

# Voluntary Remediation Program Compliance Status Report

Former Swift & Company Meat Processing Plant  
Moultrie, Colquitt County, Georgia  
HSI Site No. 10509

Submitted to:

Georgia Department of Natural Resources  
Environmental Protection Division  
Hazardous Sites Response and Remediation Program  
Suite 1054, East Tower  
2 Martin Luther King Jr. Drive SE  
Atlanta, Georgia 30334

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**Prepared for:** Conagra Brands  
222 Merchandise Mart Plaza, Suite 1300, Chicago, IL 60654

**Date:** February 27, 2018

**Prepared by:** Amec Foster Wheeler Environment & Infrastructure, Inc.  
1075 Big Shanty Road NW, Suite 100, Kennesaw, Georgia 30144

**Project No.:** 6122170498

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February 27, 2018

Mr. Allan Nix  
Unit Coordinator  
Georgia Department of Natural Resources  
Response and Remediation Program  
2 Martin Luther King Jr. Drive SE Suite, 1054 East  
Atlanta, Georgia 30334



Subject: Voluntary Remediation Program Compliance Status Report  
Former Swift & Company Meat Processing Plant  
1189 North Main Street, Moultrie, Colquitt County, Georgia  
HSI Site No. 10509

Dear Mr. Nix:

On behalf of Conagra Brands and Swift & Company, Inc., Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) respectfully submits the attached Voluntary Remediation Program (VRP) Compliance Status Report (CSR) for the above-referenced site. One hard copy and two electronic copies are enclosed, with the electronic copies on compact discs (CDs) in searchable PDF format.

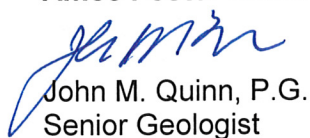
This report documents and certifies compliance with the delineation and cleanup requirements of EPD's Voluntary Remediation Program (VRP).

Approval to abandon all monitoring wells installed on site, other than those to be used for annual monitoring to demonstrate ongoing compliance, is requested. Annual monitoring of point of demonstration monitoring wells MW-28R and MW-32 will be conducted for three years or until MW-28R and MW-32 have met the Type 1 through Type 4 RRS for lead of 0.015 mg/L in two successive monitoring events, whichever occurs first.

Please contact us at 770-421-3400 with any questions you may have regarding the enclosed report. Thank you for your assistance with this project.

Sincerely,

**Amec Foster Wheeler Environment & Infrastructure, Inc.**

  
John M. Quinn, P.G.  
Senior Geologist

  
David E. Smoak, P.G.  
Associate Geologist/Project Manager

cc: Ms. René Rimelspach, Conagra Foods  
Thomas Braun, Stoel Rives  
Mr. Mickey Waller, City of Moultrie  
Mr. Billy Fallin, Tumlin Estate

Attachments: VRP Compliance Status Report

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### PG CERTIFICATION

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional geologist who is registered with the Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

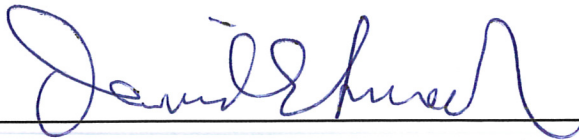
The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

David E. Smoak/Georgia, P.G. #1314

Printed Name and GA PG Number

2/27/18

Date



Signature and Stamp



## CERTIFICATION OF COMPLIANCE WITH RISK REDUCTION STANDARDS

I certify under penalty of law that this report and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Based on my review of the findings of this report with respect to the Rules for Hazardous Site Response, Rule 391-3-19.07 and in compliance with provision, purposes, standards, and policies of the Voluntary Remediation Program Statute O.C.G.A. 12-8-108, I have determined that the areas of the property affected by releases comply with the following risk reduction standards (RRS):

- The surface and subsurface soils on the following properties comply with Type 1 RRS for site COCs. The only soil constituent not in compliance is an exceedance of chromium in one subsurface soil sample (GSB-1). Subsequent subsurface soil samples collected in the area of this exceedance exhibited maximum chromium concentrations below the Type 1 soil RRS for chromium. This single outlier subsurface soil chromium concentration of 1319 mg/kg from GSB-1 is justifiably disregarded, resulting in compliance with Type 1 RRS for chromium in soil at the site. Chromium was detected in groundwater at a concentration less than the Type 1 groundwater RRS, indicating that chromium in subsurface soil has not leached significantly at the site. The subject properties are subject to Environmental Covenants.
  - City of Moultrie: A 2.53 acre tract (Tax ID Parcel M022A 005), which represents the southernmost portion of the former 14-acre Swift & Company meat processing facility property.
  - Rennie A. Tumlin Estate: A 1.1 acre (previously 2.52 acre) parcel (Tax ID Parcel M022A 004).
  - Crop Production Services, Inc. (CPS): A 1.42 acre parcel (Tax ID Parcel M022A 004A). This is a portion of the site that was previously owned by the Tumlin Estate but subdivided in September 2016 in an acquisition by CPS. CPS owns an additional 5.62 acres abutting the west side and extending to the north that were purchased from other parties (Joint Development Authority (JDA) of Brooks, Colquitt, Grady, Mitchell, and Thomas Counties, the Arnold Property, and North Street Development).
- Portions of the following properties are not in compliance with Types 1 through 4 RRS for site COCs in groundwater:
  - The groundwater on the City of Moultrie property (Tax ID Parcel M022A 005) complies with Type 1 RRS for site COCs except for lead, barium and arsenic in groundwater. The property complies with Type 4 RRS for barium. The

groundwater complies with Type 5 RRS for lead and arsenic and is subject to an Environmental Covenant.

- The groundwater on the Rennie A. Tumlin Estate property (Tax ID Parcel M022A 004) complies with Type 1 RRS for site COCs except for benzene, lead, chromium and arsenic in groundwater. The groundwater complies with Type 5 RRS for benzene, lead, chromium and arsenic and is subject to an Environmental Covenant..
- The groundwater on the Crop Production Services, Inc. (CPS) property (Tax ID Parcel M022A 004A) complies with Type 1 RRS for site COCs.

Regarding benzene in groundwater, in accordance with EPD's approval of the 2002 Corrective Action Plan for the Underground Storage Tank Removal completed by AET, no further corrective action for benzene is anticipated for this property, as documented by a No Further Action Required (NFA) letter for the UST issued by EPD on July 23, 2003.

Certified by: \_\_\_\_\_



Date: \_\_\_\_\_

2/27/18

Conagra Brands

NAME: Trevor Foster

TITLE: Vice President & Chief Counsel

## 1.0 INTRODUCTION

This Compliance Status Report (CSR) for the Former Swift & Company Meat Packing Plant (Swift) Site (Site) was prepared by Amec Foster Wheeler Environment & Infrastructure (Amec Foster Wheeler) on behalf of Conagra Brands (Conagra) for submittal to the Response and Remediation Program of the Georgia Environmental Protection Division (EPD). This CSR is submitted in accordance with the EPD's Voluntary Remediation Program (VRP) Act. This chapter discusses the Site's site description, site history and previous environmental work at the Site.

### 1.1 SITE DESCRIPTION AND SETTING

The subject property is located in an industrial-commercial area at Latitude 31° 11' 35" N and Longitude 83° 47' 24" W, less than 1 mile north of the center of Moultrie in Colquitt County, Georgia (Figure 1). The subject property is a 2.53-acre tract representing the southern-most portion of the former 14-acre Swift & Company meat processing facility property, and is currently owned by the City of Moultrie, Georgia. A site location map of the subject property, with a topographic map of the surrounding area, is provided as Figure 1. The legal description of the property was provided in the 2010 Revised CSR (MACTEC, 2010) and the 2015 VRP Application (Amec Foster Wheeler, 2015a).

The Site is comprised of three properties listed on the HSI as qualifying properties and located at 1189 North Main Street (U.S. Highway 319 Business, Georgia Highway 33). Figure 2 presents a site map with the property boundaries and with the area of former Swift & Company operations shown. The property boundaries and ownership have changed as a result of an acquisition by Crop Production Services in September 2016. The HSI listed parcels now include:

- A 2.53 acre tract currently owned by the City of Moultrie (Tax ID Parcel M022A 005), which represents the southernmost portion of the former 14-acre Swift & Company meat processing facility property.
- A 1.1 acre (previously 2.52 acre) parcel owned by the Rennie A. Tumlin Estate (Tax ID Parcel M022A 004).
- A 1.42 acre parcel (Tax ID Parcel M022A 004A) now owned by Crop Production Services, Inc. (CPS). This is a portion of the site that was previously owned by the Tumlin Estate but subdivided in September 2016 in an acquisition by CPS. CPS owns an additional 5.62 acres abutting the west side and extending to the north that were purchased from other parties (Joint Development Authority (JDA) of Brooks, Colquitt, Grady, Mitchell, and Thomas Counties, the Arnold Property, and North Street Development).

The western and southern boundaries of the subject property are bordered by an active railroad right of way owned by Georgia & Florida RailNet, Inc. North Main Street borders the subject property on the east. The northern boundary of the subject property is bounded by property that was part of the former Swift facility and currently includes the Tumlin Estate and Crop

Production Services. This adjoining property containing the Former Boiler and Engine House is currently owned by CPS.

The subject property is currently an open tract that was graded and seeded. Buildings on the property were demolished in 2001 prior to the initial CSR investigations performed by AET. The demolition rubble was removed from the site and disposed off-site. Figure 2 shows the current condition of the properties, existing Site features and monitoring wells.

During the VRP reporting period of June through December 2016, as reported in VRP Status Report No. 3 (Amec Foster Wheeler, 2016a) CPS purchased 7.04 acres of property to the north and partially inclusive of the Swift Moultrie HSI site. These properties included:

- 1.2 acres of the former Tumlin Estate property which was part of the site.
- 1.62 acres abutting the northwest side of the site that was formerly owned by the Joint Development Authority of Brooks, Colquitt, Grady, Mitchell, and Thomas Counties.
- 0.49 acres of the former Arnold property.
- 3.51 acres of the North Main Street Properties.

Property Affidavits were filed and recorded for the VRP Properties that are part of the site including the City of Moultrie and the Tumlin Estate. These notices were provided to Georgia EPD on October 31, 2016. The property deed for the portion of the Tumlin Estate that was transferred to CPS contained the HSI Site Listing Notice. Therefore, it was not necessary to file a separate affidavit for this property because the HSI language is already included in the deed exhibit. EPD provided concurrence on October 25, 2016.

## **1.2 SITE HISTORY**

The Site history has been well documented in reports submitted to the EPD from 2011 to 2017, including the Revised CSR, the Corrective Action Plan (MACTEC, 2011), Semiannual Groundwater Monitoring Reports, the VRP Application and progress reports submitted semiannually from 2015 through 2017.

The former Swift Site was originally constructed in 1914 as a stockyard and meat-processing facility where hogs, cattle, and sheep were slaughtered, butchered, and packaged for the consumer market. The meat-processing plant operated until 1970. After 1970, Swift & Company constructed a new facility to the west now referred to as National Beef Packing Company, LLC.

After meat processing operations ceased, the buildings remained on the property for about 30 years and were believed to have been used for storage. The buildings on the 2.53-acre City of Moultrie tract were demolished in 2001, and the surface was subsequently graded and grassed. Information contained in a CSR prepared by Advanced Environmental Technologies, LLC (AET, 2003), and information provided by City of Moultrie representatives report the demolition debris was removed and properly disposed offsite. The Former Boiler and Engine House were demolished in 2011. There are no activities currently conducted on the City of Moultrie and the Tumlin properties. CPS is in the process of developing their property with some land

disturbance activities currently occurring on the former 1.42 acre Tumlin parcel which is part of the Site.

## **2.0 SITE BACKGROUND**

This section provides a summary of the Site's environmental history. Additional details on these topics is provided in the 2010 Revised CSR, the 2011 Corrective Action Plan (CAP), Semiannual and Annual Corrective Action Effectiveness Reports (CAERs), the 2015 VRP Application, and VRP Status Reports.

### **2.1 ENVIRONMENTAL AND REGULATORY HISTORY**

Previous investigations of the property detected volatile organic compounds (VOCs), and metals in groundwater. A few of the constituents exceeded the Hazardous Site Response Act (HSRA) notification concentrations. The environmental history of the site is summarized as follows:

- Assessments including soil and groundwater sampling were conducted in 1997.
- The Site was listed on the Hazardous Site Inventory (HSI) on June 6, 1998 as Site No. 10509.
- A HSRA CSR Assessment was conducted in 2001-2002 that included soil and groundwater sampling and submittal of a CSR. Buildings on the property were demolished in 2001 before the HSRA CSR investigations.
- Further CSR assessment was performed in 2003 (including submittal of a Revised CSR).
- Additional field investigation was conducted in 2004-2005.
- The available 2004-2005 data were included in the September 30, 2008, Revised CSR, which also included details for the 2007 and 2008 investigations conducted by MACTEC.
- The January 29, 2010 Revised CSR responded to the subsequent EPD comments on the September 30, 2008, Revised CSR, and included information from 2009 field investigations by MACTEC.
- A CAP was submitted on May 13, 2011, including information on supplemental soil and groundwater sampling conducted in February 2011. The proposed remedy in the CAP for the former Swift site was monitored natural attenuation (MNA).
- EPD gave Conditional Approval of the CAP In a letter dated December 12, 2011.
- The First Semiannual CAER (AMEC, 2012a) was submitted to EPD on June 12, 2012.
- The Second Semiannual CAER (AMEC, 2012b) was submitted to EPD on December 11, 2012.
- The Third Semiannual CAER (AMEC, 2013a) was submitted to EPD on May 24, 2013.
- The Fourth Semiannual CAER (AMEC, 2013b) was submitted to EPD on December 11, 2013.



- The First Annual CAER (ACAER) (Amec Foster Wheeler, 2015b) was submitted to EPD on February 27, 2015 as Appendix B to the VRP Application and Plan. Based on the results of the monitoring and the updated SourceDK models presented in the ACAER, and after discussions with EPD, Conagra made the decision to proceed with entering the site into the VRP.
- The EPD letter dated May 29, 2015 accepted the Site into the VRP and requested submittal of semi-annual VRP status reports.
- The EPD letter dated June 4, 2015 put forth comments to be addressed during implementation of the VRP. A response letter dated August 31, 2015 to the EPD Comments letter was submitted.
- The VRP Status Report No. 1 (Amec Foster Wheeler, 2015c) was submitted to EPD on December 8, 2015 as a semiannual progress report. The first Status Report covered the activities conducted subsequent to the EPD's May 29, 2015 VRP acceptance letter.
- The VRP Status Report No. 2 (Amec Foster Wheeler, 2016b) was submitted in May 2016 and included responses to an EPD comment letter dated January 25, 2016.
- Property Affidavits were filed and recorded for the VRP properties that are are part of site with notices provided to Georgia EPD on October 31, 2016.
- VRP Status Report No. 3 was submitted in December 2016 and included responses to an EPD comment letter dated September 26, 2016.
- VRP Status Report No. 4 (Amec Foster Wheeler, 2017) was submitted in May 2017 and included lateral delineation confirmation, including installation and sampling of two monitoring wells as previously requested by EPD, one (MW-28R) on the Bates property located across North Main Street to the east of the site, and one (MW-32) on the Georgia Department of Transportation right of way, also across North Main Street to the east of the site.
- Subsequent to submittal of VRP Status Report No. 4, the following activities were conducted:
  - Vertical delineation confirmation of barium was accomplished with EPD's concurrence by the installation and sampling of deep well MW-33 in September and October 2017. Additionally, former deep well MW-27DDDD was abandoned in December 2017, with EPD's approval.
  - The annual monitoring event was performed in September 2017.
  - Updated SourceDK analysis and Bioscreen-AT modeling based on the September 2017 sampling event was performed.

The additional activities performed subsequent to the submittal of VRP Status Report No. 4 are reported in this CSR.

## 2.2 PREVIOUS SITE ACTIVITIES AND POTENTIAL SOURCES

The meat-processing plant was originally constructed in 1914 as part of the Moultrie Packing Company. The Moultrie Packing Company was purchased by Swift & Company in 1917. It is reported that this plant was the largest meat-processing operation in the southeastern United States. The meat-processing plant operated until 1970. After 1970, Swift & Company constructed a new facility to the west now referred to as National Beef Packing Company LLC. Data presented on Sanborn maps indicates the butchering and packaging of meat after slaughter was conducted primarily on the subject properties.

A Boiler and Engine House, located to the northwest of the subject property (Figure 2) provided the meat processing plant with steam and power for manufacturing operations. The boiler and engine operations also provided refrigeration to the meat packing plant using compressed ammonia as a refrigerant. The boiler room used coal-burning boilers from 1914 until the 1950s. The coal was stored in hoppers on the east side of the Boiler and Engine House property.

Railcars brought coal to the plant on a rail spur on the east side of the building. The furnace bottom ash from the boilers was stored on the north side of the Boiler and Engine House property until it was disposed off-site. The boilers were switched to natural gas in the 1950s. As a backup to the natural gas, a 23,500-gallon underground storage tank (UST) containing Bunker C fuel oil was located on the north side of the Boiler and Engine House property (Figure 2). This UST was reportedly removed in the 1960s (Thompson, 2003). The stockyards of the former Swift & Company meat processing plant were located to the north of the subject properties. Meat packing plants of the era were reported to have ancillary operations onsite that manufactured fertilizer and lard from the meat-processing by-products generated from the slaughter of the animals. These operations were for the economical disposal of the meat processing byproducts. The fertilizer was made from the rendering of the bones and non-edible tissues and organs. Historical drawings show buildings labeled Fertilizer and Lard Storage to the south of the Boiler and Engine House. Based on this information, it is believed fertilizer and lard may have been produced from waste animal parts at the facility.

Rendering using a wet process, i.e., steam, is referred to as “tanking” and the resulting rendered material is referred to as “tankage.” A building labeled Tank House is also located to the south of the Boiler and Engine House next to the fertilizer and lard buildings and was probably associated with the rendering operations. An apparent aboveground, lead-lined sulfuric acid aboveground storage tank (AST) was also located on the south side of the Boiler and Engine House property (Figure 2). The sulfuric acid may have been used in the processing of animal tankage from the slaughter operations into fertilizer and lard. The acid tank was present in 1947 but was not present on site during the building demolition.

Other potential sources may be as follows (considering only the Swift operation):

- A former 5000-gallon fuel UST located on the subject property was removed on June 4, 2001, and soil samples from the walls of the tank excavation detected BTEX and naphthalene. EPD issued a No Further Action Required Letter for the former UST.
- An apparent former battery charging area located within the northwest corner of the former main building on the subject property. Large industrial lead-acid batteries used in

moto-truc vehicles may have been charged, maintained, repaired, and stored in the northwest corner of the building.

- After meat processing operations ceased, the buildings remained on the property for about 30 years and are believed to have been used for storage by subsequent property owners, among other things. The impacts or sources resulting from the activities conducted on the property by others after cessation of Swift's operations are unknown.

## 2.3 POTENTIAL RECEPTORS

The information presented in these subsections is summarized from previous reports.

### 2.3.1 Water Usage

The City of Moultrie provides water and utilities to its residents, but the County does not provide water or sewer services to residents of the unincorporated County. Water is delivered from 7 deep wells through a network of pipes throughout the city and some sections of the county (Colquitt, 2007). During completion of a previous CSR, AET personnel performed an area reconnaissance, encompassing 0.5- and 2.0-mile radii, for private and public water supply wells. Three City of Moultrie Wells and four industrial wells were located within the 2.0-mile radius of the Former Swift Plant. None of the wells was observed by AET to be located downgradient of the Former Swift Plant. In addition, AET did not observe any non-public wells within the 0.5-mile search radius.

AET also requested a Groundwater Site Inventory search from the USGS Georgia District that included both a 2.0-mile and a 0.5-mile radius. Four industrial wells (Swift & Co. 01, 02, 03, and 04) were identified in the USGS survey. Swift & Co. Well 01 was located approximately 20 feet to the north of the Site's property boundary. Swift & Co. Wells 02, 03, and 04 were located approximately 300 feet northwest of the City of Moultrie property boundary that is next to the west exposure of the former Boiler and Engine House building. AET observed that Swift & Co. Well 01, which was listed as being 570 feet deep and unused in the USGS well survey, was uncovered during site building demolition and appeared to have been filled with debris after it was taken out of service and is unusable. AET found a 1947 land plat that showed a building over the Swift 01 well location. Subsequently, AET added a cap to an existing PVC extension to temporarily seal the well.

According to AET,

- Swift & Co. Well 02 is constructed of 10-inch diameter casing installed to a depth of 375 feet bls with an open borehole to 627 feet below land surface (bls).
- Swift & Co. Well 03 is constructed of 18-inch diameter casing installed to a depth of 380 feet bls with an open borehole to 704 feet bls.
- Swift & Co. Well 04 is constructed of 18-inch diameter casing installed to a depth of 380 feet bls with an open borehole to 800 feet bls.

The Swift & Co. Wells 02, 03, and 04 were reportedly useable, but were not currently in use. AET considered the Swift wells to be hydraulically disconnected from on-site or other potential

sources of impact (AET, 2003). Therefore, the potential groundwater to drinking water well exposure pathways are currently incomplete.

### **2.3.2 Environmental Receptors**

Amec Foster Wheeler has not conducted a protected species or ecological habitat survey for this site. The following information is based on literature studies and observations from photographs. Undisturbed areas near the site may serve as potential habitat for two endangered species, the gopher tortoise, and the indigo snake. However, the majority of species listed by U.S. Fish and Wildlife Service (Table 1A) and the Georgia Department of Natural Heritage (Table 1B) are unlikely to be located at the Site because of the disturbed nature of the property and because several listed species require an aquatic or semi-aquatic habitat which is not present at this Site. Environmental sensitive areas such as the Ochlocknee and Okapilco Rivers are not located in the near vicinity of this site.

For many years, the property was actively operated as a meat processing and packing facility. Since the old buildings have been dismantled and removed, the property is maintained as a large grass-covered field with very few shrubs or trees. Terrestrial burrowing species may be exposed to shallow soils at the Site, but there are no surface water features on the site that would support riparian or aquatic species. Because the site is mowed regularly, few ground dwelling species are expected to nest at this Site.

Commonly found terrestrial animals in Colquitt County may include white-tailed deer, raccoons, opossums, flying squirrels, rabbits, and numerous species of ground-dwelling rodents. The bobwhite quail, eastern wild turkey, and mourning doves are primary game birds. However, no wildlife management areas or GDNR-designated natural communities occur within 0.5 mile of the site (GA DNR, 2008).

Information on wetlands was obtained from the National Wetlands Inventory (NWI) map for the Moultrie, Georgia, topographic quadrangle (NWI Wetlands Status, 2000). There are no wetland areas within 0.25 mile of the site. Approximately 0.5 mile from the subject properties, National Beef's wastewater lagoon was identified on the NWI map as a wetlands area.

The subject property is currently inactive. In the future, the property may be used as commercial or industrial property, rather than residential, because the surrounding areas are commercial/industrial or inactive formerly industrial properties. There are no definite plans for redevelopment or reuse of the City of Moultrie and Tumlin properties. The property north of the Site now owned by CPS is currently undergoing redevelopment for commercial use/industrial use. The most likely future human receptors for the Site would be on-site commercial/industrial workers, or perhaps incidental visitors. On-site workers may have direct soil exposure during landscaping and maintenance activities. Visitors may have some incidental contact with surface soils, but their exposure should be significantly less than on-site workers. Potential off-site receptors include commercial/industrial workers employed in the area and residents.

### **2.3.3 Environmental Exposure Pathways**

Metals, VOCs, and SVOCs have been detected in site soil and groundwater samples. The potentially complete exposure pathways for future exposures at the site are listed below. There

are no surface water features at the site so surface water and sediment pathways are incomplete.

Potential exposure pathways include incidental ingestion of soil, inhalation of particulates (fugitive dust), and inhalation of volatiles emitted from soil. If residents were present at the site in the future, residential children and adults might be exposed to surface soils (0–2 feet in depth). Future commercial/industrial workers might also be exposed to surface soils. Soils may leach constituents to underlying groundwater.

Potential exposure pathways include ingestion of groundwater, and inhalation of volatiles emitted from water during showering. If either residents or workers were present at the site and a drinking water well was installed in impacted groundwater, the above pathways would be complete. Otherwise, groundwater exposure pathways are expected to remain incomplete. The impacted soil or groundwater exposure pathways can be controlled through the use of Uniform Environmental Covenants (UECs).

### 3.0 CONSTITUENTS OF CONCERN AND APPLICABLE STANDARDS

#### 3.1 CONSTITUENTS OF CONCERN

Several investigations have been conducted on the subject property, as noted in Section 2.1 above. After review of the revised CSR issued in January 2010, the EPD determined, as given in their letter dated November 22, 2011, that the following constituents of concern (COCs) would be included going forward:

- arsenic
- barium
- cadmium
- chromium
- lead
- chlorides
- nitrates
- SVOCs (benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)anthracene, chrysene and diethyl phthalate)

EPD indicated in their November 22, 2010 letter that groundwater analysis would not be required for SVOCs unless they were detected deeper in the soil profile at a later date.

The selected soil and groundwater delineation concentration criteria allowable under the VRP are the Type 1 Risk Reduction Standard (RRS) under HSRA, which are included in Tables 2 and 3. The Types 1 through 4 RRS calculated under HSRA are also provided in the referenced tables. Soil investigation results and delineation are discussed further in Section 5.0. Figure 3 shows compliance and delineation information at the Site.

The only soil constituent not in compliance was an exceedance of chromium in one subsurface soil sample (GSB-1). Subsequent subsurface soil samples collected in the area of this exceedance exhibited maximum chromium concentrations below the Type 1 soil RRS for chromium. This single outlier subsurface soil chromium concentration of 1319 mg/kg from GSB-1 is justifiably disregarded, resulting in compliance with Type 1 RRS for chromium in soil at the Site.

Natural attenuation monitoring of groundwater conducted since March 2012 has demonstrated an overall decreasing trend in the metals concentrations, as determined from the SourceDK evaluations and reported in the CAERs and Status Reports. The results of the most recent (September 2017) sampling event are provided in this CSR (Section 6.2). Lead and barium are the primary constituents of concern in groundwater that exceed the Type 1 or 4 RRS, with the exception of two potentially anomalous exceedances of the arsenic Type 1 RRS (at MW-13D and MW-15) in September 2017, and a chromium detection at MW-15 in September 2017 which exceeded the Type 1 RRS.

In September 2017, three well locations monitored as proposed in the VRP Application and Plan exceeded the lead Type 1 RRS (MW-9, MW-13D and MW-15). In September 2017, barium met the Type 4 RRS of 20 mg/L at all sampling locations, and also met the Type 1 RRS of 2 mg/L at

all locations except MW-27DDDD. The barium value at MW-27DDDD (6.94 mg/L) represented a slight decrease as compared to the September 2016 sampling. Deep well MW-27DDDD was abandoned in December 2017, with EPD concurrence, as possible vertical groundwater transport along the MW-27DDDD borehole is suspected to have been responsible for the barium exceedances in this deep well.

## **3.2 APPLICABLE ENVIRONMENTAL REMEDIATION STANDARDS**

The selected remediation standards available under the VRP for the impacted environmental media are discussed below.

### **3.2.1 Soil Criteria**

Swift evaluated soil for compliance with the corrective action goals presented in the approved CAP. The corrective action goals are based on the maximum RRS concentration for each COC.

### **3.2.2 Groundwater Criteria**

Swift evaluated groundwater for compliance with the corrective action goals presented in the approved CAP. As mentioned above, the corrective action goals are based on the maximum RRS concentration for each COC.

Types 1 through 4 RRS were calculated during the CSR investigation for this site and are presented in Tables 2 and 3. Constituents detected in groundwater at concentrations exceeding Type 1 through Type 4 RRS (Table 3) include lead, benzene, arsenic and chromium. Regarding benzene in groundwater, per EPD's approval of the 2002 Corrective Action Plan for the UST removal completed by AET, no further corrective action for benzene is anticipated, as documented by an NFA Required letter for the UST issued by EPD on July 23, 2003.

Portions of the City of Moultrie property and the Tumlin Estate exceed Types 1, 2, 3 and 4 RRS for lead, benzene, arsenic and chromium in groundwater (and the corrective action goals). Because the property usage will be restricted to non-residential, the higher of the Type 3 or 4 RRS applies. However, an environmental covenant will be used to restrict the use of groundwater wells on the qualifying properties. Therefore, the corrective action goals with exposure controls will be used until such time that the control can be eliminated for unrestricted use.



## **4.0 HYDROGEOLOGY AND SITE CONCEPTUAL MODEL**

The geologic and hydrologic setting of the Site is described below. This information, in concert with the information presented in Section 2, comprises the Site Conceptual Model. The CSM illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete and incomplete exposure pathways that exist for the site.

### **4.1 GEOLOGY AND HYDROGEOLOGY**

Moultrie is located in the Coastal Plain Physiographic Province of Georgia. The Coastal Plain is underlain by Cretaceous and younger sediments. Moultrie is underlain by the Floridan aquifer system, which is composed of dense, deep-water limestones, and is thickly overlain by Miocene and younger sediments, which form an unconfined surficial aquifer. The Floridan aquifer system is separated from the surficial aquifer by a relatively impermeable confining unit. The thickness of sediments overlying the Floridan aquifer system near the site area is reported to range from 408 to 460 feet.

Based on the soil borings conducted at the site, clayey sand extends from the surface to approximately 3 feet bls, below which the soil becomes mostly clay with some sand. A stiff, gray clay extending from about 3–18 feet bls was encountered during drilling activities. A waterbearing, clayey sand was encountered below the gray clay, at approximately 18–20 feet bls. The clay may inhibit (retard) vertical migration of near-surface constituents to greater depths. Two hydrogeologic profiles illustrate the sediments encountered during the advancement of soil borings. Figure 4 presents the locations of the profiles, and the profiles A-A' and B-B' are shown on Figures 5 and 6, respectively.

#### **4.1.1 Groundwater Elevation and Flow Direction**

Groundwater potentiometric data and maps have been included in numerous previous reports submitted to EPD. Table 4 presents historic potentiometric Site data. Potentiometric surface maps for the two shallow aquifers at the site, Shallow Zone A and Shallow Zone B, from January and September 2017 are included as Figures 7 through 10. Historic groundwater flow data appears to be relatively consistent. The direction of flow in Shallow Zone A (Figure 7 and 9) is generally to the north and northeast, while the flow direction in Shallow Zone B shows an eastward component in the central portion of the site and a southeasterly component in the northern portion of the site, due to higher groundwater elevations in MW-31 and MW-29 as compared to MW-32 and MW-16. (Figures 8 and 10).

In addition, an evaluation of the vertical hydraulic gradient at the site was performed. Based on the groundwater elevation data obtained on September 25, 2017 from the cluster of wells that includes MW-8, MW-13D, MW-22DD and MW-26DDD, there was a downward vertical gradient of about 0.375 foot per foot at well pair MW-8 (screened in Shallow Zone A) and MW-26DDD, and of about 0.239 foot per foot at well pair MW-13D (screened in Shallow Zone B) and MW-26DDD. Additionally, a comparison of groundwater elevations at this well cluster to nearby deep well MW-27DDDD shows a downward vertical gradient from each well (MW-8, MW-13D, and MW-26DDD) toward the interval screened by MW-27DDDD.

#### 4.1.2 Groundwater Flow Velocity

Based on the September 2017 potentiometric surface maps, the horizontal gradient in the ground water in Shallow Zone A was about 0.012 feet per foot across the site on September 25, 2017. The horizontal gradient in the ground water in Shallow Zone B ranged from 0.022 to 0.036 feet per foot on September 25, 2017. An effective porosity for the saturated soil was estimated to be 20 percent for a clayey sand/sandy clay (Driscoll, 1986). The horizontal ground-water flow velocity was calculated using the Darcy equation:

$$V = Ki/n_e$$

Where: K = hydraulic conductivity (feet/day)

i = hydraulic gradient (feet/foot)

$n_e$  = effective porosity

The gradients given above, the geometric mean of the Shallow Zone A and B hydraulic conductivity testing results obtained in May 2012 (4.1544 ft./day and 2.8046 ft./day, respectively), and the estimated effective porosity of 0.2 were used to calculate a groundwater flow velocity of approximately 91 ft/year for Shallow Zone A, and a groundwater flow velocity of approximately 113 to 184 ft./year for Shallow Zone B. These velocities are within the range of previous values reported in the previous reports

## 5.0 SOIL INVESTIGATION

Extensive soil sampling has been conducted at the Site, with the work conducted and results documented in previous reports submitted to EPD. A summary of the work is provided below.

### 5.1 SOIL SAMPLING ACTIVITIES AND RESULTS

The analytical results of the soil sampling conducted at the site were presented in the 2010 CSR and the 2015 VRP Application, and are shown in Table 5. Laboratory results for these analyses have previously been provided to EPD. The vertical extent of Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and naphthalene in soil extends down to the uppermost water-bearing zone at about 8 to 10 feet below land surface (bls) on the 2.53-acre City of Moultrie property and is limited to the upper 2 feet on the former Boiler and Engine House property. Polycyclic aromatic hydrocarbons (PAHs) and diethyl phthalate were detected in the soils on primarily the former Boiler and Engine House property. The vertical extent of the select SVOCs is limited to the upper 2 feet on the Boiler and Engine House property. Detected concentrations of arsenic, barium, chromium, mercury, and silver in soil have been determined to be naturally occurring based on comparison of regional upper prediction limits (UPLs) for background concentrations. Mean and median site concentrations of lead are consistent with regional UPLs backgrounds. However, individual detections for lead were reported above background concentrations on the former Boiler and Engine House property including the boring located beneath the former sulfuric acid above ground storage tank. Lead is considered delineated on the former Boiler and Engine House property based on the criteria of concentrations less than HSRA NCs, as described in the Revised CSR.

The only soil constituent not in compliance with a RRS is an exceedance of chromium in one subsurface soil sample (GSB-1). Subsequent subsurface soil samples collected in the immediate area of this exceedance exhibited maximum chromium concentrations below it's Type 1 soil RRS. This single outlier subsurface soil chromium concentration of 1319 mg/kg from GSB-1 is justifiably disregarded, resulting in compliance with Type 1 RRS for chromium in soil at the site. Chromium was detected in groundwater at a concentration less than the Type 1 groundwater RRS, indicating that chromium in subsurface soil has not leached significantly at the site. Delineation and comparison to RRS of soil COCs is presented on Figure 3.

## **6.0 GROUNDWATER INVESTIGATION**

On-site groundwater monitoring at the site initially commenced in July 1997, with the sampling of temporary well TMW-1. The first permanent groundwater monitoring wells at the Site were installed in 2001, with the initial samples collected in August 2001. The results were documented in previous reports submitted to EPD, including the 2010 Revised CSR and subsequent CAERs and the 2015 VRP Application and subsequent Status Reports. A summary of the work is provided below.

### **6.1 CURRENT AND HISTORICAL GROUNDWATER SAMPLING RESULTS**

The results of current and historic shallow groundwater sampling are provided in Table 6. Horizontal delineation of metals in groundwater has been completed, as shown on Figure 3, with the installation and sampling in December 2016 of wells MW-28R and MW-32 to the east of North Main Street (U.S. Highway 319 Business, Georgia Highway 33), with no exceedances of Type 1 RRS in either of the sampled wells.

BTEX constituents were detected in wells MW-1, MW-3, and MW-20 located around the former UST on the 2.53-acre property. The vertical extent of BTEX and naphthalene extends down to Shallow Zone B, but the constituents were not detected in deeper well MW-26DDD. Barium and lead were detected in groundwater samples collected from all subject properties. Selenium was only detected in temporary monitoring well TMW-1. The vertical extent of barium, cadmium and lead extends to Shallow Zones A and B and to a depth of about 92 feet in the deepest site well, MW-27DDDD, installed to a depth of 92 feet. Of these, only barium exceeded Type 1 RRS in MW-27DDDD. Vertical delineation confirmation of barium was accomplished with EPD's concurrence by the installation and sampling of deep well MW-33 in September and October 2017. Additionally, former deep well MW-27DDDD was abandoned in December 2017, as possible vertical groundwater transport along the MW-27DDDD borehole is suspected to have been responsible for the barium exceedances in this deep well, and the anomalous lead detection in September 2017.

The vertical extent of chromium and selenium is limited to Shallow Zone B; these metals were not detected in well MW-13D screening a deeper zone of Shallow Zone B. The vertical extent of lead was limited to Shallow Zones A and B and did not extend to the deeper water-bearing zone at 60 feet screened by well MW-26DDD, except for the potentially anomalous detection of lead in the September 2017 sample at MW-27DDDD, as discussed above. The vertical extent of arsenic extends to MW-13D, but did not extend to deep well MW-27DDDD.

Based on the most recent sampling results, including the results of the September 2017 sampling event, the maximum detected concentrations of lead, arsenic, chromium and benzene in groundwater exceed Type 1 through Type 4 RRS at a few locations. Lead exceeded the RRS at MW-1 in September 2016, and at MW-9, MW-13D and MW-15 in September 2017. Arsenic exceeded the RRS at MW-13D and MW-15 in September 2017, and chromium exceeded at MW-15 in September 2017. Benzene exceeded the RRS at MW-1 in November 2004.

Regarding benzene in groundwater, in accordance with EPD's approval of the 2002 Corrective Action Plan for the Underground Storage Tank Removal completed by AET, no further corrective action for benzene is anticipated for this property, as documented by a No Further Action Required letter for the UST issued by EPD on July 23, 2003. Portions of the City of

Moultrie property are not in compliance with Types 1, 2, 3, and 4 RRS for lead and arsenic in groundwater, and portions of the Tumlin Estate property are not in compliance with Types 1, 2, 3, and 4 RRS for lead, arsenic and chromium in groundwater.

## **6.2 2017 ANNUAL GROUNDWATER SAMPLING AND ANALYSIS**

The continued monitoring plan for the Site outlined in the VRP Application and Plan consisted of annual groundwater sampling for up to five years of six site monitoring wells for site constituents of concern (COCs) including arsenic, barium, cadmium, chromium, lead, nitrates and chlorides. The results of the September 2017 sampling event are summarized below.

The six wells included in the September 2017 sampling were MW-6, MW-9, MW-13D, MW-15, MW-16, and MW-27DDDD, and are shown on Figure 2. Also, vertical delineation well MW-33 was sampled in October 2017, and the results described below. Additionally, the field pH of every groundwater sample is monitored during the sampling events. Water level measurements are collected in all site monitoring wells prior to sampling to evaluate groundwater flow direction. The metals sampling is conducted under low-flow methodologies to reduce potential turbidity in the samples. The procedures used to collect groundwater samples are conducted in general accordance with USEPA Region 4 SESD procedure SESDPROC-301-R4 (USEPA, 2017).

The scope of services performed during the September 2017 annual groundwater sampling and analysis event included the following:

- Determined the depth to groundwater in accessible site wells (September 25-26, 2017) and calculated groundwater elevations.
- Obtained groundwater samples on September 26, 27, and 28, 2017 from 6 site monitoring wells (MW-6, MW-9, MW-13D, MW-15, MW-16, and MW-27DDDD). A sample was obtained from MW-33 on October 3, 2017.
- Six samples were analyzed for the site COCs including arsenic, barium, cadmium, chromium and lead plus nitrates and chloride (MW-6, MW-9, MW-13D, MW-15, MW-16 and MW-27DDDD). The October 2017 vertical delineation sample from MW-33 was analyzed for barium only.
- Prepared potentiometric surface maps using the September 25-26, 2017 groundwater elevation data showing groundwater flow directions in Shallow Zones A and B and determination of the groundwater flow rate (Figures 9 and 10).
- Prepared an updated pH map based upon the September 26-28, 2017 pH values.
- Prepared lead and barium isoconcentration maps based upon the September 26-28, 2017 concentrations.
- Updated the SourceDK models submitted in the Third Status Report with the data obtained in September 2017.
- Updated the fate and transport modeling (BioScreen-AT) submitted in the Third Status Report.
- Evaluated data and prepared this summary of annual groundwater sampling and analysis.

### 6.2.1 Groundwater Quality

For the groundwater quality sampling conducted on September 26, 27 and 28 and October 3, 2017 in 7 site monitoring wells, the wells sampled were as follows:

**Interior wells:**

- MW-6 Shallow Zone B (COC metals, chloride and nitrate)
- MW-13D Shallow Zone B (COC metals, chloride and nitrate)
- MW-16 Shallow Zone B (COC metals, chloride and nitrate)

**Downgradient wells:**

- MW-9 Shallow Zone B (COC metals, chloride and nitrate)
- MW-15 Shallow Zone B (COC metals, chloride and nitrate)

**Deep well:**

- MW-27DDDD Deep well (COC metals, chloride and nitrate)

**Deep vertical delineation well:**

- MW-33 Deep well (barium, chloride and nitrate)

The groundwater sampling procedure was conducted as follows. Before the purging and sampling of each well, the depth to water and total well depth were measured. Each well has been marked with a permanent reference survey point. The total depth of the well was measured from this survey point to the well bottom using a measuring tape. The depth to groundwater was measured from the reference survey point to the groundwater surface in the well using an electrical water-level indicator. The water level probe was lowered down the well until the meter's tone sounded, indicating the probe had encountered water. The measured depth to groundwater from the surveyed datum point on the well casing was recorded on the sampling form and in the field logbook to the nearest 0.01 foot. The depth to the groundwater was then subtracted from the surveyed elevation of the casing reference point to determine the groundwater elevation. Depth to groundwater data and groundwater elevations are shown on Table 4.

The wells were purged using a peristaltic pump, with the exception of MW-27DDDD and MW-33, which were purged using a submersible pump due to the depth to groundwater exceeding the capability of a peristaltic pump. New polyethylene tubing was used at each well and inserted into the water column of the well. Either a three well volume method of purging or a low-flow method of purging was used, dependent of the rate of well recharge encountered. The tubing intake was initially placed at the approximate midpoint of the well screen, and the wells pumped at a relatively slow pumping rate (less than 500 milliliters per minute [mL/min]). If the water level stabilized, a low-flow purge was conducted until the pH, temperature, and specific conductance (SC) readings stabilized to within 10% of the previous reading, and the sample was collected. If the water level could not be stabilized by adjusting the pumping rate, the intake was placed near the top of the well column and a minimum of three well volumes were purged from the well prior to sample collection.

The groundwater turbidity readings were measured with an electronic turbidity meter and documented before collecting samples in laboratory-provided preserved containers for analysis. The samples were delivered to Analytical Environmental Services, Inc. (AES) under chain-of-custody protocol for analysis (as indicated above) by EPA Method 6020A for the site COCs including arsenic, barium, cadmium, chromium and lead; and chloride and nitrate by EPA Method 9056A.

As noted above, groundwater samples from six monitoring wells (MW-6, MW-9, MW-13D, MW-15, MW-16 and MW-27DDDD) were analyzed for the complete COC list. The groundwater sample from one monitoring well (MW-33) was analyzed only for barium, chloride and nitrate so as to establish vertical delineation of the barium exceedances at MW-27DDDD.

The field pH measurements are reported in Table 6, along with a summary of the results of the analyses of the September 2017 samples. The laboratory analytical reports and field sampling reports for the September and October 2017 sampling event are provided in Appendix A.

A review of the results of the analyses of the September 2017 samples (Table 6) indicates that arsenic was only detected in MW-13D and MW-15. The arsenic concentrations in MW-13D and MW-15 (0.011 and 0.0119 mg/L, respectively) were slightly above the Type 1 RRS of 0.01 mg/L. Prior to September 2017, arsenic had only been reported twice at MW-13D and MW-15. The only previous arsenic exceedances of the Type 1 RRS at the Site prior to September 2015 were isolated occurrences; once at MW-12 (0.0126 mg/L in September 2013), and once at MW-28 (0.017 mg/L in November 2004). Based on the preponderance of evidence (only two previous historical Type 1 RRS exceedances prior to September 2015, anomalous reports of arsenic in 2015 in multiple wells in which it had never before been reported, an arsenic detection in a parent sample but not the associated duplicate sample in September 2015, and arsenic only being detected in a single well with elevated turbidity in September 2016), the arsenic detections in September 2017 are considered anomalous and are not believed to reflect actual site conditions.

Cadmium was reported in samples from MW-9 (.00154 mg/L), DUP-1 (0.00148 mg/L), MW-13D (0.00315 mg/L), MW-15 (0.003 mg/L) and MW-27DDDD (0.00254 mg/L), all below the Type 1 RRS of 0.005 mg/L.

Chromium was only detected in the sample from MW-15 (0.29 mg/L), exceeding the Type 1 RRS of 0.1 mg/L. This chromium concentration is approximately an order of magnitude above previous chromium detections reported at MW-15, and is potentially anomalous. Additionally, this is the first and only detection of chromium exceeding Type 1 RRS in groundwater at the Site.

Barium was detected in all samples analyzed, with concentrations ranging from 0.0996 mg/L (MW-15) to 6.94 mg/L (MW-27DDDD). All of the concentrations were below the barium Type 1 RRS of 2 mg/L except for the MW-27DDDD value (6.94 mg/L). The concentration of barium in deep vertical delineation well MW-33 was 0.161 mg/L, below the barium Type 1 RR. As mentioned previously, deep well MW-27DDDD was abandoned in December 2017, as possible vertical groundwater transport along the MW-27DDDD borehole is suspected to have been responsible for the barium exceedances in this deep well.

Lead was reported in all well samples in which it was analyzed (MW-6, MW-9, MW-13D, MW-15, MW-16 and MW-27DDDD) at concentrations ranging from 0.00239 mg/L (MW-27DDDD) to 0.144 mg/L (MW-15). The lead detections in three of the wells (MW-9, MW-13D, and MW-15) exceeded the Type 1 RRS of 0.015 mg/L.



## 6.2.2 Comparison to Prior Analytical Data

Updated SourceDK models have been prepared. Additionally, as part of preparation of this CSR, a comparison of the September 2017 data to the most recent comparable prior data was performed for the analyzed COCs. This comparison is described below.

The September 2015 arsenic results indicated that arsenic was detected in seven of the well samples (MW-1, MW-6, MW-7, MW-9, MW-13D, MW-15 and MW-18), whereas arsenic was only detected in MW-15 (0.00672 mg/L) in September 2016. In September 2017, arsenic was detected only in MW-13D and MW-15. The arsenic concentrations in MW-13D and MW-15 (0.011 and 0.0119 mg/L, respectively) were slightly above the Type 1 RRS of 0.01 mg/L. Prior to September 2017, arsenic had only been reported twice at MW-13D and MW-15.

Prior to the anomalous September 2015 detections described above, arsenic had never before been reported in MW-15, and had only been reported once before at MW-13D. The arsenic detection in MW-15 in September 2016, which did not exceed the Type 1 RRS, was in a total metals sample with elevated turbidity, and arsenic was not detected in the dissolved metals sample collected from MW-15. The only arsenic exceedances of the Type 1 RRS at the Site prior to September 2015 were isolated occurrences; once at MW-12 (0.0126 mg/L in September 2013), and once at MW-28 (0.017 mg/L in November 2004). As mentioned previously, for the reasons given above (only two previous historical Type 1 RRS exceedances, reports of arsenic in multiple wells in September 2015 in which it had never before been reported, and an arsenic detection in a parent sample but not the associated duplicate sample), the arsenic detections are considered anomalous and are not believed to reflect actual site conditions.

Cadmium was reported in samples from MW-9, DUP-1 (the duplicate sample from MW-9), MW-13D, MW-15 and MW-27DDDD, all below the Type 1 RRS of 0.005 mg/L. Detections of cadmium in September 2017 were in wells where it had previously been reported in September 2016 (MW-9, MW-13D, MW-15 and MW-27DDDD). Cadmium had also been detected in each of these wells in September 2015, with the exception of MW-13D. Cadmium was detected in MW-9 (.00154 mg/L) and DUP-1 (0.00148 mg/L), slightly above the September 2016 detection of 0.00918 mg/L at MW-9. Cadmium was detected at MW-13D at a concentration of 0.00315 mg/L, slightly above the September 2016 concentration of (0.00219 mg/L). Cadmium at MW-15 decreased from 0.131 mg/L in September 2016 to 0.003 mg/L, below the Type 1 RRS. Cadmium at MW-27DDDD decreased from 0.00311 mg/L in September 2016 to 0.00254 mg/L in September 2017. As mentioned above, all of the September 2017 cadmium values were below the Type 1 and Type 2 RRS of 0.005 mg/L and 0.0078 respectively.

Chromium was only detected in well MW-15. The detection at MW-15 increased from the detection in September 2016, with chromium at MW-15 increasing from 0.0246 mg/L in September 2016 (total metals sample) to 0.29 mg/L in September 2017, exceeding the Type 1 RRS of 0.1 mg/L. As mentioned previously, this is the first and only detection of chromium exceeding Type 1 RRS in groundwater at the Site and is considered potentially anomalous.

For barium, there were three instances (MW-6, MW-9 and MW-13D) of an increase in concentration as compared to the previous data. The September 2017 barium values were used to prepare an updated barium contour map (Figure 11). At MW-9, the concentration (0.686 mg/L) remains well below the historical highs reported in 2001 and 2009 (5.3 and 1.22 mg/L, respectively). At MW-13D, the concentration was both within the range of values

obtained during 2012, 2013, 2014 and 2015 monitoring, and well below values measured during previous historical site monitoring. The MW-6 concentration of 0.184 mg/L is only a slight increase above the September 2016 concentration of 0.181 g/L, and is a substantial decrease from the barium value of 10.3 mg/L reported in September 2014, which is now believed to have been anomalous. The MW-27DDDD concentration of 6.94 mg/L represents a decrease from the September 2017 barium value of 7.22 mg/L, which was the the highest barium value observed at MW-27DDDD. In September 2017, only the MW-27DDDD value (6.94 mg/L) was above the barium Type 1 RRS of 2 mg/L. As mentioned above, MW-27DDDD was abandoned in December 2017, as possible vertical groundwater transport along the MW-27DDDD borehole is suspected to have been responsible for the barium exceedances in this well.

The barium detections were further evaluated using the updated SourceDK model, as described below. As noted above, none of the September 2017 barium concentrations exceeded the barium Type 1 RRS of 2 mg/L except for the MW-27DDDD value (6.94 mg/L). While the MW-27DDDD value exceeded the Type 1 RRS, it was well below the Type 4 RRS of 20 mg/L. Additionally, new deep vertical delineation well MW-33, installed in September 2017 and screening a deeper interval than MW-27DDDD, had a barium concentration of 0.161 mg/L in October 2017, well below the the Type 1 RRS, meeting the vertical delineation requirement.

For lead, of the six wells analyzed, there were only two instances of an increase in concentration as compared to the most recent data: at MW-9 (0.0758 mg/l vs. 0.0715 mg/L in September 2016), and at MW-27DDDD (0.00239 mg/L vs. non-detect at <0.001 mg/L in September 2016). The September 2017 lead values were used to prepare an updated lead contour map (Figure 12). At MW-9, the concentration was below the September 2015 value of 0.0898 mg/L, and well below values measured during previous historical site monitoring. The September 2017 lead detection at MW-27DDDD was the first lead detection at this well. As mentioned previously, MW-27DDDD was abandoned in December 2017 due to possible vertical groundwater transport along the borehole at this well.

The lead detections were further evaluated using the updated SourceDK model, as described in below. As noted above, the lead detections in three of the wells (MW-9, MW-13D and MW-15) exceeded the Type 1 RRS of 0.015 mg/L. This represents a decrease in exceedances in the sampled wells from September 2016, when MW-6 and MW-16 also exceeded the Type 1 RRS for lead.

The September 2017 measured field pH values were also compared to the September 2016 data. Of the six wells that were sampled in both September 2016 and September 2017, five of the measured pH values decreased (becoming more acidic), and one of the wells exhibited an increase in pH (becoming more neutral). The changes in pH were minor, with the decreases ranging from 0.01 to 0.24 standard units, with an increase of 0.03 standard units.

The September 2017 pH values were used to prepare an updated pH contour map (Figure 13). A comparison to the pH map presented in the 2016 VRP Status Report No. 3 indicates that the area of low pH appears to have remained essentially the same, with only minor variation, based on the September 2017 data.

### 6.3 UPDATED SOURCEDK MODELING RESULTS

As discussed in Section 3.0, the results of the September 2017 annual sampling event were used to prepare updated SourceDK models. The results of the updated modeling are discussed below.

Monitored natural attenuation (MNA) was evaluated as a corrective action measure in the May 13, 2011 CAP to address groundwater impacts at the site. As described in the CAP, the U.S. Environmental Protection Agency's (USEPA) MNA Directive (USEPA, 1999) was used as guidance, in conjunction with the SourceDK computer spreadsheet. SourceDK is designed for use in evaluating the potential efficacy of MNA as a remedial alternative. This evaluation involves collection of site-specific data sufficient to estimate with an acceptable level of confidence both the rate of attenuation processes and the anticipated time required to achieve remediation objectives (AFCEE, 2004).

This evaluation requires statistical tools to assess the data collected in the site characterization and determine if natural attenuation (decreasing trends) is occurring. The SourceDK Microsoft Excel computer spreadsheet program is a planning-level screening model for estimating groundwater remediation timeframes and the uncertainties associated with the estimated timeframe. In this evaluation, "remediation timeframe" is the time required for the high-concentration source zones at a site to reach a certain target concentration (AFCEE, 2004).

#### 6.3.1 Data Preparation

The updated dataset to be analyzed was generated from groundwater samples taken from August 2001 to September 2017, and included the following wells monitored semi-annually in 2012 and 2013, and annually in 2014, 2015, 2016 and 2017: Monitoring wells MW-1 and MW-18 were not sampled in September 2017, and were not included in the updated dataset.

Well ID	
MW-06	MW-15
MW-09	MW-16
MW-13D	MW-27DDDD

Since the methods used in the SourceDK package do not accommodate data below the reporting limit, all data reported as "below reporting limit" were converted to a detection at the reporting limit. Since these wells have had a record of at least one COC detection (barium, lead), this is considered to be a conservative substitution.

Only total metals results were used for the evaluation; dissolved metals results were not used. Both barium and lead were used for the evaluation; the final dataset is listed in Table 7.

#### 6.3.2 Analyses

The SourceDK assessment is based on a slope determined from a regression model of existing groundwater data. As described in the SourceDK documentation, this model predicts remediation timeframe by determining the trend in measured concentration vs. time data from source-zone monitoring wells (or wells in other parts of the plume) and then extrapolating this trend to determine how long it will take to reach a cleanup objective entered by the user. The

trend is based on an analysis of log-concentration vs. time data for any constituent in groundwater (AFCEE, 2004).

For each well of interest, a SourceDK spreadsheet model was constructed by adding site-specific sample dates, analytical concentrations, and the proposed regulatory limit (Type 1 RRS) into the spreadsheet. The model then takes the log of concentration and plots that against the sample date and calculates the slope of the resulting regression line. A negative slope (corresponding to a positive decay constant) suggests a downward trend in concentration and the likelihood of attenuation occurring. The model presents a graph of the resulting regression analysis along with a dotted line representing the regulatory limit, the regressions coefficient of determination ( $r^2$ ), a predicted year to attain cleanup (along with confidence limits on the estimate, if possible), and an estimated decay constant derived from the regression slope.

### 6.3.3 Results

A total of 11 different well/COC models were run. The results of each model run are included in Appendix B. A summary of the results is presented in the following tables. The majority of the updated models present decreasing trends in concentration (negative slopes and positive decay rates), with 83.3 percent of the barium trends and 80.0 percent of the lead trends decreasing. The direction of trend appears well defined in all cases with the exception of MW-13D (lead) where the slope is essentially flat.

#### Summary of SourceDK Trend Results

	Barium	Lead
Decreases	5	4
Total	6	5
Percent	83.3%	80.0%

#### SourceDK Trend Results by COC

Well	Barium	Lead	Comments
<b>MW-06</b>	Decreasing	Decreasing	2017 barium and lead concentrations below Type 1 RRS
<b>MW-09</b>	Decreasing	Decreasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained
<b>MW-13D</b>	Decreasing	Decreasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained
<b>MW-15</b>	Decreasing	Increasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained. 2017 lead concentration decreased from the 2016 value.
<b>MW-16</b>	Decreasing	Decreasing	2017 barium and lead concentrations below Type 1 RRS
<b>MW-27DDDD</b>	Increasing	NA	Barium above Type 1 RRS, but below Type 4 RRS. 2017 concentration decreased from the 2016 value.

NA- not applicable; either all, or all except one, concentrations below detection limit

#### **6.4 UPDATED FATE AND TRANSPORT MODELING**

Contaminant fate and transport modeling was updated using the BIOSCREEN-AT model (as was completed in the VRP Application and Plan), with updated data from September 2017 to assess theoretical downgradient migration of dissolved lead and determine if the distance would fall within acceptable point of compliance requirements under the VRP. The results of the updated modeling are described in Section 7.1

## **7.0 MEASURES TO DEMONSTRATE COMPLIANCE WITH VRP REQUIREMENTS**

### **7.1 GROUNDWATER MODELING**

In order to fulfill VRP requirements, contaminant fate and transport modeling was used to simulate groundwater and lead transport at the Site over time. As described in Section 6.4, the modeling was performed using the BIOSCREEN-AT model, as updated using the September 2017 groundwater sampling data. BIOSCREEN-AT modeling had previously been performed for the VRP Application and Plan, and the Status Report No. 3. In accordance with Conagra's August 31, 2015 responses to EPD's comments dated June 4, 2015, the site point of exposure (POE) was designated as a location approximately 1051 feet east of the eastern property line of the site. The associated Point of Demonstration (POD) well was designated as MW-9, pursuant to any clarification resulting from additional potentiometric data that may be obtained in the future from new monitoring wells (MW-28R and MW-32) installed across U.S Highway 319, as stated in the comment responses. Two source area monitoring wells are currently being used for the BIOSCREEN-AT modeling, including MW-18 (replaced previous source well MW-13D based on more current data), and MW-15 which was added pursuant to EPD Comments of June 4, 2015.

BIOSCREEN-AT is an enhanced version of BioScreen (Newell et al., 1996) with an exact solution for the transport of a contaminant (Karanovic et al., 2007). The model uses the Domenico equation which describes one-dimensional transport of a solute (inorganic or organic, decaying or non-decaying). The model simulates advection, adsorption and three-dimensional dispersion of any dissolved constituent (inorganic or organic), and has the ability to simulate constant or decaying sources, and contaminant degradation using degradation constants. Features within the model designed to account for processes specific to natural attenuation of organic constituents were not applicable. The use of BIOSCREEN-AT was limited for this site-specific application to model only advection, dispersion, and adsorption onto porous media since lead is not known to degrade at notable rates.

The results of the BIOSCREEN-AT modeling remained favorable, indicating that under a theoretical worst-case scenario lead would meet compliance standards within approximately 150 feet downgradient of the property boundary (350 feet from "source" monitoring well MW-18) based on the 100 year plume duration (the plume would not reach the property boundary in the 45 year modeled time-frame). For the MW-15 second source scenario, the lead concentration (for the modeled travel time of 100 additional years) would not exceed the GWPS of 0.015 mg/l approximately 400 feet from MW-15 (equivalent to approximately 400 feet beyond the eastern boundary along the prevalent groundwater flow direction). However, the actual downgradient extent of the dissolved lead plume would likely be much less since its mobility is diminished as pH level becomes more neutral. This decreased mobility with increased pH is not able to be simulated by BIOSCREEN-AT. Further evidence of the lack of mobility of the COC plume to the east is the lack of exceedances of Type 1 RRS in new wells MW-28R and MW-32, installed to the east of North Main Street approximately 75 feet east of the property boundary, and well within the modeled extent of lead as shown in Figure C-1.

Also, the BIOSCREEN-AT model assumes a constant source, which does not apply to the Swift site as operations have ceased and there is no known residual source. The Georgia VRP permits a Point of Compliance up to 1,000 feet from a contaminant source provided there is no

exposure risk. The full BIOSCREEN-AT modeling discussion, site data, results and aerial depiction of the modeled potential offsite plume limit are provided in Appendix C.

## **7.2 ENVIRONMENTAL COVENANTS**

The VRP allows UECs to be used to prevent access to groundwater where COCs exceed RRSs. UECs prohibiting future residential use or extraction of groundwater will be obtained from the owners of the three parcels that make up the Site where groundwater concentrations currently exceed RRSs. These owners are listed below and the respective properties are shown on Figure 2:

- City of Moultrie: A 2.53 acre tract (Tax ID Parcel M022A 005), which represents the southernmost portion of the former 14-acre Swift & Company meat processing facility property.
- Rennie A. Tumlin Estate: A 1.1 acre (previously 2.52 acre) parcel (Tax ID Parcel M022A 004).
- Crop Production Services, Inc. (CPS): A 1.42 acre parcel (Tax ID Parcel M022A 004A). This is a portion of the site that was previously owned by the Tumlin Estate but subdivided in September 2016 in an acquisition by CPS. CPS owns an additional 5.62 acres abutting the west side and extending to the north that were purchased from other parties (Joint Development Authority (JDA) of Brooks, Colquitt, Grady, Mitchell, and Thomas Counties, the Arnold Property, and North Street Development).

### **7.2.1 City of Moultrie**

A UEC (Appendix D) was prepared, submitted to EPD for review, and revised based on EPD's comments, and will be executed after this CSR is approved.

### **7.2.2 Rennie A. Tumlin Estate Sampling Results**

A UEC (Appendix D) was prepared, submitted to EPD for review, and revised based on EPD's comments, and will be executed after this CSR is approved..

### **7.2.3 Crop Production Services**

A UEC (Appendix D) was prepared, submitted to EPD for review, and revised based on EPD's comments, and will be executed after this CSR is approved.



## **8.0 SUMMARY AND CONCLUSIONS**

Based on current conditions at the Former Swift Site, Swift is certifying to Type 1 RRS for soil and to Type 5 RRSs for groundwater. The current status of the Site relative to VRP delineation and cleanup criteria are summarized below.

### **8.1 SOIL**

Delineation of COCs in soil has been achieved as shown on Figure 3 and summarized in Table 5. Soil concentrations are in compliance with Type 1 RRSs, as shown on Table 2.

### **8.2 GROUNDWATER**

#### **8.2.1 Delineation**

Horizontal delineation of Site COCs in groundwater has been completed as discussed in Section 6.0 and as shown on Table 6 and on Figure 3. Horizontal delineation to the east was completed with the installation and sampling in December 2016 of wells MW-28R and MW-32 to the east of North Main Street (U.S. Highway 319 Business, Georgia Highway 33), with no exceedances of Type 1 RRS in either of the sampled wells. Vertical delineation has been achieved with the installation and sampling in October 2017 of deep well MW-33, with no exceedance of barium of Type 1 RRS in the sampled groundwater.

#### **8.2.2 RRS Compliance**

The status of the Site groundwater in relation to RRSs is summarized in Table 6 and shown on Figure 3. Portions of the City of Moultrie property are not in compliance with Types 1, 2, 3, and 4 RRS for lead and arsenic in groundwater, and portions of the Tumlin Estate property are not in compliance with Types 1, 2, 3, and 4 RRS for lead, arsenic and chromium in groundwater. The chromium exceedance was a one time occurrence (Septmeber 2017) in the history of site monitoring in only one well (MW-15), having never been considered a COC in the past and is considered anomalous. The groundwater modeling discussed in Section 7.1 indicates that lead would not exceed the GWPS of 0.015 mg/l approximately 400 feet beyond the eastern boundary along the prevalent groundwater flow direction, and would not reach the hypothetical point of drinking water exposure located at the 1000-ft downgradient Point of Exposure (POE). However, the actual downgradient extent of the dissolved lead plume would likely be much less than 400 feet beyond the eastern boundary, since its mobility is diminished as pH level becomes more neutral. Further evidence of the lack of mobility of the COC plume to the east is the lack of exceedances of Type 1 RRS in new wells MW-28R and MW-32, installed to the east of North Main Street approximately 75 feet east of the property boundary, and well within the modeled extent of lead as shown in Figure C-1.

UECs that prohibit the installation of groundwater wells on parcels owned by the City of Moultrie, the Tumlin Estate, and CPS that make up the Site were prepared, submitted to EPD for review, and revised based on EPD's comments. The UECs will be executed after EPD approves of this CSR.

### **8.3 FUTURE ACTIONS**

The only tasks remaining to delist the Site are approval of tis CSR and execution of the UECs. Once the Site has been delisted the following tasks will be performed.

### **8.3.1 Monitoring Well Abandonment**

Upon EPD approval of this CSR, Swift will abandon all the monitoring wells associated with the site except for point of demonstration monitoring wells to be used for annual monitoring (MW-28R and MW-32). The wells will be abandoned in general accordance with USEPA Region 4 Science and Ecosystem Support Division (SESD) guidance for well abandonment (SESDGUID-101-R1, Design and Installation of Monitoring Wells, dated January 29, 2013). Planned well abandonment procedures are outlined below.

The wells will be abandoned by pressure grouting the well screens and casings from the bottom up to the land surface using the positive displacement (tremie) method. The wells will not be over-drilled as the wells were constructed at the time of installation with the annular spaces grouted to prevent vertical migration of groundwater. The wells will be abandoned by plugging with a cement-bentonite grout. The grout seal will be Type I Portland cement or American Petroleum Institute Class A cement with no more than approximately four percent bentonite.

Well abandonment activities will be conducted under the direction of a professional geologist or engineer registered in the State of Georgia. The protective well covers and pads will be demolished and properly disposed, the area immediately around the casing excavated, and the casing removed to a depth of approximately one foot below the ground surface. Surface restoration of the abandoned locations will be commensurate with the expected future use.

### **8.3.2 Environmental Covenant**

Following EPD's approval of this CSR, the environmental covenants with the City of Moultrie, Tumlin Estate, and CPS will be executed, as referenced above in Section 7.2, in order to effectuate the actions listed below in Sections 8.3.3 and 8.3.4.

### **8.3.3 Annual Sampling**

Subsequent to delisting, groundwater monitoring will be conducted annually for analysis of lead, arsenic and barium to verify the groundwater fate and transport modeling presented in the VRP Application and Plan and this CSR. Water level elevations in the wells will be measured prior to sampling, and groundwater samples collected in general accordance with USEPA Region 4 SESD procedure SESDPROC-301-R4 (USEPA, 2017), or its latest revision. Monitoring wells MW-28R and MW-32 will serve as point of demonstration wells and will be sampled annually for three years or until MW-28R and MW-32 have met the Type 1 through Type 4 RRS for lead of 0.015 mg/L in two successive monitoring events, whichever occurs first.

### **8.3.4 Annual Reporting**

The results of the annual groundwater monitoring will be provided to the EPD within 60 days of sample collection. Additionally, as provided in the UECs, the owners of the three properties that make up the Site will report to EPD annually on the status of the UECs on their respective properties. In the event that groundwater monitoring is discontinued (upon EPD approval), annual reports will continue with reporting of UEC compliance for the duration of the covenants.

## 9.0 PUBLIC PARTICIPATION

The following public notice will be submitted to the Moultrie Observer within 7 days of submitting this CSR to EPD:

### **PUBLIC NOTICE**

Former Swift & Company Meat Processing Plant HSI Site #10509

1189 North Main Street

Moultrie, Colquitt County, Georgia 31768

*The Georgia Environmental Protection Division, Department of Natural Resources, State of Georgia (EPD) has placed this site on the Hazardous Site Inventory pursuant to its authority under the Hazardous Site Response Act and Rules promulgated thereunder. As required by the Rules for Hazardous Site Response and the Voluntary Remediation Program, the responsible party for this site was required to investigate the site and submit a Voluntary Remediation Program voluntary remediation program compliance status report to EPD summarizing the results of that investigation. EPD is currently reviewing the compliance status report to determine if corrective action is needed for regulated substances that have been released at this site. Before EPD decides whether corrective action is needed, the public has the opportunity to review the compliance status report and provide comments to EPD about the report.*

*In accordance with Rule 391-3-19-.06(5)(a) of the Georgia Rules for Hazardous Site Response and 12-8-107(f) of the Georgia Voluntary Remediation Program Act, notice is hereby made of a 30-day public comment period beginning on the date that the notice is published. Oral and written comments can be submitted to:*

*Mr. David Brownlee  
Georgia Department of Natural Resources  
Response and Remediation Program  
Floyd Tower East, Suite 1054  
2 Martin Luther King, Jr. Drive, S.E.  
Atlanta, Georgia 30334-9000  
(404) 657-8600*

*The designated contact person for the site is:*

René Rimelspach

Conagra Brands

222 Merchandise Mart Plaza, Suite 1300

Chicago, IL 60654

(312) 549-7099

The Compliance Status Report can be reviewed and copied at the Main Branch of the Moultrie-Colquitt County Library System located at 204 5<sup>th</sup> Street, SE, in Moultrie, Georgia.

## 10.0 REFERENCES

- Advanced Environmental Technologies, LLC., (AET), 2003. Revised Compliance Status Report, Former Swift & Company Meat Processing Facility, Moultrie, Colquitt County, Georgia., April 28, 2003.
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USEPA, 1999. Use of Monitored Natural Attenuation at Superfund, RCRA, Corrective Action, and Underground Storage Tank Sites, Office of Solid Waste and Emergency Response (OSWER), Directive 9200.4-17P, Washington, D.C.

## **TABLES**

Table 1A: Federally Protected Animal and Plant Species Occurring Within Colquitt and Surrounding Counties of Brooks, Cook, Mitchell, Thomas, Tift and Worth, Georgia

Species Name <i>Scientific Name</i>	County <sup>1</sup>	Federal Status <sup>2</sup>	State Status <sup>3</sup>	Preferred Habitat	Habitat Available in Project Area
<b>BIRDS</b>					
<b>Bald eagle**</b> <i>Haliaeetus leucocephalus</i>	Bo, Th	T	E	Inland waterways and estuarine areas in Georgia. Active eagle nests were located in Brooks County 1991-1992. No nests in 2000-2001	No
<b>Red-cockaded woodpecker</b> <i>Picoides borealis</i>	All	E	E	Nest in mature pine with low understory vegetation (<1.5m); forage in pine and pine hardwood stands > 30 years of age, preferably > 10" dbh	No
<b>Wood stork</b> <i>Mycteria americana</i>	All	E	E	Primarily feed in fresh and brackish wetlands and nest in cypress or other wooded swamps	No
<b>REPTILES</b>					
<b>Eastern indigo snake</b> <i>Drymarchon corais couperi</i>	All	T	T	During winter, den in xeric sandridge habitat preferred by gopher tortoises; during warm months, forage in creek bottoms, upland forests, and agricultural fields	Yes
<b>AMPHIBIANS</b>					
<b>Flatwoods salamander</b> <i>Ambystoma cingulatum</i>	Bo, Wo	T	T	Adults and subadults are fossorial; found in open mesic pine/wiregrass flatwoods dominated by longleaf or slash pine and maintained by frequent fire. During breeding period, which coincides with heavy rains from Oct.-Dec., move to isolated, shallow, small, depressions (forested with emergent vegetation) that dry completely on a cyclic basis. Last breeding record for Brooks county was 1970 and Worth County was in 1962.	No
<b>INVERTEBRATES</b>					
<b>Gulf moccasinshell mussel</b> <i>Medionidus penicillatus</i>	Ml, Wo	E	E	Medium streams to large rivers with slight to moderate current over sand and gravel substrates; may be associated with muddy sand substrates around tree roots.	No
<b>Ochlockonee moccasinshell</b> <i>Medionidus simpsonianus</i>	Cq, Th	E	E	Stable sandy and gravelly substrates in medium-sized streams to large rivers, often in areas swept free of silt by the current	No
<b>Oval pigtoe mussel</b> <i>Pleurobema pyriforme</i>	Cq, Th, Wo	E	E	River tributaries and main channels in slow to moderate currents over silty sand, muddy sand, sand, and gravel substrates	No
<b>Purple bankclimber mussel</b> <i>Elliptioideus sloatianus</i>	Ml, Wo	T	T	Main channels of ACF basin rivers in moderate currents over sand, sand mixed with mud, or gravel substrates	No
<b>Shiny-rayed pocketbook mussel</b> <i>Lampsilis subangulata</i>	Cq, Ml, Th, Wo	E	E	Medium creeks to the mainstems of rivers with slow to moderate currents over sandy substrates and associated with rock or clay	No
<b>PLANTS</b>					
<b>American chaffseed</b> <i>Schwalbea americana</i>	Wo	E	E	Fire-maintained wet savannahs in the Coastal Plain (with grass pinks, colic root, huckleberry and gallberry); grassy openings and swales of relict longleaf pine woods in the Piedmont ; the known population of this species in Worth County has been extirpated	No
<b>Cooley meadowrue</b> <i>Thalictrum coolevi</i>	Wo	E	E	On fine sandy loam in open, seasonally wet mixed pine-hardwoods and in adjacent wet savannahs; in Georgia, may be restricted to roadsides and powerline right-of-ways	No
<b>Pondberry</b> <i>Lindera melissifolia</i>	Wo	E	E	Shallow depression ponds of sandhills, margins of cypress ponds, and in seasonally wet low areas among bottomland hardwoods	No

Notes:

Source: U.S. Fish and Wildlife Service, Region 4 website accessed on September 3, 2008.

\*\*Bald Eagle was delisted on June 29, 2007; however, it is included here for consistency with USFWS GA counties lists. <http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=B008>

County <sup>1</sup>	Federal <sup>2</sup>	State <sup>3</sup>
Brooks - Bo	E - Endangered	E - Endangered
Colquitt - Cq	T - Threatened	T - Threatened
Cook - Cx		
Mitchell - Ml		
Thomas - Th		
Tift - Ti		
Worth - Wo		

Prepared by/Date: JAH 9/3/08

Checked by/Date: MBR 9/5/08

**Table 1B Georgia Department of Natural Resources Special Concern Animals, Plants, and Natural Communities in Colquitt County, Georgia**

Species Name Scientific Name	State Status <sup>1</sup>	State Rank <sup>2</sup>	Preferred Habitat	Habitat Available in Project Area
<b>REPTILES</b>				
<b>Gopher tortoise</b> <i>Gopherus polyphemus</i>	T	S2	Well-drained, sandy soils in forest and grassy areas; associated with pine overstory, open understory with grass and forb groundcover, and sunny areas for nesting	Yes
<b>Alligator snapping turtle</b> <i>Macroclmys temminckii</i>	T	S3	Rivers, lakes, and large ponds near stream swamps	No
<b>Mimic glass lizard</b> <i>Ophisaurus mimicus</i>	R	S2	Pine flatwoods; savannas; seepage bogs	No
<b>FISH</b>				
<b>Golden topminnow</b> <i>Fundulus chrysolus</i>	--	SU	Blackwater streams, ponds, bays, brackish streams with extensive aquatic vegetation	No
<b>Metallic shiner</b> <i>Pteronotropis metallicus</i>	--	S2?	Gulf slope streams east of the Apalachicola basin; probably similar to <i>P. stonei</i> and <i>P. grandipinnis</i> in habitat use	No
<b>PLANTS</b>				
<b>Sandhill angelica</b> <i>Angelica dentata</i>	R	S2?	Longleaf pine-wiregrass savannas	No
<b>Purple honeycomb head</b> <i>Baldouina atropurpurea</i>	R	S2	Wet savannas, pitcherplant bogs	No
<b>Tracy sundrew</b> <i>Drosera tracyi</i>	R	S1	Pitcherplant bogs; grassy seepage slopes	No
<b>Pond spice</b> <i>Litsea aestivalis</i>	T	S2	Margins of swamps, cypress ponds, and sandhill depression ponds and in hardwood swamps	No
<b>Odorless bayberry</b> <i>Myrica inodora</i>	T	S2?	Bayheads, titi swamps; forests with pond pine	No
<b>Savanna cowbane</b> <i>Oxypolis ternata</i>	R	S2	Wet pine savannas and bogs	No
<b>Snowy orchid</b> <i>Platanthera nivea</i>	R	S2S3	Wet savannas, pitcherplant bogs	No
<b>Solitary beakrush</b> <i>Rhynchospora solitaria</i>	E	S1	Wet, sandy, peaty depressions	No
<b>Yellow flytrap</b> <i>Sarracenia flava</i>	U	S3S4	Wet savannas, pitcherplant bogs	No
<b>Hooded pitcherplant</b> <i>Sarracenia minor</i>	U	S4	Wet savannas, pitcherplant bogs	No
<b>Parrot pitcherplant</b> <i>Sarracenia psittacina</i>	T	S2S3	Acid soils of open bogs, wet savannas, and low areas in pine flatwoods	No
<b>Wire-leaf dropseed</b> <i>Sporobolus teretifolius</i>	--	S2?	Longleaf pine-wiregrass savannas, pitcherplant bogs	No
<b>Stokes aster</b> <i>Stokesia laevis</i>	--	S1	Native to the southeastern coastal plain from South Carolina to northern Florida to Louisiana where it grows in wetlands, including pine flatwoods, savannas, and pitcher plant seepage areas	No

Prepared by/Date: JAH 9/3/08  
 Checked by/Date: MBR 9/5/08

**Notes:**

Source: Georgia Department of Natural Heritage website accessed on September 3, 2008.

- |                                 |   |
|---------------------------------|---|
| <b>State Status<sup>1</sup></b> | <b>State Rank<sup>2</sup></b>   |
| E - Endangered                  | SU - Possibly in peril in state, but status unknown; need more information on threats or distribution |
| T - Threatened                  | S1 - Critically impariled due to extreme rarity (5 or fewer occurrences)                              |
| R - Rare                        | S2 - Imperiled in state due to rarity (6-20 occurrences)  |
| U - Unusual                     | S3 - Rare or uncommon in state (21-100 occurrences)   |
|                                 | S4 - Apparently secure in state   |
|                                 | ? - Denotes questionable rank   |



Table 2: Risk Reduction Standards for Soils - Types 1 through 4

HSRA-Regulated Substance	Maximum Detected Concentrations (mg/kg)		Risk Reduction Standards (RRS) (mg/kg)														
			Type 1			Type 2			Type 3 Surface			Type 3 Subsurface			Type 4 Industrial Worker		
	Surface (a)	Subsurface (b)	RRS	Reference	Status	RRS	Reference	Status	RRS	Reference	Status	RRS	Reference	Status	RRS	Reference	Status
<b>Metals</b>																	
Arsenic	23	0.53	20	HSRA Type 1	E	5.8	Leaching	E	38	adult, c	C	41	Appendix I	C	5.8	Leaching	***
Barium	NA	103	1,000	HSRA Type 1	C	1,600	Leaching	***	1,000	HSRA Type 1	***	1,000	HSRA Type 1	***	19,000	Leaching	***
Cadmium	1.3	2.1	2.0	HSRA Type 1	E	7.5	Leaching	C	39	Appendix I	***	39	Appendix I	***	88	Leaching	***
Chromium	27	<b>1,320</b>	100	HSRA Type 1	E	1.9	Leaching	E	1,200	GWx100	E	1,200	Appendix I	E	38	Leaching	E
Lead	150	21	75	HSRA Type 1	E	270	Leaching	C	400	Appendix I	***	400	Appendix I	***	270	Leaching	***
Mercury	1.9	ND	0.50	HSRA Type 1	E	2.1	Leaching	C	17	Appendix I	***	17	Appendix I	***	37	Leaching	***
Selenium	1.3	0.44	2.0	HSRA Type 1	C	5.2	Leaching	***	36	Appendix I	***	36	Appendix I	***	61	Leaching	***
Silver	ND	0.18	2.0	HSRA Type 1	C	17	Leaching	***	10	Appendix I	***	10	Appendix I	***	99	Leaching	***
<b>Volatile Organic Compounds</b>																	
Benzene	ND	0.0097	0.50	GWx100	C	0.068	Leaching	***	0.50	GWx100	***	0.50	GWx100	***	0.10	Leaching	***
Ethylbenzene	ND	0.36	70	GWx100	C	16	Leaching	***	70	GWx100	***	70	GWx100	***	16	Leaching	***
Toluene	0.036	0.065	100	GWx100	C	14	Leaching	***	100	GWx100	***	100	GWx100	***	83	Leaching	***
Xylenes	ND	0.27	1,000	GWx100	C	200	Leaching	***	1,000	GWx100	***	1,000	GWx100	***	200	Leaching	***
<b>Semi-Volatile Organic Compounds</b>																	
Benzo(a)anthracene	6.4	ND	5.0	Appendix I	E	7.8	leaching	C	5.0	Appendix I	***	5.0	Appendix I	***	11	Leaching	***
Benzo(a)pyrene	6.0	ND	1.6	Appendix I	E	9.1	child, c	C	1.6	Appendix I	***	1.6	Appendix I	***	65	Leaching	***
Benzo(b)fluoranthene	5.7	ND	5.0	Appendix I	E	91	child, c	C	5.0	Appendix I	***	5.0	Appendix I	***	650	Leaching	***
Benzo(k)fluoranthene	5.7	ND	5.0	Appendix I	E	912	child, c	C	5.0	Appendix I	***	5.0	Appendix I	***	6,500	Leaching	***
Chrysene	6.4	ND	5.0	Appendix I	E	6,500	Leaching	C	5.0	Appendix I	***	5.0	Appendix I	***	24,000	Leaching	***
Diethyl phthalate	4.6	0.61	500	Appendix I	C	130	Leaching	***	500	Appendix I	***	500	Appendix I	***	770	Leaching	***
Naphthalene	1.2	ND	100	Appendix I	C	0.0059	Leaching	***	100	Appendix I	***	100	Appendix I	***	0.029	Leaching	***

**Notes:**

Maximum concentrations do not include T1N and T1S sample results which were from the wall of a tank excavation area.

Maximum concentrations do not include samples collected below the top of the water table.

mg/kg = milligram per kilogram

Reference = Reference for the RRS

NA = Not Analyzed

ND = Substance not detected

(a) Surface soil is defined under HSRA as 0 to 2 feet below ground surface

(b) Subsurface soil is defined under HSRA as any point above the upper most groundwater zone; used here to mean other than surface soil.

\*\*\* Substance concentrations complies with a lower RRS

C = Substance concentration meets the respective RRS

E = Substance concentration exceeds the respective RRS

HSRA Type 1 = Table 2, Appendix III

GW x 100 = HSRA ground water criteria standard times a factor of 100

Appendix I = HSRA Rules Appendix I: Regulated Substances and Soil Concentrations that Trigger Notification

G = Lower value of direct soil contact and non-residential soil-to-ground water leaching values

Leaching = RRS based on soil-to-groundwater transport equation from the Soil Screening Guidance background document (USEPA, 1996).

child, nc = Non-carcinogenic RRS for a child

adult, c = Carcinogenic RRS for an adult

**Bold** Substance concentrations exceeds Types 1, 2, 3 and 4 RRS

Prepared by/Date: JMQ 2/19/18

Checked by/Date: IMR 2/19/18

Table 3: Risk Reduction Standards for Ground Water

HSRA-Regulated Substance	Maximum Detected Concentrations (mg/l)	Risk Reduction Standards (RRS) (mg/l)								
		Types 1 and 3			Type 2			Type 4		
		RRS	Reference	Status	RRS	Reference	Status	RRS	Reference	Status
<b>Metals</b>										
Arsenic	<b>0.012</b>	0.010	A	E	0.00060	adult, c	E	0.0022	adult, c	E
Barium	7.0	2.0	A	E	4.0	child, nc	E	23	adult, nc	C
Cadmium	0.028	0.0050	A	E	0.010	child, nc	E	0.058	adult, nc	C
Chromium	<b>0.29</b>	0.10	A	E	--	--	--	--	--	--
Lead	<b>0.14</b>	0.015	A	E	0.015	TT	E	0.015	TT	E
Mercury	ND	0.0020	A	C	0.0060	child, nc	***	0.035	adult, nc	***
Selenium	0.11	0.050	A	E	0.10	child, nc	E	0.58	adult, nc	C
Silver	ND	0.10	A	C	0.10	child, nc	***	0.58	adult, nc	***
<b>Volatile Organic Compounds</b>										
Benzene	<b>0.14</b>	0.0050	A	E	0.0066	adult, c	E	0.010	adult, c	E
Ethylbenzene	0.029	0.70	A	C	0.024	adult, c	***	0.033	adult, c	***
Toluene	ND	1.0	A	C	1.0	child, nc	***	6.0	adult, nc	***
Xylenes	0.0039	10	A	C	0.060	child, nc	***	0.33	adult, nc	***
<b>Semi-Volatile Organic Compounds</b>										
Benzo(a)anthracene	ND	0.00010	A	C	0.0011	child, c	***	0.0015	adult, c	***
Benzo(a)pyrene	ND	0.00020	A	C	0.00090	adult, c	***	0.0033	adult, c	***
Benzo(b)fluoranthene	ND	0.00020	A	C	0.0090	adult, c	***	0.033	adult, c	***
Benzo(k)fluoranthene	ND	0.00010	A	C	0.090	adult, c	***	0.33	adult, c	***
Chrysene	ND	0.010	A	C	0.90	adult, c	***	3.3	adult, c	***
Diethyl phthalate	ND	5.0	A	C	16	child, nc	***	93	adult, nc	***
Naphthalene	ND	0.020	A	C	0.0018	child, nc	***	0.010	adult, c	***

Prepared by/Date: JMQ 2/19/18  
 Checked by/Date: IMR 2/19.18

Notes:

- mg/l = milligram per liter
- Reference = Reference for the RRS
- \*\*\* Substance concentrations complies with a lower RRS
- C = Substance concentration meets the respective RRS
- E = Substance concentration exceeds the respective RRS
- Child = Residential child RRS
- Bold Substance concentrations exceeds Types 1/3, 2, and 4 RRS**
- A = Table 1, Appendix III, HSRA Rule
- TT = Treatment Technology goal
- child, nc = Non-carcinogenic RRS for a child
- adult, c = Carcinogenic RRS for an adult
- adult, nc = Non-carcinogenic RRS for an adult

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-1	8/30/01	308.00	2.59-17.59	12.91	295.09
	12/18/01	308.00	2.59-17.59	13.82	294.18
	1/30/03	308.00	2.59-17.59	10.23	297.77
	2/14/03	308.00	2.59-17.59	11.58	296.42
	4/8/03	308.00	2.59-17.59	9.44	298.56
	6/9/04	308.00	2.59-17.59	10.55	297.45
	11/5/04	308.00	2.59-17.59	9.46	298.54
	1/25/2005 <sup>1</sup>	306.50	1.09-16.09	6.88	299.62
	2/15/05	306.50	1.09-16.09	6.46	300.04
	5/15/2007 <sup>2</sup>	306.06	0.65-15.66	10.35	295.71
	7/16/2008 <sup>2</sup>	306.06	0.65-15.66	11.86	294.20
	10/19/09	306.06	0.65-15.66	10.47	295.59
	3/28/12	306.06	0.65-15.66	4.38	301.68
	9/26/12	306.06	0.65-15.66	3.37	302.69
	3/26/13	306.06	0.65-15.67	1.68	304.38
	9/9/13	306.06	0.65-15.67	2.98	303.08
9/22/14	306.06	0.65-15.67	9.78	296.28	
9/21/15	306.06	0.65-15.68	10.50	295.56	
9/27/16	306.06	0.65-15.68	2.06	304.00	
1/18/17	306.06	0.65-15.68	2.70	303.36	
9/25/17	306.06	0.65-15.68	5.43	300.63	
MW-2	8/30/01	309.38	2.35-17.35	12.15	297.23
	12/18/01	309.38	2.35-17.35	15.16	294.22
	1/30/03	309.38	2.35-17.35	11.75	297.63
	2/14/03	309.38	2.35-17.35	11.60	297.78
	4/8/03	309.38	2.35-17.35	10.96	298.42
	6/9/04	309.38	2.35-17.35	12.77	296.61
	11/5/04	309.38	2.35-17.35	11.46	297.92
	1/25/2005 <sup>1</sup>	307.96	0.93-15.93	8.90	299.06
	2/15/05	307.96	0.93-15.93	8.56	299.40
	5/16/2007 <sup>2</sup>	307.48	0.45-15.45	Dry	Dry
	7/16/2008 <sup>2</sup>	307.48	0.45-15.45	Dry	Dry
	10/19/09	307.48	0.45-15.45	0.21	307.27
	3/28/12	307.48	0.45-15.45	Dry	Dry
	9/26/12	307.48	0.45-15.45	4.86	302.62
	3/26/13	307.48	0.45-15.46	1.31	306.17
	9/9/13	307.48	0.45-15.46	3.12	304.36
9/22/14	307.48	0.45-15.46	Dry	Dry	
9/21/15	307.48	0.45-15.47	Dry	Dry	
9/27/16	307.48	0.45-15.47	Dry	Dry	
1/18/17	307.48	0.45-15.47	Dry	Dry	
9/25/17	307.48	0.45-15.47	Dry	Dry	
MW-3	8/30/01	306.91	2.07-21.67	10.22	296.69
	12/18/01	306.91	2.07-21.67	13.02	293.89
	1/30/03	306.91	2.07-21.67	9.53	297.38
	2/14/03	306.91	2.07-21.67	9.35	297.56
	4/8/03	306.91	2.07-21.67	8.76	298.15
	6/9/04	306.91	2.07-21.67	10.49	296.42
	11/5/04	306.91	2.07-21.67	9.75	297.16
	1/25/2005 <sup>1</sup>	306.79	1.95-21.55	8.92	297.87
	2/15/05	306.79	1.95-21.55	8.52	298.27
	5/15/2007 <sup>2</sup>	306.32	1.48-21.08	11.85	294.47
	7/16/2008 <sup>2</sup>	306.32	1.48-21.08	12.92	293.40
	10/19/09	306.32	1.48-21.08	NM	NM
	3/28/12	306.32	1.48-21.08	10.44	295.88
	9/26/12	306.32	1.48-21.08	9.89	296.43
	3/26/13	306.32	1.48-21.09	8.31	298.01
	9/9/13	306.32	1.48-21.09	8.41	297.91
9/22/14	306.32	1.48-21.09	10.35	295.97	
9/21/15	306.32	1.48-21.10	13.32	293.00	
9/27/16	306.32	1.48-21.10	10.82	295.50	
1/18/17	306.32	1.48-21.10	9.69	296.63	
9/25/17	306.32	1.48-21.10	11.30	295.02	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-4	8/30/01	309.73	3.39-13.39	1.99	307.74
	12/18/01	309.73	3.39-13.39	4.28	305.45
	1/30/03	309.73	3.39-13.39	2.39	307.34
	2/14/03	309.73	3.39-13.39	1.45	308.28
	4/8/03	309.73	3.39-13.39	1.62	308.11
	6/9/04	309.73	3.39-13.39	3.07	306.66
	11/5/04	309.73	3.39-13.39	2.82	306.91
	1/25/05	309.73	3.39-13.39	1.45	308.28
	2/15/05	309.73	3.39-13.39	0.19	309.54
	5/15/2007 <sup>2</sup>	309.39	3.05-13.05	NL	NL
	7/16/2008 <sup>2</sup>	309.39	3.05-13.05	NL	NL
	10/19/09	309.39	3.05-13.05	1.16	308.23
	3/28/12	309.39	3.05-13.05	2.42	306.97
	9/26/12	309.39	3.05-13.05	1.35	308.04
	3/26/13	309.39	3.05-13.06	0.74	308.65
	9/9/13	309.39	3.05-13.06	1.34	308.05
	9/22/14	309.39	3.05-13.06	1.47	307.92
9/21/15	309.39	3.05-13.07	4.01	305.38	
9/27/16	309.39	3.05-13.07	1.01	308.38	
1/18/17	309.39	3.05-13.07	1.10	308.29	
9/25/17	309.39	3.05-13.07	2.13	307.26	
MW-5	8/30/01	307.83	1.55-11.55	1.70	306.13
	12/18/01	307.83	1.55-11.55	6.45	301.38
	1/30/03	307.83	1.55-11.55	3.66	304.17
	2/14/03	307.83	1.55-11.55	3.23	304.60
	4/8/03	307.83	1.55-11.55	2.43	305.40
	6/9/04	307.83	1.55-11.55	2.96	304.87
	11/5/04	307.83	1.55-11.55	3.49	304.34
	1/25/05	307.83	1.55-11.55	2.82	305.01
	2/15/05	307.83	1.55-11.55	2.31	305.52
	5/15/07	307.83	1.55-11.55	NL	NL
	7/16/08	307.83	1.55-11.55	NL	NL
	10/19/09	307.83	1.55-11.55	NL	NL
	3/28/12	307.83	1.55-11.55	NL	NL
	9/26/12	307.83	1.55-11.55	NL	NL
	3/26/13	307.83	1.55-11.56	NL	NL
	9/9/13	307.83	1.55-11.56	NL	NL
	9/22/14	307.83	1.55-11.56	NL	NL
9/21/15	307.83	1.55-11.57	NL	NL	
1/18/17	307.83	1.55-11.57	NL	NL	
9/25/17	307.83	1.55-11.57	NL	NL	
MW-6	8/30/01	307.98	2.12-12.12	8.01	299.97
	12/18/01	307.98	2.12-12.12	8.69	299.29
	1/30/03	307.98	2.12-12.12	Covered with fill dirt	
	2/14/03	307.98	2.12-12.12	2.40	305.58
	4/8/03	307.98	2.12-12.12	2.24	305.74
	6/9/04	307.98	2.12-12.12	3.52	304.46
	11/5/04	307.98	2.12-12.12	3.66	304.32
	1/25/2005 <sup>1</sup>	309.96	4.10-14.10	5.45	304.51
	2/15/05	309.96	4.10-14.10	5.76	304.20
	5/15/2007 <sup>2</sup>	309.55	3.69-13.69	7.35	302.20
	7/16/2008 <sup>2</sup>	309.55	3.69-13.69	27.95 <sup>(3)</sup>	281.60
	10/19/09	309.55	3.69-13.69	3.75	305.80
	3/28/12	309.55	3.69-13.69	5.81	303.74
	9/26/12	309.55	3.69-13.69	6.06	303.49
	3/26/13	309.55	3.69-13.70	3.25	306.30
	9/9/13	309.55	3.69-13.70	3.28	306.27
	9/22/14	309.55	3.69-13.70	7.90	301.65
9/21/15	309.55	3.69-13.71	7.85	301.70	
9/27/16	309.55	3.69-13.71	5.21	304.34	
1/18/17	309.55	3.69-13.71	3.66	305.89	
9/26/17	309.55	3.69-13.71	5.59	303.96	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-7	12/18/01	308.17	5.49-25.49	13.87	294.30
	1/30/03	308.17	5.49-25.49	Covered with fill dirt	
	2/14/03	308.17	5.49-25.49	9.99	298.18
	4/8/03	308.17	5.49-25.49	9.39	298.78
	6/9/04	308.17	5.49-25.49	11.01	297.16
	11/5/04	308.17	5.49-25.49	9.57	298.60
	1/25/2005 <sup>1</sup>	309.63	6.95-26.95	11.22	298.41
	2/15/05	309.63	6.95-26.95	11.1	298.53
	5/16/2007 <sup>2</sup>	309.21	6.53-26.53	14.32	294.89
	7/16/2008 <sup>2</sup>	309.21	6.53-26.53	NM	NM
	10/19/09	309.21	6.53-26.53	14.81	294.40
	3/28/12	309.21	6.53-26.53	12.73	296.48
	9/26/12	309.21	6.53-26.53	11.98	297.23
	3/26/13	309.21	6.53-26.54	9.56	299.65
	9/9/13	309.21	6.53-26.54	10.68	298.53
9/22/14	309.21	6.53-26.54	13.76	295.45	
9/21/15	309.21	6.53-26.55	15.85	293.36	
9/27/16	309.21	6.53-26.55	13.02	296.19	
1/18/17	309.21	6.53-26.55	11.56	297.65	
9/25/17	309.21	6.53-26.55	13.49	295.72	
MW-8	8/30/01	308.61	2.20-12.20	11.01	297.60
	12/18/01	308.61	2.20-12.20	11.10	297.51
	1/30/03	308.61	2.20-12.20	6.29	302.32
	2/14/03	308.61	2.20-12.20	4.66	303.95
	4/8/03	308.61	2.20-12.20	3.97	304.64
	6/9/04	308.61	2.20-12.20	6.67	301.94
	11/5/04	308.61	2.20-12.20	7.68	300.93
	1/25/2005 <sup>1</sup>	308.43	2.02-12.02	3.72	304.71
	2/15/05	308.43	2.02-12.02	4.14	304.29
	5/15/2007 <sup>2</sup>	308.03	1.62-11.62	6.56	301.47
	7/16/2008 <sup>2</sup>	308.03	1.62-11.62	6.43	301.60
	10/19/09	308.03	1.62-11.62	1.41	306.62
	3/28/12	308.03	1.62-11.62	4.16	303.87
	9/26/12	308.03	1.62-11.62	2.44	305.59
	3/26/13	308.03	1.62-11.63	0.86	307.17
	9/9/13	308.03	1.62-11.63	2.41	305.62
	9/22/14	308.03	1.62-11.63	2.18	305.85
	9/21/15	308.03	1.62-11.64	7.01	301.02
9/27/16	308.03	1.62-11.64	0.66	307.37	
1/18/17	308.03	1.62-11.64	1.4	306.63	
9/25/17	308.03	1.62-11.64	3.19	304.84	
MW-9	8/30/01	307.12	2.43-22.43	10.92	296.20
	12/18/01	307.12	2.43-22.43	13.62	293.50
	1/30/03	307.12	2.43-22.43	9.97	297.15
	2/14/03	307.12	2.43-22.43	9.80	297.32
	4/8/03	307.12	2.43-22.43	9.27	297.85
	6/9/04	307.12	2.43-22.43	Covered with fill dirt	
	11/5/04	307.12	2.43-22.43	10.31	296.81
	1/25/2005 <sup>1</sup>	307.57	2.88-22.88	10.05	297.52
	2/15/05	307.57	2.88-22.88	9.92	297.65
	5/15/2007 <sup>2</sup>	307.12	2.43-22.43	13.06	294.06
	7/16/2008 <sup>2</sup>	307.12	2.43-22.43	14.15	292.97
	10/19/09	307.12	2.43-22.43	13.46	293.66
	3/28/12	307.12	2.43-22.43	11.65	295.47
	9/26/12	307.12	2.43-22.43	11.14	295.98
	3/26/13	307.12	2.43-22.44	9.49	297.63
	9/9/13	307.12	2.43-22.44	9.51	297.61
	9/22/14	307.12	2.43-22.44	12.51	294.61
	9/21/15	307.12	2.43-22.45	14.43	292.69
9/27/16	307.12	2.43-22.45	12.14	294.98	
1/18/17	307.12	2.43-22.45	10.85	296.27	
9/26/17	307.12	2.43-22.45	12.49	294.63	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-10	8/30/01	308.20	1.65-11.65	3.25	304.95
	12/18/01	308.20	1.65-11.65	5.58	302.62
	1/30/03	308.20	1.65-11.65	Covered with fill dirt	
	2/14/03	308.20	1.65-11.65	2.50	305.70
	4/8/03	308.20	1.65-11.65	1.89	306.31
	6/9/04	308.20	1.65-11.65	2.87	305.33
	11/5/04	308.20	1.65-11.65	3.30	304.90
	1/25/2005 <sup>1</sup>	309.29	2.74-12.74	3.90	305.39
	2/15/05	309.29	2.74-12.74	4.15	305.14
	5/15/2007 <sup>2</sup>	308.94	2.39-12.39	5.82	303.12
	7/16/2008 <sup>2</sup>	308.94	2.39-12.39	5.43	303.51
	10/19/09	308.94	2.39-12.39	3.74	305.20
	3/28/12	308.94	2.39-12.39	NL	NL
	9/26/12	308.94	2.39-12.39	NL	NL
	3/26/13	308.94	2.39-12.40	NL	NL
	9/9/13	308.94	2.39-12.40	NL	NL
	9/22/14	308.94	2.39-12.40	NL	NL
9/21/15	308.94	2.39-12.41	NL	NL	
9/27/16	308.94	2.39-12.41	NL	NL	
1/18/17	308.94	2.39-12.41	NL	NL	
9/25/17	308.94	2.39-12.41	NL	NL	
MW-11	8/30/01	308.92	1.84-11.84	10.80	298.12
	12/18/01	308.92	1.84-11.84	5.73	303.19
	1/30/03	308.92	1.84-11.84	2.89	306.03
	2/14/03	308.92	1.84-11.84	2.78	306.14
	4/8/03	308.92	1.84-11.84	3.16	305.76
	6/9/04	308.92	1.84-11.84	5.56	303.36
	11/5/04	308.92	1.84-11.84	4.99	303.93
	1/25/05	308.92	1.84-11.84	4.15	304.77
	2/15/05	308.92	1.84-11.84	3.96	304.96
	5/15/2007 <sup>2</sup>	308.47	1.39-11.39	6.17	302.30
	7/16/2008 <sup>2</sup>	308.47	1.39-11.39	3.60	304.87
	10/19/09	308.47	1.39-11.39	2.05	306.42
	3/28/12	308.47	1.39-11.39	NL	NL
	9/26/12	308.47	1.39-11.39	NL	NL
	3/26/13	308.47	1.39-11.40	NL	NL
	9/9/13	308.47	1.39-11.40	NL	NL
	9/22/14	308.47	1.39-11.40	NL	NL
9/21/15	308.47	1.39-11.41	NL	NL	
9/27/16	308.47	1.39-11.41	NL	NL	
1/18/17	308.47	1.39-11.41	NL	NL	
9/25/17	308.47	1.39-11.41	NL	NL	
MW-12	8/30/01	311.10	1.76-11.76	4.63	306.47
	12/18/01	311.10	1.76-11.76	5.73	305.37
	1/30/03	311.10	1.76-11.76	7.80	303.30
	2/14/03	311.10	1.76-11.76	4.63	306.47
	4/8/03	311.10	1.76-11.76	3.95	307.15
	6/9/04	311.10	1.76-11.76	6.12	304.98
	11/5/04	311.10	1.76-11.76	6.35	304.75
	1/25/05	311.10	1.76-11.76	4.35	306.75
	2/15/05	311.10	1.76-11.76	4.4	306.70
	5/15/2007 <sup>2</sup>	310.77	1.43-11.43	6.60	304.17
	7/16/2008 <sup>2</sup>	310.77	1.43-11.43	6.47	304.30
	10/19/09	310.77	1.43-11.43	3.55	307.22
	3/28/12	310.77	1.43-11.43	4.53	306.24
	9/26/12	310.77	1.43-11.43	3.48	307.29
	3/26/13	310.77	1.43-11.44	2.10	308.67
	9/9/13	310.77	1.43-11.44	2.82	307.95
	9/22/14	310.77	1.43-11.44	4.94	305.83
9/21/15	310.77	1.43-11.45	6.38	304.39	
9/27/16	310.77	1.43-11.45	4.8	305.97	
1/18/17	310.77	1.43-11.45	3.36	307.41	
9/25/17	310.77	1.43-11.45	4.78	305.99	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-13D	8/30/01	308.78	19.58-24.58	12.35	296.43
	12/18/01	308.78	19.58-24.58	15.23	293.55
	1/30/03	308.78	19.58-24.58	11.50	297.28
	2/14/03	308.78	19.58-24.58	11.34	297.44
	4/8/03	308.78	19.58-24.58	11.80	296.98
	6/9/04	308.78	19.58-24.58	12.58	296.20
	11/5/04	308.78	19.58-24.58	11.81	296.97
	1/25/2005 <sup>1</sup>	308.58	19.38-24.38	10.92	297.66
	2/15/05	308.58	19.38-24.38	10.85	297.73
	5/15/2007 <sup>2</sup>	308.15	18.95-23.95	13.99	294.16
	7/16/2008 <sup>2</sup>	308.15	18.95-23.95	15.16	292.99
	10/19/09	308.15	18.95-23.95	14.51	293.64
	3/28/12	308.15	18.95-23.95	12.67	295.48
	9/26/12	308.15	18.95-23.95	12.12	296.03
	3/26/13	308.15	18.95-23.96	10.46	297.69
	9/9/13	308.15	18.95-23.96	10.44	297.71
	9/22/14	308.15	18.95-23.96	13.52	294.63
9/21/15	308.15	18.95-23.97	15.45	292.70	
9/27/16	308.15	18.95-23.97	13.15	295.00	
1/18/17	308.15	18.95-23.97	11.83	296.32	
9/26/17	308.15	18.95-23.97	13.47	294.68	
MW-14	8/30/01	306.92	1.19-6.19	DRY	DRY
	12/18/01	306.92	1.19-6.19	DRY	DRY
	1/30/03	306.92	1.19-6.19	2.98	303.94
	2/14/03	306.92	1.19-6.19	2.20	304.72
	4/8/03	306.92	1.19-6.19	2.67	304.25
	6/9/04	306.92	1.19-6.19	3.20	303.72
	11/5/04	306.92	1.19-6.19	3.24	303.68
	1/25/2005 <sup>1</sup>	306.81	1.08-6.08	2.80	304.01
	2/15/05	306.81	1.08-6.08	2.31	304.50
	5/15/2007 <sup>2</sup>	306.45	0.72-5.72	4.12	302.33
	7/16/2008 <sup>2</sup>	306.45	0.72-5.72	3.65	302.80
	10/19/09	306.45	0.72-5.72	NM	NM
	3/28/12	306.45	0.72-5.72	2.86	303.59
	9/26/12	306.45	0.72-5.72	2.66	303.79
	3/26/13	306.45	0.72-5.73	1.93	304.52
	9/9/13	306.45	0.72-5.73	2.54	303.91
	9/22/14	306.45	0.72-5.73	2.39	304.06
9/21/15	306.45	0.72-5.74	3.70	302.75	
9/27/16	306.45	0.72-5.74	1.91	304.54	
1/18/17	306.45	0.72-5.74	2.11	304.34	
9/25/17	306.45	0.72-5.74	Dry	Dry	
MW-15	1/30/03	305.82	5.18-15.18	14.94	290.88
	2/14/03	305.82	5.18-15.18	13.77	292.05
	4/8/03	305.82	5.18-15.18	9.53	296.29
	6/9/04	305.82	5.18-15.18	6.58	299.24
	11/5/04	305.82	5.18-15.18	5.75	300.07
	1/25/2005 <sup>1</sup>	305.88	5.24-15.24	5.25	300.63
	2/15/05	305.88	5.24-15.24	4.79	301.09
	5/16/2007 <sup>2</sup>	305.48	4.84-14.84	7.61	297.87
	7/16/2008 <sup>2</sup>	305.48	4.84-14.84	8.02	297.46
	10/19/09	305.48	4.84-14.84	5.66	299.82
	3/28/12	305.48	4.84-14.84	4.92	300.56
	9/26/12	305.48	4.84-14.84	4.62	300.86
	3/26/13	305.48	4.84-14.85	4.02	301.46
	9/9/13	305.48	4.84-14.85	4.14	301.34
	9/22/14	305.48	4.84-14.85	4.97	300.51
	9/21/15	305.48	4.84-14.86	8.00	297.48
	9/27/16	305.48	4.84-14.86	4.87	300.61
1/18/17	305.48	4.84-14.86	6.09	299.39	
9/25/17	305.48	4.84-14.86	5.32	300.16	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-16	1/30/03	309.95	5.40-20.40	NM	NM
	2/14/03	309.95	5.40-20.40	11.91	298.04
	4/8/03	309.95	5.40-20.40	11.31	298.64
	6/9/04	309.95	5.40-20.40	12.99	296.96
	11/5/04	309.95	5.40-20.40	12.19	297.76
	1/25/2005 <sup>1</sup>	310.00	5.45-20.45	11.69	298.31
	2/15/05	310.00	5.45-20.45	11.53	298.47
	5/16/2007 <sup>2</sup>	309.55	5.00-20.00	14.55	295.00
	7/16/2008 <sup>2</sup>	309.55	5.00-20.00	15.67	293.88
	10/19/09	309.55	5.00-20.00	14.49	295.06
	3/28/12	309.55	5.00-20.00	12.98	296.57
	9/26/12	309.55	5.00-20.00	12.38	297.17
	3/26/13	309.55	5.00-20.01	10.78	298.77
	9/9/13	309.55	5.00-20.01	10.96	298.59
	9/22/14	309.55	5.00-20.01	14.17	295.38
	9/21/15	307.57	5.00-20.02	14.15	293.42
9/27/16	307.57	5.00-20.02	11.38	296.19	
1/18/17	307.57	5.00-20.02	10.3	297.27	
9/25/17	307.57	5.00-20.02	12.01	295.56	
MW-17	1/30/03	307.53	4.90-14.90	2.70	304.83
	2/14/03	307.53	4.90-14.90	2.27	305.26
	4/8/03	307.53	4.90-14.90	2.42	305.11
	6/9/04	307.53	4.90-14.90	4.10	303.43
	11/5/04	307.53	4.90-14.90	3.82	303.71
	1/25/05	307.53	4.90-14.90	Covered with fill dirt	
	2/15/05	307.53	4.90-14.90	3.38	304.15
	5/16/07	307.53	4.90-14.90	NL	NL
	7/16/08	307.53	4.90-14.90	NL	NL
	10/19/09	307.53	4.90-14.90	Destroyed	Destroyed
	3/28/12	307.53	4.90-14.90	Destroyed	Destroyed
	9/26/12	307.53	4.90-14.90	Destroyed	Destroyed
	3/26/13	307.53	4.90-14.91	Destroyed	Destroyed
	9/9/13	307.53	4.90-14.91	Destroyed	Destroyed
	9/22/14	307.53	4.90-14.91	Destroyed	Destroyed
	9/21/15	307.53	4.90-14.92	Destroyed	Destroyed
9/27/16	307.53	4.90-14.92	Destroyed	Destroyed	
1/18/17	307.53	4.90-14.92	Destroyed	Destroyed	
9/25/17	307.53	4.90-14.92	Destroyed	Destroyed	
MW-18	1/30/03	307.43	5.38-20.38	8.50	298.93
	2/14/03	307.43	5.38-20.38	9.23	298.2
	4/8/03	307.43	5.38-20.38	8.74	298.69
	6/9/04	307.43	5.38-20.38	10.13	297.3
	11/5/04	307.43	5.38-20.38	8.86	298.57
	1/25/2005 <sup>1</sup>	308.12	6.07-21.07	9.13	298.99
	2/15/05	308.12	6.07-21.07	9.16	298.96
	5/15/2007 <sup>2</sup>	307.69	5.64-20.64	13.09	294.6045
	7/16/2008 <sup>2</sup>	307.69	5.64-20.64	14.46	293.23
	10/19/09	307.69	5.64-20.64	13.37	294.32
	3/28/12	307.69	5.64-20.64	11.11	296.58
	9/26/12	307.69	5.64-20.64	10.13	297.56
	3/26/13	307.69	5.64-20.65	6.12	301.57
	9/9/13	307.69	5.64-20.65	8.46	299.23
	9/22/14	307.69	5.64-20.65	12.41	295.28
	9/21/15	309.03	5.64-20.66	15.91	293.12
9/27/16	309.03	5.64-20.66	10.91	298.12	
1/18/17	309.03	5.64-20.66	9.66	299.37	
9/25/17	309.03	5.64-20.66	12.92	296.11	



**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-19	1/30/03	308.66	5.42-15.42	5.10	303.56
	2/14/03	308.66	5.42-15.42	5.94	302.72
	4/8/03	308.66	5.42-15.42	6.08	302.58
	6/9/04	308.66	5.42-15.42	7.31	301.35
	11/5/04	308.66	5.42-15.42	6.67	301.99
	1/25/2005 <sup>1</sup>	308.89	5.65-15.65	8.60	300.29
	2/15/05	308.89	5.65-15.65	5.43	303.46
	5/16/2007 <sup>2</sup>	308.47	5.23-15.23	8.68	299.794
	7/16/2008 <sup>2</sup>	308.47	5.23-15.23	9.78	298.69
	10/19/09	308.47	5.23-15.23	5.96	302.51
	3/28/12	308.47	5.23-15.23	6.50	301.97
	9/26/12	308.47	5.23-15.23	6.35	302.12
	3/26/13	308.47	5.23-15.24	4.83	303.64
	9/9/13	308.47	5.23-15.24	6.13	302.34
	9/22/14	308.47	5.23-15.24	10.71	297.76
9/21/15	308.47	5.23-15.25	10.78	297.69	
9/27/16	308.47	5.23-15.25	NM	NM	
1/18/17	308.47	5.23-15.25	5.95	302.52	
9/25/17	308.47	5.23-15.25	7.86	300.61	
MW-20	1/30/03	305.63	5.21-15.21	8.20	297.43
	2/14/03	305.63	5.21-15.21	7.69	297.94
	4/8/03	305.63	5.21-15.21	6.98	298.65
	6/9/04	305.63	5.21-15.21	8.72	296.91
	11/5/04	305.63	5.21-15.21	8.09	297.54
	1/25/2005 <sup>1</sup>	305.67	5.25-15.25	7.50	298.17
	2/15/05	305.67	5.25-15.25	7.46	298.21
	5/15/2007 <sup>2</sup>	305.30	4.88-14.88	10.30	295.0002
	7/16/2008 <sup>2</sup>	305.30	4.88-14.88	6.57	298.73
	10/19/09	305.30	4.88-14.88	2.57	302.73
	3/28/12	305.30	4.88-14.88	4.88	300.42
	9/26/12	305.30	4.88-14.88	2.68	302.62
	3/26/13	305.30	4.88-14.89	1.81	303.49
	9/9/13	305.30	4.88-14.89	3.91	301.39
	9/22/14	305.30	4.88-14.89	3.72	301.58
9/21/15	305.30	4.88-14.90	8.99	296.31	
9/27/16	305.30	4.88-14.90	2.46	302.84	
1/18/17	305.30	4.88-14.90	3.41	301.89	
9/25/17	305.30	4.88-14.90	3.55	301.75	
MW-21	1/30/03	306.12	5.18-15.18	9.60	296.52
	2/14/03	306.12	5.18-15.18	6.90	299.22
	4/8/03	306.12	5.18-15.18	6.72	299.40
	6/9/04	306.12	5.18-15.18	7.91	298.21
	11/5/04	306.12	5.18-15.18	8.13	297.99
	1/25/2005 <sup>1</sup>	306.16	5.22-15.22	7.66	298.50
	2/15/05	306.16	5.22-15.22	7.53	298.63
	5/15/2007 <sup>2</sup>	305.82	4.88-14.88	9.08	296.74
	7/16/2008 <sup>2</sup>	305.82	4.88-14.88	9.12	296.70
	10/19/09	305.82	4.88-14.88	1.75	304.07
	3/28/12	305.82	4.88-14.88	4.3	301.52
	9/26/12	305.82	4.88-14.88	2.85	302.97
	3/26/13	305.82	4.88-14.89	0.46	305.36
	9/9/13	305.82	4.88-14.89	1.39	304.43
	9/22/14	305.82	4.88-14.89	5.21	300.61
9/21/15	305.82	4.88-14.90	5.98	299.84	
9/27/16	305.82	4.88-14.90	0.28	305.54	
1/18/17	305.82	4.88-14.90	6.08	299.74	
9/25/17	305.82	4.88-14.90	6.16	299.66	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-22DD	1/30/03	308.72	40.34-45.34	16.61	292.11
	2/14/03	308.72	40.34-45.34	16.51	292.21
	4/8/03	308.72	40.34-45.34	16.11	292.61
	6/9/04	308.72	40.34-45.34	17.90	290.82
	11/5/04	308.72	40.34-45.34	17.13	291.59
	1/25/2005 <sup>1</sup>	308.55	40.17-45.17	16.11	292.44
	2/15/05	308.55	40.17-45.17	15.95	292.60
	5/15/2007 <sup>2</sup>	308.06	39.68-44.68	18.85	289.2084
	7/16/2008 <sup>2</sup>	308.06	39.68-44.68	19.57	288.49
	10/19/09	308.06	39.68-44.68	19.22	288.84
	3/28/12	308.06	39.68-44.68	17.76	290.30
	9/26/12	308.06	39.68-44.68	17.50	290.56
	3/26/13	308.06	39.68-44.69	15.86	292.20
	9/9/13	308.06	39.68-44.69	15.94	292.12
	9/22/14	308.06	39.68-44.69	18.46	289.60
9/21/15	308.06	39.68-44.70	19.95	288.11	
9/27/16	308.06	39.68-44.70	18.21	289.85	
1/18/17	308.06	39.68-44.70	17	291.06	
9/25/17	308.06	39.68-44.70	18.49	289.57	
MW-23	4/8/03	306.78	5.41-20.41	7.75	299.03
	6/9/04	306.78	5.41-20.41	9.07	297.71
	11/5/04	306.78	5.41-20.41	8.23	298.55
	1/25/2005 <sup>1</sup>	306.83	5.46-20.46	7.90	298.93
	2/15/05	306.83	5.46-20.46	8.04	298.79
	5/16/2007 <sup>2</sup>	306.42	5.05-20.05	11.60	294.8207
	7/16/2008 <sup>2</sup>	306.42	5.05-20.05	13.18	293.24
	10/19/09	306.42	5.05-20.05	12.55	293.87
	3/28/12	306.42	5.05-20.05	9.62	296.80
	9/26/12	306.42	5.05-20.05	9.00	297.42
	3/26/13	306.42	5.05-20.06	7.14	299.28
	9/9/13	306.42	5.05-20.06	7.51	298.91
	9/22/14	306.42	5.05-20.06	NL	NL
	9/21/15	306.42	5.05-20.07	NL	NL
9/27/16	306.42	5.05-20.07	NL	NL	
1/18/17	306.42	5.05-20.07	NL	NL	
9/25/17	306.42	5.05-20.07	NL	NL	
MW-24	4/8/03	309.81	5.43-20.43	10.57	299.24
	6/9/04	309.81	5.43-20.43	12.31	297.5
	11/5/04	309.81	5.43-20.43	11.46	298.35
	1/25/2005 <sup>1</sup>	309.85	5.47-20.47	11.10	298.75
	2/15/05	309.85	5.47-20.47	10.77	299.08
	5/16/2007 <sup>2</sup>	309.42	5.04-20.04	13.95	295.4728
	7/16/2008 <sup>2</sup>	309.42	5.04-20.04	15.19	294.23
	10/19/09	309.42	5.04-20.04	13.56	295.86
	3/28/12	309.42	5.04-20.04	12.15	297.27
	9/26/12	309.42	5.04-20.04	11.49	297.93
	3/26/13	309.42	5.04-20.05	9.22	300.20
	9/9/13	309.42	5.04-20.05	9.83	299.59
	9/22/14	309.42	5.04-20.05	NL	NL
	9/21/15	309.42	5.04-20.06	NL	NL
	9/27/16	309.42	5.04-20.06	NL	NL
1/18/17	309.42	5.04-20.06	NL	NL	
9/25/17	309.42	5.04-20.06	NL	NL	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-25	4/8/03	311.02	5.30-20.30	11.83	299.19
	6/9/04	311.02	5.30-20.30	13.61	297.41
	11/5/04	311.02	5.30-20.30	12.78	298.24
	1/25/2005 <sup>2</sup>	311.06	5.34-20.34	12.25	298.81
	1/25/2005 <sup>1</sup>	311.06	5.34-20.34	12.05	299.01
	5/15/2007 <sup>2</sup>	310.76	5.04-20.04	15.21	295.5463
	7/16/2008 <sup>2</sup>	310.76	5.04-20.04	16.45	294.31
	10/19/09	310.76	5.04-20.04	14.95	295.81
	3/28/12	310.76	5.04-20.04	13.44	297.32
	9/26/12	310.76	5.04-20.04	12.82	297.94
	3/26/13	310.76	5.04-20.05	10.54	300.22
	9/10/13	310.76	5.04-20.05	11.28	299.48
	9/22/14	310.76	5.04-20.05	NL	NL
	9/21/15	310.76	5.04-20.06	NL	NL
MW-26DDD	4/8/03	308.35	55.43-60.43	19.99	288.36
	6/9/04	308.35	55.43-60.43	21.57	286.78
	11/5/04	308.35	55.43-60.43	20.87	287.48
	1/25/2005 <sup>1</sup>	308.57	55.65-60.65	20.36	288.21
	2/15/05	308.57	55.65-60.65	20.15	288.42
	5/15/2007 <sup>2</sup>	308.14	55.22-60.22	22.51	285.63
	7/16/2008 <sup>2</sup>	308.14	55.22-60.22	23.57	284.57
	10/19/09	308.14	55.22-60.22	22.89	285.25
	3/28/12	308.14	55.22-60.22	21.87	286.27
	9/26/12	308.14	55.22-60.22	22.06	286.08
	3/26/13	308.14	55.22-60.23	20.65	287.49
	9/9/13	308.14	55.22-60.23	21.28	286.86
	9/22/14	308.14	55.22-60.23	22.93	285.21
	9/21/15	308.14	55.22-60.24	23.41	284.73
MW-27DDD	11/5/04	308.35	71.23-91.19	24.47	283.88
	1/25/2005 <sup>1</sup>	309.32	72.20-92.16	24.55	284.77
	2/15/05	309.32	72.20-92.16	24.48	284.84
	5/15/2007 <sup>2</sup>	308.85	71.73-91.69	23.50	285.35
	7/16/2008 <sup>2</sup>	308.85	71.73-91.69	18.71 <sup>(3)</sup>	290.14
	10/19/09	308.85	71.73-91.69	27.89	280.96
	3/28/12	308.85	71.73-91.69	27.32	281.53
	9/26/12	308.85	71.73-91.69	25.72	283.13
	3/26/13	308.85	71.73-91.70	24.13	284.72
	9/11/13	308.85	71.73-91.70	24.06	284.79
	9/22/14	308.85	71.73-91.70	26.52	282.33
	9/21/15	308.85	71.73-91.71	27.69	281.16
	9/27/16	308.85	71.73-91.71	26.51	282.34
	1/18/17	308.85	71.73-91.71	25.3	283.55
9/26/17	308.85	71.73-91.71	26.49	282.36	

**Table 4: Summary of Groundwater Elevations**

Well Number	Date Measured	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-28	11/5/04	305.83	9.30-24.30	15.62	290.21
	1/25/05	305.83	9.30-24.30	14.75	291.08
	2/15/05	305.83	9.30-24.30	14.82	291.01
	5/15/07	305.83	9.30-24.30	17.45	288.38
	7/16/08	305.83	9.30-24.30	NL	NL
	10/19/09	305.83	9.30-24.30	NL	NL
	3/28/12	305.83	9.30-24.30	NL	NL
	9/26/12	305.83	9.30-24.30	NL	NL
	3/26/13	305.83	9.30-24.30	NL	NL
	9/9/13	305.83	9.30-24.30	NL	NL
	9/22/14	305.83	9.30-24.30	NL	NL
	9/21/15	305.83	9.30-24.30	NL	NL
9/27/16	305.83	9.30-24.30	NL	NL	
11/16/16	305.83	9.30-24.30	Abandoned	Abandoned	
MW-28R	1/18/17	304.80	9.6-24.6	15.63	289.17
	9/25/17	304.80	9.6-24.6	16.9	287.90
MW-A	12/18/01	307.07	15.54-19.54	12.60	294.47
	4/8/03	307.07	15.54-19.54	7.61	299.46
	6/9/04	307.07	15.54-19.54	8.64	298.43
	11/5/04	307.07	15.54-19.54	7.79	299.28
	1/25/2005 <sup>1</sup>	307.07	15.54-19.54	7.71	299.36
	2/15/05	307.07	15.54-19.54	7.81	299.26
	5/15/2007 <sup>2</sup>	306.73	15.20-19.20	11.46	295.27
	7/16/2008 <sup>2</sup>	306.73	15.20-19.20	NM	NM
	10/19/09	306.73	15.20-19.20	12.23	294.50
	3/28/12	306.73	15.20-19.20	9.4	297.33
	9/26/12	306.73	15.20-19.20	8.37	298.36
	3/26/13	306.73	15.20-19.20	6.53	300.20
	9/9/13	306.73	15.20-19.20	7.72	299.01
	9/22/14	306.73	15.20-19.20	NL	NL
	9/21/15	306.73	15.20-19.20	NL	NL
9/27/16	306.73	15.20-19.20	NL	NL	
1/18/17	306.73	15.20-19.20	NL	NL	
9/25/17	306.73	15.20-19.20	NL	NL	
MW-29	7/17/08	310.49	14.00-24.00	15.95	294.54
	10/19/09	310.49	14.00-24.00	13.95	296.54
	3/28/12	310.49	14.00-24.00	12.08	298.41
	9/26/12	310.49	14.00-24.00	12.03	298.46
	3/26/13	310.49	14.00-24.00	12.78	297.71
	9/9/13	310.49	14.00-24.00	11.92	298.57
	9/22/14	310.49	14.00-24.00	14.47	296.02
	9/21/15	306.85	14.00-24.00	12.59	294.26
	9/27/16	306.85	14.00-24.00	8.74	298.11
	1/18/17	306.85	14.00-24.00	8.43	298.42
9/25/17	306.85	14.00-24.00	9.89	296.96	
MW-30	7/17/08	305.51	10.00-20.00	10.84	294.67
	10/19/09	305.51	10.00-20.00	9.41	296.10
	3/28/12	305.51	10.00-20.00	NL	NL
	3/28/12	305.51	10.00-20.00	NL	NL
	3/26/13	305.51	10.00-20.00	NL	NL
	9/9/13	305.51	10.00-20.00	NL	NL
	9/22/14	305.51	10.00-20.00	NL	NL
	9/21/15	305.51	10.00-20.00	NL	NL
	9/27/16	305.51	10.00-20.00	NL	NL
1/18/17	305.51	10.00-20.00	NL	NL	
9/25/17	305.51	10.00-20.00	NL	NL	
MW-31	5/2/12	Not Surveyed	14.6-24.6 <sup>4</sup>	13.69	N/A
	9/26/12	Not Surveyed	14.6-24.6 <sup>4</sup>	11.43	N/A
	3/26/13	Not Surveyed	14.6-24.6 <sup>4</sup>	9.59	N/A
	9/9/13	Not Surveyed	14.6-24.6 <sup>4</sup>	9.96	N/A
	9/22/14	Not Surveyed	14.6-24.6 <sup>4</sup>	13.44	N/A
	9/21/15	306.32	14.6-24.6 <sup>4</sup>	12.23	294.09
	9/27/16	306.32	14.6-24.6 <sup>4</sup>	9.17	297.15
	1/18/17	306.32	14.6-24.6 <sup>4</sup>	8.4	297.92
9/25/17	306.32	14.6-24.6 <sup>4</sup>	10.06	296.26	
MW-32	1/18/17	304.95	9.59-24.59	14.4	290.55
	9/25/17	304.95	9.59-24.59	15.85	289.10
MW-33	10/3/17	308.44	102-122	50.76	257.68

**Notes:**

NAVD = North American Vertical Datum  
btoc = Below top of casing  
N/A=Not Applicable  
NL = Not Located  
NM = Not Measured

<sup>1</sup> Indicates top of casing elevation was revised due to site grading.  
<sup>2</sup> Indicates a revised top of casing elevation based on a site topographic survey.  
<sup>3</sup> Possible measurement error.  
<sup>4</sup> Below ground surface

Prepared by/Date: MHA 1/26/17  
Checked by/Date: JMQ 1/27/17  
Revised by/Date: JPM 10/16/17  
Checked by/Date: DWK 10/18/17  
Revised by/Date: MHA 11/28/17



Table 5: Summary of Regulated Substances Detected in Soil Samples

Sample ID	Sample Date	Sample Depth (ft)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Diethyl phthalate (mg/kg)	Naphthalene (mg/kg)	
SB-3A (3-5)	3/27/2003	3-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002	<0.002	<0.002	<0.002	<0.333	<0.333	<0.333	<0.333	<0.333	NA	<0.333	
SB-3A (3-5) Duplicate	3/27/2003	3-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002	<0.002	<0.002	<0.002	<0.333	<0.333	<0.333	<0.333	<0.333	NA	<0.333	
SB28 3-5	1/20/2005	3-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB29 4-6	1/21/2005	4-6	NA	NA	13	NA	16	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB30 4-6	1/21/2005	4-6	NA	NA	18	NA	22	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB31 4-6	1/21/2005	4-6	NA	NA	27	NA	35	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB31 6-8	1/21/2005	6-8	NA	NA	18	NA	23	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005 (b)	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB32 4	1/20/2005	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001	<0.001	<0.001	<0.005	<0.333	<0.100	<0.333	<0.333	<0.333	NA	<0.333	
SB08-01	7/14/2008	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.0
SB08-02	7/14/2008	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB08-03 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	NA
SB08-03 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.420	<0.420	<0.420	<0.420	<0.420	<0.420	<0.420	NA
SB08-04 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	NA
SB08-04 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	NA
SB08-05 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	NA
SB08-05 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	NA
SB08-06 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.360	<0.360	<0.360	<0.360	<0.360	<0.360	<0.360	NA
SB08-06 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	NA
SB08-07 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	NA
SB08-07 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.430	<0.430	<0.430	<0.430	<0.430	<0.430	<0.430	NA
SB08-08 (0-2)	7/14/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	<0.400	NA
SB08-08 (4-6)	7/14/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	NA
HA08-09 (0-2)	7/17/2008	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	NA
HA08-09 (4-6)	7/17/2008	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	<0.380	NA
SB-09-01 (0-2')	10/20/2009	0-2	< 2.19 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-01 (12'-13')	10/20/2009	12-13	< 2.11 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-01 (12'-13') Duplicate	10/20/2009	12-13	< 2.33 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-02 (0-2')	10/20/2009	0-2	< 2.3 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-02 (12'-13.4')	10/20/2009	12-13.4	< 2.16 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-03 (0-2')	10/20/2009	0-2	< 2.06 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-03 (16'-18')	10/20/2009	16-18	< 1.98 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-09-04 (0-2')	10/20/2009	0-2	< 1.98 UJ	5.11 J	19.7	< 0.992	13	27.9	NA	NA	NA	NA	NA	NA	NA	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	NA
SB-09-04 (0-2') Duplicate	10/20/2009	0-2	< 1.89 UJ	6.29 J	19.5	< 0.947	11.3	25.6	NA	NA	NA	NA	NA	NA	NA	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	< 0.36	NA
SB-09-04 (6'-8')	10/20/2009	6-8	< 1.81 UJ	< 2.26 UJ	8.69	< 0.906	13.6	2.77	NA	NA	NA	NA	NA	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	NA
SB-09-04 (12'-13')	10/20/2009	12-13	< 2.27 UJ	< 2.84 UJ	34.7	< 1.14	1.94	8.38	NA	NA	NA	NA	NA	NA	NA	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	NA
HA-11-01 (0-1')	2/16/2011	0-1	NA	NA	NA	NA	NA	91.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>Applicable Standards: GA EPD NCs</b>			<b>10</b>	<b>41</b>	<b>500/BG</b>	<b>39</b>	<b>1200</b>	<b>400</b>	<b>17</b>	<b>36</b>	<b>10/BG</b>	<b>0.02</b>	<b>14.4</b>	<b>20</b>	<b>20</b>	<b>5</b>	<b>1.64</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>0.74</b>	<b>100</b>	
<b>Regional Background UPL</b>			NA	19.2	441	NC	100	18.4	0.4	0.521	NC	--	--	--	--	--	--	--	--	--	--	--	
<b>Highest RRS - Surface</b>				38.1	19200	88	1200	400	37	61	99	0.5	100	70	1000	10.5	65	654	6540	23630	766	100	
<b>Highest RRS - Subsurface</b>				41	19200	88	1200	400	37	61	99	0.5	100	70	1000	10.5	65	654	6540	23630	766	100	

Notes:

- ADL = Above Detection Limit
- /BG = Numerical value is the NC unless the background concentration is greater
- BWT = Below Water Table
- GA EPD NCs = Georgia Environmental Protection Division Notification Concentrations
- GA EPD Notification Concentrations (NC) for soil (GA EPD Rule 391-3-19, Appendix I); "DL" denotes Detection Limit".
- RRS = Risk Reduction Standard
- Regional Background UPL-Shacklette Coastal Georgia Upper Confidence Limit calculated using ProUCL 4.00.04 (Shacklette and Boerngen, 1984).
- (a) = Sampled from wall of tank excavation
- (b) = Laboratory report inadvertently listed the surrogate recovery as the result for xylenes; result was corrected.
- NA = Not Analyzed
- NC = Not calculated. Insufficient detections to calculate a background value.
- Bold Text = Concentration Exceeds Background**
- Bold/Shaded Text = Concentration Exceeds NC**
- Bold/Shaded Red = Concentration Exceeds RRS**
- Data Qualifiers:**
- J = Estimated value based on QC data
- UJ = Not detected; detection level may be imprecise based on QC data

Prepared by/Date: LMS 2/12/2018  
 Checked by/Date: MHA 2/15/2018

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes, Total (ug/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						0.006	0.01	2	0.005	0.1	0.015	0.002	0.05	0.1	5	1000	700	10000
Background						<0.005	<0.005	0.125	<0.0007	<0.005	<0.001	<0.002	<0.05	<0.05	ADL	ADL	ADL	ADL
Highest RRS						0.047	0.01	23	0.058	0.1	0.015	0.035	0.58	0.58	10	6000	700	10000
Corrective Action Goal						--	0.01	20	0.051	0.1	0.015	--	--	--	--	--	--	--
MW-1	8/30/2001	Bailer	5.32	70	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	< 0.002	< 0.05	< 0.05	9.9	< 1	3	< 3
MW-1	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-1	9/18/2001	Bailer	5.47	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	12/18/2001	Peristaltic Pump	5.35	1.99	Total	NA	NA	0.33	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-1	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1
MW-1	1/31/2003	Peristaltic Pump	5.17	10.3	Total	NA	NA	0.042	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-1	11/9/2004	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	140	< 1	29	< 1
MW-1	9/23/2015	Peristaltic Pump	5.38	7800	Total	NA	0.00676	0.191	< 0.0007	0.0499	0.077	NA	NA	NA	NA	NA	NA	NA
MW-1	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	NA	<0.005	0.0159	<0.0007	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-1	9/29/2016	Peristaltic Pump	5.62	>800	Total	NA	NA	NA	NA	NA	0.0691	NA	NA	NA	NA	NA	NA	NA
MW-1	9/29/2016	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-2	8/30/2001	Bailer	4.21	75	Total	NA	< 0.05	3.5	< 0.005	< 0.05	0.11	< 0.002	< 0.05	< 0.05	< 1	< 1	< 1	< 3
MW-2	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	5	NA	NA	0.19	NA	NA	NA	NA	NA	NA	NA
MW-2	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	4.9	< 0.005	< 0.05	0.21	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-2	9/18/2001	Bailer	4.14	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	12/18/2001	Peristaltic Pump	4.18	1.11	Total	NA	NA	12	NA	NA	0.55	NA	NA	NA	NA	NA	NA	NA
MW-2 **	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1
MW-2 **	9/28/2012	Peristaltic Pump	6.22	27.8	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	3/28/2013	Peristaltic Pump	5.99	140.0	Total	NA	< 0.005	0.0409	< 0.0007	< 0.005	0.00236	NA	NA	NA	NA	NA	NA	NA
MW-2	3/28/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0332	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-2	9/12/2013	Peristaltic Pump	6.04	39.8	Total	NA	< 0.005	0.0486	< 0.0007	< 0.005	0.00146	NA	NA	NA	NA	NA	NA	NA
MW-2	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0453	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-3	8/30/2001	Bailer	4.72	180000	Total	NA	< 0.05	3.4	< 0.005	< 0.05	0.12	< 0.002	< 0.05	< 0.05	< 1	1.3	< 1	< 3
MW-3	9/6/2001	Bailer	NM	NM	Dissolved	NA	< 0.05	0.6	< 0.005	< 0.05	0.022	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-3	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	0.56	< 0.005	< 0.05	0.02	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-3	9/18/2001	Bailer	4.61	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	12/18/2001	Peristaltic Pump	4.5	1.16	Total	NA	NA	0.89	NA	NA	0.044	NA	NA	NA	NA	NA	NA	NA
MW-3	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.7	< 1	< 1	< 1
MW-3	11/10/2004	Peristaltic Pump	5.71	0.31	Total	NA	NA	2.3	NA	NA	0.019	NA	NA	NA	1.2	< 1	< 1	< 1
MW-3	2/15/2011	Peristaltic Pump	5.95	51.1	Total	NA	<0.005	0.0848	< 0.0007	< 0.005	0.00347	NA	NA	NA	NA	NA	NA	NA
MW-3	2/15/2011	Peristaltic Pump	NM	0.24	Dissolved	NA	<0.005	0.0801	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-3	3/29/2012	Peristaltic Pump	5.64	9.2	Total	NA	<0.005	0.179	< 0.0007	< 0.005	0.00123	NA	NA	NA	NA	NA	NA	NA
MW-3	9/27/2012	Peristaltic Pump	5.57	9.5	Total	NA	< 0.005	0.120	< 0.0007	< 0.005	0.00136	NA	NA	NA	NA	NA	NA	NA
MW-3	3/26/2013	Peristaltic Pump	5.60	89.7	Total	NA	< 0.005	0.0275	< 0.0007	< 0.005	0.00501	NA	NA	NA	NA	NA	NA	NA
MW-3	3/26/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0234	< 0.0007	< 0.005	0.00229	NA	NA	NA	NA	NA	NA	NA
MW-3	9/10/2013	Peristaltic Pump	5.75	9.96	Total	NA	< 0.005	0.127	< 0.0007	< 0.005	0.00108	NA	NA	NA	NA	NA	NA	NA
MW-3	9/23/2014	Peristaltic Pump	5.26	16.1	Total	NA	< 0.005	0.168	< 0.0007	< 0.005	0.00166	NA	NA	NA	NA	NA	NA	NA
MW-3	9/23/2014	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.166	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-4	8/30/2001	Bailer	6.45	72	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	< 0.002	< 0.05	< 0.05	< 1	1.3	< 1	< 3
MW-4	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-4	9/18/2001	Bailer	6.35	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	12/18/2001	Peristaltic Pump	6.3	37.2	Total	NA	NA	0.081	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-4	1/31/2003	Peristaltic Pump	5.75	2.86	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1
MW-4	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.106	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-4	10/20/2009	Peristaltic Pump	6.55	0.47	Total	< 0.005	< 0.005	0.107	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-4	9/22/2015	Peristaltic Pump	6.19	0.37	Total	< 0.005	< 0.005	0.0948	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-4	9/28/2016	Peristaltic Pump	6.44	5.17	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	8/30/2001	Bailer	6.96	2900	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	< 0.002	< 0.05	< 0.05	< 1	< 1	< 1	< 3
MW-5	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-5	9/18/2001	Bailer	6.55	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	12/18/2001	Peristaltic Pump	6.76	0.67	Total	NA	NA	0.11	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA





Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes, Total (ug/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						0.006	0.01	2	0.005	0.1	0.015	0.002	0.05	0.1	5	1000	700	10000
Background						<0.005	<0.005	0.125	<0.0007	<0.005	<0.001	<0.002	<0.05	<0.05	ADL	ADL	ADL	ADL
Highest RRS						0.047	0.01	23	0.058	0.1	0.015	0.035	0.58	0.58	10	6000	700	10000
Corrective Action Goal						--	0.01	20	0.051	0.1	0.015	--	--	--	--	--	--	--
MW-12	8/30/2001	Bailer	5.98	1800	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	< 0.002	< 0.05	< 0.05	< 1	< 1	< 1	< 3
MW-12	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-12	9/18/2001	Bailer	5.85	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	12/19/2001	Peristaltic Pump	5.72	4.26	Total	NA	NA	0.13	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-12	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.123	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	10/20/2009	Peristaltic Pump	5.71	0.57	Total	< 0.005	< 0.005	0.12	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	3/29/2012	Peristaltic Pump	6.01	4.04	Total	NA	<0.005	0.182	< 0.0007	< 0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	9/27/2012	Peristaltic Pump	6.31	3.72	Total	NA	<0.005	0.134	0.000843	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	3/26/2013	Peristaltic Pump	5.75	1.01	Total	NA	<0.005	0.102	<0.0007	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	9/10/2013	Peristaltic Pump	5.86	2.58	Total	NA	0.0126	0.124	<0.0007	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	9/23/2014	Peristaltic Pump	5.86	0.12	Total	NA	<0.005	0.154	<0.0007	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	9/22/2015	Peristaltic Pump	5.85	0.85	Total	NA	<0.005	0.130	<0.0007	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-12	9/27/2016	Peristaltic Pump	5.53	0.99	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	8/30/2001	Bailer	5	3.2	Total	NA	< 0.05	3.2	< 0.005	< 0.05	0.16	< 0.002	< 0.05	< 0.05	< 1	< 1	< 1	< 3
MW-13D	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	2.7	NA	NA	0.14	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/6/2001	Bailer	NM	NM	Total	NA	< 0.05	2.4	< 0.005	< 0.05	0.14	< 0.002	< 0.05	< 0.05	NA	NA	NA	NA
MW-13D	9/18/2001	Bailer	4.22	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	12/18/2001	Peristaltic Pump	4.04	1.29	Total	NA	NA	1.7	NA	NA	0.19	NA	NA	NA	NA	NA	NA	NA
MW-13D	11/10/2004	Peristaltic Pump	5.1	0.57	Total	NA	NA	NA	NA	NA	NA	NA	< 0.01	NA	NA	NA	NA	NA
MW-13D	3/30/2012	Peristaltic Pump	3.72	2.62	Total	NA	<0.005	0.273	0.00333	<0.005	0.168	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/28/2012	Peristaltic Pump	3.98	1.30	Total	NA	<0.005	0.295	0.00132	<0.005	0.128	NA	NA	NA	NA	NA	NA	NA
MW-13D	3/28/2013	Peristaltic Pump	3.02	0.51	Total	NA	<0.005	0.383	0.00203	<0.005	0.143	NA	NA	NA	NA	NA	NA	NA
DUP-1	3/28/2013	Peristaltic Pump	NM	NM	Total	NA	<0.005	0.386	0.00202	<0.005	0.143	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/12/2013	Peristaltic Pump	3.95	0.73	Total	NA	0.00699	0.338	0.0049	<0.005	0.139	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/25/2014	Peristaltic Pump	3.82	0.61	Total	NA	<0.005	0.254	0.00508	<0.005	0.176	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/22/2015	Peristaltic Pump	3.83	2.41	Total	NA	0.0269	0.169	<0.00450	<0.005	0.129	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/28/2016	Peristaltic Pump	3.73	3.81	Total	NA	<0.005	0.219	0.00219	<0.005	0.173	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/27/2017	Peristaltic Pump	3.76	3.71	Total	NA	0.011	0.231	0.00315	<0.005	0.137	NA	NA	NA	NA	NA	NA	NA
MW-15	4/8/2003	Peristaltic Pump	3.58	43.2	Total	NA	NA	0.412	NA	NA	0.124	NA	NA	NA	< 1	< 1	< 1	3.9
MW-15	9/25/2014	Peristaltic Pump	3.75	0.95	Total	NA	<0.005	0.0628	<0.0007	0.0437	0.311	NA	NA	NA	NA	NA	NA	NA
MW-15	9/23/2015	Peristaltic Pump	4.18	7.84	Total	NA	0.0264	<0.075	0.00249	0.00643	0.243	NA	NA	NA	NA	NA	NA	NA
MW-15	9/29/2016	Peristaltic Pump	4.35	275	Total	NA	0.00672	0.220	0.131	0.0246	0.294	NA	NA	NA	NA	NA	NA	NA
MW-15	9/29/2016	Peristaltic Pump	NM	NM	Dissolved	NA	<0.005	0.0766	0.103	<0.005	0.236	NA	NA	NA	NA	NA	NA	NA
MW-15	9/27/2017	Peristaltic Pump	4.13	8.05	Total	NA	0.0119	0.0996	0.003	0.29	0.144	NA	NA	NA	NA	NA	NA	NA
MW-16	2/14/2003	Peristaltic Pump	3.98	0.6	Total	NA	NA	2.34	NA	NA	0.1	NA	NA	NA	NA	NA	NA	NA
MW-16	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	3/29/2012	Peristaltic Pump	4.5	0.5	Total	NA	<0.005	0.542	< 0.0007	<0.005	0.0239	NA	NA	NA	NA	NA	NA	NA
MW-16	9/28/2012	Peristaltic Pump	4.60	1.25	Total	NA	<0.005	0.642	< 0.0007	<0.005	0.0220	NA	NA	NA	NA	NA	NA	NA
MW-16	3/27/2013	Peristaltic Pump	5.44	3.06	Total	NA	<0.005	0.495	<0.0007	<0.005	0.00914	NA	NA	NA	NA	NA	NA	NA
MW-16	9/11/2013	Peristaltic Pump	5.02	0.0	Total	NA	<0.005	0.631	<0.0007	<0.005	0.01290	NA	NA	NA	NA	NA	NA	NA
MW-16	9/24/2014	Peristaltic Pump	4.36	4.86	Total	NA	<0.005	<0.01	<0.0007	<0.005	0.0244	NA	NA	NA	NA	NA	NA	NA
MW-16	9/22/2015	Peristaltic Pump	4.20	8.22	Total	NA	<0.005	0.531	<0.0007	<0.005	0.0121	NA	NA	NA	NA	NA	NA	NA
MW-16	9/28/2016	Peristaltic Pump	4.41	7.98	Total	NA	<0.005	0.508	<0.0007	<0.005	0.0161	NA	NA	NA	NA	NA	NA	NA
MW-16	9/26/2017	Peristaltic Pump	4.30	3.62	Total	NA	<0.005	0.462	<0.0007	<0.005	0.0104	NA	NA	NA	NA	NA	NA	NA
MW-17	1/30/2003	Peristaltic Pump	5.42	0.79	Total	NA	NA	0.06	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-17	11/9/2004	Bailer	6.88	5.39	Total	NA	NA	NA	NA	NA	NA	NA	< 0.01	< 0.01	NA	NA	NA	NA

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes, Total (ug/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						0.006	0.01	2	0.005	0.1	0.015	0.002	0.05	0.1	5	1000	700	10000
Background						<0.005	<0.005	0.125	<0.0007	<0.005	<0.001	<0.002	<0.05	<0.05	ADL	ADL	ADL	ADL
Highest RRS						0.047	0.01	23	0.058	0.1	0.015	0.035	0.58	0.58	10	6000	700	10000
Corrective Action Goal						--	0.01	20	0.051	0.1	0.015	--	--	--	--	--	--	--
MW-18	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	NA	0.285	NA	NA	0.382	NA	NA	NA	NA	NA	NA	NA
DUPPLICATE	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	NA	0.282	NA	NA	0.351	NA	NA	NA	NA	NA	NA	NA
MW-18	11/10/2004	Peristaltic Pump	6.07	1.17	Total	NA	NA	NA	NA	NA	NA	NA	< 0.01	< 0.01	NA	NA	NA	NA
MW-18	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.312	0.00881	< 0.005	0.287	NA	NA	NA	NA	NA	NA	NA
MW-18	10/21/2009	Peristaltic Pump	4.44	4	Total	< 0.005	< 0.005	0.345	0.00849	< 0.005	0.318	NA	NA	NA	NA	NA	NA	NA
MW-18	3/30/2012	Peristaltic Pump	5.49	5.06	Total	NA	< 0.005	0.148	< 0.0007	< 0.005	0.0211	NA	NA	NA	NA	NA	NA	NA
DUP-1	3/30/2012	Peristaltic Pump	5.49	5.06	Total	NA	< 0.005	0.148	< 0.0007	< 0.005	0.022	NA	NA	NA	NA	NA	NA	NA
MW-18	9/28/2012	Peristaltic Pump	6.11	2.10	Total	NA	< 0.005	0.0934	< 0.0007	< 0.005	0.00288	NA	NA	NA	NA	NA	NA	NA
MW-18	3/27/2013	Peristaltic Pump	6.91	35.4	Total	NA	< 0.005	0.0531	< 0.0007	< 0.005	0.00329	NA	NA	NA	NA	NA	NA	NA
MW-18	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0529	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-18	9/10/2013	Peristaltic Pump	6.19	5.29	Total	NA	< 0.005	0.124	0.00214	< 0.005	0.00166	NA	NA	NA	NA	NA	NA	NA
MW-18	9/24/2014	Peristaltic Pump	4.71	8.83	Total	NA	< 0.005	0.254	0.00175	< 0.005	0.216	NA	NA	NA	NA	NA	NA	NA
MW-18	9/23/2015	Peristaltic Pump	4.51	17.9	Total	NA	0.0708	0.173	0.00742	< 0.005	0.258	NA	NA	NA	NA	NA	NA	NA
MW-18	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	NA	0.0747	0.0185	0.00507	< 0.005	0.176	NA	NA	NA	NA	NA	NA	NA
MW-18	9/29/2016	Peristaltic Pump	6.36	4.08	Total	NA	< 0.005	NA	< 0.0007	NA	0.00146	NA	NA	NA	NA	NA	NA	NA
MW-19	1/30/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1
MW-19	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.12	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	10/23/2009	Peristaltic Pump	6.3	0.19	Total	< 0.005	< 0.005	0.125	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	3/29/2012	Peristaltic Pump	5.78	7.1	Total	NA	< 0.005	0.252	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	9/28/2012	Peristaltic Pump	6.20	1.03	Total	NA	< 0.005	0.231	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	3/26/2013	Peristaltic Pump	6.46	4.40	Total	NA	< 0.005	0.143	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	9/11/2013	Peristaltic Pump	5.95	4.39	Total	NA	< 0.005	0.147	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-19	9/23/2014	Peristaltic Pump	5.45	1.08	Total	NA	< 0.005	0.131	< 0.0007	< 0.005	0.00287	NA	NA	NA	NA	NA	NA	NA
MW-20	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	NA	0.045	NA	NA	< 0.005	NA	NA	NA	4.1	< 1	4.2	3
DUP-2	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.3	< 1	4.5	2.8
MW-20	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0161	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	10/22/2009	Peristaltic Pump	5.37	30.9	Total	< 0.005	< 0.005	0.0224	< 0.0007	< 0.005	0.00344	NA	NA	NA	NA	NA	NA	NA
MW-20	3/30/2012	Peristaltic Pump	5.51	21.1	Total	NA	< 0.005	0.0447	< 0.0007	< 0.005	0.00549	NA	NA	NA	NA	NA	NA	NA
MW-20	3/30/2012	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0331	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	9/27/2012	Peristaltic Pump	5.96	73.9	Total	NA	< 0.005	0.0325	< 0.0007	< 0.005	0.00490	NA	NA	NA	NA	NA	NA	NA
MW-20	9/27/2012	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0243	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	3/27/2013	Peristaltic Pump	5.88	33.4	Total	NA	< 0.005	0.0333	< 0.0007	< 0.005	0.00689	NA	NA	NA	NA	NA	NA	NA
MW-20	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0209	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	9/10/2013	Peristaltic Pump	5.75	158	Total	NA	< 0.005	0.0413	< 0.0007	0.00808	0.0101	NA	NA	NA	NA	NA	NA	NA
MW-20	9/10/2013	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0146	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	9/24/2014	Peristaltic Pump	5.50	96.7	Total	NA	< 0.005	0.0334	< 0.0007	0.00822	0.0038	NA	NA	NA	NA	NA	NA	NA
MW-20	9/24/2014	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0188	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	9/22/2015	Peristaltic Pump	5.46	51.3	Total	NA	< 0.005	0.0221	< 0.0007	< 0.005	0.00347	NA	NA	NA	NA	NA	NA	NA
MW-20	9/22/2015	Peristaltic Pump	NM	NM	Dissolved	NA	< 0.005	0.0191	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-20	9/29/2016	Peristaltic Pump	5.96	23.60	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-21	1/31/2003	Peristaltic Pump	4.96	9.7	Total	NA	NA	0.324	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-21	11/10/2004	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1
MW-21	10/21/2009	Peristaltic Pump	5.67	> 1000	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22DD	1/31/2003	Peristaltic Pump	4.37	3.36	Total	NA	NA	7.012	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-23	4/8/2003	Peristaltic Pump	5.63	44.8	Total	NA	NA	0.072	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-23	11/10/2004	Peristaltic Pump	7.24	9.95	Total	NA	NA	NA	NA	NA	NA	NA	< 0.01	< 0.01	NA	NA	NA	NA
MW-23	5/16/2007	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0479	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-23	10/21/2009	Peristaltic Pump	5.82	0.78	Total	< 0.005	< 0.005	0.0517	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-23	3/29/2012	Peristaltic Pump	6.18	1.48	Total	NA	< 0.005	0.064	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-23	9/27/2012	Peristaltic Pump	6.75	2.06	Total	NA	< 0.005	0.0912	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-23	3/26/2013	Peristaltic Pump	6.04	3.00	Total	NA	< 0.005	0.0689	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-23	9/10/2013	Peristaltic Pump	6.17	1.91	Total	NA	< 0.005	0.0679	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-24	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	NA	0.051	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
DUPPLICATE	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0416	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-24	10/22/2009	Peristaltic Pump	5.7	0.14	Total	< 0.005	< 0.005	0.0466	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-25	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	NA	2.8	NA	NA	0.008	NA	NA	NA	NA	NA	NA	NA
DUPPLICATE	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	NA	2.76	NA	NA	0.011	NA	NA	NA	NA	NA	NA	NA
MW-25	11/9/2004	Bailer	4.47	6.11	Total	NA	NA	3.2	NA	NA	0.031	NA	NA	NA	NA	NA	NA	NA
MW-25	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.365	< 0.0007	< 0.005	0.00508	NA	NA	NA	NA	NA	NA	NA
MW-25	10/22/2009	Peristaltic Pump	4.32	0.32	Total	< 0.005	< 0.005	0.402	< 0.0									

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes, Total (ug/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						0.006	0.01	2	0.005	0.1	0.015	0.002	0.05	0.1	5	1000	700	10000
Background						<0.005	<0.005	0.125	<0.0007	<0.005	<0.001	<0.002	<0.05	<0.05	ADL	ADL	ADL	ADL
Highest RRS						0.047	0.01	23	0.058	0.1	0.015	0.035	0.58	0.58	10	6000	700	10000
Corrective Action Goal						--	0.01	20	0.051	0.1	0.015	--	--	--	--	--	--	--
MW-26DDD	4/8/2003	Peristaltic Pump	5.8	2	Total	NA	NA	4.78	NA	NA	< 0.005	NA	NA	NA	NA	NA	NA	NA
MW-26DDD	4/9/2004	Bladder Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26DDD	6/9/2004	Bladder Pump	NM	2.05	Total	NA	NA	16	NA	NA	< 0.005	NA	NA	NA	< 1	< 1	< 1	< 1
MW-27DDDD	11/10/2004	Bailer	6.6	7.66	Total	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	2/15/2011	Peristaltic Pump	5.36	5.01	Total	NA	<0.005	4.34	0.00178	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	5/3/2012	Submersible Pump	5.07	2.02	Total	NA	<0.005	4.91	0.00187	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/27/2012	Submersible Pump	4.88	1.59	Total	NA	<0.005	5.15	0.00184	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	3/28/2013	Submersible Pump	4.93	5.78	Total	NA	<0.005	5.55	0.00216	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/12/2013	Peristaltic Pump	4.93	12.9	Total	NA	<0.005	5.11	0.00243	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	NA	<0.005	4.9	0.00235	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/25/2014	Peristaltic Pump	4.74	0.72	Total	NA	<0.005	6.72	0.00246	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/23/2015	Peristaltic Pump	4.9	3.84	Total	NA	< 0.005	4.95	0.00228	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/28/2016	Submersible Pump	4.97	0.87	Total	NA	<0.005	7.22	0.00311	<0.005	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/28/2017	Monsoon Pump	4.82	2.10	Total	NA	<0.005	6.94	0.00254	<0.005	0.00239	NA	NA	NA	NA	NA	NA	NA
MW-28	11/9/2004	Bailer	6.06	6.34	Total	NA	0.017	2.6	< 0.01	< 0.01	< 0.005	NA	< 0.01	< 0.01	< 1	< 1	< 1	< 1
MW-28	5/16/2007	Peristaltic Pump	5.25	1.16	Total	NA	<0.01	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-28R	12/6/2016	Peristaltic Pump	5.61	4.2	Total	NA	<0.005	NA	<0.0007	NA	<0.001	NA	NA	NA	NA	NA	NA	NA
MW-29	7/17/2008	Bailer	4.42	1.7	Total	NA	NA	1	NA	NA	< 0.01	NA	NA	NA	NA	NA	NA	< 5
MW-29	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.965	< 0.0007	< 0.005	0.00886	NA	NA	NA	NA	NA	NA	NA
MW-29	10/22/2009	Peristaltic Pump	4.21	0	Total	< 0.005	< 0.005	0.985	< 0.0007	< 0.005	0.00899	NA	NA	NA	NA	NA	NA	NA
MW-29	3/30/2012	Peristaltic Pump	4.08	0.32	Total	NA	<0.005	0.819	< 0.0007	<0.005	0.00733	NA	NA	NA	NA	NA	NA	NA
MW-29	9/27/2012	Peristaltic Pump	4.45	0.0	Total	NA	<0.005	0.765	< 0.0007	<0.005	0.00692	NA	NA	NA	NA	NA	NA	NA
MW-29	3/28/2013	Peristaltic Pump	4.33	0.23	Total	NA	< 0.005	0.764	< 0.0007	< 0.005	0.00780	NA	NA	NA	NA	NA	NA	NA
MW-29	9/11/2013	Peristaltic Pump	4.30	0.0	Total	NA	< 0.005	0.712	< 0.0007	< 0.005	0.00721	NA	NA	NA	NA	NA	NA	NA
DUP-1	9/11/2013	Peristaltic Pump	4.30	0.0	Total	NA	< 0.005	0.704	< 0.0007	< 0.005	0.00729	NA	NA	NA	NA	NA	NA	NA
MW-29	9/24/2014	Peristaltic Pump	4.28	0.75	Total	NA	< 0.005	0.682	< 0.0007	< 0.005	0.00718	NA	NA	NA	NA	NA	NA	NA
MW-29	9/23/2015	Peristaltic Pump	4.07	0.81	Total	NA	< 0.005	0.589	< 0.0007	< 0.005	0.00715	NA	NA	NA	NA	NA	NA	NA
MW-29	9/29/2016	Peristaltic Pump	4.52	0.16	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-30	7/17/2008	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-30	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0127	< 0.0007	< 0.025	0.0112	NA	NA	NA	NA	NA	NA	NA
MW-30	10/23/2009	Peristaltic Pump	4.21	0.06	Total	< 0.005	< 0.005	0.0126	< 0.0007	< 0.005	0.0112	NA	NA	NA	NA	NA	NA	NA
MW-31	5/2/2012	Peristaltic Pump	4.92	1.52	Total	NA	<0.005	1.09	<0.0007	<0.005	0.0055	NA	NA	NA	NA	NA	NA	NA
MW-31	9/23/2015	Peristaltic Pump	4.19	0.66	Total	NA	<0.005	0.837	<0.0007	<0.005	0.00894	NA	NA	NA	NA	NA	NA	NA
MW-31	9/29/2016	Peristaltic Pump	4.46	0.46	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-32	12/6/2016	Peristaltic Pump	5.75	3.75	Total	NA	<0.005	NA	<0.0007	NA	0.0058	NA	NA	NA	NA	NA	NA	NA
MW-33	10/3/2017	SS GeoSub Pump	6.70	1.62	Total	NA	NA	0.161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-A	12/18/2001	Peristaltic Pump	6.75	1.41	Total	NA	< 0.005	0.036	< 0.002	< 0.002	< 0.005	< 0.0002	0.0089	0.002	NA	NA	NA	NA
MW-A	5/15/2007	Peristaltic Pump	6.77	2.36	Total	NA	NA	NA	NA	NA	NA	NA	< 0.01	< 0.01	NA	NA	NA	NA
MW-A	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0775	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-DUP01	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	< 0.005	0.0762	< 0.0007	< 0.025	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-A	10/22/2009	Peristaltic Pump	6.21	0	Total	< 0.005	< 0.005	0.0886	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
MW-DUP01	10/22/2009	Peristaltic Pump	6.21	0	Total	< 0.005	< 0.005	0.0839	< 0.0007	< 0.005	< 0.001	NA	NA	NA	NA	NA	NA	NA
TMW-1	7/14/1997	-	NM	NM	Total	NA	< 0.005	5.38	0.028	0.028	0.028	< 0.002	0.112	< 0.007	< 2	< 2	< 4	< 2

Notes:

- RRS = Risk Reduction Standard
  - Total Metals are field preserved, unfiltered
  - Dissolved Metals are not preserved, laboratory filtered
  - USEPA MCLs = United States Environmental Protection Agency Maximum Contaminant Levels
  - HSRA Type 1/3 GW RRS from Appendix III
  - \* = USEPA Secondary Maximum Contaminant Levels are used for Chloride
  - \*\* insufficient water column for sample collection
  - = Data unavailable
  - = No Applicable Standard has been established for this constituent
  - Bolded result represents a positive value**
  - Bolded/Shaded result exceeds the groundwater standard**
  - Bolded/Shaded result exceeds the RRS**
  - NA = Not Analyzed
  - NM = Not Measured
- Data Qualifiers:
- J = Estimated value based on QC data
  - JL = Estimated quantitation; possibly biased low based on QC data
  - UL = Undetected; data biased low: the reporting detection limit is higher than indicated

**Table 6: Summary of Groundwater Analytical Results**

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Diethyl phthalate (ug/L)	Naphthalene (ug/L)	Chloride (mg/L)	Nitrate (mg/L)
<b>Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs</b>						--	0.2	--	--	--	--	--	250*	10
<b>Background</b>						ADL	ADL	ADL	ADL	ADL	ADL	ADL	12	2.4
<b>Highest RRS</b>						1.5	3.3	33	330	3300	93,000	10	--	--
<b>Corrective Action Goal</b>						3.92	0.39	3.92	39	390	82,000	--	--	--
MW-1	8/30/2001	Bailer	5.32	70	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-1	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	9/18/2001	Bailer	5.47	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-1	12/18/2001	Peristaltic Pump	5.35	1.99	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-1	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	1/31/2003	Peristaltic Pump	5.17	10.3	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	11/9/2004	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	9/23/2015	Peristaltic Pump	5.38	7800	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1	9/29/2016	Peristaltic Pump	5.62	>800	Total	NA	NA	NA	NA	NA	NA	NA	11	<0.25
MW-1	9/29/2016	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	8/30/2001	Bailer	4.21	75	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-2	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	9/18/2001	Bailer	4.14	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	2.16
MW-2	12/18/2001	Peristaltic Pump	4.18	1.11	Total	NA	NA	NA	NA	NA	NA	NA	NA	1.1
MW-2 **	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2 **	9/28/2012	Peristaltic Pump	6.22	27.8	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	3/28/2013	Peristaltic Pump	5.99	140.0	Total	NA	NA	NA	NA	NA	NA	NA	300	0.66 J
MW-2	3/28/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	9/12/2013	Peristaltic Pump	6.04	39.8	Total	NA	NA	NA	NA	NA	NA	NA	360	<2.5
MW-2	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	8/30/2001	Bailer	4.72	180000	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-3	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	9/18/2001	Bailer	4.61	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	12.7
MW-3	12/18/2001	Peristaltic Pump	4.5	1.16	Total	NA	NA	NA	NA	NA	NA	NA	NA	12
MW-3	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	11/10/2004	Peristaltic Pump	5.71	0.31	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	2/15/2011	Peristaltic Pump	5.95	51.1	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	2/15/2011	Peristaltic Pump	NM	0.24	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	3/29/2012	Peristaltic Pump	5.64	9.2	Total	NA	NA	NA	NA	NA	NA	N	140	0.63
MW-3	9/27/2012	Peristaltic Pump	5.57	9.5	Total	NA	NA	NA	NA	NA	NA	N	120	<2.5
MW-3	3/26/2013	Peristaltic Pump	5.60	89.7	Total	NA	NA	NA	NA	NA	NA	NA	5.4	0.16 J
MW-3	3/26/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	9/10/2013	Peristaltic Pump	5.75	9.96	Total	NA	NA	NA	NA	NA	NA	NA	130	0.75
MW-3	9/23/2014	Peristaltic Pump	5.26	16.1	Total	NA	NA	NA	NA	NA	NA	NA	120	0.28
MW-3	9/23/2014	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	8/30/2001	Bailer	6.45	72	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-4	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	9/18/2001	Bailer	6.35	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-4	12/18/2001	Peristaltic Pump	6.3	37.2	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-4	1/31/2003	Peristaltic Pump	5.75	2.86	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	10/20/2009	Peristaltic Pump	6.55	0.47	Total	NA	NA	NA	NA	NA	NA	NA	4.3	4
MW-4	9/22/2015	Peristaltic Pump	6.19	0.37	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	9/28/2016	Peristaltic Pump	6.44	5.17	Total	NA	NA	NA	NA	NA	NA	NA	3.9	2.2
MW-5	8/30/2001	Bailer	6.96	2900	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-5	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	9/18/2001	Bailer	6.55	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	0.25
MW-5	12/18/2001	Peristaltic Pump	6.76	0.67	Total	NA	NA	NA	NA	NA	NA	NA	NA	0.12

**Table 6: Summary of Groundwater Analytical Results**

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Diethyl phthalate (ug/L)	Naphthalene (ug/L)	Chloride (mg/L)	Nitrate (mg/L)
<b>Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs</b>						--	0.2	--	--	--	--	--	250*	10
<b>Background</b>						ADL	ADL	ADL	ADL	ADL	ADL	ADL	12	2.4
<b>Highest RRS</b>						1.5	3.3	33	330	3300	93,000	10	--	--
<b>Corrective Action Goal</b>						3.92	0.39	3.92	39	390	82,000	--	--	--
MW-6	8/30/2001		4.09	75	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-6	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	9/18/2001	Bailer	4.21	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	13.8
MW-6	12/18/2001	Peristaltic Pump	4.12	1.58	Total	NA	NA	NA	NA	NA	NA	NA	NA	16
MW-6	5/16/2007	-	4.23	6.72	Total	NA	NA	NA	NA	NA	NA	NA	2400	0.33
MW-6	3/30/2012	Peristaltic Pump	6.05	9.17	Total	NA	NA	NA	NA	NA	NA	NA	2000	<2.5
MW-6	9/27/2012	Peristaltic Pump	6.34	8.7	Total	NA	NA	NA	NA	NA	NA	NA	1800	<25
MW-6	3/27/2013	Peristaltic Pump	6.65	4.37	Total	NA	NA	NA	NA	NA	NA	NA	210	<2.7
MW-6	9/10/2013	Peristaltic Pump	5.57	69.1	Total	NA	NA	NA	NA	NA	NA	NA	1400	<2.5
MW-6	9/10/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	9/25/2014	Peristaltic Pump	4.10	21.4	Total	NA	NA	NA	NA	NA	NA	NA	6300	<25
MW-6	9/25/2014	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	9/23/2015	Peristaltic Pump	4.55	1.88	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	9/28/2016	Peristaltic Pump	5.95	4.41	Total	NA	NA	NA	NA	NA	NA	NA	750	<2.5
MW-6	9/26/2017	Peristaltic Pump	5.94	6.48	Total	NA	NA	NA	NA	NA	NA	NA	1300	<0.25
MW-7	12/18/2001	Peristaltic Pump	4.31	1.66	Total	< 1	< 1	< 1	< 1	< 1	NA	< 1	NA	4.2
MW-7	5/16/2007	-	3.54	5.02	Total	NA	NA	NA	NA	NA	NA	NA	3900	3.2
DUP-03	5/16/2007	-	3.54	5.02	Total	NA	NA	NA	NA	NA	NA	NA	4000	3.6
MW-7	3/30/2012	Peristaltic Pump	5.14	1.41	Total	NA	NA	NA	NA	NA	NA	NA	1500	3.4
MW-7	9/28/2012	Peristaltic Pump	5.94	3.93	Total	NA	NA	NA	NA	NA	NA	NA	900	<12 UJ
DUP-1	9/28/2012	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	890	<12 UJ
MW-7	3/27/2013	Peristaltic Pump	6.34	2.00	Total	NA	NA	NA	NA	NA	NA	NA	260	3.8 J
MW-7	9/11/2013	Peristaltic Pump	5.91	3.71	Total	NA	NA	NA	NA	NA	NA	NA	660	<2.5
MW-7	9/23/2014	Peristaltic Pump	5.65	1.39	Total	NA	NA	NA	NA	NA	NA	NA	1200	4.0
MW-7	9/22/2015	Peristaltic Pump	5.57	1.47	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	9/28/2016	Peristaltic Pump	5.75	0.78	Total	NA	NA	NA	NA	NA	NA	NA	1100	<12
MW-8	8/30/2001	-	NM	NM	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-8	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	9/18/2001	Bailer	5.03	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	33.3
MW-9	8/30/2001	Bailer	4.43	550	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-9	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	9/18/2001	Bailer	4.33	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	5.38
MW-9	12/18/2001	Peristaltic Pump	4.3	4.74	Total	NA	NA	NA	NA	NA	NA	NA	NA	5.8
MW-9	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	10/21/2009	Peristaltic Pump	4.2	2.38	Total	NA	NA	NA	NA	NA	NA	NA	940	2.4 J
MW-9	3/30/2012	Peristaltic Pump	4.13	3.35	Total	NA	NA	NA	NA	NA	NA	NA	490	2.6
MW-9	9/28/2012	Peristaltic Pump	4.13	0.56	Total	NA	NA	NA	NA	NA	NA	NA	490	<2.5 UJ
MW-9	3/27/2013	Peristaltic Pump	4.22	4.53	Total	NA	NA	NA	NA	NA	NA	NA	640	2.4 J
MW-9	9/11/2013	Peristaltic Pump	4.48	0.81	Total	NA	NA	NA	NA	NA	NA	NA	760	<2.5
MW-9	9/24/2014	Peristaltic Pump	4.51	0.49	Total	NA	NA	NA	NA	NA	NA	NA	860	<25
DUP-1	9/24/2014	Peristaltic Pump	4.51	0.49	Total	NA	NA	NA	NA	NA	NA	NA	900	<25
MW-9	9/22/2015	Peristaltic Pump	4.31	2.59	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUP-1	9/22/2015	Peristaltic Pump	4.31	2.59	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	9/28/2016	Peristaltic Pump	4.90	6.53	Total	NA	NA	NA	NA	NA	NA	NA	690	<12
DUP-1	9/28/2016	Peristaltic Pump	4.90	6.53	Total	NA	NA	NA	NA	NA	NA	NA	710	<12
MW-9	9/26/2017	Peristaltic Pump	4.66	5.59	Total	NA	NA	NA	NA	NA	NA	NA	950	2.4
DUP-1	9/26/2017	Peristaltic Pump	4.66	5.59	Total	NA	NA	NA	NA	NA	NA	NA	930	2.5
MW-10	8/30/2001	Bailer	5.81	42	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-10	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-10	9/18/2001	Bailer	6.11	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-10	12/18/2001	Peristaltic Pump	5.72	1.75	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-10	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-10	10/21/2009	Peristaltic Pump	5.53	0	Total	NA	NA	NA	NA	NA	NA	NA	23	< 0.25
MW-11	8/30/2001	Bailer	6.11	110	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-11	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11	9/18/2001	Bailer	5.89	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	0.58
MW-11	12/18/2001	Peristaltic Pump	5.62	0.59	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-11	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-11	10/21/2009	Peristaltic Pump	4.61	0.31	Total	NA	NA	NA	NA	NA	NA	NA	5.9	< 0.25

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Diethyl phthalate (ug/L)	Naphthalene (ug/L)	Chloride (mg/L)	Nitrate (mg/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						--	0.2	--	--	--	--	--	250*	10
Background						ADL	ADL	ADL	ADL	ADL	ADL	ADL	12	2.4
Highest RRS						1.5	3.3	33	330	3300	93,000	10	--	--
Corrective Action Goal						3.92	0.39	3.92	39	390	82,000	--	--	--
MW-12	8/30/2001	Bailer	5.98	1800	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-12	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	9/18/2001	Bailer	5.85	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-12	12/19/2001	Peristaltic Pump	5.72	4.26	Total	NA	NA	NA	NA	NA	NA	NA	NA	< 0.01
MW-12	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	10/20/2009	Peristaltic Pump	5.71	0.57	Total	NA	NA	NA	NA	NA	NA	NA	6.2	2.4
MW-12	3/29/2012	Peristaltic Pump	6.01	4.04	Total	NA	NA	NA	NA	NA	NA	NA	3.1	<0.25
MW-12	9/27/2012	Peristaltic Pump	6.31	3.72	Total	NA	NA	NA	NA	NA	NA	NA	2.9	5.4
MW-12	3/26/2013	Peristaltic Pump	5.75	1.01	Total	NA	NA	NA	NA	NA	NA	NA	2.1	4.8
MW-12	9/10/2013	Peristaltic Pump	5.86	2.58	Total	NA	NA	NA	NA	NA	NA	NA	2.1	0.25
MW-12	9/23/2014	Peristaltic Pump	5.86	0.12	Total	NA	NA	NA	NA	NA	NA	NA	2.7	<0.25
MW-12	9/22/2015	Peristaltic Pump	5.85	0.85	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-12	9/27/2016	Peristaltic Pump	5.53	0.99	Total	NA	NA	NA	NA	NA	NA	NA	4.5	<0.25
MW-13D	8/30/2001	Bailer	5	3.2	Total	< 10	< 10	< 10	< 10	< 10	NA	< 10	NA	NA
MW-13D	9/6/2001	Bailer	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/6/2001	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/18/2001	Bailer	4.22	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	3.16
MW-13D	12/18/2001	Peristaltic Pump	4.04	1.29	Total	NA	NA	NA	NA	NA	NA	NA	NA	3.4
MW-13D	11/10/2004	Peristaltic Pump	5.1	0.57	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	3/30/2012	Peristaltic Pump	3.72	2.62	Total	NA	NA	NA	NA	NA	NA	NA	1600	5.5
MW-13D	9/28/2012	Peristaltic Pump	3.98	1.30	Total	NA	NA	NA	NA	NA	NA	NA	1400	<12 UJ
MW-13D	3/28/2013	Peristaltic Pump	3.02	0.51	Total	NA	NA	NA	NA	NA	NA	NA	1600	4.0 J
DUP-1	3/28/2013	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	1600	4.0 J
MW-13D	9/12/2013	Peristaltic Pump	3.95	0.73	Total	NA	NA	NA	NA	NA	NA	NA	1500	3.4
MW-13D	9/25/2014	Peristaltic Pump	3.82	0.61	Total	NA	NA	NA	NA	NA	NA	NA	1600	<25
MW-13D	9/22/2015	Peristaltic Pump	3.83	2.41	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-13D	9/28/2016	Peristaltic Pump	3.73	3.81	Total	NA	NA	NA	NA	NA	NA	NA	1800	<12
MW-13D	9/27/2017	Peristaltic Pump	3.76	3.71	Total	NA	NA	NA	NA	NA	NA	NA	2200	5.2
MW-15	4/8/2003	Peristaltic Pump	3.58	43.2	Total	< 5	< 5	< 5	< 5	< 5	NA	< 5	NA	NA
MW-15	9/25/2014	Peristaltic Pump	3.75	0.95	Total	NA	NA	NA	NA	NA	NA	NA	1900	<25
MW-15	9/23/2015	Peristaltic Pump	4.18	7.84	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-15	9/29/2016	Peristaltic Pump	4.35	275	Total	NA	NA	NA	NA	NA	NA	NA	2000	<25
MW-15	9/29/2016	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-15	9/27/2017	Peristaltic Pump	4.13	8.05	Total	NA	NA	NA	NA	NA	NA	NA	2100	2.2
MW-16	2/14/2003	Peristaltic Pump	3.98	0.6	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	3/29/2012	Peristaltic Pump	4.5	0.5	Total	NA	NA	NA	NA	NA	NA	NA	530	4
MW-16	9/28/2012	Peristaltic Pump	4.60	1.25	Total	NA	NA	NA	NA	NA	NA	NA	490	<12 UJ
MW-16	3/27/2013	Peristaltic Pump	5.44	3.06	Total	NA	NA	NA	NA	NA	NA	NA	640	5.9 J
MW-16	9/11/2013	Peristaltic Pump	5.02	0.0	Total	NA	NA	NA	NA	NA	NA	NA	470	5.2
MW-16	9/24/2014	Peristaltic Pump	4.36	4.86	Total	NA	NA	NA	NA	NA	NA	NA	570	<25
MW-16	9/22/2015	Peristaltic Pump	4.20	8.22	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-16	9/28/2016	Peristaltic Pump	4.41	7.98	Total	NA	NA	NA	NA	NA	NA	NA	250	<12
MW-16	9/26/2017	Peristaltic Pump	4.30	3.62	Total	NA	NA	NA	NA	NA	NA	NA	260	4.2
MW-17	1/30/2003	Peristaltic Pump	5.42	0.79	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-17	11/9/2004	Bailer	6.88	5.39	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Diethyl phthalate (ug/L)	Naphthalene (ug/L)	Chloride (mg/L)	Nitrate (mg/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						--	0.2	--	--	--	--	--	250*	10
Background						ADL	ADL	ADL	ADL	ADL	ADL	ADL	12	2.4
Highest RRS						1.5	3.3	33	330	3300	93,000	10	--	--
Corrective Action Goal						3.92	0.39	3.92	39	390	82,000	--	--	--
MW-18	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUPLICATE	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	11/10/2004	Peristaltic Pump	6.07	1.17	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	10/21/2009	Peristaltic Pump	4.44	4	Total	NA	NA	NA	NA	NA	NA	NA	3000	1.1 J
MW-18	3/30/2012	Peristaltic Pump	5.49	5.06	Total	NA	NA	NA	NA	NA	NA	NA	1200	<2.5
DUP-1	3/30/2012	Peristaltic Pump	5.49	5.06	Total	NA	NA	NA	NA	NA	NA	NA	1100	<2.5
MW-18	9/28/2012	Peristaltic Pump	6.11	2.10	Total	NA	NA	NA	NA	NA	NA	NA	800	<12 UJ
MW-18	3/27/2013	Peristaltic Pump	6.91	35.4	Total	NA	NA	NA	NA	NA	NA	NA	200	<0.14
MW-18	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	9/10/2013	Peristaltic Pump	6.19	5.29	Total	NA	NA	NA	NA	NA	NA	NA	610	<2.5
MW-18	9/24/2014	Peristaltic Pump	4.71	8.83	Total	NA	NA	NA	NA	NA	NA	NA	260	<50
MW-18	9/23/2015	Peristaltic Pump	4.51	17.9	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-18	9/29/2016	Peristaltic Pump	6.36	4.08	Total	NA	NA	NA	NA	NA	NA	NA	360	<12
MW-19	1/30/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-19	10/23/2009	Peristaltic Pump	6.3	0.19	Total	NA	NA	NA	NA	NA	NA	NA	12	< 0.25
MW-19	3/29/2012	Peristaltic Pump	5.78	7.1	Total	NA	NA	NA	NA	NA	NA	NA	11	0.58
MW-19	9/28/2012	Peristaltic Pump	6.20	1.03	Total	NA	NA	NA	NA	NA	NA	NA	7.8	<0.25 UJ
MW-19	3/26/2013	Peristaltic Pump	6.46	4.40	Total	NA	NA	NA	NA	NA	NA	NA	3.6	<0.25
MW-19	9/11/2013	Peristaltic Pump	5.95	4.39	Total	NA	NA	NA	NA	NA	NA	NA	6.6	<0.25
MW-19	9/23/2014	Peristaltic Pump	5.45	1.08	Total	NA	NA	NA	NA	NA	NA	NA	5.5	<0.25
MW-20	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUP-2	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	10/22/2009	Peristaltic Pump	5.37	30.9	Total	NA	NA	NA	NA	NA	NA	NA	11	0.81
MW-20	3/30/2012	Peristaltic Pump	5.51	21.1	Total	NA	NA	NA	NA	NA	NA	NA	9.6	<0.25
MW-20	3/30/2012	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/27/2012	Peristaltic Pump	5.96	73.9	Total	NA	NA	NA	NA	NA	NA	NA	9.3	<0.25
MW-20	9/27/2012	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	3/27/2013	Peristaltic Pump	5.88	33.4	Total	NA	NA	NA	NA	NA	NA	NA	12	0.24 J
MW-20	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/10/2013	Peristaltic Pump	5.75	158	Total	NA	NA	NA	NA	NA	NA	NA	11	<0.25
MW-20	9/10/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/24/2014	Peristaltic Pump	5.50	96.7	Total	NA	NA	NA	NA	NA	NA	NA	15	<0.25
MW-20	9/24/2014	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/22/2015	Peristaltic Pump	5.46	51.3	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/22/2015	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-20	9/29/2016	Peristaltic Pump	5.96	23.60	Total	NA	NA	NA	NA	NA	NA	NA	7.0	<0.25
MW-21	1/31/2003	Peristaltic Pump	4.96	9.7	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-21	11/10/2004	-	NM	NM	Total	< 0.2	< 0.2	< 0.2	< 0.2	< 2	NA	< 5	NA	NA
MW-21	10/21/2009	Peristaltic Pump	5.67	> 1000	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22DD	1/31/2003	Peristaltic Pump	4.37	3.36	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	4/8/2003	Peristaltic Pump	5.63	44.8	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	11/10/2004	Peristaltic Pump	7.24	9.95	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	5/16/2007	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA	110	< 0.05
MW-23	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23	10/21/2009	Peristaltic Pump	5.82	0.78	Total	NA	NA	NA	NA	NA	NA	NA	110	< 0.25
MW-23	3/29/2012	Peristaltic Pump	6.18	1.48	Total	NA	NA	NA	NA	NA	NA	NA	87	<0.25
MW-23	9/27/2012	Peristaltic Pump	6.75	2.06	Total	NA	NA	NA	NA	NA	NA	NA	62	2.8
MW-23	3/26/2013	Peristaltic Pump	6.04	3.00	Total	NA	NA	NA	NA	NA	NA	NA	31	0.14 J
MW-23	9/10/2013	Peristaltic Pump	6.17	1.91	Total	NA	NA	NA	NA	NA	NA	NA	37	0.98
MW-24	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUPLICATE	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24	10/22/2009	Peristaltic Pump	5.7	0.14	Total	NA	NA	NA	NA	NA	NA	NA	130	< 0.25
MW-25	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
DUPLICATE	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25	11/9/2004	Bailer	4.47	6.11	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-25	10/22/2009	Peristaltic Pump	4.32	0.32	Total	NA	NA	NA	NA	NA	NA	NA	270	2.7

Table 6: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Diethyl phthalate (ug/L)	Naphthalene (ug/L)	Chloride (mg/L)	Nitrate (mg/L)
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						--	0.2	--	--	--	--	--	250*	10
Background						ADL	ADL	ADL	ADL	ADL	ADL	ADL	12	2.4
Highest RRS						1.5	3.3	33	330	3300	93,000	10	--	--
Corrective Action Goal						3.92	0.39	3.92	39	390	82,000	--	--	--
MW-26DDD	4/8/2003	Peristaltic Pump	5.8	2	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-26DDD	4/9/2004	Bladder Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	< 5	NA	NA
MW-26DDD	6/9/2004	Bladder Pump	NM	2.05	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	11/10/2004	Bailer	6.6	7.66	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	2/15/2011	Peristaltic Pump	5.36	5.01	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	5/3/2012	Submersible Pump	5.07	2.02	Total	NA	NA	NA	NA	NA	NA	NA	490	2.5
MW-27DDDD	9/27/2012	Submersible Pump	4.88	1.59	Total	NA	NA	NA	NA	NA	NA	NA	530	2.6
MW-27DDDD	3/28/2013	Submersible Pump	4.93	5.78	Total	NA	NA	NA	NA	NA	NA	NA	530	3.7 J
MW-27DDDD	9/12/2013	Peristaltic Pump	4.93	12.9	Total	NA	NA	NA	NA	NA	NA	NA	610	<5.0
MW-27DDDD	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/25/2014	Peristaltic Pump	4.74	0.72	Total	NA	NA	NA	NA	NA	NA	NA	610	<2.5
MW-27DDDD	9/23/2015	Peristaltic Pump	4.9	3.84	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-27DDDD	9/28/2016	Submersible Pump	4.97	0.87	Total	NA	NA	NA	NA	NA	NA	NA	690	<12
MW-27DDDD	9/28/2017	Monsoon Pump	4.82	2.10	Total	NA	NA	NA	NA	NA	NA	NA	720	3.2
MW-28	11/9/2004	Bailer	6.06	6.34	Total	< 0.2	< 0.2	< 0.2	< 0.2	< 2	NA	< 5	NA	NA
MW-28	5/16/2007	Peristaltic Pump	5.25	1.16	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-28R	12/6/2016	Peristaltic Pump	5.61	4.2	Total	NA	NA	NA	NA	NA	NA	NA	700	0.56
MW-29	7/17/2008	Bailer	4.42	1.7	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-29	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-29	10/22/2009	Peristaltic Pump	4.21	0	Total	NA	NA	NA	NA	NA	NA	NA	160	3.5
MW-29	3/30/2012	Peristaltic Pump	4.08	0.32	Total	NA	NA	NA	NA	NA	NA	NA	140	1.4
MW-29	9/27/2012	Peristaltic Pump	4.45	0.0	Total	NA	NA	NA	NA	NA	NA	NA	120	<2.5
MW-29	3/28/2013	Peristaltic Pump	4.33	0.23	Total	NA	NA	NA	NA	NA	NA	NA	120	1.8
MW-29	9/11/2013	Peristaltic Pump	4.30	0.0	Total	NA	NA	NA	NA	NA	NA	NA	120	<2.5
DUP-1	9/11/2013	Peristaltic Pump	4.30	0.0	Total	NA	NA	NA	NA	NA	NA	NA	150	<2.5
MW-29	9/24/2014	Peristaltic Pump	4.28	0.75	Total	NA	NA	NA	NA	NA	NA	NA	130	<2.5
MW-29	9/23/2015	Peristaltic Pump	4.07	0.81	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-29	9/29/2016	Peristaltic Pump	4.52	0.16	Total	NA	NA	NA	NA	NA	NA	NA	110	1.1
MW-30	7/17/2008	Bailer	NM	NM	Total	< 10	< 10	< 10	< 10	< 10	< 10	NA	NA	NA
MW-30	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-30	10/23/2009	Peristaltic Pump	4.21	0.06	Total	NA	NA	NA	NA	NA	NA	NA	440	0.29
MW-31	5/2/2012	Peristaltic Pump	4.92	1.52	Total	NA	NA	NA	NA	NA	n	nA	140	6.8
MW-31	9/23/2015	Peristaltic Pump	4.19	0.66	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-31	9/29/2016	Peristaltic Pump	4.46	0.46	Total	NA	NA	NA	NA	NA	NA	NA	150	5.0
MW-32	12/6/2016	Peristaltic Pump	5.75	3.75	Total	NA	NA	NA	NA	NA	NA	NA	290	1.60
MW-33	10/3/2017	SS GeoSub Pump	6.70	1.62	Total	NA	NA	NA	NA	NA	NA	NA	3	NA
MW-A	12/18/2001	Peristaltic Pump	6.75	1.41	Total	NA	NA	NA	NA	NA	NA	NA	NA	0.74
MW-A	5/15/2007	Peristaltic Pump	6.77	2.36	Total	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-A	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-DUP01	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-A	10/22/2009	Peristaltic Pump	6.21	0	Total	NA	NA	NA	NA	NA	NA	NA	120	< 0.25
MW-DUP01	10/22/2009	Peristaltic Pump	6.21	0	Total	NA	NA	NA	NA	NA	NA	NA	130	< 0.25
TMW-1	7/14/1997	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	< 5	NA	NA

Notes:

RRS = Risk Reduction Standard  
 Total Metals are field preserved, unfiltered  
 Dissolved Metals are not preserved, laboratory filtered  
 USEPA MCLs = United States Environmental Protection Agency Maximum Contaminant  
 HSRA Type 1/3 GW RRS from Appendix III  
 \* = USEPA Secondary Maximum Contaminant Levels are used for Chloride  
 \*\* insufficient water column for sample collection  
 -- = Data unavailable  
 -- = No Applicable Standard has been established for this constituent  
**Bolded result represents a positive value**  
**Bolded/Shaded result exceeds the groundwater standard**  
**Bolded/Shaded result exceeds the RRS**  
 NA = Not Analyzed  
 NM = Not Measured  
**Data Qualifiers:**  
 J = Estimated value based on QC data  
 JL = Estimated quantitation; possibly biased low based on QC data  
 UL = Undetected; data biased low: the reporting detection limit is higher than indicated

Prepared by/Date: RMB 12/21/09  
 Checked by/Date: JAH 12/21/09  
 Revised by/Date: JMQ 11/9/16  
 Checked by/Date: NJM 11/17/16  
 Revised by/Date: JPM 05/12/17  
 Checked by/Date: DWK 05/15/17  
 Revised by/Date: JPM 10/16/17  
 Checked by/Date: DWK 10/17/17



**Table 7: Summary of SourceDK Model Input**

Well ID	Sample Date	Barium (mg/L)	Lead (mg/L)	Number Of Samples
MW-6	8/30/2001	2	0.19	1
	9/6/2001	2.1	0.27	1
	12/18/2001	5.3	0.55	1
	3/30/2012	0.0746	<0.001	1
	9/27/2012	0.296	0.0322	1
	3/27/2013	0.039	<0.001	1
	9/10/2013	0.42	0.0534	1
	9/25/2014	10.3	1.16	1
	9/23/2015	0.449	0.132	1
	9/28/2016	0.181	0.036	1
9/26/2017	0.184	0.0112	1	
MW-9	8/30/2001	1.6	0.08	1
	9/6/2001	2	0.077	1
	12/18/2001	5.3	0.26	1
	10/21/2009	1.22	0.12	1
	3/30/2012	0.18	0.0437	1
	9/28/2012	0.118	0.0472	1
	3/27/2013	0.232	0.0483	1
	9/11/2013	0.225	0.0613	1
	9/24/2014	0.338	0.0678	1
	9/22/2015	0.375	0.0898	1
9/28/2016	0.572	0.072	1	
9/26/2017	0.686	0.0758	1	
MW-13D	8/30/2001	3.2	0.16	1
	9/6/2001	2.4	0.14	1
	12/18/2001	1.7	0.19	1
	3/30/2012	0.273	0.168	1
	9/28/2012	0.295	0.128	1
	3/28/2013	0.383	0.143	1
	9/12/2013	0.338	0.139	1
	9/25/2014	0.254	0.176	1
	9/22/2015	0.169	0.129	1
	9/28/2016	0.219	0.173	1
9/27/2017	0.231	0.137	1	
MW-15	4/8/2003	0.412	0.124	1
	9/25/2014	0.0628	0.311	1
	9/23/2015	<0.075	0.243	1
	9/29/2016	0.22	0.294	1
	9/27/2017	0.0996	0.144	1

**Table 7: Summary of SourceDK Model Input**

Well ID	Sample Date	Barium (mg/L)	Lead (mg/L)	Number Of Samples
MW-16	2/14/2003	2.34	0.1	1
	3/29/2012	0.542	0.0239	1
	9/28/2012	0.642	0.022	1
	3/27/2013	0.495	0.00914	1
	9/11/2013	0.631	0.0129	1
	9/24/2014	<0.01	0.0244	1
	9/22/2015	0.531	0.0121	1
	9/28/2016	0.508	0.0161	1
	9/26/2017	0.462	0.0104	1
MW-27DDDD	11/10/2004	<0.5	--	1
	2/15/2011	4.34	<0.001	1
	5/3/2012	4.91	<0.001	1
	9/27/2012	5.15	<0.001	1
	3/28/2013	5.55	<0.001	1
	9/12/2013	5.11	<0.001	1
	9/25/2014	6.72	<0.001	1
	9/23/2015	4.95	<0.001	1
	9/28/2016	7.22	<0.001	1
		9/28/2017	6.94	0.00239

**Notes:**

mg/L = milligrams per Liter

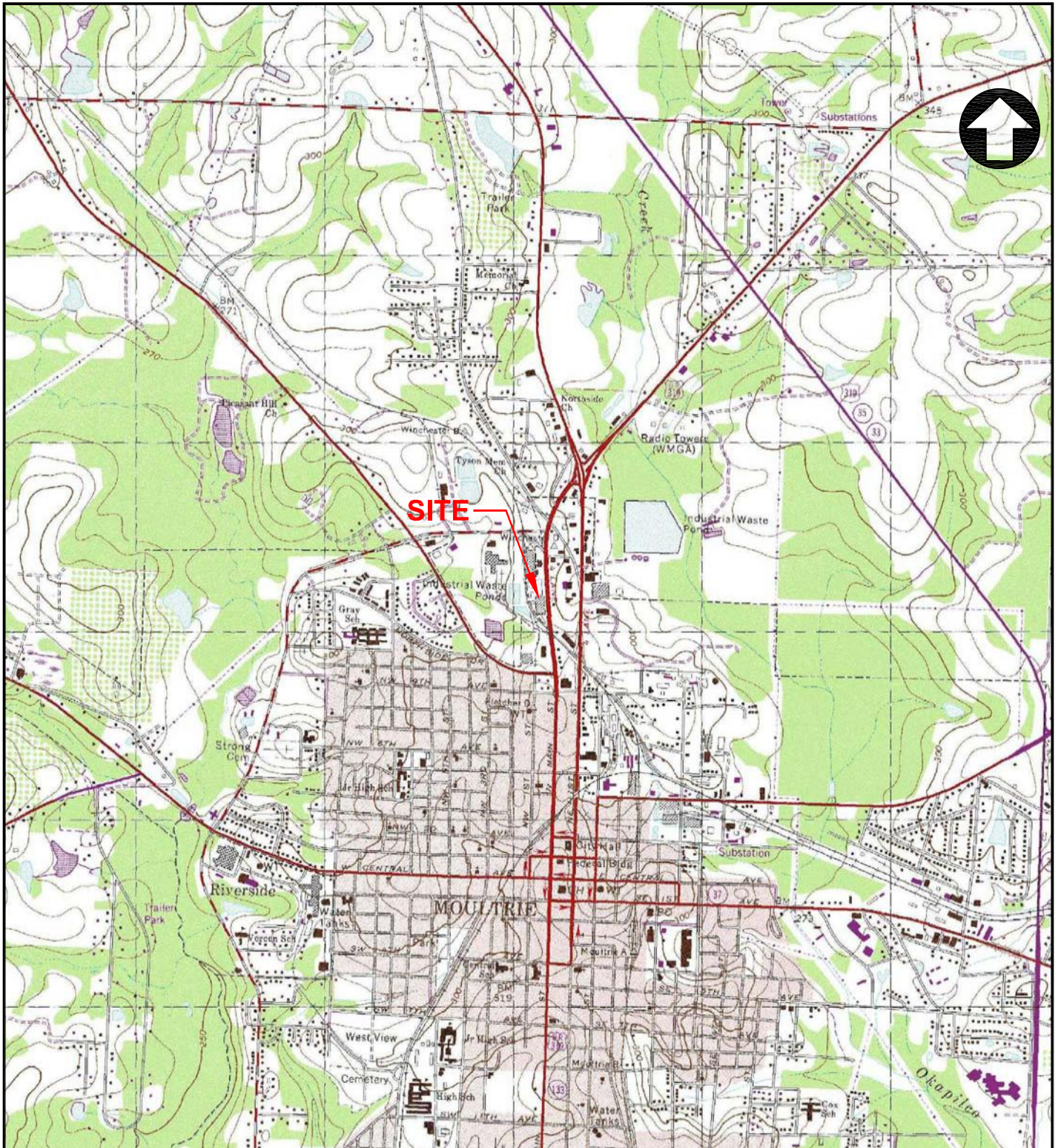
-- = not analyzed or not used as input

Revised by: JPM 10/16/17

Checked by: JMQ 1/8/18

## FIGURES





CONTOUR INTERVAL 10 FEET  
 BASE MAP FROM MOULTRIE QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC), 1978, PHOTO REVISED 1988



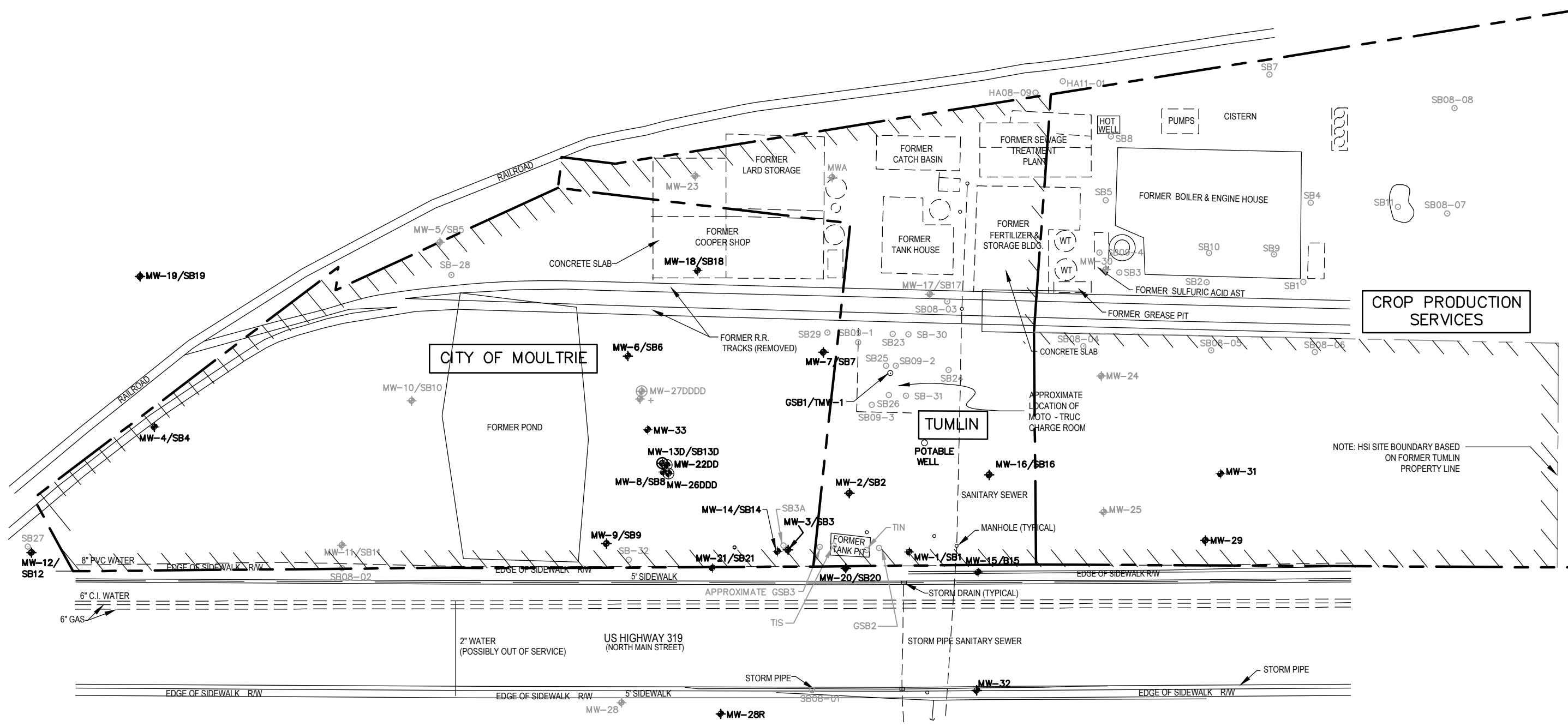
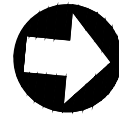
**FORMER SWIFT & COMPANY—  
 MEAT PROCESSING PLANT  
 1189 NORTH MAIN STREET  
 MOULTRIE, GEORGIA COLQUITT  
 COUNTY**

**amec foster wheeler**  
 Environment & Infrastructure, Inc.  
 3200 TOWN POINT DRIVE, SUITE 100  
 KENNESAW, GEORGIA 30144 (770) 421-3400

**SITE LOCATION MAP**  
 JOB NO. 6122-17-0498 FIGURE 1

PREPARED BY/DATE  
 CHECKED BY/DATE  
 TC 11/16/2015  
 RNQ 11/16/2015





CROP PRODUCTION SERVICES

CITY OF MOULTRIE

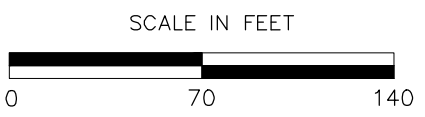
TUMLIN

NOTE: HSI SITE BOUNDARY BASED ON FORMER TUMLIN PROPERTY LINE

**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆+ WELL NOT LOCATED, PRESUMED DESTROYED (MW-27DDDD, UNIDENTIFIED WELL, AND MW-28 ABANDONED)
- ▨ HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET) AND MODIFIED BASED ON COLQUITT COUNTY TAX ASSESSOR PARCEL MAPS AND SURVEY PLAT FOR CROP PRODUCTION SERVICES (DAN HINSON, 2016)



FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY



Amec Foster Wheeler  
Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

SITE MAP

JOB NO. 6122-17-0798

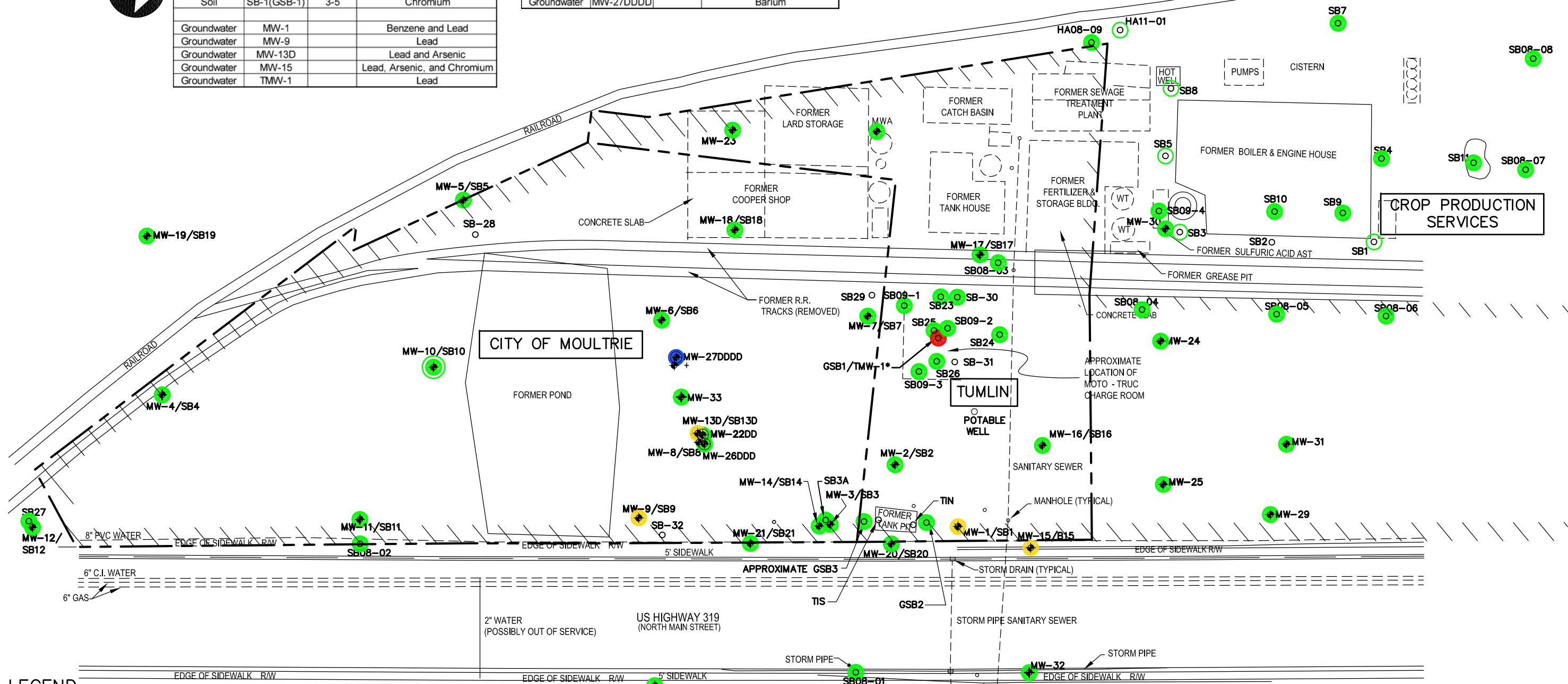
FIGURE 2

PREPARED BY/DATE RD\_05/17/2017  
 CHECKED BY/DATE JMQ\_05/17/2017



Locations and Substances Meeting Type 5 RRS			
Media	Location	Depth	Constituent
Soil	SB-1(GSB-1)	3-5	Chromium
Groundwater	MW-1		Benzene and Lead
Groundwater	MW-9		Lead
Groundwater	MW-13D		Lead and Arsenic
Groundwater	MW-15		Lead, Arsenic, and Chromium
Groundwater	TMW-1		Lead

Locations and Substances Meeting Type 4 RRS			
Media	Location	Depth	Constituent
Groundwater	MW-27DDDD		Barium



**LEGEND**

- SOIL MEETS TYPE 5 RRS.
- GROUNDWATER MEETS TYPE 5 RRS
- GROUNDWATER MEETS TYPE 4 RRS
- SOIL AND / OR GROUNDWATER MEETS TYPE 1 RRS
- SOIL MEETS TYPE 2 RRS ON SITE AND MEETS NC ON FORMER BOILER AND ENGINE HOUSE PROPERTY PER AGREEMENT WITH EPD ON 5/27/07 AND APPROVED IN REVISED CSR (2010)
- UNDERGROUND UTILITY
- PROPERTY LINE
- + MONITORING WELL LOCATION
- + UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION

\*THIS CHROMIUM SOIL DATA WAS JUSTIFIABLY DISREGARDED AS ANOMALOUS IN THE APPROVED 2010 REVISED CSR. MULTIPLE RESAMPLING EFFORTS WERE UNABLE TO DUPLICATE. THE HIGHEST COC CONCENTRATIONS IN SUBSEQUENT SOIL SAMPLES MET TYPE 1 RRS.

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

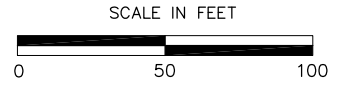
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MOULTRIE, GEORGIA COLQUITT COUNTY**



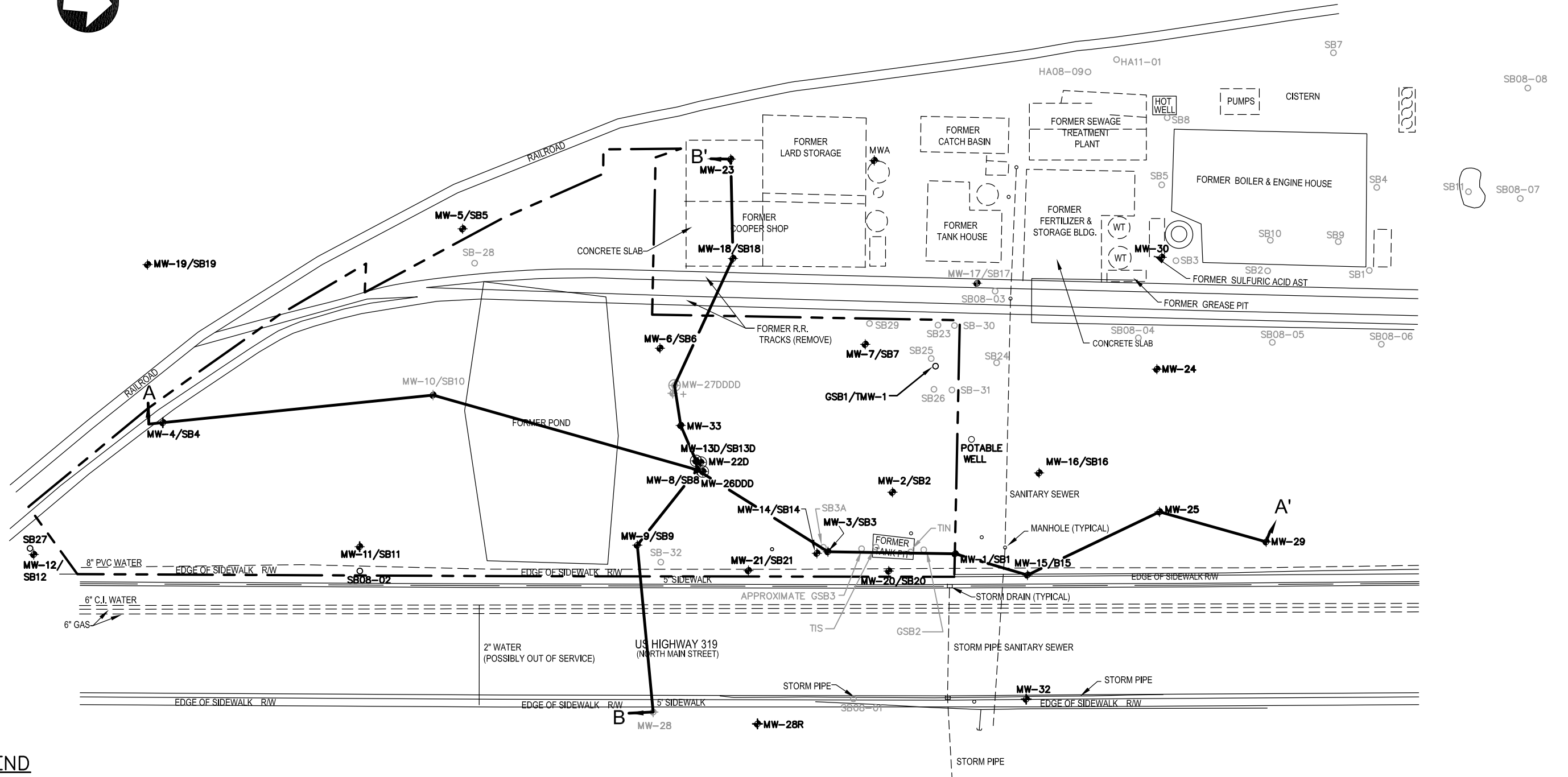
**Amec Foster Wheeler**  
Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**DELINEATION AND  
RISK REDUCTION STANDARDS  
COMPLIANCE MAP**

JOB NO. 6122-07-0004 FIGURE 3



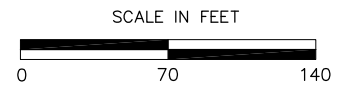
PREPARED BY/DATE: MHA 2/16/2018  
 CHECKED BY/DATE: DES 2/19/2018



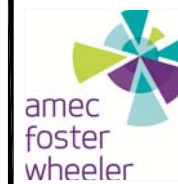
**LEGEND**

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HYDROGEOLOGIC PROFILE LOCATION
- WELL NOT LOCATED, PRESUMED DESTROYED  
(UNIDENTIFIED WELL, MW-27DDDD, AND MW-28 ABANDONED)

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



**FORMER SWIFT & COMPANY—  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY**

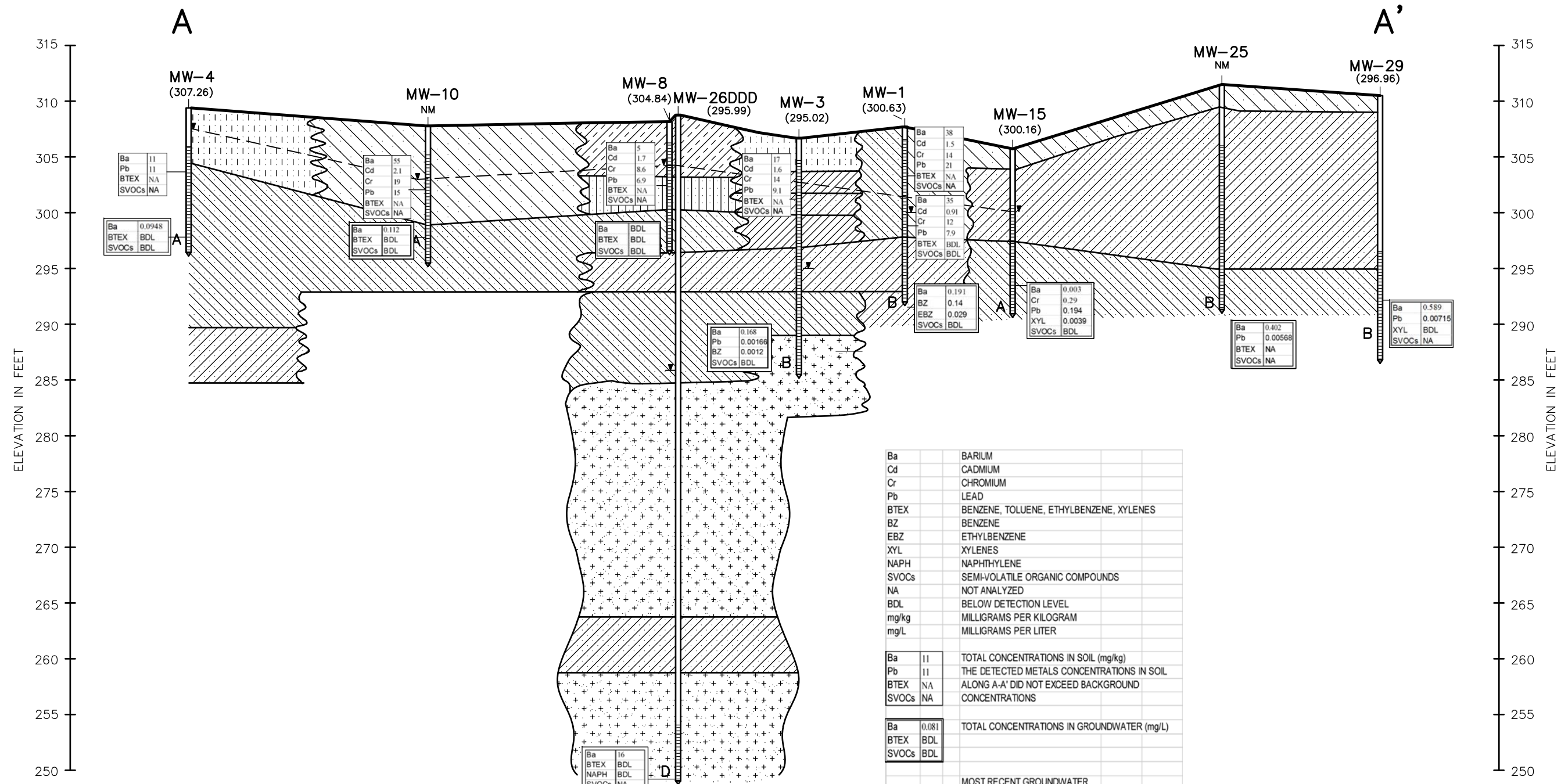


**Amec Foster Wheeler**  
Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**HYDROGEOLOGIC PROFILE  
LOCATION MAP**

JOB NO. 6122-07-0004

FIGURE 4

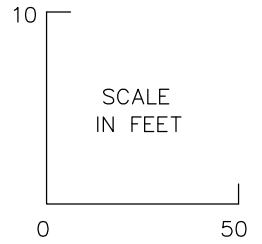


Ba	11	TOTAL CONCENTRATIONS IN SOIL (mg/kg)
Pb	11	THE DETECTED METALS CONCENTRATIONS IN SOIL
BTEX	NA	ALONG A-A' DID NOT EXCEED BACKGROUND CONCENTRATIONS
SVOCs	NA	
Ba	0.081	TOTAL CONCENTRATIONS IN GROUNDWATER (mg/L)
BTEX	BDL	
SVOCs	BDL	
MOST RECENT GROUNDWATER RESULTS WERE USED UNLESS NOTED OTHERWISE		

**LEGEND**

- SILTY SAND
- CLAYEY SAND
- SANDY CLAY & CLAYEY SAND MIX
- SAND WITH CLAY LENSES
- CLAY
- SANDY CLAY
- SANDY SILTY CLAY
- CLAY WITH TRACES OF SAND AND SILT
- APPROXIMATE DEPTH TO WATER
- APPROXIMATE DEPTH TO WATER FOR SHALLOW ZONE A
- NM NOT MEASURED
- (306.3) GROUNDWATER ELEVATION FROM TOC 9/25/2017-9/26/2017
- TOC TOP OF CASING

- SCREENED INTERVAL OF MONITORING WELL
- A WELL SCREENED IN SHALLOW ZONE A
- B WELL SCREENED IN SHALLOW ZONE B
- D WELL SCREENED IN DEEP ZONE



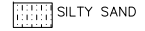

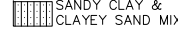

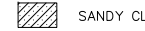
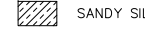
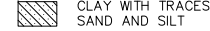





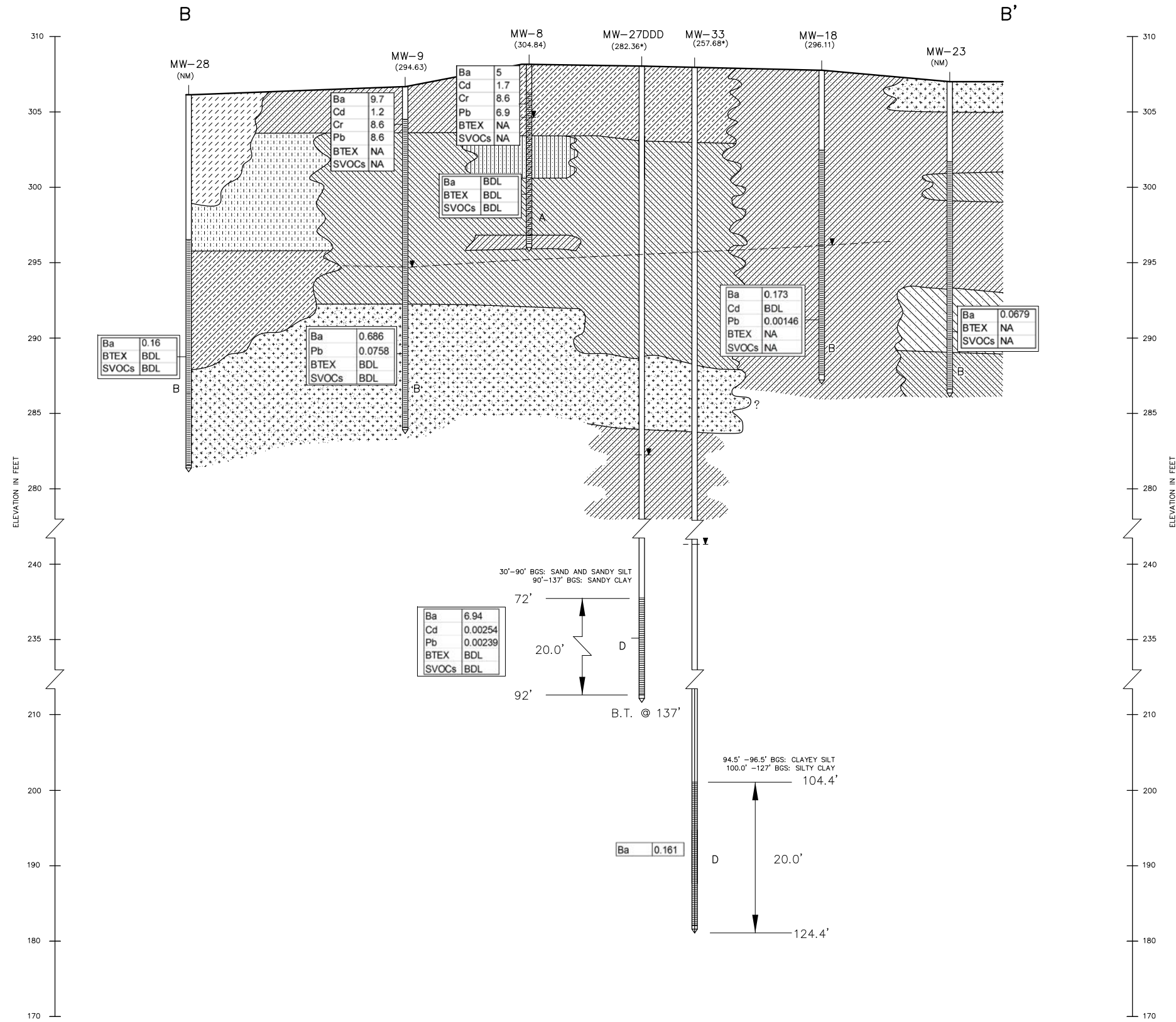
<p><b>FORMER SWIFT &amp; COMPANY- MEAT PROCESSING PLANT MOULTRIE, GEORGIA COLQUITT COUNTY</b></p>	<p><b>Amec Foster Wheeler</b> Environment &amp; Infrastructure, Inc. 1075 BIG SHANTY ROAD, NW, SUITE 100 KENNESAW, GEORGIA 30144 (770) 421-3400</p>	<p><b>HYDROGEOLOGIC PROFILE A-A'</b></p> <p>JOB NO. 6122-07-0004</p> <p>FIGURE 5</p>
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**LEGEND**

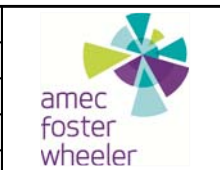
Ba		BARIUM
Cd		CADMIUM
Cr		CHROMIUM
Pb		LEAD
BTEX		BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
SVOCs		SEMI-VOLATILE ORGANIC COMPOUNDS
NA		NOT ANALYZED
BDL		BELOW DETECTION LEVEL
mg/kg		MILLIGRAMS PER KILOGRAM
mg/L		MILLIGRAMS PER LITER
Ba	9.7	TOTAL CONCENTRATIONS IN SOIL (mg/kg)
Cd	1.2	THE DETECTED METALS CONCENTRATIONS IN
Cr	8.6	SOIL ALONG B-B' DID NOT EXCEED BACKGROUND
Pb	8.6	CONCENTRATIONS
BTEX	NA	
SVOCs	NA	
Ba	5.3	TOTAL CONCENTRATIONS IN GROUNDWATER (mg/L)
Pb	0.26	
BTEX	BDL	
SVOCs	BDL	
MOST RECENT GROUNDWATER RESULTS WERE USED UNLESS NOTED OTHERWISE		

-  SCREENED INTERVAL OF MONITORING WELL
- A WELL SCREENED IN SHALLOW ZONE A
- B WELL SCREENED IN SHALLOW ZONE B
- D WELL SCREENED IN DEEP ZONE
-  FILL
-  SILTY SAND
-  CLAYEY SAND
-  SANDY CLAY & CLAYEY SAND MIX
-  SAND WITH CLAY LENSES
-  SANDY CLAY
-  SANDY SILTY CLAY
-  CLAY WITH TRACES OF SAND AND SILT
-  APPROXIMATE DEPTH TO WATER FOR SHALLOW ZONE B
-  APPROXIMATE DEPTH TO WATER
-  WATER LEVEL NOT USED
- NM NOT MEASURED



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED	M. ANDREWS
DRAWN	T. GLADSTONE
CHECKED	D. SMOAK
IN CHARGE	D. SMOAK
DATE	2/8/18



**FORMER SWIFT & COMPANY MEAT PROCESSING PLANT**  
 MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler Environment & Infrastructure, Inc.  
 1075 BIG SHANTY ROAD, NW, SUITE 100  
 KENNESAW, GEORGIA 30144 (770) 421-3400

**HYDROGEOLOGIC PROFILE B-B'**

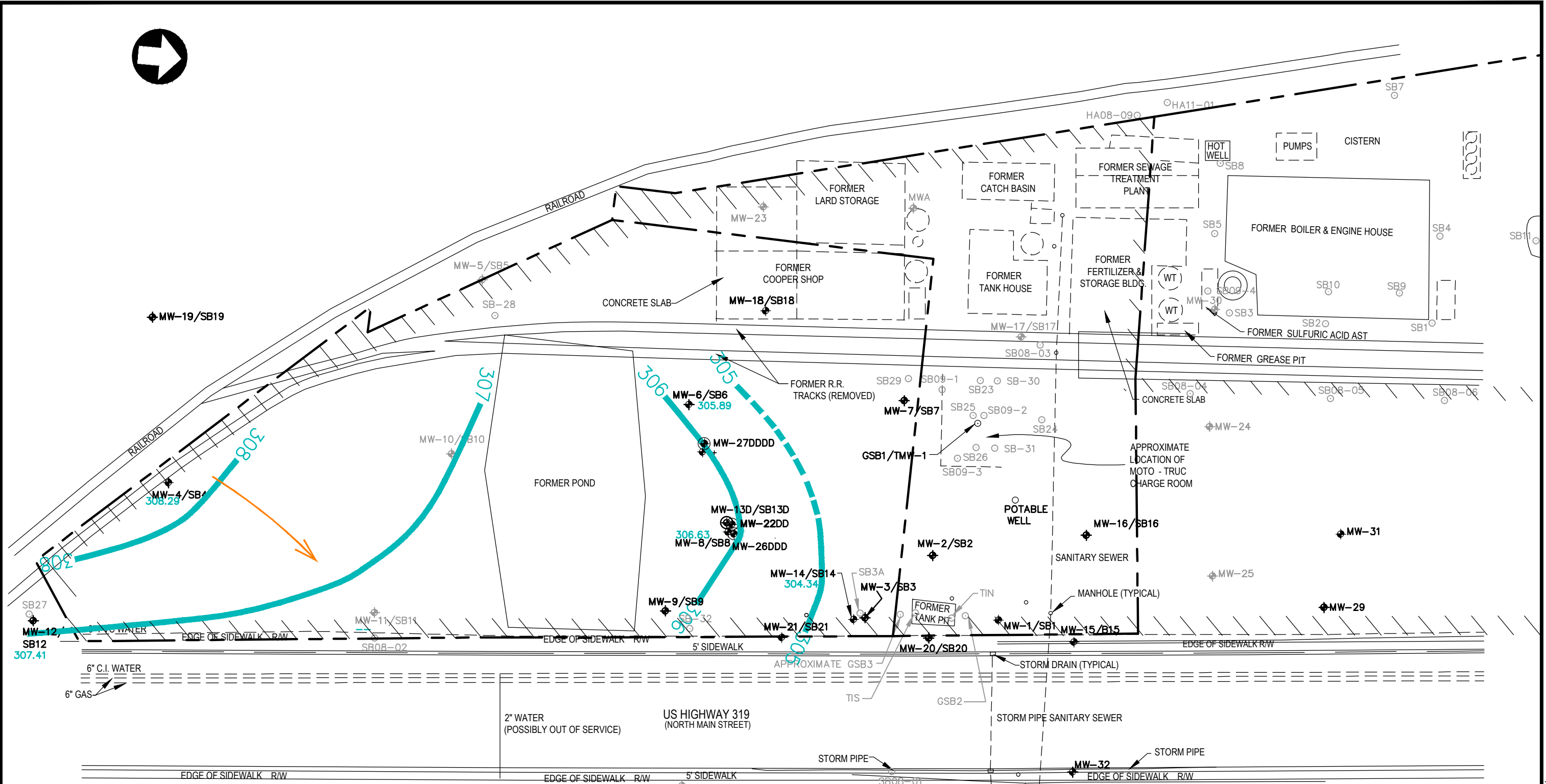
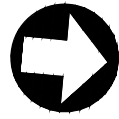
SCALE AS SHOWN

CONTRACT 6122-07-004

DWG. NO. REV. PAGE NO.

FIG. 6

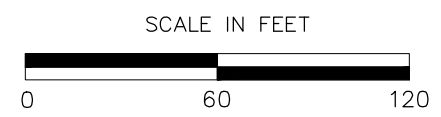
SCALE	AS SHOWN
CONTRACT	6122-07-004
DWG. NO.	REV. PAGE NO.
FIG. 6	



**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ WELL NOT LOCATED, PRESUMED DESTROYED
- 307 POTENTIOMETRIC SURFACE CONTOUR
- 304.54 POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- DIRECTION OF GROUNDWATER FLOW
- //// HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



**FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY**



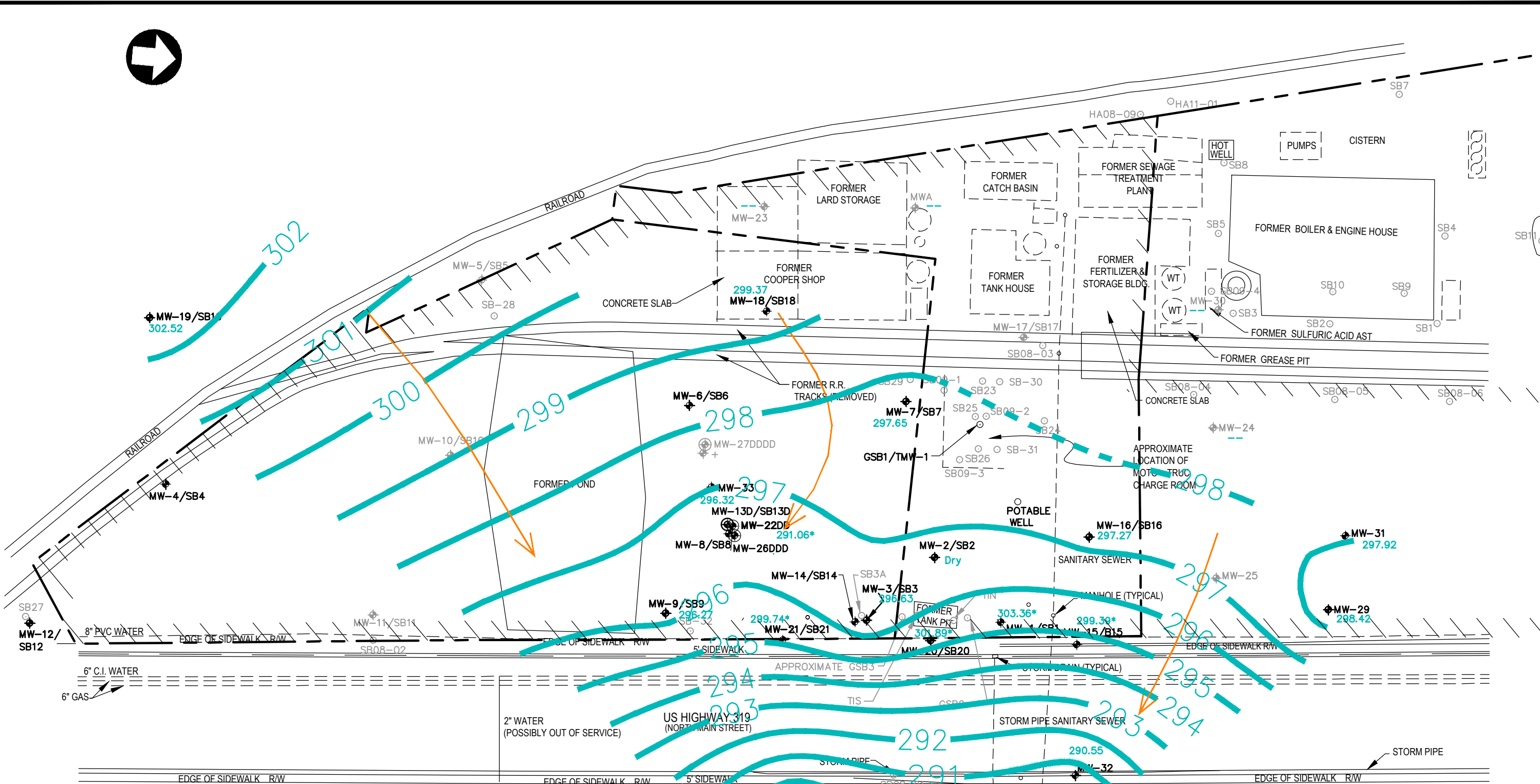
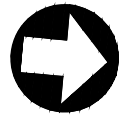
**Amec Foster Wheeler  
Environment & Infrastructure, Inc.**  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**POTENTIOMETRIC SURFACE  
SHALLOW ZONE A  
JANUARY 18, 2017**

JOB NO. 6122-17-0798

FIGURE 7

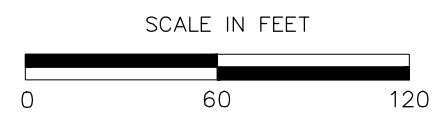
PREPARED BY/DATE: RD 01/30/2017  
 CHECKED BY/DATE: MHA 01/30/2017



**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ POTENTIOMETRIC SURFACE CONTOUR
- EXTRAPOLATED CONTOUR
- 298.12 POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- 305.54\* ANOMALOUS VALUE. ELEVATION NOT USED IN CONTOURING.
- DIRECTION OF GROUNDWATER FLOW
- //// HSI SITE
- ◆ WELL NOT LOCATED, PRESUMED DESTROYED

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



**FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY**



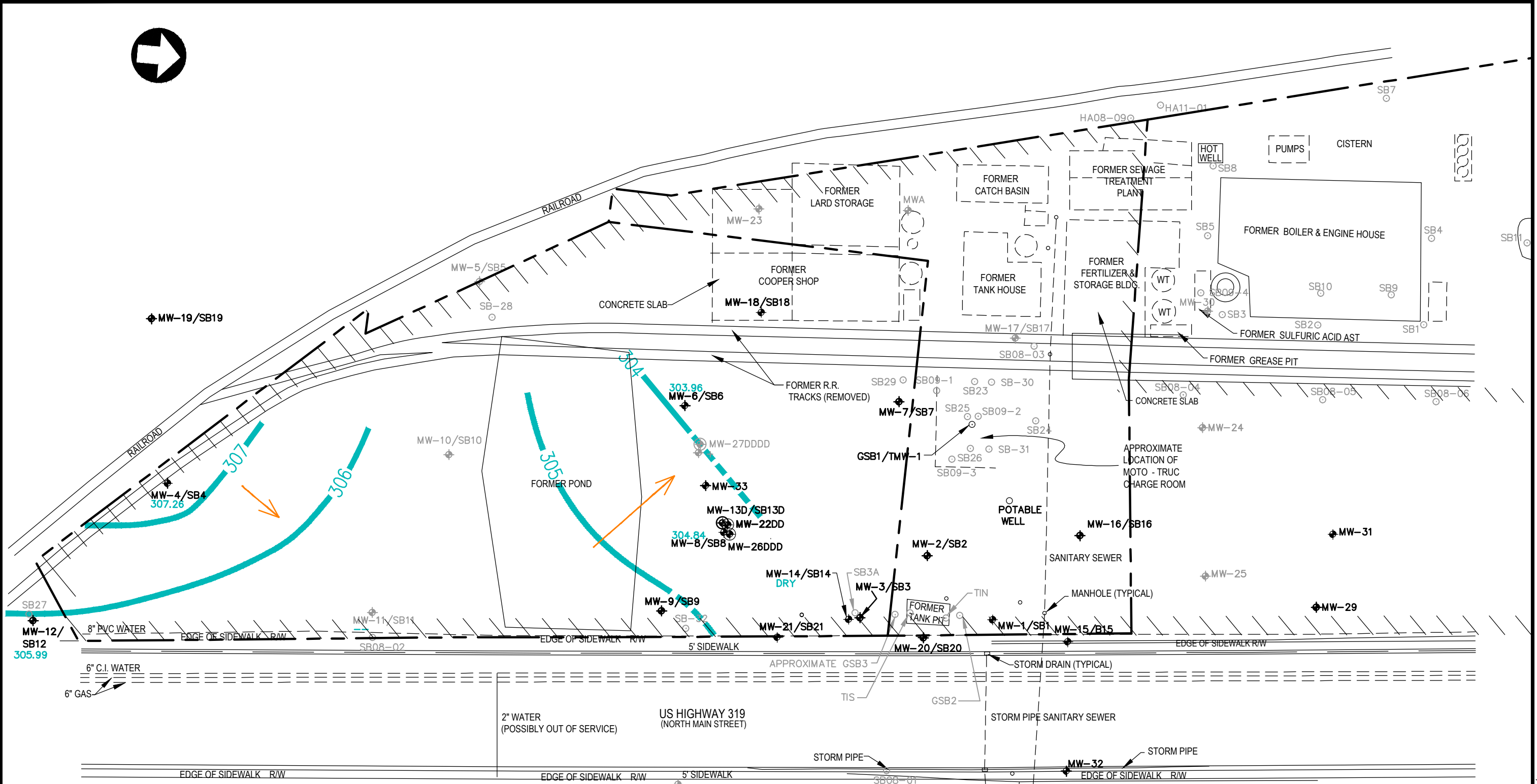
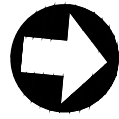
**Amec Foster Wheeler  
Environment & Infrastructure, Inc.**  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**POTENTIOMETRIC SURFACE  
SHALLOW ZONE B  
JANUARY 18, 2017**

JOB NO. 6122-17-0798 **FIGURE 8**

PREPARED BY/DATE: RD 01/30/2017  
 CHECKED BY/DATE: MHA 01/30/2017

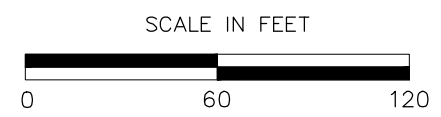




**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ (with cross) WELL NOT LOCATED, PRESUMED DESTROYED (UNIDENTIFIED WELL, MW-27DDDD, AND MW-28 ABANDONED)
- 307 POTENTIOMETRIC SURFACE CONTOUR
- 304.84 POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- DIRECTION OF GROUNDWATER FLOW
- //// HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



**FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY**

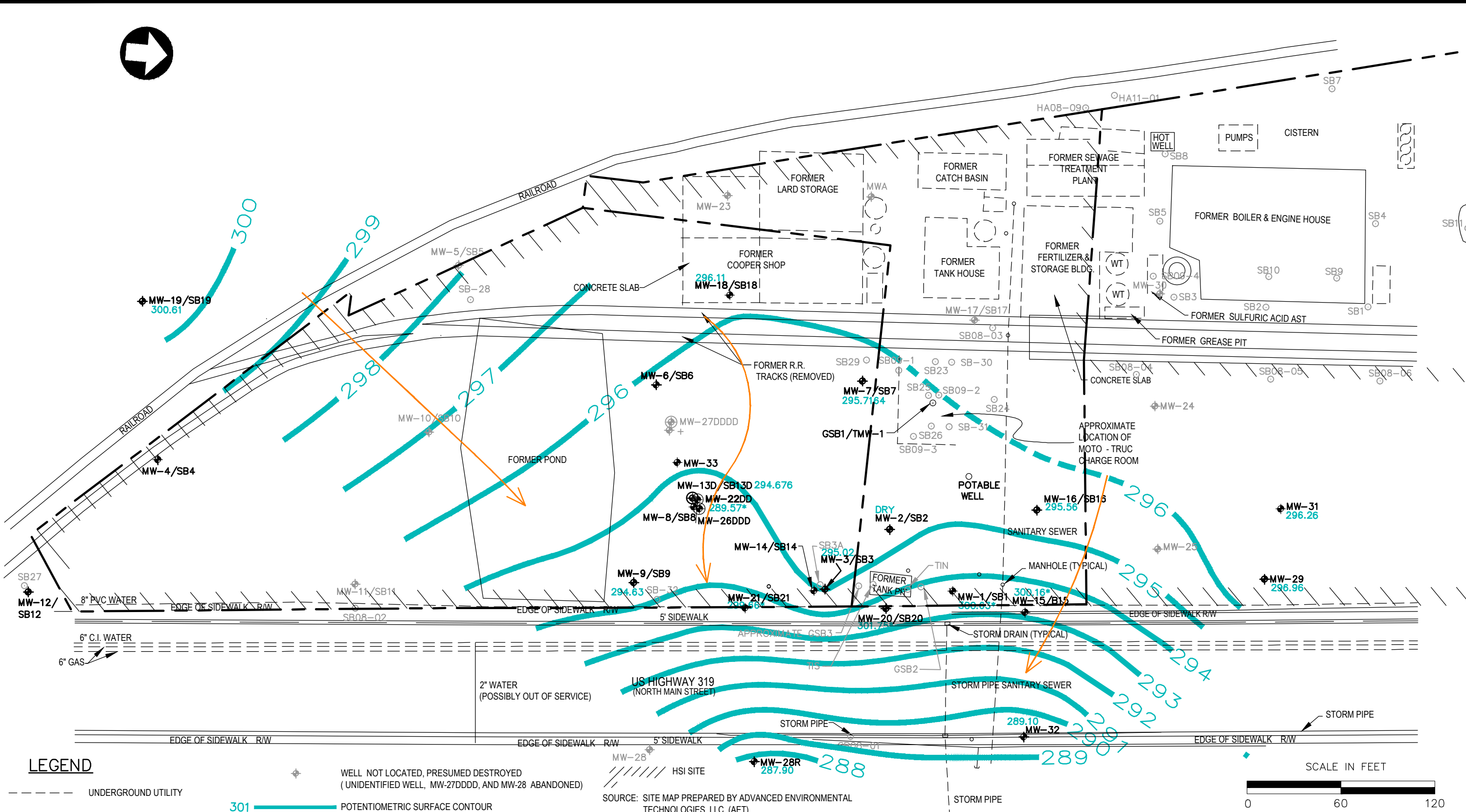


**Amec Foster Wheeler  
Environment & Infrastructure, Inc.**  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**POTENTIOMETRIC SURFACE  
SHALLOW ZONE A  
SEPTEMBER 25-26, 2017**

JOB NO. 6122-14-0220 **FIGURE 9**

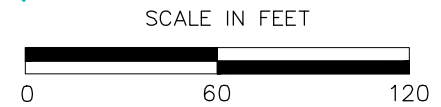
PREPARED BY/DATE: MHA 2/6/2018  
CHECKED BY/DATE: JMQ 2/7/2018



**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ WELL NOT LOCATED, PRESUMED DESTROYED (UNIDENTIFIED WELL, MW-27DDDD, AND MW-28 ABANDONED)
- 301 POTENTIOMETRIC SURFACE CONTOUR
- 299 EXTRAPOLATED CONTOUR
- 298.12 POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- 305.54\* ANOMALOUS VALUE. ELEVATION NOT USED IN CONTOURING.
- DIRECTION OF GROUNDWATER FLOW
- /// HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY



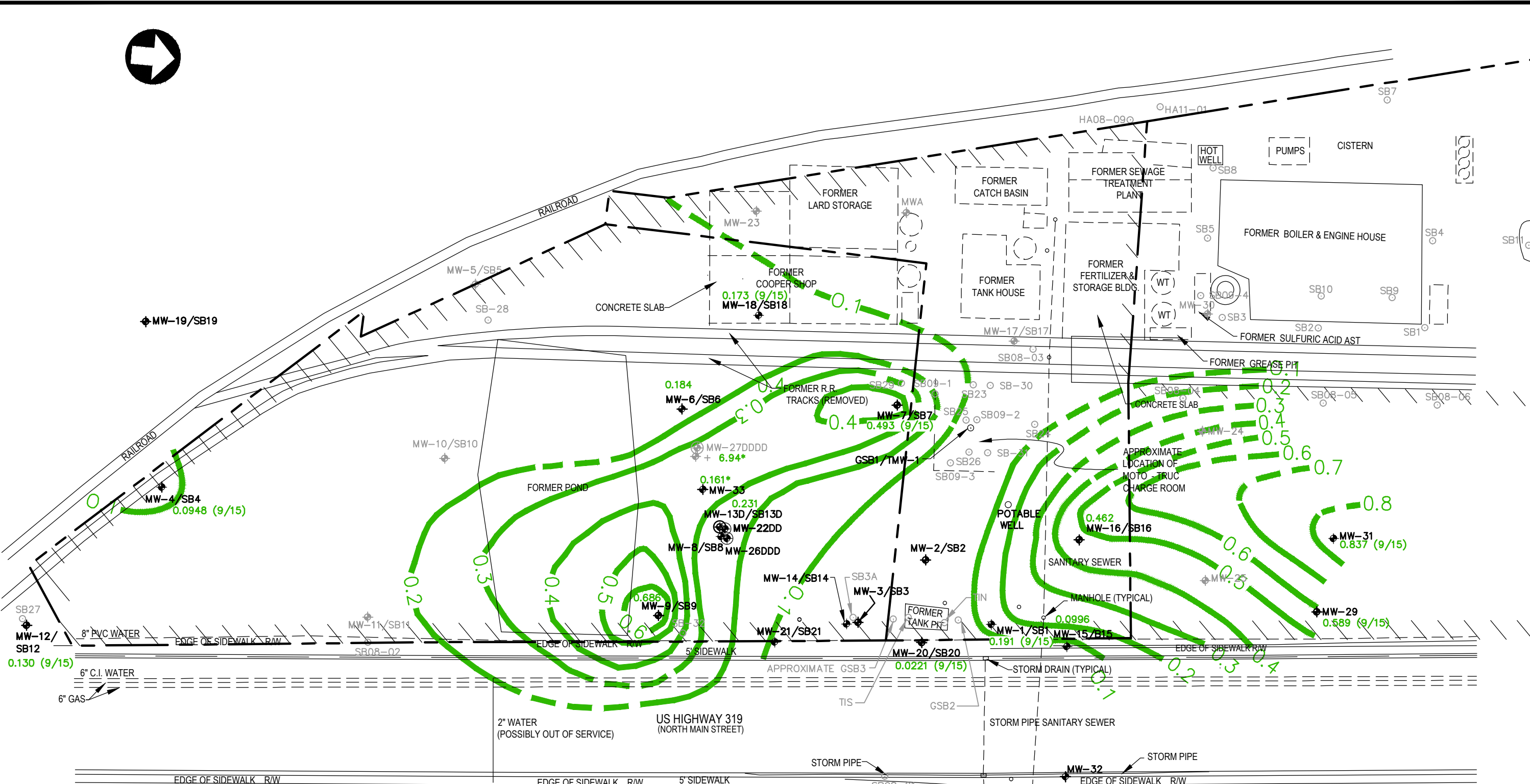
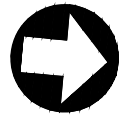
Amec Foster Wheeler  
Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

POTENTIOMETRIC SURFACE  
SHALLOW ZONE B  
SEPTEMBER 25, 2017

JOB NO. 6122-14-0220

FIGURE 10

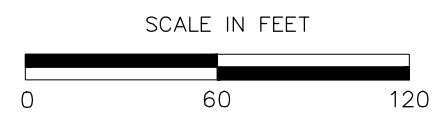
PREPARED BY/DATE MHA 2/7/2018  
 CHECKED BY/DATE JMQ 2/7/2018



**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ WELL NOT LOCATED, PRESUMED DESTROYED (UNIDENTIFIED WELL, MW-27DDDD, AND MW-28 ABANDONED)
- 0.2 ISO CONCENTRATION CONTOUR OF BARIUM (mg/L)
- 0.219 BARIUM VALUES FROM SEPTEMBER, 2017 (mg/L)
- \* BARIUM VALUES NOT USED IN CONTOURING
- 0.0948 (9/15) BARIUM VALUES FROM SEPTEMBER, 2015 & DECEMBER 2016 (mg/L) USED FOR CONTOURING
- //// HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



**FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY**

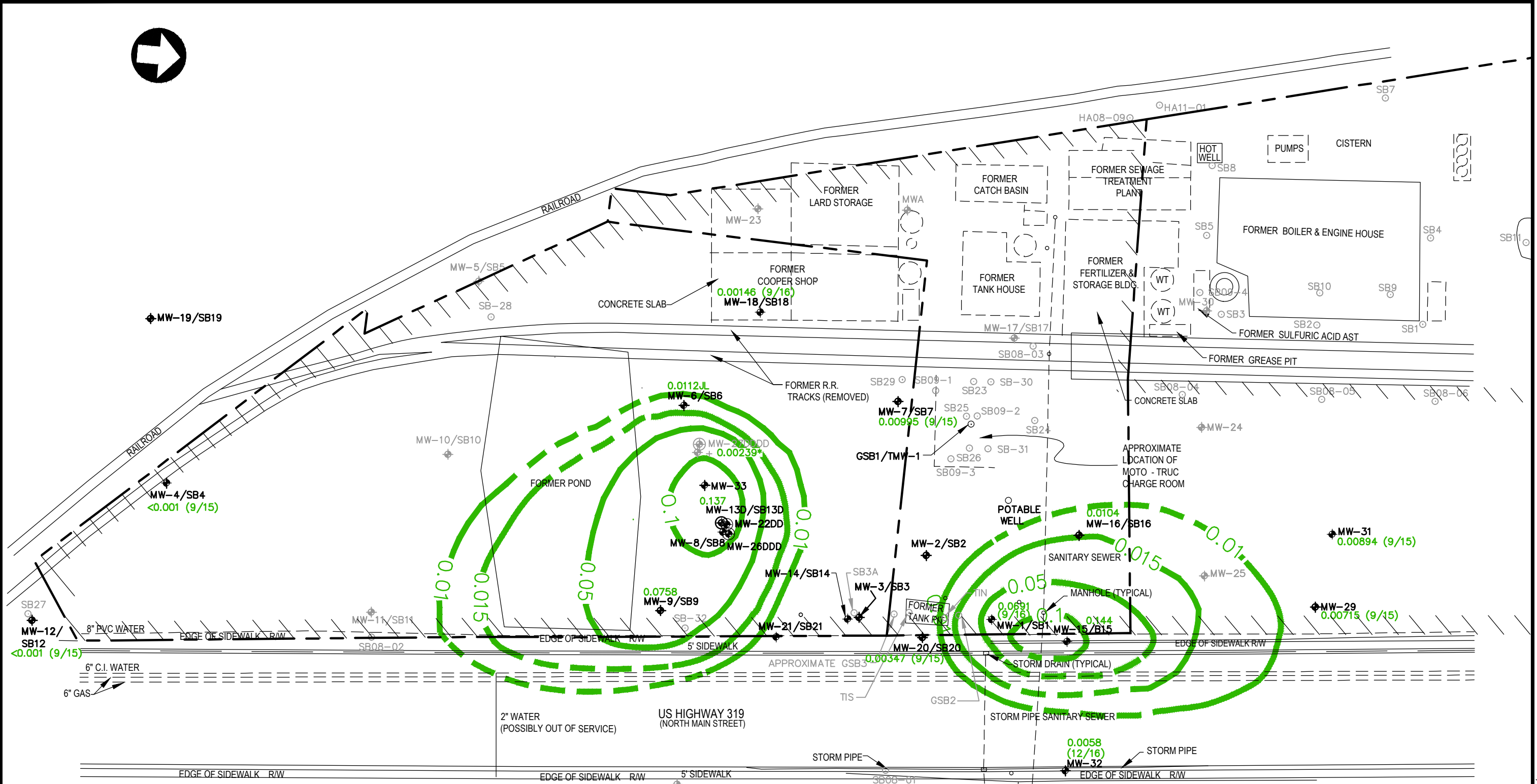
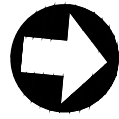


**Amec Foster Wheeler  
Environment & Infrastructure, Inc.**  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

**GROUNDWATER QUALITY MAP - BARIUM  
SEPTEMBER, 2017**  
JOB NO. 6122-14-0220 **FIGURE 11**

PREPARED BY/DATE: MHA 2/6/2018  
CHECKED BY/DATE: JMQ 2/7/2018

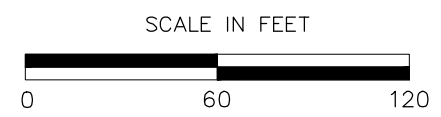




**LEGEND**

- UNDERGROUND UTILITY
- - - PROPERTY LINE
- ◆ MONITORING WELL LOCATION
- ◆+ UNIDENTIFIED WELL
- ⊕ DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- ◆ WELL NOT LOCATED, PRESUMED DESTROYED (UNIDENTIFIED WELL, MW-27DDDD, AND MW-28 ABANDONED)
- 0.01 ISO CONCENTRATION CONTOUR OF LEAD (mg/L)
- 0.0715 LEAD VALUES FROM SEPTEMBER, 2017 (mg/L)
- \* LEAD VALUES NOT USED IN CONTOURING
- 0.0948 (9/15) LEAD VALUES FROM SEPTEMBER, 2015, 2016, & DECEMBER 2016 (mg/L) USED FOR CONTOURING
- //// HSI SITE

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)



FORMER SWIFT & COMPANY  
MEAT PROCESSING PLANT  
MOULTRIE, GEORGIA COLQUITT COUNTY



Amec Foster Wheeler  
Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

GROUNDWATER QUALITY MAP - LEAD  
SEPTEMBER, 2017

JOB NO. 6122-14-0220

FIGURE 12

PREPARED BY/DATE: MHA 2/6/2018  
 CHECKED BY/DATE: JMQ 2/7/2018

**APPENDIX A**  
**September 2017 Laboratory Data Reports, Chain Of Custody, And Field Sampling Reports**



**Laboratory Reports for September and October 2017 Groundwater Sampling Event**



October 04, 2017

David Smoak  
AMEC Foster Wheeler  
1075 Big Shanty Rd NW  
Kennesaw GA 30144

RE: Swift - Moultrie

Dear David Smoak:

Order No: 1709042

Analytical Environmental Services, Inc. received 4 samples on 9/27/2017 10:30:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES's accreditations are as follows:

-NELAP/Florida State Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions for Organics, and Drinking Water Microbiology & Metals, effective 07/01/17-06/30/18.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/17-06/30/18 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-NELAP/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/17-06/30/18.

-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar  
Project Manager



**ANALYTICAL ENVIRONMENTAL SERVICES, INC.**  
3080 Presidential Drive Atlanta, GA 30340-3704  
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

### CHAIN OF CUSTODY

Work Order: 1709043

Date: 9/26/17 Page 1 of 1

COMPANY: <b>Amec Foster Wheeler</b>		ADDRESS: <b>1075 Big Shanty Rd, Ste 100 # Kennesaw, GA 30144</b>		ANALYSIS REQUESTED										Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> for downloadable COCs and to log in to your AESAccess account.		Number of Containers																																					
PHONE: <b>770-421-3400</b>		EMAIL:		<table border="1"> <tr> <td rowspan="2">Tot Metals 6020</td> <td rowspan="2">Nitrates+Cl</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>										Tot Metals 6020	Nitrates+Cl																																						REMARKS
Tot Metals 6020	Nitrates+Cl																																																				
SAMPLED BY: <b>Daniel Howard</b>		SIGNATURE: <i>Daniel Howard</i>		SAMPLED:		PRESERVATION (see codes)																																															
#	SAMPLE ID	DATE	TIME	GRAB	COMPOSITE	MATRIX (see codes)																																															
1	<b>MW-6</b>	<b>9/26/17</b>	<b>1142</b>	<b>X</b>		<b>GW</b>	<b>1</b>	<b>1</b>												<b>2</b>																																	
2	<b>MW-9</b>		<b>1352</b>	<b>X</b>		<b>GW</b>	<b>1</b>	<b>1</b>												<b>2</b>																																	
3	<b>DUP-1</b>		<b>1200</b>	<b>X</b>		<b>GW</b>	<b>1</b>	<b>1</b>												<b>2</b>																																	
4	<b>MW-16</b>		<b>1517</b>	<b>X</b>		<b>GW</b>	<b>1</b>	<b>1</b>												<b>2</b>																																	
5	<b>Temp Blank</b>																																																				
6																																																					
7																																																					
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9																																																					
10																																																					
11																																																					
12																																																					
13																																																					
14																																																					
RELINQUISHED BY: <i>Daniel Howard</i>		DATE/TIME: <b>9/26/17/16:30</b>		RECEIVED BY: <i>[Signature]</i>		DATE/TIME: <b>9/27/17 10:30</b>		PROJECT INFORMATION										RECEIPT																																			
SPECIAL INSTRUCTIONS/COMMENTS: <b>* Tot metals: As, Ba, Cd, Cr, Pb</b>		SHIPMENT METHOD		INVOICE TO: (IF DIFFERENT FROM ABOVE)										Total # of Containers																																							
		OUT: / / VIA:		PROJECT NAME: <b>Swift Moultrie</b>										Turnaround Time (TAT) Request																																							
		IN: / / VIA:		PROJECT #: <b>6122170498.02</b>										<input checked="" type="checkbox"/> Standard 5 Business Days <input type="checkbox"/> 2 Business Day Rush <input type="checkbox"/> Next Business Day Rush <input type="checkbox"/> Same-Day Rush (auth req.) <input type="checkbox"/> Other _____																																							
		client <input checked="" type="checkbox"/> FedEx UPS US mail courier eyhound		SITE ADDRESS: <b>N Main St Moultrie, GA</b>										STATE PROGRAM (if any): _____																																							
		other: _____		SEND REPORT TO: <b>David Smeek</b>										E-mail? <input type="checkbox"/> Fax? <input type="checkbox"/>																																							
				QUOTE #:										DATA PACKAGE: I <input type="radio"/> II <input checked="" type="radio"/> III <input type="radio"/> IV <input type="radio"/>																																							

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

**Analytical Environmental Services, Inc**

Date: 4-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-6
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/26/2017 11:42:00 AM
<b>Lab ID:</b> 1709O42-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249065	1	09/29/2017 21:17	JR
Barium	0.184	0.0100		mg/L	249065	1	09/29/2017 21:17	JR
Cadmium	BRL	0.000700		mg/L	249065	1	09/29/2017 21:17	JR
Chromium	BRL	0.00500		mg/L	249065	1	09/29/2017 21:17	JR
Lead	0.0112	0.00100		mg/L	249065	1	09/29/2017 21:17	JR
<b>ION SCAN SW9056A</b>								
Chloride	1300	50		mg/L	R353164	50	09/27/2017 16:54	JM
Nitrate	BRL	0.25		mg/L	R353164	1	09/27/2017 15:23	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 4-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-9
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/26/2017 1:52:00 PM
<b>Lab ID:</b> 1709O42-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249065	1	09/29/2017 21:48	JR
Barium	0.686	0.0100		mg/L	249065	1	09/29/2017 21:48	JR
Cadmium	0.00154	0.000700		mg/L	249065	5	10/02/2017 22:27	JR
Chromium	BRL	0.00500		mg/L	249065	1	09/29/2017 21:48	JR
Lead	0.0758	0.00100		mg/L	249065	5	10/02/2017 22:27	JR
<b>ION SCAN SW9056A</b>								
Chloride	950	50		mg/L	R353164	50	09/27/2017 17:09	JM
Nitrate	2.4	0.25		mg/L	R353164	1	09/27/2017 15:38	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 4-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> DUP-1
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/26/2017 12:00:00 PM
<b>Lab ID:</b> 1709O42-003	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249065	1	09/29/2017 21:54	JR
Barium	0.618	0.0100		mg/L	249065	1	09/29/2017 21:54	JR
Cadmium	0.00148	0.000700		mg/L	249065	5	10/02/2017 22:33	JR
Chromium	BRL	0.00500		mg/L	249065	1	09/29/2017 21:54	JR
Lead	0.0761	0.00500		mg/L	249065	5	10/02/2017 22:33	JR
<b>ION SCAN SW9056A</b>								
Chloride	930	50		mg/L	R353164	50	09/27/2017 17:23	JM
Nitrate	2.5	0.25		mg/L	R353164	1	09/27/2017 15:53	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 4-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-16
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/26/2017 3:17:00 PM
<b>Lab ID:</b> 1709O42-004	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249065	1	09/29/2017 22:01	JR
Barium	0.462	0.0100		mg/L	249065	1	09/29/2017 22:01	JR
Cadmium	BRL	0.000700		mg/L	249065	1	09/29/2017 22:01	JR
Chromium	BRL	0.00500		mg/L	249065	1	09/29/2017 22:01	JR
Lead	0.0104	0.00100		mg/L	249065	1	09/29/2017 22:01	JR
<b>ION SCAN SW9056A</b>								
Chloride	260	20		mg/L	R353164	20	09/27/2017 18:22	JM
Nitrate	4.2	0.25		mg/L	R353164	1	09/27/2017 16:07	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**SUMMARY OF ANALYTES DETECTED**

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
<b>Client Sample ID:</b> MW-6				<b>Lab ID:</b>	1709O42-001		
<b>Collection Date:</b> 9/26/2017 11:42:00 AM				<b>Matrix:</b>	Groundwater		
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	0.184		0.000185	0.0100	mg/L	249065	1
Lead	0.0112		0.000215	0.00100	mg/L	249065	1
<b>ION SCAN SW9056A</b>							
Chloride	1300		8.4	50	mg/L	R353164	50
<b>Client Sample ID:</b> MW-9				<b>Lab ID:</b>	1709O42-002		
<b>Collection Date:</b> 9/26/2017 1:52:00 PM				<b>Matrix:</b>	Groundwater		
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	0.686		0.000185	0.0100	mg/L	249065	1
Cadmium	0.00154		0.000740	0.000700	mg/L	249065	5
Lead	0.0758		0.00108	0.00100	mg/L	249065	5
<b>ION SCAN SW9056A</b>							
Chloride	950		8.4	50	mg/L	R353164	50
Nitrate	2.4		0.055	0.25	mg/L	R353164	1
<b>Client Sample ID:</b> DUP-1				<b>Lab ID:</b>	1709O42-003		
<b>Collection Date:</b> 9/26/2017 12:00:00 PM				<b>Matrix:</b>	Groundwater		
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	0.618		0.000185	0.0100	mg/L	249065	1
Cadmium	0.00148		0.000740	0.000700	mg/L	249065	5
Lead	0.0761		0.00108	0.00500	mg/L	249065	5
<b>ION SCAN SW9056A</b>							
Chloride	930		8.4	50	mg/L	R353164	50
Nitrate	2.5		0.055	0.25	mg/L	R353164	1
<b>Client Sample ID:</b> MW-16				<b>Lab ID:</b>	1709O42-004		
<b>Collection Date:</b> 9/26/2017 3:17:00 PM				<b>Matrix:</b>	Groundwater		
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	0.462		0.000185	0.0100	mg/L	249065	1
Lead	0.0104		0.000215	0.00100	mg/L	249065	1
<b>ION SCAN SW9056A</b>							
Chloride	260		3.4	20	mg/L	R353164	20
Nitrate	4.2		0.055	0.25	mg/L	R353164	1

**Qualifiers:**

* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
BRL Below reporting limit	S Spike Recovery outside limits due to matrix
H Holding times for preparation or analysis exceeded	Narr See case narrative
N Analyte not NELAC certified	NC Not confirmed
B Analyte detected in the associated method blank	< Less than Result value
> Greater than Result value	J Estimated value detected below Reporting Limit



### SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: \_\_\_\_\_

AES Work Order Number: \_\_\_\_\_

2. Carrier: FedEx  UPS  USPS  Client  Courier  Other \_\_\_\_\_

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?				damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?					
5. Custody seals intact on shipping container?					
6. Temperature blanks present?					
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]				Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?					
9. Chain of Custody signed, dated, and timed when relinquished and received?					
10. Sampler name and/or signature on COC?					
11. Were all samples received within holding time?					
12. TAT marked on the COC?				If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature \_\_\_\_\_ °C    Cooler 2 Temperature \_\_\_\_\_ °C    Cooler 3 Temperature \_\_\_\_\_ °C    Cooler 4 Temperature \_\_\_\_\_ °C  
 Cooler 5 Temperature \_\_\_\_\_ °C    Cooler 6 Temperature \_\_\_\_\_ °C    Cooler 7 Temperature \_\_\_\_\_ °C    Cooler 8 Temperature \_\_\_\_\_ °C

15. Comments: \_\_\_\_\_

I certify that I have completed sections 1-15 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?					
17. Custody seals present on sample containers?					
18. Custody seals intact on sample containers?					
19. Do sample container labels match the COC?				incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?					
21. Were all of the samples listed on the COC received?				samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?					
23. Did we receive sufficient sample volume for indicated analyses?					
24. Were samples received in appropriate containers?					
25. Were VOA samples received without headspace (< 1/4" bubble)?					
26. Were trip blanks submitted?				listed on COC <input type="checkbox"/> not listed on COC <input type="checkbox"/>	

27. Comments: \_\_\_\_\_

I certify that I have completed sections 16-27 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *					
29. Containers meet preservation guidelines?					
30. Was pH adjusted at Sample Receipt?					

I certify that I have completed sections 28-30 (dated initials). \_\_\_\_\_

Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Lab Order: 1709O42

### Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1709O42-001A	MW-6	9/26/2017 11:42:00AM	Groundwater	ION SCAN			09/27/2017
1709O42-001B	MW-6	9/26/2017 11:42:00AM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	09/29/2017
1709O42-002A	MW-9	9/26/2017 1:52:00PM	Groundwater	ION SCAN			09/27/2017
1709O42-002B	MW-9	9/26/2017 1:52:00PM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	09/29/2017
1709O42-002B	MW-9	9/26/2017 1:52:00PM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	10/02/2017
1709O42-003A	DUP-1	9/26/2017 12:00:00PM	Groundwater	ION SCAN			09/27/2017
1709O42-003B	DUP-1	9/26/2017 12:00:00PM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	09/29/2017
1709O42-003B	DUP-1	9/26/2017 12:00:00PM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	10/02/2017
1709O42-004A	MW-16	9/26/2017 3:17:00PM	Groundwater	ION SCAN			09/27/2017
1709O42-004B	MW-16	9/26/2017 3:17:00PM	Groundwater	Total Metals by ICP/MS		9/28/2017 4:58:00PM	09/29/2017

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709O42

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249065**

Sample ID: <b>MB-249065</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>09/28/2017</b>	Run No: <b>353322</b>							
SampleType: <b>MBLK</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249065</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7772996</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.00500									
Barium	BRL	0.0100									
Cadmium	BRL	0.000700									
Chromium	BRL	0.00500									
Lead	BRL	0.00100									

Sample ID: <b>LCS-249065</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>09/28/2017</b>	Run No: <b>353322</b>							
SampleType: <b>LCS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249065</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7772997</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09174	0.00500	0.1000		91.7	80	120				
Barium	0.09533	0.0100	0.1000		95.3	80	120				
Cadmium	0.09322	0.000700	0.1000		93.2	80	120				
Chromium	0.09127	0.00500	0.1000		91.3	80	120				
Lead	0.09594	0.00100	0.1000		95.9	80	120				

Sample ID: <b>1709O42-001BMS</b>	Client ID: <b>MW-6</b>	Units: <b>mg/L</b>	Prep Date: <b>09/28/2017</b>	Run No: <b>353322</b>							
SampleType: <b>MS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249065</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7772999</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09689	0.00500	0.1000	0.001131	95.8	75	125				
Barium	0.2947	0.0100	0.1000	0.1843	110	75	125				
Cadmium	0.07291	0.000700	0.1000	0.0002536	72.7	75	125				S
Chromium	0.09248	0.00500	0.1000	0.001411	91.1	75	125				
Lead	0.08378	0.00100	0.1000	0.01115	72.6	75	125				S

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Workorder: 1709042

**ANALYTICAL QC SUMMARY REPORT**

BatchID: 249065

Sample ID: 1709042-001BMSD	Client ID: MW-6	Units: mg/L	Prep Date: 09/28/2017	Run No: 353322							
SampleType: MSD	TestCode: Total Metals by ICP/MS SW6020B	BatchID: 249065	Analysis Date: 09/29/2017	Seq No: 7773000							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09816	0.00500	0.1000	0.001131	97.0	75	125	0.09689	1.31	20	
Barium	0.2972	0.0100	0.1000	0.1843	113	75	125	0.2947	0.854	20	
Cadmium	0.07352	0.000700	0.1000	0.0002536	73.3	75	125	0.07291	0.840	20	S
Chromium	0.09436	0.00500	0.1000	0.001411	93.0	75	125	0.09248	2.02	20	
Lead	0.08248	0.00100	0.1000	0.01115	71.3	75	125	0.08378	1.56	20	S

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709042

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R353164**

Sample ID: <b>MB-R353164</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353164</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353164</b>	Analysis Date: <b>09/27/2017</b>	Seq No: <b>7768757</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	BRL	1.0									
Nitrate	BRL	0.25									

Sample ID: <b>LCS-R353164</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353164</b>							
SampleType: <b>LCS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353164</b>	Analysis Date: <b>09/27/2017</b>	Seq No: <b>7768756</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	9.488	1.0	10.00		94.9	90	110				
Nitrate	4.712	0.25	5.000		94.2	90	110				

Sample ID: <b>1709L78-001CMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353164</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353164</b>	Analysis Date: <b>09/27/2017</b>	Seq No: <b>7768759</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	19.86	1.0	10.00	10.76	91.0	90	110				
Nitrate	5.080	0.25	5.000	0.2586	96.4	90	110				

Sample ID: <b>1709L78-001CMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353164</b>							
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353164</b>	Analysis Date: <b>09/27/2017</b>	Seq No: <b>7768760</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	19.95	1.0	10.00	10.76	91.9	90	110	19.86	0.445	20	
Nitrate	5.094	0.25	5.000	0.2586	96.7	90	110	5.080	0.283	20	

**Qualifiers:**

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



October 09, 2017

David Smoak  
AMEC Foster Wheeler  
1075 Big Shanty Rd NW  
Kennesaw GA 30144

RE: Swift - Moultrie

Dear David Smoak:

Order No: 1709Q02

Analytical Environmental Services, Inc. received 2 samples on 9/28/2017 10:35:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES's accreditations are as follows:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/17-06/30/18.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/17-06/30/18 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-NELAP/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/17-06/30/18.

-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar  
Project Manager



**CHAIN OF CUSTODY**

Work Order: 1709002

Date: 9/27/17 Page 1 of 1

COMPANY: <b>Ame c Foster Wheeler</b>		ADDRESS: <b>1075 Big Shanty Rd, Ste 100 Kennesaw, GA 30144</b>			ANALYSIS REQUESTED								Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> for downloadable COCs and to log in to your AESAccess account.	Number of Containers
PHONE: <b>770-421-3400</b>		EMAIL:												
SAMPLED BY: <b>Daniel Howard</b>		SIGNATURE: <i>Daniel Howard</i>			PRESERVATION (see codes)								REMARKS	Number of Containers
#	SAMPLE ID	DATE	TIME	GRAB	COMPOSITE	MATRIX (see codes)								
1	MW-15	9/27/17	1305	X		GW	N	I					2	
2	MW-13D	↓	1447	X		GW	I	I					2	
3	Temp Blank													
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														

RELINQUISHED BY: <i>Daniel Howard</i>	DATE/TIME: 9/27/17/1645	RECEIVED BY: <i>Mafer</i>	DATE/TIME: 9/28/17 10:35	PROJECT INFORMATION				RECEIPT	
				PROJECT NAME: <b>Swift Moultrie</b>				Total # of Containers	
				PROJECT #: <b>6122176498,02</b>				Turnaround Time (TAT) Request	
				SITE ADDRESS: <b>N Main St Moultrie, GA</b>				<input checked="" type="checkbox"/> Standard 5 Business Days <input type="checkbox"/> 2 Business Day Rush <input type="checkbox"/> Next Business Day Rush <input type="checkbox"/> Same-Day Rush (auth req.) <input type="checkbox"/> Other _____	
				SEND REPORT TO: <b>David Smeak</b>				STATE PROGRAM (if any): _____	
SPECIAL INSTRUCTIONS/COMMENTS: <b>* Tot metals: As, Ba, Cd, Cr, Pb</b>		SHIPMENT METHOD		INVOICE TO: (IF DIFFERENT FROM ABOVE)				E-mail? <input type="checkbox"/> Fax? <input type="checkbox"/>	
		OUT: / / VIA:		QUOTE #:				DATA PACKAGE: I <input type="radio"/> II <input checked="" type="radio"/> III <input type="radio"/> IV <input type="radio"/>	
		IN: / / VIA:		PO#:					
		client <input checked="" type="radio"/> FedEx <input type="radio"/> UPS <input type="radio"/> US mail <input type="radio"/> courier <input type="radio"/> Greyhound							
		other: _____							

**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-15
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/27/2017 1:05:00 PM
<b>Lab ID:</b> 1709Q02-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	0.0119	0.00500		mg/L	249203	1	10/03/2017 20:31	JR
Barium	0.0996	0.0100		mg/L	249203	1	10/03/2017 20:31	JR
Cadmium	0.00300	0.00100		mg/L	249203	10	10/04/2017 15:55	JR
Chromium	0.290	0.0500		mg/L	249203	10	10/04/2017 15:55	JR
Lead	0.144	0.0100		mg/L	249203	10	10/04/2017 15:55	JR
<b>ION SCAN SW9056A</b>								
Chloride	2100	500		mg/L	R353270	500	09/28/2017 22:44	JM
Nitrate	2.2	0.25		mg/L	R353347	1	09/28/2017 14:56	JM

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit



**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-13D
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/27/2017 2:47:00 PM
<b>Lab ID:</b> 1709Q02-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	0.0110	0.00500		mg/L	249203	1	10/03/2017 20:37	JR
Barium	0.231	0.0100		mg/L	249203	1	10/03/2017 20:37	JR
Cadmium	0.00315	0.00100		mg/L	249203	10	10/04/2017 16:02	JR
Chromium	BRL	0.00500		mg/L	249203	10	10/04/2017 16:02	JR
Lead	0.137	0.0100		mg/L	249203	10	10/04/2017 16:02	JR
<b>ION SCAN SW9056A</b>								
Chloride	2200	500		mg/L	R353270	500	09/28/2017 22:58	JM
Nitrate	5.2	0.25		mg/L	R353347	1	09/28/2017 15:11	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**SUMMARY OF ANALYTES DETECTED**

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
<b>Client Sample ID:</b> MW-15				<b>Lab ID:</b> 1709Q02-001			
<b>Collection Date:</b> 9/27/2017 1:05:00 PM				<b>Matrix:</b> Groundwater			

**Total Metals by ICP/MS SW6020B**

**(SW3005A)**

Arsenic	0.0119		0.000156	0.00500	mg/L	249203	1
Barium	0.0996		0.000185	0.0100	mg/L	249203	1
Cadmium	0.00300		0.00148	0.00100	mg/L	249203	10
Chromium	0.290		0.00193	0.0500	mg/L	249203	10
Lead	0.144		0.00215	0.0100	mg/L	249203	10

**ION SCAN SW9056A**

Chloride	2100		84	500	mg/L	R353270	500
Nitrate	2.2		0.055	0.25	mg/L	R353347	1

<b>Client Sample ID:</b> MW-13D				<b>Lab ID:</b> 1709Q02-002			
<b>Collection Date:</b> 9/27/2017 2:47:00 PM				<b>Matrix:</b> Groundwater			

**Total Metals by ICP/MS SW6020B**

**(SW3005A)**

Arsenic	0.0110		0.000156	0.00500	mg/L	249203	1
Barium	0.231		0.000185	0.0100	mg/L	249203	1
Cadmium	0.00315		0.00148	0.00100	mg/L	249203	10
Lead	0.137		0.00215	0.0100	mg/L	249203	10

**ION SCAN SW9056A**

Chloride	2200		84	500	mg/L	R353270	500
Nitrate	5.2		0.055	0.25	mg/L	R353347	1

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

### SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: \_\_\_\_\_

AES Work Order Number: \_\_\_\_\_

2. Carrier: FedEx  UPS  USPS  Client  Courier  Other \_\_\_\_\_

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?				damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?					
5. Custody seals intact on shipping container?					
6. Temperature blanks present?					
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]				Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?					
9. Chain of Custody signed, dated, and timed when relinquished and received?					
10. Sampler name and/or signature on COC?					
11. Were all samples received within holding time?					
12. TAT marked on the COC?				If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature \_\_\_\_\_ °C    Cooler 2 Temperature \_\_\_\_\_ °C    Cooler 3 Temperature \_\_\_\_\_ °C    Cooler 4 Temperature \_\_\_\_\_ °C  
 Cooler 5 Temperature \_\_\_\_\_ °C    Cooler 6 Temperature \_\_\_\_\_ °C    Cooler 7 Temperature \_\_\_\_\_ °C    Cooler 8 Temperature \_\_\_\_\_ °C

15. Comments: \_\_\_\_\_

I certify that I have completed sections 1-15 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?					
17. Custody seals present on sample containers?					
18. Custody seals intact on sample containers?					
19. Do sample container labels match the COC?				incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?					
21. Were all of the samples listed on the COC received?				samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?					
23. Did we receive sufficient sample volume for indicated analyses?					
24. Were samples received in appropriate containers?					
25. Were VOA samples received without headspace (< 1/4" bubble)?					
26. Were trip blanks submitted?				listed on COC <input type="checkbox"/> not listed on COC <input type="checkbox"/>	

27. Comments: \_\_\_\_\_

I certify that I have completed sections 16-27 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *					
29. Containers meet preservation guidelines?					
30. Was pH adjusted at Sample Receipt?					

I certify that I have completed sections 28-30 (dated initials). \_\_\_\_\_

Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Lab Order: 1709Q02

**Dates Report**

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1709Q02-001A	MW-15	9/27/2017 1:05:00PM	Groundwater	ION SCAN			09/28/2017
1709Q02-001B	MW-15	9/27/2017 1:05:00PM	Groundwater	Total Metals by ICP/MS		10/2/2017 3:25:00PM	10/03/2017
1709Q02-001B	MW-15	9/27/2017 1:05:00PM	Groundwater	Total Metals by ICP/MS		10/2/2017 3:25:00PM	10/04/2017
1709Q02-002A	MW-13D	9/27/2017 2:47:00PM	Groundwater	ION SCAN			09/28/2017
1709Q02-002B	MW-13D	9/27/2017 2:47:00PM	Groundwater	Total Metals by ICP/MS		10/2/2017 3:25:00PM	10/03/2017
1709Q02-002B	MW-13D	9/27/2017 2:47:00PM	Groundwater	Total Metals by ICP/MS		10/2/2017 3:25:00PM	10/04/2017

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709Q02

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249203**

Sample ID: <b>MB-249203</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/02/2017</b>	Run No: <b>353550</b>							
SampleType: <b>MBLK</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249203</b>	Analysis Date: <b>10/03/2017</b>	Seq No: <b>7778231</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.00500									
Barium	BRL	0.0100									
Cadmium	BRL	0.000700									
Chromium	BRL	0.00500									
Lead	BRL	0.00100									

Sample ID: <b>LCS-249203</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/02/2017</b>	Run No: <b>353550</b>							
SampleType: <b>LCS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249203</b>	Analysis Date: <b>10/03/2017</b>	Seq No: <b>7778232</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09376	0.00500	0.1000		93.8	80	120				
Barium	0.09064	0.0100	0.1000		90.6	80	120				
Cadmium	0.09133	0.000700	0.1000		91.3	80	120				
Chromium	0.09451	0.00500	0.1000		94.5	80	120				
Lead	0.09925	0.00100	0.1000		99.2	80	120				

Sample ID: <b>1709P17-011BMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/02/2017</b>	Run No: <b>353550</b>							
SampleType: <b>MS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249203</b>	Analysis Date: <b>10/03/2017</b>	Seq No: <b>7778236</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09468	0.00500	0.1000		94.7	75	125				
Barium	0.09270	0.0100	0.1000		92.7	75	125				
Cadmium	0.09482	0.000700	0.1000		94.8	75	125				
Chromium	0.09701	0.00500	0.1000		97.0	75	125				
Lead	0.1025	0.00100	0.1000		102	75	125				

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Workorder: 1709Q02

**ANALYTICAL QC SUMMARY REPORT**

BatchID: 249203

Sample ID: 1709P17-011BMSD	Client ID:	Units: mg/L	Prep Date: 10/02/2017	Run No: 353550							
SampleType: MSD	TestCode: Total Metals by ICP/MS SW6020B	BatchID: 249203	Analysis Date: 10/03/2017	Seq No: 7778237							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09415	0.00500	0.1000		94.1	75	125	0.09468	0.571	20	
Barium	0.09184	0.0100	0.1000		91.8	75	125	0.09270	0.931	20	
Cadmium	0.09280	0.000700	0.1000		92.8	75	125	0.09482	2.15	20	
Chromium	0.09605	0.00500	0.1000		96.1	75	125	0.09701	0.986	20	
Lead	0.1007	0.00100	0.1000		101	75	125	0.1025	1.78	20	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709Q02

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R353270**

Sample ID: <b>MB-R353270</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353270</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353270</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7771443</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride BRL 1.0

Sample ID: <b>LCS-R353270</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353270</b>							
SampleType: <b>LCS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353270</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7771442</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 9.763 1.0 10.00 97.6 90 110

Sample ID: <b>1709P02-002AMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353270</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353270</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7771445</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 18.54 1.0 10.00 9.091 94.5 90 110

Sample ID: <b>1709Q06-002BMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353270</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353270</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7771455</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 153.0 10 100.0 55.95 97.0 90 110

Sample ID: <b>1709P02-002AMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353270</b>							
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353270</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7771446</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 18.70 1.0 10.00 9.091 96.1 90 110 18.54 0.860 20

<b>Qualifiers:</b>	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709Q02

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R353347**

Sample ID: <b>MB-R353347</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353347</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353347</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7773584</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25

Sample ID: <b>LCS-R353347</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353347</b>							
SampleType: <b>LCS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353347</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7773583</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.910 0.25 5.000 98.2 90 110

Sample ID: <b>1709O87-019EMS</b>	Client ID: <b>GW-016649-092617-SAG-105</b>	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353347</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353347</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7773596</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.838 0.25 5.000 96.8 90 110

Sample ID: <b>1709O87-025EMS</b>	Client ID: <b>GW-016649-092717-MHT-006</b>	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353347</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353347</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7773598</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.759 0.25 5.000 95.2 90 110

Sample ID: <b>1709O87-019EMSD</b>	Client ID: <b>GW-016649-092617-SAG-105</b>	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353347</b>							
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353347</b>	Analysis Date: <b>09/28/2017</b>	Seq No: <b>7773597</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.841 0.25 5.000 96.8 90 110 4.838 0.055 20

<b>Qualifiers:</b>	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	





**ANALYTICAL ENVIRONMENTAL SERVICES, INC.**

October 09, 2017

David Smoak  
AMEC Foster Wheeler  
1075 Big Shanty Rd NW  
Kennesaw GA 30144

RE: Swift - Moultrie

Dear David Smoak:

Order No: 1709R96

Analytical Environmental Services, Inc. received 4 samples on 9/29/2017 12:07:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES's accreditations are as follows:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/17-06/30/18.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/17-06/30/18 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-NELAP/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/17-06/30/18.

-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar  
Project Manager



COMPANY: <b>Amecc Foster Wheeler</b>		ADDRESS: <b>1075 Big Shanty Rd, Ste 100 Kennesaw, GA 30144</b>					* ANALYSIS REQUESTED										Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers																		
PHONE: <b>770-421-3400</b>		FAX:					<table border="1"> <tr> <td>Tot metals 60.2.0</td> <td>Nitrates + Cl</td> <td>TCLP metals</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>													Tot metals 60.2.0	Nitrates + Cl	TCLP metals															
Tot metals 60.2.0	Nitrates + Cl	TCLP metals																																			
SAMPLED BY: <b>Daniel Howard</b>		SIGNATURE: <i>Daniel Howard</i>					PRESERVATION (See codes)										REMARKS																				
#	SAMPLE ID	DATE	TIME	Grab	Composite	Matrix (See codes)	N	I																													
1	EB-1	9/28/17	0900	X		W	1	1																													
2	MW-27 DDDD	↓	1112	X		GW	1	1																													
3	Soil Drums 2016	↓	1630		X	SO																															
4	MW-33 Soil Drum	↓	1635		X	SO																															
5	Temp Blank																																				
6																																					
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					
13																																					
14																																					
REQUISITIONED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION										RECEIPT																			
1: <i>Daniel L Howard</i>		9/29/17/1207		1: <i>[Signature]</i>		9/29/17/1207		PROJECT NAME: <b>Swift Moultrie</b>										Total # of Containers																			
2:				2:				PROJECT #: <b>61221708498.02</b>										Turnaround Time Request																			
3:				3:				SITE ADDRESS: <b>N Main St Moultrie, GA</b>										<input checked="" type="radio"/> Standard 5 Business Days																			
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				SEND REPORT TO: <b>David Smoak</b>										<input type="radio"/> 2 Business Day Rush																			
				OUT / / VIA:				INVOICE TO:										<input type="radio"/> Next Business Day Rush																			
				IN / / VIA:				(IF DIFFERENT FROM ABOVE)										<input type="radio"/> Same Day Rush (auth req.)																			
				CLIENT <input checked="" type="radio"/> FedEx UPS MAIL COURIER				QUOTE #:										<input type="radio"/> Other _____																			
				GREYHOUND OTHER _____				PO#:										STATE PROGRAM (if any): _____																			
																		E-mail? Y/N; Fax? Y/N																			
																		DATA PACKAGE: I <input checked="" type="radio"/> II III IV																			

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water  
 PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> EB-1
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/28/2017 9:00:00 AM
<b>Lab ID:</b> 1709R96-001	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249281	1	10/05/2017 22:21	JR
Barium	BRL	0.0100		mg/L	249281	1	10/05/2017 22:21	JR
Cadmium	BRL	0.000700		mg/L	249281	1	10/05/2017 22:21	JR
Chromium	BRL	0.00500		mg/L	249281	1	10/05/2017 22:21	JR
Lead	BRL	0.00100		mg/L	249281	1	10/05/2017 22:21	JR
<b>ION SCAN SW9056A</b>								
Chloride	BRL	1.0		mg/L	R353381	1	09/29/2017 17:52	JM
Nitrate	BRL	0.25		mg/L	R353381	1	09/29/2017 17:52	JM

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-27DDDD
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/28/2017 11:12:00 AM
<b>Lab ID:</b> 1709R96-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Arsenic	BRL	0.00500		mg/L	249281	1	10/05/2017 22:28	JR
Barium	6.94	0.0500		mg/L	249281	5	10/06/2017 13:21	JR
Cadmium	0.00254	0.000700		mg/L	249281	1	10/05/2017 22:28	JR
Chromium	BRL	0.00500		mg/L	249281	1	10/05/2017 22:28	JR
Lead	0.00239	0.00100		mg/L	249281	1	10/05/2017 22:28	JR
<b>ION SCAN SW9056A</b>								
Chloride	720	50		mg/L	R353381	50	09/30/2017 12:06	JM
Nitrate	3.2	0.25		mg/L	R353381	1	09/29/2017 20:48	JM

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> SOIL DRUMS 2016
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/28/2017 4:30:00 PM
<b>Lab ID:</b> 1709R96-003	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>MERCURY, TCLP SW1311/7470A</b>				<b>(SW7470A)</b>				
Mercury	BRL	0.00400		mg/L	249415	1	10/05/2017 16:39	AS
<b>ICP METALS, TCLP SW1311/6010C</b>				<b>(SW3010A)</b>				
Arsenic	BRL	0.250		mg/L	249332	1	10/04/2017 14:42	JR
Barium	1.59	0.500		mg/L	249332	1	10/04/2017 14:42	JR
Cadmium	BRL	0.0250		mg/L	249332	1	10/04/2017 14:42	JR
Chromium	BRL	0.0500		mg/L	249332	1	10/04/2017 14:42	JR
Lead	0.286	0.0500		mg/L	249332	1	10/04/2017 15:06	JR
Selenium	BRL	0.100		mg/L	249332	1	10/04/2017 14:42	JR
Silver	BRL	0.0250		mg/L	249332	1	10/04/2017 14:42	JR

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 9-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-33 SOIL DRUM
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 9/28/2017 4:35:00 PM
<b>Lab ID:</b> 1709R96-004	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>MERCURY, TCLP SW1311/7470A</b>				<b>(SW7470A)</b>				
Mercury	BRL	0.00400		mg/L	249415	1	10/05/2017 16:43	AS
<b>ICP METALS, TCLP SW1311/6010C</b>				<b>(SW3010A)</b>				
Arsenic	BRL	0.250		mg/L	249332	1	10/04/2017 15:13	JR
Barium	1.43	0.500		mg/L	249332	1	10/04/2017 15:13	JR
Cadmium	BRL	0.0250		mg/L	249332	1	10/04/2017 15:13	JR
Chromium	BRL	0.0500		mg/L	249332	1	10/04/2017 15:13	JR
Lead	BRL	0.0500		mg/L	249332	1	10/04/2017 15:13	JR
Selenium	BRL	0.100		mg/L	249332	1	10/04/2017 15:13	JR
Silver	BRL	0.0250		mg/L	249332	1	10/04/2017 15:13	JR

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**SUMMARY OF ANALYTES DETECTED**

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
<b>Client Sample ID:</b> MW-27DDDD				<b>Lab ID:</b>	1709R96-002		
<b>Collection Date:</b> 9/28/2017 11:12:00 AM				<b>Matrix:</b>	Groundwater		
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	6.94		0.000926	0.0500	mg/L	249281	5
Cadmium	0.00254		0.000148	0.000700	mg/L	249281	1
Lead	0.00239		0.000215	0.00100	mg/L	249281	1
<b>ION SCAN SW9056A</b>							
Chloride	720		8.4	50	mg/L	R353381	50
Nitrate	3.2		0.055	0.25	mg/L	R353381	1
<b>Client Sample ID:</b> SOIL DRUMS 2016				<b>Lab ID:</b>	1709R96-003		
<b>Collection Date:</b> 9/28/2017 4:30:00 PM				<b>Matrix:</b>	Soil		
<b>ICP METALS, TCLP SW1311/6010C</b>				<b>(SW3010A)</b>			
Barium	1.59		0.0155	0.500	mg/L	249332	1
Lead	0.286		0.0140	0.0500	mg/L	249332	1
<b>Client Sample ID:</b> MW-33 SOIL DRUM				<b>Lab ID:</b>	1709R96-004		
<b>Collection Date:</b> 9/28/2017 4:35:00 PM				<b>Matrix:</b>	Soil		
<b>ICP METALS, TCLP SW1311/6010C</b>				<b>(SW3010A)</b>			
Barium	1.43		0.0155	0.500	mg/L	249332	1

**Qualifiers:**

* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
BRL Below reporting limit	S Spike Recovery outside limits due to matrix
H Holding times for preparation or analysis exceeded	Narr See case narrative
N Analyte not NELAC certified	NC Not confirmed
B Analyte detected in the associated method blank	< Less than Result value
> Greater than Result value	J Estimated value detected below Reporting Limit

### SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: \_\_\_\_\_

AES Work Order Number: \_\_\_\_\_

2. Carrier: FedEx  UPS  USPS  Client  Courier  Other \_\_\_\_\_

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?				damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?					
5. Custody seals intact on shipping container?					
6. Temperature blanks present?					
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]				Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?					
9. Chain of Custody signed, dated, and timed when relinquished and received?					
10. Sampler name and/or signature on COC?					
11. Were all samples received within holding time?					
12. TAT marked on the COC?				If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature \_\_\_\_\_ °C    Cooler 2 Temperature \_\_\_\_\_ °C    Cooler 3 Temperature \_\_\_\_\_ °C    Cooler 4 Temperature \_\_\_\_\_ °C  
 Cooler 5 Temperature \_\_\_\_\_ °C    Cooler 6 Temperature \_\_\_\_\_ °C    Cooler 7 Temperature \_\_\_\_\_ °C    Cooler 8 Temperature \_\_\_\_\_ °C

15. Comments: \_\_\_\_\_

I certify that I have completed sections 1-15 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?					
17. Custody seals present on sample containers?					
18. Custody seals intact on sample containers?					
19. Do sample container labels match the COC?				incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?					
21. Were all of the samples listed on the COC received?				samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?					
23. Did we receive sufficient sample volume for indicated analyses?					
24. Were samples received in appropriate containers?					
25. Were VOA samples received without headspace (< 1/4" bubble)?					
26. Were trip blanks submitted?				listed on COC <input type="checkbox"/> not listed on COC <input type="checkbox"/>	

27. Comments: \_\_\_\_\_

I certify that I have completed sections 16-27 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *					
29. Containers meet preservation guidelines?					
30. Was pH adjusted at Sample Receipt?					

I certify that I have completed sections 28-30 (dated initials). \_\_\_\_\_



Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Lab Order: 1709R96

**Dates Report**

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1709R96-001A	EB-1	9/28/2017 9:00:00AM	Aqueous	Total Metals by ICP/MS		10/3/2017 5:09:00PM	10/05/2017
1709R96-001B	EB-1	9/28/2017 9:00:00AM	Aqueous	ION SCAN			09/29/2017
1709R96-002A	MW-27DDDD	9/28/2017 11:12:00AM	Groundwater	Total Metals by ICP/MS		10/3/2017 5:09:00PM	10/05/2017
1709R96-002A	MW-27DDDD	9/28/2017 11:12:00AM	Groundwater	Total Metals by ICP/MS		10/3/2017 5:09:00PM	10/06/2017
1709R96-002B	MW-27DDDD	9/28/2017 11:12:00AM	Groundwater	ION SCAN			09/29/2017
1709R96-002B	MW-27DDDD	9/28/2017 11:12:00AM	Groundwater	ION SCAN			09/30/2017
1709R96-003A	SOIL DRUMS 2016	9/28/2017 4:30:00PM	Soil	MERCURY, TCLP Leached	10/03/2017	10/5/2017 12:25:00PM	10/05/2017
1709R96-003A	SOIL DRUMS 2016	9/28/2017 4:30:00PM	Soil	ICP METALS, TCLP Leached	10/03/2017	10/4/2017 11:31:00AM	10/04/2017
1709R96-004A	MW-33 SOIL DRUM	9/28/2017 4:35:00PM	Soil	MERCURY, TCLP Leached	10/03/2017	10/5/2017 12:25:00PM	10/05/2017
1709R96-004A	MW-33 SOIL DRUM	9/28/2017 4:35:00PM	Soil	ICP METALS, TCLP Leached	10/03/2017	10/4/2017 11:31:00AM	10/04/2017

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249281**

Sample ID: <b>MB-249281</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353792</b>							
SampleType: <b>MBLK</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249281</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784893</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.00500									
Barium	BRL	0.0100									
Cadmium	BRL	0.000700									
Chromium	BRL	0.00500									
Lead	BRL	0.00100									

Sample ID: <b>LCS-249281</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353792</b>							
SampleType: <b>LCS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249281</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784896</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09196	0.00500	0.1000		92.0	80	120				
Barium	0.09500	0.0100	0.1000		95.0	80	120				
Cadmium	0.09575	0.000700	0.1000		95.7	80	120				
Chromium	0.09195	0.00500	0.1000		91.9	80	120				
Lead	0.09540	0.00100	0.1000		95.4	80	120				

Sample ID: <b>1709P73-008BMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353792</b>							
SampleType: <b>MS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249281</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784905</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09344	0.00500	0.1000		93.4	75	125				
Barium	0.09461	0.0100	0.1000		94.6	75	125				
Cadmium	0.09545	0.000700	0.1000		95.5	75	125				
Chromium	0.09302	0.00500	0.1000		93.0	75	125				
Lead	0.09789	0.00100	0.1000		97.9	75	125				

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

Client: AMEC Foster Wheeler  
 Project Name: Swift - Moultrie  
 Workorder: 1709R96

**ANALYTICAL QC SUMMARY REPORT**

BatchID: 249281

Sample ID: 1709P73-008BMSD	Client ID:	Units: mg/L	Prep Date: 10/03/2017	Run No: 353792							
SampleType: MSD	TestCode: Total Metals by ICP/MS SW6020B	BatchID: 249281	Analysis Date: 10/05/2017	Seq No: 7784912							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	0.09479	0.00500	0.1000		94.8	75	125	0.09344	1.44	20	
Barium	0.09677	0.0100	0.1000		96.8	75	125	0.09461	2.26	20	
Cadmium	0.09711	0.000700	0.1000		97.1	75	125	0.09545	1.72	20	
Chromium	0.09433	0.00500	0.1000		94.3	75	125	0.09302	1.40	20	
Lead	0.09963	0.00100	0.1000		99.6	75	125	0.09789	1.77	20	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249332**

Sample ID: <b>MB-249332</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/04/2017</b>	Run No: <b>353646</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ICP METALS, TCLP SW1311/6010C</b>	BatchID: <b>249332</b>	Analysis Date: <b>10/04/2017</b>	Seq No: <b>7780763</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.250									
Barium	BRL	0.500									
Cadmium	BRL	0.0250									
Chromium	BRL	0.0500									
Lead	BRL	0.0500									
Selenium	BRL	0.100									
Silver	BRL	0.0250									

Sample ID: <b>LCS-249332</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/04/2017</b>	Run No: <b>353646</b>							
SampleType: <b>LCS</b>	TestCode: <b>ICP METALS, TCLP SW1311/6010C</b>	BatchID: <b>249332</b>	Analysis Date: <b>10/04/2017</b>	Seq No: <b>7780765</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	4.800	0.250	5.000		96.0	80	120				
Barium	4.760	0.500	5.000	0.01935	94.8	80	120				
Cadmium	4.776	0.0250	5.000		95.5	80	120				
Chromium	4.754	0.0500	5.000		95.1	80	120				
Lead	4.510	0.0500	5.000		90.2	80	120				
Selenium	4.856	0.100	5.000		97.1	80	120				
Silver	0.4806	0.0250	0.5000		96.1	80	120				

Sample ID: <b>1709R96-003AMS</b>	Client ID: <b>SOIL DRUMS 2016</b>	Units: <b>mg/L</b>	Prep Date: <b>10/04/2017</b>	Run No: <b>353646</b>							
SampleType: <b>MS</b>	TestCode: <b>ICP METALS, TCLP SW1311/6010C</b>	BatchID: <b>249332</b>	Analysis Date: <b>10/04/2017</b>	Seq No: <b>7780782</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	4.808	0.250	5.000		96.2	50	150				
Barium	6.355	0.500	5.000	1.586	95.4	50	150				
Cadmium	4.792	0.0250	5.000		95.8	50	150				
Chromium	4.786	0.0500	5.000		95.7	50	150				

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249332**

Sample ID: <b>1709R96-003AMS</b>	Client ID: <b>SOIL DRUMS 2016</b>	Units: <b>mg/L</b>	Prep Date: <b>10/04/2017</b>	Run No: <b>353646</b>							
SampleType: <b>MS</b>	TestCode: <b>ICP METALS, TCLP SW1311/6010C</b>	BatchID: <b>249332</b>	Analysis Date: <b>10/04/2017</b>	Seq No: <b>7780782</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead	4.646	0.0500	5.000	0.1130	90.7	50	150				
Selenium	4.769	0.100	5.000		95.4	50	150				
Silver	0.4838	0.0250	0.5000		96.8	50	150				

Sample ID: <b>1709R96-003AMSD</b>	Client ID: <b>SOIL DRUMS 2016</b>	Units: <b>mg/L</b>	Prep Date: <b>10/04/2017</b>	Run No: <b>353646</b>							
SampleType: <b>MSD</b>	TestCode: <b>ICP METALS, TCLP SW1311/6010C</b>	BatchID: <b>249332</b>	Analysis Date: <b>10/04/2017</b>	Seq No: <b>7780784</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	4.753	0.250	5.000		95.1	50	150	4.808	1.14	30	
Barium	6.517	0.500	5.000	1.586	98.6	50	150	6.355	2.51	30	
Cadmium	4.819	0.0250	5.000		96.4	50	150	4.792	0.569	30	
Chromium	4.786	0.0500	5.000		95.7	50	150	4.786	0.008	30	
Lead	4.647	0.0500	5.000	0.1130	90.7	50	150	4.646	0.023	30	
Selenium	4.865	0.100	5.000		97.3	50	150	4.769	1.99	30	
Silver	0.4838	0.0250	0.5000		96.8	50	150	0.4838	0.010	30	

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249415**

Sample ID: <b>MB-249415</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/05/2017</b>	Run No: <b>353757</b>							
SampleType: <b>MBLK</b>	TestCode: <b>MERCURY, TCLP SW1311/7470A</b>	BatchID: <b>249415</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784000</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00400

Sample ID: <b>LCS-249415</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/05/2017</b>	Run No: <b>353757</b>							
SampleType: <b>LCS</b>	TestCode: <b>MERCURY, TCLP SW1311/7470A</b>	BatchID: <b>249415</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784001</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.03891 0.00400 0.0400 97.3 80 120

Sample ID: <b>1710074-001AMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/05/2017</b>	Run No: <b>353757</b>							
SampleType: <b>MS</b>	TestCode: <b>MERCURY, TCLP SW1311/7470A</b>	BatchID: <b>249415</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784003</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.03953 0.00400 0.0400 98.8 80 120

Sample ID: <b>1710074-001AMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/05/2017</b>	Run No: <b>353757</b>							
SampleType: <b>MSD</b>	TestCode: <b>MERCURY, TCLP SW1311/7470A</b>	BatchID: <b>249415</b>	Analysis Date: <b>10/05/2017</b>	Seq No: <b>7784004</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.03908 0.00400 0.0400 97.7 80 120 0.03953 1.14 20

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R353381**

Sample ID: <b>MB-R353381</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774324</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride  
Nitrate

BRL 1.0  
BRL 0.25

Sample ID: <b>LCS-R353381</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>							
SampleType: <b>LCS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774323</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride  
Nitrate

9.900 1.0 10.00 99.0 90 110  
4.878 0.25 5.000 97.6 90 110

Sample ID: <b>1709R68-001DMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774329</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride  
Nitrate

12.63 1.0 10.00 3.578 90.6 90 110  
5.006 0.25 5.000 96.1 90 110

Sample ID: <b>1709R96-001BMS</b>	Client ID: <b>EB-1</b>	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774333</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride  
Nitrate

5.123 1.0 5.000 0.2812 96.8 90 110  
4.780 0.25 5.000 95.6 90 110

Sample ID: <b>1709R68-001DMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>							
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774330</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride

12.70 1.0 10.00 3.578 91.3 90 110 12.63 0.553 20

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1709R96

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R353381**

Sample ID: <b>1709R68-001DMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>353381</b>
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R353381</b>	Analysis Date: <b>09/29/2017</b>	Seq No: <b>7774330</b>

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	5.006	0.25	5.000	0.2012	96.1	90	110	5.006	0.003	20	

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<b>Qualifiers:</b>	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	





October 11, 2017

David Smoak  
AMEC Foster Wheeler  
1075 Big Shanty Rd NW  
Kennesaw GA 30144

RE: Swift - Moultrie

Dear David Smoak:

Order No: 1710214

Analytical Environmental Services, Inc. received 1 samples on 10/3/2017 4:30:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES's accreditations are as follows:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/17-06/30/18.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/17-06/30/18 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-NELAP/Louisiana Agency Interest No. 100818 for or analysis of Non-Potable Water and Solid & Chemical Materials, effective 07/01/17-06/30/18.

-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ioana Pacurar  
Project Manager



**CHAIN OF CUSTODY**

COMPANY: <b>Amec Foster Wheeler</b>		ADDRESS: <b>1075 Big Shanty Rd, Ste 100 Kennesaw, GA 30147</b>		ANALYSIS REQUESTED					Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> for downloadable COCs and to log in to your AES Access account.	Number of Containers		
PHONE: <b>770-421-3400</b>	EMAIL:											
SAMPLED BY: <b>Daniel Howard</b>		SIGNATURE: <i>Daniel Howard</i>										
#	SAMPLE ID	SAMPLED: DATE TIME		GRAB	COMPOSITE	MATRIX (see codes)	PRESERVATION (see codes)				REMARKS	
1	<b>MW-33</b>	<b>10/3/17</b>	<b>1137</b>	<b>X</b>		<b>GW</b>	<b>N I</b>					
2	<b>Temp Blank</b>										<b>2</b>	
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
RELINQUISHED BY: 1. <i>Daniel Howard</i>		DATE/TIME: <b>10/3/17 / 1630</b>		RECEIVED BY: 1. <i>Hydlen</i>		DATE/TIME: <b>10/3/17 / 1630</b>		PROJECT INFORMATION				
2. _____				3. _____				PROJECT NAME: <b>Swift Moultrie</b>				
3. _____								PROJECT #: <b>6122170498.02</b>				
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD						SITE ADDRESS: <b>N Main St Moultrie, GA</b>				
		OUT: / / VIA:						SEND REPORT TO: <b>David Smoak</b>				
		IN: / / VIA:						INVOICE TO:				
		<b>client</b> FedEx UPS US mail courier Greyhound						(IF DIFFERENT FROM ABOVE)				
		other: _____						QUOTE #: _____ PO#: _____				
								RECEIPT				
								Total # of Containers				
								Turnaround Time (TAT) Request				
								<input checked="checked" type="checkbox"/> Standard 5 Business Days				
								<input type="checkbox"/> 2 Business Day Rush				
								<input type="checkbox"/> Next Business Day Rush				
								<input type="checkbox"/> Same-Day Rush (auth req.)				
								<input type="checkbox"/> Other _____				
								STATE PROGRAM (if any): _____				
								E-mail? <input type="checkbox"/> Fax? <input type="checkbox"/>				
								DATA PACKAGE: I <input type="radio"/> II <input checked="checked" type="radio"/> III <input type="radio"/> IV <input type="radio"/>				

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arrangements are made.

**Analytical Environmental Services, Inc**

**Date:** 11-Oct-17

<b>Client:</b> AMEC Foster Wheeler	<b>Client Sample ID:</b> MW-33
<b>Project Name:</b> Swift - Moultrie	<b>Collection Date:</b> 10/3/2017 11:37:00 AM
<b>Lab ID:</b> 1710214-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>Total Metals by ICP/MS SW6020B</b>					<b>(SW3005A)</b>			
Barium	0.161	0.0100		mg/L	249355	1	10/06/2017 18:37	JR
<b>ION SCAN SW9056A</b>								
Chloride	3.0	1.0		mg/L	R354011	1	10/09/2017 16:07	VL

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**SUMMARY OF ANALYTES DETECTED**

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
<b>Client Sample ID:</b> MW-33				<b>Lab ID:</b> 1710214-001			
<b>Collection Date:</b> 10/3/2017 11:37:00 AM				<b>Matrix:</b> Groundwater			
<b>Total Metals by ICP/MS SW6020B</b>				<b>(SW3005A)</b>			
Barium	0.161		0.000185	0.0100	mg/L	249355	1
<b>ION SCAN SW9056A</b>							
Chloride	3.0		0.17	1.0	mg/L	R354011	1

**Qualifiers:**

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

### SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: \_\_\_\_\_

AES Work Order Number: \_\_\_\_\_

2. Carrier: FedEx  UPS  USPS  Client  Courier  Other \_\_\_\_\_

	Yes	No	N/A	Details	Comments
3. Shipping container/cooler received in good condition?				damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>	
4. Custody seals present on shipping container?					
5. Custody seals intact on shipping container?					
6. Temperature blanks present?					
7. Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]				Cooling initiated for recently collected samples / ice present <input type="checkbox"/>	
8. Chain of Custody (COC) present?					
9. Chain of Custody signed, dated, and timed when relinquished and received?					
10. Sampler name and/or signature on COC?					
11. Were all samples received within holding time?					
12. TAT marked on the COC?				If no TAT indicated, proceeded with standard TAT per Terms & Conditions. <input type="checkbox"/>	

13. Cooler 1 Temperature \_\_\_\_\_ °C    Cooler 2 Temperature \_\_\_\_\_ °C    Cooler 3 Temperature \_\_\_\_\_ °C    Cooler 4 Temperature \_\_\_\_\_ °C  
 Cooler 5 Temperature \_\_\_\_\_ °C    Cooler 6 Temperature \_\_\_\_\_ °C    Cooler 7 Temperature \_\_\_\_\_ °C    Cooler 8 Temperature \_\_\_\_\_ °C

15. Comments: \_\_\_\_\_

I certify that I have completed sections 1-15 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
16. Were sample containers intact upon receipt?					
17. Custody seals present on sample containers?					
18. Custody seals intact on sample containers?					
19. Do sample container labels match the COC?				incomplete info <input type="checkbox"/> illegible <input type="checkbox"/> no label <input type="checkbox"/> other <input type="checkbox"/>	
20. Are analyses requested indicated on the COC?					
21. Were all of the samples listed on the COC received?				samples received but not listed on COC <input type="checkbox"/> samples listed on COC not received <input type="checkbox"/>	
22. Was the sample collection date/time noted?					
23. Did we receive sufficient sample volume for indicated analyses?					
24. Were samples received in appropriate containers?					
25. Were VOA samples received without headspace (< 1/4" bubble)?					
26. Were trip blanks submitted?				listed on COC <input type="checkbox"/> not listed on COC <input type="checkbox"/>	

27. Comments: \_\_\_\_\_

I certify that I have completed sections 16-27 (dated initials). \_\_\_\_\_

	Yes	No	N/A	Details	Comments
28. Have containers needing chemical preservation been checked? *					
29. Containers meet preservation guidelines?					
30. Was pH adjusted at Sample Receipt?					

I certify that I have completed sections 28-30 (dated initials). \_\_\_\_\_

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1710214

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 249355**

Sample ID: <b>MB-249355</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353795</b>							
SampleType: <b>MBLK</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249355</b>	Analysis Date: <b>10/06/2017</b>	Seq No: <b>7785055</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Barium BRL 0.010

Sample ID: <b>LCS-249355</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353795</b>							
SampleType: <b>LCS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249355</b>	Analysis Date: <b>10/06/2017</b>	Seq No: <b>7785056</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Barium 0.09552 0.010 0.1000 95.5 80 120

Sample ID: <b>1709S61-001DMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353795</b>							
SampleType: <b>MS</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249355</b>	Analysis Date: <b>10/06/2017</b>	Seq No: <b>7785058</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Barium 0.1668 0.0100 0.1000 0.07017 96.6 75 125

Sample ID: <b>1709S61-001DMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date: <b>10/03/2017</b>	Run No: <b>353795</b>							
SampleType: <b>MSD</b>	TestCode: <b>Total Metals by ICP/MS SW6020B</b>	BatchID: <b>249355</b>	Analysis Date: <b>10/06/2017</b>	Seq No: <b>7785059</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Barium 0.1658 0.0100 0.1000 0.07017 95.6 75 125 0.1668 0.602 20

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** AMEC Foster Wheeler  
**Project Name:** Swift - Moultrie  
**Workorder:** 1710214

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: R354011**

Sample ID: <b>MB-R354011</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>354011</b>							
SampleType: <b>MBLK</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R354011</b>	Analysis Date: <b>10/09/2017</b>	Seq No: <b>7790248</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride BRL 1.0

Sample ID: <b>LCS-R354011</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>354011</b>							
SampleType: <b>LCS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R354011</b>	Analysis Date: <b>10/09/2017</b>	Seq No: <b>7790247</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 4.537 1.0 5.000 90.7 90 110

Sample ID: <b>1710175-001BMS</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>354011</b>							
SampleType: <b>MS</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R354011</b>	Analysis Date: <b>10/09/2017</b>	Seq No: <b>7790251</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 14.30 1.0 5.000 9.227 101 90 110

Sample ID: <b>1710175-001BMSD</b>	Client ID:	Units: <b>mg/L</b>	Prep Date:	Run No: <b>354011</b>							
SampleType: <b>MSD</b>	TestCode: <b>ION SCAN SW9056A</b>	BatchID: <b>R354011</b>	Analysis Date: <b>10/09/2017</b>	Seq No: <b>7790254</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride 13.87 1.0 5.000 9.227 92.9 90 110 14.30 3.03 20

<b>Qualifiers:</b>	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

**Field Sampling Reports for September and October 2017 Groundwater Sampling Event**



PROJECT NAME:  
**Swift Moultrie**

**FIELD SAMPLING REPORT**

Project Number:

Ameo Foster Wheeler  
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144  
PHONE: (770) 421-3400 / FAX: (770) 421-3486

**612 2170498.03**

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER  
MONITORING WELL TYPE: Standard Compliance Background Extraction  
WELL ID: MW-6  
WELL MATERIAL: PVC

SAMPLE METHOD: Peristaltic pump

WELL DIAMETER: 2"  
DEPTH TO WATER: 5.59 GRAB (x) COMPOSITE ( )  
TOTAL DEPTH: 14.00  
WATER COLUMN HEIGHT: 8.41 x 0.163 = 1.4 x 3  
PURGE VOLUME: 4.2 or low flow

DUP./REP. OF: \_\_\_\_\_

Arrived at: 0930

Screen length: 10

Tubing Intake (btoc) = 12.0

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1000	0	1.88	87.3	4.03	14.00	25.72	13.5	200 ( )	6.10
1010	0.5	0.41	61.3	5.58	5.702	25.87	17.8	200	6.55
1020	1.0	0.46	-55.9	6.27	2.690	26.21	17.8	200	7.04
1030	1.5	0.82	-45.1	6.43	1.938	26.43	5.52	200	7.79
1040	2.0	0.60	-13.7	6.37	2.243	26.54	4.59	200	8.37
1050	2.5	0.43	6.5	6.27	2.546	26.66	3.34	200	8.95
1100	3.0	0.42	24.6	6.10	2.380	26.72	4.42	200	9.54
1110	3.5	0.44	35.6	6.09	3.253	26.90	5.16	200	10.06
1115	3.75	0.39	42.4	5.95	3.611	26.96	6.61	200	10.30
1130	4.0	0.40	44.1	5.94	3.643	26.96	6.70	200	10.46
1140	4.25	0.44	46.6	5.94	3.705	26.99	6.48	200	10.84
NOTES:									

SAMPLE DATE: 9/26/17  
SAMPLE TIME: 1142

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 poly	1	HNO <sub>3</sub>	6020	Metals Tot - As, Ba, Cd, Cr, Pb
500 poly	1	None	9056	Nitrates + Cl

GENERAL INFORMATION	
WEATHER:	<u>Clear + Sunny, Temp 78°F</u>
SHIPPED VIA:	<u>Fed Ex</u>
SHIPPED TO:	<u>AES</u>
SAMPLER:	<u>Daniel Howard</u>
OBSERVER:	

PROJECT NAME:

**Swift Moultrie**

**FIELD SAMPLING REPORT**

Amec Foster Wheeler

1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144

PHONE: (770) 421-3400 / FAX: (770) 421-3486

Project Number:

**6122178498**  
**03**

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER

MONITORING WELL TYPE: Standard Compliance Background Extraction

WELL ID: MW-9

WELL MATERIAL: PVC

SAMPLE METHOD: Peristaltic pump

DUP./REP. OF: DUP-1

Arrived at: 1235

Screen length: 10

Tubing Intake (btoc) = 18.5

WELL DIAMETER: 2"

DEPTH TO WATER: 12.49

TOTAL DEPTH: 20.50

WATER COLUMN HEIGHT: 8.01 x 0.163 = 1.3 x 3 =

PURGE VOLUME: 3.9 or low flow

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1300	0	2.30	87.4	5.21	0.711	25.81	36.6	200 ( )	12.72
1310	0.5	0.74	108.6	4.81	2.222	26.21	14.0	200	12.74
1320	1.0	0.85	111.6	4.72	2.857	26.33	11.7	200	12.76
1330	1.5	0.93	105.4	4.68	2.986	26.45	8.94	200	12.76
1335	1.75	0.58	96.9	4.67	2.960	26.31	8.71	200	12.76
1340	2.0	0.61	89.7	4.69	2.953	26.54	6.91	200	12.76
1345	2.25	0.52	84.6	4.69	2.953	26.60	6.76	200	12.76
1350	2.5	0.48	83.7	4.66	2.970	26.81	5.59	200	12.76

NOTES:

Collected DUP-1 sample Time 1200

SAMPLE DATE: 9/26/17

SAMPLE TIME: 1352

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 poly	1	HNO <sub>3</sub>	6020	Tit metals - As, Ba, Cd, Cr, Pb
500 poly	1	None	9056	Nitrates, Cl

**GENERAL INFORMATION**

WEATHER:	<u>Clear &amp; Sunny ; Temp 84°F</u>
SHIPPED VIA:	<u>Fed Ex</u>
SHIPPED TO:	<u>AES</u>
SAMPLER:	<u>Daniel Howard</u>
OBSERVER:	

PROJECT NAME:

Swift Moultrie

## FIELD SAMPLING REPORT

Amec Foster Wheeler

1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144

PHONE: (770) 421-3400 / FAX: (770) 421-3486

Project Number:

6122170498.02  
03SAMPLING EVENT:  1ST QUARTER  2ND QUARTER  3RD QUARTER  4TH QUARTERMONITORING WELL TYPE:  Standard  Compliance  Background  Extraction

WELL ID: MW-16

WELL MATERIAL: PVC

SAMPLE METHOD: Peristaltic pump

DUP./REP. OF: \_\_\_\_\_

Arrived at: 1417  
Screen length: 16.5 10 Ft  
Tubing Intake (btoc) = 16.5WELL DIAMETER: 2"  
DEPTH TO WATER: 12.01  
TOTAL DEPTH: 18.49  
WATER COLUMN HEIGHT:  $6.48 \times 0.163 = 1.1 \times 3 =$   
PURGE VOLUME: 3.3  
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]  
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]  
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [ $\leq 10$ NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1440	0	3.05	138.3	4.33	1.259	27.61	40.8	200	12.21
1450	0.5	1.80	113.5	4.29	1.064	27.11	20.1	200	12.22
1500	1.0	1.74	110.8	4.31	1.003	27.30	7.65	200	12.23
1505	1.25	1.78	112.9	4.28	0.946	26.91	4.99	200	12.23
1510	1.5	1.71	112.0	4.28	0.935	26.35	4.10	200	12.23
1515	1.75	1.68	116.0	4.30	0.918	26.71	3.62	200	12.23

NOTES:

SAMPLE DATE: 9/26/17

SAMPLE TIME: 1517

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 poly	1	HNO <sub>3</sub>	6020	Tot metals As, Ba, Cd, Cr, Pb
500 poly	1	None	9056	Nitrates + Cl

## GENERAL INFORMATION

WEATHER:	Clear & Sunny, Temp 86°F
SHIPPED VIA:	Fed Ex
SHIPPED TO:	AES
SAMPLER:	Daniel Howard
OBSERVER:	

PROJECT NAME:  
**Swift Moultrie**

**FIELD SAMPLING REPORT**

Amec Foster Wheeler  
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144  
PHONE: (770) 421-3400 / FAX: (770) 421-3486

Project Number:  
**6122170498.02  
03**

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER  
MONITORING WELL TYPE: Standard Compliance Background Extraction  
WELL ID: MW-15  
WELL MATERIAL: PVC

SAMPLE METHOD: Peristaltic pump

WELL DIAMETER: 2"  
DEPTH TO WATER: 5.32 GRAB (x) COMPOSITE ( )  
TOTAL DEPTH: 15.27  
WATER COLUMN HEIGHT: 9.95 x 0.163 = 1.6 x 3  
PURGE VOLUME: 4.8 or low flow

DUP./REP. OF: \_\_\_\_\_

Arrived at: 0900

Screen length: 10

Tubing Intake (btoc) = 12" 14.5

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0930	0	1.32	248.6	5.79	2.655	27.48	14.4	150 ( )	6.88
0940	0.4	0.90	205.3	6.11	2.250	28.16	11.3	150	7.42
0950	0.8	0.88	187.1	6.08	2.306	28.52	32.7	150	7.85
1000	1.2	0.85	164.8	6.07	2.238	29.00	59.3	150	8.31
* 1020	2.0	1.45	144.5	5.92	2.278	28.45	121	150	10.02
1030	2.4	0.79	140.3	5.74	2.426	28.99	25.3	150	10.61
1040	2.8	0.80	144.2	5.47	2.765	29.17	25.2	150	11.19
1050	3.2	0.50	156.0	5.20	3.256	29.11	111	150	11.65
1100	3.6	0.70	166.2	4.89	3.916	29.26	50.6	150	12.10
1110	4.0	0.77	172.7	4.62	4.453	29.21	21.7	150	12.40
1120	4.4	0.63	176.9	4.44	4.854	29.00	19.8	150	12.83
1125	4.6	0.62	180.4	4.27	5.162	29.09	18.1	150	13.06
1130	4.8	0.61	186.7	4.19	5.319	29.28	14.5	150	13.24
1135	5.0	0.56	189.5	4.14	5.529	29.11	11.7	150	13.44
1140	5.2	0.65	191.5	4.13	5.673	29.18	10.0	150	13.75
1302							8.05		

NOTES: \* Cleaned mud from bottom of well. I will remove 3 well volumes from well before sampling.  
Well is almost dry will let recharge and then sample.  
Will take a turbidity reading before sampling

SAMPLE DATE: 9/27/17

SAMPLE TIME: 1305

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 poly	1	HNO <sub>3</sub>	6020	Tot metals (As, Ba, Cd, Cr, Pb)
500 poly	1	None	9056	Nitrates & Cl

GENERAL INFORMATION

WEATHER:	<u>Clear + Sunny, Temp 71° F</u>
SHIPPED VIA:	<u>Fed Ex</u>
SHIPPED TO:	<u>AES</u>
SAMPLER:	<u>Daniel Howard</u>
OBSERVER:	

PROJECT NAME: Swift Moultrie

# FIELD SAMPLING REPORT

Project Number: 6122170498.05  
03

Amec Foster Wheeler  
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144  
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER  
MONITORING WELL TYPE: Standard Compliance Background Extraction  
WELL ID: MW-13D  
WELL MATERIAL: PVC

SAMPLE METHOD: Peristaltic pump

WELL DIAMETER: 2"  
DEPTH TO WATER: 13.47 GRAB (x) COMPOSITE ( )  
TOTAL DEPTH: 24.30  
WATER COLUMN HEIGHT: 10.83 x 0.163 = 1.8 x 3  
PURGE VOLUME: 5.4 or low flow  
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]  
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]  
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

DUP./REP. OF: \_\_\_\_\_

Arrived at: 1333

Screen length: 10

Tubing Intake (btoc) = 21

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: <u>1405</u>	<u>0</u>	<u>1.24</u>	<u>183.2</u>	<u>4.18</u>	<u>4.948</u>	<u>29.16</u>	<u>4.72</u>	<u>150 ( )</u>	<u>13.64</u>
<u>1415</u>	<u>0.4</u>	<u>0.37</u>	<u>189.7</u>	<u>3.91</u>	<u>3.181</u>	<u>28.86</u>	<u>4.19</u>	<u>150</u>	<u>13.66</u>
<u>1425</u>	<u>0.8</u>	<u>0.40</u>	<u>202.9</u>	<u>3.74</u>	<u>5.762</u>	<u>26.80</u>	<u>2.74</u>	<u>150</u>	<u>13.67</u>
<u>1435</u>	<u>1.2</u>	<u>0.42</u>	<u>215.0</u>	<u>3.77</u>	<u>5.871</u>	<u>27.83</u>	<u>1.63</u>	<u>150</u>	<u>13.67</u>
<u>1440</u>	<u>1.4</u>	<u>0.42</u>	<u>219.0</u>	<u>3.77</u>	<u>5.914</u>	<u>28.45</u>	<u>2.56</u>	<u>150</u>	<u>13.67</u>
<u>1445</u>	<u>1.6</u>	<u>0.37</u>	<u>220.5</u>	<u>3.76</u>	<u>5.960</u>	<u>28.19</u>	<u>3.71</u>	<u>150</u>	<u>13.67</u>

NOTES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SAMPLE DATE: 9/27/17  
SAMPLE TIME: 1447

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
<u>250 poly</u>	<u>1</u>	<u>HNO<sub>3</sub></u>	<u>6020</u>	<u>Tot metals: As, Ba, Cd, Cr, Pb</u>
<u>500 poly</u>	<u>1</u>	<u>None</u>	<u>9050</u>	<u>Nitrates + Cl</u>

GENERAL INFORMATION	
WEATHER:	<u>Hot + Humid Temp 87°F</u>
SHIPPED VIA:	<u>FedEx</u>
SHIPPED TO:	<u>AES</u>
SAMPLER:	<u>Daniel Howard</u>
OBSERVER:	

PROJECT NAME:

# FIELD SAMPLING REPORT

Project Number:

Swift Moultrie

Amec Foster Wheeler

6122170498.02  
03

1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144

PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER

MONITORING WELL TYPE: Standard Compliance Background Extraction

WELL ID: MW-27DDDD

WELL MATERIAL: PVC

SAMPLE METHOD: Monsoon Pump

DUP./REP. OF: \_\_\_\_\_

Arrived at: 0910

Screen length: 20

Tubing Intake (btoc) = 82

WELL DIAMETER: 2"

DEPTH TO WATER: 92.20

GRAB (x) COMPOSITE ( )

TOTAL DEPTH: 26.49

WATER COLUMN HEIGHT: 65.71 x 0.163 = 10.7 x 3

PURGE VOLUME: 32.1 or low flow

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]

[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]

[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP. (°C)	TURB. (NTU) [≤10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: <u>0955</u>	<u>0</u>	<u>5.47</u>	<u>175.8</u>	<u>4.96</u>	<u>2.126</u>	<u>23.47</u>	<u>90.3</u>	<u>200</u>	<u>28.68</u>
<u>1005</u>	<u>0.5</u>	<u>5.45</u>	<u>204.4</u>	<u>4.82</u>	<u>2.349</u>	<u>24.27</u>	<u>92.1</u>	<u>200</u>	<u>28.51</u>
<u>1015</u>	<u>1.0</u>	<u>5.31</u>	<u>210.5</u>	<u>4.81</u>	<u>2.318</u>	<u>24.03</u>	<u>68.1</u>	<u>200</u>	<u>28.84</u>
<u>1025</u>	<u>1.5</u>	<u>5.41</u>	<u>212.1</u>	<u>4.83</u>	<u>2.159</u>	<u>24.20</u>	<u>24.9</u>	<u>200</u>	<u>29.43</u>
<u>1035</u>	<u>2.0</u>	<u>5.02</u>	<u>208.3</u>	<u>4.84</u>	<u>2.123</u>	<u>24.60</u>	<u>11.3</u>	<u>200</u>	<u>28.65</u>
<u>1045</u>	<u>2.5</u>	<u>5.12</u>	<u>206.1</u>	<u>4.83</u>	<u>2.156</u>	<u>24.44</u>	<u>6.63</u>	<u>200</u>	<u>28.80</u>
<u>1055</u>	<u>3.0</u>	<u>4.73</u>	<u>201.9</u>	<u>4.83</u>	<u>2.191</u>	<u>24.54</u>	<u>4.56</u>	<u>200</u>	<u>28.92</u>
<u>1100</u>	<u>3.25</u>	<u>4.73</u>	<u>198.9</u>	<u>4.82</u>	<u>2.221</u>	<u>24.60</u>	<u>2.50</u>	<u>200</u>	<u>28.85</u>
<u>1105</u>	<u>3.5</u>	<u>4.87</u>	<u>197.7</u>	<u>4.82</u>	<u>2.239</u>	<u>24.33</u>	<u>2.42</u>	<u>200</u>	<u>28.76</u>
<u>1110</u>	<u>3.75</u>	<u>4.98</u>	<u>196.7</u>	<u>4.82</u>	<u>2.259</u>	<u>24.01</u>	<u>2.10</u>	<u>200</u>	<u>28.75</u>

NOTES:

SAMPLE DATE: 9/28/17

SAMPLE TIME: 0816 1112

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
<u>250ml poly</u>	<u>1</u>	<u>HNO3</u>	<u>6020</u>	<u>Tot metals: As, Ba, Cd, Cr, Pb</u>
<u>500ml poly</u>	<u>1</u>	<u>None</u>	<u>9056</u>	<u>Nitrates, Cl</u>

GENERAL INFORMATION

WEATHER:	<u>Clear &amp; Sunny, Temp 74°C</u>
SHIPPED VIA:	<u>Fed Ex</u>
SHIPPED TO:	<u>AES</u>
SAMPLER:	<u>Daniel Howard</u>
OBSERVER:	

PROJECT NAME:  
**Swift Moultrie**

**FIELD SAMPLING REPORT**

Project Number:

Amec Foster Wheeler  
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144  
PHONE: (770) 421-3400 / FAX: (770) 421-3486

**6122170498.02**  
**03**

SAMPLING EVENT: 1ST QUARTER 2ND QUARTER 3RD QUARTER 4TH QUARTER  
MONITORING WELL TYPE: Standard Compliance Background Extraction  
WELL ID: MW-33  
WELL MATERIAL: PVC

SAMPLE METHOD: 55 GeoSub pump

WELL DIAMETER: 2"  
DEPTH TO WATER: 50.86 GRAB (x) COMPOSITE ( )  
TOTAL DEPTH: 122.15  
WATER COLUMN HEIGHT: 71.29 x 0.163 = 11.6 x 3  
PURGE VOLUME: 34.8 or low flow

DUP./REP. OF: \_\_\_\_\_

Arrived at: 0935  
Screen length: PH #12 20  
Tubing Intake (btoc) = 112

[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]  
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]  
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0955	0	1.42	177.9	7.41	0.172	23.79	4.57	200	54.32
1005	0.5	0.44	169.1	7.98	0.181	24.52	2.86	200	54.63
1015	1.0	0.37	156.8	7.88	0.182	25.04	2.79	200	54.69
1025	1.5	0.33	153.0	7.64	0.178	25.24	2.70	200	54.73
1035	2.0	0.34	140.6	7.37	0.172	25.40	2.24	200	54.76
1045	2.5	0.32	127.2	7.16	0.165	25.56	1.89	200	54.85
1055	3.0	0.33	115.1	6.99	0.156	25.61	1.85	200	54.88
1105	3.5	0.30	92.0	6.88	0.150	25.65	1.62	200	54.93
1115	4.0	0.28	77.5	6.82	0.147	25.99	1.37	200	54.93
1120	4.25	0.30	77.8	6.77	0.145	25.82	1.41	200	54.92
1125	4.5	0.30	71.9	6.73	0.144	25.52	1.55	200	54.95
1130	4.75	0.29	69.9	6.72	0.143	25.79	1.44	200	54.96
1135	5.0	0.30	66.0	6.70	0.141	25.62	1.62	200	54.97

NOTES:

SAMPLE DATE: 10/3/17  
SAMPLE TIME: 1137

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250ml poly	1	HNO <sub>3</sub>	6020	Ba Total
50ml poly	1	None	9056	Cl

GENERAL INFORMATION

WEATHER: Clear, Temp 70°F  
SHIPPED VIA: AmecFW  
SHIPPED TO: AES  
SAMPLER: Daniel Howard OBSERVER: \_\_\_\_\_

**APPENDIX B**  
**SourceDK Modeling Results**



# SourcedKTIER 1

## Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence Version 1.1

Site Location and I.D.: Swift MW-6  
 Constituent of Interest: Barium

Data Input Instructions:

10.80  Enter value directly.

10.80  Value calculated by model. (Don't enter any Data).

**1. ENTER CONSTITUENT NAME AND HISTORICAL DATA**

Concentration

Date (mm/dd/yyyy)	Constituent A	Constituent B	Constituent C	Constituent D
1 5/30/2001	2			
2 3/6/2001	2.1			
3 12/16/2001	5.5			
4 3/30/2012	0.0746			
5 3/27/2012	0.296			
6 3/27/2013	0.659			
7 3/10/2013	0.42			
8 3/25/2014	10.5			
9 3/23/2013	0.449			
10 3/26/2016	0.161			
11 3/26/2017	0.164			
12				
13				
14				
15				



**2. WHICH CONSTITUENT TO PLOT?**

What is the cleanup level?

**Barium**  (mg/L)

Constituent B  (mg/L)

Constituent C  (mg/L)

Constituent D  (mg/L)

**4. RESULTS**

Predicted Date to Achieve Cleanup: **2002**

Confidence Interval on Predicted Cleanup Date:  90% Confidence Interval  
 95% Confidence Interval  
(at least 3 data points needed to calculate confidence intervals)

**2001** to **2279**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.52E-01**  
(positive numbers represent shrinking plume while negative numbers represent expanding plume)

# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence  
Version 1.1  
Empirical Data

Site Location and I.D.: Swift MW-6  
Constituent of Interest: Barium and Lead

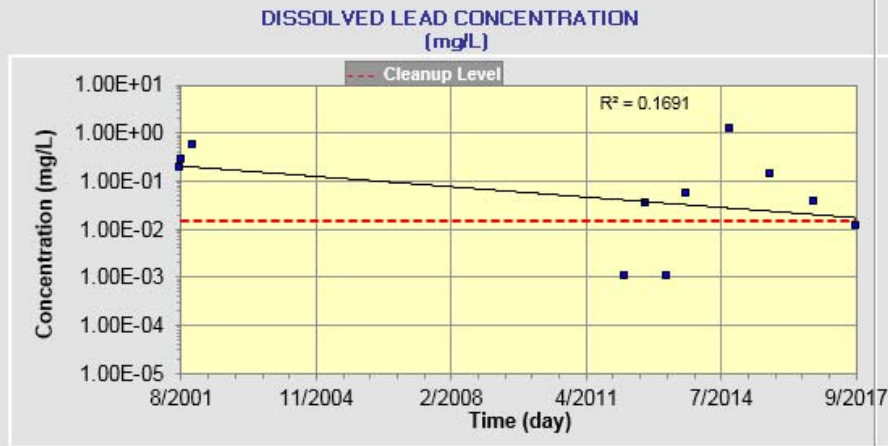
Data Input Instructions:

10.80 → Enter value directly.  
10.80 → Value calculated by model.  
(Don't enter any data).

### 1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yyyy)	Concentration (mg/L)			
	Constituent A	Constituent B	Constituent C	Constituent D
		Lead		
1 8/30/2001		0.19		
2 9/9/2001		0.27		
3 12/18/2001		0.55		
4 3/30/2012		0.001		
5 9/27/2012		0.0322		
6 3/27/2013		0.001		
7 9/10/2013		0.0534		
8 9/25/2014		1.16		
9 9/23/2015		0.152		
10 9/29/2016		0.036		
11 9/29/2017		0.012		
12				
13				
14				
15				

### 3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph:  (yr)

### 2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Constituent A  (mg/L)
- Lead**  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

### 4. RESULTS

Predicted Date to Achieve Cleanup: **2018**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2002** to **Can't Calc (+ve Trend)**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.54E-01**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

[Return To Main Screen](#)

[New Site/Clear Screen](#)

[Paste Example Data Set](#)

[HELP](#)

# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and I.D.: Swift MW-9  
Constituent of Interest: Barium

Data Input Instructions:

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A Barium	Constituent B	Constituent C	Constituent D
1 8/30/2001	1.6			
2 9/6/2001	2			
3 12/18/2001	5.3			
4 10/21/2009	1.22			
5 3/30/2012	0.18			
6 9/28/2012	0.118			
7 3/27/2013	0.232			
8 9/11/2013	0.225			
9 9/24/2014	0.338			
10 9/22/2015	0.375			
11 9/28/2016	0.572			
12 9/26/2017	0.686			
13				
14				
15				

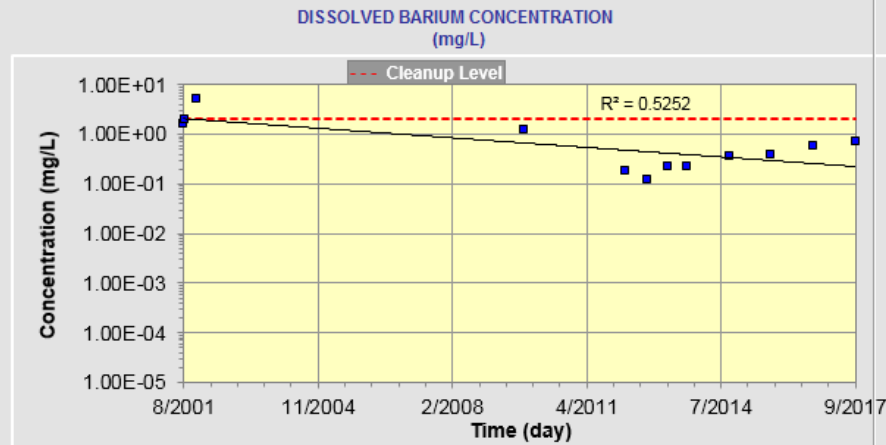
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Barium  (mg/L)
- Constituent B  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph  (yr)

Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup:

2001

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval

95 % Confidence Interval

2001  
(Lower Limit on Confidence Interval)

to 2015  
(Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year):

1.38E-01

(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

HELP

# Sourced K TIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence  
Version 1.1  
Empirical Data

Site Location and I.D.: Swift MW-9  
Constituent of Interest: Lead

Data Input Instructions:

10.80 → Enter value directly.  
10.80 → Value calculated by model.  
(Don't enter any data).

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A	Constituent B	Constituent C	Constituent D
		Lead		
1 8/30/2001		0.08		
2 9/6/2001		0.077		
3 12/18/2001		0.26		
4 10/21/2009		0.12		
5 3/30/2012		0.0437		
6 9/28/2012		0.0472		
7 3/27/2013		0.0483		
8 9/11/2013		0.0613		
9 9/24/2013		0.0678		
10 9/22/2015		0.0898		
11 9/28/2016		0.072		
12 9/26/2017		0.0758		
13				
14				
15				

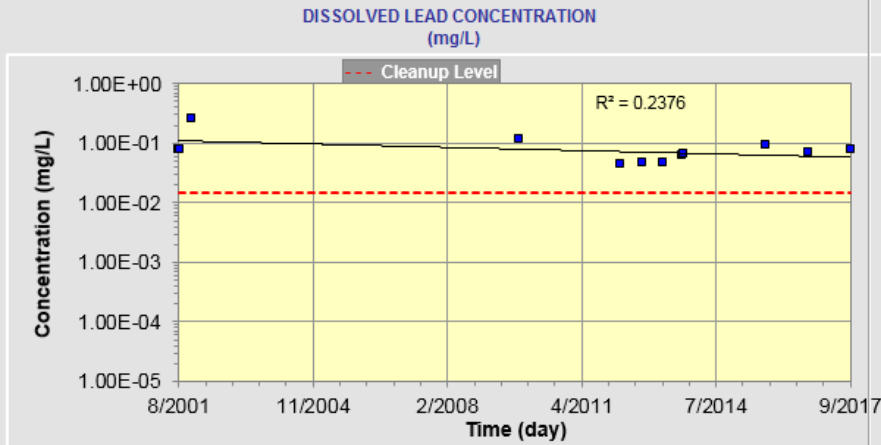
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Constituent A  (mg/L)
- Lead  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

3. OUTPUT GRAPH



4. RESULTS

Predicted Date to Achieve Cleanup: **2051**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2020** to **Can't Calc (+ve Trend)**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **3.98E-02**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

HELP

# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and ID: Swift MW13D  
Constituent of Interest: Barium

Data Input Instructions:

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A Barium	Constituent B	Constituent C	Constituent D
1 8/30/2001	3.2			
2 9/6/2001	2.4			
3 12/18/2001	1.7			
4 3/30/2012	0.273			
5 9/28/2012	0.295			
6 3/28/2013	0.383			
7 9/12/2013	0.338			
8 9/25/2014	0.254			
9 9/22/2015	0.169			
10 9/28/2016	0.219			
11 9/27/2017	0.231			
12				
13				
14				
15				

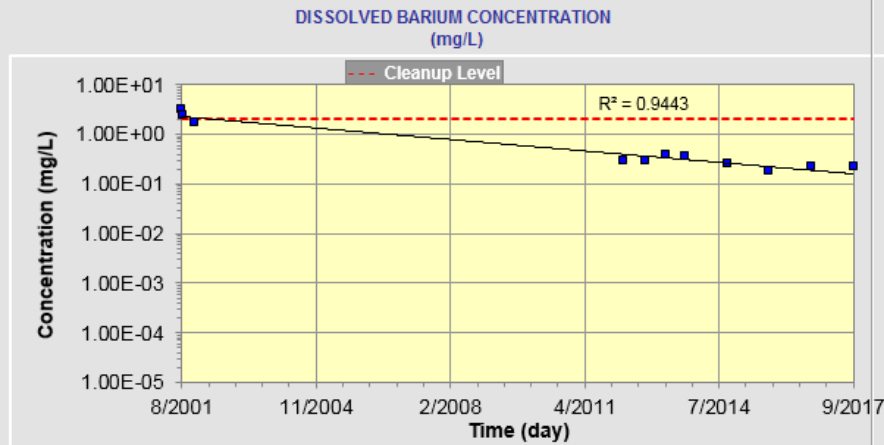
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Barium  (mg/L)
- Constituent B  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph  (yr)

Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2002**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2001** to **2004**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.65E-01**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

HELP

# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and I.D.: Swift MW13D  
Constituent of Interest: Lead

Data Input Instructions:

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A	Constituent B	Constituent C	Constituent D
		Lead		
1 8/30/2001		0.16		
2 9/6/2001		0.14		
3 12/18/2001		0.19		
4 3/30/2012		0.168		
5 9/28/2012		0.128		
6 3/28/2013		0.143		
7 9/12/2013		0.139		
8 9/25/2014		0.176		
9 9/22/2015		0.129		
10 9/28/2016		0.173		
11 9/27/2017		0.137		
12				
13				
14				
15				

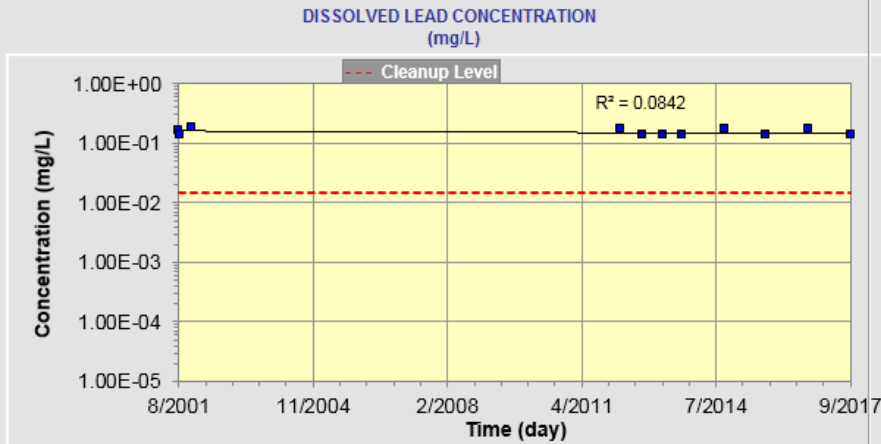
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Constituent A  (mg/L)
- Lead  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

3. OUTPUT GRAPH



4. RESULTS

Predicted Date to Achieve Cleanup: **2374**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2117** to **Can't Calc (+ve Trend)**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **6.37E-03**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

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**HELP**



# SourceDK TIER 1

Remediation Timeframe Decision Support System  
 Air Force Center for Environmental Excellence  
 Version 1.1 Empirical Data

Site Location and I.D.: Swift MW15  
 Constituent of Interest: Barium

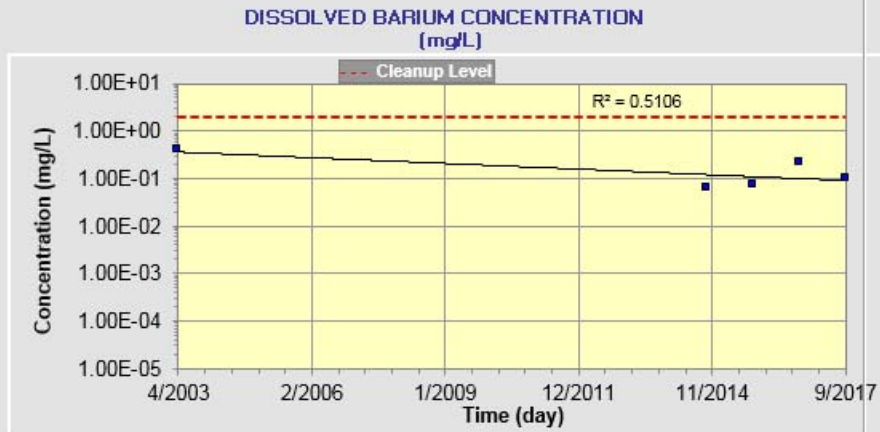
**Data Input Instructions:**

10.80 → Enter value directly.  
 10.80 → Value calculated by model.  
 (Don't enter any data).

**1. ENTER CONSTITUENT NAME AND HISTORICAL DATA**

Date (mm/dd/yyyy)	Concentration (mg/L)			
	Constituent A	Constituent B	Constituent C	Constituent D
	Barium			
1 4/8/2003	0.412			
2 9/29/2014	0.0628			
3 9/29/2015	0.075			
4 9/29/2016	0.22			
5 9/29/2017	0.0996			
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

**3. OUTPUT GRAPH**



Number of Years Over Which to Plot Graph:  (yr)

**2. WHICH CONSTITUENT TO PLOT?**

What is the cleanup level?

- Barium  (mg/L)
- Constituent B  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

**4. RESULTS**

Predicted Date to Achieve Cleanup:

Confidence Interval on Predicted Cleanup Date:  
 (at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

to   
 (Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year):   
 (positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

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# SourcedK TIER 1

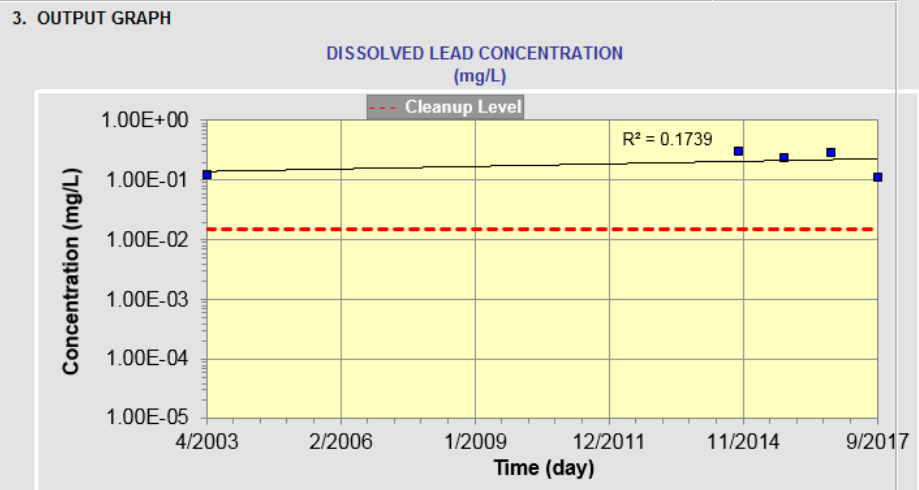
Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence  
Version 1.1  
Empirical Data

**Data Input Instructions:**  
 → Enter value directly.  
 → Value calculated by model. (Don't enter any data).

Site Location and I.D.: Swift MW15  
 Constituent of Interest: Lead

**1. ENTER CONSTITUENT NAME AND HISTORICAL DATA**

Date (mm/dd/yy)	Concentration (mg/L)			
	Constituent A	Constituent B	Constituent C	Constituent D
		Lead		
1 4/8/2003		0.124		
2 9/25/2014		0.311		
3 9/23/2015		0.243		
4 9/29/2016		0.294		
5 9/27/2017		0.144		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				



**2. WHICH CONSTITUENT TO PLOT?** Print Historical Data

What is the cleanup level?

Constituent A  (mg/L)

**Lead**  (mg/L)

Constituent C  (mg/L)

Constituent D  (mg/L)

**4. RESULTS**

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:  90 % Confidence Interval  
(at least 3 data points needed to calculate confidence intervals)  95 % Confidence Interval

**2019** to **Can't Calc (+ve Trend)**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-3.40E-02**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

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# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and I.D.: Swift MW16  
Constituent of Interest: Barium

**Data Input Instructions:**

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

**1. ENTER CONSTITUENT NAME AND HISTORICAL DATA**

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A <i>Barium</i>	Constituent B	Constituent C	Constituent D
1 2/14/2003	2.34			
2 3/29/2012	0.542			
3 9/28/2012	0.642			
4 3/27/2013	0.495			
5 9/11/2013	0.631			
6 9/24/2014	0.01			
7 9/22/2015	0.531			
8 9/28/2016	0.508			
9 9/26/2017	0.462			
10				
11				
12				
13				
14				
15				

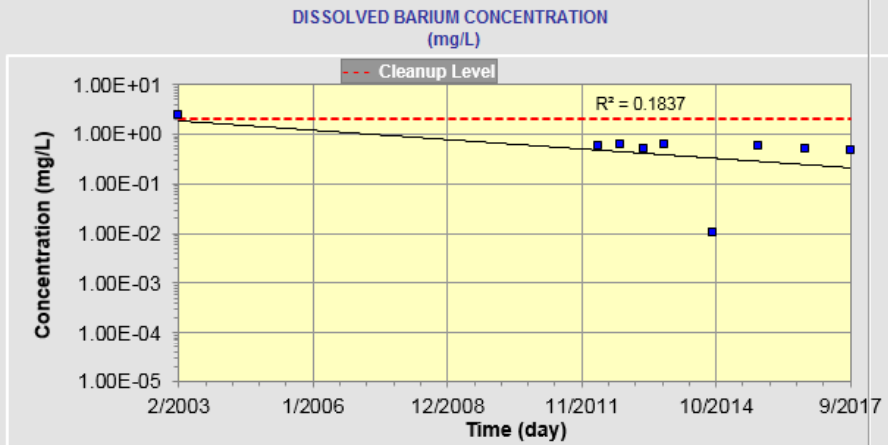
Print Historical Data

**2. WHICH CONSTITUENT TO PLOT?**

What is the cleanup level?

- Barium  (mg/L)
- Constituent B  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

**3. OUTPUT GRAPH**



Number of Years Over Which to Plot Graph  (yr)

Update Graph

**4. RESULTS**

Predicted Date to Achieve Cleanup: **2003**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2003** to **Can't Calc (+ve Trend)**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.49E-01**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

**HELP**

# Sourced K TIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and I.D.: Swift MW16  
Constituent of Interest: Lead

**Data Input Instructions:**

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

**1. ENTER CONSTITUENT NAME AND HISTORICAL DATA**

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A	Constituent B	Constituent C	Constituent D
		Lead		
1 2/14/2003		0.1		
2 3/29/2012		0.0239		
3 9/28/2012		0.022		
4 3/27/2013		0.00914		
5 9/11/2013		0.0129		
6 9/24/2014		0.0244		
7 9/22/2015		0.0121		
8 9/28/2016		0.0161		
9 9/26/2017		0.0104		
10				
11				
12				
13				
14				
15				

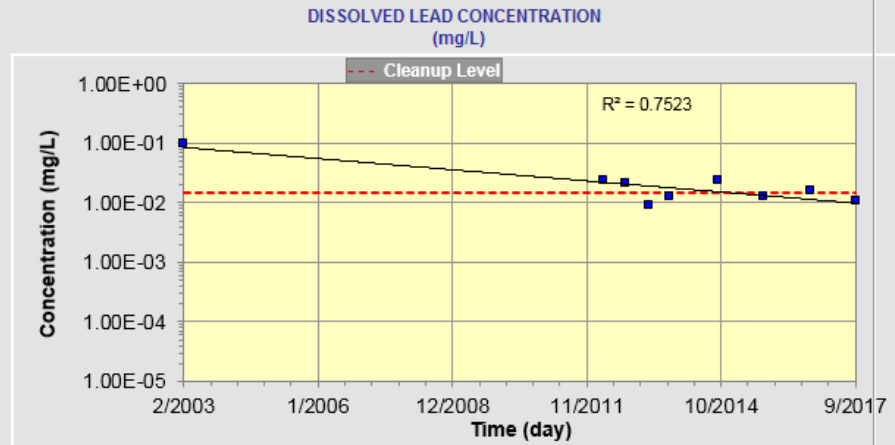
Print Historical Data

**2. WHICH CONSTITUENT TO PLOT?**

What is the cleanup level?

- Constituent A  (mg/L)
- Lead**  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

**3. OUTPUT GRAPH**



Number of Years Over Which to Plot Graph  (yr)

Update Graph

**4. RESULTS**

Predicted Date to Achieve Cleanup: **2014**

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval  
 95 % Confidence Interval

**2008** to **2030**  
(Lower Limit on Confidence Interval) (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.47E-01**  
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

**HELP**

# SourcedKTIER 1

Remediation Timeframe Decision Support System  
Air Force Center for Environmental Excellence

Version 1.1

Empirical Data

Site Location and I.D.: Swift MW-27DDDD  
Constituent of Interest: Barium

Data Input Instructions:

10.80 → Enter value directly.

10.80 → Value calculated by model.  
(Don't enter any data).

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Date (mm/dd/yy)	Concentration mg/L			
	Constituent A Barium	Constituent B	Constituent C	Constituent D
1 11/10/2004	0.5			
2 2/15/2011	4.34			
3 5/3/2012	4.91			
4 9/27/2012	5.15			
5 3/28/2013	5.55			
6 9/12/2013	5.11			
7 9/25/2014	6.72			
8 9/23/2015	4.95			
9 9/28/2016	7.22			
10 9/28/2017	6.94			
11				
12				
13				
14				
15				

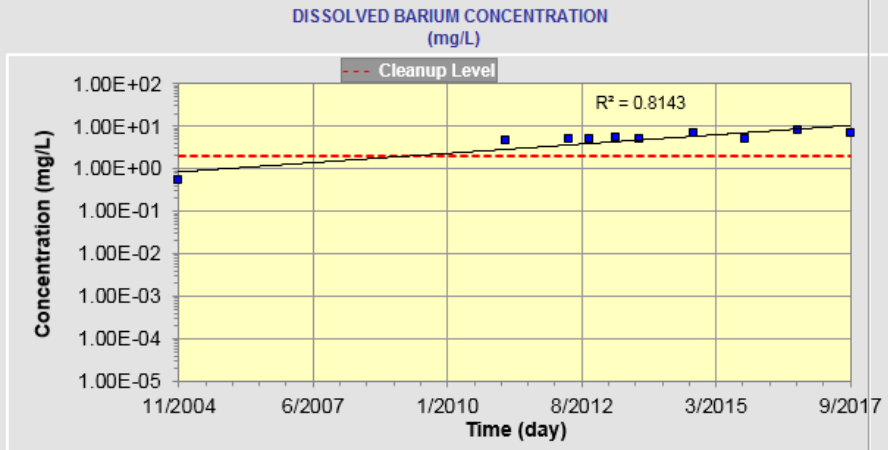
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

- Barium  (mg/L)
- Constituent B  (mg/L)
- Constituent C  (mg/L)
- Constituent D  (mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph  (yr)

Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup:

Can't Calc (+ve Trend)

Confidence Interval on Predicted Cleanup Date:  
(at least 3 data points needed to calculate confidence intervals)

90 % Confidence Interval

95 % Confidence Interval

Can't Calc (+ve Trend)  
(Lower Limit on Confidence Interval)

to Can't Calc (+ve Trend)  
(Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year):

(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

-1.96E-01

Return To Main Screen

New Site/Clear Screen

Paste Example Data Set

HELP

**APPENDIX C**  
**Updated Fate And Transport Modeling Results**

## **BIOSCREEN-AT Model Results Former Swift Site, Moultrie, Georgia Fate and Transport of Lead**

This section presents the modeled fate and transport for lead at the former Swift site, which was found above the screening level for groundwater in one or more wells. The screening level is based on the Groundwater Protection Standard (GWPS) of 0.015 mg/L. This section will focus on lead concentrations in groundwater since this form is subject to migration. The purpose of the following assessment is to evaluate the potential for lead detected above the screening levels to migrate beyond the current monitoring well network.

The maximum lead concentration detected in groundwater samples taken in September 2017 was at MW-15 (0.144 mg/L) located on the eastern perimeter of the site. The lead concentration at MW-15 was also used as the concentration at MW-18 for the BIOSCREEN-AT modeling, as MW-18 was not sampled in September 2017.

### **Lead Transport**

The potential for lead in groundwater to migrate from current locations to beyond the current monitoring well network was evaluated using the one-dimensional fate and transport model BIOSCREEN-AT. BIOSCREEN-AT is an enhanced version of BIOSCREEN (Newell et al., 1996) with an exact analytical solution for the transport of a contaminant (Karanovic et al., 2007). This model is based on Microsoft Excel software that solves the widely-used analytical Domenico equation (Karanovic et al, 2007). This equation describes transport of solute in groundwater (inorganic or organic, decaying or non-decaying). Features within the model designed to account for processes specific to natural attenuation of organic constituents were not used. The model simulates advection, adsorption and three dimensional dispersion of any dissolved constituent (inorganic or organic), and has the ability to simulate constant or decaying sources, and contaminant degradation using degradation constants. The use of BIOSCREEN AT was limited for this site-specific application to model only advection, dispersion, and adsorption onto porous media since lead is an elemental contaminant that does not naturally degrade. Processes such as degradation or other chemical/biological processes were not included in this model. The use of this model as described above is consistent with USEPA guidance (USEPA, 2007), where the USEPA's Center for Subsurface Modeling Support states that the Domenico-based models (such as BIOCHLOR, BIOSCREEN, FOOTPRINT, and REMChlor) in their current forms are reasonable for screening level tools.

Lead is modeled as being transported from the source area with the following assumptions.

- The modeled flow path is depicted from MW-18 through MW-09 and beyond.
- The highest detected lead concentration in MW-18 is representative of lead concentrations in the source area and is constant in concentration.
- An alternate scenario using MW-15 as a source area is also modeled.

The parameters selected for use in the model are presented in the following subsections.

### **Source Zone Width**

The source zone is defined as the two-dimensional cross sectional area that is perpendicular to the direction of groundwater flow and of known constituent concentration. Downgradient of this zone, the groundwater concentration is calculated by the model based on the dispersion, decay, adsorption, etc. that would occur in the flow field based on the value of the parameters used in the model. The modeled source is MW-18, with MW-15 also modeled as an alternate scenario. The planar two-dimensional source is represented by the highest detected lead concentration (MW-18 or MW-15). The cross section of the source is assumed to be approximately 100 feet wide around MW-18, or MW-15 in the alternate scenario.

### **Source Zone Thickness**

The source zone thickness was assumed to be 50 feet based on the boring log and potentiometric surface measurements of MW-26DDD (near the central portion of the site).

### **Seepage velocity**

There are two ways to input seepage velocity in this model – either as a final seepage velocity or as hydraulic conductivity, groundwater gradient, and effective porosity. The final seepage velocity method was used in this model exercise.

There are two water-bearing zones in the area of this model (Zone A and B). For this model, they are considered as one unit. The seepage velocity in Zone A has been calculated to be 65 ft/yr based on a horizontal gradient of 0.0086 ft/ft. Seepage velocities in Zone B have been calculated to be 32 – 91 ft/yr; based on a horizontal gradient of 0.0063 – 0.0178 ft/ft. Since the model requires a single seepage velocity, 65 ft/y was used. This value is consistent with reported values for both zones.

### **Dispersivity**

The dispersivities were calculated by the model based on an estimated plume length of 280 feet. The resulting values are longitudinal dispersivity (13.3 feet), the transverse dispersivity (1.3 feet), and vertical dispersivity of 0.13 feet. The model estimates these based on published guidelines for dispersivity (Newell et al., 1996).

### **Partitioning Coefficient**

BIOSCREEN is designed to use an organic Kd partitioning coefficient. This value is dependent on the fraction of organic carbon (foc) in the aquifer matrix, which is used to multiply the entered organic carbon partitioning coefficient (Koc) to get the organic Kd. It can also be used to model an inorganic metal constituent by entering a foc = 1.0 and an actual Kd for the Koc. With this adjustment, the appropriate actual metal Kd value is used in the adsorption formula. The Kd value for lead is dependent on pH. Both H<sup>+</sup> (which determines pH) and Pb<sup>2+</sup> are cations so there can be competition between them for adsorption sites on grain surfaces. This means the effective Kd depends on actual groundwater pH. Literature values report a range of Kd values from 5 L/kg to 100,000 L/kg (USEPA, 1996). Because the groundwater pH is below neutral, the median of literature values (15,849L/kg) was used as an initial input value and adjusted to calibrate the model to historic plume length and actual groundwater concentrations. Final Kd was dependent on length of time assumed since initial release.

### Source Concentration and Strength

For the initial calibration, the lead concentration used in the MW-18 area was 0.258 mg/L, based on the September 2015 total metals sampling result at MW-18. At MW-18, both total and dissolved metals samples were collected, as turbidity could not be reduced below 17.9 NTU. The dissolved metals result at MW-18 was 0.176 mg/L. The source was assumed to be constant over time. The lead concentration in the MW-15 area is 0.243 mg/L based on the September 2015 sampling result.

### Degradation and Chemical Transformations

No degradation of lead or chemical reactions was assumed in the model.

### Simulation Time

For calibration, the estimated earliest and latest possible times of release (based on the years of operation of the former Swift facility) were modeled. The actual first release date is unknown but should lie somewhere between these endpoints. The estimated earliest possible release date gives the plume 100 years to develop and results in a slower moving plume with a higher retardation factor for the aquifer. Use of these parameters would lead to predictions of slower future growth and more limited extent. The estimated latest possible release date gives the plume 44 years to develop and results in a faster moving plume with a lower retardation factor for the aquifer. Use of these parameters would lead to predictions of faster future growth and more extensive plume development. Since neither of these scenarios takes into account source area attenuation (both use a continuing source), both will generate very conservative (higher concentrations and greater extent) estimates of future plume development.

### Calibration Values

The following September 2015 concentrations were used to calibrate the Kd values for the 100 and 44 year historic plume development:

Well	Distance (Feet from Source Area)	September 2015 Lead Concentration (mg/L)
MW-18	0	0.258 (total)
MW-18	0	0.176 (dissolved)
MW-6	74	0.132
MW-13D	132	0.129
MW-9	194	0.0898
MW-20	224	0.00347

Screen captures of final input and output values for the 44 and 100 year historic plumes are attached.

The calibration using the MW-18 total metals value of 0.258 mg/L yielded unsatisfactory predicted values as compared to existing site values. Therefore, the calibration was performed again using the MW-18 dissolved metals value of 0.176 mg/L, which yielded a more satisfactory calibration when compared to site values. As mentioned above, the BIOSCREEN input pages

for both the MW-18 total and dissolved metals values, and associated model output pages showing predicted values, are attached.

For the MW-15 scenario, the source used was the MW-15 September 2017 lead concentration of 0.144 mg/L. Modeled travel times of 50 and 100 years were used for this scenario. The set-up for the MW-18 scenario was otherwise used, as there are no downgradient wells from MW-15 to use for calibration of the Kd values.

## **CONCLUSIONS**

### **Lead Model Results**

The results of this model of lead fate and transport from MW-18 toward MW-9 show that (for the modeled travel time of 100 additional years) the lead concentration would not exceed the GWPS of 0.015 mg/l within approximately 150 feet downgradient of the property boundary (350 feet from "source" monitoring well MW-18) (the plume would not reach the property boundary in the 45 year modeled time-frame). For the MW-15 source scenario, the lead concentration (for the modeled travel time of 100 additional years) would not exceed the GWPS of 0.015 mg/l approximately 400 feet from MW-15 (equivalent to approximately 400 feet beyond the eastern boundary along the prevalent groundwater flow direction).

The models represent a very conservative estimate and actual conditions will be lower, as the highest detected groundwater concentration was maintained as a constant source over the entire model timeframe, and because the Kd values used are very low when compared to guidance document values. Most importantly, as pH becomes more neutral over time and distance from the source, the mobility of lead will be diminished and corresponding Kd values would increase. This decreased mobility with increased pH is not able to be simulated by BIOSCREEN-AT. Further evidence of the lack of mobility of the COC plume to the east is the lack of exceedances of Type 1 RRS in new wells MW-28R and MW-32, installed to the east of North Main Street approximately 75 feet east of the property boundary, and well within the modeled extent of lead as shown in Figure C-1. Screen captures of model inputs and results are attached.



**Table C-1: Summary of Input Parameters for the BIOSCREEN-AT Model**

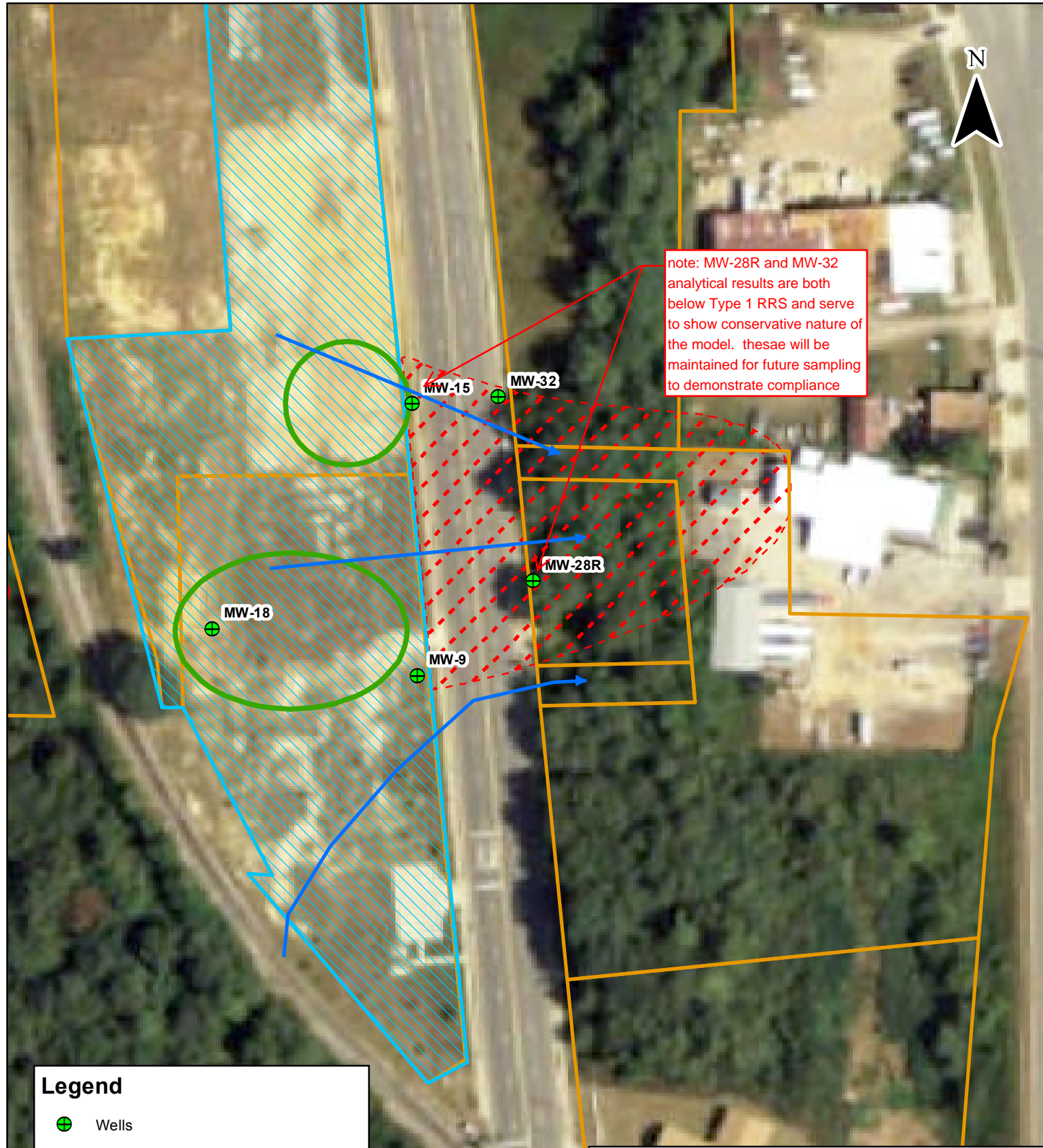
Parameter	Value	Units	Basis
<b>Hydrogeology</b>			
Seepage Velocity	65	ft/year	Derived from range of historical site values of hydraulic conductivity and gradient presented in CSR, CAERs and Status Reports
<b>DISPERSION</b>			
Estimated Plume Length	280	ft	Lead plume lengths presented in CAERs and VRP Status Reports
<b>ADSORPTION</b>			
Soil Bulk Density	1.7	kg/L	EPA default value (BIOSCREEN User's Manual, pg 21).
Partition Coefficient	5	L/kg	Allison, J. D. and T. L. Allison. Partition Coefficients For Metals in Surface Water, Soil, and Waste. USEPA, 2005
Fraction Organic Carbon	1	unitless	Conversion of organic Kd to Inorganic Kd
<b>BIODEGRADATION</b>			
1st Order Decay Coefficients	0	per year	No degradation of metals
<b>GENERAL</b>			
Modeled Area Length	300	feet	Assumption determined from site map
Modeled Area Width	200	feet	Assumption determined from site map
Simulation Time	45 and 100	years	Determined from range of site use history
<b>SOURCE DATA</b>			
Source Thickness in Saturated Zone	50	feet	Approximate thickness of aquifer based on site cross-sections as presented in 2010 CSR
Source Zones:	width feet	Concentration in mg/L	
1	0	0	Non-source part of model area
2	50	0	Non-source part of model area
3	100	0.144/0.243	Highest concentration at well MW-18 in 2017/MW-15 in 2015
4	50	0	Non-source part of model area
5	0	0	Non-source part of model area
Soluble Mass	Infinite	Kg	Infinite source

Prepared by: NTG 2/16/18  
 Checked by: JMQ 2/23/18

**BioScreen-AT Projection of  
Migration Potential in Groundwater  
(Conservative – No decay)**

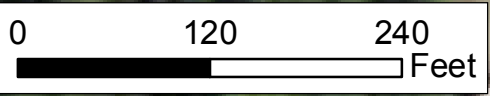


note: MW-28R and MW-32 analytical results are both below Type 1 RRS and serve to show conservative nature of the model. theseae will be maintained for future sampling to demonstrate compliance



**Legend**

- Wells
- Groundwater Flow
- Residual Source Area
- HSI Site
- Approximate Parcel
- Area of Potential Offsite Encroachment



**Former Swift & Company  
Meat Processing Plant  
Moultrie, Georgia Colquitt County**

**Approximate Extent of Lead Impact  
Projected by BioScreen-AT**

Prepared by:  
RD 12/13/2016

Checked by:  
DES 12/13/2016

Project Number:  
6122-14-0220

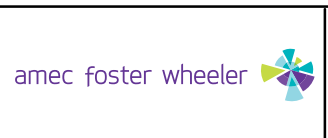


Figure  
Number:  
C1

### **Set-up and Calibration Using MW-18 Dissolved Metals Value**

# BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence

Version 1.4

Swift-Lead  
Moultrie, GA  
Run Name

## Data Input Instructions:

- 1. Enter value directly...or
  - 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).
- Variable\* → Data used directly in model.  
20 → Value calculated by model. (Don't enter any data).

### 1. HYDROGEOLOGY

Seepage Velocity*	Vs	65.0	(ft/yr)
<b>or</b>			
Hydraulic Conductivity	K	1.1E-02	(cm/sec)
Hydraulic Gradient	i	0.003	(ft/ft)
Porosity	n	0.3	(-)

### 2. DISPERSION

Longitudinal Dispersivity*	alpha x	13.3	(ft)
Transverse Dispersivity*	alpha y	1.3	(ft)
Vertical Dispersivity*	alpha z	0.1	(ft)
<b>or</b>			
Estimated Plume Length	Lp	280	(ft)

### 3. ADSORPTION

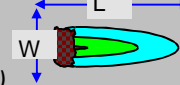
Retardation Factor*	R	20.9	(-)
<b>or</b>			
Soil Bulk Density	rho	1.5	(kg/l)
Partition Coefficient	Koc	3.98	(L/kg)
Fraction Organic Carbon	foc	1.0E+0	(-)

### 4. BIODEGRADATION

1st Order Decay Coeff*	lambda	0.0E+0	(per yr)
<b>or</b>			
Solute Half-Life	t-half	0.15	(year)
<b>or Instantaneous Reaction Model</b>			
Delta Oxygen*	DO	1.65	(mg/L)
Delta Nitrate*	NO3	0.7	(mg/L)
Observed Ferrous Iron*	Fe2+	16.6	(mg/L)
Delta Sulfate*	SO4	22.4	(mg/L)
Observed Methane*	CH4	6.6	(mg/L)

### 5. GENERAL

Modeled Area Length*	250	(ft)
Modeled Area Width*	200	(ft)
Simulation Time*	44	(yr)



### 6. SOURCE DATA

Source Thickness in Sat.Zone\* 50 (ft)

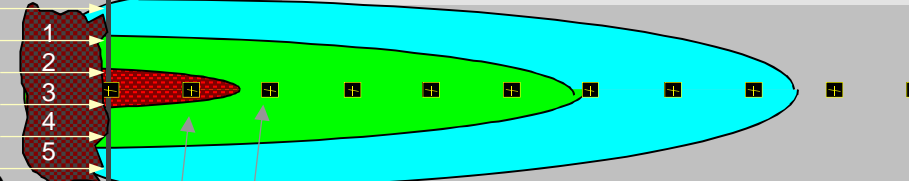
Source Zones:

Width* (ft)	Conc. (mg/L)*
10	0
20	0
100	0.176
20	0
10	0

#### Source Halflife (see Help):

20	>1000	(yr)
Inst. React.	1st Order	
Soluble Mass	2000	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells  
If No Data Leave Blank or Enter "0"

### 7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.258			.132		.129			.09	.003	
Dist. from Source (ft)	0	25	50	75	100	125	150	175	200	225	250

### 8. CHOOSE TYPE OF OUTPUT TO SEE:

**RUN CENTERLINE**

View Output

**RUN ARRAY**

View Output

**Help**

Recalculate This

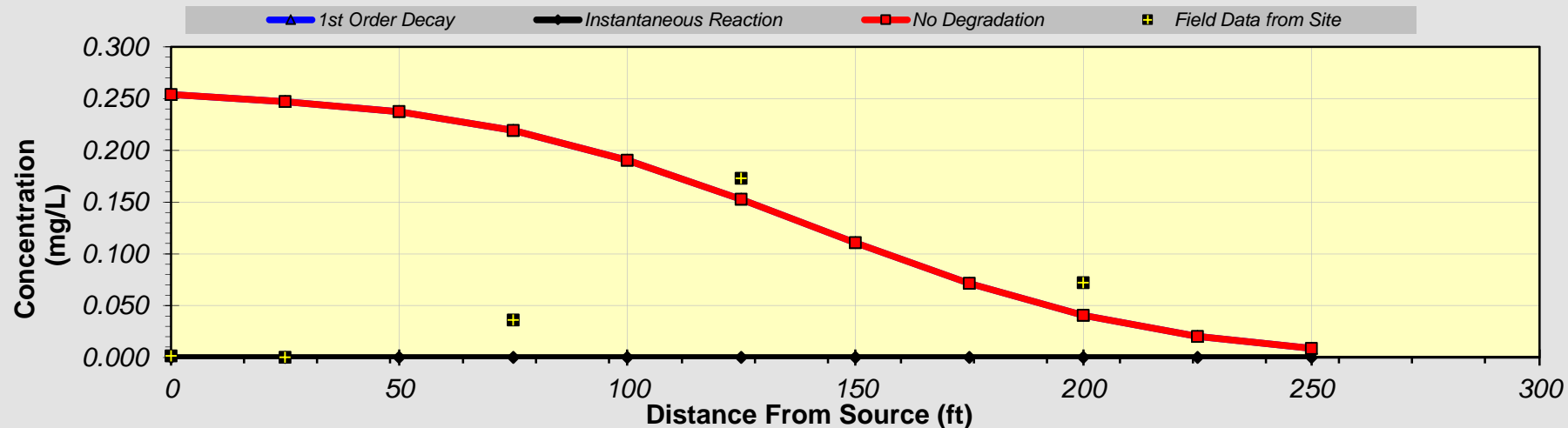
Paste Example Dataset

Restore Formulas for Vs,

### DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

*Distance from Source (ft)*

TYPE OF MODEL	0	25	50	75	100	125	150	175	200	225	250
No Degradation	0.254	0.247	0.237	0.219	0.190	0.153	0.111	0.071	0.041	0.020	0.009
1st Order Decay	0.254	0.247	0.237	0.219	0.190	0.153	0.111	0.071	0.041	0.020	0.009
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.001			0.036		0.173			0.072		



Calculate Animation

Time:

45 Years

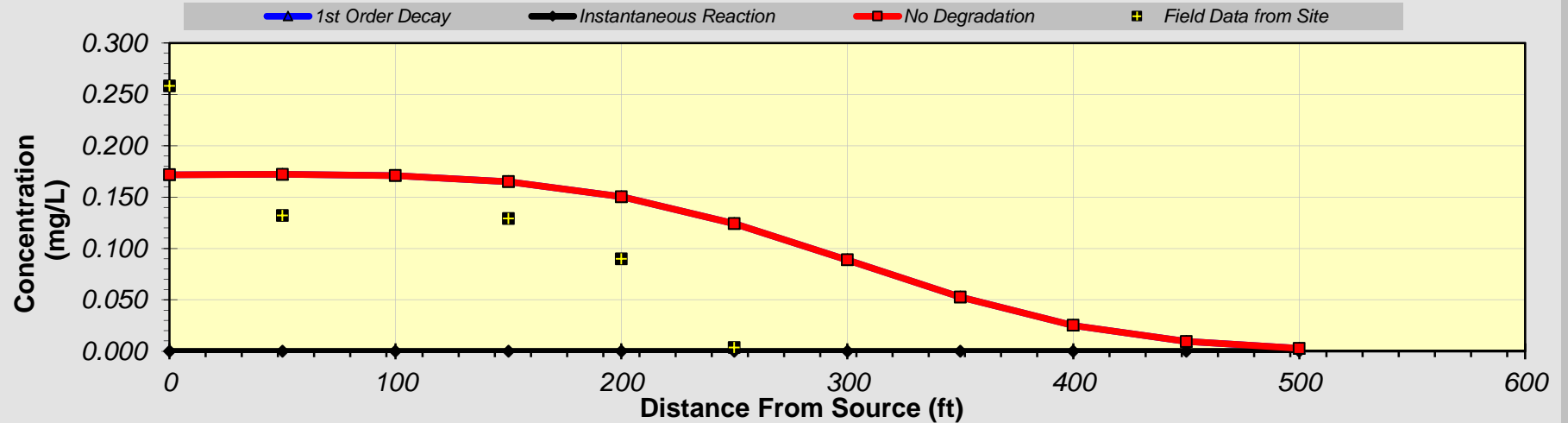
Return to

Recalculate This

### DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

*Distance from Source (ft)*

TYPE OF MODEL	0	50	100	150	200	250	300	350	400	450	500
No Degradation	0.172	0.172	0.171	0.165	0.150	0.124	0.089	0.053	0.025	0.009	0.003
1st Order Decay	0.172	0.172	0.171	0.165	0.150	0.124	0.089	0.053	0.025	0.009	0.003
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.258	0.132		0.129	0.090	0.003					



Calculate Animation

Time:

100 Years

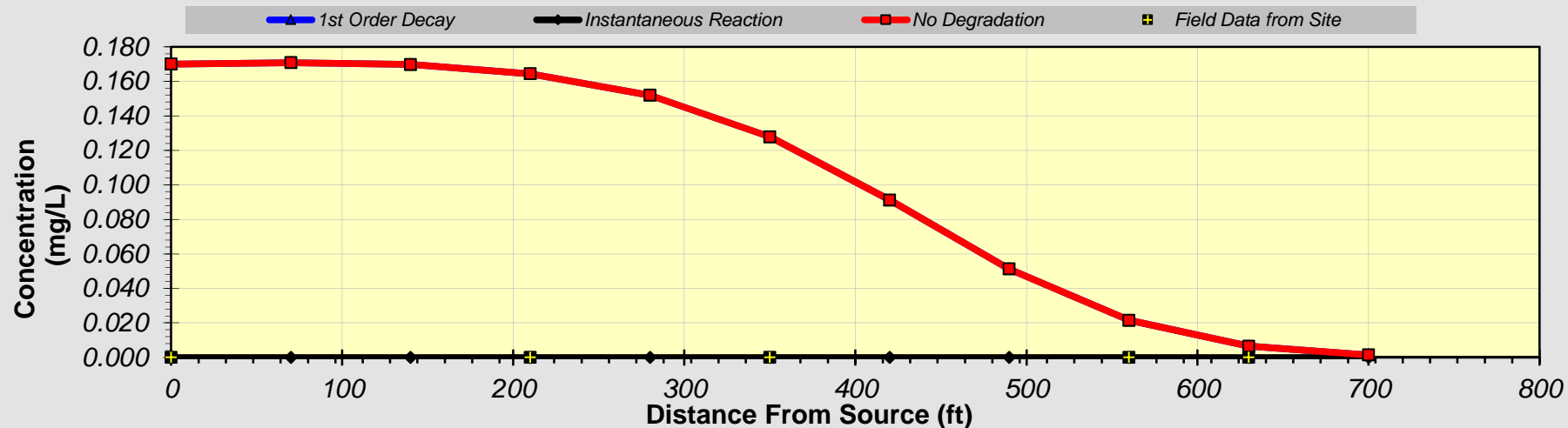
Return to

Recalculate This

### DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

*Distance from Source (ft)*

TYPE OF MODEL	0	70	140	210	280	350	420	490	560	630	700
No Degradation	0.170	0.171	0.170	0.164	0.152	0.128	0.091	0.051	0.022	0.007	0.001
1st Order Decay	0.170	0.171	0.170	0.164	0.152	0.128	0.091	0.051	0.022	0.007	0.001
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site											



Calculate Animation

Time:

144 Years

Return to

Recalculate This

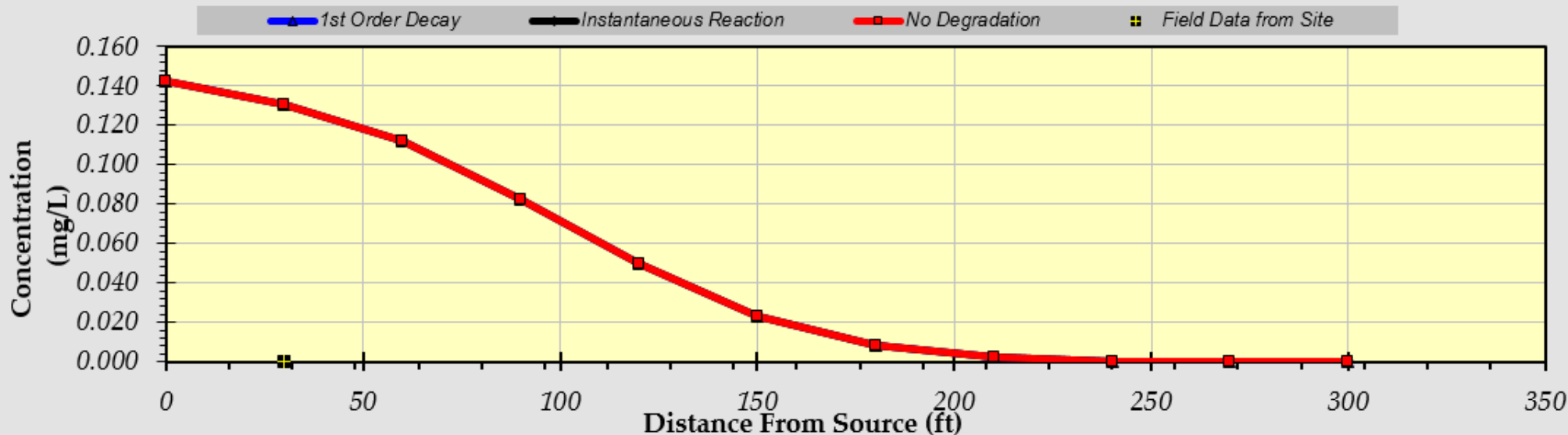


**Predicted Values of MW-18 Scenario; 45 and 100 Years Modeled Time**

### DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

*Distance from Source (ft)*

TYPE OF MODEL	0	30	60	90	120	150	180	210	240	270	300
No Degradation	0.143	0.130	0.112	0.083	0.050	0.023	0.008	0.002	0.000	0.000	0.000
1st Order Decay	0.143	0.130	0.112	0.083	0.050	0.023	0.008	0.002	0.000	0.000	0.000
Inst. Reaction	0.143	0.130	0.112	0.083	0.050	0.023	0.008	0.002	0.000	0.000	0.000
Field Data from Site											



Calculate Animation

Time:

45 Years

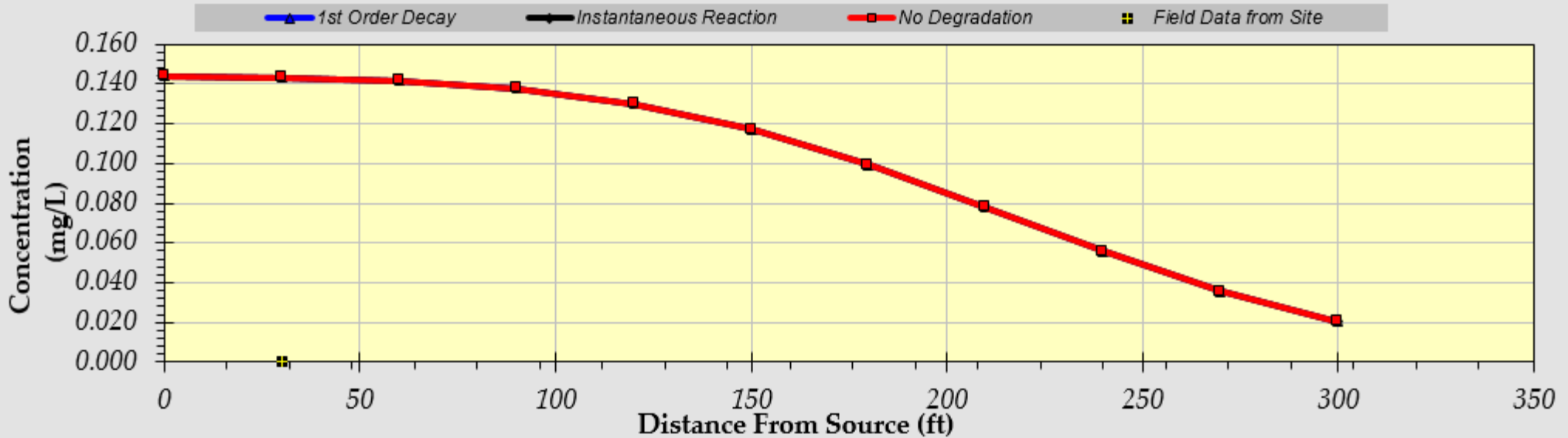
Return to

Recalculate This

**DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)**

*Distance from Source (ft)*

<b>TYPE OF MODEL</b>	0	30	60	90	120	150	180	210	240	270	300
<b>No Degradation</b>	0.144	0.143	0.141	0.138	0.130	0.117	0.099	0.078	0.056	0.036	0.020
<b>1st Order Decay</b>	0.144	0.143	0.141	0.138	0.130	0.117	0.099	0.078	0.056	0.036	0.020
<b>Inst. Reaction</b>	0.144	0.143	0.141	0.138	0.130	0.117	0.099	0.078	0.056	0.036	0.020
<i>Field Data from Site</i>											



**Calculate Animation**

**Time:**

100 Years

**Return to Input**

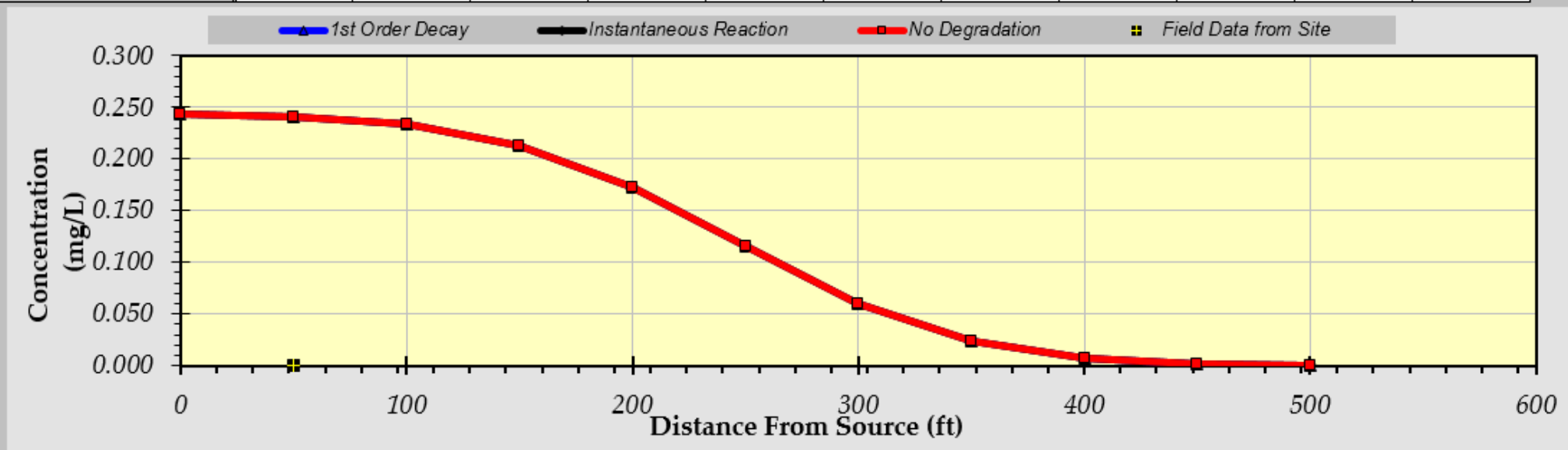
**Recalculate This Sheet**

**Predicted Values of MW-15 Scenario; 100 Years Modeled Time**

**DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)**

*Distance from Source (ft)*

<b>TYPE OF MODEL</b>	0	50	100	150	200	250	300	350	400	450	500
<b>No Degradation</b>	0.243	0.241	0.234	0.213	0.172	0.115	0.061	0.024	0.007	0.001	0.000
<b>1st Order Decay</b>	0.243	0.241	0.234	0.213	0.172	0.115	0.061	0.024	0.007	0.001	0.000
<b>Inst. Reaction</b>	0.243	0.241	0.234	0.213	0.172	0.115	0.061	0.024	0.007	0.001	0.000
<i>Field Data from Site</i>											



**Calculate Animation**

**Time:**

100 Years

**Return to**

**Recalculate This**

**APPENDIX D**  
**UNIFORM ENVIRONMENTAL COVENANTS**

After Recording Return to:

City of Moultrie  
P.O. Box 3368  
Moultrie, Georgia 31776

CROSS-REFERENCE:

Deed Book: 675  
Page: 591

### **Environmental Covenant**

This instrument is an Environmental Covenant executed pursuant to the Georgia Uniform Environmental Covenants Act, OCGA § 44-16-1, *et seq.* This Environmental Covenant subjects the Property identified below to the activity and/or use limitations specified in this document. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded in accordance with OCGA § 44-16-8(a).

**Fee Owner of Property/Grantor:** City of Moultrie  
P.O. Box 3368  
Moultrie, Georgia 31776

**Grantee/Holder:** Conagra Brands, Inc.  
Attn: Legal Department  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

**Grantee/Entity with  
express power to enforce:** State of Georgia  
Department of Natural Resources  
Environmental Protection Division  
2 Martin Luther King Jr. Drive, SE  
Suite 1456 East Tower  
Atlanta, GA 30334

**Parties with interest in the Property:** State Highway Department of Georgia  
Lloyd Baxter  
Municipal Electric Authority of Georgia  
Municipal Gas Authority of Georgia  
South Georgia Governmental Services Authority  
Georgia & Florida Railway LLC

**Property:**

The property subject to this Environmental Covenant is the City of Moultrie property, located on 1189 North Main Street, Colquitt County, Georgia (hereinafter "Property"). This tract of land was conveyed on March 6, 2000 from Major N. Adderton Sr. to City of Moultrie recorded in Deed Book 675, Page 591, Colquitt County Records. The Property is located in Land Lot 245 of the 8<sup>th</sup> District of Colquitt County, Georgia. The Property is approximately 2.53 acres and zoned general industrial. A complete legal description of the Property is attached as Exhibit A and a map of the Property is attached as Exhibit B.

**Tax Parcel Number(s):**

Tax ID parcel number M022A 005, Colquitt County, Georgia

**Name and Location of Administrative Records:**

The corrective action at the Property that is the subject of this Environmental Covenant is described in Administrative Records that can be found in the case file/records for HSI Site 10509 at:

Georgia Environmental Protection Division  
Response and Remediation Program  
Land Branch Office  
2 MLK Jr. Drive, SE, Suite 1054 East Tower  
Atlanta, GA 30334  
M-F 8:00 AM to 4:30 PM excluding state holidays

**Description of Contamination and Corrective Action:**

**This Property has been listed on the state's hazardous site inventory and has been designated as needing corrective action due to the presence of hazardous wastes, hazardous constituents, or hazardous substances regulated under state law. Contact the property owner or the Georgia Environmental Protection Division for further information concerning this Property. This notice is provided in compliance with the Georgia Hazardous Site Response Act.**

This Declaration of Covenant is made pursuant to the Georgia Uniform Environmental Covenants Act, O.C.G.A. § 44-16-1 *et seq.* by CPS, its successors and assigns, Conagra Brands, Inc., and EPD, its successors and assigns. This Environmental Covenant is required because a release of arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate occurred on the Property. Arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate are "regulated substances" as defined under the Georgia Hazardous Site Response Act, O.C.G.A. § 12-8-90 *et seq.*, and the rules promulgated thereunder (hereinafter "HSRA" and "Rules", respectively). The Corrective Action consists of monitored natural attenuation of these regulated substances in groundwater, and establishment of institutional controls in the form of this Uniform Environmental Covenant to ensure future control of the Site related to exposure pathways and recording of an affidavit providing notification that the Property has been listed on the state's hazardous site inventory to protect human health and the environment. This affidavit has already been recorded.



Grantor, City of Moultrie, hereby binds Grantor, its successors and assigns to the activity and use restriction(s) for the Property identified herein and grants such other rights under this Environmental Covenant in favor of Conagra Brands, Inc. and EPD. EPD shall have full right of enforcement of the rights conveyed under this Environmental Covenant pursuant to HSRA, O.C.G.A. § 12-8-90 *et seq.*, and the rules promulgated thereunder. Failure to timely enforce compliance with this Environmental Covenant or the use or activity limitations contained herein by any person shall not bar subsequent enforcement by such person and shall not be deemed a waiver of the person's right to take action to enforce any non-compliance. Nothing in this Environmental Covenant shall restrict EPD from exercising any authority under applicable law.

City of Moultrie makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, pursuant to O.C.G.A. § 44-16-5(a); is perpetual, unless modified or terminated pursuant to the terms of this Covenant pursuant to O.C.G.A. § 44-16-9 and 10; and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereinafter "Owner"). Should a transfer or sale of the Property occur before such time as this Environmental Covenant has been amended or revoked then said Environmental Covenant shall be binding on the transferee(s) or purchaser(s).

The Environmental Covenant shall inure to the benefit of Conagra Brands, Inc., EPD, City of Moultrie and their respective successors and assigns and shall be enforceable by the EPD Director or his agents or assigns, Conagra Brands, Inc. or its successors and assigns, City of Moultrie or its successors and assigns, and other party(ies) as provided for in O.C.G.A. § 44-16-11 in a court of competent jurisdiction.

**Activity and/or Use Limitation(s)**

1. Registry. Pursuant to O.C.G.A. § 44-16-12, this Environmental Covenant and any amendment or termination thereof, may be contained in EPD's registry for environmental covenants.
2. Notice. The Owner of the Property must give thirty (30) day advance written notice to EPD of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Corrective Action. The Owner of the Property must also give thirty (30) day advance written notice to EPD of the Owner's intent to change the use of the Property, apply for building permit(s), or propose any site work that would affect the Property.
3. Notice of Limitation in Future Conveyances. Each instrument hereafter conveying an interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of the Environmental Covenant.
4. Monitoring. Conagra Brands, Inc. shall perform groundwater monitoring as required by the Compliance Status Report approved by EPD.

5. Periodic Reporting. Annually, each January 31 following the recording of this Environmental Covenant, Owner shall submit to EPD an Annual Report in the form attached hereto as Exhibit C, certifying that the Activity and Use Limitations in the Environmental Covenant are being abided by.
6. Activity and Use Limitation(s). The Property shall be used only for non-residential uses, as defined in Section 391-3-19-.02 of the Rules and defined in and allowed under the Colquitt County's zoning regulations as of the date of this Environmental Covenant. Any residential use on the Property shall be prohibited. Any activity on the Property that may result in the release or exposure to the regulated substances that were contained as part of the Corrective Action, or create a new exposure pathway, is prohibited.
7. Groundwater Limitation. The use or extraction of groundwater beneath the Property for drinking water or for any other non-remedial purposes shall be prohibited.
8. Permanent Markers. Permanent markers on each side of the Property shall be installed and maintained that delineate the restricted area as specified in Section 391-3-19-.07(10) of the Rules. Disturbance or removal of such markers is prohibited.
9. Right of Access. In addition to any rights already possessed by EPD and/or Conagra Brands, Inc., the Owner shall allow authorized representatives of EPD and/or Conagra Brands, Inc. the right to enter the Property at reasonable times for the purpose of evaluating the Corrective Action; to take samples, to inspect the Corrective Action conducted at the Property, to determine compliance with this Environmental Covenant, and to inspect records that are related to the Corrective Action.
10. Recording of Environmental Covenant and Proof of Notification. Within thirty (30) days after the date of the Director's signature, the Owner shall file this Environmental Covenant with the Recorders of Deeds for each County in which the Property is located, and send a file stamped copy of this Environmental Covenant to EPD within thirty (30) days of recording. Within that time period, the Owner shall also send a file-stamped copy to each of the following: (1) Conagra Brands, Inc., (2) each person holding a recorded interest in the Property subject to the covenant, (3) each person in possession of the real property subject to the covenant, (4) each municipality, county, consolidated government, or other unit of local government in which real property subject to the covenant is located, and (5) each owner in fee simple whose property abuts the property subject to the Environmental Covenant.
11. Termination or Modification. The Environmental Covenant shall remain in full force and effect in accordance with O.C.G.A. § 44-5-60, unless and until the Director determines that the Property is in compliance with the Type 1, 2, 3, or 4 Risk Reduction Standards, as defined in Georgia Rules of Hazardous Site Response (Rules) Section 391-3-19-.07, whereupon the Environmental Covenant may be amended or revoked in accordance with Section 391-3-19-08(7) of the Rules and O.C.G.A. § 44-16-1 *et seq.*
12. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.
13. No EPD Interest in Property Created. This Environmental Covenant does not in any way create any interest by EPD in the Property that is subject to the Environmental Covenant. Furthermore, the act

of approving this Environmental Covenant does not in any way create any interest by EPD in the Property in accordance with O.C.G.A. § 44-16-3(b).

**Representations and Warranties.**

Grantor hereby represents and warrants to the other signatories hereto:

- a) That the Grantor has the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder;
- b) That the Grantor is the sole owner of the Property and holds fee simple title which is free, clear and unencumbered;
- c) That the Grantor has identified all other parties that hold any interest (e.g., encumbrance) in the Property and notified such parties of the Grantor's intention to enter into this Environmental Covenant;
- d) That this Environmental Covenant will not materially violate, contravene, or constitute a material default under any other agreement, document or instrument to which Grantor is a party, by which Grantor may be bound or affected;
- e) That the Grantor has served each of the people or entities referenced in Activity 10 above with an identical copy of this Environmental Covenant in accordance with O.C.G.A. § 44-16-4(d).
- f) That this Environmental Covenant will not materially violate or contravene any zoning law or other law regulating use of the Property; and
- g) That this Environmental Covenant does not authorize a use of the Property that is otherwise prohibited by a recorded instrument that has priority over the Environmental Covenant.

**Notices.**

Any document or communication required to be sent pursuant to the terms of this Environmental Covenant shall be sent to the following persons:

Georgia Environmental Protection Division  
Branch Chief  
Land Protection Branch  
2 Martin Luther King Jr. Drive SE  
Suite 1054 East Tower  
Atlanta, GA 30334

Conagra Brands, Inc.  
c/o Trevor Foster  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

Grantor has caused this Environmental Covenant to be executed pursuant to The Georgia Uniform Environmental Covenants Act, on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Signed, sealed, and delivered in the presence of:

**For the Grantor:**

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Name of Grantor *(Print)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Grantor's Authorized Representative *(Signature)* (Seal)

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

My Commission Expires:\_\_\_\_\_

Dated:\_\_\_\_\_

(NOTARY SEAL)

Signed, sealed, and delivered in the presence of:

**For the State of Georgia  
Environmental Protection Division:**

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
*(Signature)* (Seal)

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

Richard E. Dunn  
Director

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

Dated:\_\_\_\_\_

(NOTARY SEAL)

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

Signed, sealed, and delivered in the presence  
of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

**For the Grantee/Holder:**

\_\_\_\_\_  
Name of Grantee/Holder *(Print)*

\_\_\_\_\_  
Grantee/Holder's Authorized Representative  
*(Signature)* (Seal)

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

Dated:\_\_\_\_\_  
(NOTARY SEAL)

Exhibit A  
Legal Description

All that tract or parcel of land situate, lying and being in the County of COLQUITT, State of Georgia, and described as follows:

All that tract or parcel of land situate, lying and being in Land Lot 245 in the 8<sup>th</sup> Land District of Colquitt County, Georgia, and being in the City of Moultrie and being more particularly described as beginning at a point on the West margin of North Main Street with the South margin of the right-of-way of the Georgia Northern Railroad and run thence North along the West margin of North Main Street 668 feet to a point which is on line with what was the party wall separating the three story level of the old Swift and Company building with the two story level, run thence in a southwesterly direction along the location of said party wall 172 feet to the East margin of a spur track or line, thence run in a southerly direction along the East margin of said spur line 222 feet to a point 10 feet South of the old Cooper Shop, thence run in a westerly direction 123 feet to the East margin of the Georgia Northern Railroad right-of-way, thence run in a southeasterly direction along the East margin of the Georgia Northern Railroad right-of-way 545 feet to the West margin of North Main Street to the point of beginning.

Exhibit B  
Site Map  
City of Moultrie Property – M022A 005



Exhibit C  
Annual Property Evaluation Form

**Swift Meat Processing Plant, HSI Site No. 10509**

TYPE	No.	CRITERIA RESPONSE	YES	NO
Land Use	1	Does this former HSRA site meet the definition of non-residential property as defined in HSRA Rule 391-3-19.02(2)?  “Non-residential property means any property or portion of a property not currently being used for human habitation or for other purposes with a similar potential for human exposure, at which activities have been or are being conducted that can be categorized in one of the 1987 Standard Industrial Classification major group...”		
	1a	If no to 1, provide a written explanation (attached) to the EPD within 30 days.		
Exposure	2	Are site workers expected to be directly exposed to soils that do not meet residential standards at this HSRA site in excess of 250 days per year?		
	2a	If yes to 2, are these same site workers expected to be exposed to soils at this HSRA site in excess of 25 years throughout their career?		
Erosion	3	Is there evidence of soil erosion in the remedial areas of the property?		
	3a	If yes to 3, is there evidence of erosion of these soils to off-property areas?		
	3b	If yes to 3a, are corrective measures being taken?		
	3c	If yes to 2, 3, 3a, and/or 3b, provide written explanation (attached) to the EPD within 30 days.		
Property Instruments	4	Do all leases or other property instruments for the site have the applicable deed notice language inserted into them.		
	4a	If no to 4, provide a written explanation (attached) to the EPD within 30 days.		
Inspection	5	Date of inspection:		
	5a	Name of inspector:		
	5b	Photographs showing current land use (attached)		

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
NAME (Please type or print)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE



After Recording Return to:

Crop Production Services, Inc.  
P.O. Box 487  
Moultrie, GA 31776

CROSS-REFERENCE:

Deed Book: 1276  
Page: 0414

### **Environmental Covenant**

This instrument is an Environmental Covenant executed pursuant to the Georgia Uniform Environmental Covenants Act, OCGA § 44-16-1, *et seq.* This Environmental Covenant subjects the Property identified below to the activity and/or use limitations specified in this document. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded in accordance with OCGA § 44-16-8(a).

**Fee Owner of Property/Grantor:**

Crop Production Services, Inc.  
P.O. Box 487  
Moultrie, GA 31776

**Grantee/Holder:**

Conagra Brands, Inc.  
Attn: Legal Department  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

**Grantee/Entity with  
express power to enforce:**

State of Georgia  
Department of Natural Resources  
Environmental Protection Division  
2 Martin Luther King Jr. Drive, SE  
Suite 1456 East Tower  
Atlanta, GA 30334

**Parties with interest in the Property:**

City of Moultrie, Georgia  
State Highway Department of Georgia  
Lloyd Baxter  
Municipal Electric Authority of Georgia

Municipal Gas Authority of Georgia  
Georgia & Florida Railway LLC  
South Georgia Governmental Services Authority

**Property:**

The property subject to this Environmental Covenant is located on 1189 North Main Street, Colquitt County, Georgia and is presently owned by Crop Production Services, Inc. (hereinafter “CPS”) (the “Property”). This Property was conveyed on August 31, 2016 from the Estate of Brenda Stallcup Tumlin to CPS, recorded in Deed Book 1276, Page 0414, Colquitt County Records. The Property is located in Land Lot 245 of the 8<sup>th</sup> District of Colquitt County, Georgia. The Property is approximately 1.42 acres, and sits in both general industrial and light and service industrial districts. A complete legal description of the Property is attached as Exhibit A and a map of the Property is attached as Exhibit B.

**Tax Parcel Number(s):**

Tax ID parcel number M022A 004A, Colquitt County, Georgia.

**Name and Location of Administrative Records:**

The corrective action at the Property that is the subject of this Environmental Covenant is described in Administrative Records that can be found in the case file/records for HSI Site 10509 at:

Georgia Environmental Protection Division  
Response and Remediation Program  
Land Branch Office  
2 MLK Jr. Drive, SE, Suite 1054 East Tower  
Atlanta, GA 30334  
M-F 8:00 AM to 4:30 PM excluding state holidays

**Description of Contamination and Corrective Action:**

**This Property has been listed on the state's hazardous site inventory and has been designated as needing corrective action due to the presence of hazardous wastes, hazardous constituents, or hazardous substances regulated under state law. Contact the property owner or the Georgia Environmental Protection Division for further information concerning this Property. This notice is provided in compliance with the Georgia Hazardous Site Response Act.**

This Declaration of Covenant is made pursuant to the Georgia Uniform Environmental Covenants Act, O.C.G.A. § 44-16-1 *et seq.* by CPS, its successors and assigns, Conagra Brands, Inc., and EPD, its successors and assigns. This Environmental Covenant is required because a release of arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate occurred on the Property. Arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate are “regulated substances” as defined under the Georgia Hazardous Site Response Act, O.C.G.A. § 12-8-90 *et seq.*, and the rules promulgated thereunder (hereinafter “HSRA” and “Rules”, respectively). The Corrective Action consists of monitored natural attenuation of these regulated substances in groundwater, and establishment of institutional controls in the form of this Uniform Environmental Covenant to ensure

future control of the Site related to exposure pathways and recording of an affidavit providing notification that the Property has been listed on the state's hazardous site inventory to protect human health and the environment. This affidavit has already been recorded.

Grantor, CPS, hereby binds Grantor, its successors and assigns to the activity and use restriction(s) for the Property identified herein and grants such other rights under this Environmental Covenant in favor of Conagra Brands, Inc. and EPD. EPD shall have full right of enforcement of the rights conveyed under this Environmental Covenant pursuant to HSRA, O.C.G.A. § 12-8-90 *et seq.*, and the rules promulgated thereunder. Failure to timely enforce compliance with this Environmental Covenant or the use or activity limitations contained herein by any person shall not bar subsequent enforcement by such person and shall not be deemed a waiver of the person's right to take action to enforce any non-compliance. Nothing in this Environmental Covenant shall restrict EPD from exercising any authority under applicable law.

CPS makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, pursuant to O.C.G.A. § 44-16-5(a); is perpetual, unless modified or terminated pursuant to the terms of this Covenant pursuant to O.C.G.A. § 44-16-9 and 10; and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereinafter "Owner"). Should a transfer or sale of the Property occur before such time as this Environmental Covenant has been amended or revoked then said Environmental Covenant shall be binding on the transferee(s) or purchaser(s).

The Environmental Covenant shall inure to the benefit of Conagra Brands, Inc., EPD, CPS and their respective successors and assigns and shall be enforceable by the EPD Director or his agents or assigns, Conagra Brands, Inc. or its successors and assigns, CPS or its successors and assigns, and other party(ies) as provided for in O.C.G.A. § 44-16-11 in a court of competent jurisdiction.

### **Activity and/or Use Limitation(s)**

1. **Registry.** Pursuant to O.C.G.A. § 44-16-12, this Environmental Covenant and any amendment or termination thereof, may be contained in EPD's registry for environmental covenants.
2. **Notice.** The Owner of the Property must give thirty (30) day advance written notice to EPD of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Corrective Action. The Owner of the Property must also give thirty (30) day advance written notice to EPD of the Owner's intent to change the use of the Property, apply for building permit(s), or propose any site work that would affect the Property.
3. **Notice of Limitation in Future Conveyances.** Each instrument hereafter conveying an interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of the Environmental Covenant.

4. Monitoring. Conagra Brands, Inc. shall perform groundwater monitoring as required by the Compliance Status Report approved by EPD.
5. Periodic Reporting. Annually, each January 31 following the recording of this Environmental Covenant, Owner shall submit to EPD an Annual Report in the form attached hereto as Exhibit C, certifying that the Activity and Use Limitations in the Environmental Covenant are being abided by.
6. Activity and Use Limitation(s). The Property shall be used only for non-residential uses, as defined in Section 391-3-19-.02 of the Rules and defined in and allowed under the Colquitt County's zoning regulations as of the date of this Environmental Covenant. Any residential use on the Property shall be prohibited. Any activity on the Property that may result in the release or exposure to the regulated substances that were contained as part of the Corrective Action, or create a new exposure pathway, is prohibited.
7. Groundwater Limitation. The use or extraction of groundwater beneath the Property for drinking water or for any other non-remedial purposes shall be prohibited.
8. Permanent Markers. Permanent markers on each side of the Property shall be installed and maintained that delineate the restricted area as specified in Section 391-3-19-.07(10) of the Rules. Disturbance or removal of such markers is prohibited.
9. Right of Access. In addition to any rights already possessed by EPD and/or the Conagra Brands, Inc., the Owner shall allow authorized representatives of EPD and/or Conagra Brands, Inc. the right to enter the Property at reasonable times for the purpose of evaluating the Corrective Action; to take samples, to inspect the Corrective Action conducted at the Property, to determine compliance with this Environmental Covenant, and to inspect records that are related to the Corrective Action.
10. Recording of Environmental Covenant and Proof of Notification. Within thirty (30) days after the date of the Director's signature, the Owner shall file this Environmental Covenant with the Records of Deeds for each County in which the Property is located, and send a file stamped copy of this Environmental Covenant to EPD within thirty (30) days of recording. Within that time period, the Owner shall also send a file-stamped copy to each of the following: (1) Conagra Brands, Inc., (2) each person holding a recorded interest in the Property subject to the covenant, (3) each person in possession of the real property subject to the covenant, (4) each municipality, county, consolidated government, or other unit of local government in which real property subject to the covenant is located, and (5) each owner in fee simple whose property abuts the property subject to the Environmental Covenant.
11. Termination or Modification. The Environmental Covenant shall remain in full force and effect in accordance with O.C.G.A. § 44-5-60, unless and until the Director determines that the Property is in compliance with the Type 1, 2, 3, or 4 Risk Reduction Standards, as defined in Georgia Rules of Hazardous Site Response (Rules) Section 391-3-19-.07, whereupon the Environmental Covenant may be amended or revoked in accordance with Section 391-3-19-08(7) of the Rules and O.C.G.A. § 44-16-1 *et seq.*
12. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

13. No EPD Interest in Property Created. This Environmental Covenant does not in any way create any interest by EPD in the Property that is subject to the Environmental Covenant. Furthermore, the act of approving this Environmental Covenant does not in any way create any interest by EPD in the Property in accordance with O.C.G.A. § 44-16-3(b).

**Representations and Warranties.**

Grantor hereby represents and warrants to the other signatories hereto:

- a) That the Grantor has the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder;
- b) That the Grantor is the sole owner of the Property and holds fee simple title which is free, clear and unencumbered;
- c) That the Grantor has identified all other parties that hold any interest (e.g., encumbrance) in the Property and notified such parties of the Grantor's intention to enter into this Environmental Covenant;
- d) That this Environmental Covenant will not materially violate, contravene, or constitute a material default under any other agreement, document or instrument to which Grantor is a party, by which Grantor may be bound or affected;
- e) That the Grantor has served each of the people or entities referenced in Activity 10 above with an identical copy of this Environmental Covenant in accordance with O.C.G.A. § 44-16-4(d).
- f) That this Environmental Covenant will not materially violate or contravene any zoning law or other law regulating use of the Property; and
- g) That this Environmental Covenant does not authorize a use of the Property that is otherwise prohibited by a recorded instrument that has priority over the Environmental Covenant.

**Notices.**

Any document or communication required to be sent pursuant to the terms of this Environmental Covenant shall be sent to the following persons:

Georgia Environmental Protection Division  
Branch Chief  
Land Protection Branch  
2 Martin Luther King Jr. Drive SE  
Suite 1054 East Tower  
Atlanta, GA 30334

Conagra Brands, Inc.  
c/o Trevor Foster  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

Grantor has caused this Environmental Covenant to be executed pursuant to The Georgia Uniform Environmental Covenants Act, on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Signed, sealed, and delivered in the presence

**For the Grantor:**

of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

\_\_\_\_\_  
Name of Grantor *(Print)*

\_\_\_\_\_  
Grantor's Authorized Representative *(Signature)*

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

Dated:\_\_\_\_\_

(NOTARY SEAL)

(Seal)

Signed, sealed, and delivered in the presence  
of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

**For the State of Georgia  
Environmental Protection Division:**

\_\_\_\_\_  
*(Signature)*

Richard E. Dunn  
Director

Dated:\_\_\_\_\_

(NOTARY SEAL)

(Seal)

Signed, sealed, and delivered in the presence  
of:

**For the Grantee/Holder:**

\_\_\_\_\_

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

\_\_\_\_\_  
Name of Grantee/Holder *(Print)*

\_\_\_\_\_  
Grantee/Holder's Authorized Representative  
*(Signature)*

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

Dated:\_\_\_\_\_

(NOTARY SEAL)

(Seal)

Exhibit A  
Legal Description

All that tract or parcel of land situate, lying and being in Land Lot 245, 8<sup>th</sup> Land District, Colquitt County, Georgia and being 1.42 acres in Tract 3 as shown by that Plat of Survey for Crop Production Services, dated June 28, 2016, recorded in Plat Book 44, Page 184A, Colquitt County Records.



Exhibit B  
Site Map  
CPS Property -M022A 004A

 **qPublic.net**™ Colquitt County, GA



Exhibit C  
Annual Property Evaluation Form

**Swift Meat Processing Plant, HSI Site No. 10509**

TYPE	No.	CRITERIA RESPONSE	YES	NO
Land Use	1	Does this former HSRA site meet the definition of non-residential property as defined in HSRA Rule 391-3-19.02(2)?  “Non-residential property means any property or portion of a property not currently being used for human habitation or for other purposes with a similar potential for human exposure, at which activities have been or are being conducted that can be categorized in one of the 1987 Standard Industrial Classification major group...”		
	1a	If no to 1, provide a written explanation (attached) to the EPD within 30 days.		
Exposure	2	Are site workers expected to be directly exposed to soils that do not meet residential standards at this HSRA site in excess of 250 days per year?		
	2a	If yes to 2, are these same site workers expected to be exposed to soils at this HSRA site in excess of 25 years throughout their career?		
Erosion	3	Is there evidence of soil erosion in the remedial areas of the property?		
	3a	If yes to 3, is there evidence of erosion of these soils to off-property areas?		
	3b	If yes to 3a, are corrective measures being taken?		
	3c	If yes to 2, 3, 3a, and/or 3b, provide written explanation (attached) to the EPD within 30 days.		
Property Instruments	4	Do all leases or other property instruments for the site have the applicable deed notice language inserted into them.		
	4a	If no to 4, provide a written explanation (attached) to the EPD within 30 days.		
Inspection	5	Date of inspection:		
	5a	Name of inspector:		
	5b	Photographs showing current land use (attached)		

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
NAME (Please type or print)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

After Recording Return to:

The Estate of Brenda Stallcup Tumlin  
c/o William G. Fallin  
Fallin & McIntosh, PC  
39 North Main Street  
Moultrie, GA 31768

CROSS-REFERENCE:

Deed Book: 1160  
Page: 33

### **Environmental Covenant**

This instrument is an Environmental Covenant executed pursuant to the Georgia Uniform Environmental Covenants Act, OCGA § 44-16-1, *et seq.* This Environmental Covenant subjects the Property identified below to the activity and/or use limitations specified in this document. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded in accordance with OCGA § 44-16-8(a).

**Fee Owner of Property/Grantor:**

The Estate of Brenda Stallcup Tumlin  
c/o William G. Fallin  
Fallin & McIntosh, PC  
39 North Main Street  
Moultrie, GA 31768

**Grantee/Holder:**

Conagra Brands, Inc.  
Attn: Legal Department  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

**Grantee/Entity with  
express power to enforce:**

State of Georgia  
Department of Natural Resources  
Environmental Protection Division  
2 Martin Luther King Jr. Drive, SE  
Suite 1456 East Tower  
Atlanta, GA 30334

**Parties with interest in the Property:** City of Moultrie, GA  
State Highway Department of Georgia  
Lloyd Baxter  
Municipal Electric Authority of Georgia  
Municipal Gas Authority of Georgia  
South Georgia Governmental Services Authority  
Georgia & Florida Railway LLC

**Property:**

The property subject to this Environmental Covenant is located at 1189 North Main Street in Moultrie, Georgia and is presently owned by The Estate of Brenda Stallcup Tumlin (the “Tumlin Estate”) (the “Property”) through a Deed of Assent from Rennie A. Tumlin Estate, dated January 14, 2013, filed for record January 17, 2013, and recorded in Deed Book 1160, page 33, Colquitt County, Georgia records, less the portion transferred to Crop Production Services, Inc. through an Executor’s Deed Under Power, dated August 31, 2016, filed for record September 2, 2016, and recorded in Deed Book 1276, page 413. The Property is located in Land Lot 245 of the 8<sup>th</sup> District of Colquitt County, Georgia. The Property is approximately 1.1 acres and zoned general industrial. A complete legal description of the Property is attached as Exhibit A and a map of the Property is attached as Exhibit B.

**Tax Parcel Number(s):**

Tax ID parcel number M022A 004, Colquitt County, Georgia

**Name and Location of Administrative Records:**

The corrective action at the Property that is the subject of this Environmental Covenant is described in Administrative Records that can be found in the case file/records for HSI Site 10509 at:

Georgia Environmental Protection Division  
Response and Remediation Program  
Land Branch Office  
2 MLK Jr. Drive, SE, Suite 1054 East Tower  
Atlanta, GA 30334  
M-F 8:00 AM to 4:30 PM excluding state holidays

**Description of Contamination and Corrective Action:**

**This Property has been listed on the state's hazardous site inventory and has been designated as needing corrective action due to the presence of hazardous wastes, hazardous constituents, or hazardous substances regulated under state law. Contact the property owner or the Georgia Environmental Protection Division for further information concerning this Property. This notice is provided in compliance with the Georgia Hazardous Site Response Act.**

This Declaration of Covenant is made pursuant to the Georgia Uniform Environmental Covenants Act, O.C.G.A. § 44-16-1 et seq. by CPS, its successors and assigns, Conagra Brands, Inc., and EPD, its successors and assigns. This Environmental Covenant is required because a release of arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate occurred on the Property.

Arsenic, barium, cadmium, chromium, lead, nitrates, chlorides, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and diethyl phthalate are “regulated substances” as defined under the Georgia Hazardous Site Response Act, O.C.G.A. § 12-8-90 et seq., and the rules promulgated thereunder (hereinafter “HSRA” and “Rules”, respectively). The Corrective Action consists of monitored natural attenuation of these regulated substances in groundwater, and establishment of institutional controls in the form of this Uniform Environmental Covenant to ensure future control of the Site related to exposure pathways and recording of an affidavit providing notification that the Property has been listed on the state’s hazardous site inventory to protect human health and the environment. This affidavit has already been recorded.

Grantor, the Tumlin Estate, hereby binds Grantor, its successors and assigns to the activity and use restriction(s) for the Property identified herein and grants such other rights under this Environmental Covenant in favor of Conagra Brands, Inc. and EPD. EPD shall have full right of enforcement of the rights conveyed under this Environmental Covenant pursuant to HSRA, O.C.G.A. § 12-8-90 et seq., and the rules promulgated thereunder. Failure to timely enforce compliance with this Environmental Covenant or the use or activity limitations contained herein by any person shall not bar subsequent enforcement by such person and shall not be deemed a waiver of the person’s right to take action to enforce any non-compliance. Nothing in this Environmental Covenant shall restrict EPD from exercising any authority under applicable law.

The Tumlin Estate makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, pursuant to O.C.G.A. § 44-16-5(a); is perpetual, unless modified or terminated pursuant to the terms of this Covenant pursuant to O.C.G.A. § 44-16-9 and 10; and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereinafter "Owner"). Should a transfer or sale of the Property occur before such time as this Environmental Covenant has been amended or revoked then said Environmental Covenant shall be binding on the transferee(s) or purchaser(s).

The Environmental Covenant shall inure to the benefit of Conagra Brands, Inc., EPD, Tumlin Estate and their respective successors and assigns and shall be enforceable by the EPD Director or his agents or assigns, Conagra Brands, Inc. or its successors and assigns, Tumlin Estate or its successors and assigns, and other party(ies) as provided for in O.C.G.A. § 44-16-11 in a court of competent jurisdiction.

### **Activity and/or Use Limitation(s)**

1. **Registry.** Pursuant to O.C.G.A. § 44-16-12, this Environmental Covenant and any amendment or termination thereof, may be contained in EPD’s registry for environmental covenants.
2. **Notice.** The Owner of the Property must give thirty (30) day advance written notice to EPD of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Corrective Action. The Owner of the Property must also give thirty (30) day advance written notice to EPD of the Owner's intent to change the use of the Property, apply for building permit(s), or propose any site work that would affect the Property.
3. **Notice of Limitation in Future Conveyances.** Each instrument hereafter conveying an interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use

limitations set forth in this Environmental Covenant and shall provide the recorded location of the Environmental Covenant.

4. Monitoring. Conagra Brands, Inc. shall perform groundwater monitoring as required by the Compliance Status Report approved by EPD.
5. Periodic Reporting. Annually, each January 31 following the recording of this Environmental Covenant, Owner shall submit to EPD an Annual Report in the form attached hereto as Exhibit C, certifying that the Activity and Use Limitations in the Environmental Covenant are being abided by.
6. Activity and Use Limitation(s). The Property shall be used only for non-residential uses, as defined in Section 391-3-19-.02 of the Rules and defined in and allowed under the Colquitt County's zoning regulations as of the date of this Environmental Covenant. Any residential use on the Property shall be prohibited. Any activity on the Property that may result in the release or exposure to the regulated substances that were contained as part of the Corrective Action, or create a new exposure pathway, is prohibited.
7. Groundwater Limitation. The use or extraction of groundwater beneath the Property for drinking water or for any other non-remedial purposes shall be prohibited.
8. Permanent Markers. Permanent markers on each side of the Property shall be installed and maintained that delineate the restricted area as specified in Section 391-3-19-.07(10) of the Rules. Disturbance or removal of such markers is prohibited.
9. Right of Access. In addition to any rights already possessed by EPD and/or the Conagra Brands, Inc., the Owner shall allow authorized representatives of EPD and/or Conagra Brands, Inc. the right to enter the Property at reasonable times for the purpose of evaluating the Corrective Action; to take samples, to inspect the Corrective Action conducted at the Property, to determine compliance with this Environmental Covenant, and to inspect records that are related to the Corrective Action.
10. Recording of Environmental Covenant and Proof of Notification. Within thirty (30) days after the date of the Director's signature, the Owner shall file this Environmental Covenant with the Records of Deeds for each County in which the Property is located, and send a file stamped copy of this Environmental Covenant to EPD within thirty (30) days of recording. Within that time period, the Owner shall also send a file-stamped copy to each of the following: (1) Conagra Brands, Inc., (2) each person holding a recorded interest in the Property subject to the covenant, (3) each person in possession of the real property subject to the covenant, (4) each municipality, county, consolidated government, or other unit of local government in which real property subject to the covenant is located, and (5) each owner in fee simple whose property abuts the property subject to the Environmental Covenant.
11. Termination or Modification. The Environmental Covenant shall remain in full force and effect in accordance with O.C.G.A. § 44-5-60, unless and until the Director determines that the Property is in compliance with the Type 1, 2, 3, or 4 Risk Reduction Standards, as defined in Georgia Rules of Hazardous Site Response (Rules) Section 391-3-19-.07, whereupon the Environmental Covenant may be amended or revoked in accordance with Section 391-3-19-08(7) of the Rules and O.C.G.A. § 44-16-1 *et seq.*

12. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.
13. No EPD Interest in Property Created. This Environmental Covenant does not in any way create any interest by EPD in the Property that is subject to the Environmental Covenant. Furthermore, the act of approving this Environmental Covenant does not in any way create any interest by EPD in the Property in accordance with O.C.G.A. § 44-16-3(b).

**Representations and Warranties.**

Grantor hereby represents and warrants to the other signatories hereto:

- a) That the Grantor has the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder;
- b) That the Grantor is the sole owner of the Property and holds fee simple title which is free, clear and unencumbered;
- c) That the Grantor has identified all other parties that hold any interest (e.g., encumbrance) in the Property and notified such parties of the Grantor's intention to enter into this Environmental Covenant;
- d) That this Environmental Covenant will not materially violate, contravene, or constitute a material default under any other agreement, document or instrument to which Grantor is a party, by which Grantor may be bound or affected;
- e) That the Grantor has served each of the people or entities referenced in Activity 10 above with an identical copy of this Environmental Covenant in accordance with O.C.G.A. § 44-16-4(d).
- f) That this Environmental Covenant will not materially violate or contravene any zoning law or other law regulating use of the Property; and
- g) That this Environmental Covenant does not authorize a use of the Property that is otherwise prohibited by a recorded instrument that has priority over the Environmental Covenant.

**Notices.**

Any document or communication required to be sent pursuant to the terms of this Environmental Covenant shall be sent to the following persons:

Georgia Environmental Protection Division  
Branch Chief  
Land Protection Branch  
2 Martin Luther King Jr. Drive SE  
Suite 1054 East Tower  
Atlanta, GA 30334

Conagra Brands, Inc.  
c/o Trevor Foster  
222 W. Merchandise Mart Plaza, Suite 1300  
Chicago, IL 60654

Grantor has caused this Environmental Covenant to be executed pursuant to The Georgia Uniform Environmental Covenants Act, on the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Signed, sealed, and delivered in the presence of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

**For the Grantor:**

\_\_\_\_\_  
Name of Grantor *(Print)*

(Seal)

\_\_\_\_\_  
Grantor's Authorized Representative *(Signature)*

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

Dated:\_\_\_\_\_

(NOTARY SEAL)

Signed, sealed, and delivered in the presence of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

**For the State of Georgia  
Environmental Protection Division:**

\_\_\_\_\_  
*(Signature)*

(Seal)

Richard E. Dunn

Director

Dated:\_\_\_\_\_

(NOTARY SEAL)



Signed, sealed, and delivered in the presence  
of:

\_\_\_\_\_  
Unofficial Witness *(Signature)*

\_\_\_\_\_  
Unofficial Witness Name *(Print)*

\_\_\_\_\_  
Unofficial Witness Address *(Print)*

\_\_\_\_\_  
Notary Public *(Signature)*

My Commission Expires:\_\_\_\_\_

**For the Grantee/Holder:**

\_\_\_\_\_  
Name of Grantee/Holder *(Print)*

(Seal)

\_\_\_\_\_  
Grantee/Holder's Authorized Representative  
*(Signature)*

\_\_\_\_\_  
Authorized Representative Name *(Print)*

\_\_\_\_\_  
Title of Authorized Representative *(Print)*

Dated:\_\_\_\_\_  
(NOTARY SEAL)

Exhibit A  
Legal Description

5.05 acres in Land Lot 245 in the Eighth (8th) Land District in Colquitt County, Georgia, and for a point of beginning of the land to be described, start at the original Southwest corner of said Land Lot 245 and run North 0 degrees 30 minutes West along the West original line of said Land Lot 245, 1927.50 feet to a point; run thence North 89 degrees 05 minutes East 612.00 feet to a point on the West margin of the Moultrie-Tifton Road; run thence South 7 degrees 05 minutes East along the West margin of said Moultrie-Tifton Road 49.75 feet to an iron pin and the point or place of beginning of the land herein described.

Thence from said point of beginning run South 89 degrees 05 minutes West 141.95 feet to an iron pin; thence South 5 degrees 50 minutes East 539.95 feet to a nail driven into concrete, this line runs along, and East of a spur railroad track being six (6) feet from the center line of said spur track at the nearest point; thence run South 83 degrees 40 minutes West 169.8 feet to an iron pin and the East right of way of the Georgia-Northern Railroad; thence run along the East margin of said Georgia-Northern Railroad the following calls: South 11 degrees 24 minutes East 55.35 feet; South 14 degrees 42 minutes East 100.0 feet; South 25 degrees 04 minutes East 46.75 feet to an iron pin; thence South 7 degrees 50 minutes East 50.33 feet to all iron pin; North 84 degrees 09 minutes East 15.79 feet to an iron pin; South 30 degrees 41 minutes East 71.1 feet; South 35 degrees 08 minutes East 100.0 feet to an iron pin; South 86 degrees 00 minutes West 18.8 feet to an iron pin; South 37 degrees 36 minutes East 68.5 feet; South 42 degrees 34 minutes East 100.0 feet; South 46 degrees 15 minutes East 100.0 feet to an iron pin; thence leaving said railroad right of way run North 47 degrees 31 minutes East 54.35 feet to an iron pin and the West margin of the Moultrie-Tifton Road; thence run North 7 degrees 03 minutes West 25.1 feet to an iron pin; thence continuing along the West margin of said road North 6 degrees 41 minutes West 492.5 feet to an iron pin and a point of a curve; thence running along a curve and continuing along the West margin of said road the following calls: North 6 degrees 45 minutes West 25.1 feet; North 7 degrees 03 minutes West 100.0 feet; North 7 degrees 17 minutes West 100.0 feet; North 7 degrees 40 minutes West 100.0 feet; North 8 degrees 03 minutes West 100.0 feet to an iron pin and the end of said curve; thence continuing along the West margin of said road North 8 degrees 11 minutes West 231.2 feet to an iron pin and a point of curve; thence along said curve North 7 degrees 38 minutes West 39.55 feet to an iron pin and the point of beginning of the land herein described.

The above described land bounded North by lands of Swift & Company and the East margin right of way of Georgia-Northern Railroad; South by lands of Georgia-Northern Railroad and East by Moultrie-Tifton Road, also known as North Main Street.

LESS AND EXCEPT that part of the above property previously conveyed to Arnold Thomas by Lloyd Baxter and J. B. Tumlin in June of 1973, the deed being recorded in the deed records of Colquitt County, Georgia.

ALSO, LESS AND EXCEPT that property conveyed to Major N. Adderton, Sr. by Warranty Deed dated February 11, 1993, recorded in Deed Book 475, Page 816, Colquitt County Records, being more particularly described as follows:

Commence at a point on the Street which if extended from the City would be North Main Street, as a point where the Georgia Northern Railroad right of way intersects the Westerly margin of the Street, and run thence in a Northerly direction along the Westerly margin of the Street to a point which is on line with the party wall which separates the three story level of the old Swift and Company building with the two story level; run thence in a Southwesterly direction along the party wall referred to, to a point on the Easterly margin of the spur line which lies just to the West of the portion of the referred to building which is three stories; run thence in a Southeasterly direction along the Easterly margin of the spur line to a point where the Easterly margin of the railroad right of way intersects the Westerly margin of the street which would be North Main Street if extended from the City of Moultrie. Also that small parcel of land which lies South of the metal building shown on the attached drawing as the Cooper Shop and described as being that parcel of land between Georgia Northern Railroad right of way and that area to the West of the spur line lying at the West of the Old Swift Building and bounded on the North by a line which runs East and West 10 feet South of the Cooper Shop. Excluded from this last area is that joint right of way used as a common drive by the tenants of the Swift & Company property entering from North Main Street and lying just to the West of the area referred to as the spur line.

ALSO LESS AND EXCEPT that property conveyed to Crop Production Services, Inc. by Executor's Deed Under Power dated August 31, 2016, recorded in Deed Book 1276, Page 413, Colquitt County Records, being more particularly described as follows:

All that tract or parcel of land situate, lying and being in Land Lot 245, 8th Land District, Colquitt County, Georgia and being 1.42 acres in Tract 3 as shown by that Plat of Survey for Crop Production Services, dated June 28, 2016, recorded in Plat Book 44, Page 184A Colquitt County Records.

Exhibit B  
Site Map  
Tumlin Estate Property – M022A 004



Exhibit C  
Annual Property Evaluation Form

**Swift Meat Processing Plant, HSI Site No. 10509**

TYPE	No.	CRITERIA RESPONSE	YES	NO
Land Use	1	Does this former HSRA site meet the definition of non-residential property as defined in HSRA Rule 391-3-19.02(2)?  “Non-residential property means any property or portion of a property not currently being used for human habitation or for other purposes with a similar potential for human exposure, at which activities have been or are being conducted that can be categorized in one of the 1987 Standard Industrial Classification major group...”		
	1a	If no to 1, provide a written explanation (attached) to the EPD within 30 days.		
Exposure	2	Are site workers expected to be directly exposed to soils that do not meet residential standards at this HSRA site in excess of 250 days per year?		
	2a	If yes to 2, are these same site workers expected to be exposed to soils at this HSRA site in excess of 25 years throughout their career?		
Erosion	3	Is there evidence of soil erosion in the remedial areas of the property?		
	3a	If yes to 3, is there evidence of erosion of these soils to off-property areas?		
	3b	If yes to 3a, are corrective measures being taken?		
	3c	If yes to 2, 3, 3a, and/or 3b, provide written explanation (attached) to the EPD within 30 days.		
Property Instruments	4	Do all leases or other property instruments for the site have the applicable deed notice language inserted into them.		
	4a	If no to 4, provide a written explanation (attached) to the EPD within 30 days.		
Inspection	5	Date of inspection:		
	5a	Name of inspector:		
	5b	Photographs showing current land use (attached)		

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
NAME (Please type or print)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

90703180.2

**APPENDIX E**  
**REGISTERED PROFESSIONAL SUPPORTING DOCUMENTATION**

**Summary of Hours and Services**  
Former SWIFT & Company Meat Processing Plant  
HSI Site No. 10509  
Submittal to EPD date February 27, 2017

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David E. Smoak, P.G.  
Preparation of submittal and review  
54 hours charged through February 23, 2017

John Quinn, P.G.  
Preparation of submittal documentation  
64 hours charged through February 23, 2017