SAVANNAH ENVIRONMENTAL RESPONSE TRUST

July 21, 2017

Mr. Jim McNamara, Unit Coordinator, Land Protection Branch
Georgia Department of Natural Resources
2 Martin Luther King, Jr. Dr., Suite 1154
Atlanta, Georgia 30334-9000

Re: HIS#: 10179, Deptford Site

Dear Jim:

Please find attached an amendment to the Corrective Action Plan (CAP) associated with the Deptford Site. The purpose of this CAP amendment is to address site impacts from Hurricane Matthew in October 2016 and to facilitate the development of a solar farm under Georgia Power's Advanced Solar Initiative.

If you have any questions about the attachment, please do not hesitate to contact me or Joseph Blackmon at 912-652-1151.

Thanks,

July 21, 2017

Name: Philip Rowland
Date

Title: Manager of the Savannah Acid Plant LLC
and Duly Authorized Consultant to the Savannah Trust

Electronic cc to: Jim McNamara, Georgia Environmental Protection Division
Pete Shonka, City of Savannah
Marc Weinreich, Savannah Environmental Response Trust

Corrective Action Plan Amendment

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

July 21, 2017
Terracon Project No. ES177145

Prepared for:

Savannah Environmental Response Trust
Savannah, Georgia

and

City of Savannah
Savannah, Georgia

Prepared by:

Terracon Consultants, Inc.
Savannah, Georgia

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

July 21, 2017

Georgia Department of Natural Resources
Hazardous Waste Corrective Action
2 Martin Luther King, Jr Drive SE, Suite 1054
Atlanta, Georgia 30334

Attn: Mr. Jim McNamara, Unit Coordinator

Re: Corrective Action Plan Amendment
Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179
Terracon Project No. ES177145

Dear Mr. McNamara:

Terracon Consultants, Inc. (Terracon) respectfully submits this Corrective Action Plan (CAP) Amendment for the above-referenced site on behalf of the Savannah Environmental Response Trust and the City of Savannah. The purpose of this CAP amendment is to address site impacts from Hurricane Matthew in October 2016 and to facilitate the development of a solar farm under Georgia Power's Advanced Solar Initiative.

This CAP Amendment is being submitted for review and approval by the Georgia EPD. If you have any questions or comments pertaining to the material presented herein, please contact the undersigned at (912) 629 4000.

Sincerely,
Terracon Consultants, Inc.

R. Luke Bragg, PE
Project Engineer

Stewart A. Dixon, PG
Environmental Department Manager

William S. Anderson, III, PE
Senior Principal

cc: Philip Rowland and Joe Blackmon, Savannah Acid Plant, LLC and duly authorized consultant to the Savannah Trust
Heath Lloyd, City of Savannah
Marc Weinreich, Savannah Environmental Response Trust

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APPENDICES

REGISTERED PROFESSIONAL CERTIFICATION

I certify that I am a qualified groundwater scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by me or by a subordinate working under my direction.

Name: William S. Anderson, III

Signature:

Date: July 21, 2017

Georgia Stamp

CORRECTIVE ACTION PLAN AMENDMENT

DEPTFORD TRACT SITE
Savannah, Chatham County, Georgia
HSI No. 10179

Terracon Project No. ES177145
July 21, 2017

1.0 SITE OVERVIEW

1.1 Site History

The Deptford Tract site encompasses approximately 53 acres of land adjacent to President Street and Kerr-McGee Road in Savannah, Chatham County, Georgia. A topographic vicinity map has been prepared as Figure 1 in Appendix A. A site diagram has been prepared as Figure 2 in Appendix A. The site was acquired from the Rowland Estate by the City of Savannah in November 1919 for use as a municipal landfill. Operation of the landfill was transferred to the Savannah Port Authority (currently known as the Savannah Economic Authority) in 1935, and later sold to American Cyanamid in 1951. The City of Savannah continued as an operator of the landfill until 1954, when landfill operations ceased.

The landfill portion of the Deptford Tract site contains an estimated 600,000 cubic yards of municipal waste. In 1921, the City of Savannah began filling in the marsh lands at the site with municipal and, possibly, industrial wastes. The Central of Georgia Railway transported municipal waste from the city to the site by rail car. According to a story in the Savannah Morning News in April 1921, a coal tar disinfectant and deodorant was used on the wastes transported to the site to reduce odors, and inhibit infestation of flies, mosquitoes, and rodents at the rail car platforms. By-products from a coal-gasification plant previously located in Savannah may have been used for odor and vector control. According to a story in the Savannah Morning News written 4 years after the municipal landfill had closed (March 2, 1958), raw garbage was dumped and partially burned at the site.

1.2 Summary of Previous Environmental Investigations

Several environmental investigations have been conducted at the Deptford Tract site since 1993 in accordance with the requirements of the Georgia Hazardous Site Response Act (HSRA). Numerous soil borings and monitoring wells have been installed; soil, sediment, groundwater, and surface water samples have been collected; and assessments of human health and ecological risk have been conducted. In 1993, Phase I and Phase II assessments of the site were conducted in response to the identification of elevated lead concentrations in soil by the

Georgia Environmental Protection Division (EPD; Law 1994). A HSRA release notification was submitted to the Georgia EPD on March 21, 1994.

Based on site characterization information available at the end of June 1994, the Georgia EPD determined that a release exceeding a reportable quantity had occurred at the site. On July 1, 1994, the Georgia EPD listed the site on the Hazardous Site Inventory (HSI) as HSI No. 10179 and classified the site as a Class II site requiring further evaluation. Subsequent site investigations conducted in the 1990s identified the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and cyanide. Lead in soil was identified as the most widespread constituent exceeding the HSRA non-residential risk reduction standards (RRS). In June 1999, it was determined that limited portions of the former landfill were not in compliance with the non-residential RRS for soil, although the site was considered to be in compliance with the non-residential RRS for groundwater.

In 2002, additional site investigations were conducted to define the boundaries of the source contamination and landfill extents; identify background concentrations; define the horizontal and vertical extent of impacted soil and groundwater; complete a risk assessment; and develop a conceptual plan for corrective action. The 2002 investigation indicated that the horizontal extent of impacted soil was limited to 4 general areas within the site boundary. The vertical extent of impacted soil was limited to soils overlying debris and municipal waste. The horizontal and vertical extent of impacted groundwater above background concentrations was fully delineated. The risk assessment determined that the only potential on-site receptors are trespassers and on-site workers. Non-residential RRS were confirmed as the most appropriate standards for the site.

In late 2002, a focused soil investigation was conducted to further delineate concentrations of lead and arsenic in soil within 2 locations east of Kerr-McGee Road. The investigation identified an area of lead impacted soil in surface soils just north of the (former) Air Liquide facility east of Kerr-McGee Road. Arsenic was not detected in surface soils east of Kerr-McGee Road at concentrations above the non-residential RRS. Additional soil and groundwater investigations were conducted through 2006. As a result of the additional work, the background concentrations were revised and all regulated substances of concern were delineated to below background concentrations. Laboratory analytical data indicated that the following compounds were detected in surface soil above the non-residential RRS: benzo(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, arsenic, barium, chromium, lead, and silver. In addition, barium and lead were detected in subsurface soil above the non-residential RRS. Only arsenic and lead were detected in surface soils at concentrations above the non-residential RRS that are protective of human health. Groundwater beneath the site was determined to be in compliance with the non-residential RRS.

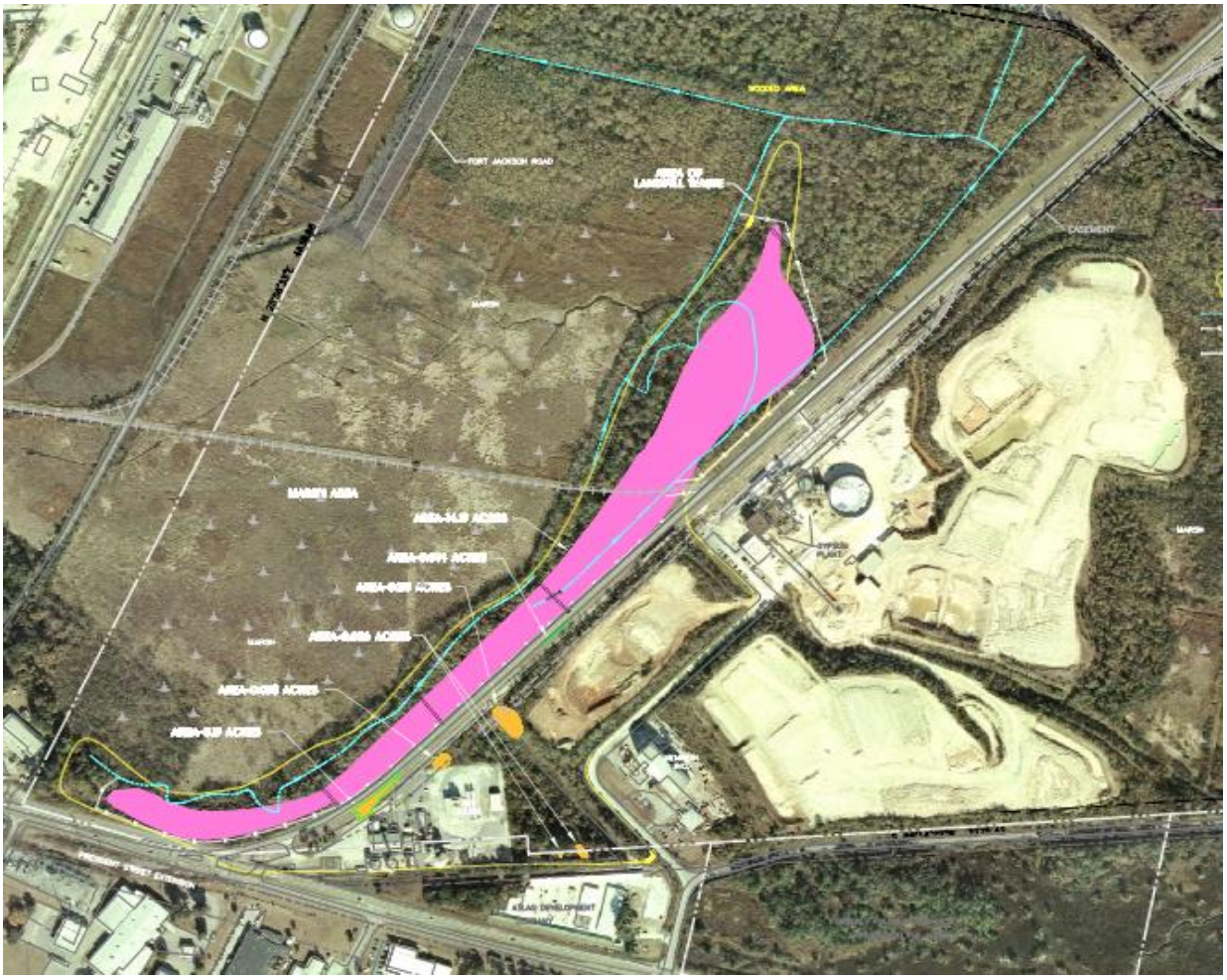

Figure 1.1: Area of Elevated Lead and Arsenic Concentrations in Soil shown in Pink.

1.3 Baseline Ecological Risk Assessment

A Screening Level Ecological Risk Assessment (SLERA) was included in a 2004 Compliance Status Report and evaluated potential ecological risks to on-site and off-site terrestrial and aquatic receptors from exposure to residual concentrations of substances in the surface soil of the occupied and unoccupied areas, and the surface water and sediment of the freshwater tidal drainage ditches (Environmental Strategies Consulting, LLC, 2006). The SLERA included an evaluation of the extent of impacted media, potential ecological receptors and their complete exposure pathways, and development of assessment and measurement endpoints. Using ecotoxicity screening values and the maximum substance concentration in each of the affected environmental media, hazard quotients were calculated.

A Baseline Ecological Risk Assessment (BERA) was completed in 2006 as a follow up to the SLERA (Environmental Strategies Consulting, LLC, 2006). The purpose of the BERA was to further refine calculated risks based on measured uptake of substances by species in the food

chain. In the BERA, field samples were collected and analyzed for substances identified in the SLERA with hazard quotients greater than 1 and substances without ecotoxicity screening values. Specifically, the BERA addressed potential risks due to exposure of terrestrial and aquatic ecological receptors to residual concentrations of metals in surface soils and drainage tidal ditches associated with the site. These metals included arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

To evaluate the potential for adverse ecological effects, toxicity reference values (TRVs) were selected as measurement endpoints to be used in risk analysis. The TRVs were based on substance levels that imply no adverse effects or levels that represent the lowest concentration at which adverse effects may occur. The BERA identified concentration-based TRVs obtained from ecological screening values developed by EPA Region 4 (EPA, 2001). Dose-based TRVs were obtained from Sample et al (1996), and included no observed adverse effects levels (NOAELs) and lowest observed adverse effects levels (LOAELs). These TRVs are detailed on Table 1 in Appendix B.

Estimated potential risks were evaluated in the "unoccupied area" for three secondary consumers (southern short-tailed shrew, American robin, and eastern cottontail) and two tertiary consumers (mink and great blue heron). The BERA identified potential exposure risks for select metals for both the NOAEL and LOAEL risk levels for the shrew (arsenic, barium, lead, selenium, and silver), the robin (barium, chromium, lead, and selenium), and the cottontail (barium, lead, and silver). It was noted that potential risks exist at the background total intake (TI) levels for the secondary consumers for lead and arsenic, even at the LOAEL level. The estimated potential risks above acceptable levels were limited to local potential adverse effect on wildlife that rely exclusively on the site for their home range. There were no estimated potential risks to wildlife that are present on the site infrequently, based on their home range being significantly larger than the site area. No potential risk was identified for either of the tertiary consumers. In addition, the BERA stated that metals present in the drainage ditches were not being passed up the food chain and that there were no obvious signs of stress by the wildlife and plants observed at the site.

Based on the results of the BERA, a corrective action plan (CAP) was recommended. In the unoccupied portion of the site, standards protective of both human health and potential ecological receptors would be applied.

1.4 Corrective Action Plan

1.4.1 Overview

A Corrective Action Plan (CAP) was prepared in 2008 to address the regulated substances of concern at the Deptford Tract site. The corrective action approach was to manage areas of the site where municipal waste materials were permanently disposed in accordance with HSRA

Type 5 standards (WSP Environmental Strategies, LLC, 2008). Non-residential Type 5 RRS protective of human health were established for the following constituents:

- Arsenic – 38 mg/kg
- Lead – 1,100 mg/kg

The Type 5 standards are utilized for managing potential risks where compliance with the Type 1-4 RRS is not possible. Type 5 standards require the use of measures to control the property where regulated substances are located, i.e. institutional controls. Under Type 5 standards, restriction of access or decontamination (engineering controls) of isolated areas is also appropriate to address principal threats.

Figure 1.2: Map of Georgia EPD approved Type 5 Engineering Controls and Land Use Restrictions - Deptford Tract.

The primary components of the corrective action approach described in the 2008 CAP included the following:

- Management of impacted soil and waste material within the limits of the defined landfill in accordance with Type 5 standards;
- Monitoring of groundwater within and downgradient of the former landfill to ensure it remains in compliance with the applicable non-residential RRS;
- Management of soil and groundwater in the areas beyond the limits of the former landfill in accordance with the applicable non-residential RRS;
- Implementation of other controls, maintenance plans, and monitoring programs that will ensure the corrective action remains protective of human receptors.

The corrective action proposed in the 2008 CAP included implementation of institutional controls and separate engineering controls for the “unoccupied area” west of Kerr McGee Road and the “occupied area” east of Kerr McGee Road. Technical approval of the CAP and comments were provided by the Georgia EPD in a letter dated February 16, 2010. The institutional controls and engineering controls implemented in 2012 and 2013 as part of the CAP are described in the sections below. After completion of the remedial action in 2012-2013, the surface soils to a depth of 18 inches were in compliance with non-residential RRS for lead and arsenic.

1.4.2 Institutional Controls

An environmental covenant for all parcels part of the Type 5 area was implemented in accordance with the Georgia Uniform Environmental Covenants Act. The environmental covenant restricts land use for industrial/commercial purposes only and prohibits residential use. Future earthwork activities within the Type 5 area are restricted without following proper health and safety protocols. In addition, groundwater use within the site property limits are prohibited for both potable and non-potable purposes.

1.4.3 Engineering Controls

Engineering controls were implemented around the “unoccupied area” west of Kerr McGee Road. These controls include a six-foot tall chain link fence with three strand barbwire, signs that are legible from a distance of four hundred feet, and permanent markers placed on each corner of the defined Type 5 area as stipulated in 391-3-19-.08(7)(d) of the Rules for Hazardous Site Response. There are four signs posted in the marsh with four additional signs posted on each fence gate. The signs read as follows:

DANGER
Deptford Tract Landfill
HSI # 10179
Unauthorized Personnel
KEEP OUT

Six granite permanent markers have been placed on each corner of the defined Type 5 area. The markers read as follows:

Restricted Area Subject
To Environmental Covenant
Deptford Tract Landfill
HSI #10179
Call owner (912) 652-1151 or GA EPD
Prior to digging or commencing any other land disturbing activity

Remediation of the impacted material within the "occupied area" east of Kerr McGee Road consisted of excavating the top 18-inches of soil that exceeded the non-residential RRS for arsenic (38 mg/kg) and lead (1,100 mg/kg) as described in the 2008 CAP. Within the "occupied area", seven areas were designated for excavation and backfill. Once backfill placement was complete for each designated area, the areas were seeded with rye/fescue grass seed mixture in accordance with the Erosion and Sedimentation Control Plan and covered with wheat straw. Two areas were designated to be covered with 18 inches of #57 stone due to their location abutting the ballast of the rail line that bisects the site (Terracon Consultants, Inc., 2013).

Quarterly inspections are conducted to assess site conditions in accordance with the requirements and obligations specified in the 2008 CAP and the 2010 Georgia EPD CAP approval letter. The inspection is part of the maintenance and monitoring program designed to ensure the corrective action remains protective of human receptors. The maintenance and monitoring program includes the inspection and maintenance of the engineering controls and the surface barriers.

2.0 HURRICANE MATTHEW

2.1 Local Effects

Hurricane Matthew was a powerful hurricane that impacted the Caribbean and the southeastern United States from September 28 – October 9, 2016. Chatham County received the brunt of Hurricane Matthew's storm surge effects in the state of Georgia on October 8, 2016. The maximum storm surge measured by a tidal gauge in the United States was 7.70 feet above normal tide levels at a National Ocean Service (NOS) gauge at Fort Pulaski. Wind gusts of up

to 96 mph were recorded on Tybee Island and wind gusts of up to 71 mph were recorded in Savannah. According to the National Oceanic and Atmospheric Administration (NOAA), 17.49 inches of rainfall was measured at Hunter Army Airfield in Savannah.

Terracon conducted a site reconnaissance and evaluation of the Deptford Tract site following Hurricane Matthew. Terracon traversed the "unoccupied" and "occupied" areas to determine the quantity and locations of downed trees and exposed rootmat/landfill debris areas. Significant downed trees were observed within the "unoccupied area" and several downed trees were present in the "occupied area". Approximately 28,516 square feet area within the "unoccupied" portion of the Deptford Tract landfill contained new exposed areas. One large area within the "unoccupied area" contained over 100 large trees that had been uprooted. Numerous downed trees and exposed rootmat were noted along the drainage ditches and tidal creeks in the "unoccupied area". Approximately 548 square feet of area within the "occupied" area exhibited new exposed areas. A copy of Terracon's Site Reconnaissance and Evaluation of Downed Trees & Exposed Landfill Debris report has been included in Appendix C. The report contains figures and tables detailing the GPS coordinates and mass areas of downed trees, as well as photographs from the site reconnaissance.

Figure 2.2: Typical view of a downed tree within an upland portion of the Deptford Tract "unoccupied area".

2.2 Corrective Action Plan Implications

As indicated previously, technical approval of the CAP and comments were provided by the Georgia EPD in a letter dated February 16, 2010. The Georgia EPD provided the following comments:

> *"EPD has completed its review of the Baseline Ecological Risk Assessment (BERA), dated July 17, 2006 and the associated December 12, 2006 response to comments. As stated in the conclusion section of the BERA, 'For the unoccupied portion of the site, standards that are protective of both human health and potential ecological receptors will be applied.' Therefore, EPD approves the TRV_{so}, TRV_{sd}, and TRV_{sw} in Table 11 of the response as media-specific Ecological Screening Values (ESVs) for metals at this site (Note: these concentrations default to an approved site-specific background if greater than the listed ESVs).*
>
> *"In the unoccupied area, the cleanup standard is the approved ESVs and apply to the upper two feet of soil. It is noted that a majority of the unoccupied area is forested, and tree clearing to perform this cleanup will result in habitat loss. Therefore, in any event that an area greater than ¼ acre in size is damaged, cleared, or otherwise results in the destruction of trees, whether man-made or due to natural circumstances, Tronox and Savannah will either sample the upper two feet of soil to demonstrate concentrations do not exceed the Ecological Screening Values (ESVs) or install a minimum of two feet (2') of soil with a vegetative cover. Said cover will be mowed quarterly and inspected…"*

Hurricane Matthew resulted in significant downed trees and areas of exposed rootmat/landfill debris. To the extent practical, these impacted areas need to be addressed in order for the Deptford Tract site to remain in compliance with the provisions of the CAP.

3.0 CORRECTIVE ACTION PLAN AMENDMENTS

The following sections detail amendments to the CAP required for the site to remain in compliance with the Type 5 RRS, such as the clearing of downed trees and the repair of the soil cover. In addition, this amendment to the CAP will facilitate the construction and operation of a solar farm within the Deptford Tract site. While discussed separately, it is assumed that certain site activities will be conducted in a coordinated manner. All amendments to the CAP will be subject to approval by the Georgia EPD. Approved CAP amendments will be implemented in accordance with the Environmental Management Plan and the Site-Specific Health and Safety Plan included in Appendix D and Appendix E, respectively.

3.1 Clearing of Downed Trees and Repair of Soil Cover

In order to address the downed trees and exposed rootmat/landfill debris, land disturbance activities will be performed in accordance with a permitted Erosion and Sediment Control Plan. In addition, wetland permitting may be required depending on solar farm development plans. Accessible areas within the upland portions of the "unoccupied area" of the Deptford Tract site will be targeted for clearing. Specialized off-road equipment, as well as tree and vegetation clearing will be used to access these areas. Tree and vegetation clearing will be performed using manual labor, as well as clearing equipment such as a track-mounted Feller Buncher and Shinncutter. Temporary bridges and/or large mats will also be used for crossing the existing tidal creek and drainage ditches.

Downed trees will be cut at the stump and trunks/foliage will be mulched utilizing a Tub Grinder or similar equipment. Tree trunks larger than 2 feet in diameter will be cut and staged on-site. The mulch from downed trees will be applied to the site as vegetative cover. The tree stumps and rootmat will then be removed and shaken as needed to clear excess soil and/or landfill debris. Removed tree stumps and rootmat will be loaded into on-road haulers with a track hoe and transported to a permitted Subtitle D landfill for disposal.

One (1) foot of fill will be applied to exposed areas as a result of rootmat clearing activities. The 1-foot fill will be composed of 6-8 inches of on-site Marconi sand or off-site clean sandy backfill material with an additional 4-6 inches of vegetative top soil. Fill material should consist of <25% passing the No. 200 sieve. Placed fill will be compacted to 90% of Standard Proctor density in accordance with ASTM D698. Any exposed landfill debris within the upland areas as a result of Hurricane Matthew or required solar farm development will be covered with 1 foot of fill in accordance with the above methodology. All work will be performed in accordance with the Site-Specific Health and Safety Plan included in Appendix E.

The approved CAP does not distinguish soil cover maintenance requirements based on location within the "unoccupied" portion of the Deptford Tract site. However, activities within lowland and/or wetland areas would pose significant access and implementation challenges. Mobilization of equipment into these areas would likely cause more damage to the soil cover than leaving the downed trees in place. Furthermore, activities would likely cause more damage to sensitive wetland areas. As such, downed trees will remain in-place within lowland and/or wetland areas within the "unoccupied" portion of the site. Accessible downed-trees along the tidal creek or drainage ditches will be flattened in-place in order to maintain slope stability.

3.2 Solar Farm Construction

3.2.1 Overview

A solar farm will be constructed within the southern portion of the "unoccupied area" of the Deptford Tract site. The solar farm will be constructed as part of Georgia Power's Renewable Energy Development Initiative (REDI) Community Solar Program. The Deptford Tract solar farm will be designed and constructed by Hannah Solar and then procured by Georgia Power. Customers in the local community can subscribe to or purchase solar panels to offset electric power consumption from traditional fossil fuel power plants.

Figure 3.2: Typical view of a community solar farm.

A preliminary layout of the proposed solar farm is shown on Figure 4 in Appendix A. The exact location and configuration has yet to be determined. As indicated, the solar farm will feature 4,176 JKM325PP-72-V-2016, 325 watt (W) poly crystalline solar modules. Once constructed, the solar farm is designed to produce 1,357,200 total watts or over 1 megawatt (1 MW).

3.2.2 Vegetation Clearing and Grading

Construction of the solar farm will require vegetation clearing and grading within the southern portion of the "unoccupied area" (in addition to the downed tree clearing as a result of Hurricane Matthew). Vegetation and tree clearing will proceed in general accordance with the procedures

outlined in Section 3.1 above, as well as the Site-Specific Health and Safety Plan included in Appendix E. Standing trees will be cut at the stump and mulched. The stumps will then be ground down in place as needed to avoid impacts to the soil cover and reduce potential worker exposure to contaminants. The solar farm footprint will be graded to promote positive drainage without ponding. A minimum 1-foot of vegetative cover will be maintained throughout the project area. Where required, imported fill materials will consist, at a minimum, of 6-8 inches of Marconi sand or off-site clean sandy backfill material with an additional 4-6 inches of vegetative top soil at the surface. Fill material should consist of <25% passing the No. 200 sieve. Placed fill will be compacted to 90% of Standard Proctor density in accordance with ASTM D698. All clearing and grading operations will be conducted in a manner that prevents (a) off-site erosion and sedimentation and (b) sediment discharges to water bodies and/or wetlands.

3.2.3 Construction Methodology

As of the date of this CAP Amendment, geotechnical investigation are being conducted within the solar farm footprint to determine the most appropriate foundation construction methodology for the solar farm panels. Potential options include construction on driven piles or helicals, which would minimally penetrate the surface barrier. The panel assemblies could be ballasted on the above grade if subsurface conditions are not suitable, however it is likely driven piles will be utilized. All wiring and conduit is anticipated to be constructed above grade, such that surface barrier penetrations are not required. A chain link fence will surround the solar farm foot print and will require surface barrier penetrations for support.

All construction activities will adhere to the Environmental Management Plan and Site-Specific Health and Safety Plan presented in Appendix D and Appendix E, respectively. Any soil that is cleared from the site will be transported to a permitted Subtitle D landfill for disposal. In the event surface penetrations require stump removal, the procedures indicated above in Section 3.1 will be followed.

3.2.4 Operations and Maintenance

Operations and maintenance (O&M) activities will be conducted at the solar farm on an approximate monthly basis. Activities will include inspection, cleaning, and/or repair of solar farm components. Access to the solar farm will be restricted by a fence and locked gates when O&M personnel are not on-site.

3.3 Maintenance and Monitoring Program

The below sections discuss the implications of the CAP amendments to the maintenance and monitoring program within the “unoccupied area” of the Deptford Tract site. Future site work will

not impact the maintenance and monitoring program associated with the "occupied area" of the site.

3.3.1 Engineering Controls

Engineering controls for the "unoccupied area" include a six-foot tall chain link fence with three strand barbwire, signs that are legible from a distance of four hundred feet, and permanent markers placed on each corner of the defined Type 5 area. Access to the "unoccupied area" is provided by 4 pad-locked gates. Tree clearing, land clearing, and construction/operation of the solar farm may require the modification of the existing fence to allow for more access locations. In the event these locations are required, new pad-locked gates will be installed, complete with three strand barbed wire and signage. Gates will be locked at all times except to allow for the completion of site work. New fencing may also be installed within the "unoccupied area" around the solar farm. Any additional fencing will maintain compliance with specifications of the CAP so as to prohibit access to areas that contain soil contamination at concentrations above standards protective of human health. Future site activities will not impact the permanent markers.

3.3.2 Inspection and Maintenance of Surface Barriers/Engineering Controls

Quarterly inspections will continue to be conducted to assess site conditions in accordance with the requirements and obligations specified in the 2008 CAP and the 2010 Georgia EPD CAP approval letter. A minimum of one inspection per year will be conducted by a Professional Engineer registered in the State of Georgia. The landfill cover within the "occupied area" and "unoccupied area" will be inspected by traversing all accessible areas of the site and noting any areas of erosion or exposed landfill debris. The vegetative soil cover will be mowed on a quarterly basis and also inspected to ensure continued growth. Re-seeding or fertilization of the vegetative soil cover will be conducted as needed. The surface barrier within the solar farm will also be inspected as part of site activities to prevent potential exposure to site workers.

The quarterly inspections will continue to include an inspection of the engineering controls. Each quarter the fence, gates, locks, signage, and markers will be examined to ensure functionality. Gates will be manually checked by opening and closing to verify proper function. The signage posted along the fence will be inspected to verify presence and integrity. Any missing signs or signs that are no longer legible will be replaced immediately following the inspection. Vegetation clearing and repairs will continue along the fence as needed.

Quarterly Landfill Cap Inspection Reports will continue to be issued on a quarterly basis. Each report will contain photographs, a narrative, and maps depicting the condition of the landfill, and any recommendations regarding maintenance and/or repair of the landfill cover or engineering controls.

3.3.3 Groundwater Monitoring

Although site groundwater is in compliance with non-residential RRS, long-term groundwater monitoring is required for sites where Type 5 RRS are applied. Since approval of the 2008 CAP, groundwater samples have been collected on an annual basis from the monitoring well network and analyzed for total RCRA metals via EPA Method 6010C. The monitoring wells are purged and sampled utilizing low flow techniques in accordance with the procedures outlined in the US EPA Science and Ecosystem Support Division (SESD) *Field Branches Quality System and Technical Procedures* (March 6, 2013). The Deptford Tract monitoring well network includes the following:

- South (upgradient) of the former landfill: monitoring wells MW-3A (A zone) and PMW-16 (B zone);
- West of the former landfill: monitoring wells MW-27A (A zone), MW-28A (A zone), MW-8B (B zone), and MW-26B (B zone);
- North (downgradient) of the former landfill: monitoring wells MW-29A (A zone) and MW-15B (B zone);
- East of the former landfill: monitoring wells MW-17A (A zone), PMW-17 (A zone), and MW-19B (B zone);
- Additional monitoring wells include: MW-4A, MW-5A, PMW-5, PMW-6, PMW-7, PMW-7A, MW-9, and MW-9A.

The monitoring well network will be assessed during downed tree clearing and associated land clearing and solar farm construction activities. Monitoring wells found to have been damaged or which will impede the construction or operation of the solar farm will be properly abandoned in accordance with the Georgia Water Well Standards Act of 1985 and replaced. Well abandonment will be overseen by a Professional Engineer or Geologist registered in the State of Georgia. Wells requiring abandonment will be reinstalled in accordance with the original well construction. In the event tree clearing, land clearing, or construction/operation of the solar farm prevents exact well re-installation, the well will be constructed as a flush-mount well or moved to a different location in the immediate vicinity. Any alteration to the construction or location of a re-installed monitoring well will require Georgia EPD notification and approval. Wells found to have not been impacted will be protected during tree clearing and land clearing activities.

Previous annual groundwater monitoring events have indicated the depth to water ranges from 1-15 feet below grade (Terracon Consultants, Inc., 2016). Shallow zone and deep zone potentiometric surface maps indicate the direction of groundwater flow towards the north or northeast. Annual groundwater monitoring will continue following repair of the landfill surface barrier and construction of the solar farm to monitor for any changes in groundwater flow regime or constituent of concern concentrations. Additional monitoring wells may be required in the

event the direction of groundwater flow changes as a result of earthwork or solar farm construction activities.

4.0 RISK ASSESSMENT

4.1 Previous Risk Assessments

4.1.1 Ecological Risk Assessment

As discussed in Section 1.3, a BERA was conducted in 2006 to evaluate the potential for adverse ecological effects to on-site and off-site terrestrial and aquatic receptors from exposure to residual concentrations of metals in the surface soil of the "occupied areas" and the "unoccupied areas", and the surface water and sediment of the freshwater tidal drainage ditches. Using conservative assumptions, potential risks estimated for localized wildlife were above acceptable levels; however, there were also potential risks associated with exposure to background soil conditions. Potential risk estimated for regional wildlife did not indicate any unacceptable levels. In addition, the exposure to drainage ditches in the form of prey consumption did not result in an unacceptable risk. As such, the ecological risk assessment determined that the Deptford Tract landfill did not pose an unacceptable risk to regional ecological receptors.

4.1.2 Human Health Risk Assessment

The 2008 CAP contained a Type 5 risk assessment to evaluate the potential risks to human receptors by constituents of concern in the "occupied area" and the "unoccupied area" following the implementation of the institutional and engineering controls described in Sections 1.4.2 and 1.4.3. Based on the results of previous investigations, arsenic and lead were the only regulated constituents of concern detected in surface soil at concentrations above the non-residential RRS that are protective of human health. As such, the Type 5 risk assessment was limited to potential human exposures to arsenic and lead in surface soil after the implementation of corrective action. A discussion of risks associated with the "occupied area" has not been included as the CAP amendments will not occur in that area.

Within the "unoccupied area", the source of impacted soil was identified as waste material formerly disposed within the landfill. As identified in the CAP, these former waste disposal areas resulted in soils impacted with arsenic and lead at concentrations in excess of the remediation criteria of 38 mg/kg and 1,100 mg/kg, respectively. Potential transport release mechanisms evaluated for arsenic and lead in soil included surface runoff to soil, releases of particulates in outdoor air from soil, and leaching of these metals from soil to groundwater. Given the presence of vegetative cover and the moisture content of soil in the "unoccupied

area", the potential transfer of soil as surface runoff and fugitive dust generation was determined to be unlikely. The potential for arsenic and lead to leach to groundwater existed; however, historic groundwater monitoring within the "unoccupied area" indicated a lack of metals migration to groundwater. Since long-term groundwater monitoring and groundwater use restrictions for both potable and non-potable uses were to be implemented as part of the CAP, human exposure to contaminants of concern in groundwater was deemed unlikely.

The CAP stated that exposure to facility, utility, and construction workers, as well as trespassers, to impacted soil in the "unoccupied area" via direct contact was possible. Potential human exposure would be prevented by the installation of a chain-link fence designed to provide separation between human receptors and the demarcated area in which soils exceed the remediation criteria. The wetland area to the west and the drainage ditches to the north and northeast would also serve as physical barriers to prevent human exposure. The CAP risk assessment did state, however, that surface soils in the "unoccupied area" that are outside of the fence to the northeast contain arsenic and lead in surface soils at concentrations less 38 mg/kg and 1,100 mg/kg, respectively. Therefore, workers and trespassers could potentially be exposed to these metals at concentrations less than the remediation criteria via inadvertent ingestion, dermal contact, and inhalation of particulates.

After implementation of corrective action, the CAP stated that there would be no complete exposure pathways for soil containing arsenic and lead above the remediation criteria in the "unoccupied area". On-site workers could be exposed to on-site surface soil at concentrations less than the remediation criteria, and, as such, Type 5 RRS protective of potential human receptors were established in accordance with Georgia Rule 391-3-19-.07(10)(d).

The Type 5 RRS for arsenic was derived using the US EPA's *"Risk Assessment Guidance for Superfund: Volume 1 – Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)"*, i.e. RAGS, Part B. The Type 5 RRS were calculated using the standard non-residential exposure assumptions in Table 3 of Appendix II of the Rules for Hazardous Site Response (Georgia Rule 319-3-19) for the RAGS equations. These standard assumptions included an averaging time (AT) of 70 years, an exposure frequency (EF) of 250 days/year, and an exposure duration of 25 years. The Type 5 RRS for arsenic was determined to be 38 mg/kg. Exposures to soil impacted with arsenic at concentrations below the Type 5 RRS would result in an acceptable excess cancer risk of less than 10^{-5} and a hazard index of less than 1.

The Type 5 RRS for lead was derived utilizing the Georgia Adult Lead Model (GALM) in accordance with Appendix IV of the Rules for Hazardous Site Response (Georgia Rule 319-3-19). Default assumptions were utilized for the GALM and included an EF of 219 days/year and an AT of 365 days/year. The maximum concentration of lead detected in groundwater (9.9 µg/L) was also used. The Type 5 RRS for lead was determined to be 1,100 mg/kg.

Exposures to soil impacted with arsenic and lead at concentrations below the Type 5 RRS would result in an acceptable excess cancer risk of less than 10^{-5} and a hazard index of less than 1.

4.2 CAP Amendment Risk Assessment

4.2.1 Ecological Risk Assessment

Tree clearing and repair of the surface barrier within the "unoccupied area" will reduce the risk of metals exposure to ecological receptors. As such, the conclusion in the 2006 BERA that the Deptford Tract landfill does not pose an unacceptable risk to regional ecological receptors remains valid. After construction, the solar farm will not contain an ecological habitat. The solar farm will be fenced and regularly maintained to prevent migration of ecological receptors onto the property.

4.2.2 Human Health Risk Assessment

Site activities associated with the CAP Amendment will occur within the "unoccupied area" where surface soils contain arsenic and lead at concentrations in excess of the Type 5 RRS. The dermal contact, incidental ingestion, and inhalation of particulates exposure pathways will be complete during the following site activities:

- Vegetation clearing;
- Tree clearing;
- Repair of the surface barrier;
- Grading of the solar farm area;
- Construction of the solar farm.

The above activities have been collectively referred to as 'construction' activities. Worker's completing these activities are anticipated to be on-site for no more than 180 days in a 1 year period. Following construction of the solar farm, workers are anticipated to be on-site within the solar farm area conducting operations and maintenance (O&M) activities for no more than 14 days per year throughout the useful life of the project (Hannah Solar). Given the risk of exposure to arsenic and lead at concentrations above the Type 5 RRS, the RAGS equations and GALM have been reassessed utilizing activity specific (i.e. construction or O&M) information, such as exposure frequency and exposure duration.

Arsenic

As discussed in Section 4.1.2, the Type 5 RRS for arsenic was determined to be 38 mg/kg based on standard non-residential exposure assumptions. Of note, these standard assumptions included an exposure frequency (EF) of 250 days/year and an exposure duration (ED) of 25 years. During construction activities, workers are anticipated to be on-site for 180 days in a 1 year period. As shown on Table 2A in Appendix B, the EF variable has been revised to 180 days per year and the ED variable has been revised to 1 year (Note: for systemic toxicants, i.e. noncarcinogenic effects, the averaging time equals the exposure duration). From RAGS Part B, exposures to soil with arsenic concentrations less than 847 mg/kg during construction activities would result in an acceptable excess cancer risk of less than 10^{-5} and a hazard index of less than 1.

The O&M risk for exposure to arsenic during O&M activities has been reassessed on Table 2B in Appendix B. As shown, the EF variable has been revised to 14 days per year and all other variables have remained as standard non-residential exposure assumptions. From RAGS Part B, exposures to soil with arsenic concentrations less than 681 mg/kg during O&M activities would result in an acceptable excess cancer risk of less than 10^{-5} and a hazard index of less than 1.

According to information presented in the 2008 CAP (Figure 2 – Distribution of Arsenic in Surface Soil), a maximum arsenic concentration of 170 mg/kg was detected in boring GHA-10 in the “unoccupied area” (Law, 1998-1999). Based on the results of the revised RAGS Part B equations, exposure to soils containing arsenic during construction and O&M activities should not result in unacceptable carcinogenic or non-carcinogenic risks.

Lead

The Type 5 RRS for lead was derived utilizing the default GALM assumptions including an EF of 219 days/year and an AT of 365 days/year. The maximum concentration of lead detected in groundwater (9.9 µg/L) was also used. The Type 5 RRS for lead was determined to be 1,100 mg/kg.

Similar to the approach for arsenic, the GALM has been reassessed for the construction and O&M conditions. For the construction condition, the exposure frequency, EF, was revised to 180 days per year. For the O&M condition, the EF was revised to 14 days per year. In both conditions, the maximum groundwater concentration was revised to 11 µg/L (PMW-7) based on laboratory analytical data from November 2016 (Terracon Consultants, Inc., 2016). Default assumptions were retained for all other variables. As shown on Table 3A in Appendix B, the soil target concentration for lead for the construction condition was determined to be 1,373 mg/kg. Table 3B indicates that the soil target concentration for lead for the O&M condition was determined to be 21,999 mg/kg.

According to information presented in the 2008 CAP (Figure 1 – Distribution of Lead in Surface Soil), a maximum lead concentration of 38,000 mg/kg was detected in boring SP-06 in the "unoccupied area" (ESC, 2002-2006). As such, concentrations of lead in soil exceed the soil target concentrations for both the construction and O&M conditions and may constitute an unacceptable risk to site workers.

In order to mitigate risk of exposure to lead concentrations in excess of the soil target concentrations, site workers must adhere to the Environmental Management Plan and Site-Specific Health and Safety Plan referenced below and included in Appendix D and Appendix E, respectively. It should be noted that following completion of construction activities a minimum 1 foot protective soil cover will be maintained throughout the solar farm footprint. As such, dermal contact, incidental ingestion, and inhalation of particulates exposure pathways will be incomplete. Therefore, site O&M workers would not be exposed to unacceptable lead concentrations.

5.0 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) has been prepared that outlines the practices and procedures to be implemented by site Contractors and Subcontractors to manage and mitigate potential adverse environmental effects during downed tree clearing, land clearing, grading, and solar farm construction activities. This EMP, included as Appendix D, establishes best management practices for minimizing site worker and general public exposure to on-site contaminants. The EMP provides a general approach to managing environmental effects, construction activities, and wastes in accordance with the existing CAP, the amendments presented in this document, and best management practices. The EMP mandates that all Contractors and Subcontractors adhere to an Erosion and Sediment Control Plan prepared by a Professional Engineer registered in the State of Georgia. In addition, the EMP mandates that if wetland impacts are required (i.e. filling), activities will be conducted in accordance with the US Army Corps of Engineers permitting regulations.

6.0 SITE-SPECIFIC HEALTH AND SAFETY PLAN

A Site-Specific Health and Safety Plan (HASP) will govern the activities of all personnel conducting work at the Deptford Tract site. The purpose of this plan is to prevent adverse health effects from contaminants and site safety hazards which may be present at this site. Contractors and Subcontractors engaged in project activities will comply with the applicable provisions of the Occupational Safety and Health Act of 1970, the safety and health requirements set forth in Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.120, where applicable, and any applicable state, city, or local safety codes. Each Contractor or Subcontractor will be responsible for supplying a Competent Person to oversee work at this project site. The Competent Person will bear primary responsibility for utilizing equipment and work practices necessary to protect the safety of the Contractor's/Subcontractor's employees at this site. The site-specific HASP has been included as Appendix E.

APPENDIX A

FIGURES

Note:
Base map was taken from portions of the 2014 Savannah and Fort Pulaski, Georgia US Geologic Survey 7.5-minute series topographic quadrangle maps. Contour interval is ten feet.

N

SUBJECT SITE

Barnwell Island Number 2
Barnwell Island
Four Mile Point
Mackey Point
Elba Island
Fig Island
Yamacraw Bluff
Savannah River
Back River
South Channel Savannah River
Wrecks Channel
JASPER CO
CHATHAM CO
SOUTH CAROLINA
GEORGIA
RESERVE WAY
WAYNE SHACKELFORD BLVD
INTERNATIONAL DR
GRAND PRIZE OF AMERICA AVE
KEMIRA RD
OLD FORT JACKSON RD
KERR-MCGEE RD
FORBES RD
WOODCOCK RD
WAHLSTROM RD
DULANY RD
HARBOR ST
LePageville
Robert M Hitch Village
Colonial Park Cem
E RIVER ST
E BAY ST
E BRYAN ST
E CONGRESS ST
E BROUGHTON ST
E YORK LN
E LIBERTY ST
E HARRIS ST
E CHARLTON LN
E TAYLOR ST
GORDON LN
RANDOLPH ST
HARRY TRUMAN PKY
E PRESIDENT ST
NEWMARK DR
FORT PULASKI NATIONAL MONUMENT
McQueens Island
Bull River
ELBA ISLAND RD
ISLANDS EXPY
CAUSTON HARBOR DR
BARTOW POINT DR
Causton Bluff
The Bluff
Saint Augustine Creek
Pine Gardens
Hillcrest Cem
Catholic Cem
BEECH ST
NEW MEXICO LN
CAUSTON BLUFF RD
UTAH ST
GREENWOOD ST
CAPITAL ST
GREGORY ST
RIVERVIEW DR
BACKSHELL RD
DEPTFORD ST
NEVADA ST
GOEBEL AVE
GOEBEL LN
LAWTON LN
LAWTON AVE
PENNSYLVANIA AVE
Savannah Gardens
Avon Park
TREAT AVE
E GWINNETT LN
E GWINNETT ST
HALE ST
WHEATON ST
E BROAD ST
E BOLTON ST
E WALDBURG ST
E WALDBURG LN
E DUFFY LN
E DUFFY ST
COLLINS ST
CEDAR ST
E PARK AVE
E ANDERSON ST
E HENRY LN
E HENRY ST
E ANDERSON LN
E 34TH ST
E 35TH ST
E 36TH ST
E 37TH ST
E 38TH ST
E 32ND ST
E 32ND LN
E 31ST LN
E 33RD ST
ASH ST
DEITER ST
SEILER AVE
OTT ST
SE 36TH ST
BEE RD
SKIDAWAY RD
KINZIE AVE
GORDONSTON AVE
Gordonston
Avondale
E Savannah Cem
MISSISSIPPI AVE
FLORIDA AVE
NEW YORK AVE
LOUISIANA AVE
ALABAMA AVE
TEXAS AVE
TENNESSEE AVE
OHIO AVE
Forest Lawn Memory Gardens
Crest Lawn Memory Gardens
Greenwich Cem
BONAVENTURE RD
WALLIN ST
E 40TH ST
E 39TH ST
E 42ND ST
UPAS AVE
TORY DR
80
WATERS AVE
LIVE OAK ST
HOLLY AVE
SAVANNAH
Wilmington River
Oatland Cr
Richardson Creek
RIVERVIEW RD
SAND HILL RD
SANDTOWN RD
OATLAND ISLAND RD
Oatland Island
Riverside
BARLEY DR
CHERYL S
JUAN
REIT
PER

0 1,000' 2,000'
1" = 2,000'
SCALE IN FEET

Project Mngr:	RLB
Drawn By:	VMG
Checked By:	RLB
Approved By:	WSA

Project No.	ES177145
Scale:	1" = 2,000'
File Name:	ES177145.dwg
Date:	June 16, 2017

Terracon
Consulting Engineers & Scientists
2201 Rowland Avenue Savannah, Georgia 31404
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TOPOGRAPHIC VICINITY MAP

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

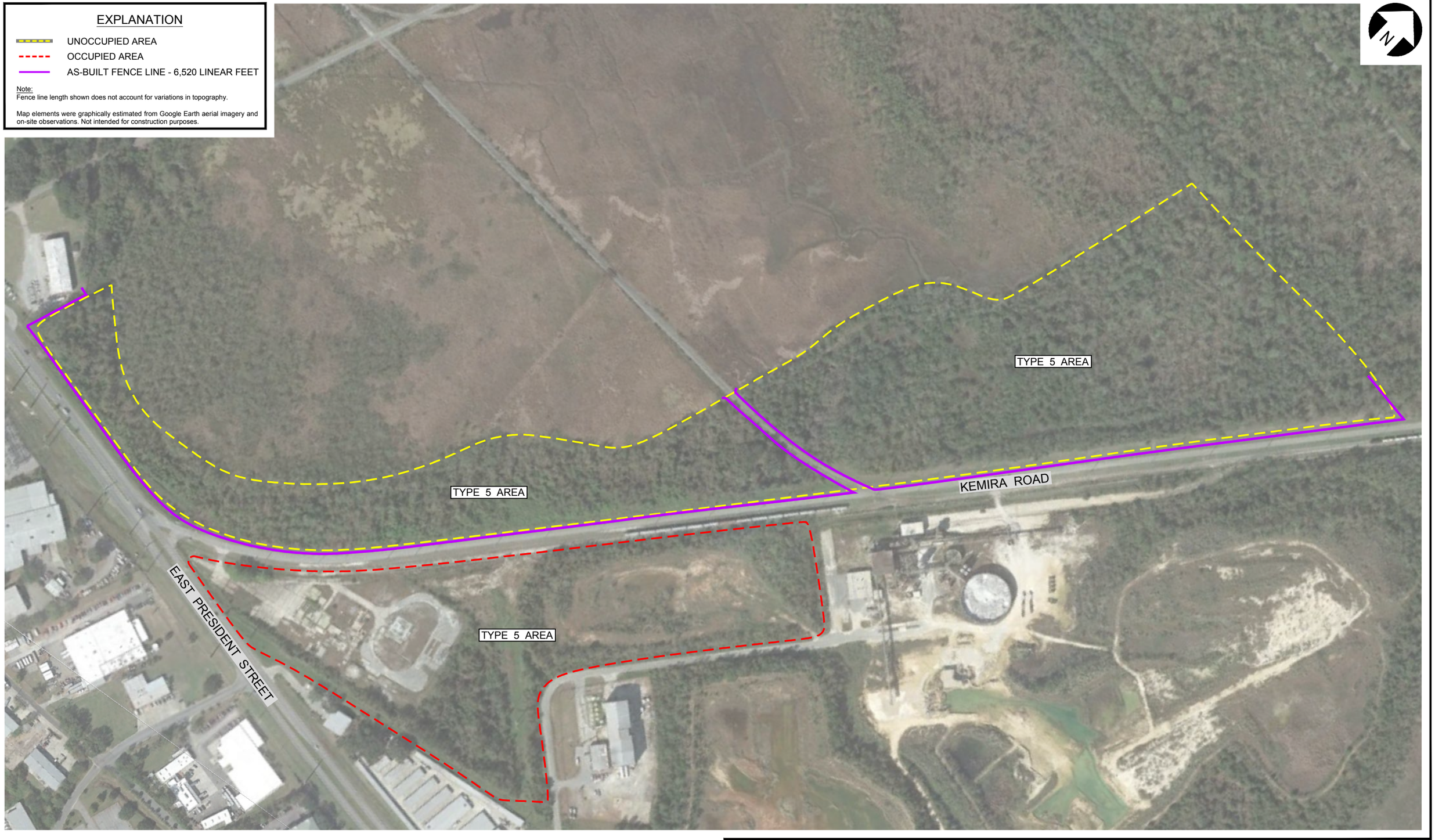
Figure
1

EXPLANATION

- UNOCCUPIED AREA
- OCCUPIED AREA
- AS-BUILT FENCE LINE - 6,520 LINEAR FEET

Note:
Fence line length shown does not account for variations in topography.

Map elements were graphically estimated from Google Earth aerial imagery and on-site observations. Not intended for construction purposes.



0 150' 300'
1" = 300'
SCALE IN FEET

Project Mngr:	RLB
Drawn By:	VMG
Checked By:	RLB
Approved By:	WSA

Project No.	ES177145
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SITE DIAGRAM

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

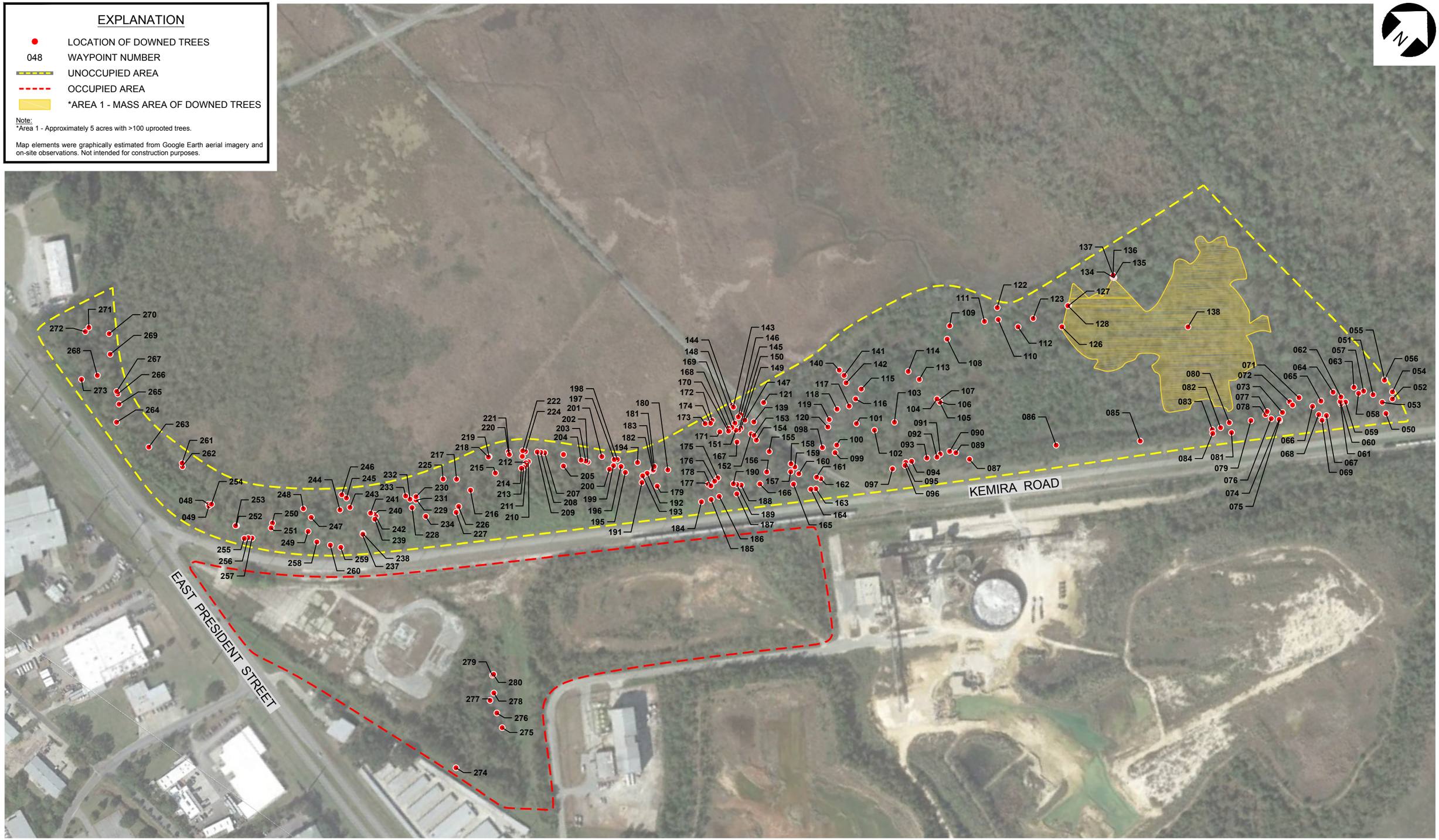
Figure
2

EXPLANATION

- LOCATION OF DOWNED TREES
- 048 WAYPOINT NUMBER
- UNOCCUPIED AREA
- OCCUPIED AREA
- *AREA 1 - MASS AREA OF DOWNED TREES

Note:
*Area 1 - Approximately 5 acres with >100 uprooted trees.

Map elements were graphically estimated from Google Earth aerial imagery and on-site observations. Not intended for construction purposes.



0 150' 300'
1" = 300'
SCALE IN FEET

Project Mngr:	RLB
Drawn By:	VMG
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GPS LOCATIONS AND MASS AREAS OF DOWNED TREES

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

Figure 3

EXPLANATION

UNOCCUPIED AREA

OCCUPIED AREA

Note:
Map elements were graphically estimated from Google Earth aerial imagery and on-site observations. Not intended for construction purposes.

PRELIMINARY DESIGN CRITERIA:
-123mph/0psf
-Strings of 18
-19' row spacing
-JKM325PP-72-V-2016, 325W mods
-(4,176) total mods
-1,357,200 total watts
-37° drivelines, 19 rows per motor

KEMIRA ROAD

EAST PRESIDENT STREET

N

0 150' 300'
1" = 300'
SCALE IN FEET

Project Mngr:	RLB
Drawn By:	VMG
Checked By:	RLB
Approved By:	WSA

Project No.	ES177145
Scale:	1" = 300'
File Name:	ES177145.dwg
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PROPOSED SOLAR FIELD LOCATION DIAGRAM

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

Figure
4

EXPLANATION

- ROAD
- PLANT ROAD
- RAILROAD
- DEPTFORD TRACT BOUNDARY
- MW-54 — DEPTFORD TRACT MONITORING WELL - SAMPLED
- MPW-20B — DEPTFORD TRACT MONITORING WELL - NOT SAMPLED

N

UNDEVELOPED AREA

UNDEVELOPED AREA

SAVANNAH ENERGY SYSTEMS

MPW-29A
MPW-29B
SB-2
SB-1
MPW-19A
MPW-19B
MW-14S/D
MPW-15B
MPW-28A
MPW-27A
MW-14A
MW-14B
PMW-19
MW-16A
MW-16B
PMW-21
PMW-04
PMW-3
PMW-18
PMW-20
MW-13A
MW-17A
MW-17
MW-12A
PMW-22
PMW-10
PMW-11
PMW-05
MW-09
MW-18A
MW-27A
MW-11A
MW-26B
MW-26C
PMW-09
PMW-17
MW-19B
MW-19C
MW-8A
MW-8B
MW-9A
PMW-12
MW-10A
PMW-6
MW-07A
PMW-13
MW-06A
PMW-14
PMW-7
PMW-7A
MW-05B
MW-04A
PMW-15
PMW-1
PMW-16
PMW-2
MW-22A
MW-03A
MW-02A
MW-01A

0 250' 500'
1" = 500'
SCALE IN FEET

Project Mngr:	RLB	Project No.	ES177145
Drawn By:	VMG	Scale:	1" = 500'
Checked By:	RLB	File Name:	ES177145.dwg
Approved By:	WSA	Date:	June 16, 2017

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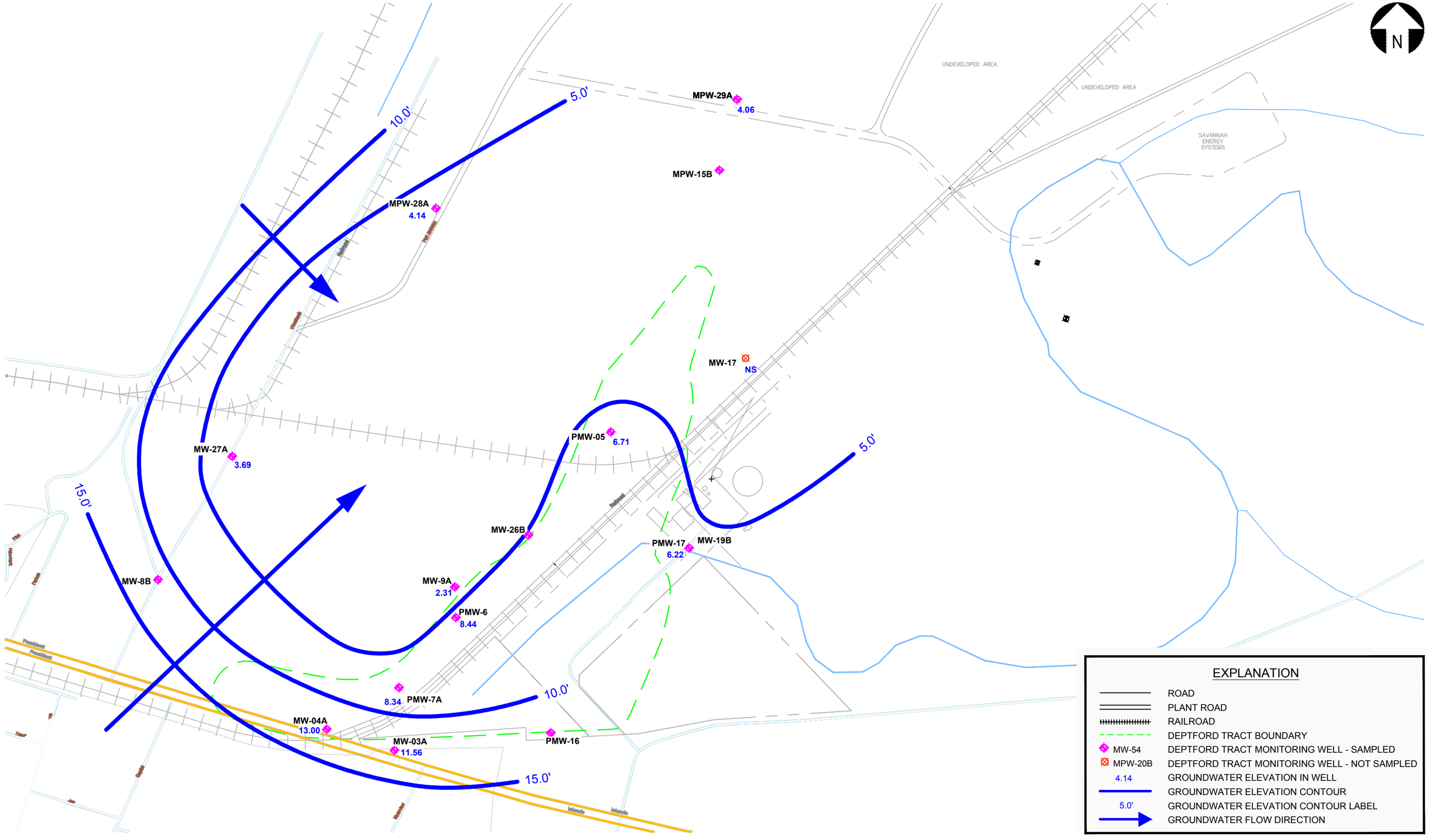
GROUNDWATER MONITORING WELL LOCATION MAP

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

Figure
5



Project Mngr:	RLB
Drawn By:	VMG
Checked By:	RLB
Approved By:	WSA

Project No.	ES177145
Scale:	1" = 500'
File Name:	ES177145.dwg
Date:	June 16, 2017

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SHALLOW ZONE POTENTIOMETRIC SURFACE MAP (NOVEMBER 2016)

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

Figure
6A

N

UNDEVELOPED AREA

UNDEVELOPED AREA

SAVANNAH ENERGY SYSTEMS

MPW-15B
1.03

2.0'

2.0'

4.0'

6.0'

MW-26B
1.68

MW-19B
1.77

MW-8B
6.51

8.0'

6.0'

8.0'

8.83
PMW-16

0 250' 500'
1" = 500'
SCALE IN FEET

EXPLANATION

- ROAD
- PLANT ROAD
- RAILROAD
- DEPTFORD TRACT BOUNDARY
- MW-54 — DEPTFORD TRACT MONITORING WELL - SAMPLED
- MPW-20B — DEPTFORD TRACT MONITORING WELL - NOT SAMPLED
- 4.14 — GROUNDWATER ELEVATION IN WELL
- GROUNDWATER ELEVATION CONTOUR
- 5.0' — GROUNDWATER ELEVATION CONTOUR LABEL
- GROUNDWATER FLOW DIRECTION

Project Mngr:	RLB
Drawn By:	VMG
Checked By:	RLB
Approved By:	WSA

Project No.	ES177145
Scale:	1" = 500'
File Name:	ES177145.dwg
Date:	June 16, 2017

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DEEP ZONE POTENTIOMETRIC SURFACE MAP (NOVEMBER 2016)

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

Figure
6B

APPENDIX B

TABLES

DEPTFORD TRACT SITE

Savannah, Chatham County, Georgia
HSI No. 10179

Table 1: BASELINE ECOLOGICAL RISK ASSESSMENT TOXICITY REFERENCE VALUES[1]

Constituent	**Toxicity Reference Value, soil (TRVso)** [mg/kg]	**Toxicity Reference Value, sediment (TRVsd)** [mg/kg]	**Toxicity Reference Value, surface water (TRVsw)** [µg/L]
Arsenic	10	7.24	190
Barium	165	NA	1,040
Cadmium	1.6	1	0.66
Chromium	0.4	52.3	11
Lead	50	30.2	1.32
Mercury	0.1	0.13	0.012
Silver	0.81	2	0.12
Selenium	2	0.81	5

NOTES:
[1]Media-specific Ecological Screening Values (ESVs) approved by the Georgia EPD (2010).
NA - Not Available
Concentrations from the Baseline Ecological Assessment BERA, Table 11 (Environmental Strategies Consulting, LLC - 2006)

DEPTFORD TRACT SITE

Savannah, Chatham County, Georgia

HSI No. 10179

Table 2A: RAGS CALCULATIONS FOR ARSENIC IN SURFACE SOIL - CONSTRUCTION RISK

Carcinogenic Effects [a]

	SFo	SFi	TR	BW	AT	EF	ED	IR Soil	IR Air	VF	PEF
Substance	$(mg/kg\text{-}day)^{-1}$[c]	$(mg/kg\text{-}day)^{-1}$[c]	unitless [d]	(kg) [d]	(yr) [d]	(day/yr) [d]	(yr) [d]	(mg/day) [d]	(m^3/day) [d]	(m^3/kg) [d]	(m^3/kg) [d]
Arsenic	1.50E+00	1.51E+01	1.00E-05	70	70	180	1	50	20	N/A [e]	4.63E+09

Noncarcinogenic Effects [b]

	RfDo	RfDi	THI	BW	AT	EF	ED	IR Soil	IR Air	VF	PEF
Substance	$(mg/kg\text{-}day)^{-1}$[c]	$(mg/kg\text{-}day)^{-1}$[c]	unitless [d]	(kg) [d]	(yr) [d]	(day/yr) [d]	(yr) [d]	(mg/day) [d]	(m^3/day) [d]	(m^3/kg) [d]	(m^3/kg) [d]
Arsenic	3.00E-04	4.29E-06	1	70	1	180	1	50	20	N/A [e]	4.63E+09

Results

	C carc	C noncarc	Applicable Standard [f]
Substance	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	1324	847	847

[a] Carcinogenic effects derived from US EPA RAGS Part B, Equation 6:

$$C\ carc = \frac{TR \times BW \times AT \times 365\ day/yr}{EF \times ED \times [(SFo \times 10^{-6}\ kg/mg \times IR\ soil) + (SFi \times IR\ air \times [1/VF + 1/PEF])]}$$

Where:

C carc = concentration of carcinogenic substance in soil
TR = target excess individual lifetime cancer risk
Sfo = oral cancer slope factor
Sfi = inhalation cancer slope factor
BW = adult body weight
AT = averaging time
EF = exposure frequency
ED = exposure duration
IR soil = soil ingestion rate
IR air = daily inhalation rate
VF = soil-to-air volatilization factor
PEF = particulate emission factor

[b] Noncarcinogenic effects derived from US EPA RAGS Part B, Equation 7:

$$C\ noncarc = \frac{THI \times BW \times AT \times 365\ day/yr}{EF \times ED \times [((1/RfDo) \times 10^{-6}\ kg/mg \times IR\ soil) + ((1/RfDi) \times IR\ air \times [1/VF + 1/PEF])]}$$

Where:

C noncarc = concentration of noncarcinogenic substance in soil
THI = target hazard index
RfDo = oral chronic reference dose
RfDi = inhalation chronic reference dose
BW = adult body weight
AT = averaging time
EF = exposure frequency
ED = exposure duration
IR soil = soil ingestion rate
IR air = daily inhalation rate
VF = soil-to-air volatilization factor
PEF = particulate emission factor

[c] US EPA Regional Screening Level (RSL) Composite Worker Soil Table - May 2016
[d] Georgia Rule 391-3-19 Hazardous Site Response, Appendix III, Table 3
[e] Parameter not applicable for this substance
[f] Concentration that is the least of the result of RAGS Equation 6 and RAGS Equation 7, per Georgia Rule 391-3-19 Hazardous Site Response

DEPTFORD TRACT SITE

Savannah, Chatham County, Georgia
HSI No. 10179

Table 2B: RAGS CALCULATIONS FOR ARSENIC IN SURFACE SOIL - O&M RISK

Carcinogenic Effects [a]

Substance	SFo (mg/kg-day)$^{-1}$[c]	SFi (mg/kg-day)$^{-1}$[c]	TR unitless [d]	BW (kg) [d]	AT (yr) [d]	EF (day/yr) [d]	ED (yr) [d]	IR Soil (mg/day) [d]	IR Air (m^3/day) [d]	VF (m^3/kg) [d]	PEF (m^3/kg) [d]
Arsenic	1.50E+00	1.51E+01	1.00E-05	70	70	14	25	50	20	N/A [e]	4.63E+09

Noncarcinogenic Effects [b]

Substance	RfDo (mg/kg-day)$^{-1}$[c]	RfDi (mg/kg-day)$^{-1}$[c]	THI unitless [d]	BW (kg) [d]	AT (yr) [d]	EF (day/yr) [d]	ED (yr) [d]	IR Soil (mg/day) [d]	IR Air (m^3/day) [d]	VF (m^3/kg) [d]	PEF (m^3/kg) [d]
Arsenic	3.00E-04	4.29E-06	1	70	25	14	25	50	20	N/A [e]	4.63E+09

Results

Substance	C carc (mg/kg)	C noncarc (mg/kg)	Applicable Standard [f] (mg/kg)
Arsenic	681	10884	681

[a] Carcinogenic effects derived from US EPA RAGS Part B, Equation 6:

$$C\ carc = \frac{TR \times BW \times AT \times 365\ day/yr}{EF \times ED \times [(SFo \times 10^{-6}\ kg/mg \times IR\ soil) + (SFi \times IR\ air \times [1/VF + 1/PEF])]}$$

Where:

C carc = concentration of carcinogenic substance in soil
TR = target excess individual lifetime cancer risk
Sfo = oral cancer slope factor
Sfi = inhalation cancer slope factor
BW = adult body weight
AT = averaging time
EF = exposure frequency
ED = exposure duration
IR soil = soil ingestion rate
IR air = daily inhalation rate
VF = soil-to-air volatilization factor
PEF = particulate emission factor

[b] Noncarcinogenic effects derived from US EPA RAGS Part B, Equation 7:

$$C\ noncarc = \frac{THI \times BW \times AT \times 365\ day/yr}{EF \times ED \times [((1/RfDo) \times 10^{-6}\ kg/mg \times IR\ soil) + ((1/RfDi) \times IR\ air \times [1/VF + 1/PEF])]}$$

Where:

C noncarc = concentration of noncarcinogenic substance in soil
THI = target hazard index
RfDo = oral chronic reference dose
RfDi = inhalation chronic reference dose
BW = adult body weight
AT = averaging time
EF = exposure frequency
ED = exposure duration
IR soil = soil ingestion rate
IR air = daily inhalation rate
VF = soil-to-air volatilization factor
PEF = particulate emission factor

[c] US EPA Regional Screening Level (RSL) Composite Worker Soil Table - May 2016
[d] Georgia Rule 391-3-19 Hazardous Site Response, Appendix III, Table 3
[e] Parameter not applicable for this substance
[f] Concentration that is the least of the result of RAGS Equation 6 and RAGS Equation 7, per Georgia Rule 391-3-19 Hazardous Site Response

DEPTFORD TRACT SITE

Savannah, Chatham County, Georgia

HSI No. 10179

Table 3A: GEORGIA ADULT LEAD MODEL - CONSTRUCTION RISK

Georgia Adult Lead Model Equation 1 [a]

PbBfetal	R	GSD	PbB
(ug/dL) [c]	(unitless) [c]	(unitless) [c]	(ug/dL)
10	0.90	2.04	3.44

Georgia Adult Lead Model Equation 2 [b]

PbB	PbBb	BSF	EF	AT	CW	Iw	Aw	Is	As	Cs
(ug/dL)	(ug/dL) [c]	(ug/dL per ug/day) [c]	(day/yr) [c]	(day/yr) [c]	(ug/L) [d]	(L/day)	(unitless) [c]	(g/day) [c]	(unitless) [c]	(mg/kg)
3.44	1.38	0.40	180	365	11	1.00	0.20	0.05	0.12	1373

[a] Georgia Adult Lead Model Equation 1:

$$PbB = \frac{PbBfetal}{R \times GSD^{1.645}}$$

Where:

PbB = average adult blood level that is protective of the fetus

PbBfetal = blood lead goal for the unborn fetus

GSD = geometric standard deviation of blood lead concentration among the exposed adult population, specifically women of child-bearing age

R = constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration

Cs = soil target concentration

[b] Georgia Adult Lead Model Equation 2:

$$Cs = \left[\frac{PbB - PbBb}{BSF \times (EF/AT)} - (Cw \times Iw \times Aw) \right] \times (Is \times As)^{-1}$$

Where:

Cs = soil target concentration

PbBb = typical blood lead concentration in adults in the absence of exposures to the site that is being assessed

BSF = biokinetic slope factor relating (quasi-steady state) increase in typical adult blood lead concentration to average daily lead uptake

EF = exposure frequency for contact with assessed soils and/or dust derived in part from these soils

AT = averaging time for continuing long-term exposures

Cw = concentration of lead in groundwater at the site

Iw = intake rate of water from on-site groundwater

Aw = absolute gastrointestinal absorption fraction for lead ingested in drinking water

Is = intake rate of soil

As = absolute gastrointestinal absorption fraction for ingested lead in soil and in dust derived from soil

[c] value from Georgia Rule 391-3-19 Hazardous Site Response, Appendix IV

[d] value is site-specific maximum concentration of lead detected in groundwater

DEPTFORD TRACT SITE

Savannah, Chatham County, Georgia
HSI No. 10179

Table 3B: GEORGIA ADULT LEAD MODEL - CONSTRUCTION RISK

Georgia Adult Lead Model Equation 1 [a]

PbBfetal	R	GSD	PbB
(ug/dL) [c]	(unitless) [c]	(unitless) [c]	(ug/dL)
10	0.90	2.04	3.44

Georgia Adult Lead Model Equation 2 [b]

PbB	PbBb	BSF	EF	AT	CW	Iw	Aw	Is	As	Cs
(ug/dL)	(ug/dL) [c]	(ug/dL per ug/day) [c]	(day/yr) [c]	(day/yr) [c]	(ug/L) [d]	(L/day)	(unitless) [c]	(g/day) [c]	(unitless) [c]	(mg/kg)
3.44	1.38	0.40	14	365	11	1.00	0.20	0.05	0.12	21999

[a] Georgia Adult Lead Model Equation 1:

$$PbB = \frac{PbBfetal}{R \times GSD^{1.645}}$$

Where:

PbB = average adult blood level that is protective of the fetus
PbBfetal = blood lead goal for the unborn fetus
GSD = geometric standard deviation of blood lead concentration among the exposed adult population, specifically women of child-bearing age
R = constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration
Cs = soil target concentration

[b] Georgia Adult Lead Model Equation 2:

$$Cs = \left[\frac{PbB - PbBb}{BSF \times (EF/AT)} - (Cw \times Iw \times Aw) \right] \times (Is \times As)^{-1}$$

Where:

Cs = soil target concentration
PbBb = typical blood lead concentration in adults in the absence of exposures to the site that is being assessed
BSF = biokinetic slope factor relating (quasi-steady state) increase in typical adult blood lead concentration to average daily lead uptake
EF = exposure frequency for contact with assessed soils and/or dust derived in part from these soils
AT = averaging time for continuing long-term exposures
Cw = concentration of lead in groundwater at the site
Iw = intake rate of water from on-site groundwater
Aw = absolute gastrointestinal absorption fraction for lead ingested in drinking water
Is = intake rate of soil
As = absolute gastrointestinal absorption fraction for ingested lead in soil and in dust derived from soil

[c] value from Georgia Rule 391-3-19 Hazardous Site Response, Appendix IV
[d] value is site-specific maximum concentration of lead detected in groundwater

APPENDIX C

SITE RECONNAISSANCE AND EVALUATION OF DOWNED TREES & EXPOSED LANDFILL DEBRIS

April 13, 2017

Savannah Environmental Response Trust
1 Kerr McGee Road
P.O. Box 368
Savannah, Georgia 31402

Attn: Mr. Joseph Blackmon
E: joseph.blackmon@savannahacids.com

City of Savannah
P.O. Box 1027
Savannah, Georgia 31402

Attn: Mr. Heath Lloyd
E: hlloyd@savannahga.gov

Re: Site Reconnaissance and Evaluation of Downed Trees & Exposed Landfill Debris
Deptford Tract Landfill
Savannah, Chatham County, Georgia
Terracon Project No. ES117094

Dear Mr. Blackmon and Mr. Lloyd:

Terracon Consultants, Inc. (Terracon) has completed the site reconnaissance and evaluation of the downed trees and exposed landfill debris for the Deptford Tract Landfill. The purpose of this work was to further assess and document conditions at the Deptford Tact Landfill resulting from Hurricane Matthew damage.

1.0 PROJECT INFORMATION

The fourth quarter 2016 inspection was conducted after Hurricane Matthew went through the Savannah area on October 8, 2016. As a result of the hurricane, significant trees were uprooted throughout the Unoccupied Area and a few trees were uprooted in the Occupied area. Based on the fourth quarter inspection, Terracon recommended the following:

- During the first quarter of 2017 perform an evaluation of the downed trees and exposed root mat within the Unoccupied and Occupied areas to determine the estimated amount of trees and landfill debris that may need to be removed and disposed of properly. Based on the evaluation, determine what level of effort would be required to remove the trees

and exposed root mats / landfill debris and then remediate the impacted areas with two feet of clean cover and establish a vegetative cover;

- During this evaluation, the accessibility to the upland areas and limitations due to wetland areas and associated rough terrain should be evaluated to determine if access to the landfill area, better containment of landfill materials, and improved minimization of erosion can be achieved as a component of the downed tree removal process.

The Georgia EPD CAP approval letter states *"…in the event that any area greater than 1/4 acre in size is damaged, cleared or otherwise results in the destruction of the trees, whether man-made or due to natural circumstances, Tronox and Savannah will either sample the upper two feet of soil to demonstrate soil concentrations do not exceed the ESVs, or install a minimum of two feet (2') of soil with a vegetative cover…".*

2.0 FINDINGS

Terracon traversed the Unoccupied and Occupied areas to determine the quantity and locations of the downed trees and exposed rootmat / landfill debris areas. During this field work, Terracon recorded the latitude and longitude locations (with handheld GPS equipment) of downed trees and where exposed root mat with landfill debris as well as uprooted trees that did not have landfill debris were located. In addition, Terracon traversed the areas and documented the locations of onsite drainage features.

As shown in Figure 2, Appendix A, significant downed trees are present within the Unoccupied Area and several downed trees are present in the Occupied Area. Tables indicating the quantities, locations, measured areas of root mat with and without exposed landfill debris are presented in Appendix B. There is one large area within the Unoccupied Area that has over 100 large trees that have been uprooted. There is approximately 28,516 square feet of landfill area that has new exposed areas within the Unoccupied Area. There is approximately 548 square feet of landfill area that has new exposed areas within the Occupied Area.

Terracon was provided with two survey drawings which show tidal creeks, wetland areas, and drainage ditches. Terracon reviewed the drawings as well as traversed the areas and plotted them on Figure 3 in Appendix A. As shown on Figure 3 the tidal creek is shown in blue and the drainage ditches are shown in purple. The 2010 surveyed wetland areas are shown in green. Most of the area north of the bisecting railroad tracks is very low land. A lot of the downed trees and exposed root mat are located along the drainage ditches and tidal creek.

If the installation of two feet of soil and vegetative cover is required for the impacted areas within the Unoccupied Area, specialized off-road equipment will be needed to access the areas to cut/clear downed trees. Temporary bridges and/or large mats will be needed for crossing the tidal

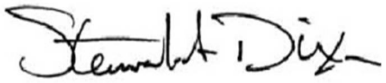
creek and drainage ditches. Tree and vegetation clearing will require manual labor as well as clearing equipment such as a track mounted Feller Buncher and Shinncutter. The dense vegetation and downed trees will require cutting and grinding with a Tub Grinder. Off road haulers and track hoes will be required for moving the root mat and landfill debris. In order to access exposed areas, large areas of the Unoccupied Area will need to be cleared. Some areas within the Unoccupied Area will not be accessible due to being wetlands or extremely low and soft ground not being able to support large equipment.

3.0 RECOMMENDATIONS

Based on the above noted findings of uprooted trees and accessibility to the upland / wetland areas, Terracon recommends proceeding with the preparation of an engineered plan for addressing the requirements as noted in the Georgia EPD's CAP approval letter. Potential remediation alternatives should be developed to include an estimated cost and timeline to conduct the work.

Terracon appreciates this opportunity to provide these services to the City and Savannah Environmental Response Trust. If you have any questions, please do not hesitate to contact us at your earliest convenience.

Sincerely,
Terracon Consultants, Inc.



William S. Anderson, III, P.E.
Senior Principal

Stewart A. Dixon, P.G.
Environmental Department Manager

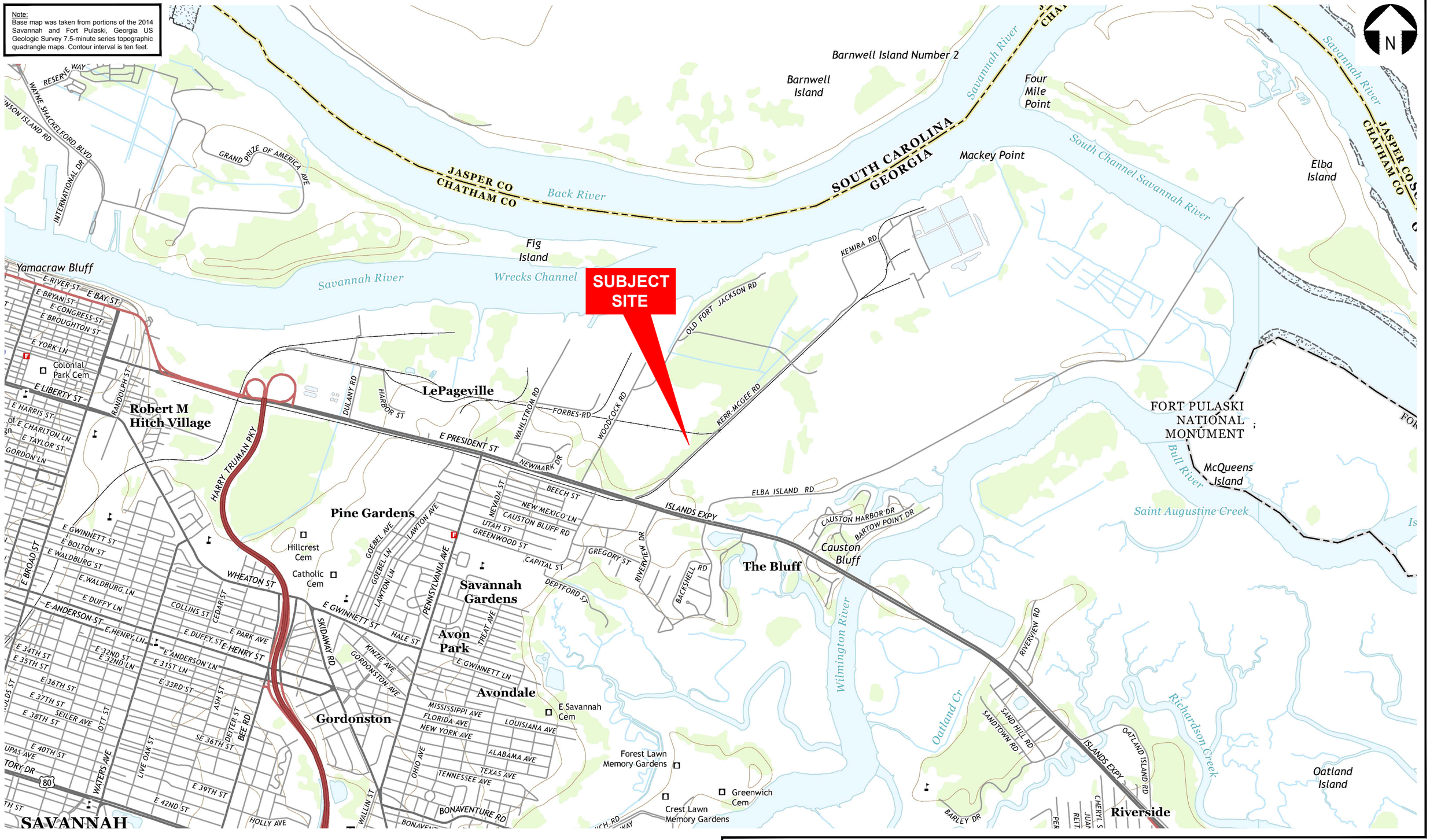
Attachments:

Appendix A – Figures
Appendix B – Tables
Appendix C - Photographs

APPENDIX A

FIGURES

Note:
Base map was taken from portions of the 2014 Savannah and Fort Pulaski, Georgia US Geologic Survey 7.5-minute series topographic quadrangle maps. Contour interval is ten feet.



0 1,000' 2,000'
1" = 2,000'
SCALE IN FEET

Project Mngr:	JHC
Drawn By:	VMG
Checked By:	JHC
Approved By:	WSA

Project No.	ES117094
Scale:	1" = 2,000'
File Name:	ES117094.dwg
Date:	April 13, 2017

Terracon
Consulting Engineers & Scientists
2201 Rowland Avenue Savannah, Georgia 31404
Phone (912) 629 4000 Fax. (912) 629 4001

GENERAL VICINITY MAP

Deptford Tree Survey
Deptford Tract
Savannah, Chatham County, Georgia

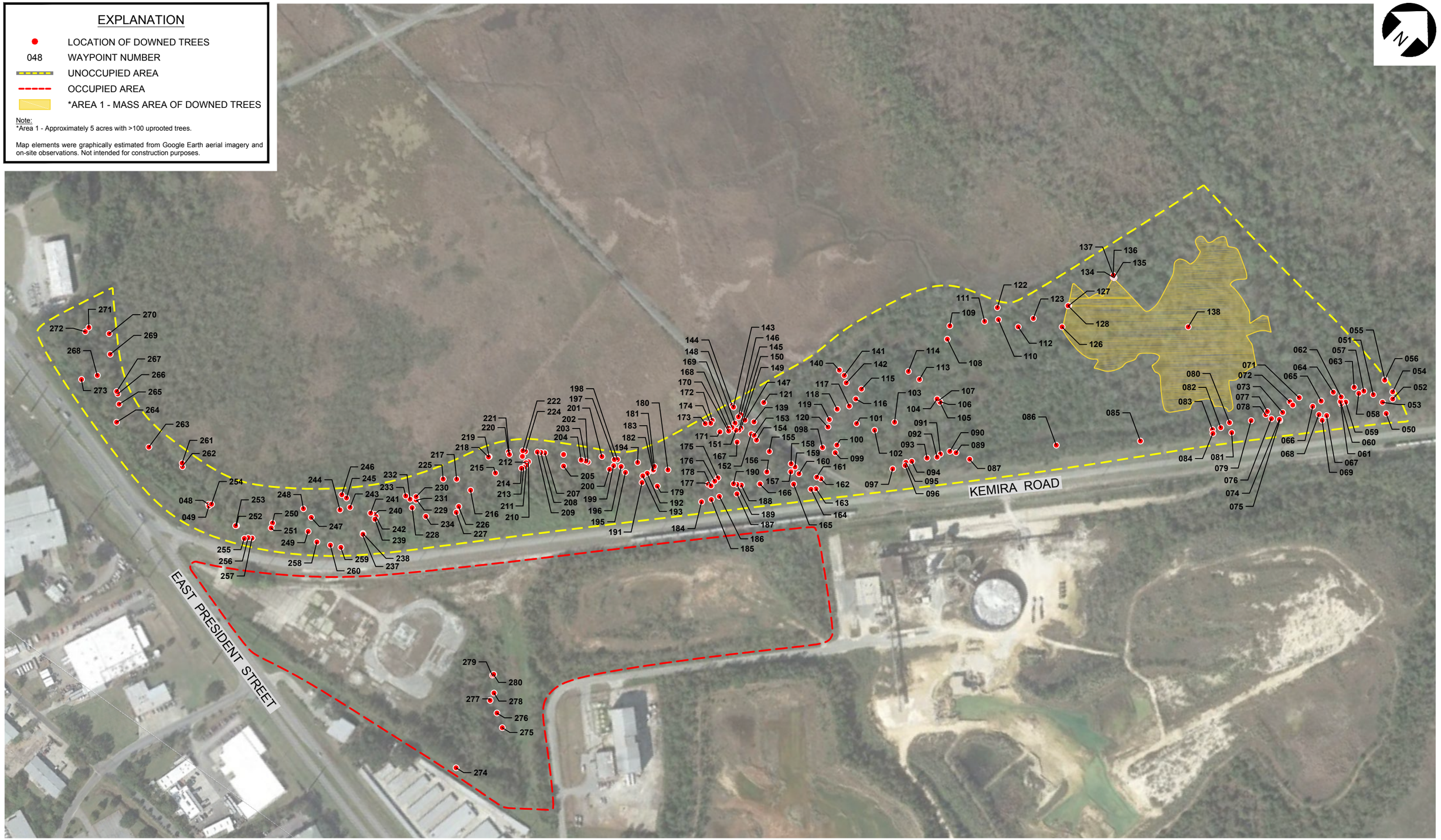
Figure 1

EXPLANATION

- LOCATION OF DOWNED TREES
- 048 WAYPOINT NUMBER
- UNOCCUPIED AREA
- OCCUPIED AREA
- *AREA 1 - MASS AREA OF DOWNED TREES

Note:
*Area 1 - Approximately 5 acres with >100 uprooted trees.

Map elements were graphically estimated from Google Earth aerial imagery and on-site observations. Not intended for construction purposes.



0 150' 300'
1" = 300'
SCALE IN FEET

Project Mngr:	JHC	Project No.	ES117094
Drawn By:	VMG	Scale:	1" = 300'
Checked By:	JHC	File Name:	ES117094.dwg
Approved By:	WSA	Date:	April 13, 2017

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GPS LOCATIONS & MASS AREAS OF DOWN TREES

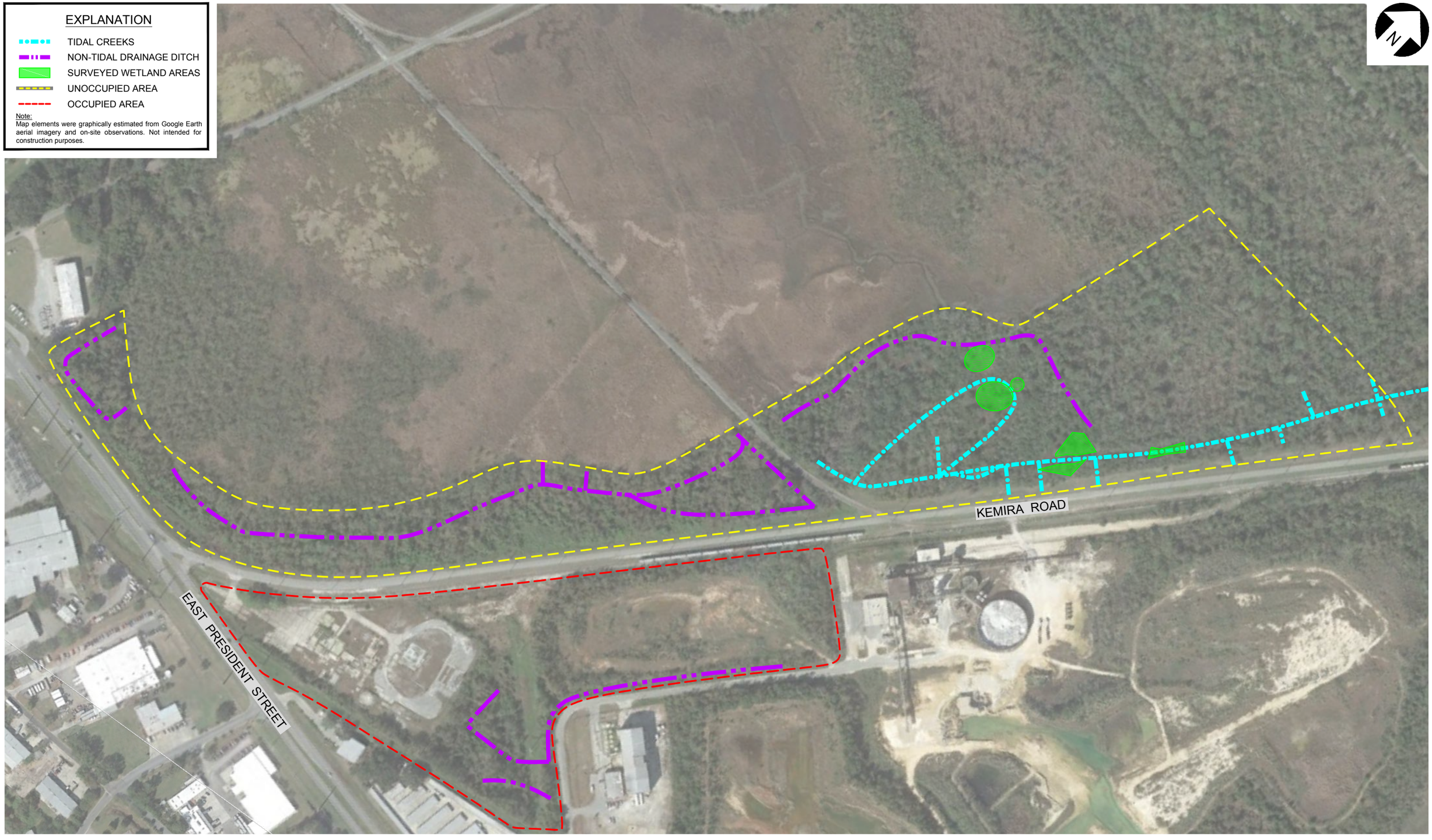
Deptford Tree Survey
Deptford Tract
Savannah, Chatham County, Georgia

Figure 2

EXPLANATION

- TIDAL CREEKS
- NON-TIDAL DRAINAGE DITCH
- SURVEYED WETLAND AREAS
- UNOCCUPIED AREA
- OCCUPIED AREA

Note:
Map elements were graphically estimated from Google Earth aerial imagery and on-site observations. Not intended for construction purposes.



0 150' 300'
1" = 300'
SCALE IN FEET

Project Mngr:	JHC
Drawn By:	VMG
Checked By:	JHC
Approved By:	WSA

Project No.	ES117094
Scale:	1" = 300'
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Date:	April 13, 2017

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TIDAL CREEKS / DITCHES AND WETLANDS

Deptford Tree Survey
Deptford Tract
Savannah, Chatham County, Georgia

Figure
3

APPENDIX B

TABLES

Terracon

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
1	50	32.07473	81.03613	17	8.5	5.5	Yes / Upland
2	51	32.07480	81.03643	6	3.5	3.5	No / Upland
3	52	32.07486	81.03615	13	8	3.5	No / Upland
4	53	32.07475	81.03622	14	6	2.5	No / Upland
5	54	32.07492	81.03620	6	5	3	No / Upland
6	55	32.07497	81.03634	12	8	2.5	No / Lowland
7	57	32.07478	81.03635	15	12	2	No / Lowland
8	58	32.07472	81.03649	5	4	2	No / Lowland
9	59	32.07459	81.03652	11	8	3	No / Upland
10	60	32.07455	81.03656	8	5.5	2.5	No / Upland
11	61	32.07456	81.03660	9	7	3.5	No / Upland
12	62	32.07461	81.03664	4	4	2	No / Upland
13	63	32.07475	81.03657	14	7	2	No / Lowland
14	64	32.07460	81.03472	8	6	3.5	No / Lowland
15	65	32.07447	81.03677	5	3	3	No / Upland
16	66	32.07436	81.03683	15	9	5	No / Upland
17	66	32.07436	81.03683	15	9	5	No / Upland
18	66	32.07436	81.03683	15	9	5	No / Upland
19	67	32.07439	81.03665	9	6	2	No / Upland
20	68	32.07435	81.03671	11	8	2.5	Yes / Upland
21	69	32.07432	81.03663	5	3	1.5	No / Upland
22	72	32.07430	81.03700	10	6.5	2	No / Lowland
23	72	32.07430	81.03700	10	6.5	2	No / Lowland
24	73	32.07415	81.03704	9	6	3	No / Upland
25	74	32.07410	81.03703	7	6	2.5	No / Upland
26	75	32.07411	81.03702	9	7	2	No / Upland
27	76	32.07407	81.03712	5	3	1	No / Upland
28	77	32.07409	81.03720	10	5.5	1	No / Lowland
29	78	32.07405	81.03719	5	4	2	No / Upland
30	79	32.07394	81.03728	9	7	1	No / Lowland
31	80	32.07381	81.03745	12	7	2.5	No / Lowland
32	81	32.07374	81.03732	15	7	4	No / Upland
33	82	32.07371	81.03748	6	3	4	No / Upland
34	83	32.07364	81.03752	7	4	1	No / Lowland
35	84	32.07364	81.03752	8	6	1	No / Lowland
36	84	32.07364	81.03752	8	6	1	No / Lowland
37	85	32.07318	81.03812	3.5	3.5	1	No / Upland
38	86	32.07269	81.03885	9	5.5	2	No / Upland
39	87	32.07211	81.03948	17	9	2	Yes / Lowland
40	89	32.07207	81.03964	11	6	2	Yes / Lowland
41	90	32.07204	81.03974	7	5	1	Yes / Lowland

Terracon

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
42	91	32.07199	81.03980	20	7	2	Yes / Lowland
43	92	32.07194	81.03979	8.5	4	3.5	Yes / Lowland
44	93	32.07188	81.03986	19	6.5	1.5	Yes / Lowland
45	94	32.07179	81.04001	10	6	2.5	Yes / Lowland
46	95	32.07173	81.04004	12	6	2.5	Yes / Lowland
47	96	32.07170	81.04004	7	4	2	No / Upland
48	97	32.07161	81.04015	7	4	1.5	Yes / Lowland
49	98	32.07141	81.04088	17	10	3	Yes / Upland
50	99	32.07143	81.04073	32	7	3	Yes / Upland
51	100	32.07149	81.04075	7	7	2	Yes / Upland
52	101	32.07175	81.04070	16	7.5	4	Yes / Upland
53	102	32.07181	81.04048	30	10	3	Yes / Lowland
54	103	32.07198	81.04036	25	9	2	Yes / Lowland
55	104	32.07238	81.04017	30	10	3	Yes / Lowland
56	108	32.07290	81.04046	10	7	2	Yes / Upland
57	109	32.07297	81.04048	11	5	2	Yes / Lowland
58	110	32.07330	81.04013	21	6	2	Yes / Lowland
59	111	32.07321	81.04026	9	5	2	Yes / Lowland
60	112	32.07337	81.03992	40	8	2	Yes / Lowland
61	113	32.07243	81.04045	6	7.5	3	No / Upland
62	114	32.07242	81.04060	9	5.5	2.5	Yes / Upland
63	115	32.07205	81.04095	10	8	1.5	No / Upland
64	116	32.07194	81.04087	24	14	6	Yes / Upland
65	117	32.07185	81.04090	12.5	6	1.5	No / Upland
66	118	32.07177	81.04099	25	12	8	No / Upland
67	119	32.07163	81.04099	12	10	3	Yes / Upland
68	120	32.07158	81.04095	16	8	6	Yes / Lowland
69	121	32.07142	81.04164	14	3.5	1	Yes / Lowland
70	122	32.07341	81.04021	3.5	3.5	1	Yes / Lowland
71	123	32.07349	81.03986	3	3	1	Yes / Upland
72	126	32.07361	81.03951	16	10	4	Yes / Upland
73	126	32.07361	81.03951	3	3	2	Yes / Upland
74	126	32.07361	81.03951	4.5	3	2	Yes / Upland
75	126	32.07361	81.03951	3	3	2	Yes / Upland
76	126	32.03361	81.03951	2	2	2	Yes / Upland
77	127	32.0738	81.03961	10	9	3	Yes / Upland
78	135	32.07426	81.03941	20	12	3	Yes / Upland
79	139	32.07119	81.04165	12	4.5	1.5	Yes / Upland
80	140	32.07211	81.04122	24	13	3	Yes / Upland
81	141	32.07203	81.04115	9	5	3	Yes / Upland
82	142	32.07201	81.04106	15	12	6	Yes / Upland

Terracon

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
83	143	32.07119	81.04191	10.5	5.5	2	Yes / Lowland
84	144	32.07122	81.04194	6	5	2.5	Yes / Lowland
85	145	32.07119	81.04176	9	9	2.5	Yes / Lowland
86	146	32.07115	81.04181	10	8	4	Yes / Lowland
87	147	32.07119	81.04172	14	9	2.5	Yes / Lowland
88	148	32.07110	81.04181	14	8	2	Yes / Lowland
89	149	32.07109	81.04171	8	5	2	Yes / Lowland
90	150	32.07107	81.04169	20	8	3.5	Yes / Lowland
91	151	32.07105	81.04173	11	7	2.5	Yes / Upland
92	152	32.07111	81.04158	19	9	3.5	Yes / Upland
93	153	32.07110	81.04157	8	5	2	Yes / Upland
94	154	32.07108	81.04152	15	9	3	Yes / Upland
95	155	32.07107	81.04131	11	8	3.5	Yes / Upland
96	156	32.07092	81.04121	20	15	1.5	Yes / Upland
97	157	32.07104	81.04100	11	7	3	Yes / Lowland
98	158	32.07110	81.04107	11	7	3	Yes / Lowland
99	159	32.07110	81.04098	8	7	3.5	Yes / Lowland
100	160	32.07106	81.04092	7	7	5	Yes / Lowland
101	161	32.07114	81.04073	12	8	1.5	Yes / Lowland
102	162	32.07115	81.04068	9	7.5	2	Yes / Lowland
103	163	32.07103	81.04066	7	5	1	Yes / Lowland
104	164	32.07101	81.04071	12	8	2	Yes / Lowland
105	165	32.07095	81.04089	21	8	3	Yes / Lowland
106	166	32.07077	81.04118	6	4	1	Yes / Upland
107	167	32.07096	81.04167	25	6.5	2.5	No / Upland
108	168	32.07102	81.04182	9	6	2	Yes / Lowland
109	169	32.07104	81.04179	6	4	2	Yes / Lowland
110	170	32.07100	81.04181	5	4	2.5	Yes / Lowland
111	171	32.07097	81.04189	30	20	3.5	Yes / Upland
112	172	32.07099	81.04203	12	4	2	Yes / Lowland
113	173	32.07093	81.04206	6	5	2.5	Yes / Lowland
114	174	32.07096	81.04200	11	5	2.5	Yes / Lowland
115	175	32.07060	81.04160	8	6	2.5	Yes / Upland
116	176	32.07055	81.04162	6	5	1.5	Yes / Upland
117	177	32.07048	81.04165	9	4	1.5	Yes / Upland
118	178	32.07049	81.04160	4	3	1	Yes / Upland
119	179	32.07020	81.04208	5	4	2.5	Yes / Upland
120	180	32.07038	81.04208	5	4	1.5	Yes / Lowland
121	181	32.07030	81.04227	4	3	1.5	Yes / Lowland
122	182	32.07030	81.04220	5	5	2.5	Yes / Lowland
123	183	32.07029	81.04221	7	5	3	Yes / Lowland

Terracon

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
124	184	32.07032	81.04159	7	5	2	Yes / Lowland
125	185	32.07038	81.04153	6	4	1	Yes / Lowland
126	186	32.07047	81.04147	10	7	3	Yes / Lowland
127	187	32.07059	81.04134	30	9	2	Yes / Lowland
128	188	32.07066	81.04134	9	7	3	Yes / Lowland
129	189	32.07064	81.04139	8	6	1.5	Yes / Lowland
130	190	32.07062	81.04143	7	5	1.5	Yes / Lowland
131	191	32.07014	81.04223	8	7.5	3	Yes / Lowland
132	192	32.07025	81.04226	8	7	2.5	Yes / Lowland
133	193	32.07019	81.04228	7	6	2	Yes / Lowland
134	194	32.07028	81.04240	6	4	2	No / Lowland
135	195	32.07014	81.04244	8	6	2.5	Yes / Lowland
136	196	32.07015	81.04251	10.5	7	3	Yes / Lowland
137	197	32.07016	81.04264	8	4	1.5	Yes / Lowland
138	198	32.07018	81.04259	30	4	2	Yes / Lowland
139	199	32.07011	81.04258	3	3	1.5	Yes / Lowland
140	200	32.07006	81.04258	5	3	1.5	Yes / Lowland
141	201	32.07013	81.04276	18	5	2	Yes / Lowland
142	202	32.06999	81.04283	8	4	3.5	Yes / Lowland
143	203	32.06999	81.04285	6	4	6	Yes / Lowland
144	204	32.06998	81.04293	7	5	2.5	Yes / Lowland
145	205	32.06984	81.04304	12	8	4	Yes / Lowland
146	206	32.06992	81.04312	30	6	2	Yes / Lowland
147	207	32.06984	81.04329	8	6	3.5	Yes / Lowland
148	208	32.06982	81.04332	7	5	2	Yes / Lowland
149	209	32.06980	81.04335	7	7	3	Yes / Lowland
150	210	32.06966	81.04337	15	6	2	Yes / Lowland
151	211	32.06964	81.04335	7	3	2	Yes / Upland
152	212	32.06966	81.04342	12	6	3	Yes / Upland
153	213	32.06960	81.04337	12	8	2.5	Yes / Upland
154	214	32.06959	81.04339	10	5	2	Yes / Upland
155	215	32.06941	81.04359	40	5	3	Yes / Lowland
156	216	32.06915	81.04372	18	8	3.5	Yes / Lowland
157	217	32.06915	81.04388	15	7	2	Yes / Lowland
158	218	32.06950	81.04377	8	3	2	Yes / Lowland
159	219	32.06950	81.04376	4	3	1.5	Yes / Lowland
160	220	32.06964	81.04362	17	8	2	Yes / Lowland
161	221	32.06963	81.04358	20	10	3	Yes / Lowland
162	222	32.06973	81.04349	12	5	2	Yes / Lowland
163	223	32.06969	81.04346	6	4	3	Yes / Lowland
164	224	32.06974	81.04346	3	3	1.5	Yes / Lowland

Terracon

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
165	225	32.06908	81.04401	100	3.5	2	Yes / Lowland
166	226	32.06896	81.04369	5	4	1	Yes / Lowland
167	227	32.06891	32.04369	20	4	2	Yes / Lowland
168	228	32.06870	81.04410	6	4	2	Yes / Upland
169	229	32.06878	81.04412	10	8	3	Yes / Upland
170	230	32.06881	81.04414	25	6	2.5	Yes / Lowland
171	232	32.06874	81.04419	6	4	1	Yes / Lowland
172	233	32.06875	81.04427	6	6	1	Yes / Lowland
173	234	32.06870	81.04395	5	3	1.5	Yes / Upland
174	237	32.06822	81.04437	8	5	2	Yes / Upland
175	238	32.06825	81.04436	6	5	2	Yes / Upland
176	239	32.06841	81.04433	6	4	1.5	Yes / Upland
177	240	32.06845	81.04439	3	3	1	Yes / Upland
178	241	32.06842	81.04444	6	4	1	Yes / Upland
179	242	32.06844	81.04436	5	4	1	Yes / Upland
180	243	32.06835	81.04461	8	6	2	Yes / Upland
181	244	32.06828	81.04473	15	8	4	Yes / Upland
182	245	32.06841	81.04471	12	9	3	Yes / Lowland
183	246	32.06842	81.04480	8	6	1	Yes / Lowland
184	247	32.06807	81.04491	10	8	3	Yes / Upland
185	248	32.06809	81.04505	5	6	2	Yes / Upland
186	249	32.06796	81.04487	10	8	2	Yes / Upland
187	250	32.06782	81.04520	5	5	1	Yes / Upland
188	251	32.06776	81.04520	8	5	1	Yes / Upland
189	252	32.06760	81.04553	5	4	1	Yes / Upland
190	253	32.06760	81.04554	5	4	1.5	Yes / Upland
191	254	32.06763	81.04588	5	5	1	Yes / Upland
192	255	82.06755	81.04536	4	3	1	Yes / Upland
193	256	32.06758	81.04534	5	4	1	Yes / Upland
194	257	32.06760	81.04533	5	4	1	Yes / Upland
195	258	32.06793	81.04474	8	6	1.5	Yes / Upland
196	259	32.06800	81.04446	6	3	1	Yes / Upland
197	260	32.06797	81.04458	7	5	1	Yes / Upland
198	261	32.06777	81.04640	9	7	2	Yes / Lowland
199	262	32.06775	81.04639	8	6	2	No / Lowland
200	263	32.06771	81.04679	5	4	2	No / Lowland
201	264	32.06772	81.04725	4	3	1	No / Upland
202	265	32.06788	81.04734	9	6	2	Yes / Lowland
203	266	32.06794	81.04742	10	6	1.5	No / Lowland
204	267	32.06796	81.04746	8	5	1.5	No / Lowland
205	268	32.06797	81.04774	8	4	2.5	No / Upland

DEPTFORD TREE SURVEY - UNOCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 3/27, 3/28, 3/29, and 4/6 2017
Survey Crew: Jordan Caldwell and Cory McManus

Tree Number	Waypoint Number	Survey Data (WGS 84 DD)		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
206	269	32.81600	81.77800	20	15	2.5	No / Lowland
207	270	32.06834	81.04789	20	8	2	No / Lowland
208	271	32.06828	81.04810	10	5	2	No / Lowland
209	272	32.06823	81.04810	5	3	1.5	No / Lowland
210	273	32.06784	81.04785	12	8	2	Yes / Lowland
*Area	138	32.07418	81.0391	12,000		2.5	Yes / Upland
Approximate Area of Impacted Land				28,516 Square Feet or 0.65 Acres			
Approximate Volume of Impacted Land				76,231 Cubic Feet or 2,823 Cubic Yards			

Note:

* Large area, approximately 5 acres with approximately 100 large trees uprooted. Average root mass dimensions of 12 ft x 10 ft x 2.5 ft

DEPTFORD TREE SURVEY - OCCUPIED AREA

Project Name: 2017 Deptford Tract Tree Survey
Project Number: ES117094
Date Surveyed: 4/7/2017
Survey Crew: Jordan Caldwell

Tree Number	Waypoint Number	Survey Data		Root Mass Dimensions (feet)			Additional Notes
		Latitude	Longitude	Length	Width	Depth	Debris / Location
211	274	32.06716	81.04200	14	13	5	Yes / Upland
212	275	32.06753	81.04189	11	7	3	Yes / Upland
213	276	32.06763	81.04205	14	11	3	Yes / Upland
214	277	32.06768	81.04217	10	5	1	Yes / Lowland
215	278	32.06776	81.04218	7	4	1.5	Yes / Upland
216	279	32.06789	81.04231	11	5	3	No / Lowland
217	280	32.06788	81.04232	2	1	0.5	No / Upland
Approximate Area of Impacted Land				548 Square Feet or 0.01 Acres			
Approximate Volume of Impacted Land				1,861 Cubic Feet or 69 Cubic Yards			

APPENDIX C

PHOTOGRAPHS

Photo 1 Typical view of downed tree and exposed debris along the tidal creek.

Photo 2 Typical view of downed tree within an upland area.

Photo 3 Typical view of exposed area due to fallen tree.

Photo 4 View of downed tree with exposed landfill debris.

Photo 5 Typical view of downed trees along the drainage ditches.

Photo 6 Typical view of larger tree and exposed area.

APPENDIX D

ENVIRONMENTAL MANAGEMENT PLAN

ENVIRONMENTAL MANAGEMENT PLAN

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

July 21, 2017
Terracon Project No. ES117145

Prepared for:

Savannah Environmental Response Trust
Savannah, Georgia

and

City of Savannah
Savannah, Georgia

Prepared by:

Terracon Consultants, Inc.
Savannah, Georgia

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

July 21, 2017

Georgia Department of Natural Resources
Hazardous Waste Corrective Action
2 Martin Luther King, Jr Drive SE, Suite 1054
Atlanta, Georgia 30334

Attn: Mr. Jim McNamara, Unit Coordinator

Re: Environmental Management Plan
Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179
Terracon Project No. ES177145

Dear Mr. McNamara:

Terracon Consultants, Inc. (Terracon) respectfully submits this Environmental Management Plan (EMP) for the above-referenced site on behalf of the Savannah Environmental Response Trust and the City of Savannah. This EMP outlines the practices and procedures to be implemented by site personnel and their subcontractors to manage and mitigate potential adverse environmental effects during work at the Deptford Tract site.

Terracon appreciates your assistance with this matter. If you have any questions or comments pertaining to the material presented herein, please contact the undersigned at (912) 629 4000.
Sincerely,

Terracon Consultants, Inc.

R. Luke Bragg, PE
Project Engineer

Stewart A. Dixon, PG
Environmental Department Manager

William S. Anderson, III, PE
Senior Principal

cc: Philip Rowland and Joe Blackmon, Savannah Acid Plant, LLC and duly authorized consultant to the Savannah Trust
Heath Lloyd, City of Savannah
Marc Weinreich, Savannah Environmental Response Trust

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ENVIRONMENTAL MANAGEMENT PLAN

DEPTFORD TRACT SITE
Savannah, Chatham County, Georgia
HSI No. 10179

Terracon Project No. ES177145
July 21, 2017

1.0 INTRODUCTION

1.1 Background

The Deptford Tract site encompasses approximately 53 acres of land adjacent to President Street and Kerr-McGee Road in Savannah, Chatham County, Georgia. The site operated as a municipal landfill from 1919 until 1954 and contains an estimated 600,000 cubic yards of municipal waste. Several environmental investigations have been conducted at the Deptford Tract site since 1993 in accordance with the requirements of the Georgia Hazardous Site Response Act (HSRA). Based on site characterization information available at the end of June 1994, the Georgia EPD determined that a release exceeding a reportable quantity had occurred and that site. On July 1, 1994, the Georgia EPD listed the site on the Hazardous Site Inventory (HSI) as HSI No. 10179 and classified the site as a Class II site requiring further evaluation. Subsequent site investigations conducted in the 1990s identified the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and cyanide. In June 1999, it was determined that limited portions of the former landfill were not in compliance with the non-residential RRS for soil, although the site was considered to be in compliance with the non-residential RRS for groundwater.

In 2002, additional site investigations were conducted to define the boundaries of the source contamination and landfill extents; identify background concentrations; define the horizontal and vertical extent of impacted soil and groundwater; complete a risk assessment; and develop a conceptual plan for corrective action. The 2002 investigation indicated that the horizontal extent of impacted soil was limited to 4 general areas within the site boundary. The vertical extent of impacted soil was limited to soils overlying debris and municipal waste. The horizontal and vertical extent of impacted groundwater above background concentrations was fully delineated. The risk assessment determined that the only potential on-site receptors are trespassers and on-site workers. Non-residential RRS were confirmed as the most appropriate standards for the site.

Additional soil and groundwater investigations were conducted through 2006. As a result of the additional work, the background concentrations were revised and all regulated substances of concern were delineated to below background concentrations. Only arsenic and lead were detected in surface soils at concentrations above the non-residential RRS that are protective of

human health. Groundwater beneath the site was determined to be in compliance with the non-residential RRS.

A Corrective Action Plan (CAP) was prepared in 2008 to address the regulated substances of concern at the Deptford Tract site. The corrective action approach was to manage areas of the site where municipal waste materials were permanently disposed in accordance with HSRA Type 5 standards. The corrective action proposed in the 2008 CAP included implementation of institutional controls and separate engineering controls for the "unoccupied area" west of Kerr McGee Road and the "occupied area" east of Kerr McGee Road. Technical approval of the CAP and comments were provided by the Georgia EPD in a letter dated February 16, 2010. The institutional controls and engineering controls implemented in 2012 and 2013 as part of the. After completion of the remedial action in 2012-2013, the surface soils to a depth of 18 inches were in compliance with non-residential RRS for lead and arsenic.

1.2 Scope of Work

Hurricane Matthew was a powerful hurricane that impacted the Caribbean and the southeastern United States from September 28 – October 9, 2016. Chatham County received the brunt of Hurricane Matthew's storm surge effects in the state of Georgia on October 8, 2016. A site reconnaissance following the hurricane indicated significant downed trees and exposed rootmat/landfill debris within the "unoccupied area" of the landfill. Approximately 28,516 square feet area within the "unoccupied" portion of the Deptford Tract landfill contained new exposed areas. Numerous downed trees and exposed rootmat were noted along the drainage ditches and tidal creeks in the "unoccupied area".

Given the site impacts from Hurricane Matthew, clearing of downed trees and repair of the soil cover within upland areas is required in order to remain in compliance with the Type 5 RRS. Downed trees will be mulched and/or cleared as needed, while stump and rootmat will be transported to a permitted Subtitle D landfill for disposal. One (1) foot of fill will be applied to exposed areas as a result of rootmat clearing. The 1-foot of fill will be composed of 6-8 inches of Marconi sand or off-site clean sandy fill material with 4-6 inches of vegetative top soil. Placed fill will be compacted to 90% of Standard Proctor density in accordance with ASTM D698. Any exposed landfill debris within the upland areas as a result of Hurricane Matthew or site work will be covered with 1 foot of fill in accordance with the above methodology. In addition, further clearing and earthwork will be conducted to facilitate the construction and operation of a solar farm within the Deptford Tract site. The solar farm will be constructed within the southern portion "unoccupied area" and will be capable of producing at least 1 megawatt (MW) of electric power. A Corrective Action Plan Amendment was submitted to the Georgia EPD to allow compliance with the Type 5 RRS during and after site work.

This EMP outlines the practices and procedures to be implemented by all site personnel to manage and mitigate potential adverse environmental effects during site work at the Deptford Tract. This

EMP was prepared utilizing best management practices for minimizing site worker and general public exposure to on-site contaminants. The EMP provides a general approach to managing environmental effects, construction activities, and wastes generated in accordance with the existing CAP requirements and best management practices.

2.0 ROLES AND RESPONSIBILITIES

This section of the EMP defines the responsibilities of those parties involved in aspects of the project which have environmental requirements related to the Deptford Tract site.

2.1 Responsibilities

All site workers and managers have an inherent responsibility for the protection of environmental and health and safety values in their work. Members of the project team have specific responsibilities for environmental management. These responsibilities are noted below:

2.1.1 Prime Contractor

- Responsible for the definition and implementation of the Deptford Tract project.
- Ensure adherence to the terms and conditions of all regulatory permits, approvals, and authorizations as mandated under federal and state legislation.
- Delegates authority and communicates requirements as required on all aspects of project implementation.
- Manages engineering, design, construction, and environmental performance of the project.

2.1.2 Environmental Consultant

Project Manager

- Responsible for the preparation and implementation of the Corrective Action Plan Amendment, EMP, and Site-Specific Health and Safety Plan.
- Conducts Pre-Construction Environmental Safety Induction Training sessions for all employees, Contractors, and/or Subcontractors that will perform tree clearing, earthwork, or solar farm construction activities.
- Ensures daily environmental safety toolbox meetings are conducted prior to the start of each day's activities with each construction crew.

- Ensures Environmental Consultant personnel are managing the project in strict accordance with the EMP.
- Maintains copies of all EMP acknowledgement forms, health and safety forms, and environmental incident reports.
- Maintains communication with the Prime Contractor regarding all aspects of environmental management and advises Prime Contractor personnel of characterization, disposal, and/or release reporting requirements.
- Responsible for the preparation of a project Completion Report.
- Has the authority to shut down project activities for non-conformance with the EMP, contravention of regulatory permits and approvals, and/or if environmental damage is occurring or is likely to occur.

Environmental Specialist/Field Geologist

- On-site representative for the Environmental Consultant – ensures compliance with EMP policies, guidelines, and other applicable regulatory requirements that govern work conducted at the project site.
- Conducts daily environmental safety toolbox meetings prior to the start of each day's activities with each construction crew.
- Ensures EMP acknowledgement forms, health and safety forms, and environmental incident reports are completed as required.
- Prepares a daily summary report documenting activities conducted at the site, and environmental issues, and resolution of any issues, as applicable.
- At the direction of the Prime Contractor, assists in waste characterization of construction derived waste (soil cuttings, drilling fluids, and/or groundwater) for waste profiling and off-site disposal at an approved facility, as applicable.
- Communicates with the Environmental Consultant Project Manager regarding construction activities, environmental concerns, incident reporting, and health and safety matters.
- Has the authority to shut down project activities for non-conformance with the EMP, contravention of regulatory permits and approvals, and/or if environmental damage is occurring or is likely to occur.

2.1.3 Contractor

The Contractor, either prior to commencement of work or in the course of completing work as appropriate, will undertake the following:

2.1.3.1 Environmental Monitoring

- Appoint an Environmental Monitor (i.e., competent person) to develop and monitor compliance of the Contractor's work procedures and practices against the environmental requirements established by the EMP, Health and Safety Plan, and the Environmental Consultant.
- Ensure that field crews and Subcontractors are aware of the environmental requirements of the work, and are trained and competent to implement them.

2.1.3.2 Communication with Staff, Work Crews, and Subcontractors

- Ensure effective environmental communication with and within work crews and Subcontractors to ensure that Contract environmental responsibilities and requirements are understood prior to commencement of work and are implemented throughout the project duration.
- Undertake regular inspections, reviews of work, and monitoring programs to evaluate adherence to the EMP.

2.1.3.3 Work Practices

- Implement appropriate work procedures, instructions, and controls to prevent and/or reduce adverse environmental impacts.
- Adhere to the requirements of this EMP.
- Contact the Environmental Consultant should the scope or schedule of work change. Identify the time, limits of the construction zone, and changes in conditions of the environment or construction practices.
- Ensure site restoration activities meet the requirements specified in the EMP and conditions of the Deptford Tract site CAP and CAP Amendment.
- Has the authority to shut down project activities for non-conformance with the EMP, contravention of regulatory permits and approvals, and/or if environmental damage is occurring or is likely to occur.

2.1.3.4 Incidents

- Respond to emergencies and incidents immediately.

- Notify the Environmental Consultant immediately following spills of deleterious substances.
- Ensure that corrective and preventative measures are undertaken in response to non-conformances with the EMP.

2.2 Conflict Resolution

If a professional disagreement arises with the Contractor's staff on the interpretation of the EMP requirements or other environmental matters related to conduct the work that cannot be resolved, it will be referred for resolution to the lowest organizational level possible as follows, in order of preference:

- By the Contractor
- Referred to the Environmental Consultant Specialist/Field Geologist
- Referred to the Environmental Consultant Project Manager
- Referred to the Environmental Consultant QA/QC Manager
- Referred to the Prime Contractor Project Manager

3.0 OVERVIEW OF SITE ACTIVITIES

Given the site impacts from Hurricane Matthew, clearing of downed trees and repair of the soil cover within upland areas is required in order to remain in compliance with the Type 5 RRS. Downed trees and limbs will be mulched and/or cleared as needed, while stump and rootmat will be transported to a permitted Subtitle D landfill for disposal. One (1) foot of fill will be applied to exposed areas as a result of rootmat clearing. Any exposed landfill debris within the upland areas as a result of Hurricane Matthew or site work will be covered with 1 foot of fill as well. In addition, further clearing and earthwork will be conducted to facilitate the construction and operation of a solar farm within the Deptford Tract site. The solar farm will be constructed within the southern portion "unoccupied area" and will be capable of producing at least 1 megawatt (MW) of electric power.

4.0 VEGETATION CLEARING

4.1 Vegetation Clearing

In order to address the downed trees and exposed rootmat/landfill debris, land disturbance activities will be performed in accordance with a permitted Erosion and Sediment Control Plan. In addition, wetland permitting may be required depending on solar farm development plans. Accessible areas within the upland portions of the "unoccupied area" of the Deptford Tract site will be targeted for clearing. Specialized off-road equipment, as well as tree and vegetation clearing will be used to access these areas. Tree and vegetation clearing will be performed using manual labor, as well as clearing equipment such as a track-mounted Feller Buncher and Shinncutter. Temporary bridges and/or large mats will also be used for crossing the existing tidal creek and drainage ditches.

Grubbing/clearing of vegetation and root mass should be avoided in order to maintain the integrity of soil cover and reduce potential exposure to contaminants. Upland clearing operations should be conducted in a manner that prevents (a) off-site erosion and sedimentation and (b) sediment discharges to water bodies and/or wetlands. Vegetation clearing for construction of the solar farm in the southern portion of the "unoccupied area" will be conducted, in addition to land clearing for downed tree clearing and soil cover repair in other upland areas.

Training requirements for workers performing these tasks are detailed in the Site-Specific Health and Safety Plan.

4.2 Downed Tree Clearing and Repair of Soil Cover

Downed trees will be cut at the stump and trunks/foliage will be mulched utilizing a Tub Grinder. Tree trunks larger than 2 feet in diameter will be cut and staged on-site, if needed. The mulch from downed trees will be applied to the site as vegetative cover. The tree stumps and rootmat will then be removed and shaken as needed to clear excess soil and/or landfill debris. Removed tree stumps and rootmat will be loaded into off-road haulers with a track hoe and transported to a permitted Subtitle D landfill for disposal.

One foot of fill will be applied to exposed areas as a result of land and rootmat clearing. The 1-foot fill will be composed of 6-8 inches of on-site Marconi sand or off-site clean sandy backfill material with an additional 4-6 inches of vegetative top soil. Fill material should consist of <25% passing the No. 200 sieve. Placed fill will be compacted to 90% of Standard Proctor density in accordance with ASTM D698. Any exposed landfill debris within the upland areas as a result of Hurricane Matthew, land clearing, or required solar farm development will be covered with 1 foot of fill in accordance with the above methodology.

Drainage ditches, a tidal creek, and wetlands are present within the "unoccupied area". Temporary bridges and/or large mats will be required for crossing these areas. Accessible downed-trees along the tidal creek or drainage ditches will be flattened in-place in order to maintain slope stability. If wetland impacts are required (i.e. filling), activities will be conducted in accordance with the US Army Corps of Engineers permitting regulations.

Training requirements for workers performing these tasks are detailed in the Site-Specific Health and Safety Plan.

4.3 Solar Farm Construction

Tree clearing within the solar farm footprint should proceed in general accordance with procedures above. Standing trees should be cut at the stump and mulched. The stumps should then be ground down in place to avoid impacts to the soil cover and potential worker exposure to contaminants. The solar farm footprint will be graded to promote positive drainage without ponding. A minimum 1-foot of vegetative cover will be maintained throughout the project area in accordance with the procedures presented above. The solar farm should be constructed so as to minimize disturbance to the soil cover. Any soil that is cleared from the site will be transported to a permitted Subtitle D landfill for disposal. In the event surface penetrations require stump clearing, the procedures indicated above will be followed.

5.0 SOIL MANAGEMENT

As previously discussed, grubbing/clearing of vegetation root mass during tree clearing should be avoided order to maintain the integrity of soil cover and reduce potential exposure to contaminants. One foot of fill will be applied to exposed areas as a result of land clearing and rootmat removal for downed trees.

Grading of the solar farm area will be required and care should be taken to reduce exposure of landfill debris. The solar farm should be constructed in a manner that minimizes impacts to the landfill soil cover. Where possible, solar farm components should be installed aboveground. A minimum 1-foot of soil cover must be maintained within the solar farm footprint in general accordance with the procedures described above.

6.0 GROUNDWATER MANAGEMENT

Groundwater is not expected to be encountered during site activities.

7.0 AIR QUALITY MANAGEMENT

Vegetation clearing, tree clearing, grading, and construction of the solar farm will cause a temporary and minimal increase in fugitive dust. Ambient levels of nitrogen oxides, hydrocarbons, and carbon monoxide near the construction zone will also be temporarily increased due to emissions from heavy construction equipment. Best management practices to reduce fugitive dust emissions and air quality impacts are detailed below:

- Site personnel shall utilize practicable methods and devices to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants;
- Possible construction related dust disturbance shall be controlled by the periodic application of water to all disturbed areas, thus preventing any visible dust plumes from project-related traffic or construction activities;
- Vehicles and equipment showing excessive emission of exhaust gases due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective adjustments or repairs are made.
- Post seeding mulch or other approved methods will be utilized during reclamation activities to aid in reducing wind erosion and blowing dust. Soil stabilization will be performed as soon as possible after completion of project activities to minimize potential fugitive dust generation;
- The Contractor shall shut down equipment when not in use;
- Vehicle speeds within the construction area shall be reduced (i.e., 5 miles per hour);
- Surface disturbing activities shall be restricted when wind speeds exceed 25 miles per hour;
- To minimize fugitive dust, open-bodied, on-road haulers transporting Deptford Tract materials to a landfill will be covered at all times.

As previously indicated, the contaminants of concern within the work area primarily consist of the metals arsenic and lead. These metals in shallow soil may constitute a dust hazard during construction activities. Site workers performing activities that may disturb soils with concentrations of arsenic and lead above the designated analytical detection limit should comply with all current OSHA regulations in order to minimize worker exposure. No site worker should be exposed to arsenic at concentrations higher than 0.01 mg/m^3 averaged over an eight-hour period or lead at concentrations higher than 0.05 mg/m^3 averaged over an eight-hour period without adequate protection. OSHA has established action levels for arsenic (0.005 mg/m^3) and lead (0.03 mg/m^3) which, if exceeded, triggers the requirement for medical monitoring.

The Environmental Consultant will collect personal breathing zone samples and area samples during vegetation clearing, tree clearing, grading, and solar farm construction activities in order to

determine the potential for worker exposure to airborne arsenic and/or lead. Two employees from each construction crew performing work will be equipped with personal breathing zone monitors each day. In addition, one project area sample will be collected each day. Samples will be collected on 37-mm diameter cassettes with 0.8-micron cellulose ester membrane filters, in accordance with the National Institute of Occupational Safety and Health (NIOSH) Method 7300. All samples will be collected over an 8-hour work shift, utilizing an average pump flow rate of 2.0 liters of air per minute (L/min).

VOCs and SVOCs could be present within shallow soils. As such, the Environmental Consultant will continuously monitor for the presence of volatile vapors with a photoionization detector throughout the duration of construction activities. In the event volatile vapors are present at elevated concentrations, construction activities within the affected area should cease until a source is identified. Recommendations for further action will be made on a case-by-case basis.

8.0 WASTE CHARACTERIZATION, CLEARING, AND DISPOSAL

Tree stumps and rootmat materials will be removed where necessary and shaken to clear excess soil and/or landfill debris. Removed tree stumps and rootmat will be loaded into on-road haulers with a track hoe and transported to a permitted Subtitle D landfill for disposal. Extensive previous sampling within the "unoccupied area" of the Deptford Tract has indicated that soils should be classified as non-hazardous for disposal purposes. Prior to the initiation of site work activities, the Environmental Consultant will collect two (2) representative stump/soil samples within the project area. These representative samples will be submitted to an independent laboratory to be analyzed for the following parameters:

- TCLP VOCs (EPA Method 1311/8260)
- TCLP SVOCs (EPA Method 1311/8270)
- TCLP Metals (EPA Method 1311/6010/7470/7471)

Based on previous laboratory analytical results from the Deptford Tract site, stumps/soils within the project area will likely be determined to be non-hazardous. As such, off-site disposal within a permitted Subtitle D landfill will be acceptable.

Sampling utensils will be decontaminated in general accordance to ASTM D 5088 - 15 *"Decontamination of Field Equipment Used at Waste Sites"*. The downhole sampling equipment will be cleaned using Alconox soap and water before arrival at the site, before introduction into the subsurface, between each sampling, between each borehole location, and before leaving the site. New disposable gloves will also be utilized between each sample to minimize the possibility of cross contamination.

All tree stumps, rootmat materials, and/or soil cleared during construction activities should be placed within roll-off containers or dump trucks in preparation for transportation and disposal. All non-hazardous material must be shipped to a permitted Subtitle D landfill under a Non-Hazardous Waste Manifest. The manifest identifies the following:

- The nature and amount of transported waste;
- The generator;
- The transporter;
- The waste's destination;
- Signature of the generator or authorized third party representative.

Multiple manifest copies will be produced with each roll-off and/or dump truck transported for disposal. One copy will be retained by the Environmental Consultant on behalf of the Contractor for their records. Additional copies of the manifest will accompany the waste during shipment and upon receipt of the waste at the landfill. The landfill facility operator will sign the manifest and will then send a copy of the signed manifest to the generator confirming receipt at the facility.

9.0 FIELD DOCUMENTATION AND REPORTING

When field oversight and/or sampling is required, all activities will be recorded on field forms by site contractor field personnel. Pertinent data will vary based on the site conditions and services requested; however, the following data will be recorded; date, job number, project name, sampling location, sample depth, sample identification, and sample description, along with any screening results and general observations.

Should tree clearing activities require off-site disposal, a summary report will be prepared to document the disposal. This report will include any applicable sample results and observations and recommendations for additional action, if needed. Additionally, copies of any disposal manifests designating the quantity of materials received by the landfill will be provided as an appendix to the report.

The following field documentation, record keeping, and reporting are required to be maintained throughout the work by the Contractor or its designee upon request and at project close out.

- EMP Acknowledgement Sheet – prior to commencing field activities and upon change of any key personnel, the Contractor, Subcontractor, and environmental personnel must provide written documentation that they have read and understood the EMP.
- Any corrections/revisions to the EMP.

- Field Logs and Daily Activities Summaries – environmental personnel shall submit daily activities summaries of work performed and observations (i.e., PID readings, visible/olfactory observations of contamination, etc.).
- Digital photographs of site activities.
- Laboratory analytical results for soil characterization, as needed.
- Waste profile forms.
- Waste manifests for soil transported off-site for disposal.

Pertinent document forms that will be used for the duration of the project are included in Appendix B.

10.0 INCIDENT PREVENTION

10.1 Fire Prevention

The Contractor will be required to maintain and adhere to a Fire Prevention Plan during all phases of work. The Fire Prevention Plan must include measures to address such matters as:

- Fuel management considering petroleum product transportation, transfer, storage, and use, accumulations of wood waste, and other flammable materials;
- Work related fire initiation such as sparks, catalytic converters, mufflers, cigarettes, etc.;
- Natural events such as lightening.

The Fire Prevention Plan must specify firefighting equipment (i.e., shovels, fire extinguishers, etc.) that must be kept on-site at all times. The location and content of the required firefighting equipment are to be inspected on a regular basis and maintained at the required level. The Fire Prevention Plan will be communicated to all field crews at the start of work and thereafter at regular intervals throughout the Contract, and will be strictly enforced.

10.2 Spill Prevention

The Contractor will be required to maintain and adhere to an Emergency Response and Spill Prevention Plan for applications during all phases of work. The Emergency Response and Spill Prevention Plan is to include all aspects of:

- Petroleum product transportation, storage, use, and disposal. This is to include consideration of petroleum product contaminated materials such as rags and soil.

- Other non-petroleum materials that are considered environmental contaminants and therefore risks;
- Equipment maintenance to reduce risk of spills. This shall include, but not be limited to, heavy equipment maintained to be free of excess oil and grease, and regular inspection of hydraulic systems.

Spill response equipment that is to be kept on-site should be specified in the Emergency Response and Spill Prevention Plan. The location and content of spill response kits and equipment will be maintained at the specified level and inspected on a regular basis. Contractors are also to adhere to the following:

- Regularly monitor equipment and vehicles for leaks;
- Store chemicals in sealed containers with labels;
- Store waste materials securely to prevent leachate.

The Emergency Response and Spill Prevention Plan will be communicated to all field crews at the start of work and thereafter at regular intervals throughout the Contract, and will be strictly enforced. The Contractor must post the Emergency Response and Spill Prevention Plan in conspicuous locations at each site location.

10.3 Sediment and Erosion Control

All Contractors shall adhere to an Erosion and Sediment Control (ES&C) Plan prepared by a Professional Engineer registered in the State of Georgia. This ES&C Plan should be prepared in accordance with the "Manual for Erosion and Sediment Control in Georgia" (latest edition) and General National Pollutant Discharge Elimination System (NPDES) Permit GAR 100002. All erosion and sediment control measures and practices will be governed by this plan. Note that the initial sediment storage requirements and perimeter control best management practices (BMPs) must be installed and implemented prior to conducting any construction activities (i.e. clearing, grubbing, and grading) within the construction site or when applicable, within phased sub-parts or segments of the construction site.

10.4 Environmental Incidents

An environmental incident is one that has caused, or has the potential to cause, one or more of the following:

- Environmental damage;
- Adverse effects on vegetation, fish, wildlife, or other environmental resources;
- Legal action with respect to violation of statutes or environmental damage.

Examples of environmental incidents include, but are not limited to:

- Spills of oil, fuel, PCBs, or other chemicals;
- Discharge to deleterious substances into fish-bearing water;
- Erosion;
- Harmful alteration, disruption, or destruction of aquatic or terrestrial habitat without proper written approval and authorization; and;
- Forest fires related to construction activities.

An environmental incident report (example provided in Appendix B) provides for timely and accurate internal notification of environmental incidents. The target reporting deadline is 24 hours following an incident.

- Cause and nature of the incident;
- Approximate volume of the release;
- Aquatic, terrestrial, and/or cultural resources affected;
- Mitigation measures taken to control or limited the activity causing the incident;
- Additional proposed remedial or corrective actions recommended;
- Communications held with project personnel; and
- Communications with regulatory agencies, if applicable.

The Contractor is responsible for filing an incident report with the Environmental Consultant. In addition to reporting to the Environmental Consultant, it is necessary in some situations to notify regulatory agencies. In the State of Georgia, releases of substances regulated under the Georgia Rules for Hazardous Site Response must be reported to the Georgia EPD Response and Remediation Program within 30 days of the discovery of the release. Using the information in the notification, the Georgia EPD determines if a release above a reportable quantity has occurred using the reportable quantities screening method (RQSM). Certain releases are excluded from the notification requirements, such as releases that are cleaned up within 30 days of discovery; releases of petroleum-based fuel, lubricant, or hydraulic fluid, and releases regulated under the Georgia Underground Storage Tank Act. If necessary and after consultation with the Prime Contractor, release notifications may be submitted to:

- Response and Remediation Program
  Georgia Environmental Protection Division
  2 Martin Luther King, Jr. Drive SE
  Suite 1054, East Tower
  Atlanta, Georgia 30334

On the federal level, any person or organization responsible for a release or spill is required to notify the National Response Center at (800) 424 8802 when the amount reaches a federally determined limit. Separate reporting requirements exist for oil spills and hazardous substance releases.

In the event of a release, the Environmental Consultant will identify the release notification requirements and/or corrective action measures (if applicable) and coordinate further action with the Prime Contractor.

APPENDIX A

ACKNOWLEDGEMENT OF INSTRUCTION

ACKNOWLEDGMENT OF INSTRUCTION

All personnel subject to the requirements contained in the Environmental Management Plan (EMP) for the Deptford Tract site are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used to confirm that instructions pertaining to environmental management at the project site have been received and will be followed in all aspects of work.

I understand that implementation of activities at the Deptford Tract site may require management of media (soil, groundwater, and/or air) impacted with volatile, semi-volatile, and/or metals. I have read this EMP and have received instructions for practices and procedures to manage, remediate, and/or mitigate potential adverse environmental effects. In addition, I have received instructions for best management practices for minimizing site worker and general public exposure to potential on-site contaminants. I understand that all work at the site must be conducted in accordance with this EMP.

PROJECT: Deptford Tract Site

Name (Please Print)	**Signature**	**Date**

EMP briefing performed by: _____ Date:_____

APPENDIX B

EXAMPLE FIELD DOCUMENTATION FORMS

DAILY ACTIVITIES FORM

Date	Project No.	Project Name
Employee:		
Additional On-Site Personnel:		
Weather:		
Work Location:		

Description of Daily Activities

Identify Number and Type of Waste Containers On-Site
Samples Collected? **Yes** **No**
If Yes, Describe (include time and location)
Elevated PID Readings? **Yes** **No**
If Yes, Describe (include time and location)

ENVIRONMENTAL INCIDENT REPORT

Date of Incident	Time of Incident	Location of Incident	
TYPE OF INCIDENT			
☐ Fuel Spill	☐ Chemical Spill	☐ Water Release	☐ Excessive Vegetation clearance or damage
☐ Uncontrolled Air Emission	☐ Management of Wastes	☐ Excessive Noise	☐ Damage to Cultural Heritage Items/Area
☐ Protected Vegetation Damage	☐ Fauna Injury	☐ Breach of permit conditions	☐ Near Miss
Notify Terracon	☐ Yes ☐ No	Who?	How?
Notify Georgia Power	☐ Yes ☐ No	Who?	How?
Notify External Agency	☐ Yes ☐ No	Who?	How?

TYPE OF IMPACT
☐ General environmental and social effects (to be used where other categories do no apply)
☐ Controlled and uncontrolled discharges to water
☐ Contamination of land
☐ Controlled and uncontrolled emissions to atmosphere
☐ Noise, dust, vibration, and/or odor
☐ Solids and other wastes
☐ Effects on the natural environment
☐ Archaeological, heritage, or cultural issues
☐ Use of land, water, fuels and energy, and other natural resources
☐ Legal
☐ Public/media
☐ Total Cost ($) – fines, remedial action, lost time, legal fees, liabilities, etc.

PEOPLE AFFECTED BY THE INCIDENT	
Name	Company

ENVIRONMENTAL INCIDENT REPORT

DETAILS OF INCIDENT			
Describe how the incident occurred:			
Containment:			
Cleanup Information:			
Other Details:			
Police or Emergency Services Involved?	Yes	No	
If yes, provide details:			
CLASSIFICATION OF INCIDENT			
Level 1 – High Severity	Level 2 – Medium Severity	Level 3 – Low Severity	
Rectification/Rehabilitation Required?	Yes	No	
Training/Re-training Required?	Yes	No	
INCIDENT INVESTIGATION DETAILS			
Incident investigation undertaken?	Yes	No	
Witness names and contact details provided?	Yes	No	
Details of preventative action taken:			
COMPLETED BY			
Name	Signature	Position	Date

APPENDIX E

SITE-SPECIFIC HEALTH AND SAFETY PLAN

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Deptford Tract Site
Savannah, Chatham County, Georgia
HSI No. 10179

July 21, 2017
Terracon Project No. ES177145

Prepared for:

Savannah Environmental Response Trust
Savannah, Georgia

and

City of Savannah
Savannah, Georgia

Prepared by:

Terracon Consultants, Inc.
Savannah, Georgia

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

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SITE-SPECIFIC HEALTH AND SAFETY PLAN

DEPTFORD TRACT SITE
Savannah, Chatham County, Georgia
HSI No. 10179

Terracon Project No. ES177145
July 21, 2017

1.0 APPLICABILITY

This Site-Specific Health and Safety Plan (SSHASP) will govern the activities of all personnel conducting work at the Deptford Tract site. The purpose of this plan is to prevent adverse health effects from contaminants and site safety hazards which may be present at this site.

Contractors and Subcontractors engaged in project activities will comply with the applicable provisions of the Occupational Safety and Health Act of 1970, the safety and health requirements set forth in Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.120, where applicable, and any applicable state, city, or local safety codes. Each Contractor or Subcontractor will be responsible for supplying a Competent Person to oversee work at this project site. The Competent Person will bear primary responsibility for utilizing equipment and work practices necessary to protect the safety of the Contractor's/Subcontractor's employees at this site.

Contractors and Subcontractors will maintain orderly and safe work areas to minimize the potential for accidents. In addition, Contractors and Subcontractors shall provide whatever safety barricades or warning devices deemed necessary by the Environmental Consultant and/or the Prime Contractor to prevent accidents or injury to field personnel and the general public.

The Health and Safety Plan (SSHASP) for this project has been prepared by the Environmental Consultant. Contractors and Subcontractors engaged on this project may utilize this SSHASP for their employees, or they may develop and utilize their own SSHASP, provided the provisions in each SSHASP meet the minimum requirements outlined in the Environmental Consultant's SSHASP. Decisions regarding equivalency of health and safety requirements shall be made by the Environmental Consultant Project Manager and the Environmental Consultant's Corporate Health and Safety Manager. Adoption of the Environmental Consultant's SSHASP by other employers involved with the project does not relieve any Contractor or Subcontractor of the responsibility for the health and safety of their own employees.

2.0 DEPTFORD TRACT SITE OVERVIEW

The Deptford Tract site encompasses approximately 53 acres of land adjacent to President Street and Kerr-McGee Road in Savannah, Chatham County, Georgia. The site operated as a municipal landfill from 1919 until 1954 and contains an estimated 600,000 cubic yards of municipal waste. Several environmental investigations have been conducted at the Deptford Tract site since 1993 in accordance with the requirements of the Georgia Hazardous Site Response Act (HSRA). Based on site characterization information available at the end of June 1994, the Georgia EPD determined that a release exceeding a reportable quantity had occurred and that site. On July 1, 1994, the Georgia EPD listed the site on the Hazardous Site Inventory (HSI) as HSI No. 10179 and classified the site as a Class II site requiring further evaluation. Subsequent site investigations conducted in the 1990s identified the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and cyanide. In June 1999, it was determined that limited portions of the former landfill were not in compliance with the non-residential RRS for soil, although the site was considered to be in compliance with the non-residential RRS for groundwater.

In 2002, additional site investigations were conducted to define the boundaries of the source contamination and landfill extents; identify background concentrations; define the horizontal and vertical extent of impacted soil and groundwater; complete a risk assessment; and develop a conceptual plan for corrective action. The 2002 investigation indicated that the horizontal extent of impacted soil was limited to 4 general areas within the site boundary. The vertical extent of impacted soil was limited to soils overlying debris and municipal waste. The horizontal and vertical extent of impacted groundwater above background concentrations was fully delineated. The risk assessment determined that the only potential on-site receptors are trespassers and on-site workers. Non-residential RRS were confirmed as the most appropriate standards for the site.

Additional soil and groundwater investigations were conducted through 2006. As a result of the additional work, the background concentrations were revised and all regulated substances of concern were delineated to below background concentrations. Only arsenic and lead were detected in surface soils at concentrations above the non-residential RRS that are protective of human health. Groundwater beneath the site was determined to be in compliance with the non-residential RRS.

A Corrective Action Plan (CAP) was prepared in 2008 to address the regulated substances of concern at the Deptford Tract site. The corrective action approach was to manage areas of the site where municipal waste materials were permanently disposed in accordance with HSRA Type 5 standards. The corrective action proposed in the 2008 CAP included implementation of institutional controls and separate engineering controls for the “unoccupied area” west of Kerr McGee Road and the “occupied area” east of Kerr McGee Road. Technical approval of the

CAP and comments were provided by the Georgia EPD in a letter dated February 16, 2010. The institutional controls and engineering controls implemented in 2012 and 2013 as part of the. After completion of the remedial action in 2012-2013, the surface soils to a depth of 18 inches were in compliance with non-residential RRS for lead and arsenic.

3.0 SCOPE OF SERVICES

Hurricane Matthew was a powerful hurricane that impacted the Caribbean and the southeastern United States from September 28 – October 9, 2016. Chatham County received the brunt of Hurricane Matthew's storm surge effects in the state of Georgia on October 8, 2016. A site reconnaissance following the hurricane indicated significant downed trees and exposed rootmat/landfill debris within the "unoccupied area" of the landfill. Approximately 28,516 square feet area within the "unoccupied" portion of the Deptford Tract landfill contained new exposed areas. Numerous downed trees and exposed rootmat were noted along the drainage ditches and tidal creeks in the "unoccupied area".

Given the site impacts from Hurricane Matthew, clearing of downed trees and repair of the soil cover within upland areas is required in order to remain in compliance with the Type 5 RRS. Downed trees will be mulched and/or cleared as needed, while stump and rootmat will be transported to a permitted Subtitle D landfill for disposal. One (1) foot of fill will be applied to exposed areas as a result of rootmat clearing. The 1-foot fill will be composed of 6-8 inches of Marconi sand or off-site clean sandy fill material with 4-6 inches of vegetative top soil. Placed fill will be compacted to 90% of Standard Proctor density in accordance with ASTM D698. Any exposed landfill debris within the upland areas as a result of Hurricane Matthew or site work will be covered with 1 foot of fill in accordance with the above methodology. In addition, further clearing and earthwork will be conducted to facilitate the construction and operation of a solar farm within the Deptford Tract site. The solar farm will be constructed within the southern portion "unoccupied area" and will be capable of producing at least 1 megawatt (MW) of electric power. A Corrective Action Plan Amendment was submitted to the Georgia EPD to allow compliance with the Type 5 RRS during and after site work.

4.0 SAFETY AND HEALTH ADMINISTRATION

The Environmental Consultant's representative is ultimately responsible for seeing that work on this project is performed in accordance with the safety and health provisions contained in this Plan. The designated Site Safety and Health Officer (SSO) will monitor compliance with this Plan during field activities. All field team members engaged in project activities will be required to sign the "Acknowledgment of Instruction" form included with this Plan. The SSO or

designated representative will maintain a copy of this Plan on site for the duration of project activities.

The Environmental Consultant, on behalf of the Prime Contractor, will be responsible for:

- Providing subordinate personnel a copy of this Plan, and briefing them on its content.
- Enforcing the applicable provisions of this Plan.
- Inspecting and maintaining equipment in compliance with applicable federal, state or local safety regulations.
- Enforcement of corrective actions.
- Investigation of accidents or injuries.

Pertinent personnel associated with this project are detailed below:

Project Role	Name	Office Phone	Mobile Phone

If hazardous conditions develop during the course of project activity, the SSO in conjunction with the Environmental Consultant Project Manager will coordinate actions required to safeguard site personnel and members of the general public. Additional safety measures will be verbally communicated to all project personnel, recorded in writing and appended to this Plan.

5.0 PROJECT SITE WORKER TRAINING REQUIREMENTS

Work at the Deptford Tract site will occur within the “unoccupied area”, which is the portion of the property west of Kerr McGee Road. Within this area, arsenic and lead have been detected in surface soils at concentrations above the non-residential RRS that are protective of human health (38 mg/kg and 1,100 mg/kg, respectively). Work conducted at the site will include

vegetation clearing, tree removal, surface barrier repair, grading, and construction of a solar field. Some of these task do not involve soil disturbing activities, whereas others will require disturbance of surface soils. Given the various work activities associated with the Deptford Tract site, worker exposure to contamination is possible for activities that involve surface and/or subsurface soil disturbance. Therefore, the site worker training requirements will vary with the task to be completed.

5.1 Environmental Consultant Employees

All Environmental Consultant personnel overseeing and/or inspecting work at the project site covered by this health and safety plan will have completed a OSHA 40 hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) Training Course and at least three days of supervised field activity per the requirements of OSHA 29 CFR 1910.120 training. Those workers that are not participating require disturbance of the surface and/or subsurface and 8 Hour Supervisor Course and at least three days of supervised field activity per the requirements of OSHA 29 CFR 1910.120 and 29 CFR 1910.120 (e). In addition, a current 8-hour annual refresher training certificate will be required for all Environmental Consultant personnel. Training certificates for all Environmental Consultant project personnel will be maintained by the Environmental Consultant Corporate Safety and Health Manager and/or the SSO.

5.2 Contractors and Subcontractors

As previously discussed, training requirements for the work crews will vary depending on task to be completed. On-site workers and/or inspectors involved with site clearing and filling activities that will require the disturbance of surface and/or subsurface soil will be required to have completed the OSHA 40 hour HAZWOPER Training Course and at least three days of supervised field activity per the requirements of OSHA 29 CFR 1910.120 training. Those workers that are not participating in the disturbance of the surface and/or subsurface soil will not be required to have the OSHA 40 hour training.

In addition to HAZWOPER training, if required for task, all site workers will be required to participate in a Pre-Construction Environmental Safety Induction Class and the Daily Safety Environmental Toolbox meetings prior to starting work at the site initially and on a daily basis.

The following table details the training requirements for each phase/task to be completed as part of the Deptford Tract project.

Phase	Performing Group	General Work Practice	Required Training
1	Survey Contractor	Land surveyors access the site to flag clearing limits. Limited hand clearing of brush for survey lines.	On-site Pre-Construction Safety Induction and Daily Safety Meetings
2	Crew Support Contractor	Crew support contractor installs access for the clearing crew, may include things like mats across ditches, gravel exits as needed, etc.	On-site Pre-Construction Safety Induction and Daily Safety Meetings
3	Vegetation/Tree Removal Contractor	Contractor removes trees and vegetation. Clearing methods can be adjusted as needed, and may include mechanized clearing, hand clearing, use of a "Shin cutter", or combination thereof, depending on environmental requirements and the terrain (slope, etc.).	On-site Pre-Construction Safety Induction, Daily Safety Meetings, OSHA HAZWOPER 40 hours + 3 days field experience 1910.120(e)(3)(i)
4	Grading/Fill Placement Contractor	Contractor installs 1-foot of fill vegetative cover to areas of exposed landfill debris. Conducts grading activities within the solar farm footprint.	On-site Pre-Construction Safety Induction, Daily Safety Meetings, OSHA HAZWOPER 40 hours + 3 days field experience 1910.120(e)(3)(i)
5	Survey Contractor	Survey crew returns to locate and stake the location of solar farm features.	On-site Pre-Construction Safety Induction and Daily Safety Meetings
6	Crew Support Contractor	Support contractor lays mats as needed to provide access to the structure locations for the solar farm construction contractor.	On-site Pre-Construction Safety Induction and Daily Safety Meetings
7	Solar Farm Construction Contractor	Solar farm contractor will use a vibratory hammer or similar to install piles through the landfill cover. Contractor will construct solar farm components and structures aboveground. A fence surrounding the solar farm will also be installed. Solar farm contractor performing operation and maintenance.	On-site Pre-Construction Safety Induction and Daily Safety Meetings
8	Survey Crew	A survey crew returns to establish "as built" structure locations, etc.	On-site Pre-Construction Safety Induction and Daily Safety Meetings

5.3 Site Specific Environmental Safety Training

Prior to the start of site activities, the SSO or designated representative will conduct a pre-project safety and health briefing for all project participants. The personnel responsible for project safety and health will be addressed, as will site history, scope of work, site control measures, emergency procedures and site communications. The briefing will address site contaminants, air monitoring protocols (if applicable), action levels for upgrade/downgrade of personal protective equipment and level of personal protective equipment to be employed for each project task.

Safety and health briefings will be presented by the SSO or designated representative at the start of each work day. In addition to a general review of the proposed daily activity and safety requirements, the results of previous monitoring and any procedural changes will be addressed. A general description of the pre-construction and daily training is described in the following sections.

5.3.1 Pre-Construction Environmental Safety Induction Training

Pre-Construction Environmental Safety Induction Training sessions will be provided for all contractors and/or subcontractors that will perform activities at the project site prior to each group's activities at the site.

This induction training shall include:

- Brief site history with description of known environmental hazards;
- Review of the Site Specific Health and Safety Plan;
- Review of the Environmental Management Plans, including Soil, Groundwater, and Air Management Plans;
- Awareness of the general environmental requirements for the project, including key site specific management measures;
- Knowledge of the roles and responsibilities of the various parties on site, including the key contacts for reporting and notifications;
- Training in appropriate corrective action in the event that they become aware of an environmental issue; and
- Instruction on procedures and reporting on issues that may result in environmental degradation.

Each site worker that received the Pre-Construction Environmental Safety Induction Training will be given a training certificate/wallet card and a hard hat sticker to be worn at all times while

working at the project site to denote that they have received the required training. Training records will be maintained by the Environmental Consultant throughout the duration of the project and will be included in the final completion report to be submitted to the Prime Contractor at the conclusion of the project.

5.3.2 Daily Environmental Safety Toolbox Meeting

The Environmental Consultant's Specialist/Field Geologist will conduct a brief environmental safety toolbox meeting prior to the start of each day's activities with the each construction crew to review the relevant environmental safety topics related to the day's activities.

The Environmental Consultant's on-site representative will make sure each construction crew member has attended the Pre-Construction Environmental Safety Induction Training, has completed any additional training required based on task (e.g. 40 Hour HAZWOPER), and each construction crew member will sign-in on the daily toolbox safety sign-in sheet.

6.0 HAZARD ASSESSMENT

The following constituents have been historically detected at concentrations above surface soil non-residential risk reduction standards (RRS) at the Deptford Tract: benzo(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, arsenic, barium, chromium, lead, and silver. In addition, barium and lead have been historically detected in subsurface soil above the non-residential RRS. Only arsenic and lead have been detected in surface soils at concentrations above the non-residential RRS that are protective of human health (38 mg/kg and 1,100 mg/kg, respectively).

Activities associated with the Deptford Tract site will occur within the "unoccupied area" and, as such, worker exposure to impacted surface soil is possible. Specific health hazard information for detected and potential chemicals of concern is detailed below:

ARSENIC
Permissible Exposure Limit

0.10 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, skin absorption, skin and/or eye contact, ingestion

Potential Symptoms: Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen].

BARIUM
Permissible Exposure Limit

0.5 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, skin and/or eye contact

Potential Symptoms: Irritation eyes, nose, upper respiratory system; benign pneumoconiosis (baritosis)

CADMIUM
Permissible Exposure Limit

0.005 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion

Potential Symptoms: Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]

CHROMIUM
Permissible Exposure Limit

1.0 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Symptoms: Irritation eyes, skin; lung fibrosis (histologic)

LEAD
Permissible Exposure Limit

0.050 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, and/or contact

Symptoms: Irritation to skin and/or eyes, upper respiratory tract irritation, chest pain, fatigue, headache, abdominal pain or cramps (lead colic), nausea, vomiting, insomnia, dizziness, [Potential occupational carcinogen]

MERCURY
Permissible Exposure Limit

0.1 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, skin absorption, ingestion, skin and/or eye contact

Potential Symptoms: Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness,

exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria.

SELENIUM
Permissible Exposure Limit

0.2 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage.

SILVER
Permissible Exposure Limit

0.1 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance

BENZENE
Permissible Exposure Limit

1 ppm OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, unconsciousness, vomiting, convulsions, death
[Occupational carcinogen]

TOLUENE
Permissible Exposure Limit

200 ppm TWA

Exposure Routes: Inhalation, skin and/or eye contact

Potential Symptoms: Drowsiness, confusion, weakness, memory loss, nausea

ETHYLBENZENE
Permissible Exposure Limit

100 ppm TWA

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Eye and throat irritation, dizziness, irritation or burning of skin [Potential occupational carcinogen]

XYLENES
Permissible Exposure Limit

100 ppm TWA

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Headaches, lack of muscle coordination, dizziness, confusion, irritation of skin, eyes, nose, and throat, difficulty breathing, stomach discomfort

BENZO (A) ANTHRACENE
Permissible Exposure Limit

0.2 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Skin rash or irritation with redness and/or burning sensation, eye irritation, nausea, vomiting, diarrhea, confusion

BENZO (G, H, I) PYRENE
Permissible Exposure Limit

0.2 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Skin rash or irritation with redness and/or burning sensation, eye irritation, nausea, vomiting, diarrhea, confusion

BENZO (A) PYRENE
Permissible Exposure Limit

0.2 mg/m^3 OSHA PEL

Exposure Routes: Inhalation, ingestion, skin and/or eye contact

Potential Symptoms: Skin rash or irritation with redness and/or burning sensation, eye irritation, nausea, vomiting, diarrhea, confusion
[Potential occupational carcinogen]

6.1 Biological Hazards

Biological hazards may include ticks, fleas, mosquitoes, wasps, spiders or other pests; poisonous plants (poison ivy, poison oak); snakes; thorny bushes and trees; and medical waste.

6.1.1 West Nile Virus

West Nile virus is primarily spread through the bite of an infected mosquito (usually a Culex species). Mosquitoes pick up the virus when they feed on infected birds. The virus must then circulate in the mosquito for a few days before they are capable of transmitting the infection to animals or humans while biting. The virus is found in the salivary gland of the mosquito. During feeding, the virus may be injected into a human or animal where it may multiply and possibly cause disease.

Most persons who are infected with West Nile virus will have no noticeable symptoms, or have an illness syndrome called “West Nile Fever” lasting 2-10 days. Common symptoms of West Nile Fever include headache, fever, and extreme muscle weakness, occasionally accompanied by vomiting or skin rashes. In some cases, West Nile virus infection will cause severe neurologic disease such as meningitis, paralysis, or encephalitis (swelling and inflammation of the brain).

Symptoms of West Nile meningitis or encephalitis may be intense headache, dizziness, stiff neck, marked weakness, muscle tremors, disorientation, mental confusion, or convulsions.

Workers should protect themselves from mosquito bites by applying insect repellent to exposed skin. Generally, the more active ingredient a repellent contains, the longer it can protect from mosquito bites. A higher percentage of active ingredient in a repellent does not mean that protection is better—just that it will last longer. Choose a repellent that provides protection for the amount of time that you will be outdoors. Repellents may irritate the eyes and mouth. Whenever an insecticide or insect repellent is used, workers must read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.

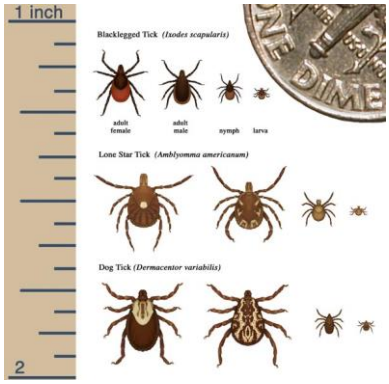
Insect repellent containing diethyltoluamide (DEET) can be sprayed on skin or clothing to provide protection from mosquitoes. A repellent containing permethrin can also be sprayed on clothing. Repellents containing permethrin should not be applied directly to exposed skin. Workers should wear long-sleeved shirts and long pants whenever outdoors.

Workers should consider staying indoors at dawn, dusk, and in the early evening, which are peak mosquito biting times. Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

6.1.2 Tick borne diseases

Lyme Disease, Ehrlichiosis, Tularemia, Southern Tick-Associated Rash Illness (STARI), and Rocky Mountain Spotted Fever (RMSF) are diseases transmitted by ticks and may occur throughout the United States during spring, summer, and fall.

Lyme Disease is a potentially serious disease caused by the bacteria Borrelia burgdorferi. Humans can become infected following the bite of an infected deer tick also called the black legged tick.



Persons bitten by ticks carrying Lyme Disease may have symptoms such as a rash or a peculiar red spot (Bulls Eye) that expands outward in a circular manner. Headaches, weakness, fever, a stiff neck, swelling and pain in the joints, and eventually, arthritis may also occur. The primary symptom of RMSF is the sudden appearance of a moderate to high fever. The fever may persist for two to three weeks. A severe headache, deep muscle pain and chills may also occur. A rash will appear on the hands and feet on about the third day and eventually spread to all parts of the body. RMSF may cause death if untreated. Ehrlichiosis refers to a disease caused by the bacteria Ehrlichia from the bite of the Lone Star Tick (see figure above). Symptoms of ehrlichiosis will generally include a sudden onset of fever, chills, headache, myalgia, and fatigue within 10 to 15 days following a tick bite. The symptoms of ehrlichiosis are similar to RMSF; however, a rash occurs less often. Other symptoms include nausea, vomiting, abdominal pain, and loss of appetite.

Tularemia is a disease caused by the bacteria Francisella tuarensis. In Oklahomathe ticks commonly associated with Tularemia are the Dog Tick and the Lone Star Tick. Symptoms of Tularemia are high fever, chills, fatigue, general body aches, headache, and nausea. Tularemia was once known as “Rabbit Fever”. Southern Tick-Associated Rash Illness (STARI) is an illness that is indistinguishable from the early stages of Lyme Disease. These symptoms include the “bull’s eye” rash commonly associated with Lyme Disease. The cause of the disease is not fully understood, but it appears to be associated with the bite of the Lone Star Tick. Lyme Disease is associated with the bite of the Deer Tick.

Early diagnosis of tick borne diseases is essential to treatment of the disease. The following photographs show common symptoms one may develop. Insect repellent, containing diethyltoluamide (DEET) should be used in tick infested areas, and pants legs should be tucked into boots. Another option is to spray clothing with a repellent containing permethrin. Repellents containing permethrin should not be applied directly to exposed skin. Additionally, workers should search the entire body every three or four hours for attached ticks. Ticks should be removed promptly and carefully without crushing. A gentle and steady pulling action should be used to avoid leaving the head or mouth parts in the skin.

Folklore remedies, such as the use of petroleum jelly or hot matches, do little to encourage a tick to detach from skin. In fact, they may make matters worse by irritating the tick and stimulating it to release additional saliva or regurgitate gut contents, increasing the chances of transmitting the pathogen. These methods of tick removal should be avoided. A number of tick removal devices have been marketed, but none are better than a plain set of fine tipped tweezers.

6.1.2.1 Tick Bite Prevention Tips

Avoiding tick bites is the best way to reduce your risk of developing a tick-borne illness. The following personal tick bite prevention tips are recommended when exposure to a wooded or tick infested area is likely:

- Wear light colored clothing to make ticks easier to see.
- Wear long-sleeved shirts and long pants tucked into socks to deprive ticks of attachment sites.
- Check for ticks every three to four hours; particularly along waistbands, in the armpits, and groin area. Don't forget the back and the scalp!
- Use a tick repellent with DEET on skin and clothing according to the directions.
- Use a tick repellent with permethrin ON CLOTHING ONLY as directed by the label.

6.1.3 Stinging Insects

To avoid stinging insects, it is important to learn what they look like and where they live. Most sting reactions are caused by five types of insects: yellow jackets, honeybees, paper wasps, hornets and fire ants. Yellow jackets are black with yellow markings, and are found in various climates. Their nests, which are made of a paper-Mache material, are usually located underground, but can sometimes be found in the walls of frame buildings, cracks in masonry or woodpiles.

Honeybees have a rounded, “fuzzy” body with dark brown coloring and yellow markings. Upon stinging, the honeybee usually leaves its barbed stinger in its victim; the bee dies as a result. Honeybees are non-aggressive and will only sting when provoked. However, Africanized honeybees, or so-called “killer bees” found in the southwestern United States and South and Central America, are more aggressive and may sting in swarms. Domesticated honeybees live in man-made hives, while wild honeybees live in colonies or “honeycombs” in hollow trees or cavities of buildings. Africanized honeybees may nest in holes in building frames, between fence posts, in old tires or holes in the ground, or other partially protected sites. Paper wasps' slender, elongated bodies are black, brown, or red with yellow markings. Their nests are also made of a paper-like material that forms a circular comb of cells which opens downward. The nests are often located under eaves, behind shutters, or in shrubs or woodpiles.

Hornets are black or brown with white, orange or yellow markings and are usually larger than yellow jackets. Their nests are gray or brown, football-shaped, and made of a paper material similar to that of yellow jackets' nests. Hornets' nests are usually found high above ground on branches of trees, in shrubbery, on gables or in tree hollows.

Fire ants are reddish brown to black stinging insects related to bees and wasps. They build nests of dirt in the ground that may be quite tall (18 inches) in the right kinds of soil. Fire ants may attack with little warning: after firmly grasping the victim's skin with its jaws, the fire ant arches its back as it inserts its rear stinger into the skin. It then pivots at the head and may inflict multiple stings in a circular pattern. Fire ant venom often causes an immediate burning sensation.

6.1.3.1 Preventing Stings

Personnel should stay out of the “territory” of the stinging insects' nests as much as possible. These insects are most likely to sting if their homes are disturbed, so it is important to have hives and nests around work areas destroyed. Since this activity can be dangerous, a trained exterminator should be hired.

If any flying stinging insects are encountered, workers should remain calm and quiet, and move slowly away from them. Many stinging insects are foraging for food. It is important to not look or smell like a flower—avoid brightly colored clothing and perfume when outdoors. Because the smell of food attracts insects, be careful when eating, or drinking sweet drinks like soda or juice outdoors. Keep food and beverages covered until consumed. Workers should avoid loose-fitting garments that can trap insects between material and skin.

6.1.3.2 Treating Stings

If stung by a honeybee that has left its stinger (and attached venom sac) in your skin, remove the stinger within 30 seconds to avoid receiving more venom. A quick scrape of a fingernail

removes the stinger and sac. Squeezing the sac should be avoided—this forces more venom through the stinger and into the skin. Hornets, wasps, and yellow jackets do not usually leave their stingers. Try to remain calm, and brush these insects from the skin promptly with deliberate movements to prevent additional stings. Then, quietly and immediately leave the area.

If stung by fire ants, carefully brush them off to prevent repeated stings, and leave the area. Fire ant stings usually result in the development of a blister about 24 hours after the sting. The material in this will become cloudy and appear to be pustular, but isn't. Fire ant venom kills bacteria; this is just dead tissue and should be left alone. It will dry and heal within the next 7 – 10 days. If the blister is opened it must be monitored for secondary bacterial infection. Diabetics and others with circulatory disorders, including varicose veins and phlebitis, can be particularly at risk for complications, and should see a physician to monitor their condition after being stung. Up to 50% of patients develop large local reactions at the site of fire ant stings—swelling may last for several days and may be accompanied by itching, redness and pain.

Use topical steroid ointments or oral antihistamines to relieve itching. See your doctor if swelling progresses or if the sting site seems infected.

6.1.4 Poisonous Plants

Poison ivy, poison oak or poison sumac may be present in the work area. Personnel should be alerted to the presence of these plants, and instructed on methods to prevent exposure.
The main control is to avoid contact with the plant, cover arms and hands, and use Ivy Block barrier cream on exposed skin. Particular attention must be given to avoiding skin contact with objects or protective clothing that have touched the plants. Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance. If skin contact is made, the area should be washed immediately with Ivy Wipes or soap and water, and observed for signs of reddening.

6.1.5 Snakes

The possibility of encountering snakes exists, specifically for personnel working in heavily wooded/vegetated areas. Avoid walking in areas where snakes may nest or hide. When walking, always look ahead for signs of snakes. Employees should make as much noise as possible when approaching a possible snake area to give snakes time to leave. Use a long handled shovel, heavy equipment or other tools when moving or lifting objects that could be used by snakes as cover. Never reach under or behind objects or into other areas where snakes may hide. Look before placing your hands or feet anywhere, and do not put your hands or feet into places you cannot see. Avoid walking alone in snake-infested areas. Do not go out of your way to disturb or kill a snake. Avoid snakes – living and dead. Even dead snakes can bite reflexively.

If an employee is bitten by a snake the following actions are recommended: An attempt should be made to identify the snake. Do not try and capture or kill the snake.

The victim should be transported to the nearest hospital within 30 minutes (See attached Map). First aid consists of washing the area around the wound to remove any unabsorbed venom. Keep the victim calm and limit the victim's physical activity. While limiting movement of the bitten body part, keep the bitten area at the level of the heart.

Remove all constricting clothing or jewelry from the bite site because swelling may occur. Remove shoes if bitten on the leg.

- Do not apply a tourniquet.
- Clean the wound if possible.
- Do not pack wound in ice or apply heat.
- Do not give the victim a sedative or alcohol.
- Do not waste time capturing or killing the snake.
- Do not cut into the bite area; you might damage important nerves, tissues or muscles

6.2 Physical Hazards

6.2.1 Heavy Equipment

Physical hazards associated with services to be conducted at this project site are expected to include hazards from heavy equipment being operated at the site. Personnel exposure to electrical equipment, trench/excavation/drilled shaft hazards, heat stress, falls and high noise levels are also possible. Physical hazards at construction project sites could cause slips, trips and falls, traffic accidents, electrical shock, crushing, pinching, cuts or lacerations, falls, and falling object injuries. Also, improper handling of soil samples or density/moisture gauging devices can cause musculoskeletal strain/sprain injuries.

- A first aid kit and fire extinguisher will be immediately available at all times.
- A minimum horizontal and vertical clearance distance of **10 feet** must be maintained between the equipment and overhead power lines; use spotters to help equipment operator maneuver the vehicle when near overhead power lines.

6.2.2 Excavation Hazards

The OSHA Excavations standard (29 CFR 1926, Subpart P) requires employers responsible for an excavation to assign a "competent person" to oversee the excavation and to safeguard personnel who may be required to enter the excavation.

6.2.2.1 Inspection by Competent Person

Prior to entering trenches/excavations, a designated competent person shall have inspected the excavation and surrounding areas to evaluate:

- Indications of a situation which could result in cave-in.
- Indications of a failure of a protective system.
- Development of a possibly hazardous atmosphere.

Such inspections must also be made after every rainstorm or other hazard-increasing occurrence (i.e., blasting operation, etc.)

6.2.2.2 Personnel Entry/Evacuation

Personnel will not enter trenches with vertical sidewalls in excess of 5 feet in depth.

If personnel observe situations which could result in possible cave ins, slides, failure of protective systems or other hazardous condition, they will not enter or will immediately evacuate the trench or excavation. Personnel will immediately report site conditions to the Environmental Consultant Project Manager or their Supervisor. The Environmental Consultant Project Manager (or senior-level designee) is responsible for discussing site conditions with the excavation contractor and other personnel responsible for the site.

Environmental Consultant personnel who observe situations which could potentially result in cave-in, failure of protective systems or other hazardous conditions will immediately report their concerns to the excavation contractor or other responsible party, and order all Environmental Consultant personnel out of the trench or excavation. Environmental Consultant personnel will not permit employees to enter or re-enter the trench or excavation until the hazardous condition has been eliminated.

Personnel will not work in excavations in which there is accumulated water or in which water is accumulating unless the hazards posed by water accumulation have been evaluated and controlled by the designated Competent Person.

6.2.3 High Voltage Power Line Hazards

Services provided at the site may be conducted near high voltage power lines. When working within 10 feet of an overhead high voltage line, you are required to first give notice to the Prime Contractor. Notice MUST be given at least 72 hours BEFORE commencing work. No work may be commenced within 10 feet of a high voltage line until the electrical personnel has taken safety precautions against the danger from accidental contact. The Prime Contractor will respond in a reasonable time and, at its option, may choose to deenergize and ground the line, relocate it, install protective covering, or install mechanical barriers. A complete copy of the High Voltage Safety Act *(Code 1981, section 46-3-30, enacted by Ga. L. 1992, p. 2141, section 1.)* is included in Appendix B.

6.2.4 Other Hazards

Other physical hazards which may be present on this project site include:

- Back injuries due to improper lifting - Use proper lifting techniques. Lift with the legs, not the back. Keep loads close to the body and avoid twisting. Loads heavier than 50 pounds (lbs.) require a second person or mechanical device for lifting. Use mechanical devices such as drum dollies, hand trucks, and tool hoists (for lifting augers) to lift or move heavy loads whenever possible.
- Ergonomic Stress - Lift carefully with load close to body with the legs taking most of the weight. Get help with lifts greater than 40 lbs. When working with a heavy tool or object, keep legs under the load and do not overreach or twist to the side. Reposition body to be squarer to the load and work. Push loads, rather than pull, whenever feasible. Do not persist with lifting when the load is too heavy. Use a mechanical lifting aid or have a coworker assist with the lift. Rotate repetitive tasks to avoid soft-tissue fatigue.
- Falls From Elevated Surfaces - Protect employees from falling off surfaces that have a side or an edge that is 6 ft or more above a lower level. Provide a safety harness and shock-absorbing lifeline or adequate fall protection where applicable. Employees must wear them when working 6 ft or higher above the platform or main work deck. Install either a guardrail system or fall arrest system that conforms to 29 CFR 1926.502 (d) and is approved by the American National Standards Institute.
- Fire and Explosion - Make ABC fire extinguishers accessible in the work area. Store flammables in Underwriter's Laboratory and Occupational Safety and Health Administration (OSHA) approved metal safety cans equipped with spark arrestors. Store flammable containers more than 50 ft from possible ignition sources. Keep exhaust equipment powered by internal combustion engines well away from flammables and combustibles. Secure hot work permits/approvals before welding or cutting. Store and use compressed gases in a safe manner. Never refuel equipment (e.g., generators)

while it is in operation or hot enough to ignite fuel vapors. Conspicuously mark operations that pose fire hazards "No Smoking" or "Open Flames." Remove trash, weeds, and unnecessary combustibles from the Exclusion Zone (EZ). Transfer of potentially flammable liquids will be conducted with intrinsically safe pumping equipment. Drums will be bonded and grounded prior to transfer of potentially flammable liquids.

- Vehicles - Obey all site traffic signs and speed limits. Seat belts must be functional and in use during operation of any site vehicles (including rentals). Operator shall regularly inspect the vehicle for defective parts, such as brakes, controls, motor, chassis and drives. Always be aware and stay alert to traffic around the work area.
- Inclement Weather – The project may be shut down by the SSO during the following inclement weather conditions: poor visibility; precipitation severe enough to impair safe movement or travel; lightning in the immediate area; steady winds in excess of 40 mph; or, other conditions as determined by the SSO or Corporate Safety and Health Manager. Work will resume when the conditions are deemed safe by the SSO.
- Noise - Wear hearing protection when speech becomes difficult to understand at a distance of 10 ft and while standing within 20 to 25 ft from heavy equipment, pneumatic power tools, steam cleaners, and other equipment in operation that can generate more than 85 decibels (A-weighted scale) (dBA).
- Slips, Trips, and Falls - Clear work area of obstructions and debris before setting up. Alter work areas as necessary to provide a safe, reasonably level area. All walking and working surfaces shall continually be inspected and maintained to be free of slip, trip, and fall hazards. Keep platforms, stairs, and immediate work areas clear. Do not allow oil, grease, or excessive mud to accumulate in these areas. Eliminate slip, trip, and fall hazards or identify them clearly with caution tape, barricades, or equivalent means. Store loose or light material and debris in designated areas or containers. Secure tools, materials, and equipment subject to displacement or falling.
- Traffic Control - If site activities interrupt the normal flow of pedestrian or vehicular traffic, barricades and warning signs which comply with the Manual on Uniform Traffic Control Devices and/or State or local ordinances will be erected around affected equipment. Safety orange work vests will be worn by personnel working within 10 feet of any active roadway.

7.0 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

LEVEL D personal protective equipment to include:

- Hard Hat
- Protective Safety Toe Boots

- Nitrile, Neoprene Rubber or Silver Shield Outer Gloves
- Nitrile or Latex Inner Liners
- Safety Eye Wear (ANSI Z-87 approved)
- Hearing Protection (if within 10 feet of heavy machinery or other equipment which impairs normal conversation at < 5 feet.)
- If needed, DuPont Tyvek coveralls shall be worn to prevent liquids or solids from contacting exposed skin or clothing.

8.0 DECONTAMINATION

8.1 Personal Decontamination

Personnel decontamination is necessary on all potentially contaminated intrusive projects. Personnel decontamination for this project will consist of washing off safety footwear, proper cleaning or disposal of outer and inner gloves and thorough washing of face, arms and hands. A full body shower will be required as soon as possible upon leaving the project site. Expendable personal protective equipment will be placed in plastic trash bags, sealed and disposed of per client agreement. Decontamination solutions will be containerized or disposed of as arranged by Project Manager.

8.2 Equipment Decontamination

Decontamination of equipment will be performed to limit the migration of contaminants off-site. All equipment will be cleaned prior to site entry to remove grease, oil and encrusted soil. Decontamination of large equipment will consist of physically removing gross contamination with shovels, brushes etc. followed by detergent and water high pressure wash with a clean water rinse. Cuttings and decontamination fluids will be handled as outlined in the project work plan.

9.0 SITE COMMUNICATIONS

Communication between personnel within the Work Zone will be via verbal communication or hand signals. Visual contact between members of task teams should be possible throughout the course of project activities. Contact with the SSO will be through direct verbal communication. The following hand signals will be used by personnel wherever respiratory protection and/or equipment noise limit verbal communication.

Signal	Meaning
Thumbs Up	OK, all is well
Grab throat with both hands	Can't breathe
Shake head, thumbs down	NO, negative
Point right (when facing equipment operator)	Move/steer left
Point left (when facing equipment operator)	Move/steer right
Grab partner's wrist	Leave area immediately

10.0 EMERGENCY RESPONSE PROCEDURES

10.1 Emergency Notification

The Project Manager is responsible for obtaining and recording the following emergency information prior to site mobilization:

Location of Nearest Telephone: Environmental Consultant personnel will have cell phones on site at all times.

Nearest Hospital/Clinic: Memorial University Medical Center Phone: (912)-350-8000

Estimated Drive Time: 11 minutes

Directions From Site: Southwest on Kerr McGee Road; Right onto E. President St; Take ramp onto Harry S. Truman Pkwy; Take Delesseps Ave exit; Continue straight; Turn right onto E 66th St.: Destination on right. Map Attached in Appendix C

Ambulance: **911**

Fire Department: **911**

Police: **911**

Poison Control Center: **1-888-222-1222**

Project Personnel Emergency Contact Information

Project Role	Name	Office Phone	Mobile Phone

10.2 Personal Injury

The SSO and at least one other individual on site will be appropriately trained to administer first aid. A certificate issued by the American Red Cross, National Safety Council or equivalent will be considered acceptable.

For minor injuries, such as cuts, burns, exhaustion, heat cramps, insect stings, etc., the affected employee will be removed to an uncontaminated area. The SSO or other designated employee trained in first aid procedures will administer appropriate first aid. If the injury warrants additional medical attention, the affected employee will be properly decontaminated and transported to the nearest hospital or emergency medical facility.

For more serious injuries the Site Safety Officer or designee will summon an ambulance to the project site. No attempt will be made by personnel to move the victim, without the aid and/or instructions of qualified medical personnel.

Where air monitoring indicates the absence of toxic gases or vapors, the ambulance will be directed to the affected employee. If site conditions warrant and as time permits, the wheels of the ambulance will be decontaminated with high pressure wash. The SSO or designee will accompany the ambulance to the medical facility, and provide guidance concerning additional decontamination which may be required for the injured employee, ambulance or attendants.

Whenever an injury occurs on sites with contamination requiring personal protective equipment greater than Level D modified, a minimum of two employees will don appropriate equipment and proceed to the victim. An ambulance will be called immediately. If the extent of injuries permit, the injured employee will be removed to fresh air. Appropriate first aid will be administered.

If rescuer(s) assess that the victim cannot be removed without a stretcher or other specialized equipment, the victim will be removed at the earliest possible moment by appropriately attired personnel with the direction and/or assistance of qualified medical response personnel. The injured employee will be immediately decontaminated and transported to the nearest medical facility. A crew member designated by the SSO will inform the ambulance crew of contaminants of concern and provide assistance with additional decontamination if required.

10.3 Evacuation and Shutdown Procedures

The site owner and SSO will establish and notify site personnel of emergency "rally" points. In the event of a site emergency, personnel will immediately exit the site and assemble at the designated rally point. Evacuation routes will be dependent on site topography and wind conditions. The routes will be selected and presented by the SSO daily prior to site activity.

If emergency evacuation becomes necessary, the SSO will sound the emergency alarm (e.g. support vehicle horn or compressed air horn). Personnel will safely shutdown all electrical and mechanical equipment and quickly proceed to closest designated rally point. The SSO will then account for each crew member on site.

In the event that an employee or subcontractor employee does not report to the designated rally point within 5 minutes of the evacuation alarm, the SSO will perform an immediate assessment of site conditions. If site conditions do not pose an immediate hazard to life or health, the SSO will initiate search and rescue efforts utilizing two crew members attired in appropriate personal protective equipment.

10.4 Spill Prevention / Action Plan

The Contractor will be required to maintain and adhere to an Emergency Response and Spill Prevention Plan for applications during all phases of work. The Emergency Response and Spill Prevention Plan is to include all aspects of:

- Petroleum product transportation, storage, use, and disposal. This is to include consideration of petroleum product contaminated materials such as rags, soil, and water.
- Other non-petroleum materials that are considered environmental contaminants and therefore risks;
- Equipment maintenance to reduce risk of spills. This shall include, but not be limited to, heavy equipment maintained to be free of excess oil and grease, and regular inspection of hydraulic systems.

Spill response equipment that is to be kept on-site should be specified in the Emergency Response and Spill Prevention Plan. The location and content of spill response kits and equipment will be maintained at the specified level and inspected on a regular basis. Contractors are also to adhere to the following:

- Regularly monitor equipment and vehicles for leaks;
- Store chemicals in sealed containers with labels;
- Store waste materials securely to prevent leachate.

The Emergency Response and Spill Prevention Plan will be communicated to all field crews at the start of work and thereafter at regular intervals throughout the Contract, and will be strictly enforced. The Contractor must post the Emergency Response and Spill Prevention Plan in conspicuous locations at each site location.

11.0 HEAT STRESS

11.1 Level D/D Modified PPE

Whenever ambient temperature exceeds 70 degrees Fahrenheit (F) and personal protective equipment requirements are Level D or Level D modified, the following heat stress monitoring and preventive measures will be implemented.

At least one gallon of water will be available for each field employee during each day of site activity. The designated Site Safety Officer and one designee will observe personnel for signs of heat stress (excessive perspiration, flushed skin, nausea, etc.).

If such signs are observed, affected workers will be required to leave the contaminant zone, loosen protective clothing and rest. During the rest period affected personnel will drink at least one 8 oz. glass of cool water. Pulse will be checked at the beginning of the rest period. Personnel will not return to work until pulse rate is less than 90 beats per minute.

11.2 Level C, B or A PPE

In addition to the above precautions, the following procedures will be implemented whenever the ambient temperature exceed 70˚F and personal protective equipment requirements are Level C or above. Ambient temperature will be measured with a dry bulb thermometer and percent cloud cover will be estimated:

- 1.0 = No Clouds
- 0.75 = 25% Clouds
- 0.5 = 50% Clouds
- 0.25 = 75% Clouds
- 0.0 = 100% Clouds

Calculate the adjusted temperature using the following formula:

ADJUSTED TEMPERATURE = 13(% CLOUD COVER) + DRY TEMPERATURE

Rest regimens and physiological monitoring (oral temperature and radial pulse) will be implemented at frequencies dependent upon adjusted temperature.

Adjusted Temperature	Rest Period/Monitoring Frequency
90+	After 15 minutes
87.5-90	After 30 minutes
82.5-87.4	After 60 minutes
77.5-82.5	After 90 minutes
70.5-77.4	After 120 minutes

Employees will return to work only after oral temperature is below 99.7 degrees F and pulse rate < 90 beats per minute. Fluid replacement will be encouraged during each rest period. The use of stimulants and alcoholic beverages in off hours will be discouraged.

APPENDIX A

ACKNOWLEDGEMENT OF INSTRUCTION

ACKNOWLEDGMENT OF INSTRUCTION

All Terracon personnel are required to sign the following acknowledgment of instruction form prior to conducting project activities. This acknowledgment is not a waiver. It is the primary method used in compiling environmental experience and contaminant exposure records for Terracon personnel. Upon written request, a copy of your environmental work record will be provided by the Corporate Safety and Health Manager.

I understand that this project involves the investigation of a project site where soils are potentially impacted by unknown chemical hazards. I have read this Safety and Health Plan and have received instructions for safe work practices, personal protective equipment and air monitoring requirements. I further understand that if I encounter unanticipated contamination I am to leave the site and immediately notify the Project Manager and Corporate Safety and Health Manager of conditions discovered.

PROJEC: Deptford Tract Site

Name (Please Print)	**Signature**	**Date**

PERSONAL PROTECTIVE EQUIPMENT UTILIZED:

_____ LEVEL D **_____ LEVEL D MOD.** **____ LEVEL C**

Safety briefing performed by: _____ Date:_____

APPENDIX B

HIGH VOLTAGE SAFETY ACT

APPENDIX C

DIRECTIONS TO HOSPITAL

APPENDIX A

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Name (Please Print)	**Signature**	**Date**

PERSONAL PROTECTIVE EQUIPMENT UTILIZED:

_____ LEVEL D **_____ LEVEL D MOD.** **____ LEVEL C**

Safety briefing performed by: _____ Date:_____

APPENDIX B

HIGH VOLTAGE SAFETY ACT

Community
Electric Safety
Power Lines
Around the House
Power Tools and Cords
Machinery & Power Lines
Circuits, Wiring & GFCIs
Electrical Fires
Safety Programs
Call Before You Dig

High Voltage Safety Act

46-3-30. Short title.
This part shall be known and may be cited as the "High-voltage Safety Act."

(Code 1981, section 46-3-30, enacted by Ga. L. 1992, p. 2141, section 1.)

46-3-31. Purpose of part.
The purpose of this part is to prevent injury to persons and property and interruptions of utility service resulting from accidental or inadvertent contact with high-voltage electric lines by providing that no work shall be done in the vicinity of such lines unless and until the owner or operator thereof has been notified of such work and has taken one of the safety measures prescribed in this part.

(Code 1981, section 46-3-31, enacted by Ga. L. 1992, p. 2141, section 1.)

46-3-32. Definitions.
As used in this part, the term:

"High-voltage lines" means an electric line or lines installed above ground level having a voltage in excess of 750 volts between conductors or from any conductor to ground.
"Notice" means actual notification given to the center.
"Person responsible for the work" means the person actually doing the work as well as any person, firm, or corporation who employs and carries on his payroll any person actually doing the work or who employs a subcontractor who actually does the work; provided, however, that this term does not mean one who is exempted under Code Sections 46-3-37 and 46-3-38.
"Utilities protection center" or "center" means the corporation or other organization formed by utilities which receive advance notifications regarding work and distributes such notifications to its utility members.
"Utility" means any person operating or maintaining high-voltage lines within the state.
"Work" means the physical act of performing or preparing to perform any activity under, over, by, or near high-voltage lines, including, but not limited to, the operation, erection, handling, storage, or transportation of any tools, machinery, ladders, antennas, equipment, supplies, materials, or apparatus or the moving of any house or other structure whenever such activity is done by a person or entity in pursuit of his trade or business.

(Ga. L. 1960, p. 181, section 1; Ga. L. 1974, p. 153, section 1; Code 1981, section 46-3-30; Code 1981, section 46-3-32, as redesignated by Ga. L. 1992, p. 2141, section 1.)

46-3-33. Required conditions for commencing work within ten feet of high-voltage line.
No person, firm, or corporation shall commence any work as defined in paragraph (6) of Code Section 46-3-32 if at any time any person or any item specified in paragraph (6) of Code Section 46-3-32 may be brought within ten feet of any high-voltage line unless and until:
The person responsible for the work has given the notice required by Code Section 46-3-34; and
The owner or operator of such high-voltage line has effectively guarded against danger from accidental contact by either deenergizing and grounding the line, relocating it, or installing protective covering or mechanical barriers, whichever safeguard is deemed by the owner or operator to be feasible under the circumstances.

(Code 1981, section 46-3-33, enacted by Ga. L. 1992, p. 2141, section 1.)

46-3-34. Utilities protection center; funding of activities; notice of work; delay; responsibility for completing safety requirements.

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a. All utilities shall organize, participate as members in, and cooperate with the utilities protection center. In lieu of organizing a new center, if the organization defined as the utilities protection center in paragraph (13) of Code Section 25-9-2 undertakes to serve as the utilities protection center referred to in this part, it may do so and no duplicative center shall thereafter be established. The activities of the center relating to high-voltage lines shall be funded by all utilities.
b. Where work is to be done, the person responsible for such work shall give notice to the utilities protection center during its regular business hours at least 72 hours, excluding weekends and holidays, prior to commencing such work and such notice shall:
c.
   Describe the tract or parcel of land upon which the work to be done is to take place with sufficient particularity to enable the owner or operator of the high-voltage lines to ascertain the precise tract or parcel of land involved;
   State the name, address, and telephone number of the person who will be in charge of the work;
   Describe the type of work to be engaged in by the person; and
   Designate the date upon which the work will commence and will be completed.

d. After receipt of the notice required by subsection (b) of this Code section, the owner or operator of the high-voltage line shall contact the person whose name is given as required by paragraph (2) of subsection (b) of this Code section within a reasonable time, so that appropriate satisfactory arrangements can be made for the completion of the safety precautions required by Code Section 46-3-33, including coordination of work schedules and payment of costs required to effect such safety precautions. Upon completion of such arrangements, the owner or operator of such high-voltage line shall effect such safety precautions within a reasonable time.
e. If, after such arrangements are made, a delay in commencing the work is encountered, then the person responsible for the work shall be required to give a new notice as specified in subsection (b) of this Code section.
f. The person responsible for the work shall be responsible to assure that the safety requirements of Code Section 46-3-33 are completed prior to the commencement of any such work.

(Ga. L. 1960, p. 181, section 5; Code 1981, section 46-3-33 Code 1981, section 46-3-34, as redesignated by Ga. L. 1992, p. 2141, section 1.)

46-3-35. Allocation of expense of precautionary measures taken pursuant to public highway construction.

Where, during any public highway construction, any temporary precautionary measure is required by this part to guard against accidental contact with high-voltage lines that are located upon public highways or roads which are owned by this state or a county thereof and which are located outside the corporate limits of any municipality, the expense of such temporary precautionary measure shall be borne by the owner or operator of such lines, provided that such construction is undertaken pursuant to a permit issued by the state or county, for which permit neither the state nor the county received consideration. The person responsible for the work nevertheless shall not commence any work until he has given notice as required by Code Section 46-3-34 and the safety precautions required by Code Section 46-3-33 have been effected.

(*Ga. L. 1960, p. 181, section 5A; Code 1981, section 46-3-34; Code 1981, section 46-3-35, as redesignated by Ga. L. 1992, p. 2141, section 1.*

46-3-36. Administration and Enforcement of part by Commissioner of Labor.

Reserved. Repealed by Ga. L 1994, page 1673, section1 effective April 19, 1994.

46-3-37. Applicability of part to railway systems, electrical engineering systems, etc.

a. This part shall not be construed as applying to the construction, reconstruction, operation, and maintenance of overhead electrical

conductors and their supporting structures and associated equipment by authorized and qualified electrical workers. Specifically, this part shall not be construed as applying to the construction, reconstruction, operation, and maintenance of overhead electrical circuits or conductors and their supporting structures and associated equipment for rail transportation systems or for electrical generating, transmission, and distribution systems or for communication systems, when such work is performed by authorized and qualified employees of any person engaged in such work.

b. When applied to railway systems, the exception provided in this code section shall be construed as permitting operation of standard rail equipment which is normally used in the transportation of freight or passengers, or both, or in the operation of relief trains or other equipment in emergencies, or in the maintenance of way service, at a distance of less than ten feet from any high-voltage conductor of such railway system; provided, however, that normal repair or construction operations at a distance of less than ten feet from any high-voltage conductor by other than properly qualified and authorized persons or employees under the direct supervision of an authorized person who is familiar with the hazards involved is prohibited, unless there has been compliance with the safety provisions of Code Section 46-3-33.
c. Any telephone company or other entity which has a joint use contract with an electric company is specifically exempted from this part.

(Ga. L. 1960, p. 181, section 8; Code 1981, section 46-3-36; Code 1981, section 46-3-37, as redesignated by Ga. L. 1992, p. 2141, section 1.)

46-3-38. Applicability of part to moving or transportation of houses or buildings.

In addition to the exceptions set forth in Code Section 46-3-37, this part shall not be construed as applying to and shall not apply to the moving or transportation of houses or buildings or parts thereof when such moving is under the jurisdiction of, and is undertaken pursuant to authority granted by, the Georgia Public Service Commission.

(Ga. L. 1960, p. 181, section 4; Code 1981, section 46-3-37; code 1981, section 46-3-38, as redesignated by Ga. L. 1992, p. 2141, section 1.)

46-3-39. Restriction on liability of owners and operators of high-voltage lines; effect of part on duty or degree of care.

a. The owner of operator of high-voltage lines shall not be liable for damage or loss to person or property resulting from work within ten feet of high-voltage lines unless notice has been given as required by Code Section 46-3-34 and the owner or operator of the high-voltage line has failed to comply with the provisions of Code Section 46-3-33.
b. Except as provided in subsection (a) of this Code section, nothing in this part shall be construed or applied so as to limit or reduce the duty or degree of care applicable to owners or operators of high-voltage lines with respect to damage or loss to person or property.

(Ga. L. 1960, p. 181, section 10; Code 1981, section 46-3-38; Code 1981, section 46-3-39, as redesignated by Ga. L. 1992, p. 2141, section 1.)

46-3-40. Criminal penalty; strict liability for injury or damage; indemnification; liability for cost of delay.

a. Any person responsible for the work who violates any of the provisions of this part shall be guilty of a misdemeanor and, upon conviction thereof, shall be liable for a fine of $1,000.00 for a first offense and $3,000.00 for a second or subsequent offense.
b. Any person responsible for the work who violates the requirements of Code Section 46-3-33 and whose subsequent activities within the vicinity of high-voltage lines result in damage to utility facilities or result in injury or damage to person or property shall be strictly liable for said injury or damage. Any such person shall also indemnify the owner or operator of such high-voltage lines against all claims, if any, for personal injury, including death, property damage, or service interruptions, including costs

incurred in defending any such claims resulting from work in violation of Code Section 46-3-33.

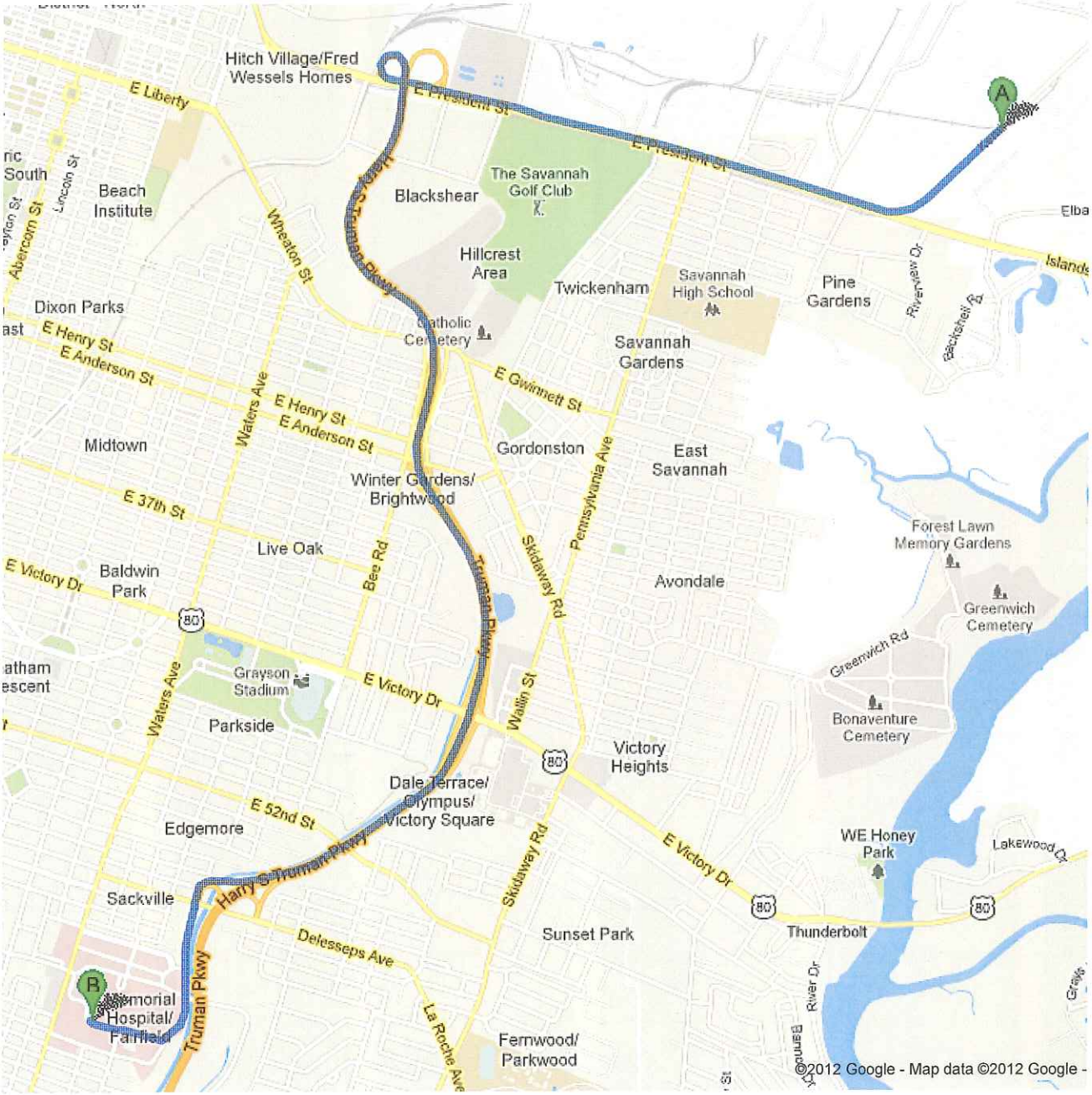
c. In the event the owner or operator of the high-voltage line fails to effect the safeguards required by Code Section 46-3-33 within a reasonable time after notice is given and appropriate arrangements are made pursuant to Code Section 46-3-34, such owner or operator shall be liable for the reasonable costs incurred by any such delay.

(Ga. L. 1960, p. 181, section 7; Code 1981, section 46-3-39; Code 1981, section 46-3-40, as redesignated by Ga. L. 1992, p. 2141, section 1.)

APPENDIX C

DIRECTIONS TO HOSPITAL

Directions to Memorial University Medical Center
4700 Waters Avenue, Savannah, GA 31404 - (912) 350-8000
6.5 mi – about **12 mins**



A Kemira Rd

1.	Head **southwest** on **Kemira Rd** About 1 min	go 0.4 mi total 0.4 mi
2.	Slight right onto **E President St** About 4 mins	go 1.7 mi total 2.1 mi
3.	Take the ramp onto **Harry S Truman Pkwy/Truman Pkwy** About 3 mins	go 3.4 mi total 5.5 mi
4.	Take the **Delesseps Ave** exit	go 0.3 mi total 5.8 mi
5.	Continue straight About 2 mins	go 0.5 mi total 6.3 mi
6.	Turn right onto **E 66th St** Destination will be on the right About 1 min	go 0.2 mi total 6.5 mi

B **Memorial University Medical Center**
4700 Waters Avenue, Savannah, GA 31404 - (912) 350-8000

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2012 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.