November 26, 2019
File No. 09215600.09

Mr. Timothy Bahr
2600 Blair Stone Road
MS #4500
Tallahassee, FL 32399

Subject: Request for Alternate Procedure Approval
Hillsborough County Southeast County Landfill (WACS ID 41193)

Dear Mr. Bahr:

At the request of the Hillsborough County, Solid Waste Management Division (SWMD), SCS Engineers (SCS) has prepared the enclosed Request for Alternate Procedure Approval (Request) in accordance with Chapter 62-701.310 Florida Administrative Code (F.A.C.). As discussed in a September 25, 2019 preparatory meeting between the Florida Department of Environmental Protection (FDEP), SWMD, and SCS, we have addressed each regulatory requirement for approval of an alternate procedure. We have included the proposed operations and monitoring procedures in the enclosed Request. Also enclosed is a check for $2,000 for the review of the Request in accordance with 62-701.315(8)(a) F.A.C.

We appreciate the opportunity to work with FDEP in development of this Request and look forward to continuing this dialogue as we implement the liquid level monitoring, stormwater management, and accelerated closure activities outlined in the enclosed Request.

Sincerely,

Kollan L. Spradlin, P.E.
Senior Project Professional
SCS Engineers

Shane R. Fischer, P.E.
Vice President
SCS Engineers

KLS/SRF:kls

cc: Kimberly Byer, SWMD
Joe O'Neill, SWMD
Larry Ruiz, SWMD

Encl.

Request for Alternate Procedure Approval

Southeast County Landfill
Lithia, Florida

Hillsborough County – Public Utilities Department
Solid Waste Management Division (SWMD)
332 North Falkenburg Road
Tampa, Florida 33619

Florida Board of Professional Engineers
Certificate No. 00004892

SCS ENGINEERS
File No. 09215600.09 | November 26, 2019
3922 Coconut Palm Drive, Suite 102
Tampa, FL 33619
813-621-0080

Request for Alternate Procedure Approval

Southeast County Landfill
Lithia, Florida

Submitted to:

Hillsborough County
Solid Waste Management Division
332 North Falkenburg Road
Tampa, Florida 33619

Prepared by:

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Kollan L. Spradlin, P.E.
No. 82852

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1 INTRODUCTION

SCS Engineers (SCS), on behalf of the Hillsborough County Solid Waste Management Division (SWMD), is requesting the Florida Department of Environmental Protection (FDEP) grant this Request for Alternate Procedure Approval (Request) to amend the operating conditions related to leachate levels over the liner within the Phase I-VI disposal area at the Southeast County Landfill (SCLF). The SWMD is requesting this approval in accordance with Rule 62-701.310, Florida Administrative Code (F.A.C.) and in accordance with the path forward process agreed upon during the September 25, 2019 meeting between the SWMD and FDEP. The results of this meeting were commemorated in a Memorandum of Understanding dated September 27, 2019 (**Appendix A**). This request is also intended to satisfy paragraph 4 of the Consent Agreement (OGC No. 17-0058) executed on July 27, 2017 that requires the SWMD obtain an alternate procedure to reauthorize operating with a leachate head over the liner in Phase I-VI in excess of 12 inches. Section 2 of this document provides information on how this Request satisfies the criteria contained in subsection 62-701.310(2), F.A.C.

2 CRITERIA

2.A THE SPECIFIC FACILITY FOR WHICH AN EXCEPTION IS SOUGHT

The specific Facility for which an exception is sought is the Phase I-VI disposal area of the SCLF, WACS ID#41193, located in Lithia, Florida. None of the other currently permitted disposal areas at the SCLF are included in this Request. The SCLF is owned by Hillsborough County (County) and operated by Waste Management, Inc. of Florida under a contract with the County. The Phase I-VI disposal area has been in operation since 1984.

2.B RELIEF FROM PROVISIONS

The SWMD seeks relief from the specific provisions of subsection 62-701.400(3) F.A.C., that requires landfill liner systems (composite and/or double liner) be designed to limit the head above the liner, during routine landfill operations, to no greater than 12 inches.

Requested Provision Exception: The SWMD requests approval of an alternate procedure to allow the Phase I-VI disposal area to operate with an alternate hydraulic head (up to 30 inches) over the liner.

2.C BASIS FOR EXCEPTION

The basis of this exception for the Phase I-VI disposal area is founded in: (1) the unique history and design of the Phase I-VI disposal area; (2) the evolution of the regulations that have been applied to this facility and specifically the Phase I-VI disposal area; (3) the generally successful operation of this facility in providing continued protection of the environment for the past 35 years since the permitting and construction of the Phase I-VI disposal area; and, (4) the supplemental operational controls already implemented and those proposed to be implemented by the SWMD to provide additional safeguards and protections to the environment. These principals serve as the basis of the exception and will be discussed in further detail within the proceeding sections.

2.C.1 Unique History and Design

The Phase I-VI disposal area was selected and permitted to construct and operate in 1984 in accordance with the 1982 Florida Department of Environmental Regulation (FDER) rules. At that time the FDER rules, Chapter 17-7, F.A.C., did not require Class I landfills to be constructed with a geosynthetic liner or a leachate collection and removal system (LCRS). Thus, neither a maximum leachate head nor bottom liner slopes were specified in Chapter 17-7 F.A.C. The primary design requirement for the facility was that the disposal area be designed to meet water quality standards at the site's boundary.

The area selected for the SCLF was a former phosphate mine. The specific area for Phase I-VI had been used as a clay settling area for waste phosphatic clays from earlier mining operations. The 1983 Hydrogeological Investigation, completed by Ardaman & Associates (Ardaman), reported the waste phosphatic clays in the Phase I-VI disposal area ranged in thickness from 6 to 18 feet (**Appendix B**) and these high plasticity/low permeability clays would provide a bottom liner for the Phase I-VI disposal area. The waste phosphatic clays would consolidate under the load from the overlying waste, and as the clays consolidated, would decrease in permeability. To complete the containment system, a chlorosulfonated polyethylene (CSPE, aka Hypalon) geomembrane liner was installed on the sideslopes of the perimeter berm and keyed into bottom phosphatic clays. This liner system provided an effective containment system to protect the environment and exceeded the regulations in place at the time of permitting and construction of the Phase I-VI disposal areas.

The bottom phosphatic clay liner was originally a relatively flat surface but was predicted by Ardaman to settle over time as the waste disposed caused consolidation of the underlying clay. This consolidation of the clay would result in a denser, stronger, and a lower hydraulic conductivity barrier layer. As shown in **Appendix B**, Ardaman estimated the initial permeability of the clays within the Phase I-VI disposal area ranged from 1.2 X 10^{-8} cm/sec to 1.6 X 10^{-8} cm/sec in 1983. As waste is landfilled, pressure is exerted upon the waste phosphatic clay by the overlying waste mass. This pressure consolidates the waste phosphatic clay layer, resulting in clay permeability less than that observed of the unconsolidated clay in 1983.

In addition, although it was not required by the FDER at the time, an LCRS was installed over the waste phosphatic clay liner. It consisted of drainage trenches and collection pipes and was designed to limit the leachate head over the phosphatic clay liner to depths within the 3-foot sand drainage layer "*except under high peak flow conditions.*" An excerpt from the original Camp, Dresser, & McKee Inc. construction and operation permit application is included as **Appendix C.**

The expected consolidation of the waste phosphatic clay was a primary consideration in the LCRS design. As the consolidating forces exerted on the clay are directly related to the depth of waste, total settlement of the clay was estimated to be greatest in the areas with thickest clay and the greatest depth of waste during the designing of the LCRS. As shown in **Appendix B**, the area of thickest clay was in the Phase VI disposal area; therefore, Phase VI was subsequently determined to be the area of greatest settlement by consolidation testing and thus the central low point for Phase I-VI disposal area.

As originally designed, settlement in the clays, induced by the overlying waste mass, creates bottom slopes to convey leachate to Phase VI. Other disposal areas, consolidate in a similar manner and direct leachate toward Phase VI. Liquids above the clays are collected and conveyed through the LCRS trenches and pipes to a central collection sump located in Phase VI, which is designated as the Pump Station B (PS-B) sump. Within the PS-B sump a pressure level sensor regulates the liquid level and pump cycling to maintain a hydraulic gradient toward the PS-B sump. A daily liquid level value from the PS-B sump is recorded and submitted to the FDEP in Quarterly Water Balance Reports.

It is clear this was, and remains, a unique landfill design. By installing a geosynthetic liner and LCRS in 1984, Phase I-VI exceeded the requirements of the 1982 regulations that were in effect at the time it was originally permitted. The SWMD is not aware of any other Class I landfills in Florida that were constructed over waste phosphatic clay settling areas from earlier mining operations. Therefore, this is a unique characteristic of the Phase I–VI disposal area design and operations.

2.C.2 Evolution of the Regulations

The solid waste regulations in Florida have been amended many times since the 1982 version of Chapter 17-7, F.A.C. For example, in 1985 the FDER began requiring a bottom liner and LCRS for Class I landfills. The rules required a liner system with either a single geomembrane or a 3-feet thick compacted clay layer (CCL) with a maximum hydraulic conductivity of 1 X 10^{-7} cm/sec. The LCRS design had a maximum liquid depth requirement of 12 inches. In 1990, the regulations were amended to require either a composite liner, with a geomembrane underlain by 18 inches of CCL with a maximum hydraulic conductivity of 1.0 x 10^{-7} cm/sec, or a double liner system. In 1993, the requirement for a maximum leachate depth of 12 inches was removed from the LCRS design criteria and replaced with various hydraulic heads up to 12 inches for nine new composite liner designs based on the thickness and hydraulic conductivity of the CCL component of the composite liner. The double liner design was limited to 12 inches of hydraulic head over the primary liner.

Department changes were also occurring within the FDER. In 1993, the Florida Department of Environmental Protection (FDEP) was created by merging the FDER with the Department of Natural Resources. Further, by December 1996, the solid waste rule name was changed to Chapter 62-701, F.A.C.

In 2001, the FDEP amended Chapter 62-701 F.A.C., which also included clarifications for how the requirements of the Chapter should be applied to existing landfills. At least two provisions in the Chapter are relevant to this basis for exception. First, the General Applicability language of subsection 62-701.220(1), F.A.C., was revised to read as follows:

> "*This chapter has been substantially amended several times since it was first promulgated. Except as otherwise specifically provided herein, facilities remain subject to the provisions which were in effect at the time the site was permitted or received a site certification, or at the time a complete application was submitted and deemed complete by the Department.*"

This language made it clear that unless otherwise stated in Chapter 62-701, F.A.C., the Phase I-VI disposal area remained subject to the requirements that applied when it was originally permitted. As shown below in the second provision the exception language "*otherwise specifically provided herein*" does not apply to Phase I-VI of the SCLF.

A second provision, the Applicability Section of the Landfill Permit Requirements in paragraphs 62-701.330(1)(a) to (c), F.A.C., clarified that certain existing, permitted landfills were not subject to the liner and leachate collection requirements of the Chapter and may continue to operate to their permitted design dimensions. This language reads as follows:

> *(1) Applicability.*
>
> *(a) Except as otherwise specifically provided herein, this chapter shall apply to all solid waste disposal units constructed or operated under a landfill permit issued after May 27, 2001, including renewals of existing permits.*

(b) All holders of landfill construction or operation permits issued prior to May 27, 2001 which contain conditions not in conformance with this chapter shall apply for modification of the permit to conform to this chapter to the District Office of the Department which issued the permit. The submission shall occur at the time of application for renewal of an existing permit, or before November 23, 2001, whichever is later. For purposes of this paragraph, a permit issued prior to May 27, 2001, is deemed to include a completed permit application received by the Department prior to May 27, 2001.

(c) Rules 62-701.400 - .420, F.A.C., shall not apply to any solid waste disposal unit for which construction is completed prior to the later of the dates specified in paragraph (b) of this subsection. Such solid waste disposal unit may be operated until filled to its permitted or modified design dimensions which, if such unit is lined, may include any future vertical expansion over the liner in accordance with Rule 62-701.430, F.A.C.

This language made it clear the changes to Chapter 62-701, F.A.C., effective on May 27, 2001 did apply to the Phase I-VI disposal area except for the liner and LCRS requirements of Rule 62-701.400, F.A.C. The liner and LCRS requirements did not apply because the Phase I-VI disposal area was permitted well before May 27, 2001. This rule language continues in Chapter 62-701, F.A.C. today. Thus, the Phase I-VI disposal area is not subject to the current Class I landfill liner and LCRS requirements of Chapter 62-701, F.A.C.

The solid waste regulations for landfills in Florida have seen many improvements over the years due to changes in technologies, and a better understanding of the design and operation requirements for those facilities. The FDEP has done a good job keeping Chapter 62-701, F.A.C., up-to-date with current technologies and developing applicability language to allow the regulated community to transition to new compliance requirements; however, as the industry matured, compliance requirements were occasionally added and later substantially changed or removed entirely. This may have had the unintended consequence of causing the compliance status of some facilities to change, creating confusion with regards to requirements to maintain compliance. Responding properly to these changes can be difficult for both the FDEP and the regulated community.

The SWMD believes this unintended consequence applies to Phase I-VI of the SCLF, specifically, the inappropriate application of leachate head requirements in Operation Permit renewals less than the originally approved 1983 design basis.

2.C.3 Successful Facility Operation

Regarding solid waste landfills, a primary goal of Chapter 62-701, F.A.C., is to ensure facilities are constructed, operated, and closed in a way that minimizes their threat to public health and the environment. The SWMD actively promotes this goal and has been operating the Phase I-VI disposal area to achieve this primary goal. The following observations demonstrate this cooperation by the SWMD;

- The SWMD has historically managed leachate head over the liner by measuring and controlling the liquid levels within the PS-B sump (one primary pump and one emergency back-up pump) to as low a level as practical. The reference point for measuring leachate depth, inside of PS-B, has not changed since the permanent PS-B sump was installed and permitted in 1997 following construction of Phase VI. The current PS-B maintenance levels based on the May 2019 vault survey are included as **Figure 1**.

- There are eight detection wells and two compliance wells installed downgradient from the Phase I-VI disposal area. Since the SWMD began monitoring the groundwater quality no consistent long-term impacts have been identified. Sometimes, a limited number of parameters may have temporarily exceeded limits within detection wells; however, they have been very limited in duration and have dissipated over time.
    - On April 21, 2016 the SWMD notified the FDEP that detection monitoring well TH-67, near Phase II, was experiencing elevated concentrations of conductivity, total dissolved solids (TDS), chloride, and sodium. The Consent Agreement executed on July 27, 2017, required more investigations of the LCRS performance in the Phase I-VI disposal area. In response, evaluations by the SWMD have included: (1) installation of additional detection monitoring wells in the vicinity of well TH-67; (2) construction of an approximately 1,600-foot cut-off trench along the eastern and southern border of Phase II; (3) performing numerous subsurface conductivity evaluations; (4) conducting a tracer dye test to confirm leachate from Phase II could flow to the PS-B sump; and, (5) installation of numerous dewatering locations in Phases I and II to increase the removal of leachate from the landfill.
    - While not required by Chapter 62-701, F.A.C., the SWMD installed numerous piezometers in an attempt to measure liquid levels at the bottom of the landfill. Weekly water levels for these piezometers and rainfall records are shown in **Appendix D**. While the SWMD is not aware of any other landfill in Florida attempting this type of monitoring, this method was utilized as part of the evaluation; however, the effectiveness of these piezometers to accurately provide liquid levels representative of hydraulic head within the LCRS has been inconclusive.

As shown by recent groundwater laboratory analytical data, the concentrations of TDS, chloride, and sodium are now below their respective groundwater standards in well TH-67 and the additional detection wells that were installed nearby. The only exception is well TH-83 which slightly exceeded the TDS and chloride groundwater standards in the August 2019 sampling events. This is believed to be due to seasonal water level fluctuations. In general, the groundwater around the Phase I-VI disposal area does not appear to be experiencing any significant adverse impacts at this time. The previous impacts to groundwater appear to have been successfully abated through natural attenuation processes. The SWMD will continue to monitor groundwater in accordance with the Operation Permit and the Consent Agreement (OGC No. 17-0058) to confirm groundwater abatement. Upon resolution of the Consent Agreement (OGC No. 17-0058), the SWMD will conduct regular groundwater monitoring sampling in accordance with the Operation or Closure Permit in effect at the time.

As a result of the evaluation process resulting from the 2016 event, the SWMD successfully located several cleanouts (designated as CO 1-1, CO 1-2, CO 1-3, CO 2-1, CO 2-4, and 3-1), conducted tracer dye tests to verify header conveyance capability, installed a cut-off trench along the east and southern sides of Phase II, and installed a new supplemental withdrawal point (designated as PS-2).

There have been several hypotheses on what caused this event in 2016, the SWMD believes the measures implemented since the initial detection have effectively prevented further release from occurring and with additional operational control proposed as part of this Request will provide assurance the SCLF operations will continue to do so in the future.

The SWMD believes the unique design and history of the Phase I-VI disposal area, the current requirements of Chapter 62-701, F.A.C., the generally successful operation of the Phase I-VI disposal area over the past 35 years in conjunction with the additional supplemental assurance outlined in Sections 2.C.4 and 2.D discussed below will provide a sufficient basis for requesting this exception.

2.C.4 Supplemental Operational Controls and Measures

In addition to the current operational measures described above, to provide supplemental assurance of protection, the SWMD is proposing: (1) additional liquid monitoring locations positioned within the LCRS; (2) continued operation of an additional physical barrier in Phase II in the form of a leachate cut-off trench; (3) waste fill sequence revisions to promote stormwater drainage; (4) an accelerated approach to the final closure of Phase II and III to minimize stormwater infiltration; and, (5) the abandonment of piezometers to reduce conduits directly to the top of the waste phosphatic clay liner.

These additional operational improvements are described in Section 2.D of this Request.

2.D ALTERNATE PROCEDURE SOUGHT AND DEMONSTRATION OF EQUAL DEGREE OF PROTECTION FOR PUBLIC AND ENVIRONMENT

As stated in preceding sections, the alternate procedure for which approval is being sought is authorization to operate the Phase I-VI disposal area with leachate heads up to 30 inches. New and significantly enhanced operational methods will be implemented to control the leachate head to within the normal operational level requested. The normal operating level will be comparable to the level intended in the original design as well as the original construction and operation permit application. The SWMD believes this approach will be protective of human health and the environment and is consistent with the path forward process decided by the SWMD and the FDEP on September 25, 2019 (**Appendix A**). The primary operational improvements being proposed in this Request are summarized as follows:

- PS-B Sump Leachate Maintenance Levels - During routine operation of the Phase I-VI disposal area, after placement of initial cover, the leachate level measured in the PS-B sump by the installed pressure sensor device will be maintained below 30 inches. Liquid levels will continue to be recorded daily and provided to the FDEP in Quarterly Water Balance Reports. Should the primary pump fail, an existing emergency backup pump will continue leachate removal. A graph of PS-B liquid levels and site precipitation from January 2010 through September 2019 is included in **Figure 2**. This historical record shows selecting a maximum level of 30 inches in this sump is achievable and consistent with past routine operations. Limited variations above the 30-inch level have occurred during extreme weather events and power interruptions, but will be maintained in accordance with the proposed Leachate Management Plan (LMP) revisions summarized in **Appendix E**. Following each instance of a reading above 30-inches the pump station has been able to lower levels to below 30 inches within several days.

- Cut-off Trench Monitoring Point Leachate Maintenance Level - During routine operation of the Phase I-VI disposal area, after placement of initial cover, the leachate level measured in the Monitoring Point 2-2 (MP 2-2) will be maintained below 30 inches as measured from a liquid level measurement device placed into the MP 2-2 cut-off trench monitoring point. This operational commitment effectively adds a second leachate level monitoring location to the Phase I-VI disposal area's LCRS. Liquid levels will be recorded daily and provided to the FDEP in Quarterly Water Balance Reports. A back-up diesel pump will be kept on site to provide supplemental pumping in accordance with the liquids management actions outlined in the attached LMP revisions. The proposed LMP revisions are included in **Appendix E**. The proposed daily liquid level monitoring locations are identified in **Figure 3.**

- Phase II Cleanout 2-1 (CO 2-1) Header Pipe Leachate Maintenance Level – During routine operation of the Phase I-VI disposal area, after placement of initial cover, the leachate level measured within the CO 2-1 header will be maintained below 30 inches as measured from a pressure level sensor placed into the CO 2-1 header access clean out. This operational commitment effectively adds a third leachate level monitoring location to the original Phase I-VI disposal area's LCRS. Liquid levels will be recorded daily and provided to the FDEP in Quarterly Water Balance Reports. A back-up diesel pump will be kept on site to provide supplemental pumping in accordance with the proposed liquids management actions. The proposed daily liquid level monitoring locations are identified in **Figure 3.**

- Additional Leachate Monitoring Locations – The SWMD will install the necessary telemetry systems and measurement devices required to comply with the monitoring and operational requirements proposed in this Request. These modifications will be included in a revised LMP which is incorporated by reference into the Operation Permit. The proposed LMP revisions are included in **Appendix E**.

- Revised Fill Sequence Plan – The SWMD will submit an Operation Permit Modification Application to incorporate a revised fill sequence with future lifts characterized by landfill crown slopes of about 7.5 percent for areas that have not reached final permitted design elevations. The increased slopes will promote stormwater drainage and reduce infiltration.

- Accelerated Closure of Phase II and III – The SWMD will conduct closure of Phase II and III Accelerated Closure Areas that have reached design elevations to mitigate stormwater infiltration. The revised fill sequence will incorporate final grading of the Phase II and III sideslopes as part of Conceptual Lift 18A. Upon filling Phase II and Phase III to permitted design elevations, Phase II and Phase III will be closed with a geosynthetic liner system. A Conceptual Fill Sequence and Accelerated Closure Plan is included in **Appendix F**.

- Abandon Existing Piezometers – In an effort to reduce stormwater infiltration into the landfill, the SWMD will abandon piezometers depicted in **Figure 4** by grouting the casing of each piezometer. Abandoning the piezometers will eliminate unnecessary conduits from the landfill surface directly to the top of the waste phosphatic clay liner, reducing leachate generation and head on the liner. The proposed additional monitoring locations, i.e., new monitoring locations, within MP 2-2 and CO 2-1 will be more reliable for measuring liquid levels and will provide greater protection than piezometers installed through heterogeneous waste layers.

In addition to the primary operational improvements listed above, the SWMD has implemented two additional improvements to help manage the leachate levels within the Phase I-VI disposal area. These enhancements are:

- The excavation of LCRS headers and installation of access clean-outs on the leachate header pipes serving Phases I, II, and III. The recently installed header access points include CO 1-1, CO 1-2, CO 1-3, CO 1-4, CO 2-1, CO 2-2, CO 2-3, CO 2-4, and CO 3-1.

- The construction of an approximately 1,600-foot leachate cut-off trench around the southeast perimeter of Phase II, from north of PS-2 to west of the Phase I/II internal berm. The cut-off trench is the full depth of the disposal area and will intercept leachate near the Phase II perimeter berm. The cut-off trench is hydraulically connected to the CO 2-1 header pipe that conveys liquid from Phase II, westward toward the PS-B Sump. The SWMD will operate and maintain the existing Phase II Cut-off Trench as part of the LCRS and physical barrier to liquids near the Phase II waste limits.

There has not been significant impacts to the groundwater quality beyond the permitted zone of discharge for the Phase I-VI disposal areas as a result of landfill operations beginning in 1984. The SWMD believes the additional operational features discussed above provide the demonstration of an "equal degree of protection for the public and the environment" as required by Rule 62-701.310, F.A.C. and follow the path forward process outlined in the Memorandum of Understanding (Appendix A).

2.E DEMONSTRATION OF EFFECTIVENESS OF THE PROPOSED ALTERNATE PROCEDURE

The demonstration of effectiveness requirement in paragraph 62-701.310(2)(e), F.A.C., essentially requires the proposed alternative must function as intended. The effectiveness of the requested alternate procedure described above has been demonstrated by the SWMD as previously discussed in Section 2.D.

Additionally, many of the proposed operations have been implemented as part of an on-going evaluation of the Phase II disposal area. Appendix D includes over 100 weekly liquid level measurements from MP 2-2 that indicates that the SWMD can maintain the proposed MP 2-2 maintenance level with pumping from PS-2. Figure 5 depicts PS-2 pumping data that clearly demonstrates the effectiveness of the proposed liquid removal location from within the Phase II LCRS.

The changes already implemented, as well as the remaining operational changes proposed in Section 2.D, will continue to be monitored by SWMD to demonstrate the protocols described herein. The SWMD believes the information contained in this Request provides reasonable assurance that the leachate management controls proposed for the Phase I-VI disposal area will be effective in protecting human health and the environment.

3 CONCLUSION

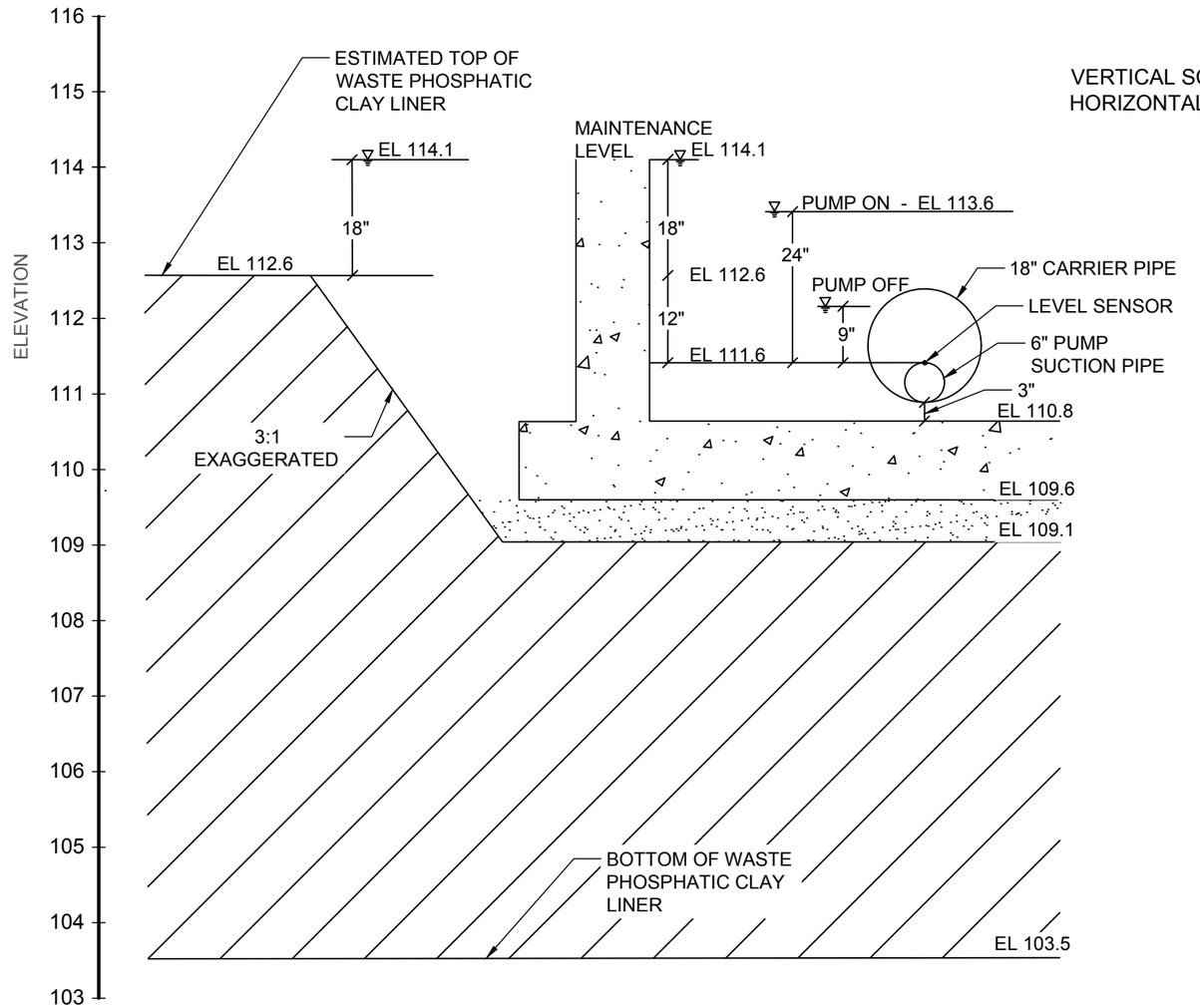
The SWMD believes due to its unique history and design, regulatory changes over time, successful operation of the landfill, and proposed additional operational and control features, the maximum leachate head limit of 12 inches over the liner in the Phase I-VI disposal area should not be required. Rather, the SWMD should be required to operate the facility in accordance with the guidelines provided in this Request. The SWMD believes following these guidelines provides reasonable assurance the Phase I-VI disposal area will be operated to protect human health and the environment. In conclusion, the SWMD respectively requests the FDEP grant this Request.

FIGURES

NOTES:

SUMP ELEVATION BASED ON ORIGINAL DESIGN DATED FEBRUARY 1998 AND VAULT SURVEY BY PICKETT & ASSOCIATES DATED MAY 2019

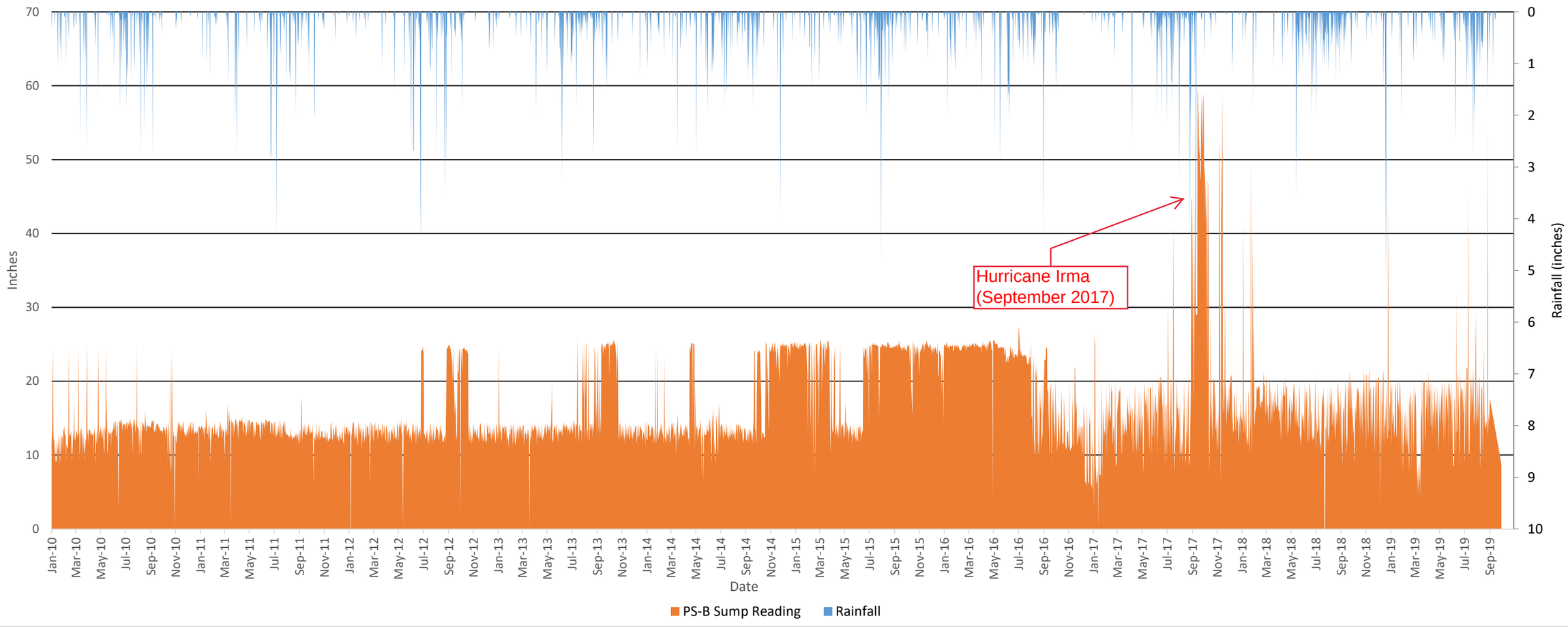
VERTICAL SCALE: 1"=2'
HORIZONTAL SCALE: NTS



SCS ENGINEERS

FIGURE 1. MAIN SUMP (PS-B) MAINTENANCE LEVEL
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

Figure 2. Leachate Levels at PS-B Sump January 2010 through September 2019



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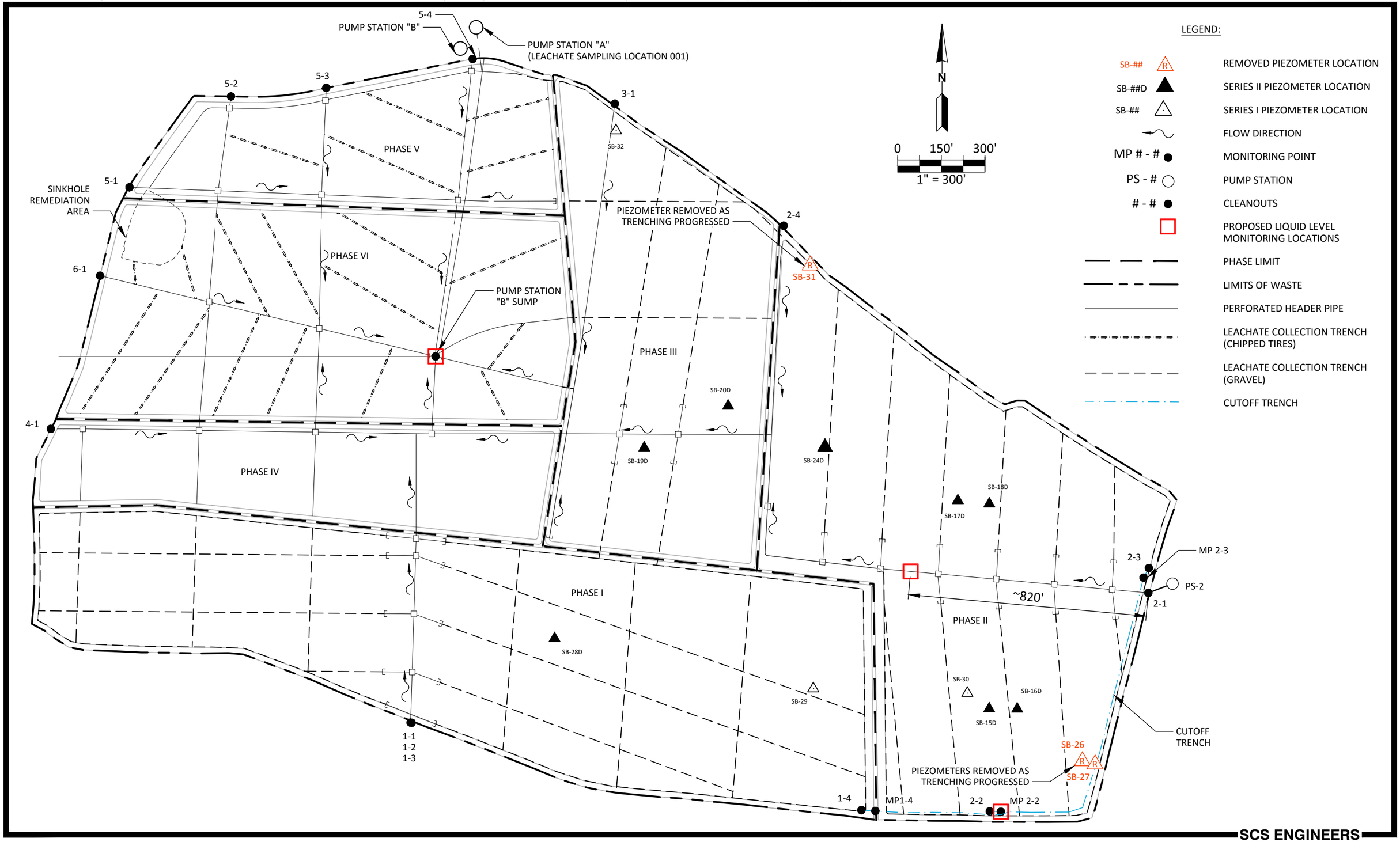
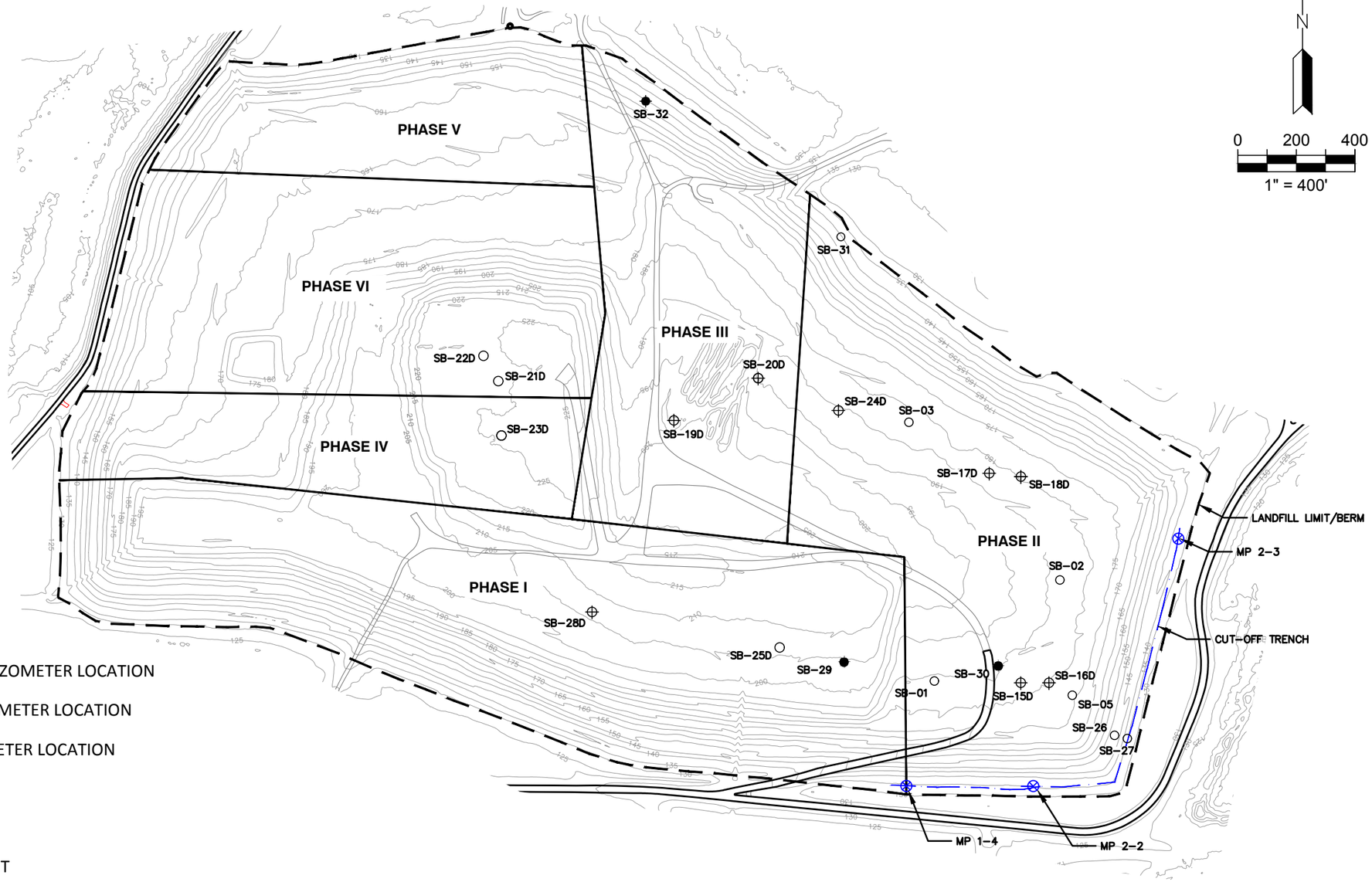


SCS ENGINEERS

FIGURE 3. MAP OF PROPOSED DAILY LIQUID LEVEL MONITORING LOCATIONS
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019



LEGEND:

- SB-21D ⊕ SECOND SERIES PIEZOMETER LOCATION
- SB-03 ● FIRST SERIES PIEZOMETER LOCATION
- SB-27 ○ REMOVED PIEZOMETER LOCATION
- PHASE LIMIT
- CUT-OFF TRENCH
- ⊗ MONITORING POINT

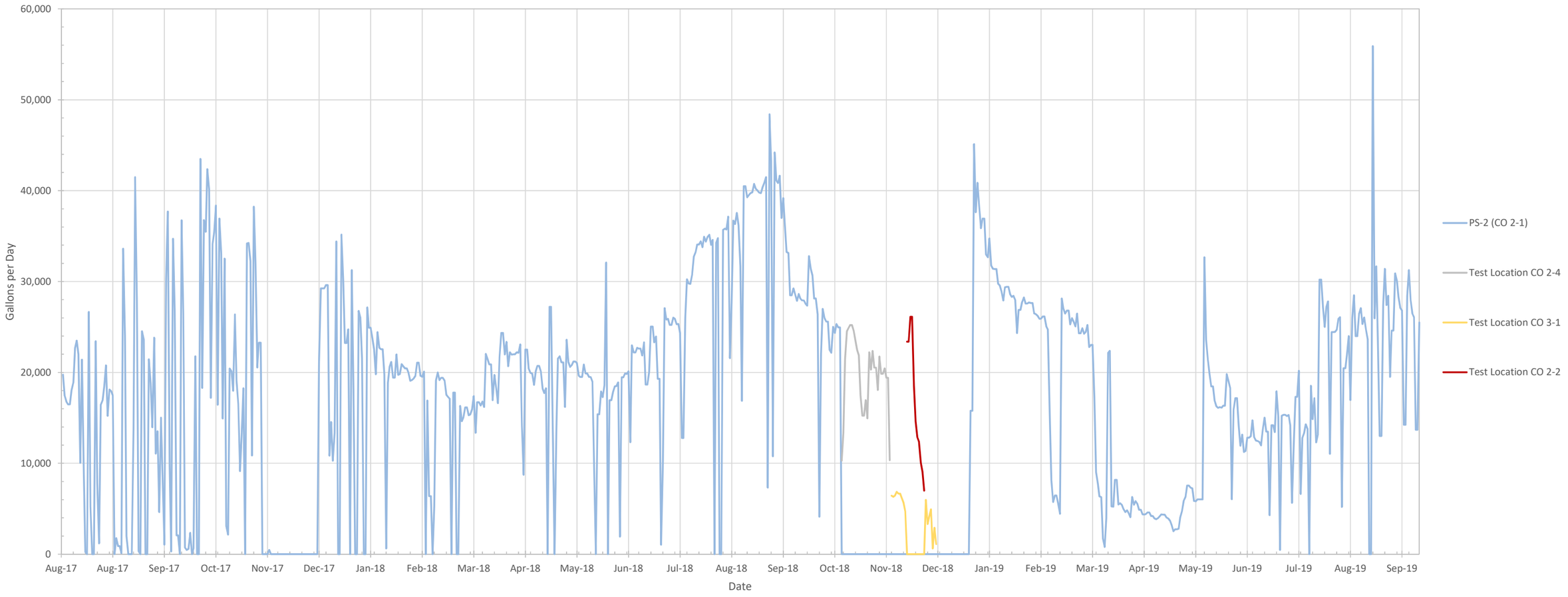
NOTE:

1. TOPOGRAPHIC SURVEY BY PICKETT, JULY 2019.

SCS ENGINEERS

FIGURE 4. MAP OF EXISTING PIEZOMETERS
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

Figure 5. Daily PS - 2 Pumping Data August 2017 through September 2019



Appendix A
September 27, 2019 Memorandum of Understanding

Hillsborough County Florida

PUBLIC UTILITIES
PO Box 1110 Tampa, FL 33601-1110

BOARD OF COUNTY COMMISSIONERS
Ken Hagan
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September 27, 2019
File No. 09215600.08

Mr. Cory Dilmore, P.E.
DEP Permitting and Compliance Assistance Program
2600 Blair Stone Road, MS 4565
Tallahassee, FL 32399

Subject: Hillsborough County Southeast County Landfill Alternate Procedure Path

Dear Mr. Dilmore:

The Hillsborough County Solid Waste Management Division (SWMD) has prepared this memorandum to document the discussion during the September 25, 2019 meeting between SWMD and the Florida Department of Environmental Protection (FDEP) regarding the path toward an approved Alternate Procedure Request and satisfaction of the Consent Agreement (OGC No. 17-0058) at the Southeast County Landfill. Based on our understanding of the discussion, SWMD will proceed with the following path toward satisfaction of the Consent Agreement:

Prepare a Request for Alternate Procedure and submit to Tim Bahr (Director – Division of Waste Management) by November 30, 2019 to include the following aspects:

- Monitor liquid levels daily at the existing compliance point, Pump Station – B (PS-B) sump.
- Monitor liquid levels daily within the Phase II Cut-off Trench at Monitoring Point 2-2 (MP 2-2).
- Monitor liquid levels daily in the Cleanout 2-1 (CO 2-1) header pipe near the Phase II pump station (PS-2) intake (approximately 800 feet into the header).
- Regrade the top of Phase II using waste/ash to increase slopes to promote stormwater runoff, thus reducing infiltration. This will be accomplished through a modification of the fill sequence plan.
- Develop a conceptual plan to conduct a phased approach to the final closure of Phase II sides lopes that have reached final grade ("close as you go"). Final closure of the Phase II sides lopes will assist in further reduction of stormwater infiltration. In addition, the closure liner will tie in to Hypalon along the toe of the landfill and act as an added barrier.
- To further reduce infiltration, the SWMD will request to abandon (grout) existing piezometers upon approval of the Alternate Procedure and installation of liquid level monitoring devices at the agreed upon compliance points.

Following approval of the alternate procedure, SWMD will submit an Operation Permit Modification Application to FDEP that will include the following:

- A revised fill sequence that provides increased slopes over the "flat" areas of the landfill.
- The technical aspects of the side slope final closures (Design Drawings, Specifications, Construction Quality Assurance Plan, Conceptual Phase II Closure Plan).

Approval and implementation of the Operation Permit Modification would satisfy the requirements of the Request for Alternate Procedure.

The resolution of the Consent Agreement would be based on compliance with the revised Operation Permit and Alternate Procedure at the permitted liquid level compliance points and attenuation of groundwater. The SWMD anticipates that upon issuance of the Alternate Procedure and modified Operation Permit, the conditions of the Consent Agreement will have been fulfilled, and it will be closed.

Please contact us as soon as possible if FDEP is not in agreement with any of the above summary of our discussion.

Sincerely,

Kimberly Byer, PG Division
Director
Hillsborough County Solid Waste
Management Division

Appendix B
Excerpt from 1983 Ardaman & Associates Hydrogeological Investigation

P. Berry
Solid Waste

HYDROGEOLOGICAL INVESTIGATION
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

Ardaman & Associates, Inc.

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MEMBERS:
American Concrete Institute
American Society for Testing and Materials
American Consulting Engineers Council
Association of Soil and Foundation Engineers
Florida Institute of Consulting Engineers
Professional Engineers in Private Practice

Ardaman & Associates, Inc.

Consulting Engineers in Soil Mechanics,
Foundations, and Materials Testing

February 22, 1983
File Number 81-159

Camp Dresser & McKee, Inc.
One Center Plaza
Boston, Massachusetts 02108

Attention: Mr. Robert Hauser, P.E.

Subject: Hydrogeological and Geotechnical Investigation for Proposed Southeast Hillsborough County Sanitary Landfill

Gentlemen:

As requested by Camp Dresser & McKee, Inc. and authorized by Hillsborough County, we have completed the hydrogeological and geotechnical investigation for the above mentioned project. The proposed landfill will be located within the initial waste clay settling area for the old Boyette Mine, within Sections 14, 15, 22 and 23 of Township 31 South, Range 21 East. This report documents our findings.

The proposed landfill area is a satisfactory landfill site. The waste clay, which covers over 90 percent of the proposed landfill area (i.e., that portion south of the partition dike) will provide an effective liner for the leachate collection system. We have analyzed the stability of the liner under the proposed filling plan and have concluded that the liner is stable under the proposed operating conditions. A variety of good cover material is also available within the settling area immediately north of the proposed landfill site.

This report has been prepared for the exclusive use of Hillsborough County and their solid waste management consultant, Camp Dresser & McKee, Inc. for specific application to the above mentioned project in accordance with generally accepted geotechnical engineering practice. No other warranty, expressed or implied, is made. In the event any changes occur in the design criteria for the landfill such as a change in the filling plan or a modification in the location of the landfill area, we should review the applicability of conclusions and recommendations in this report. We also recommend a general review of the final design plans and specifications by our office to ensure that our recommendations have been properly interpreted and implemented.

It has been a pleasure assisting you with this project. Please do not hesitate to contact us if you have questions concerning this report or if we can be of further service.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Herbert G. Stangland

Herbert G. Stangland, Jr., P.E.
Senior Water Resources Engineer

John E. Garlanger

John E. Garlanger, Ph.D., P.E.
Principal
Florida Registration No. 19782

HGS:ed
Enclosures

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PRODUCTION WELL

WATER

WEATHER STATION

POWER LINE

N
SCALE 1" = 400'

E 444,000

E 442,000

E 440,000

E 438,000

LEGEND

- STANDARD PENETRATION TEST BORING
- WASH BORING
- AUGER BORING
- PROBE
- SURFICIAL AQUIFER PIEZOMETER
- SECONDARY AQUIFER PIEZOMETER
- FLORIDAN AQUIFER PIEZOMETER
- SURFICIAL AQUIFER WELL

REV NO	DATE	DRWN	CHKD	REMARKS

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners, & management consultants

CDM

BORING LOCATION PLAN INCLUDING GROUNDWATER MONITORING SITES

PROJECT NO

SHEET NO

Ardaman & Associates, Inc.
Consulting Engineers in Soil Mechanics, Foundations, and Material Testing

HYDROGEOLOGICAL INVESTIGATION
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

DRAWN BY: T.S.	CHECKED BY: R.A.C.	DATE: 1/21/93
FILE NO. 91-159	APPROVED BY: R.C. Stoyland	

FIGURE 3.1

ISOPACH OF WASTE PHOSPHATIC CLAY THICKNESS

LEGEND

- DENOTES BORING LOCATION
- (2) DENOTES 2-FOOT THICKNESS CONTOUR
- 2.0 / 123.8 — THICKNESS OF WASTE PHOSPHATIC CLAY ENCOUNTERED IN FEET / ELEVATION OF UPPER SURFACE OF WASTE PHOSPHATIC CLAY IN FEET (NGVD)
- 123.8 — APPROXIMATE ELEVATION OF UPPER SURFACE OF WASTE PHOSPHATIC CLAY IN FEET (NGVD)
- 0 — INDICATES THAT NO WASTE PHOSPHATIC CLAY WAS ENCOUNTERED

SCALE 1" = 400

E 444,000 · E 442,000 · E 440,000 · E 438,000

PARTITION DIKE · POWER LINE · WATER

REV NO	DATE	DRWN	CHKD	REMARKS

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE

CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners & management consultants
CDM

PROJECT NO

SHEET NO

Ardaman & Associates, Inc.
Consulting Engineers in Soil Mechanics, Foundations, and Material Testing

HYDROGEOLOGICAL INVESTIGATION
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

DRAWN BY: KA | CHECKED BY: JC | DATE: 1/19/83
FILE NO. 81-159 | APPROVED BY: H.C. Ardaman

FIGURE 4.1

Chapter 5

LABORATORY INVESTIGATION AND RESULTS

All recovered split-spoon, auger and Shelby tube samples obtained during the field investigation were returned to our laboratory for visual examination and for determination of engineering properties.

5.1 Laboratory Classification

The split-spoon and auger jar samples taken during the field investigation program were reclassified in the laboratory using the procedures outlined by the Unified Soil Classification System. Several tests were performed on these samples including determination of natural moisture content, Atterberg limits, unconfined compressive strength, and percent fines passing the No. 200 sieve. The unconfined compressive strengths were obtained with a pocket penetrometer, a torvane and a laboratory vane along with unconfined compression tests performed in a triaxial load frame. The results of these tests were used to aid in classifying and stratifying the soils encountered. All tests were performed in accordance with current ASTM standards.

A total of 169 natural moisture contents were obtained for samples of the waste phosphatic clays, the sand tailings and mixtures of these two materials. This information not only aided in classifying the soils but also in estimating total unit weights and strength characteristics for use in the stability analyses. The moisture content results are shown alongside the location of each tested sample on the boring profiles presented in Figures A.3-1 through A.3-12.

Twenty-nine Atterberg limits were performed on representative jar and Shelby tube samples of the waste phosphatic clays (ASTM Testing Methods D-423 and D-424). The results are listed in Table 5.1 as well as being presented on the boring profiles. The typical range in plasticity for these clays is illustrated in Figure 5.1, a plot of Liquid Limit versus Plasticity Index.

The unconfined compressive strength of the waste clays was determined by the performance of 6 pocket penetrometer tests, 13 laboratory vane tests, 12 torvane tests and 18 unconfined compression tests. The results from these tests are included on the boring profiles. Excluding the pocket penetrometer tests, the results are also presented in Figure 5.2 in a plot of undrained shear strength versus moisture content. The tabulated results of the unconfined compression tests and the torvane tests are given in Tables 5.2 and 5.3, respectively.

The percent fines passing the standard U.S. No. 200 sieve was determined by washing the test specimen of known dry weight over the sieve and then weighing what was retained after drying it in the oven. A total of 19 minus 200 determinations were obtained on representative samples of the waste clays, the sand tailings and mixtures thereof. The results of these tests are presented on the boring profiles alongside the respective location of each tested sample.

5.2 Density of the Waste Phosphatic Clay

The *in situ* density of the waste phosphatic clay was determined by analyzing 25 of the 30 Shelby tube samples recovered during the field investigation. The specific gravity (G_s = 2.80) was obtained by performing two specific gravity tests, the results of which are shown on Figures A.3-11 and A.3-12 of the boring profiles. The dry density ranged from a low of 22 pounds per cubic foot (PCF) to a high of 61 PCF with a mean density of 35 PCF. These results are also presented on the boring profiles included in Appendix A.

5.3 Shear Strength of Waste Phosphatic Clay

Besides the unconfined compressive strength tests discussed in Section 5.1, a total of 7 consolidated-undrained triaxial compression tests with pore pressure measurements ($\overline{CU}$ tests) were performed on representative samples of the waste phosphatic clay to determine its undrained and effective stress shear strength parameters. The test specimens were obtained from Shelby tube samples.

These triaxial tests were strain-controlled and the rate of strain was slow enough to allow for pore pressure equilization. The samples were consolidated under back pressures ranging from 11.5 to 12.75 kg/cm^2. Back pressuring was utilized to obtain complete saturation of the sample prior to shear. Pore pressures were monitored with a rigid, flush-diaphragm pressure transducer. The signal from the transducer was measured with a digital voltmeter. The readouts from the voltmeter were, in turn, continuously recorded by a computerized data aquisition system.

The undrained effective stress paths and Mohr-Coulomb parameters for these 7 tests are presented in Figure 5.3. It shows a range of K_f envelopes for the normally consolidated waste clay (i.e., OCR = 1.0) for which $\bar{c}$ = 0 and $\bar{\phi}$ varies from 25 to 31 degrees. The individual test results are presented in Appendix A.6, Figures A.6-1 through A.6-7. These figures include the effective stress path diagram, the stress-strain curve, the excess pore pressure versus strain curve and the obliquity versus strain curve. Relevant specimen data are also included on these figures.

5.4 Permeability of Waste Phosphatic Clay

The permeability of the waste phosphatic clay was determined from five consolidation tests and nine constant head permeability tests. These tests were all performed on selected Shelby tube samples. For the five consolidation tests, the variation of the permeability coefficient was calculated from c_v and m_v using the square root of time method. The coefficient of permeability was also obtained directly from the nine constant head tests. Prior to permeation in the constant head tests, the test specimens were back-pressured to achieve saturation.

The results of the constant head permeability tests are presented in Table 5.4. All the permeability test data are included on Figure 5.4, a plot of coefficient of permeability versus void ratio. The coefficient is shown to vary from a high of 6.0×10^{-7} cm/sec to a low of 3.0×10^{-10} cm/sec.

5.5 Consolidation Tests on Waste Phosphatic Clay

Seven incremental one-dimensional consolidation tests were performed on representative undisturbed samples of the waste phosphatic clay. The results of these tests are summarized in Appendix A.5, Figures A.5-1 through A.5-7.

Primary compression curves indicate that the waste clays are normally consolidated and highly compressible. The virgin compression ratio in terms of strain, CR, which governs the magnitude of primary virgin compression settlements, was found to range between 0.24 and 0.37. The recompression ratio, RR, was estimated to vary between 0.04 and 0.07.

The coefficient of consolidation, c_v, which governs the rate of consolidation, is on the order of 1.5×10^{-4} cm^2/sec for the normally consolidated range of stresses. Presented in Figure 5.5 is a plot of stress level versus coefficient of consolidation. The variation of effective vertical consolidation stress with void ratio is illustrated in Figure 5.6.

5.6 Clay Mineralogy

Three moist clay samples (No. 2, No. 4, and No. 7) from test hole 49 were supplied to R. T. Martin at MIT for mineralogical examination. After thorough mixing, a subsample was air dried and crushed to pass a sieve with 44 μm openings. The air dried powder was used to prepare random mounts for x-ray diffraction (XRD). The remainder of the moist sample was made into a 4% slurry based upon the air-dry water content. Small roots were removed from the slurries by pouring the slurry over a sieve with 44 μm openings. No mineral matter was retained on the sieve. The fairly uniform clay concentration facilitated comparison of clay relative peak amplitudes in the XRD data from the different samples.

The major crystalline phases were clay and apatite. Minor amounts of quartz, crandallite, wavellite, and dolomite were detected in the XRD data. The clay species were smectite, illite, and kaolin. Palygorskite was not detected. The results are summarized in Table 5.5 using relative peak amplitude, R, calculated from reference data generated specifically for phosphatic clay (Martin, 1982). The wavellite XRD peaks were too weak to allow a reliable estimate of R and no reference data were available for crandallite. While relative peak amplitude is not equivalent to weight percent, one normally expects the sum of R values from clay species to be approximately equal to total clay weight percent. The very low clay mineral sums are ascribed to inter-stratified clay material and/or nearly amorphous clay that gave no basal peaks but did contribute to the total clay XRD peak.

Partial X-ray diffractograms indicate the interstratified nature of the clay minerals. The smectite peak is a very broad doublet. Heat treatment increased significantly the low angle background which suggests interstratification. Both position and skewness of the kaolin peak suggest that kaolin probably is interstratified with the expandable layers. The poorly crystalline clay material in all three samples was dominantly an expandable phase that appeared to be interstratified with illite and probably also with kaolin.

5.7 Cation Exchange Capacity

Two waste clay samples were supplied to A & L Southern Agricultural Laboratories in Fort Lauderdale, Florida for determination of cation exchange capacity. The results of these analyses are presented in Table 5.6.

Table 5.4

PERMEABILITY TEST RESULTS ON WASTE PHOSPHATIC CLAYS

Boring No.	Sample	Depth (feet)	Initial w_i (%)	Initial γ_d (pcf)	Final w_f (%)	Final γ_d (pcf)	$\bar{\sigma}_c$ (kg/cm^2)	k (cm/sec)	-200 (%)	PI (%)
P-1	US-1	1.0-3.0	78.6	51.3	63.4	61.5	0.50	6.4×10^{-8}	99	46
P-2	US-1	3.0-5.0	107.7	41.1	81.6	50.8	0.50	1.2×10^{-8}	97	141
P-3	US-1	1.0-3.0	88.0	47.9	73.3	54.2	0.50	1.6×10^{-8}	100	107
P-4	US-1	1.0-3.0	132.1	36.3	94.7	45.9	0.50	1.4×10^{-8}	100	139
P-5	US-1	1.0-3.0	101.8	44.3	76.6	53.3	0.50	1.5×10^{-8}	100	122
W-1	US-1	19.0-21.0	115.9	40.6	88.7	49.7	0.50	1.1×10^{-8}	-	135
W-2	US-1	13.5-15.5	56.4	63.0	36.8	81.6	0.50	5.7×10^{-7}	-	39
W-3	US-1	12.0-14.0	103.4	41.3	67.8	52.8	0.50	2.7×10^{-8}	-	63
TH-9	US-1	4.0-6.0	102.4	44.1	100.4	46.8	1.00	9.8×10^{-9}	97	150

Appendix C
Excerpt from 1983 Camp, Dresser, & McKee Construction and Operation Permit Application

HILLSBOROUGH COUNTY
SOUTHEAST COUNTY SANITARY LANDFILL
APPLICATION FOR PERMIT TO CONSTRUCT & OPERATE A SOLID WASTE RESOURCE RECOVERY & MANAGEMENT FACILITY

ATTACHMENT C

ENGINEERING REPORT

FEBRUARY 1983

CAMP DRESSER & McKEE INC.
Clearwater, Florida

environmental engineers, scientists, planners, & management consultants CDM

ENGINEERING REPORT

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clay liner and to aid the leachate collection system. The sand is being utilized to assist in maintaining the stability of the clay only in Area 6.

3.4 Sequence of Operation

The sequence of operation is shown on Plans D-8 through D-11, Attachment E. The landfill operation will begin in Area 1 following preparation of the base including: placement of the sand layer; installation of leachate trenches: and construction of berms around Area 1.

The operation will begin on the eastern side of Area 1 in the northeast corner. The rows will be filled from north to south and the row sequence of filling will move from east to west as shown on Plan D-8. In previous discussions in this report and in the Hydrogeological Investigation Report (related to the stability of the clay), the first lift is referred to as the total height of solid waste in the areas before moving to the next areas. In actuality, this height will be developed through the placement of two to four 8-foot layers. The fill operation is more fully described in Section 4 of this report.

Area 1 will take approximately one year to fill with solid waste, after which the operation will move into Area 2. This area will require a little more than one year to fill to the initial grades. These two areas will be utilized for the placement of raw refuse prior to the implementation of the resource recovery facilities as discussed in Section 1. At the end of the second year and beginning in Area 3, the landfill will be receiving residue and non-processable wastes. The initial "lift" shown on Plans D-8 and D-9 will require about seven years to complete.

Area 1 was selected as the starting area for two primary reasons. First, the clays along the southern side are the most structurally stable and provide a good base to start operations. Second, Area 1 can be developed and placed into operation reasonably fast. As landfilling operations take place in this area, construction on the remaining parts of the site can be completed.

3.5 Leachate Collection System

The layout of the leachate collection system is shown on Plans D-6 and D-7, Attachment E. The nature of the site poses several design considerations with respect to leachate collection. These considerations and the development of the leachate collection system are discussed below.

The existing clay surface within the landfill site is currently fairly flat and therefore does not provide sufficient slopes for drainage. However, following consolidation of the clay, slopes will develop on the clay surface which provide good drainage characteristics as shown on Plans D-4 and D-5, Attachment E. However, also as shown on these Plans, a basin or low spot will develop within the center of the site to which the leachate will drain.

As discussed earlier, it is not desirable to grade or significantly trench the clay liner. Therefore, the leachate collection system must be designed

around both the existing conditions and the future conditions which will exist after consolidation.

Initially, the leachate collection system will be constructed individually for each area. In Area 1, the system will be developed only within the limits of the berms for this Area. While initially the base slopes in this area are fairly flat, the clay will begin to consolidate almost immediately, developing a slope to a low area near the north center of Area 1 as located by the clay elevations after settlement. At this point a pipe will be constructed through the inside temporary berm and sealed to the liner on the inside of the berm. The pipe will drain into a small temporary sump and pumped into a temporary holding tank. The location of the temporary sump (Sump A) and holding tank are shown on Plan D-2 and details of their construction are shown on Plan D-14.

When Area 2 is developed a temporary sump and holding tank will be constructed (Sump B) as shown on Plan D-2 to collect leachate from this Area. Likewise a temporary sump and holding tank (Sump C) will be constructed to serve Area 3 and the temporary Sump B serving Area 2 will be removed. This same procedure will be followed with the development of Areas 4 and 5.

When Area 6 is developed (approximately 15 years) it will no longer be possible to service the temporary holding tanks. Several alternative designs were evaluated for removing the leachate from the site at the low point in Area 6. Draining the leachate from this area by gravity would be very difficult and require extensive trenching in the clay. The most feasible method of draining the leachate is the development of a well point at the low point near the center of the site.

Three separate wells will be utilized at this well point. Two of the wells will pump at the rate of about 30 gallons per minute. The third well, which will be used when high flows are encountered, will pump at a rate of about 150 gallons per minute. The location of these wells are shown on Plan D-2 and their construction details are shown on Plan D-14.

The wells will have 4-foot stainless steel screens. The intake of the pumps will be located as close to the surface of the clay liner as is feasible. The water will be pumped up to an initial elevation of about 135 feet and then pumped horizontally through a buried line to exit the site over the berm on the southern side of the site into several large storage tanks. A vertical casing will be constructed upward and will be extended as the landfill is developed. This casing will allow removal of the pump for servicing. The pump controls will be located at the top of this casing.

The casing and leachate pipe lines will be constructed of high strength fiberglass. Fiberglass has the strength to resist the external loadings without collapse and is resistant to chemical action. The discharge line will be constructed in a sand trench extending downward to the clay liner so as not to be placed on solid waste fill. Flexible joints will be used in the fiberglass lines to accommodate the settling of the clay base.

The vertical casing will be enclosed in crusher run Class 57 rock to give stability to the casing and resistance to horizontal forces. The pump, well casing and discharge line will all settle as the clay base consolidates.

All of the leachate generated at the site will be collected in these well points except for a small section along the northern side of Area 5. Leachate from this area will be collected in a permanent sump and holding tank as shown on Plan D-2.

The leachate collection system will consist of channels utilizing crusher run wrapped in filter cloth to prevent siltation as shown in the detail on Plan D-13. The use of PVC collection pipe was investigated. However, the rock-filled trenches will be better able to accommodate the clay consolidation and shifting which may occur at the base of the landfill.

When a new landfill area is developed, the leachate collection trenches in the new area will be extended through the temporary berms to connect to the trenches in the adjoining area. The berm should be trenched only when required to extend the trenches. The synthetic liner in the area of the trench should be removed. It will not be necessary to remove the liner along the length of the berm.

The leachate trench spacing has been established as 200-foot center to center. This is based upon a permeability of the sand layer of 1×10^{-2} cm/sec and a minimum of 3 feet of sand. This will prevent leachate in the sand layer from mounding into the solid waste layer except under high peak flow conditions.

3.5.1. Leachate Treatment

The leachate which will be collected in the leachate collection system will contain dissolved and suspended material from both the waste material and the products of decomposition of the waste materials through which it has percolated. The proposed sanitary landfill is expected to receive several different classes of non-hazardous solid wastes which will result in leachate with significantly varying composition (which is normal for municipal sanitary landfills).

The first type of waste is solid waste materials which have not been processed and which represent the "as collected" waste material. This waste will be disposed at the site area the first two years and in lesser quantities thereafter following implementation of the resource recovery facilities. The normal solid waste materials will generate a leachate with a low pH and containing very high concentrations of organics, inorganic salts and heavy metals.

Residue from the resource recovery facilities, which will represent the largest portion of wastes disposed of at the site after the first several years, will generate a leachate with significantly different characteristics from that of unprocessed solid wastes. Leachate from the residues will have a high (alkaline) pH with significant concentrations (but lower than the concentrations from unprocessed waste) of inorganic salts and heavy metals. Organic contaminants will be low in concentration.

Appendix D
Weekly Water Level and Precipitation Data

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-01	6/3/2016	56.9	188.35	131.5	118.3	13.2	
		6/8/2016	59.5		128.9		10.6	
		6/9/2016	61.3		127.1		8.8	
		6/16/2016	61.2		127.2		8.9	
		6/21/2016	61.1		127.3		9.0	
		6/22/2016	61.5		126.9		8.6	
		6/28/2016	61.2		127.2		8.9	
		7/13/2016	61.1		127.3		9.0	
		7/29/2016	61.8		126.6		8.3	
		8/5/2016	60.7		127.7		9.3	
		8/12/2016	60.4		128.0		9.6	
		8/19/2016	60.3		128.1		9.8	
		8/26/2016	60.2		128.2		9.8	
		9/2/2016	60.0		128.4		10.1	
		9/9/2016	60.0		128.4		10.1	
		9/16/2016	59.8		128.6		10.3	
		9/23/2016	59.2		129.2		10.9	
		9/30/2016	58.8		129.6		11.3	
		10/11/2016	58.6		129.8		11.5	
		10/14/2016	58.6		129.8		11.5	
		10/21/2016	57.8		130.6		12.3	
		10/28/2016	58.0		130.4		12.1	
		11/4/2016	58.0		130.4		12.1	
		11/11/2016	58.2		130.2		11.9	
		11/18/2016	58.5		129.9		11.6	
		11/25/2016	58.8		129.6		11.3	
		12/2/2016	58.2		130.2		11.9	
		12/9/2016	58.7		129.7		11.4	
		12/16/2016	58.7		129.7		11.4	
		12/23/2016	58.7		129.7		11.4	
		12/30/2016	58.7		129.7		11.4	
		1/6/2017	58.6		129.8		11.5	
		1/13/2017	59.2		129.2		10.9	
		1/20/2017	58.8		129.6		11.3	
		1/27/2017	59.3		129.1		10.8	
		2/3/2017	59.6		128.8		10.5	
		2/10/2017	59.7		128.7		10.4	
		2/17/2017	59.6		128.8		10.5	
		2/24/2017	59.3		129.1		10.8	
		3/3/2017	59.9		128.5		10.2	
		3/10/2017	59.5		128.9		10.6	
		3/17/2017	60.0		128.4		10.1	
		3/24/2017	59.9		128.5		10.2	
		3/31/2017	59.5		128.9		10.6	
		4/7/2017	59.8		128.6		10.3	
		4/13/2017	59.9		128.5		10.2	
		4/21/2017	59.9		128.5		10.2	
		4/28/2017	60.0		128.4		10.1	
		5/5/2017	59.6		128.8		10.5	
		5/12/2017	59.8		128.6		10.3	
		5/19/2017	60.2		128.2		9.8	
		5/26/2017	60.3		128.1		9.8	
		6/2/2017	60.2		128.2		9.8	
		6/9/2017	59.7		128.7		10.4	
		6/16/2017	58.6		129.8		11.5	
		6/23/2017	60.1		128.3		10.0	
		6/30/2017	60.7		127.7		9.3	
		7/7/2017	60.8		127.6		9.3	
		7/14/2017	56.5		131.9		13.6	
		7/21/2017	58.5		129.9		11.6	
		7/28/2017	60.4		128.0		9.6	
		8/4/2017	60.1		128.3		10.0	
		8/11/2017	60.6		127.8		9.5	
		8/18/2017	59.8		128.6		10.3	
		8/25/2017	60.7		127.7		9.3	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-01	9/1/2017	60.7		127.7		9.3	
		9/8/2017	59.8		128.6		10.3	
		9/15/2017	54.5		133.9		15.6	
		9/22/2017	59.2		129.2		10.9	
		9/29/2017	59.3		129.1		10.8	
		10/6/2017	59.0		129.4		11.1	
		10/13/2017	59.0		129.4		11.1	
		10/20/2017	59.0		129.4		11.1	
		10/27/2017	59.2		129.2		10.9	
		11/3/2017	59.3		129.1		10.8	
		11/10/2017	59.3		129.1		10.8	
		11/17/2017	59.5		128.9		10.6	
		11/24/2017	59.3		129.1		10.8	
		12/1/2017	59.8		128.6		10.3	
		12/8/2017	59.4		129.0		10.7	
		12/15/2017	59.7		128.7		10.4	
		12/22/2017	59.7		128.7		10.4	
		12/29/2017	59.8		128.6		10.3	
		1/5/2018	60.2		128.2		9.8	
		1/12/2018	59.7		128.7		10.4	-0.5
		1/19/2018	59.7		128.7		10.4	-0.9
		1/26/2018	60.4		128.0		9.6	-1.1
		2/2/2018	60.3		128.1		9.8	-0.7
		2/9/2018	60.5		127.9		9.6	-0.8
		2/16/2018	60.5		127.9		9.6	-0.9
		2/23/2018	61.0		127.4		9.1	-1.7
		3/2/2018	60.9		127.5		9.1	-1.0
		3/9/2018	61.1		127.3		9.0	-1.6
		3/16/2018	61.2		127.1		8.8	-1.2
		3/23/2018	61.7		126.7		8.3	-1.8
		3/30/2018	61.3		127.1		8.8	-1.8
		4/6/2018	61.2		127.2		8.8	-1.4
		4/13/2018	61.7		126.7		8.3	-1.8
		4/20/2018	61.7		126.7		8.3	-1.8
		4/27/2018	61.6		126.8		8.5	-1.6
		5/4/2018	61.9		126.5		8.1	-2.3
		5/11/2018	62.3		126.1		7.8	-2.5
		5/18/2018	57.1		131.3		13.0	3.1
		5/25/2018	60.0		128.4		10.1	0.3
		6/1/2018	60.2		128.2		9.8	0.0
		6/8/2018	60.2		128.2		9.8	-0.5
		6/15/2018	60.5		127.9		9.5	-2.0
		6/22/2018	60.4		128.0		9.6	-0.3
		6/29/2018	60.4		128.0		9.6	0.3
		7/6/2018	61.0		127.4		9.1	-0.2
		7/13/2018	61.0		127.4		9.1	-4.5
		7/20/2018	60.3		128.1		9.8	-1.8
		7/27/2018	60.0		128.4		10.1	0.4
		8/3/2018	60.0		128.4		10.1	0.1
		8/10/2018	60.1		128.3		10.0	0.5
		8/17/2018	59.7		128.7		10.4	0.1
		8/24/2018	59.8		128.6		10.3	0.9
		8/31/2018	54.6		133.8		15.5	6.1
		9/7/2018	55.7		132.7		14.4	4.1
		9/14/2018	54.6		133.8		15.5	-0.1
		9/21/2018	59.0		129.4		11.1	0.2
		9/28/2018	58.7		129.7		11.4	0.6
		10/5/2018	58.3		130.1		11.8	0.7
		10/12/2018	58.0		130.4		12.1	1.0
		10/19/2018	58.1		130.3		12.0	0.9
		10/26/2018	58.2		130.2		11.9	1.0
		11/2/2018	57.8		130.6		12.3	1.5
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-02	6/9/2016	54.5	187.62	133.1	117.9	15.2	
		6/11/2016	56.5		131.2		13.3	
		6/14/2016	56.0		131.7		13.8	
		6/16/2016	54.6		133.0		15.1	
		6/21/2016	56.2		131.4		13.5	
		6/22/2016	55.4		132.2		14.3	
		6/28/2016	56.1		131.5		13.6	
		7/13/2016	54.8		132.9		15.0	
		7/29/2016	54.9		132.8		14.9	
		8/5/2016	56.3		131.3		13.4	
		8/12/2016	55.6		132.0		14.1	
		8/19/2016	55.8		131.8		13.9	
		8/26/2016	55.8		131.8		13.9	
		9/2/2016	55.7		131.9		14.0	
		9/9/2016	55.7		131.9		14.0	
		9/16/2016	55.5		132.1		14.2	
		9/23/2016	54.9		132.7		14.8	
		9/30/2016	54.6		133.0		15.1	
		10/11/2016	54.3		133.3		15.4	
		10/14/2016	54.5		133.1		15.2	
		10/21/2016	54.0		133.6		15.7	
		10/28/2016	55.5		132.1		14.2	
		11/4/2016	54.0		133.6		15.7	
		11/11/2016	54.4		133.2		15.3	
		11/18/2016	54.5		133.1		15.2	
		11/25/2016	54.6		133.0		15.1	
		12/2/2016	54.9		132.7		14.8	
		12/9/2016	55.0		132.6		14.7	
		12/16/2016	55.0		132.6		14.7	
		12/23/2016	55.0		132.6		14.7	
		12/30/2016	55.1		132.5		14.6	
		1/6/2017	55.0		132.6		14.7	
		1/13/2017	55.4		132.2		14.3	
		1/20/2017	54.9		132.7		14.8	
		1/27/2017	55.4		132.2		14.3	
		2/3/2017	55.6		132.0		14.1	
		2/10/2017	55.6		132.0		14.1	
		2/17/2017	55.6		132.0		14.1	
		2/24/2017	55.4		132.2		14.3	
		3/3/2017	55.9		131.7		13.8	
		3/10/2017	55.8		131.8		13.9	
		3/17/2017	56.2		131.4		13.5	
		3/24/2017	56.2		131.4		13.5	
		3/31/2017	55.8		131.8		13.9	
		4/7/2017	56.4		131.2		13.3	
		4/13/2017	56.5		131.1		13.2	
		4/21/2017	56.4		131.2		13.3	
		4/28/2017	56.7		130.9		13.0	
		5/5/2017	56.4		131.2		13.3	
		5/12/2017	56.7		130.9		13.0	
		5/19/2017	56.9		130.7		12.8	
		5/26/2017	57.1		130.5		12.6	
		6/2/2017	57.0		130.6		12.7	
		6/9/2017	57.1		130.5		12.6	
		6/16/2017	57.0		130.6		12.7	
		6/23/2017	57.1		130.5		12.6	
		6/30/2017	57.2		130.4		12.5	
		7/7/2017	57.2		130.4		12.5	
		7/14/2017	57.2		130.4		12.5	
		7/21/2017	57.0		130.6		12.7	
		7/28/2017	56.8		130.8		12.9	
		8/4/2017	56.6		131.0		13.1	
		8/11/2017	55.9		131.7		13.8	
		8/18/2017	55.4		132.2		14.3	
		8/25/2017	55.0		132.6		14.7	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-02	9/1/2017	54.9		132.7		14.8	
		9/8/2017	54.4		133.2		15.3	
		9/15/2017	53.8		133.8		15.9	
		9/22/2017	52.9		134.7		16.8	
		9/29/2017	52.6		135.0		17.1	
		10/6/2017	52.5		135.1		17.2	
		10/13/2017	52.9		134.7		16.8	
		10/20/2017	53.1		134.5		16.6	
		10/27/2017	53.9		133.7		15.8	
		11/3/2017	54.2		133.4		15.5	
		11/10/2017	54.2		133.4		15.5	
		11/17/2017	54.3		133.3		15.4	
		11/24/2017	54.6		133.0		15.1	
		12/1/2017	54.6		133.0		15.1	
		12/8/2017	54.6		133.0		15.1	
		12/15/2017	54.6		133.0		15.1	
		12/22/2017	54.6		133.0		15.1	
		12/29/2017	54.9		132.7		14.8	
		1/5/2018	55.5		132.1		14.2	-0.5
		1/12/2018	54.7		132.9		15.0	0.7
		1/19/2018	54.6		133.0		15.1	0.3
		1/26/2018	55.7		131.9		14.0	-0.3
		2/2/2018	55.3		132.3		14.4	0.3
		2/9/2018	55.8		131.8		13.9	-0.2
		2/16/2018	55.8		131.8		13.9	-0.2
		2/23/2018	56.1		131.5		13.6	-0.7
		3/2/2018	55.9		131.7		13.8	0.0
		3/9/2018	56.0		131.6		13.7	-0.2
		3/16/2018	56.2		131.4		13.5	0.0
		3/23/2018	56.6		131.0		13.1	-0.4
		3/30/2018	56.3		131.3		13.4	-0.5
		4/6/2018	56.4		131.2		13.3	0.0
		4/13/2018	56.6		131.0		13.1	-0.1
		4/20/2018	56.9		130.7		12.8	-0.5
		4/27/2018	56.5		131.1		13.2	0.2
		5/4/2018	56.4		131.2		13.3	0.0
		5/11/2018	56.9		130.7		12.8	-0.2
		5/18/2018	56.8		130.8		12.9	0.1
		5/25/2018	56.6		131.0		13.1	0.5
		6/1/2018	56.9		130.7		12.8	0.1
		6/8/2018	56.9		130.7		12.8	0.2
		6/15/2018	56.9		130.7		12.8	0.1
		6/22/2018	57.0		130.6		12.7	0.1
		6/29/2018	56.9		130.7		12.8	0.3
		7/6/2018	56.9		130.7		12.8	0.3
		7/13/2018	56.7		130.9		13.0	0.5
		7/20/2018	56.4		131.2		13.3	0.6
		7/27/2018	56.3		131.3		13.4	0.5
		8/3/2018	56.0		131.6		13.7	0.6
		8/10/2018	56.6		131.0		13.1	-0.7
		8/17/2018	55.4		132.2		14.3	0.0
		8/24/2018	54.9		132.7		14.8	0.1
		8/31/2018	54.7		132.9		15.0	0.2
		9/7/2018	54.4		133.2		15.3	0.0
		9/14/2018	54.4		133.2		15.3	-0.6
		9/21/2018	54.5		133.1		15.2	-1.6
		9/28/2018	54.5		133.1		15.2	-1.9
		10/5/2018	54.4		133.2		15.3	-1.9
		10/12/2018	54.3		133.3		15.4	-1.4
		10/19/2018	54.5		133.1		15.2	-1.4
		10/26/2018	54.3		133.3		15.4	-0.4
		11/2/2018	54.4		133.2		15.3	-0.2
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-03	6/10/2016	51.7	185.73	134.0	117.4	16.6	
		6/11/2016	58.5		127.3		9.9	
		6/13/2016	59.6		126.1		8.7	
		6/16/2016	59.7		126.1		8.7	
		6/21/2016	59.8		126.0		8.6	
		6/22/2016	59.9		125.9		8.5	
		6/28/2016	58.0		127.8		10.4	
		7/13/2016	56.2		129.6		12.2	
		7/29/2016	59.7		126.1		8.7	
		8/5/2016	56.2		129.5		12.1	
		8/12/2016	56.0		129.7		12.3	
		8/19/2016	56.2		129.5		12.1	
		8/26/2016	55.8		129.9		12.5	
		9/2/2016	56.0		129.7		12.3	
		9/9/2016	55.9		129.8		12.4	
		9/16/2016	55.0		130.7		13.3	
		9/23/2016	55.0		130.7		13.3	
		9/30/2016	55.0		130.7		13.3	
		10/11/2016	55.0		130.7		13.3	
		10/14/2016	55.0		130.7		13.3	
		10/21/2016	54.8		130.9		13.5	
		10/28/2016	54.7		131.0		13.6	
		11/4/2016	54.9		130.8		13.4	
		11/11/2016	54.3		131.4		14.0	
		11/18/2016	54.3		131.4		14.0	
		11/25/2016	54.3		131.4		14.0	
		12/2/2016	54.2		131.5		14.1	
		12/9/2016	54.9		130.8		13.4	
		12/16/2016	54.8		130.9		13.5	
		12/23/2016	54.9		130.8		13.4	
		12/30/2016	55.1		130.6		13.2	
		1/6/2017	54.9		130.8		13.4	
		1/13/2017	54.4		131.3		13.9	
		1/20/2017	55.0		130.7		13.3	
		1/27/2017	55.2		130.5		13.1	
		2/3/2017	55.4		130.3		12.9	
		2/10/2017	55.7		130.0		12.6	
		2/17/2017	55.8		129.9		12.5	
		2/24/2017	55.5		130.2		12.8	
		3/3/2017	55.9		129.8		12.4	
		3/10/2017	55.8		129.9		12.5	
		3/17/2017	56.1		129.6		12.2	
		3/24/2017	56.1		129.6		12.2	
		3/31/2017	55.9		129.8		12.4	
		4/7/2017	56.3		129.4		12.0	
		4/13/2017	56.2		129.5		12.1	
		4/21/2017	56.3		129.4		12.0	
		4/28/2017	56.5		129.2		11.8	
		5/5/2017	56.3		129.4		12.0	
		5/12/2017	56.5		129.2		11.8	
		5/19/2017	56.7		129.0		11.6	
		5/26/2017	56.8		128.9		11.5	
		6/2/2017	56.8		128.9		11.5	
		6/9/2017	57.0		128.7		11.3	
		6/16/2017	56.9		128.8		11.4	
		6/23/2017	57.1		128.6		11.2	
		6/30/2017	57.1		128.6		11.2	
		7/7/2017	57.1		128.6		11.2	
		7/14/2017	57.1		128.6		11.2	
		7/21/2017	56.8		128.9		11.5	
		7/28/2017	56.4		129.3		11.9	
		8/4/2017	56.2		129.5		12.1	
		8/11/2017	55.5		130.2		12.8	
		8/18/2017	55.0		130.7		13.3	
		8/25/2017	54.5		131.2		13.8	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-03	9/1/2017	54.4		131.3		13.9	
		9/8/2017	53.8		131.9		14.5	
		9/15/2017	52.8		132.9		15.5	
		9/22/2017	52.0		133.7		16.3	
		9/29/2017	51.6		134.1		16.7	
		10/6/2017	51.4		134.3		16.9	
		10/13/2017	51.6		134.1		16.7	
		10/20/2017	51.8		133.9		16.5	
		10/27/2017	52.3		133.4		16.0	
		11/3/2017	52.7		133.0		15.6	
		11/10/2017	52.9		132.8		15.4	
		11/17/2017	53.2		132.5		15.1	
		11/24/2017	53.1		132.6		15.2	
		12/1/2017	53.8		131.9		14.5	
		12/8/2017	53.7		132.0		14.6	
		12/15/2017	54.0		131.7		14.3	
		12/22/2017	53.8		131.9		14.5	
		12/29/2017	54.3		131.4		14.0	
		1/5/2018	54.7		131.0		13.6	0.2
		1/12/2018	54.3		131.4		14.0	0.1
		1/19/2018	54.9		130.8		13.4	0.1
		1/26/2018	55.1		130.6		13.2	0.1
		2/2/2018	55.0		130.7		13.3	0.4
		2/9/2018	55.2		130.5		13.1	0.5
		2/16/2018	55.2		130.5		13.1	0.6
		2/23/2018	55.4		130.3		12.9	0.1
		3/2/2018	55.3		130.4		13.0	0.6
		3/9/2018	55.5		130.2		12.8	0.3
		3/16/2018	55.6		130.2		12.8	0.5
		3/23/2018	56.0		129.7		12.3	0.1
		3/30/2018	55.7		130.0		12.6	0.2
		4/6/2018	55.9		129.8		12.4	0.4
		4/13/2018	55.9		129.8		12.4	0.3
		4/20/2018	56.2		129.5		12.1	0.1
		4/27/2018	56.1		129.6		12.2	0.4
		5/4/2018	56.4		129.3		11.9	-0.1
		5/11/2018	56.6		129.1		11.7	-0.1
		5/18/2018	56.6		129.1		11.7	0.1
		5/25/2018	56.6		129.1		11.7	0.2
		6/1/2018	56.7		129.0		11.6	0.1
		6/8/2018	56.7		129.0		11.6	0.3
		6/15/2018	56.5		129.2		11.8	0.4
		6/22/2018	56.4		129.3		11.9	0.7
		6/29/2018	56.3		129.4		12.0	0.8
		7/6/2018	56.2		129.5		12.1	0.9
		7/13/2018	55.9		129.8		12.4	1.2
		7/20/2018	55.5		130.2		12.8	1.3
		7/27/2018	55.3		130.4		13.0	1.1
		8/3/2018	55.0		130.7		13.3	1.2
		8/10/2018	54.5		131.2		13.8	1.0
		8/17/2018	54.2		131.5		14.1	0.8
		8/24/2018	53.5		132.2		14.8	1.0
		8/31/2018	53.2		132.5		15.1	1.2
		9/7/2018	52.8		132.9		15.5	1.0
		9/14/2018	52.7		133.0		15.6	0.1
		9/21/2018	52.5		133.2		15.8	-0.5
		9/28/2018	52.4		133.3		15.9	-0.8
		10/5/2018	52.5		133.2		15.8	-1.1
		10/12/2018	52.3		133.4		16.0	-0.7
		10/19/2018	52.2		133.5		16.1	-0.4
		10/26/2018	52.4		133.3		15.9	-0.1
		11/2/2018	52.5		133.2		15.8	0.2
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-05	6/22/2016	51.7	180.19	128.5	118.5	10.0	
		6/28/2016	52.4		127.8		9.3	
		7/13/2016	52.3		127.9		9.4	
		7/29/2016	52.8		127.4		8.9	
		8/5/2016	52.1		128.1		9.6	
		8/12/2016	52.0		128.2		9.7	
		8/19/2016	52.2		128.0		9.5	
		8/26/2016	52.0		128.2		9.7	
		9/2/2016	52.0		128.2		9.7	
		9/9/2016	52.0		128.2		9.7	
		9/16/2016	51.2		129.0		10.5	
		9/23/2016	50.9		129.3		10.8	
		9/30/2016	50.3		129.9		11.4	
		10/11/2016	50.1		130.1		11.6	
		10/14/2016	50.0		130.2		11.7	
		10/21/2016	50.0		130.2		11.7	
		10/28/2016	50.1		130.1		11.6	
		11/4/2016	50.3		129.9		11.4	
		11/11/2016	50.9		129.3		10.8	
		11/18/2016	51.0		129.2		10.7	
		11/25/2016	51.0		129.2		10.7	
		12/2/2016	51.1		129.1		10.6	
		12/9/2016	51.6		128.6		10.1	
		12/16/2016	51.3		128.9		10.4	
		12/23/2016	51.2		129.0		10.5	
		12/30/2016	51.1		129.1		10.6	
		1/6/2017	51.4		128.8		10.3	
		1/13/2017	51.6		128.6		10.1	
		1/20/2017	51.3		128.9		10.4	
		1/27/2017	51.8		128.4		9.9	
		2/3/2017	51.3		128.9		10.4	
		2/10/2017	51.4		128.8		10.3	
		2/17/2017	52.2		128.0		9.5	
		2/24/2017	52.1		128.1		9.6	
		3/3/2017	51.5		128.7		10.2	
		3/10/2017	52.3		127.9		9.4	
		3/17/2017	53.0		127.2		8.7	
		3/24/2017	53.2		127.0		8.5	
		3/31/2017	53.3		126.9		8.4	
		4/7/2017	53.7		126.5		8.0	
		4/13/2017	53.9		126.3		7.8	
		4/21/2017	53.9		126.3		7.8	
		4/28/2017	54.1		126.1		7.6	
		5/5/2017	54.0		126.2		7.7	
		5/12/2017	54.1		126.1		7.6	
		5/19/2017	54.2		126.0		7.5	
		5/26/2017	54.3		125.9		7.4	
		6/2/2017	54.3		125.9		7.4	
		6/9/2017	54.3		125.9		7.4	
		6/16/2017	54.3		125.9		7.4	
		6/23/2017	54.4		125.8		7.3	
		6/30/2017	54.5		125.7		7.2	
		7/7/2017	54.5		125.7		7.2	
		7/14/2017	54.6		125.6		7.1	
		7/21/2017	54.6		125.6		7.1	
		7/28/2017	54.3		125.9		7.4	
		8/4/2017	53.9		126.3		7.8	
		8/11/2017	53.1		127.1		8.6	
		8/18/2017	54.2		126.0		7.5	
		8/25/2017	51.1		129.1		10.6	
		9/1/2017	52.1		128.1		9.6	
		9/8/2017	51.4		128.8		10.3	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-05	9/15/2017	50.8		129.4		10.9	
		9/22/2017	50.0		130.2		11.7	
		9/29/2017	50.0		130.2		11.7	
		10/6/2017	50.3		129.9		11.4	
		10/13/2017	50.3		129.9		11.4	
		10/20/2017	51.2		129.0		10.5	
		10/27/2017	51.5		128.7		10.2	
		11/3/2017	51.8		128.4		9.9	
		11/10/2017	51.9		128.3		9.8	
		11/17/2017	52.5		127.7		9.2	
		11/24/2017	52.3		127.9		9.4	
		12/1/2017	52.7		127.5		9.0	
		12/8/2017	52.8		127.4		8.9	
		12/15/2017	52.9		127.3		8.8	
		12/22/2017	52.8		127.4		8.9	
		12/29/2017	53.2		127.0		8.5	
		1/5/2018	53.3		126.9		8.4	-1.9
		1/12/2018	53.0		127.2		8.7	-1.4
		1/19/2018	53.3		126.9		8.4	-2.0
		1/26/2018	53.4		126.8		8.3	-1.6
		2/2/2018	53.3		126.9		8.4	-2.0
		2/9/2018	53.4		126.8		8.3	-2.0
		2/16/2018	53.3		126.9		8.4	-1.1
		2/23/2018	53.4		126.8		8.3	-1.3
		3/2/2018	53.5		126.7		8.2	-2.0
		3/9/2018	53.6		126.6		8.1	-1.3
		3/16/2018	53.6		126.6		8.1	-0.6
		3/23/2018	53.9		126.3		7.8	-0.7
		3/30/2018	53.7		126.5		8.0	-0.4
		4/6/2018	53.8		126.4		7.9	-0.1
		4/13/2018	53.9		126.3		7.8	0.0
		4/20/2018	53.9		126.3		7.8	0.0
		4/27/2018	53.9		126.3		7.8	0.2
		5/4/2018	54.0		126.2		7.7	0.0
		5/11/2018	54.1		126.1		7.6	0.0
		5/18/2018	54.1		126.1		7.6	0.1
		5/25/2018	54.9		125.3		6.8	-0.6
		6/1/2018	54.3		125.9		7.4	0.0
		6/8/2018	54.4		125.8		7.3	-0.1
		6/15/2018	54.4		125.8		7.3	-0.1
		6/22/2018	54.4		125.8		7.3	0.0
		6/29/2018	54.4		125.8		7.3	0.1
		7/6/2018	54.4		125.8		7.3	0.1
		7/13/2018	53.9		126.3		7.8	0.7
		7/20/2018	53.7		126.5		8.0	0.9
		7/27/2018	53.4		126.8		8.3	0.9
		8/3/2018	53.4		126.8		8.3	0.5
		8/10/2018	53.8		126.4		7.9	-0.7
		8/17/2018	52.4		127.8		9.3	1.8
		8/24/2018	51.8		128.4		9.9	-0.7
		8/31/2018	51.6		128.6		10.1	0.5
		9/7/2018	51.3		128.9		10.4	0.1
		9/14/2018	51.2		129.0		10.5	-0.4
		9/21/2018	51.4		128.8		10.3	-1.4
		9/28/2018	51.4		128.8		10.3	-1.4
		10/5/2018	51.3		128.9		10.4	-1.0
		10/12/2018	51.3		128.9		10.4	-1.0
		10/19/2018	51.2		129.0		10.5	0.0
		10/26/2018	51.3		128.9		10.4	0.2
		11/2/2018	51.7		128.5		10.0	0.1
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-15D	2/21/2017	55.8	184.44	128.6	117.0	11.6	
		2/23/2017	57.8		126.7		9.7	
		2/24/2017	57.9		126.5		9.5	
		3/3/2017	58.6		125.8		8.8	
		3/10/2017	58.4		126.0		9.0	
		3/17/2017	59.0		125.4		8.4	
		3/24/2017	59.3		125.1		8.1	
		3/31/2017	59.4		125.0		8.0	
		4/7/2017	59.8		124.6		7.6	
		4/13/2017	59.9		124.5		7.5	
		4/21/2017	59.9		124.5		7.5	
		4/28/2017	60.2		124.2		7.2	
		5/5/2017	59.9		124.5		7.5	
		5/12/2017	60.2		124.2		7.2	
		5/19/2017	60.4		124.0		7.0	
		5/26/2017	60.5		123.9		6.9	
		6/2/2017	60.5		123.9		6.9	
		6/9/2017	60.4		124.0		7.0	
		6/16/2017	60.5		123.9		6.9	
		6/23/2017	60.6		123.8		6.8	
		6/30/2017	60.7		123.7		6.7	
		7/7/2017	60.6		123.8		6.8	
		7/14/2017	60.7		123.7		6.7	
		7/21/2017	60.8		123.6		6.6	
		7/28/2017	60.7		123.7		6.7	
		8/4/2017	60.9		123.5		6.5	
		8/11/2017	60.7		123.7		6.7	
		8/18/2017	60.7		123.7		6.7	
		8/25/2017	60.5		123.9		6.9	
		9/1/2017	60.5		123.9		6.9	
		9/8/2017	60.1		124.3		7.3	
		9/15/2017	59.7		124.7		7.7	
		9/22/2017	59.1		125.3		8.3	
		9/29/2017	58.8		125.6		8.6	
		10/6/2017	58.7		125.7		8.7	
		10/13/2017	58.6		125.8		8.8	
		10/20/2017	58.8		125.6		8.6	
		10/27/2017	59.0		125.4		8.4	
		11/3/2017	59.3		125.1		8.1	
		11/10/2017	59.4		125.0		8.0	
		11/17/2017	59.6		124.8		7.8	
		11/24/2017	59.6		124.8		7.8	
		12/1/2017	60.0		124.4		7.4	
		12/8/2017	59.8		124.6		7.6	
		12/15/2017	60.0		124.4		7.4	
		12/22/2017	60.1		124.3		7.3	
		12/29/2017	60.1		124.3		7.3	
		1/5/2018	60.4		124.0		7.0	
		1/12/2018	60.0		124.4		7.4	
		1/19/2018	60.4		124.0		7.0	
		1/26/2018	60.4		124.0		7.0	
		2/2/2018	60.3		124.1		7.1	
		2/9/2018	60.4		124.0		7.0	
		2/16/2018	60.3		124.1		7.1	
		2/23/2018	60.5		123.9		6.9	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
		3/2/2018	60.4		124.0		7.0	
		3/9/2018	60.4		124.0		7.0	
		3/16/2018	60.3		124.1		7.1	
		3/23/2018	60.4		124.0		7.0	
		3/30/2018	60.6		123.8	See Note 16	6.8	
		4/6/2018	60.6		123.8		6.8	-0.8
		4/13/2018	60.8		123.6		6.6	-0.9
		4/20/2018	60.8		123.6		6.6	-0.9
		4/27/2018	60.7		123.7		6.7	-0.5
		5/4/2018	61.0		123.4		6.4	-1.1
		5/11/2018	61.0		123.4		6.4	-0.8
		5/18/2018	60.9		123.5		6.5	-0.5
		5/25/2018	60.9		123.5		6.5	-0.4
		6/1/2018	60.9		123.5		6.5	-0.4
		6/8/2018	61.1		123.3		6.3	-0.7
		6/15/2018	61.0		123.4		6.4	-0.5
		6/22/2018	61.0		123.4		6.4	-0.4
		6/29/2018	61.0		123.4		6.4	-0.3
		7/6/2018	61.1		123.3		6.3	-0.5
		7/13/2018	61.0		123.4		6.4	-0.3
		7/20/2018	60.9		123.5		6.5	-0.1
		7/27/2018	60.9		123.5		6.5	-0.2
		8/3/2018	61.0		123.4		6.4	-0.1
		8/10/2018	60.8		123.6		6.6	-0.1
		8/17/2018	60.8		123.6		6.6	-0.1
II	SB-15D	8/24/2018	60.3		124.1		7.1	0.2
		8/31/2018	60.3		124.1		7.1	0.2
		9/7/2018	60.0		124.4		7.4	0.1
		9/14/2018	60.0		124.4		7.4	-0.3
		9/21/2018	59.9		124.5		7.5	-0.8
		9/28/2018	59.8		124.6		7.6	-1.0
		10/5/2018	59.7		124.7		7.7	-1.0
		10/12/2018	59.5		124.9		7.9	-0.9
		10/19/2018	59.5		124.9		7.9	-0.7
		10/26/2018	59.4		125.0		8.0	-0.4
		11/2/2018	59.4		125.0		8.0	-0.1
		11/9/2018	59.5		124.9		7.9	-0.1
		11/16/2018	59.6		124.8		7.8	0.0
		11/23/2018	59.4		125.0		8.0	0.2
		11/30/2018	59.5		124.9		7.9	0.5
		12/7/2018	59.8		124.6		7.6	0.0
		12/14/2018	59.6		124.8		7.8	0.4
		12/21/2018	59.5		124.9		7.9	0.6
		12/28/2018	59.7		124.7		7.7	0.4
		1/4/2019	59.5		124.9		7.9	0.9
		1/11/2019	59.5		124.9		7.9	0.5
		1/18/2019	59.6		124.8		7.8	0.8
		1/25/2019	60.0		124.4		7.4	0.4
		2/1/2019	60.1		124.3		7.3	0.2
		2/8/2019	60.2		124.2		7.2	0.2
		2/15/2019	60.0		124.4		7.4	0.3
		2/22/2019	60.3		124.1		7.1	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-15D	3/1/2019	60.3		124.1		7.1	0.1
		3/8/2019	60.4		124.0		7.0	0.0
		3/15/2019	60.3		124.1		7.1	0.0
		3/22/2019	60.4		124.0		7.0	0.0
		3/29/2019	60.6		123.8		6.8	0.0
		4/5/2019	60.5		123.9		6.9	0.1
		4/12/2019	60.5		123.9		6.9	0.3
		4/19/2019	60.3		124.1		7.1	0.5
		4/26/2019	60.3		124.1		7.1	0.4
		5/3/2019	60.4		124.0		7.0	0.6
		5/10/2019	60.4		124.0		7.0	0.6
		5/17/2019	60.7		123.7		6.7	0.2
		5/24/2019	61.0		123.4		6.4	-0.1
		5/31/2019	60.9		123.5		6.5	0.0
		6/7/2019	60.7		123.7		6.7	0.4
		6/14/2019	61.0		123.4		6.4	0.0
		6/21/2019	60.9		123.5		6.5	0.1
		6/28/2019	60.9		123.5		6.5	0.1
		7/5/2019	60.8		123.6		6.6	0.3
		7/12/2019	60.8		123.6		6.6	0.2
		7/19/2019	60.8		123.6		6.6	0.1
		7/26/2019	60.9		123.5		6.5	0.0
		8/2/2019	60.7		123.7		6.7	0.3
		8/9/2019	60.8		123.6		6.6	0.0
		8/16/2019	60.8		123.6		6.6	0.0
		8/23/2019	60.6		123.8		6.8	-0.3
		8/30/2019	60.5		123.9		6.9	-0.2
		9/6/2019	60.5		123.9		6.9	-0.5
		9/13/2019	60.3		124.1		7.1	-0.3
		9/20/2019	60.3		124.1		7.1	-0.4
		9/27/2019	60.1		124.3		7.3	-0.3

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-16D	2/16/2017	54.5	183.60	129.1	117.2	11.9	
		2/17/2017	58.4		125.2		8.0	
		2/20/2017	58.3		125.3		8.1	
		2/23/2017	57.7		126.0		8.7	
		2/24/2017	57.8		125.8		8.6	
		3/3/2017	58.4		125.2		8.0	
		3/10/2017	58.2		125.4		8.2	
		3/17/2017	59.6		124.0		6.8	
		3/24/2017	59.9		123.7		6.5	
		3/31/2017	59.7		123.9		6.7	
		4/7/2017	60.3		123.3		6.1	
		4/13/2017	60.3		123.3		6.1	
		4/21/2017	60.3		123.3		6.1	
		4/28/2017	60.5		123.1		5.9	
		5/5/2017	60.2		123.4		6.2	
		5/12/2017	60.4		123.2		6.0	
		5/19/2017	60.4		123.2		6.0	
		5/26/2017	60.7		122.9		5.7	
		6/2/2017	60.6		123.0		5.8	
		6/9/2017	60.6		123.0		5.8	
		6/16/2017	60.6		123.0		5.8	
		6/23/2017	60.6		123.0		5.8	
		6/30/2017	60.7		122.9		5.7	
		7/7/2017	60.7		122.9		5.7	
		7/14/2017	60.6		123.0		5.8	
		7/21/2017	60.7		122.9		5.7	
		7/28/2017	60.5		123.1		5.9	
		8/4/2017	60.4		123.2		6.0	
		8/11/2017	59.7		123.9		6.7	
		8/18/2017	60.0		123.6		6.4	
		8/25/2017	61.0		122.6		5.4	
		9/1/2017	60.2		123.4		6.2	
		9/8/2017	59.6		124.0		6.8	
		9/15/2017	59.3		124.3		7.1	
		9/22/2017	58.6		125.0		7.8	
		9/29/2017	58.5		125.1		7.9	
		10/6/2017	58.5		125.1		7.9	
		10/13/2017	58.8		124.8		7.6	
		10/20/2017	59.4		124.2		7.0	
		10/27/2017	59.6		124.0		6.8	
		11/3/2017	59.7		123.9		6.7	
		11/10/2017	59.7		123.9		6.7	
		11/17/2017	59.9		123.7		6.5	
		11/24/2017	59.8		123.8		6.6	
		12/1/2017	59.6		124.0		6.8	
		12/8/2017	60.1		123.5		6.3	
		12/15/2017	60.3		123.3		6.1	
		12/22/2017	60.4		123.2		6.0	
		12/29/2017	60.4		123.2		6.0	
		1/5/2018	60.4		123.2		6.0	
		1/12/2018	59.8		123.8		6.6	
		1/19/2018	60.1		123.5		6.3	
		1/26/2018	60.1		123.5		6.3	
		2/2/2018	60.0		123.6		6.4	
		2/9/2018	60.0		123.6		6.4	
		2/16/2018	60.0		123.6		6.4	
		2/23/2018	60.1		123.5		6.3	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-16D	3/2/2018	60.0		123.6		6.4	
		3/9/2018	60.1		123.5		6.3	
		3/16/2018	60.1		123.5		6.3	
		3/23/2018	60.4		123.2		6.0	
		3/30/2018	60.1		123.5	See Note 16	6.3	
		4/6/2018	60.2		123.4		6.2	0.1
		4/13/2018	60.3		123.3		6.1	0.0
		4/20/2018	60.1		123.5		6.3	0.2
		4/27/2018	60.1		123.5		6.3	0.4
		5/4/2018	60.3		123.3		6.1	-0.1
		5/11/2018	60.3		123.3		6.1	0.1
		5/18/2018	60.2		123.4		6.2	0.2
		5/25/2018	60.2		123.4		6.2	0.5
		6/1/2018	60.3		123.3		6.1	0.3
		6/8/2018	60.4		123.2		6.0	0.2
		6/15/2018	60.3		123.3		6.1	0.3
		6/22/2018	60.3		123.3		6.1	0.3
		6/29/2018	60.2		123.4		6.2	0.5
		7/6/2018	60.3		123.3		6.1	0.4
		7/13/2018	60.3		123.3		6.1	0.3
		7/20/2018	60.2		123.4		6.2	0.5
		7/27/2018	60.2		123.4		6.2	0.3
		8/3/2018	60.2		123.4		6.2	0.2
		8/10/2018	60.0		123.6		6.4	-0.3
		8/17/2018	60.0		123.6		6.4	0.0
		8/24/2018	59.7		123.9		6.7	1.3
		8/31/2018	59.6		124.0		6.8	0.6
		9/7/2018	59.5		124.1		6.9	0.1
		9/14/2018	59.4		124.2		7.0	-0.1
		9/21/2018	59.7		123.9		6.7	-1.1
		9/28/2018	59.5		124.1		6.9	-1.0
		10/5/2018	59.5		124.1		6.9	-1.0
		10/12/2018	59.4		124.2		7.0	-0.6
		10/19/2018	59.4		124.2		7.0	0.0
		10/26/2018	59.3		124.3		7.1	0.3
		11/2/2018	59.4		124.2		7.0	0.3
		11/9/2018	59.4		124.2		7.0	0.3
		11/16/2018	59.5		124.1		6.9	0.4
		11/23/2018	59.2		124.4		7.2	0.6
		11/30/2018	59.4		124.2		7.0	0.2
		12/7/2018	59.8		123.8		6.6	0.3
		12/14/2018	60.0		123.6		6.4	0.3
		12/21/2018	59.5		124.1		6.9	0.9
		12/28/2018	59.5		124.1		6.9	0.9
		1/4/2019	59.3		124.3		7.1	1.1
		1/11/2019	59.3		124.3		7.1	0.5
		1/18/2019	59.6		124.0		6.8	0.5
		1/25/2019	59.8		123.8		6.6	0.3
		2/1/2019	59.9		123.7		6.5	0.1
		2/8/2019	59.9		123.7		6.5	0.1
		2/15/2019	59.7		123.9		6.7	0.3
		2/22/2019	59.9		123.7		6.5	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-16D	3/1/2019	60.0		123.6		6.4	0.0
		3/8/2019	60.1		123.5		6.3	0.0
		3/15/2019	59.9		123.7		6.5	0.2
		3/22/2019	60.0		123.6		6.4	0.4
		3/29/2019	60.2		123.4		6.2	-0.1
		4/5/2019	60.1		123.5		6.3	0.1
		4/12/2019	60.3		123.3		6.1	0.0
		4/19/2019	60.1		123.5		6.3	0.0
		4/26/2019	60.3		123.3		6.1	-0.2
		5/3/2019	60.4		123.2		6.0	-0.1
		5/10/2019	60.5		123.1		5.9	-0.2
		5/17/2019	60.5		123.1		5.9	-0.3
		5/24/2019	60.4		123.2		6.0	-0.2
		5/31/2019	60.3		123.3		6.1	0.0
		6/7/2019	60.0		123.6		6.4	0.4
		6/14/2019	60.2		123.4		6.2	0.1
		6/21/2019	60.2		123.4		6.2	0.1
		6/28/2019	60.1		123.5		6.3	0.1
		7/5/2019	60.1		123.5		6.3	0.2
		7/12/2019	60.1		123.5		6.3	0.2
		7/19/2019	60.1		123.5		6.3	0.1
		7/26/2019	60.2		123.4		6.2	0.0
		8/2/2019	60.0		123.6		6.4	0.2
		8/9/2019	60.0		123.6		6.4	0.0
		8/16/2019	59.9		123.7		6.5	0.1
		8/23/2019	59.8		123.8		6.6	-0.1
		8/30/2019	59.7		123.9		6.7	-0.1
		9/6/2019	59.6		124.0		6.8	-0.1
		9/13/2019	59.5		124.1		6.9	-0.1
		9/20/2019	59.5		124.1		6.9	0.2
		9/27/2019	59.5		124.1		6.9	0.0

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-17D	2/16/2017	60.3	185.47	125.2	119.6	5.6	
		2/17/2017	60.3		125.2		5.6	
		2/20/2017	60.2		125.3		5.7	
		2/23/2017	59.9		125.6		6.0	
		2/24/2017	60.1		125.4		5.8	
		3/3/2017	60.7		124.8		5.2	
		3/10/2017	60.6		124.9		5.3	
		3/17/2017	60.9		124.6		5.0	
		3/24/2017	60.9		124.6		5.0	
		3/31/2017	60.6		124.9		5.3	
		4/7/2017	61.0		124.5		4.9	
		4/13/2017	61.1		124.4		4.8	
		4/21/2017	61.2		124.3		4.7	
		4/28/2017	61.3		124.2		4.6	
		5/5/2017	61.1		124.4		4.8	
		5/12/2017	61.3		124.2		4.6	
		5/19/2017	61.3		124.2		4.6	
		5/26/2017	61.5		124.0		4.4	
		6/2/2017	61.5		124.0		4.4	
		6/9/2017	61.5		124.0		4.4	
		6/16/2017	61.6		123.9		4.3	
		6/23/2017	61.7		123.8		4.2	
		6/30/2017	61.8		123.7		4.1	
		7/7/2017	61.8		123.7		4.1	
		7/14/2017	61.8		123.7		4.1	
		7/21/2017	61.8		123.7		4.1	
		7/28/2017	61.7		123.8		4.2	
		8/4/2017	61.6		123.9		4.3	
		8/11/2017	61.7		123.8		4.2	
		8/18/2017	61.5		124.0		4.4	
		8/25/2017	60.8		124.7		5.1	
		9/1/2017	60.8		124.7		5.1	
		9/8/2017	60.1		125.4		5.8	
		9/15/2017	59.3		126.2		6.6	
		9/22/2017	58.3		127.2		7.6	
		9/29/2017	57.6		127.9		8.3	
		10/6/2017	57.1		128.4		8.8	
		10/13/2017	57.2		128.3		8.7	
		10/20/2017	57.2		128.3		8.7	
		10/27/2017	57.9		127.6		8.0	
		11/3/2017	58.5		127.0		7.4	
		11/10/2017	58.6		126.9		7.3	
		11/17/2017	58.9		126.6		7.0	
		11/24/2017	58.8		126.7		7.1	
		12/1/2017	59.6		125.9		6.3	
		12/8/2017	59.3		126.2		6.6	
		12/15/2017	59.4		126.1		6.5	
		12/22/2017	59.6		125.9		6.3	
		12/29/2017	59.7		125.8		6.2	
		1/5/2018	60.3		125.2		5.6	
		1/12/2018	60.0		125.5		5.9	
		1/19/2018	60.8		124.7		5.1	
		1/26/2018	60.9		124.6		5.0	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-17D	2/2/2018	60.9		124.6		5.0	
		2/9/2018	61.1		124.4		4.8	
		2/16/2018	61.1		124.4		4.8	
		2/23/2018	61.2		124.3		4.7	
		3/2/2018	61.2		124.3		4.7	
		3/9/2018	61.3		124.2		4.6	
		3/16/2018	61.4		124.1		4.5	
		3/23/2018	61.8		123.7		4.1	
		3/30/2018	61.8		123.7	See Note 16	4.1	
		4/6/2018	61.8		123.7		4.1	-0.8
		4/13/2018	61.9		123.6		4.0	-0.8
		4/20/2018	62.1		123.4		3.8	-0.9
		4/27/2018	62.0		123.5		3.9	-0.7
		5/4/2018	62.2		123.3		3.7	-1.1
		5/11/2018	62.3		123.2		3.6	-1.0
		5/18/2018	62.2		123.3		3.7	-0.9
		5/25/2018	62.7		122.8		3.2	-1.2
		6/1/2018	62.4		123.1		3.5	-0.9
		6/8/2018	62.5		123.0		3.4	-1.0
		6/15/2018	62.4		123.1		3.5	-0.8
		6/22/2018	62.4		123.1		3.5	-0.7
		6/29/2018	62.4		123.1		3.5	-0.6
		7/6/2018	62.4		123.1		3.5	-0.6
		7/13/2018	62.3		123.2		3.6	-0.5
		7/20/2018	62.0		123.5		3.9	-0.2
		7/27/2018	61.9		123.6		4.0	-0.2
		8/3/2018	61.7		123.8		4.2	-0.1
		8/10/2018	61.4		124.1		4.5	0.3
		8/17/2018	61.2		124.3		4.7	0.3
		8/24/2018	60.5		125.0		5.4	0.3
		8/31/2018	60.1		125.4		5.8	0.7
		9/7/2018	59.7		125.8		6.2	0.4
		9/14/2018	59.5		126.0		6.4	-0.2
		9/21/2018	59.4		126.1		6.5	-1.1
		9/28/2018	59.2		126.3		6.7	-1.6
		10/5/2018	59.0		126.5		6.9	-1.9
		10/12/2018	58.8		126.7		7.1	-1.6
		10/19/2018	59.2		126.3		6.7	-2.0
		10/26/2018	58.7		126.8		7.2	-0.8
		11/2/2018	58.7		126.8		7.2	-0.2
		11/9/2018	58.6		126.9		7.3	0.0
		11/16/2018	58.7		126.8		7.2	0.2
		11/23/2018	58.5		127.0		7.4	0.3
		11/30/2018	58.7		126.8		7.2	0.9
		12/7/2018	59.0		126.5		6.9	0.3
		12/14/2018	58.6		126.9		7.3	0.8
		12/21/2018	58.5		127.0		7.4	1.1
		12/28/2018	58.9		126.6		7.0	0.8
		1/4/2019	58.6		126.9		7.3	1.7
		1/11/2019	58.7		126.8		7.2	1.3
		1/18/2019	59.0		126.5		6.9	1.8
		1/25/2019	59.5		126.0		6.4	1.4

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-17D	2/1/2019	60.0		125.5		5.9	0.9
		2/8/2019	60.3		125.2		5.6	0.8
		2/15/2019	60.2		125.3		5.7	0.9
		2/22/2019	60.5		125.0		5.4	0.7
		3/1/2019	60.6		124.9		5.3	0.6
		3/8/2019	60.6		124.9		5.3	0.7
		3/15/2019	60.6		124.9		5.3	0.8
		3/22/2019	60.8		124.7		5.1	1.0
		3/29/2019	60.8		124.7		5.1	1.0
		4/5/2019	60.7		124.8		5.2	1.1
		4/12/2019	60.5		125.0		5.4	1.4
		4/19/2019	60.3		125.2		5.6	1.8
		4/26/2019	60.4		125.1		5.5	1.6
		5/3/2019	60.5		125.0		5.4	1.7
		5/10/2019	60.4		125.1		5.5	1.9
		5/17/2019	60.4		125.1		5.5	1.8
		5/24/2019	60.5		125.0		5.4	2.2
		5/31/2019	60.4		125.1		5.5	2.0
		6/7/2019	60.6		124.9		5.3	1.9
		6/14/2019	61.2		124.3		4.7	1.2
		6/21/2019	61.1		124.4		4.8	1.3
		6/28/2019	61.2		124.3		4.7	1.2
		7/5/2019	61.2		124.3		4.7	1.2
		7/12/2019	61.2		124.3		4.7	1.1
		7/19/2019	61.3		124.2		4.6	0.7
		7/26/2019	61.5		124.0		4.4	0.4
		8/2/2019	61.2		124.3		4.7	0.5
		8/9/2019	61.2		124.3		4.7	0.2
		8/16/2019	61.0		124.5		4.9	0.2
		8/23/2019	60.6		124.9		5.3	-0.1
		8/30/2019	60.1		125.4		5.8	0.0
		9/6/2019	59.3		126.2		6.6	0.4
		9/13/2019	59.0		126.5		6.9	0.5
		9/20/2019	58.6		126.9		7.3	0.8
		9/27/2019	58.3		127.2		7.6	0.9

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-18D	2/16/2017	55.1	182.71	127.6	120.3	7.3	
		2/17/2017	58.9		123.8		3.5	
		2/20/2017	58.8		123.9		3.6	
		2/23/2017	58.7		124.0		3.7	
		2/24/2017	58.9		123.8		3.5	
		3/3/2017	59.2		123.5		3.2	
		3/10/2017	59.2		123.5		3.2	
		3/17/2017	59.4		123.3		3.0	
		3/24/2017	59.6		123.1		2.8	
		3/31/2017	59.2		123.5		3.2	
		4/7/2017	59.5		123.2		2.9	
		4/13/2017	59.7		123.0		2.7	
		4/21/2017	59.5		123.2		2.9	
		4/28/2017	59.7		123.0		2.7	
		5/5/2017	59.5		123.2		2.9	
		5/12/2017	59.6		123.1		2.8	
		5/19/2017	59.7		123.0		2.7	
		5/26/2017	59.7		123.0		2.7	
		6/2/2017	59.6		123.1		2.8	
		6/9/2017	59.5		123.2		2.9	
		6/16/2017	59.5		123.2		2.9	
		6/23/2017	59.6		123.1		2.8	
		6/30/2017	59.8		122.9		2.6	
		7/7/2017	59.7		123.0		2.7	
		7/14/2017	59.7		123.0		2.7	
		7/21/2017	60.1		122.6		2.3	
		7/28/2017	60.0		122.7		2.4	
		8/4/2017	60.2		122.5		2.2	
		8/11/2017	60.1		122.6		2.3	
		8/18/2017	60.0		122.7		2.4	
		8/25/2017	59.9		122.8		2.5	
		9/1/2017	59.7		123.0		2.7	
		9/8/2017	59.1		123.6		3.3	
		9/15/2017	58.1		124.6		4.3	
		9/22/2017	57.0		125.7		5.4	
		9/29/2017	56.2		126.5		6.2	
		10/6/2017	56.5		126.2		5.9	
		10/13/2017	56.4		126.3		6.0	
		10/20/2017	56.7		126.0		5.7	
		10/27/2017	58.0		124.7		4.4	
		11/3/2017	58.2		124.5		4.2	
		11/10/2017	58.1		124.6		4.3	
		11/17/2017	58.4		124.3		4.0	
		11/24/2017	58.4		124.3		4.0	
		12/1/2017	58.7		124.0		3.7	
		12/8/2017	58.7		124.0		3.7	
		12/15/2017	58.5		124.2		3.9	
		12/22/2017	58.8		123.9		3.6	
		12/29/2017	59.1		123.6		3.3	
		1/5/2018	59.7		123.0		2.7	
		1/12/2018	59.5		123.2		2.9	
		1/19/2018	60.0		122.7		2.4	
		1/26/2018	60.0		122.7		2.4	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-18D	2/2/2018	60.0		122.7		2.4	
		2/9/2018	59.9		122.8		2.5	
		2/16/2018	60.0		122.7		2.4	
		2/23/2018	60.1		122.6		2.3	
		3/2/2018	60.0		122.7		2.4	
		3/9/2018	60.0		122.7		2.4	
		3/16/2018	60.1		122.6		2.3	
		3/23/2018	60.3		122.4		2.1	
		3/30/2018	60.2		122.5	See Note 16	2.2	
		4/6/2018	60.2		122.5		2.2	-0.7
		4/13/2018	60.6		122.1		1.8	-0.9
		4/20/2018	60.6		122.1		1.8	-1.1
		4/27/2018	60.5		122.2		1.9	-0.8
		5/4/2018	60.7		122.0		1.7	-1.2
		5/11/2018	60.8		121.9		1.6	-1.2
		5/18/2018	60.7		122.0		1.7	-1.0
		5/25/2018	60.7		122.0		1.7	-1.0
		6/1/2018	60.8		121.9		1.6	-1.2
		6/8/2018	60.7		122.0		1.7	-1.2
		6/15/2018	60.7		122.0		1.7	-1.2
		6/22/2018	60.7		122.0		1.7	-1.1
		6/29/2018	60.7		122.0		1.7	-0.9
		7/6/2018	60.7		122.0		1.7	-1.0
		7/13/2018	60.6		122.1		1.8	-0.9
		7/20/2018	60.4		122.3		2.0	-0.3
		7/27/2018	60.4		122.3		2.0	-0.4
		8/3/2018	60.2		122.5		2.2	0.0
		8/10/2018	60.1		122.6		2.3	0.0
		8/17/2018	60.0		122.7		2.4	0.0
		8/24/2018	59.6		123.1		2.8	0.3
		8/31/2018	59.4		123.3		3.0	0.3
		9/7/2018	59.1		123.6		3.3	0.0
		9/14/2018	58.9		123.8		3.5	-0.8
		9/21/2018	58.7		124.0		3.7	-1.7
		9/28/2018	58.5		124.2		3.9	-2.3
		10/5/2018	58.4		124.3		4.0	-1.9
		10/12/2018	58.4		124.3		4.0	-2.0
		10/19/2018	58.4		124.3		4.0	-1.7
		10/26/2018	58.2		124.5		4.2	-0.2
		11/2/2018	57.9		124.8		4.5	0.3
		11/9/2018	57.7		125.0		4.7	0.4
		11/16/2018	57.8		124.9		4.6	0.6
		11/23/2018	57.7		125.0		4.7	0.7
		11/30/2018	57.8		124.9		4.6	0.9
		12/7/2018	58.2		124.5		4.2	0.5
		12/14/2018	58.1		124.6		4.3	0.4
		12/21/2018	57.9		124.8		4.5	0.9
		12/28/2018	57.8		124.9		4.6	1.3
		1/4/2019	57.8		124.9		4.6	1.9
		1/11/2019	57.7		125.0		4.7	1.8
		1/18/2019	58.8		123.9		3.6	1.2
		1/25/2019	59.3		123.4		3.1	0.7

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-18D	2/1/2019	59.5		123.2		2.9	0.5
		2/8/2019	59.8		122.9		2.6	0.1
		2/15/2019	59.7		123.0		2.7	0.3
		2/22/2019	59.9		122.8		2.5	0.2
		3/1/2019	59.9		122.8		2.5	0.1
		3/8/2019	59.9		122.8		2.5	0.1
		3/15/2019	60.0		122.7		2.4	0.1
		3/22/2019	60.0		122.7		2.4	0.3
		3/29/2019	59.6		123.1		2.8	0.6
		4/5/2019	59.5		123.2		2.9	0.7
		4/12/2019	59.3		123.4		3.1	1.3
		4/19/2019	59.2		123.5		3.2	1.4
		4/26/2019	59.2		123.5		3.2	1.3
		5/3/2019	59.3		123.4		3.1	1.4
		5/10/2019	59.3		123.4		3.1	1.5
		5/17/2019	59.3		123.4		3.1	1.4
		5/24/2019	59.4		123.3		3.0	1.3
		5/31/2019	59.5		123.2		2.9	1.3
		6/7/2019	59.4		123.3		3.0	1.3
		6/14/2019	60.0		122.7		2.4	0.7
		6/21/2019	59.8		122.9		2.6	0.9
		6/28/2019	59.8		122.9		2.6	0.9
		7/5/2019	59.8		122.9		2.6	0.9
		7/12/2019	60.0		122.7		2.4	0.6
		7/19/2019	60.0		122.7		2.4	0.4
		7/26/2019	60.2		122.5		2.2	0.2
		8/2/2019	59.9		122.8		2.5	0.3
		8/9/2019	60.0		122.7		2.4	0.1
		8/16/2019	59.5		123.2		2.9	0.5
		8/23/2019	59.1		123.6		3.3	0.5
		8/30/2019	58.8		123.9		3.6	0.6
		9/6/2019	58.6		124.1		3.8	0.5
		9/13/2019	58.3		124.4		4.1	0.6
		9/20/2019	58.1		124.6		4.3	0.6
		9/27/2019	57.8		124.9		4.6	0.7

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-19D	2/16/2017	87.5	203.06	115.6	114.2	1.4	
		2/17/2017	87.3		115.8		1.6	
		2/20/2017	87.2		115.9		1.7	
		2/23/2017	87.1		116.0		1.8	
		2/24/2017	86.5		116.6		2.4	
		3/3/2017	87.3		115.8		1.6	
		3/10/2017	87.2		115.9		1.7	
		3/17/2017	87.3		115.8		1.6	
		3/24/2017	87.3		115.8		1.6	
		3/31/2017	87.2		115.9		1.7	
		4/7/2017	87.3		115.8		1.6	
		4/13/2017	87.3		115.8		1.6	
		4/21/2017	87.4		115.7		1.5	
		4/28/2017	87.4		115.7		1.5	
		5/5/2017	87.2		115.9		1.7	
		5/12/2017	87.3		115.8		1.6	
		5/19/2017	87.4		115.7		1.5	
		5/26/2017	87.4		115.7		1.5	
		6/2/2017	87.3		115.8		1.6	
		6/9/2017	87.1		116.0		1.8	
		6/16/2017	86.4		116.7		2.5	
		6/23/2017	86.5		116.6		2.4	
		6/30/2017	87.1		116.0		1.8	
		7/7/2017	86.9		116.2		2.0	
		7/14/2017	86.7		116.4		2.2	
		7/21/2017	86.7		116.4		2.2	
		7/28/2017	87.0		116.1		1.9	
		8/4/2017	86.5		116.6		2.4	
		8/11/2017	86.8		116.3		2.1	
		8/18/2017	86.8		116.3		2.1	
		8/25/2017	86.8		116.3		2.1	
		9/1/2017	86.3		116.8		2.6	
		9/8/2017	86.2		116.9		2.7	
		9/15/2017	85.6		117.5		3.3	
		9/22/2017	85.7		117.4		3.2	
		9/29/2017	85.8		117.3		3.1	
		10/6/2017	85.8		117.3		3.1	
		10/13/2017	86.3		116.8		2.6	
		10/20/2017	86.6		116.5		2.3	
		10/27/2017	86.9		116.2		2.0	
		11/3/2017	87.0		116.1		1.9	
		11/10/2017	86.9		116.2		2.0	
		11/17/2017	87.0		116.1		1.9	
		11/24/2017	87.1		116.0		1.8	
		12/1/2017	87.1		116.0		1.8	
		12/8/2017	87.0		116.1		1.9	
		12/15/2017	87.0		116.1		1.9	
		12/22/2017	87.2		115.9		1.7	
		12/29/2017	87.1		116.0		1.8	
		1/5/2018	87.3		115.8		1.6	
		1/12/2018	87.0		116.1		1.9	
		1/19/2018	87.3		115.8		1.6	
		1/26/2018	87.2		115.9		1.7	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-19D	2/2/2018	87.2		115.9		1.7	
		2/9/2018	87.2		115.9		1.7	
		2/16/2018	87.1		116.0		1.8	
		2/23/2018	87.2		115.9		1.7	
		3/2/2018	87.2		115.9		1.7	
		3/9/2018	87.2		115.9		1.7	
		3/16/2018	87.2		115.9		1.7	
		3/23/2018	87.4		115.7		1.5	
		3/30/2018	87.1		116.0	See Note 16	1.8	
		4/6/2018	87.2		115.9		1.7	0.1
		4/13/2018	87.2		115.9		1.7	0.1
		4/20/2018	87.2		115.9		1.7	0.2
		4/27/2018	87.1		116.0		1.8	0.3
		5/4/2018	87.2		115.9		1.7	0.0
		5/11/2018	87.2		115.9		1.7	0.1
		5/18/2018	87.2		115.9		1.7	0.2
		5/25/2018	87.0		116.1		1.9	0.4
		6/1/2018	87.0		116.1		1.9	0.3
		6/8/2018	87.1		116.0		1.8	0.0
		6/15/2018	87.1		116.0		1.8	-0.7
		6/22/2018	87.1		116.0		1.8	-0.6
		6/29/2018	87.1		116.0		1.8	0.0
		7/6/2018	87.1		116.0		1.8	-0.2
		7/13/2018	87.1		116.0		1.8	-0.4
		7/20/2018	87.1		116.0		1.8	-0.4
		7/27/2018	87.0		116.1		1.9	0.0
		8/3/2018	87.0		116.1		1.9	-0.5
		8/10/2018	87.0		116.1		1.9	-0.2
		8/17/2018	86.9		116.2		2.0	-0.1
		8/24/2018	86.8		116.3		2.1	0.0
		8/31/2018	86.7		116.4		2.2	-0.4
		9/7/2018	86.7		116.4		2.2	-0.5
		9/14/2018	86.8		116.3		2.1	-1.2
		9/21/2018	86.9		116.2		2.0	-1.2
		9/28/2018	87.0		116.1		1.9	-1.2
		10/5/2018	86.9		116.2		2.0	-1.1
		10/12/2018	86.9		116.2		2.0	-0.6
		10/19/2018	87.0		116.1		1.9	-0.4
		10/26/2018	86.6		116.5		2.3	0.3
		11/2/2018	86.9		116.2		2.0	0.1
		11/9/2018	87.0		116.1		1.9	-0.1
		11/16/2018	87.1		116.0		1.8	-0.1
		11/23/2018	87.0		116.1		1.9	0.1
		11/30/2018	87.0		116.1		1.9	0.1
		12/7/2018	87.0		116.1		1.9	0.0
		12/14/2018	86.8		116.3		2.1	0.2
		12/21/2018	86.7		116.4		2.2	0.5
		12/28/2018	86.7		116.4		2.2	0.4
		1/4/2019	86.7		116.4		2.2	0.6
		1/11/2019	86.9		116.2		2.0	0.1
		1/18/2019	86.9		116.2		2.0	0.4
		1/25/2019	87.1		116.0		1.8	0.1

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-19D	2/1/2019	87.0		116.1		1.9	0.2
		2/8/2019	87.1		116.0		1.8	0.1
		2/15/2019	87.0		116.1		1.9	0.1
		2/22/2019	87.1		116.0		1.8	0.1
		3/1/2019	87.1		116.0		1.8	0.1
		3/8/2019	86.9		116.2		2.0	0.3
		3/15/2019	87.0		116.1		1.9	0.2
		3/22/2019	87.1		116.0		1.8	0.3
		3/29/2019	87.0		116.1		1.9	0.1
		4/5/2019	86.9		116.2		2.0	0.3
		4/12/2019	86.9		116.2		2.0	0.3
		4/19/2019	86.7		116.4		2.2	0.5
		4/26/2019	86.8		116.3		2.1	0.3
		5/3/2019	86.9		116.2		2.0	0.3
		5/10/2019	86.9		116.2		2.0	0.3
		5/17/2019	86.9		116.2		2.0	0.3
		5/24/2019	86.9		116.2		2.0	0.1
		5/31/2019	87.0		116.1		1.9	0.0
		6/7/2019	87.0		116.1		1.9	0.1
		6/14/2019	87.1		116.0		1.8	0.0
		6/21/2019	87.0		116.1		1.9	0.1
		6/28/2019	87.1		116.0		1.8	0.0
		7/5/2019	87.1		116.0		1.8	0.0
		7/12/2019	87.0		116.1		1.9	0.1
		7/19/2019	87.0		116.1		1.9	0.1
		7/26/2019	86.9		116.2		2.0	0.1
		8/2/2019	86.5		116.6		2.4	0.5
		8/9/2019	86.6		116.5		2.3	0.4
		8/16/2019	86.2		116.9		2.7	0.7
		8/23/2019	86.2		116.9		2.7	0.6
		8/30/2019	86.2		116.9		2.7	0.5
		9/6/2019	86.2		116.9		2.7	0.5
		9/13/2019	86.0		117.1		2.9	0.8
		9/20/2019	85.9		117.2		3.0	1.0
		9/27/2019	85.9		117.2		3.0	1.1

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-19S	3/3/2017	78.6	203.36	DRY	N/A	N/A	
		3/10/2017	78.6		DRY		N/A	
		3/17/2017	78.5		DRY		N/A	
		3/24/2017	78.5		DRY		N/A	
		3/31/2017	78.5		DRY		N/A	
		4/7/2017	78.4		DRY		N/A	
		4/13/2017	78.5		DRY		N/A	
		4/21/2017	78.6		DRY		N/A	
		4/28/2017	78.5		DRY		N/A	
		5/5/2017	78.5		DRY		N/A	
		5/12/2017	78.6		DRY		N/A	
		5/19/2017	78.5		DRY		N/A	
		5/26/2017	78.5		DRY		N/A	
		6/2/2017	78.5		DRY		N/A	
		6/9/2017	78.5		DRY		N/A	
		6/16/2017	78.5		DRY		N/A	
		6/23/2017	78.5		DRY		N/A	
		6/30/2017	78.5		DRY		N/A	
		7/7/2017	78.6		DRY		N/A	
		7/14/2017	78.6		DRY		N/A	
		7/21/2017	78.6		DRY		N/A	
		7/28/2017	78.6		DRY		N/A	
		8/4/2017	78.5		DRY		N/A	
		8/11/2017	78.5		DRY		N/A	
		8/18/2017	78.6		DRY		N/A	
		8/25/2017	78.6		DRY		N/A	
		9/1/2017	78.6		DRY		N/A	
		9/8/2017	78.5		DRY		N/A	
		9/15/2017	78.4		DRY		N/A	
		9/22/2017	78.4		DRY		N/A	
		9/29/2017	78.5		DRY		N/A	
		10/6/2017	78.5		DRY		N/A	
		10/13/2017	78.6		DRY		N/A	
		10/20/2017	78.5		DRY		N/A	
		10/27/2017	78.5		DRY		N/A	
		11/3/2017	78.5		DRY		N/A	
		11/10/2017	78.4		DRY		N/A	
		11/17/2017	78.4		DRY		N/A	
		11/24/2017	78.5		DRY		N/A	
		12/1/2017	78.5		DRY		N/A	
		12/8/2017	78.5		DRY		N/A	
		12/15/2017	78.5		DRY		N/A	
		12/22/2017	78.5		DRY		N/A	
		12/29/2017	78.5		DRY		N/A	
		1/5/2018	78.5		DRY		N/A	
		1/12/2018	78.5		DRY		N/A	
		1/19/2018	78.6		DRY		N/A	
		1/26/2018	78.5		DRY		N/A	
		2/2/2018	78.5		DRY		N/A	
		2/9/2018	78.5		DRY		N/A	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-19S	2/16/2018	78.5		DRY		N/A	
		2/23/2018	78.5		DRY		N/A	
		3/2/2018	78.6		DRY		N/A	
		3/9/2018	78.5		DRY		N/A	
		3/16/2018	78.5		DRY		N/A	
		3/23/2018	78.6		DRY		N/A	
		3/30/2018	78.6		DRY		N/A	
		4/6/2018	78.6		DRY		N/A	
		4/13/2018	78.6		DRY		N/A	
		4/20/2018	78.6		DRY		N/A	
		4/27/2018	78.5		DRY		N/A	
		5/4/2018	78.6		DRY		N/A	
		5/11/2018	78.6		DRY		N/A	
		5/18/2018	78.6		DRY		N/A	
		5/25/2018	78.6		DRY		N/A	
		6/1/2018	78.6		DRY		N/A	
		6/8/2018	78.5		DRY		N/A	
		6/15/2018	78.6		DRY		N/A	
		6/22/2018	78.6		DRY		N/A	
		6/29/2018	78.6		DRY		N/A	
		7/6/2018	78.6		DRY		N/A	
		7/13/2018	78.6		DRY		N/A	
		7/20/2018	78.6		DRY		N/A	
		7/27/2018	78.6		DRY		N/A	
		8/3/2018	78.6		DRY		N/A	
		8/10/2018	78.6		DRY		N/A	
		8/17/2018	78.6		DRY		N/A	
		8/24/2018	78.6		DRY		N/A	
		8/31/2018	78.6		DRY		N/A	
		9/7/2018	78.6		DRY		N/A	
		9/14/2018	78.7		DRY		N/A	
		9/21/2018	78.7		DRY		N/A	
		10/5/2018	78.7		DRY		N/A	
		10/12/2018	78.7		DRY		N/A	
		10/19/2018	78.7		DRY		N/A	
		10/26/2018	78.7		DRY		N/A	
		8/24/2018	78.7		DRY		N/A	
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-20D	2/16/2017	74.4	192.86	118.5	115.0	3.5	
		2/17/2017	75.8		117.0		2.0	
		2/20/2017	75.7		117.2		2.2	
		2/23/2017	75.7		117.2		2.2	
		2/24/2017	75.7		117.2		2.2	
		3/3/2017	75.9		117.0		2.0	
		3/10/2017	75.8		117.1		2.1	
		3/17/2017	75.7		117.2		2.2	
		3/24/2017	75.9		117.0		2.0	
		3/31/2017	75.8		117.1		2.1	
		4/7/2017	75.9		117.0		2.0	
		4/13/2017	76.0		116.9		1.9	
		4/21/2017	75.9		117.0		2.0	
		4/28/2017	76.1		116.8		1.8	
		5/5/2017	75.9		117.0		2.0	
		5/12/2017	76.0		116.9		1.9	
		5/19/2017	76.1		116.8		1.8	
		5/26/2017	76.0		116.9		1.9	
		6/2/2017	76.0		116.9		1.9	
		6/9/2017	76.1		116.8		1.8	
		6/16/2017	76.1		116.8		1.8	
		6/23/2017	76.1		116.8		1.8	
		6/30/2017	76.2		116.7		1.7	
		7/7/2017	76.2		116.7		1.7	
		7/14/2017	76.1		116.8		1.8	
		7/21/2017	76.1		116.8		1.8	
		7/28/2017	76.0		116.9		1.9	
		8/4/2017	76.1		116.8		1.8	
		8/11/2017	76.1		116.8		1.8	
		8/18/2017	75.9		117.0		2.0	
		8/25/2017	75.8		117.1		2.1	
		9/1/2017	75.8		117.1		2.1	
		9/8/2017	75.8		117.1		2.1	
		9/15/2017	75.6		117.3		2.3	
		9/22/2017	75.6		117.3		2.3	
		9/29/2017	75.2		117.7		2.7	
		10/6/2017	75.1		117.8		2.8	
		10/13/2017	75.1		117.8		2.8	
		10/20/2017	75.0		117.9		2.9	
		10/27/2017	75.0		117.9		2.9	
		11/3/2017	74.9		118.0		3.0	
		11/10/2017	74.8		118.1		3.1	
		11/17/2017	74.8		118.1		3.1	
		11/24/2017	74.8		118.1		3.1	
		12/1/2017	74.8		118.1		3.1	
		12/8/2017	74.7		118.2		3.2	
		12/15/2017	74.8		118.1		3.1	
		12/22/2017	75.0		117.9		2.9	
		12/29/2017	75.0		117.9		2.9	
		1/5/2018	75.1		117.8		2.8	
		1/12/2018	74.8		118.1		3.1	
		1/19/2018	75.0		117.9		2.9	
		1/26/2018	75.0		117.9		2.9	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-20D	2/2/2018	74.9		118.0		3.0	
		2/9/2018	74.9		118.0		3.0	
		2/16/2018	74.8		118.1		3.1	
		2/23/2018	74.8		118.1		3.1	
		3/2/2018	74.7		118.2		3.2	
		3/9/2018	74.6		118.3		3.3	
		3/16/2018	74.5		118.4		3.4	
		3/23/2018	74.6		118.3		3.3	
		3/30/2018	74.3		118.6	See Note 16	3.6	
		4/6/2018	74.5		118.4		3.4	1.4
		4/13/2018	74.5		118.4		3.4	1.5
		4/20/2018	74.5		118.4		3.4	1.4
		4/27/2018	74.5		118.4		3.4	1.6
		5/4/2018	74.6		118.3		3.3	1.3
		5/11/2018	74.7		118.2		3.2	1.3
		5/18/2018	74.7		118.2		3.2	1.4
		5/25/2018	74.7		118.2		3.2	1.3
		6/1/2018	74.9		118.0		3.0	1.1
		6/8/2018	74.9		118.0		3.0	1.2
		6/15/2018	74.9		118.0		3.0	1.2
		6/22/2018	74.9		118.0		3.0	1.2
		6/29/2018	74.9		118.0		3.0	1.3
		7/6/2018	75.0		117.9		2.9	1.2
		7/13/2018	75.0		117.9		2.9	1.1
		7/20/2018	75.0		117.9		2.9	1.1
		7/27/2018	75.0		117.9		2.9	1.0
		8/3/2018	75.0		117.9		2.9	1.1
		8/10/2018	75.0		117.9		2.9	1.1
		8/17/2018	75.1		117.8		2.8	0.8
		8/24/2018	74.9		118.0		3.0	0.9
		8/31/2018	74.9		118.0		3.0	0.9
		9/7/2018	74.8		118.1		3.1	1.0
		9/14/2018	75.0		117.9		2.9	0.6
		9/21/2018	75.0		117.9		2.9	0.6
		9/28/2018	74.9		118.0		3.0	0.3
		10/5/2018	74.8		118.1		3.1	0.3
		10/12/2018	74.7		118.2		3.2	0.4
		10/19/2018	74.8		118.1		3.1	0.2
		10/26/2018	74.6		118.3		3.3	0.4
		11/2/2018	74.6		118.3		3.3	0.3
		11/9/2018	74.6		118.3		3.3	0.2
		11/16/2018	74.8		118.1		3.1	0.0
		11/23/2018	74.6		118.3		3.3	0.2
		11/30/2018	74.8		118.1		3.1	0.0
		12/7/2018	74.9		118.0		3.0	-0.2
		12/14/2018	74.6		118.3		3.3	0.2
		12/21/2018	74.5		118.4		3.4	0.5
		12/28/2018	74.7		118.2		3.2	0.3
		1/4/2019	74.7		118.2		3.2	0.4
		1/11/2019	74.7		118.2		3.2	0.1
		1/18/2019	74.7		118.2		3.2	0.3
		1/25/2019	74.9		118.0		3.0	0.1

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-20D	2/1/2019	74.9		118.0		3.0	0.0
		2/8/2019	75.0		117.9		2.9	-0.1
		2/15/2019	74.8		118.1		3.1	0.0
		2/22/2019	75.0		117.9		2.9	-0.2
		3/1/2019	75.0		117.9		2.9	-0.3
		3/8/2019	75.0		117.9		2.9	-0.4
		3/15/2019	75.0		117.9		2.9	-0.5
		3/22/2019	75.1		117.8		2.8	-0.5
		3/29/2019	75.1		117.8		2.8	-0.8
		4/5/2019	75.1		117.8		2.8	-0.6
		4/12/2019	75.1		117.8		2.8	-0.6
		4/19/2019	74.9		118.0		3.0	-0.4
		4/26/2019	75.0		117.9		2.9	-0.5
		5/3/2019	75.1		117.8		2.8	-0.5
		5/10/2019	75.1		117.8		2.8	-0.4
		5/17/2019	75.2		117.7		2.7	-0.5
		5/24/2019	75.2		117.7		2.7	-0.5
		5/31/2019	75.2		117.7		2.7	-0.3
		6/7/2019	75.2		117.7		2.7	-0.3
		6/14/2019	75.4		117.5		2.5	-0.5
		6/21/2019	75.4		117.5		2.5	-0.5
		6/28/2019	75.3		117.6		2.6	-0.4
		7/5/2019	75.3		117.6		2.6	-0.3
		7/12/2019	75.3		117.6		2.6	-0.3
		7/19/2019	75.3		117.6		2.6	-0.3
		7/26/2019	75.3		117.6		2.6	-0.3
		8/2/2019	75.1		117.8		2.8	-0.1
		8/9/2019	75.1		117.8		2.8	-0.1
		8/16/2019	74.9		118.0		3.0	0.2
		8/23/2019	74.7		118.2		3.2	0.2
		8/30/2019	74.6		118.3		3.3	0.3
		9/6/2019	74.5		118.4		3.4	0.3
		9/13/2019	74.2		118.7		3.7	0.8
		9/20/2019	74.3		118.6		3.6	0.7
		9/27/2019	74.2		118.7		3.7	0.7

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
VI	SB-21D	2/16/2017	79.1	194.30	115.2	113.0	2.2	
		2/17/2017	79.2		115.1		2.1	
		2/20/2017	79.4		114.9		1.9	
		2/23/2017	79.1		115.3		2.3	
		2/24/2017	79.2		115.1		2.1	
		3/3/2017	79.2		115.1		2.1	
		3/10/2017	79.2		115.1		2.1	
		3/17/2017	79.1		115.2		2.2	
		3/24/2017	79.2		115.1		2.1	
		3/31/2017	79.0		115.3		2.3	
		4/7/2017	79.2		115.1		2.1	
		4/13/2017	79.2		115.1		2.1	
		4/21/2017	79.2		115.1		2.1	
		4/28/2017	79.3		115.0		2.0	
		5/5/2017	79.2		115.1		2.1	
		5/12/2017	79.2		115.1		2.1	
		5/19/2017	79.3		115.0		2.0	
		5/26/2017	79.4		114.9		1.9	
		6/2/2017	79.3		115.0		2.0	
		6/9/2017	79.4		114.9		1.9	
		6/16/2017	79.2		115.1		2.1	
		6/23/2017	79.4		114.9		1.9	
		6/30/2017	79.4		114.9		1.9	
		7/7/2017	79.4		114.9		1.9	
		7/14/2017	79.4		114.9		1.9	
		7/21/2017	79.3		115.0		2.0	
		7/28/2017	79.2		115.1		2.1	
		8/4/2017	79.0		115.3		2.3	
		8/11/2017	79.0		115.3		2.3	
		8/18/2017	79.0		115.3		2.3	
		8/25/2017	78.9		115.4		2.4	
		9/1/2017	78.9		115.4		2.4	
		9/8/2017	78.7		115.6		2.6	
		9/15/2017	78.4		115.9		2.9	
		9/22/2017	78.2		116.1		3.1	
		9/29/2017				See Note 11		
		10/6/2017	87.6	203.99	116.4	See Note 11	3.4	
		10/13/2017	87.8		116.2		3.2	
		10/20/2017	88.0		116.0		3.0	
		10/27/2017		208.67		See Note 11		
		11/3/2017				See Note 11		
		11/10/2017				See Note 11		
		11/17/2017				See Note 11		
		11/24/2017				See Note 11		
		12/1/2017				See Note 11		
		12/8/2017				See Note 11		
		12/15/2017	93.8		114.9		1.9	
		12/22/2017	93.8		114.9		1.9	
		12/29/2017	93.8		114.9		1.9	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
VI	SB-21D	1/5/2018	93.9		114.8		1.8	
		1/12/2018	93.6		115.1		2.1	
		1/19/2018	93.5		115.2		2.2	
		1/26/2018	93.8		114.9		1.9	
		2/2/2018	93.8		114.9		1.9	
		2/9/2018	93.9		114.8		1.8	
		2/16/2018	93.8		114.9		1.9	
		2/23/2018	93.8		114.9		1.9	
		3/2/2018	93.8		114.9		1.9	
		3/9/2018	93.8		114.9		1.9	
		3/16/2018	93.7		115.0		2.0	
		3/23/2018	93.9		114.8		1.8	
		3/30/2018	93.7		115.0	See Note 16	2.0	
		4/6/2018	93.6		115.1		2.1	0.0
		4/13/2018	93.8		114.9		1.9	-0.2
		4/20/2018	93.7		115.0		2.0	-0.1
		4/27/2018	93.7		115.0		2.0	0.0
		5/4/2018	93.7		115.0		2.0	-0.1
		5/11/2018	93.7		115.0		2.0	-0.1
		5/18/2018	93.7		115.0		2.0	0.0
		5/25/2018	93.6		115.1		2.1	0.2
		6/1/2018	93.6		115.1		2.1	0.1
		6/8/2018	93.7		115.0		2.0	0.1
		6/15/2018	93.6		115.1		2.1	0.0
		6/22/2018	93.6		115.1		2.1	0.2
		6/29/2018	93.6		115.1		2.1	0.2
		7/6/2018	93.6		115.1		2.1	0.2
		7/13/2018	93.6		115.1		2.1	0.2
		7/20/2018	93.5		115.2		2.2	0.2
		7/27/2018	93.3		115.4		2.4	0.3
		8/3/2018	93.3		115.4		2.4	0.1
		8/10/2018	93.2		115.5		2.5	0.2
		8/17/2018	93.2		115.5		2.4	0.1
		8/24/2018	93.0		115.7		2.7	0.3
		8/31/2018	93.0		115.7		2.7	0.3
		9/7/2018	92.9		115.8		2.8	0.2
		9/14/2018	92.9		115.8		2.8	-0.1
		9/21/2018	92.9		115.8		2.8	-0.3
		9/28/2018	93.0		115.7		2.7	-
		10/5/2018	92.9		115.8		2.8	-0.6
		10/12/2018	92.8		115.9		2.9	-0.3
		10/19/2018	92.9		115.8		2.8	-0.2
		10/26/2018	92.7		116.0		3.0	-
		11/2/2018	92.8		115.9		2.9	-
		11/9/2018	92.8		115.9		2.9	-
		11/16/2018	92.9		115.8		2.8	-
		11/23/2018	92.9		115.8		2.8	-
		11/30/2018	92.9		115.8		2.8	-
		12/7/2018	92.9		115.8		2.8	-
		12/14/2018	See Note 25					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
VI	SB-22D	2/17/2017	78.5	193.05	114.6	113.2	1.4	
		2/17/2017	79.0		114.1		0.9	
		2/20/2017	78.8		114.3		1.1	
		2/23/2017	78.0		115.1		1.9	
		2/24/2017	78.1		115.0		1.8	
		3/3/2017	78.1		115.0		1.8	
		3/10/2017	78.2		114.9		1.7	
		3/17/2017	78.1		115.0		1.8	
		3/24/2017	78.0		115.1		1.9	
		3/31/2017	77.9		115.2		2.0	
		4/7/2017	78.0		115.1		1.9	
		4/13/2017	78.1		115.0		1.8	
		4/21/2017	78.2		114.9		1.7	
		4/28/2017	78.2		114.9		1.7	
		5/5/2017	78.1		115.0		1.8	
		5/12/2017	78.2		114.9		1.7	
		5/19/2017	78.2		114.9		1.7	
		5/26/2017	78.2		114.9		1.7	
		6/2/2017	78.2		114.9		1.7	
		6/9/2017	78.4		114.7		1.5	
		6/16/2017	78.2		114.9		1.7	
		6/23/2017	78.2		114.9		1.7	
		6/30/2017	78.4		114.7		1.5	
		7/7/2017	78.2		114.9		1.7	
		7/14/2017	78.2		114.9		1.7	
		7/21/2017	78.2		114.9		1.7	
		7/28/2017	78.1		115.0		1.8	
		8/4/2017	78.1		115.0		1.8	
		8/11/2017	78.1		115.0		1.8	
		8/18/2017	78.2		114.9		1.7	
		8/25/2017	78.2		114.9		1.7	
		9/1/2017	78.0		115.1		1.9	
		9/8/2017	77.8		115.3		2.1	
		9/15/2017	77.5		115.6		2.4	
		9/22/2017	77.1		116.0		2.8	
		9/29/2017	77.1		116.0		2.8	
		10/6/2017	77.1		116.0		2.8	
		10/13/2017	77.3		115.8		2.6	
		10/20/2017	77.5		115.6		2.4	
		10/27/2017	77.5		115.6		2.4	
		11/3/2017	77.7		115.4		2.2	
		11/10/2017	77.7		115.4		2.2	
		11/17/2017	77.7		115.4		2.2	
		11/24/2017	77.8		115.3		2.1	
		12/1/2017	78.0		115.1		1.9	
		12/8/2017	78.0		115.1		1.9	
		12/15/2017	78.0		115.1		1.9	
		12/22/2017	78.1		115.0		1.8	
		12/29/2017	78.1		115.0		1.8	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
VI	SB-22D	1/5/2018	78.1		115.0		1.8	
		1/12/2018	78.1		115.0		1.8	
		1/19/2018	78.0		115.1		1.9	
		1/26/2018	78.1		115.0		1.8	
		2/2/2018	78.1		115.0		1.8	
		2/9/2018	78.1		115.0		1.8	
		2/16/2018	78.1		115.0		1.8	
		2/23/2018	78.1		115.0		1.8	
		3/2/2018	78.2		114.9		1.7	
		3/9/2018	78.2		114.9		1.7	
		3/16/2018	78.1		115.0		1.8	
		3/23/2018	78.3		114.8		1.6	
		3/30/2018	78.0		115.1	See Note 16	1.9	
		4/6/2018	78.0		115.1		1.9	0.0
		4/13/2018	77.7		115.4		2.2	0.4
		4/20/2018	-			See Note 17		
		4/27/2018	-			See Note 17		
		5/4/2018	88.0	202.8	114.8	See Note 17	1.6	-0.2
		5/11/2018	96.2	210.8	114.6	See Note 17	1.4	-0.3
		5/18/2018	See Note 18					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
IV	SB-23D	2/16/2017	83.9	199.70	115.8	113.3	2.5	
		2/17/2017	84.0		115.7		2.4	
		2/20/2017	84.1		115.6		2.3	
		2/23/2017	83.9		115.9		2.6	
		2/24/2017	83.9		115.8		2.5	
		3/3/2017	84.0		115.7		2.4	
		3/10/2017	84.0		115.7		2.4	
		3/17/2017	84.0		115.7		2.4	
		3/24/2017	83.9		115.8		2.5	
		3/31/2017	84.5		115.2		1.9	
		4/7/2017	83.9		115.8		2.5	
		4/13/2017	84.0		115.7		2.4	
		4/21/2017	84.1		115.6		2.3	
		4/28/2017	84.1		115.6		2.3	
		5/5/2017	84.1		115.6		2.3	
		5/12/2017	84.3		115.4		2.1	
		5/19/2017	84.2		115.5		2.2	
		5/26/2017	84.2		115.5		2.2	
		6/2/2017	84.2		115.5		2.2	
		6/9/2017	84.3		115.4		2.1	
		6/16/2017	84.1		115.6		2.3	
		6/23/2017	84.2		115.5		2.2	
		6/30/2017	84.3		115.4		2.1	
		7/7/2017	84.2		115.5		2.2	
		7/14/2017	84.3		115.4		2.1	
		7/21/2017	84.1		115.6		2.3	
		7/28/2017	84.1		115.6		2.3	
		8/4/2017	84.0		115.7		2.4	
		8/11/2017	83.9		115.8		2.5	
		8/18/2017	84.0		115.7		2.4	
		8/25/2017	83.9		115.8		2.5	
		9/1/2017	83.8		115.9		2.6	
		9/8/2017	83.7		116.0		2.7	
		9/15/2017		208.90		See Note 10		
		9/22/2017				See Note 10		
		9/29/2017				See Note 10		
		10/6/2017	92.6		116.3		3.0	
		10/13/2017	92.7		116.2		2.9	
		10/20/2017	92.9		116.0		2.7	
		10/27/2017	92.8		116.1		2.8	
		11/3/2017	93.2		115.7		2.4	
		11/10/2017	93.2		115.7		2.4	
		11/17/2017	93.6		115.3		2.0	
		11/24/2017	93.3		115.6		2.3	
		12/1/2017	93.4		115.5		2.2	
		12/8/2017	93.4		115.5		2.2	
		12/15/2017	93.4		115.5		2.2	
		12/22/2017	93.6		115.3		2.0	
		12/29/2017	93.5		115.4		2.1	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
IV	SB-23D	1/5/2018	93.6		115.3		2.0	
		1/12/2018	93.4		115.5		2.2	
		1/19/2018	93.4		115.5		2.2	
		1/26/2018	93.5		115.4		2.1	
		2/2/2018	93.5		115.4		2.1	
		2/9/2018	93.5		115.4		2.1	
		2/16/2018	93.5		115.4		2.1	
		2/23/2018	93.6		115.3		2.0	
		3/2/2018	93.6		115.3		2.0	
		3/9/2018	93.6		115.3		2.0	
		3/16/2018	93.5		115.4		2.1	
		3/23/2018	93.8		115.1		1.8	
		3/30/2018	93.4		115.5	See Note 16	2.2	
		4/6/2018	93.6		115.3		2.0	-0.5
		4/13/2018	93.6		115.3		2.0	-0.4
		4/20/2018	93.6		115.3		2.0	-0.3
		4/27/2018	93.5		115.4		2.1	-0.2
		5/4/2018	93.5		115.4		2.1	-0.2
		5/11/2018	93.5		115.4		2.1	0.0
		5/18/2018	93.5		115.4		2.1	-0.1
		5/25/2018	93.4		115.5		2.2	0.0
		6/1/2018	93.4		115.5		2.2	0.0
		6/8/2018	93.5		115.4		2.1	0.0
		6/15/2018	93.5		115.4		2.1	-0.2
		6/22/2018	93.5		115.4		2.1	-0.1
		6/29/2018	93.5		115.4		2.1	0.0
		7/6/2018	93.4		115.5		2.2	0.0
		7/13/2018	93.5		115.4		2.1	0.0
		7/20/2018	93.4		115.5		2.2	-0.1
		7/27/2018	93.4		115.5		2.2	-0.1
		8/3/2018	93.5		115.4		2.1	-0.3
		8/10/2018	93.3		115.6		2.3	-0.2
		8/17/2018	93.3		115.6		2.3	-0.1
		8/24/2018	93.2		115.7		2.4	-0.1
		8/31/2018	93.0		115.9		2.6	0.0
		9/7/2018	93.0		115.9		2.6	-0.1
		9/14/2018	93.1		115.8		2.5	-
		9/21/2018				See Note 22		
		9/28/2018				See Note 22		
		10/5/2018				See Note 22		
		10/12/2018				See Note 22		
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
IV	SB-23S	2/23/2017	80.4	199.45	DRY	N/A	N/A	
		2/24/2017	80.4		DRY		N/A	
		3/3/2017	80.4		DRY		N/A	
		3/10/2017	80.3		DRY		N/A	
		3/17/2017	80.3		DRY		N/A	
		3/24/2017	80.3		DRY		N/A	
		3/31/2017	80.3		DRY		N/A	
		4/7/2017	80.2		DRY		N/A	
		4/13/2017	80.2		DRY		N/A	
		4/21/2017	80.2		DRY		N/A	
		4/28/2017	80.2		DRY		N/A	
		5/5/2017	80.2		DRY		N/A	
		5/12/2017	80.1		DRY		N/A	
		5/19/2017	80.1		DRY		N/A	
		5/26/2017	80.1		DRY		N/A	
		6/2/2017	80.1		DRY		N/A	
		6/9/2017	80.1		DRY		N/A	
		6/16/2017	80.1		DRY		N/A	
		6/23/2017	80.1		DRY		N/A	
		6/30/2017	80.1		DRY		N/A	
		7/7/2017	80.2		DRY		N/A	
		7/14/2017	80.1		DRY		N/A	
		7/21/2017	80.2		DRY		N/A	
		7/28/2017	80.2		DRY		N/A	
		8/4/2017	80.1		DRY		N/A	
		8/11/2017	80.1		DRY		N/A	
		8/18/2017	80.1		DRY		N/A	
		8/25/2017	80.1		DRY		N/A	
		9/1/2017	80.1		DRY		N/A	
		9/8/2017	80.1		DRY		N/A	
		9/15/2017		208.78		See Note 10		
		9/22/2017				See Note 10		
		9/29/2017				See Note 10		
		10/6/2017				See Note 10		
		10/13/2017				See Note 10		
		10/20/2017				See Note 10		
		10/27/2017	89.4		DRY		N/A	
		11/3/2017	89.4		DRY		N/A	
		11/10/2017	89.4		DRY		N/A	
		11/17/2017	89.4		DRY		N/A	
		11/24/2017	89.4		DRY		N/A	
		12/1/2017	89.4		DRY		N/A	
		12/8/2017	89.4		DRY		N/A	
		12/15/2017	89.4		DRY		N/A	
		12/22/2017	89.4		DRY		N/A	
		12/29/2017	89.3		DRY		N/A	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
IV	SB-23S	1/5/2018	89.3		DRY		N/A	
		1/12/2018	89.3		DRY		N/A	
		1/19/2018	89.3		DRY		N/A	
		1/26/2018	89.3		DRY		N/A	
		2/2/2018	89.3		DRY		N/A	
		2/9/2018				See Note 15		
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-24D	3/3/2017	66.3	188.82	122.5	117.6	4.9	
		3/10/2017	66.3		122.5		4.9	
		3/17/2017	66.5		122.3		4.7	
		3/24/2017	66.6		122.2		4.6	
		3/31/2017	66.3		122.5		4.9	
		4/7/2017	66.6		122.2		4.6	
		4/13/2017	66.8		122.0		4.4	
		4/21/2017	66.8		122.0		4.4	
		4/28/2017	67.0		121.8		4.2	
		5/5/2017	66.8		122.0		4.4	
		5/12/2017	67.2		121.6		4.0	
		5/19/2017	67.3		121.5		3.9	
		5/26/2017	67.3		121.5		3.9	
		6/2/2017	67.4		121.4		3.8	
		6/9/2017	67.4		121.4		3.8	
		6/16/2017	67.5		121.3		3.7	
		6/23/2017	67.5		121.3		3.7	
		6/30/2017	67.5		121.3		3.7	
		7/7/2017	67.4		121.4		3.8	
		7/14/2017	67.2		121.6		4.0	
		7/21/2017	66.7		122.1		4.5	
		7/28/2017	66.1		122.7		5.1	
		8/4/2017	65.3		123.5		5.9	
		8/11/2017	64.3		124.5		6.9	
		8/18/2017	63.8		125.0		7.4	
		8/25/2017	63.9		124.9		7.3	
		9/1/2017	63.7		125.1		7.5	
		9/8/2017	62.8		126.0		8.4	
		9/15/2017	62.0		126.8		9.2	
		9/22/2017	61.6		127.2		9.6	
		9/29/2017	62.0		126.8		9.2	
		10/6/2017	62.3		126.5		8.9	
		10/13/2017	62.3		126.5		8.9	
		10/20/2017	63.4		125.4		7.8	
		10/27/2017	63.7		125.1		7.5	
		11/3/2017	64.1		124.7		7.1	
		11/10/2017	64.2		124.6		7.0	
		11/17/2017	64.4		124.4		6.8	
		11/24/2017	64.5		124.3		6.7	
		12/1/2017	64.9		123.9		6.3	
		12/8/2017	64.8		124.0		6.4	
		12/15/2017	65.1		123.7		6.1	
		12/22/2017	65.2		123.6		6.0	
		12/29/2017	65.3		123.5		5.9	
		1/5/2018	65.5		123.3		5.7	
		1/12/2018	65.4		123.4		5.8	
		1/19/2018	65.8		123.0		5.4	
		1/26/2018	66.0		122.8		5.2	
		2/2/2018	65.9		122.9		5.3	
		2/9/2018	66.0		122.8		5.2	
		2/16/2018	66.0		122.8		5.2	
		2/23/2018	66.1		122.7		5.1	
		3/2/2018	66.0		122.8		5.2	
		3/9/2018	66.1		122.7		5.1	
		3/16/2018	66.1		122.7		5.1	
		3/23/2018	66.4		122.4		4.8	
		3/30/2018	66.3		122.5	See Note 16	4.9	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-24D	4/6/2018	66.4		122.4		4.8	0.2
		4/13/2018	66.4		122.4		4.8	0.4
		4/20/2018	66.6		122.2		4.6	0.2
		4/27/2018	66.5		122.3		4.7	0.5
		5/4/2018	66.8		122.0		4.4	0.0
		5/11/2018	66.9		121.9		4.3	0.3
		5/18/2018	66.9		121.9		4.3	0.4
		5/25/2018	67.0		121.8		4.2	0.3
		6/1/2018	67.1		121.7		4.1	0.3
		6/8/2018	67.1		121.7		4.1	0.3
		6/15/2018	67.1		121.7		4.1	0.4
		6/22/2018	67.0		121.8		4.2	0.5
		6/29/2018	66.9		121.9		4.3	0.6
		7/6/2018	66.8		122.0		4.4	0.6
		7/13/2018	66.5		122.3		4.7	0.7
		7/20/2018	66.1		122.7		5.1	0.6
		7/27/2018	65.9		122.9		5.3	0.2
		8/3/2018	65.5		123.3		5.7	-0.2
		8/10/2018	65.1		123.7		6.1	-0.8
		8/17/2018	64.8		124.0		6.4	-1.0
		8/24/2018	64.3		124.5		6.9	-0.4
		8/31/2018	64.2		124.6		7.0	-0.5
		9/7/2018	64.1		124.7		7.1	-1.3
		9/14/2018	64.1		124.7		7.1	-2.1
		9/21/2018	64.1		124.7		7.1	-2.5
		9/28/2018	64.2		124.6		7.0	-2.2
		10/5/2018	64.2		124.6		7.0	-1.9
		10/12/2018	64.2		124.6		7.0	-1.9
		10/19/2018	64.5		124.3		6.7	-1.1
		10/26/2018	64.5		124.3		6.7	-0.8
		11/2/2018	64.4		124.4		6.8	-0.3
		11/9/2018	64.5		124.3		6.7	-0.3
		11/16/2018	64.7		124.1		6.5	-0.3
		11/23/2018	64.7		124.1		6.5	-0.2
		11/30/2018	64.9		123.9		6.3	0.0
		12/7/2018	65.1		123.7		6.1	-0.3
		12/14/2018	64.7		124.1		6.5	0.4
		12/21/2018	64.6		124.2		6.6	0.6
		12/28/2018	64.9		123.9		6.3	0.4
		1/4/2019	64.9		123.9		6.3	0.6
		1/11/2019	65.0		123.8		6.2	0.4
		1/18/2019	65.0		123.8		6.2	0.8
		1/25/2019	65.2		123.6		6.0	0.8
		2/1/2019	65.3		123.5		5.9	0.6
		2/8/2019	65.4		123.4		5.8	0.6
		2/15/2019	65.4		123.4		5.8	0.6
		2/22/2019	65.5		123.3		5.7	0.6
		3/1/2019	65.6		123.2		5.6	0.4
		3/8/2019	65.8		123.0		5.4	0.3
		3/15/2019	65.7		123.1		5.5	0.4
		3/22/2019	65.8		123.0		5.4	0.6
		3/29/2019	66.0		122.8		5.2	0.3
		4/5/2019	66.0		122.8		5.2	0.4
		4/12/2019	66.0		122.8		5.2	0.4
		4/19/2019	65.9		122.9		5.3	0.7
		4/26/2019	66.0		122.8		5.2	0.5

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-24D	5/3/2019	66.2		122.6		5.0	0.6
		5/10/2019	66.2		122.6		5.0	0.7
		5/17/2019	66.3		122.5		4.9	0.6
		5/24/2019	66.4		122.4		4.8	0.6
		5/31/2019	66.4		122.4		4.8	0.7
		6/7/2019	66.3		122.5		4.9	0.8
		6/14/2019	66.7		122.1		4.5	0.4
		6/21/2019	66.8		122.0		4.4	0.2
		6/28/2019	66.9		121.9		4.3	0.0
		7/5/2019	66.9		121.9		4.3	-0.1
		7/12/2019	66.9		121.9		4.3	-0.4
		7/19/2019	67.1		121.7		4.1	-1.0
		7/26/2019	67.2		121.6		4.0	-1.3
		8/2/2019	66.9		121.9		4.3	-1.4
		8/9/2019	66.9		121.9		4.3	-1.8
		8/16/2019	66.5		122.3		4.7	-1.7
		8/23/2019	65.3		123.5		5.9	-1.0
		8/30/2019	64.5		124.3		6.7	-0.3
		9/6/2019	64.1		124.7		7.1	0.0
		9/13/2019	63.9		124.9		7.3	0.2
		9/20/2019	63.9		124.9		7.3	0.2
		9/27/2019	64.0		124.8		7.2	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-25D	3/10/2017	80.6	208.83	128.2	117.5	10.7	
		3/17/2017	80.8		128.0		10.5	
		3/24/2017	80.8		128.0		10.5	
		3/31/2017	80.4		128.4		10.9	
		4/7/2017	80.6		128.2		10.7	
		4/13/2017	80.8		128.0		10.5	
		4/21/2017	80.8		128.0		10.5	
		4/28/2017	85.5	213.83	128.3	See Note 3	10.8	
		5/5/2017	85.2		128.6		11.1	
		5/15/2017	83.6	211.40	127.8	See Note 4	10.3	
		5/19/2017	83.8		127.6		10.1	
		5/26/2017	83.8		127.6		10.1	
		6/2/2017	83.9		127.5		10.0	
		6/9/2017	83.8		127.6		10.1	
		6/16/2017	84.0		127.4		9.9	
		6/23/2017	84.0		127.4		9.9	
		6/30/2017	84.1		127.3		9.8	
		7/7/2017	84.1		127.3		9.8	
		7/14/2017	84.2		127.2		9.7	
		7/21/2017	84.1		127.3		9.8	
		7/28/2017	84.1		127.3		9.8	
		8/4/2017	84.1		127.3		9.8	
		8/11/2017	84.0		127.4		9.9	
		8/18/2017	83.9		127.5		10.0	
		8/25/2017	83.8		127.6		10.1	
		9/1/2017	-			See Note 9		

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-26	4/14/2017	25.3	148.36	123.1	119.3	3.8	
		4/17/2017	25.3		123.1		3.8	
		4/19/2017	25.2		123.2		3.9	
		4/21/2017	25.1		123.3		4.0	
		4/26/2017	25.1		123.2		3.9	
		4/28/2017	25.2		123.2		3.9	
		5/5/2017	25.1		123.3		4.0	
		5/12/2017	25.3		123.1		3.8	
		5/19/2017	25.3		123.1		3.8	
		5/26/2017	25.5		122.9		3.6	
		6/2/2017	25.5		122.9		3.6	
		6/9/2017	25.5		122.9		3.6	
		6/16/2017	25.5		122.9		3.6	
		6/23/2017	25.4		123.0		3.7	
		6/30/2017	25.4		123.0		3.7	
		7/7/2017	23.8		124.6		5.3	
		7/14/2017	23.6		124.8		5.5	
		7/21/2017	23.7		124.7		5.4	
		7/28/2017	23.6		124.8		5.5	
		8/4/2017	23.2		125.2		5.9	
		8/11/2017	23.2		125.2		5.9	
		8/18/2017	23.3		125.1		5.8	
		8/25/2017	23.2		125.2		5.9	
		9/1/2017	23.5		124.9		5.6	
		9/8/2017	23.2		125.2		5.9	
		9/15/2017	22.2		126.2		6.9	
		9/22/2017	22.0		126.4		7.1	
		9/29/2017	22.1		126.3		7.0	
		10/6/2017	22.4		126.0		6.7	
		10/13/2017	22.4		126.0		6.7	
		10/20/2017	23.0		125.4		6.1	
		10/27/2017	23.5		124.9		5.6	
		11/3/2017	23.5		124.9		5.6	
		11/10/2017	24.2		124.2		4.9	
		11/17/2017	24.4		124.0		4.7	
		11/24/2017	24.5		123.9		4.6	
		12/1/2017	24.8		123.6		4.3	
		12/8/2017	24.8		123.6		4.3	
		12/15/2017	25.0		123.4		4.1	
		12/22/2017	25.1		123.3		4.0	
		12/29/2017	25.2		123.2		3.9	
		1/5/2018	25.1		123.3		4.0	
		1/12/2018	24.8		123.6		4.3	
		1/19/2018	24.8		123.6		4.3	
		1/26/2018	24.9		123.5		4.2	
		2/2/2018	24.8		123.6		4.3	
		2/9/2018	24.8		123.6		4.3	
		2/16/2018	24.9		123.5		4.2	
		2/23/2018	24.9		123.5		4.2	
		3/2/2018	24.9		123.5		4.2	
		3/9/2018	24.9		123.5		4.2	
		3/16/2018	24.9		123.4		4.1	
		3/23/2018	25.1		123.3		4.0	
		3/30/2018	24.9		123.5		4.2	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-26	4/6/2018	25.0		123.4		4.1	0.2
		4/13/2018	25.0		123.4		4.1	0.2
		4/20/2018	25.1		123.3		4.0	0.0
		4/27/2018	25.0		123.4		4.1	0.1
		5/4/2018	25.0		123.4		4.1	0.2
		5/11/2018	25.1		123.3		4.0	0.0
		5/18/2018	25.1		123.3		4.0	0.2
		5/25/2018	24.7		123.7		4.4	0.6
		6/1/2018	24.2		124.2		4.9	1.3
		6/8/2018	24.1		124.3		5.0	1.4
		6/15/2018	24.1		124.3		5.0	1.4
		6/22/2018	24.1		124.3		5.0	1.4
		6/29/2018	24.1		124.3		5.0	1.3
		7/6/2018	24.1		124.3		5.0	1.3
		7/13/2018	24.1		124.3		5.0	-0.3
		7/20/2018	24.1		124.3		5.0	-0.5
		7/27/2018	24.0		124.4		5.1	-0.3
		8/3/2018	24.0		124.4		5.1	-0.4
		8/10/2018	24.0		124.4		5.1	-0.8
		8/17/2018	23.7		124.7		5.4	-0.5
		8/24/2018	23.5		124.9		5.6	-0.2
		8/31/2018	23.3		125.1		5.8	-0.1
		9/7/2018	23.3		125.1		5.8	0.2
		9/14/2018	23.4		125.0		5.7	-0.2
		9/21/2018	23.5		124.9		5.6	-1.3
		9/28/2018	23.6		124.8		5.5	-1.6
		10/5/2018	23.6		124.8		5.5	-1.5
		10/12/2018	23.6		124.8		5.5	-1.2
		10/19/2018	23.5		124.9		5.6	-1.1
		10/26/2018	23.5		124.9		5.6	-0.5
		11/2/2018	24.0		124.4		5.1	-0.5
		11/9/2018	See Note 23					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-27	4/13/2017	15.7	138.11	122.4	120.6	1.8	
		4/17/2017	15.7		122.4		1.8	
		4/19/2017	15.7		122.4		1.8	
		4/21/2017	15.6		122.5		1.9	
		4/26/2017	15.5		122.6		2.0	
		4/28/2017	15.7		122.4		1.8	
		5/5/2017	15.6		122.5		1.9	
		5/12/2017	15.6		122.5		1.9	
		5/19/2017	15.7		122.4		1.8	
		5/26/2017	15.8		122.3		1.7	
		6/2/2017	15.7		122.4		1.8	
		6/9/2017	15.7		122.4		1.8	
		6/16/2017	15.6		122.5		1.9	
		6/23/2017	15.6		122.5		1.9	
		6/30/2017	15.6		122.5		1.9	
		7/7/2017	Removed		-	See Note 5	-	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-28D	5/5/2017	87.5	208.62	121.1	116.7	4.4	
		5/12/2017	87.3		121.3		4.6	
		5/19/2017	87.3		121.3		4.6	
		5/26/2017	87.3		121.3		4.6	
		6/2/2017	87.5		121.1		4.4	
		6/9/2017	87.2		121.4		4.7	
		6/16/2017	87.3		121.3		4.6	
		6/23/2017	87.5		121.1		4.4	
		6/30/2017	87.4		121.2		4.5	
		7/7/2017	87.5		121.1		4.4	
		7/14/2017	87.5		121.1		4.4	
		7/21/2017	87.4		121.2		4.5	
		7/28/2017	87.2		121.4		4.7	
		8/4/2017	87.3		121.3		4.6	
		8/11/2017	87.3		121.3		4.6	
		8/18/2017	87.0		121.6		4.9	
		8/25/2017	86.9		121.7		5.0	
		9/1/2017	86.9		121.7		5.0	
		9/8/2017	86.6		122.0		5.3	
		9/15/2017	86.5		122.1		5.4	
		9/22/2017	86.1		122.5		5.8	
		9/29/2017	86.0		122.6		5.9	
		10/6/2017	85.9		122.7		6.0	
		10/13/2017	86.1		122.5		5.8	
		10/20/2017	86.1		122.5		5.8	
		10/27/2017	86.1		122.5		5.8	
		11/3/2017	86.1		122.5		5.8	
		11/10/2017	86.2		122.4		5.7	
		11/17/2017	86.4		122.2		5.5	
		11/24/2017	86.2		122.4		5.7	
		12/1/2017	86.6		122.0		5.3	
		12/8/2017	86.4		122.2		5.5	
		12/15/2017	86.6		122.0		5.3	
		12/22/2017	86.6		122.0		5.3	
		12/29/2017	86.8		121.8		5.1	
		1/5/2018	86.7		121.9		5.2	
		1/12/2018	86.7		121.9		5.2	
		1/19/2018	86.7		121.9		5.2	
		1/26/2018	87.1		121.5		4.8	
		2/2/2018	86.9		121.7		5.0	
		2/9/2018	87.0		121.6		4.9	
		2/16/2018	87.0		121.6		4.9	
		2/23/2018	87.1		121.5		4.8	
		3/2/2018	87.0		121.6		4.9	
		3/9/2018	87.1		121.5		4.8	
		3/16/2018	87.1		121.5		4.8	
		3/23/2018	87.4		121.2		4.5	
		3/30/2018	87.2		121.4	See Note 16	4.7	
		4/6/2018	87.2		121.4		4.7	
		4/13/2018	87.2		121.4		4.7	
		4/20/2018	87.4		121.2		4.5	
		4/27/2018	87.3		121.3		4.6	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-28D	5/4/2018	87.5		121.1		4.4	0.0
		5/11/2018	87.5		121.1		4.4	-0.2
		5/18/2018	87.4		121.2		4.5	-0.1
		5/25/2018	87.6		121.0		4.3	-0.3
		6/1/2018	86.1	207.03	120.9	See Note 21	4.2	-0.2
		6/8/2018	86.2		120.8		4.1	-0.6
		6/15/2018	87.6	208.40	120.8	See Note 21	4.1	-0.5
		6/22/2018	87.6		120.8		4.1	-0.3
		6/29/2018	87.6		120.8		4.1	-0.4
		7/6/2018	87.6		120.8		4.1	-0.3
		7/13/2018	87.6		120.8		4.1	-0.3
		7/20/2018	87.5		120.9		4.2	-0.3
		7/27/2018	87.5		120.9		4.2	-0.5
		8/3/2018	87.4		121.0		4.3	-0.3
		8/10/2018	87.4		121.0		4.3	-0.3
		8/17/2018	87.2		121.2		4.5	-0.4
		8/24/2018	86.9		121.5		4.8	-0.2
		8/31/2018	86.7		121.7		5.0	0.0
		9/7/2018	86.5		121.9		5.2	-0.1
		9/14/2018	86.5		121.9		5.2	-0.2
		9/21/2018	86.6		121.8		5.1	-0.7
		9/28/2018	86.5		121.9		5.2	-0.7
		10/5/2018	86.5		121.9		5.2	-0.8
		10/12/2018	86.3		122.1		5.4	-0.4
		10/19/2018	86.6		121.8		5.1	-0.7
		10/26/2018	86.6		121.8		5.1	-0.7
		11/2/2018	86.4		122.0		5.3	-0.5
		11/9/2018	86.6		121.8		5.1	-0.6
		11/16/2018	86.8		121.6		4.9	-0.6
		11/23/2018	86.7		121.7		5.0	-0.7
		11/30/2018	86.8		121.6		4.9	-0.4
		12/7/2018	87.1		121.3		4.6	-0.9
		12/14/2018	86.7		121.7		5.0	-0.3
		12/21/2018	86.7		121.7		5.0	-0.3
		12/28/2018	86.8		121.6		4.9	-0.2
		1/4/2019	86.8		121.6		4.9	-0.3
		1/11/2019	86.9		121.5		4.8	-0.4
		1/18/2019	86.9		121.5		4.8	-0.4
		1/25/2019	87.0		121.4		4.7	-0.1
		2/1/2019	86.9		121.5		4.8	-0.2
		2/8/2019	86.9		121.5		4.8	-0.1
		2/15/2019	86.8		121.6		4.9	0.0
		2/22/2019	87.0		121.4		4.7	-0.1
		3/1/2019	86.9		121.5		4.8	-0.1
		3/8/2019	86.9		121.5		4.8	0.0
		3/15/2019	86.8		121.6		4.9	0.1
		3/22/2019	86.9		121.5		4.8	0.3
		3/29/2019	87.0		121.4		4.7	0.0
		4/5/2019	86.9		121.5		4.8	0.1
		4/12/2019	87.0		121.4		4.7	0.0
		4/19/2019	86.8		121.6		4.9	0.4
		4/26/2019	86.9		121.5		4.8	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-28D	5/3/2019	87.0		121.4		4.7	0.3
		5/10/2019	87.1		121.3		4.6	0.2
		5/17/2019	87.2		121.2		4.5	0.0
		5/24/2019	87.2		121.2		4.5	0.2
		5/31/2019	87.2		121.2		4.5	0.3
		6/7/2019	87.1		121.3		4.6	0.5
		6/14/2019	87.4		121.0		4.3	0.2
		6/21/2019	87.4		121.0		4.3	0.2
		6/28/2019	87.4		121.0		4.3	0.2
		7/5/2019	87.4		121.0		4.3	0.2
		7/12/2019	87.3		121.1		4.4	0.3
		7/19/2019	87.4		121.0		4.3	0.1
		7/26/2019	87.4		121.0		4.3	0.1
		8/2/2019	87.2		121.2		4.5	0.2
		8/9/2019	87.2		121.2		4.5	0.2
		8/16/2019	87.1		121.3		4.6	0.1
		8/23/2019	86.9		121.5		4.8	0.0
		8/30/2019	86.6		121.8		5.1	0.1
		9/6/2019	86.4		122.0		5.3	0.1
		9/13/2019	86.2		122.2		5.5	0.3
		9/20/2019	86.3		122.1		5.4	0.3
		9/27/2019	86.1		122.3		5.6	0.4

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-29	5/5/2017	78.5	207.86	129.4	117.5	11.9	
		5/12/2017	77.2		130.7		13.2	
		5/19/2017	77.4		130.5		13.0	
		5/26/2017	79.3		128.6		11.1	
		6/2/2017	82.3		125.6		8.1	
		6/9/2017	82.4		125.5		8.0	
		6/16/2017	81.9		126.0		8.5	
		6/23/2017	81.7		126.2		8.7	
		6/30/2017	82.9		125.0		7.5	
		7/7/2017	82.7		125.2		7.7	
		7/14/2017	83.0		124.9		7.4	
		7/21/2017	83.3		124.6		7.1	
		7/28/2017	82.9		125.0		7.5	
		8/4/2017	82.8		125.1		7.6	
		8/11/2017	81.2		126.7		9.2	
		8/18/2017	81.2		126.7		9.2	
		8/25/2017	82.8		125.1		7.6	
		9/1/2017	82.8		125.1		7.6	
		9/8/2017	82.8		125.1		7.6	
		9/15/2017	79.4		128.5		11.0	
		9/22/2017	82.3		125.6		8.1	
		9/29/2017	82.6		125.3		7.8	
		10/6/2017	81.1		126.8		9.3	
		10/13/2017	81.1		126.8		9.3	
		10/20/2017	82.6		125.3		7.8	
		10/27/2017	77.0		130.9		13.4	
		11/3/2017	77.1		130.8		13.3	
		11/10/2017	83.2		124.7		7.2	
		11/17/2017	82.2		125.7		8.2	
		11/24/2017	82.2		125.7		8.2	
		12/1/2017	82.7		125.2		7.7	
		12/8/2017	82.5		125.4		7.9	
		12/15/2017	82.7		125.2		7.7	
		12/22/2017	82.6		125.3		7.8	
		12/29/2017	82.7		125.2		7.7	
		1/5/2018	82.8		125.1		7.6	
		1/12/2018	82.5		125.4		7.9	
		1/19/2018	82.4		125.5		8.0	
		1/26/2018	80.9		127.0		9.5	
		2/2/2018	81.0		126.9		9.4	
		2/9/2018	81.0		126.9		9.4	
		2/16/2018	81.4		126.5		9.0	
		2/23/2018	82.6		125.3		7.8	
		3/2/2018	82.8		125.1		7.6	
		3/8/2018	82.8		125.1		7.6	
		3/16/2018	80.6		127.3		9.8	
		3/23/2018	83.5		124.4		6.9	
		3/30/2018	81.0		126.9		9.4	
		4/6/2018	81.0		126.9		9.4	
		4/13/2018	80.9		127.0		9.5	
		4/20/2018	81.1		126.8		9.3	
		4/27/2018	80.8		127.1		9.6	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
		5/4/2018	82.7		125.2		7.7	-4.2
		5/11/2018	82.8		125.1		7.6	-5.6
		5/18/2018	82.9		125.0		7.5	-5.5
		5/25/2018	82.6		125.3		7.8	-3.3
		6/1/2018	82.6		125.3		7.8	-0.3
		6/8/2018	82.6		125.3		7.8	-0.2
		6/15/2018	82.6		125.3		7.8	-0.7
		6/22/2018	82.6		125.3		7.8	-0.9
		6/29/2018	82.5		125.4		7.9	0.4
		7/6/2018	81.6		126.3		8.8	1.1
		7/13/2018	81.5		126.4		8.9	1.5
		7/20/2018	82.6		125.3		7.8	0.7
		7/27/2018	82.6		125.3		7.8	0.3
		8/3/2018	82.5		125.4		7.9	0.3
		8/10/2018	82.5		125.4		7.9	-1.3
		8/17/2018	82.6		125.3		7.8	-1.4
		8/24/2018	82.3		125.6		8.1	0.5
		8/31/2018	82.3		125.6		8.1	0.5
		9/7/2018	82.4		125.5		8.0	0.4
		9/14/2018	82.5		125.4		7.9	-3.1
		9/21/2018	82.5		125.4		7.9	-0.2
		9/28/2018	82.5		125.4		7.9	0.1
		10/5/2018	82.4		125.5		8.0	-1.3
		10/12/2018	82.3		125.6		8.1	-1.2
		10/19/2018	82.4		125.5		8.0	0.2
		10/26/2018	82.4		125.5		8.0	-5.4
		11/2/2018	82.3		125.6		8.1	-5.2
		11/9/2018	82.4		125.5		8.0	0.8
		11/16/2018	82.3		125.6		8.1	-0.1
		11/23/2018	80.2		127.7		10.2	2.0
		11/30/2018	81.6		126.3		8.8	1.1
I	SB-29	12/7/2018	82.4		125.5		8.0	0.1
		12/14/2018	81.8		126.1		8.6	0.9
		12/21/2018	80.8		127.1		9.6	1.8
		12/28/2018	80.9		127.0		9.5	1.8
		1/4/2019	81.7		126.2		8.7	1.1
		1/11/2019	81.3		126.6		9.1	1.2
		1/18/2019	81.0		126.9		9.4	1.4
		1/25/2019	80.4		127.5		10.0	0.5
		2/1/2019	80.4		127.5		10.0	0.6
		2/8/2019	79.0		128.9		11.4	2.0
		2/15/2019	82.4		125.5		8.0	-1.0
		2/22/2019	82.4		125.5		8.0	0.2
		3/1/2019	82.5		125.4		7.9	0.3
		3/8/2019	82.2		125.7		8.2	0.6
		3/15/2019	82.1		125.8		8.3	-1.5
		3/22/2019	82.4		125.5		8.0	1.1
		3/29/2019	82.3		125.6		8.1	-1.3
		4/5/2019	81.2		126.7		9.2	-0.2
		4/12/2019	82.4		125.5		8.0	-1.5
		4/19/2019	82.2		125.7		8.2	-1.1
		4/26/2019	82.3		125.6		8.1	-1.5
		5/3/2019	82.4		125.5		8.0	0.3
		5/10/2019	82.3		125.6		8.1	0.5
		5/17/2019	82.4		125.5		8.0	0.5
		5/24/2019	82.0		125.9		8.4	0.6
		5/31/2019	82.5		125.4		7.9	0.1
		6/7/2019	82.3		125.6		8.1	0.3
		6/14/2019	82.5		125.4		7.9	0.1
		6/21/2019	82.3		125.6		8.1	0.3
		6/28/2019	82.4		125.5		8.0	0.1
		7/5/2019	82.4		125.5		8.0	-0.8
		7/12/2019	82.4		125.5		8.0	-0.9

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	SB-29	7/19/2019	81.7		126.2		8.7	0.9
		7/26/2019	82.5		125.4		7.9	0.1
		8/2/2019	82.2		125.7		8.2	0.3
		8/9/2019	82.4		125.5		8.0	0.1
		8/16/2019	82.4		125.5		8.0	0.2
		8/23/2019	80.8		127.1		9.6	1.5
		8/30/2019	79.6		128.3		10.8	2.7
		9/6/2019	79.1		128.8		11.3	3.3
		9/13/2019	78.6		129.3		11.8	3.9
		9/20/2019	78.9		129.0		11.5	3.6
		9/27/2019	79.0		128.9		11.4	3.5

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-30	5/5/2017	64.3	189.53	125.2	117.8	7.4	
		5/12/2017	64.7		124.8		7.0	
		5/19/2017	64.8		124.7		6.9	
		5/26/2017	65.7		123.8		6.0	
		6/2/2017	65.7		123.8		6.0	
		6/9/2017	65.7		123.8		6.0	
		6/16/2017	65.6		123.9		6.1	
		6/23/2017	65.6		123.9		6.1	
		6/30/2017	65.2		124.3		6.5	
		7/7/2017	65.7		123.8		6.0	
		7/14/2017	65.8		123.7		5.9	
		7/21/2017	66.0		123.5		5.7	
		7/28/2017	66.0		123.5		5.7	
		8/4/2017	66.0		123.5		5.7	
		8/11/2017	65.6		123.9		6.1	
		8/18/2017	65.8		123.7		5.9	
		8/25/2017	65.8		123.7		5.9	
		9/1/2017	65.9		123.6		5.8	
		9/8/2017	65.5		124.0		6.2	
		9/15/2017	64.4		125.1		7.3	
		9/22/2017	64.7		124.8		7.0	
		9/29/2017	64.7		124.8		7.0	
		10/6/2017	64.8		124.7		6.9	
		10/13/2017	63.4		126.1		8.3	
		10/20/2017	63.2		126.3		8.5	
		10/27/2017	65.4		124.1		6.3	
		11/3/2017	65.4		124.1		6.3	
		11/10/2017	65.3		124.2		6.4	
		11/17/2017	65.4		124.1		6.3	
		11/24/2017	65.5		124.0		6.2	
		12/1/2017	65.6		123.9		6.1	
		12/8/2017	65.4		124.1		6.3	
		12/15/2017	65.5		124.0		6.2	
		12/22/2017	65.6		123.9		6.1	
		12/29/2017	65.7		123.8		6.0	
		1/5/2018	65.8		123.7		5.9	
		1/12/2018	65.6		123.9		6.1	
		1/19/2018	65.6		123.9		6.1	
		1/26/2018	65.6		123.9		6.1	
		2/2/2018	65.8		123.7		5.9	
		2/9/2018	65.8		123.7		5.9	
		2/16/2018	65.8		123.7		5.9	
		2/23/2018	65.9		123.6		5.8	
		3/2/2018	65.9		123.6		5.8	
		3/8/2018	65.9		123.6		5.8	
		3/16/2018	66.0		123.5		5.7	
		3/23/2018	66.2		123.3		5.5	
		3/30/2018	65.7		123.8		6.0	
		4/6/2018	66.0		123.5		5.7	
		4/13/2018	66.0		123.5		5.7	
		4/20/2018	66.1		123.4		5.6	
		4/27/2018	66.0		123.5		5.7	

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-30	5/4/2018	66.4		123.1		5.3	-2.1
		5/11/2018	66.4		123.1		5.3	-1.7
		5/18/2018	66.4		123.1		5.3	-1.6
		5/25/2018	66.3		123.2		5.4	-0.6
		6/1/2018	66.4		123.1		5.3	-0.7
		6/8/2018	66.4		123.1		5.3	-0.7
		6/15/2018	66.4		123.1		5.3	-0.8
		6/22/2018	66.4		123.1		5.3	-0.8
		6/29/2018	66.5		123.0		5.2	-1.3
		7/6/2018	66.4		123.1		5.3	-0.7
		7/13/2018	66.4		123.1		5.3	-0.6
		7/20/2018	66.3		123.2		5.4	-0.3
		7/27/2018	66.3		123.2		5.4	-0.3
		8/3/2018	66.3		123.2		5.4	-0.3
		8/10/2018	66.0		123.5		5.7	-0.4
		8/17/2018	65.9		123.6		5.8	-0.1
		8/24/2018	65.7		123.8		6.0	0.1
		8/31/2018	65.6		123.9		6.1	0.3
		9/7/2018	65.4		124.1		6.3	0.1
		9/14/2018	65.4		124.1		6.3	-1.0
		9/21/2018	65.3		124.2		6.4	-0.6
		9/28/2018	65.3		124.2		6.4	-0.6
		10/5/2018	65.2		124.3		6.5	-0.4
		10/12/2018	65.1		124.4		6.6	-1.7
		10/19/2018	65.2		124.3		6.5	-2.0
		10/26/2018	65.2		124.3		6.5	0.2
		11/2/2018	64.9		124.6		6.8	0.5
		11/9/2018	64.9		124.6		6.8	0.4
		11/16/2018	65.0		124.5		6.7	0.4
		11/23/2018	64.2		125.3		7.5	1.3
		11/30/2018	65.1		124.4		6.6	0.5
		12/7/2018	65.3		124.2		6.4	0.1
		12/14/2018	65.1		124.4		6.6	0.4
		12/21/2018	65.0		124.5		6.7	0.6
		12/28/2018	65.0		124.5		6.7	0.7
		1/4/2019	65.0		124.6		6.8	0.8
		1/11/2019	65.0		124.5		6.7	0.6
		1/18/2019	65.3		124.2		6.4	0.3
		1/25/2019	65.5		124.0		6.2	0.1
		2/1/2019	65.6		123.9		6.1	0.2
		2/8/2019	65.7		123.8		6.0	0.1
		2/15/2019	65.7		123.8		6.0	0.1
		2/22/2019	65.8		123.7		5.9	0.1
		3/1/2019	65.8		123.7		5.9	0.1
		3/8/2019	65.7		123.8		6.0	0.2
		3/15/2019	65.9		123.6		5.8	0.1
		3/22/2019	65.9		123.6		5.8	0.3
		3/29/2019	65.8		123.7		5.9	-0.1
		4/5/2019	65.5		124.0		6.2	0.5
		4/12/2019	65.7		123.8		6.0	0.3
		4/19/2019	65.6		123.9		6.1	0.5
		4/26/2019	65.7		123.8		6.0	0.3
		5/3/2019	65.4		124.1		6.3	1.0
		5/10/2019	65.7		123.8		6.0	0.7
		5/17/2019	66.0		123.5		5.7	0.4
		5/24/2019	66.0		123.5		5.7	0.3
		5/31/2019	66.1		123.4		5.6	0.3
		6/7/2019	66.0		123.5		5.7	0.4
		6/14/2019	66.2		123.3		5.5	0.2
		6/21/2019	66.1		123.4		5.6	0.3
		6/28/2019	66.2		123.3		5.5	0.3
		7/5/2019	66.2		123.3		5.5	0.2
		7/12/2019	66.1		123.4		5.6	0.3

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-30	7/19/2019	66.1		123.4		5.6	0.2
		7/26/2019	66.2		123.3		5.5	0.1
		8/2/2019	66.2		123.3		5.5	0.1
		8/9/2019	65.8		123.7		5.9	0.2
		8/16/2019	65.7		123.8		6.0	0.2
		8/23/2019	65.6		123.9		6.1	0.1
		8/30/2019	65.5		124.0		6.2	0.1
		9/6/2019	65.8		123.7		5.9	-0.4
		9/13/2019	65.7		123.8		6.0	-0.3
		9/20/2019	65.7		123.8		6.0	-0.4
		9/27/2019	65.7		123.8		6.0	-0.4

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	SB-31[14]	3/7/2018	18.4	141.8	123.4	122.4	1.0	
		3/9/2018	18.4		123.4		1.0	
		3/16/2018	18.4		123.4		1.0	
		3/23/2018	18.4		123.4		1.0	
		3/30/2018	18.4		123.4		1.0	
		4/6/2018	18.4		123.4		1.0	
		4/13/2018	18.4		123.4		1.0	
		4/20/2018	18.4		123.4		1.0	
		4/27/2018	18.5		123.3		0.9	
		5/4/2018	18.5		123.3		0.9	
		5/11/2018	See Note 20					

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-32[14]	3/7/2018	24.1	146.8	122.7	121.9	0.8	
		3/9/2018	24.1		122.7		0.8	
		3/16/2018	24.1		122.7		0.8	
		3/23/2018	24.2		122.6		0.7	
		3/30/2018	24.2		122.6		0.7	
		4/6/2018	24.2		122.6		0.7	
		4/13/2018	24.2		122.6		0.7	
		4/20/2018	24.2		122.6		0.7	
		4/27/2018	24.5		122.3	See Note 19	0.4	
		5/4/2018	24.5		122.3	See Note 19	0.4	
		5/11/2018	24.4		122.4		0.5	
		5/18/2018	24.4		122.4		0.5	
		5/25/2018	24.4		122.4		0.5	
		6/1/2018	24.4		122.4		0.5	
		6/8/2018	24.4		122.4		0.5	
		6/15/2018	24.4		122.4		0.5	
		6/22/2018	24.4		122.4		0.5	
		6/29/2018	24.4		122.4		0.5	
		7/6/2018	24.3		122.5		0.6	
		7/13/2018	24.3		122.5		0.6	
		7/20/2018	24.1		122.7		0.8	
		7/27/2018	24.1		122.7		0.8	
		8/3/2018	24.1		122.7		0.8	
		8/10/2018	24.1		122.7		0.8	
		8/17/2018	23.9		122.9		1.0	
		8/24/2018	23.9		122.9		1.0	
		8/31/2018	23.9		122.9		1.0	
		9/7/2018	23.9		122.9		1.0	
		9/14/2018	23.9		122.9		1.0	
		9/21/2018	23.9		122.9		1.0	
		9/28/2018	23.9		122.9		1.0	
		10/5/2018	23.9		122.9		1.0	
		10/12/2018	23.9		122.9		1.0	
		10/19/2018	23.9		122.9		1.0	
		10/26/2018	23.9		122.9		1.0	
		11/2/2018	24.0		122.8		0.9	
		11/9/2018	24.0		122.8		0.9	
		11/16/2018	24.1		122.7		0.8	
		11/23/2018	24.1		122.7		0.8	
		11/30/2018	24.1		122.7		0.8	
		12/7/2018	24.1		122.7		0.8	
		12/14/2018	24.1		122.7		0.8	
		12/21/2018	24.1		122.7		0.8	
		12/28/2018	24.1		122.7		0.8	
		1/4/2019	24.0		122.8		0.9	
		1/11/2019	24.0		122.8		0.9	
		1/18/2019	24.0		122.8		0.9	
		1/25/2019	24.1		122.7		0.8	
		2/1/2019	24.0		122.8		0.9	
		2/8/2019	24.0		122.8		0.9	
		2/15/2019	24.0		122.8		0.9	
		2/22/2019	24.0		122.8		0.9	
		3/1/2019	24.0		122.8		0.9	
		3/8/2019	24.0		122.8		0.9	0.1
		3/15/2019	24.0		122.8		0.9	0.1
		3/22/2019	24.1		122.7		0.8	0.1
		3/29/2019	24.1		122.7		0.8	0.1
		4/5/2019	24.1		122.7		0.8	0.1
		4/12/2019	24.1		122.7		0.8	0.1
		4/19/2019	24.1		122.7		0.8	0.1
		4/26/2019	24.1		122.7		0.8	0.4

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
III	SB-32[14]	5/3/2019	24.2		122.6		0.7	0.3
		5/10/2019	24.2		122.6		0.7	0.2
		5/17/2019	24.2		122.6		0.7	0.2
		5/24/2019	24.2		122.6		0.7	0.2
		5/31/2019	24.2		122.6		0.7	0.2
		6/7/2019	24.2		122.6		0.7	0.2
		6/14/2019	24.2		122.5		0.6	0.2
		6/21/2019	24.2		122.6		0.7	0.2
		6/28/2019	24.3		122.5		0.6	0.1
		7/5/2019	24.3		122.5		0.6	0.0
		7/12/2019	24.3		122.5		0.6	0.0
		7/19/2019	24.3		122.5		0.6	-0.2
		7/26/2019	24.1		122.7		0.8	0.0
		8/2/2019	23.8		123.0		1.1	0.3
		8/9/2019	23.8		123.0		1.1	0.3
		8/16/2019	23.6		123.2		1.3	0.3
		8/23/2019	23.4		123.4		1.5	0.5
		8/30/2019	23.8		123.0		1.1	0.1
		9/6/2019	23.8		123.0		1.1	0.1
		9/13/2019	23.7		123.1		1.2	0.2
		9/20/2019	23.7		123.1		1.2	0.2
		9/27/2019	23.7		123.1		1.2	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
I	MP 1-4	7/12/19	11.3	136.2	DRY	123.1		
		7/19/19	11.3		DRY			
		7/26/19	11.3		DRY			
		8/2/19	11.3		DRY			
		8/9/19	11.3		DRY			
		8/16/19	11.3		DRY			
		8/23/19	11.3		DRY			
		8/30/19	11.3		DRY			
		9/6/2019	11.3		DRY			
		9/13/2019	11.3		DRY			
		9/20/2019	11.3		DRY			
		9/27/2019	11.3		DRY			

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	MP 2-2 [6]	7/21/2017	14.5	136.85	122.4	121.5	0.9	
		7/28/2017	14.1	top HDPE	122.8		1.3	
		8/4/2017	13.7		123.2		1.7	
		8/11/2017	12.8	See Note 7	124.1		2.6	
		8/18/2017	13.6		123.3		1.8	
		8/25/2017	13.7		123.2		1.7	
		9/1/2017	13.4		123.5		2.0	
		9/8/2017	13.1		123.8		2.3	
		9/15/2017	12.8		124.1		2.6	
		9/22/2017	12.8		124.1		2.6	
		9/29/2017	12.7		124.2		2.7	
		10/6/2017	13.1		123.8		2.3	
		10/13/2017	13.1		123.8		2.3	
		10/20/2017	15.2		121.7		0.2	
		10/27/2017	14.7		122.2		0.7	
		11/3/2017	14.5		122.4		0.9	
		11/10/2017	13.8		123.1		1.6	
		11/17/2017	13.8		123.1		1.6	
		11/24/2017	13.9		123.0		1.5	
		12/1/2017	15.2		121.7		0.2	
		12/8/2017	14.2		122.7	See Note 13	1.2	
		12/15/2017	15.0		121.9		0.4	
		12/22/2017	15.2		121.7		0.2	
		12/29/2017	14.3		122.6		1.1	
		1/5/2018	14.0		122.9		1.4	
		1/12/2018	13.8		123.1		1.6	
		1/19/2018	14.0		122.9		1.4	
		1/26/2018	13.9		123.0		1.5	
		2/2/2018	13.9		123.0		1.5	
		2/9/2018	13.9		123.0		1.5	
		2/16/2018	13.9		123.0		1.5	
		2/23/2018	13.9		123.0		1.5	
		3/2/2018	13.9		123.0		1.5	
		3/9/2018	13.9		123.0		1.5	
		3/16/2018	13.9		123.0		1.5	
		3/23/2018	14.0		122.9		1.4	
		3/30/2018	13.9		123.0		1.5	
		4/6/2018	13.9		123.0		1.5	
		4/13/2018	13.9		123.0		1.5	
		4/20/2018	14.0		122.9		1.4	
		4/27/2018	14.0		122.9		1.4	
		5/4/2018	14.0		122.9		1.4	
		5/11/2018	14.0		122.9		1.4	
		5/18/2018	14.0		122.9		1.4	
		5/25/2018	14.0		122.9		1.4	
		6/1/2018	14.0		122.9		1.4	
		6/8/2018	14.0		122.9		1.4	
		6/15/2018	14.0		122.9		1.4	
		6/22/2018	14.0		122.9		1.4	
		6/29/2018	14.0		122.9		1.4	
		7/6/2018	14.0		122.9		1.4	
		7/13/2018	14.0		122.9		1.4	
		7/20/2018	14.0		122.9		1.4	0.5
		7/27/2018	13.9		123.0		1.5	0.2
		8/3/2018	13.9		123.0		1.5	-0.2

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Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	MP 2-2 [6]	8/10/2018	13.9		123.0		1.5	-1.1
		8/17/2018	13.8		123.1		1.6	-0.2
		8/24/2018	13.8		123.1		1.6	-0.1
		8/31/2018	13.8		123.1		1.6	-0.4
		9/7/2018	13.8		123.1		1.6	-0.7
		9/14/2018	13.8		123.1		1.6	-1.0
		9/21/2018	13.8		123.1		1.6	-1.0
		9/28/2018	13.8		123.1		1.6	-1.1
		10/5/2018	13.8		123.1		1.6	-0.7
		10/12/2018	13.8		123.1		1.6	-0.7
		10/19/2018	13.8		123.1		1.6	1.4
		10/26/2018	13.8		123.1		1.6	0.9
		11/2/2018	13.8		123.1		1.6	0.7
		11/9/2018	13.7		123.2		1.7	0.1
		11/16/2018	13.8		123.1		1.6	0.0
		11/23/2018	13.5		123.4	See Note 24	1.9	0.4
		11/30/2018	13.6		123.3		1.8	1.6
		12/7/2018	15.0		121.9		0.4	-0.8
		12/14/2018	15.2		121.7		0.2	-0.2
		12/21/2018	13.6		123.3		1.8	1.6
		12/28/2018	13.6		123.3		1.8	0.7
		1/4/2019	13.4		123.5		2.0	0.6
		1/11/2019	13.3		123.6		2.1	0.5
		1/18/2019	13.9		123.0		1.5	0.1
		1/25/2019	13.9		123.0		1.5	0.0
		2/1/2019	13.9		123.0		1.5	0.0
		2/8/2019	13.9		123.0		1.5	0.0
		2/15/2019	13.9		123.0		1.5	0.0
		2/22/2019	13.9		123.0		1.5	0.0
		3/1/2019	14.2		122.7		1.2	-0.3
		3/8/2019	13.9		123.0		1.5	0.0
		3/15/2019	13.9		123.0		1.5	0.0
		3/22/2019	13.9		123.0		1.5	0.1
		3/29/2019	14.5		122.4		0.9	-0.6
		4/5/2019	14.1		122.8		1.3	-0.2
		4/12/2019	14.5		122.4		0.9	-0.6
		4/19/2019	14.6		122.3		0.8	-0.6
		4/26/2019	14.6		122.3		0.8	-0.6
		5/2/2019	14.6		122.3		0.8	-0.6
		5/10/2019		See Note 26				
		5/17/2019	14.4	137.02	122.6		1.2	-0.2
		5/24/2019	14.3		122.7		1.3	-0.1
		5/31/2019	14.0		123.0		1.6	0.2
		6/7/2019	13.9		123.1		1.7	0.3
		6/14/2019	14.0		123.0		1.6	0.2
		6/21/2019	14.0		123.0		1.6	0.2
		6/28/2019	14.0		123.0		1.6	0.2
		7/5/2019	14.0		123.0		1.6	0.2
		7/12/2019	14.0		123.0		1.6	0.2
		7/19/2019	14.0		123.0		1.6	0.2
		7/26/2019	14.0		123.0		1.6	0.1
		8/2/2019	13.9		123.1		1.7	0.2
		8/9/2019	13.9		123.1		1.7	0.2
		8/16/2019	13.9		123.1		1.7	0.1
		8/23/2019	13.9		123.1		1.7	0.0
		8/30/2019	13.8		123.2		1.8	0.2
		9/6/2019	13.8		123.2		1.8	0.2
		9/13/2019	13.8		123.2		1.8	0.2
		9/20/2019	13.9		123.1		1.7	0.1
		9/27/2019	13.8		123.2		1.8	0.2

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	MP 2-3 [6]	7/21/2017	15.0	141.05	DRY	122.4	DRY	
		7/28/2017	15.0	top HDPE	DRY	See Note 8	DRY	
		8/4/2017	15.0		DRY		DRY	
		8/11/2017	15.0		DRY		DRY	
		8/18/2017	15.0		DRY		DRY	
		8/25/2017	15.0		DRY		DRY	
		9/1/2017	15.0		DRY		DRY	
		9/8/2017	15.0		DRY		DRY	
		9/15/2017	15.0		DRY		DRY	
		9/22/2017	15.0		DRY		DRY	
		9/29/2017	15.0		DRY		DRY	
		10/6/2017	15.0		DRY		DRY	
		10/13/2017	15.0		DRY		DRY	
		10/20/2017	15.0		DRY		DRY	
		10/27/2017	15.0		DRY		DRY	
		11/3/2017	15.0		DRY		DRY	
		11/10/2017	15.0		DRY		DRY	
		11/17/2017	15.0		DRY		DRY	
		11/24/2017	15.0		DRY		DRY	
		12/1/2017	-		DRY	See Note 12	DRY	
		12/8/2017	19.4	142.2	122.8		0.4	
		12/15/2017	19.6		122.6		0.2	
		12/22/2017	19.4		122.8		0.4	
		12/29/2017	19.5		122.7		0.3	
		1/5/2018	19.1		123.1		0.7	
		1/12/2018	19.0		123.2		0.8	
		1/19/2018	19.1		123.1		0.7	
		1/26/2018	19.1		123.1		0.7	
		2/2/2018	19.1		123.1		0.7	
		2/9/2018	19.1		123.1		0.7	
		2/16/2018	19.1		123.1		0.7	
		2/23/2018	19.3		122.9		0.5	
		3/2/2018	19.1		123.1		0.7	
		3/9/2018	19.1		123.1		0.7	
		3/16/2018	19.1		123.1		0.7	
		3/23/2018	19.2		123.0		0.6	
		3/30/2018	19.1		123.1		0.7	
		4/6/2018	19.1		123.1		0.7	
		4/13/2018	19.0		123.2		0.8	
		4/20/2018	19.2		123.0		0.6	
		4/27/2018	19.2		123.0		0.6	
		5/4/2018	19.2		123.0		0.6	
		5/11/2018	19.2		123.0		0.6	
		5/18/2018	19.1		123.1		0.7	
		5/25/2018	19.1		123.1		0.7	
		6/1/2018	19.1		123.1		0.7	
		6/8/2018	19.1		123.1		0.7	
		6/15/2018	19.1		123.1		0.7	
		6/22/2018	19.1		123.1		0.7	
		6/29/2018	19.1		123.1		0.7	
		7/6/2018	19.1		123.1		0.7	
		7/13/2018	19.1		123.1		0.7	
		7/20/2018	19.1		123.1		0.7	0.7
		7/27/2018	19.2		123.0		0.6	0.6
		8/3/2018	19.1		123.1		0.7	0.7
		8/10/2018	19.1		123.1		0.7	0.7
		8/17/2018	19.0		123.2		0.8	0.8
		8/24/2018	19.0		123.2		0.8	0.8
		8/31/2018	19.0		123.2		0.8	0.8
		9/7/2018	19.0		123.3		0.9	0.9
		9/14/2018	19.0		123.2		0.8	0.8
		9/21/2018	19.0		123.2		0.8	0.8
		9/28/2018	19.0		123.2		0.8	0.8

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)
II	MP 2-3 [6]	10/5/2018	19.0		123.2		0.8	0.8
		10/12/2018	19.0		123.2		0.8	0.8
		10/19/2018	19.0		123.3		0.9	0.9
		10/26/2018	19.0		123.3		0.9	0.9
		11/2/2018	19.0		123.2		0.8	0.8
		11/9/2018	18.8		123.4		1.0	1.0
		11/16/2018	18.8		123.4		1.0	1.0
		11/23/2018	18.7		123.5	See Note 24	1.1	1.1
		11/30/2018	18.8		123.4		1.0	1.0
		12/7/2018	19.4		122.8		0.4	0.4
		12/14/2018	19.5		122.7		0.3	0.3
		12/21/2018	18.8		123.4		1.0	1.0
		12/28/2018	18.8		123.4		1.0	1.0
		1/4/2019	18.6		123.6		1.2	1.2
		1/11/2019	18.5		123.7		1.3	1.3
		1/18/2019	19.1		123.1		0.7	0.7
		1/25/2019	19.0		123.2		0.8	0.8
		2/1/2019	19.1		123.1		0.7	0.7
		2/8/2019	19.1		123.1		0.7	0.7
		2/15/2019	19.1		123.1		0.7	0.7
		2/22/2019	19.1		123.1		0.7	0.7
		3/1/2019	19.5		122.7		0.3	0.3
		3/8/2019	19.1		123.1		0.7	0.7
		3/15/2019	19.1		123.1		0.7	0.7
		3/22/2019	19.1		123.1		0.7	0.7
		3/29/2019	19.6		122.6		0.2	0.2
		4/5/2019	19.2		123.0		0.6	0.6
		4/12/2019	19.4		122.8		0.4	0.4
		4/19/2019	19.5		122.7		0.3	0.3
		4/26/2019	19.6		122.6		0.2	0.2
		5/3/2019	19.6		122.6		0.2	0.2
		5/10/2019	19.6	See Note 26	122.6		0.2	0.2
		5/17/2019	19.5		122.7		0.3	0.3
		5/24/2019	19.6		122.6		0.2	0.2
		5/31/2019	19.2		123.0		0.6	0.6
		6/7/2019	19.1		123.1		0.7	0.7
		6/14/2019	19.1		123.1		0.7	0.7
		6/21/2019	19.0		123.2		0.8	0.8
		6/28/2019	19.1		123.1		0.7	0.7
		7/5/2019	19.1		123.1		0.7	0.7
		7/12/2019	19.1		123.1		0.7	0.7
		7/19/2019	19.1		123.1		0.7	0.7
		7/26/2019	19.1		123.1		0.7	0.7
		8/2/2019	19.1		123.1		0.7	0.7
		8/9/2019	19.1		123.1		0.7	0.7
		8/16/2019	18.9		123.3		0.9	0.9
		8/23/2019	19.0		123.2		0.8	0.8
		8/30/2019	19.1		123.1		0.7	0.7
		9/6/2019	18.8		123.4		1.0	1.0
		9/13/2019	19.0		123.2		0.8	0.8
		9/20/2019	18.9		123.3		0.9	0.9
		9/27/2019	18.8		123.4		1.0	1.0

Appendix D - Weekly Water Level Data
Southeast County Landfill

Phase	Soil Boring #	Date[1]	Depth to water (ft tpvc)	Elevation Top PVC (NGVD)	Water Elevation (NGVD)	Top of Clay Elev (NGVD)	Liquid Depth Over Clay (ft)	Depth Change Previous Year (ft)

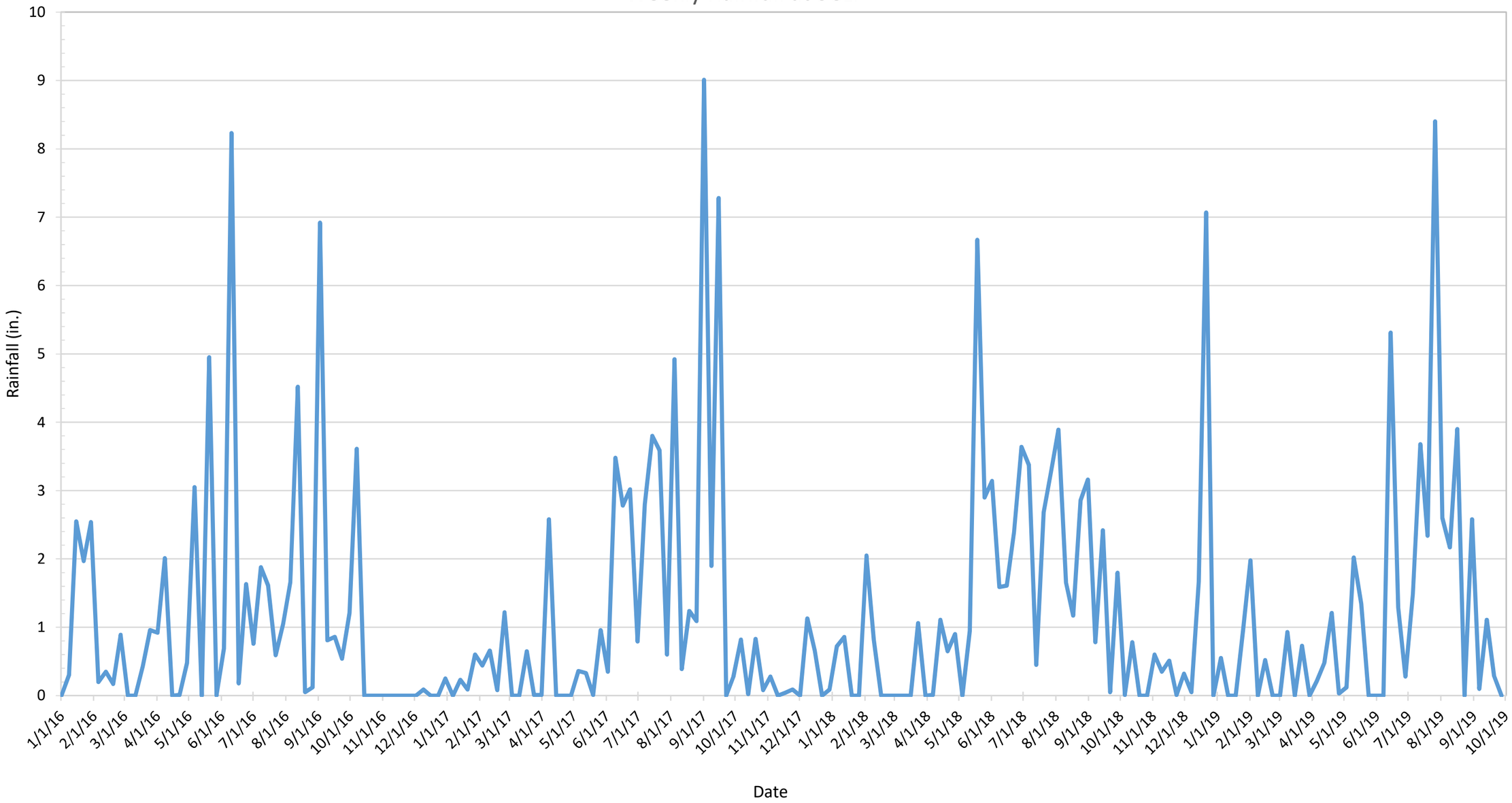
Notes:

1. Water levels collected in SB-15 through SB-23D on 2/16/17 are prior to development.
2. Approximate elevations based on raw survey data.
3. Extended riser at SB-25D due to waste filling operations.
4. Lowered riser at SB-25D in order to conduct pump test.
5. Removed SB-27 during construction of cut-off trench the week of 7-10-2017. Replaced with MP-1 and MP-2.
6. Monitoring Points MP 2-2 and MP 2-3 are vertical HDPE risers installed in cutoff trench.
7. Installed pump at CO 2-2 on 8/11/2017. MP 2-2 may be affected by pumping.
8. Clay elevation at MP 2-3 is estimated based on bottom of trench survey points north and south of riser.
9. SB-25D appeared to be blocked on 9/1/2017. Investigations were conducted with an excavation that determined the piezometer is broken at 14' B.G.
10. Actively filling in the Phase IV area. SWMD extended risers at SB-23D and SB-23S.
11. Actively filling in the Phase IV and VI area. SWMD extended riser at SB-21D.
12. Construction activity at CO 2-1 on 12/1 adjusting depth of MP 2-3.
13. Pump at CO 2-2 turned off to evaluate effects of construction activity at cut-off trench.
14. SB-31 and SB-32 installed temporarily to monitor liquid level prior to excavation to determine accuracy of piezometers. Top of casing based on ground survey and measurement of stickup.
15. SB-23S was damaged after 2/2/2018 and staff has not been able to conduct liquid level measurements.
16. Slug tests on Series-2 piezometers. Levels may be artificially high. Water added on 3/28/18.
17. Extended riser at SB-22D due to waste filling operations. Added 10' on 4/22/18 and 8' on 5/11/2018.
18. SB-22D destroyed during waste filling operations in Phase VI.
19. SWMD excavated trench near SB-32 from 4/24/2018 - 4/30/2018 in order to locate Phase III header pipe and install cleanout riser.
20. SWMD excavated trench near SB-31 from 5/7/2018 - 5/15/2018 in order to locate Phase II header pipe and install cleanout riser. SB-31 removed on 5/11/2018.
21. Damage to SB-28D riser. Removed broken piece ~ 1.59'. Modified piezometer prior to 6/15/18.
22. PVC pipe at SB-23D sheared by landfill prior to 9/21/18 reading.
23. SB-01, 02, 03, 05, 26, P-19S, 23S and 23D were all abandoned prior to 11/9/18.
24. Power failure - DW-1 and DW-2 not pumping - allowed liquid level to increase in SB-29 and SB-30.
25. PVC pipe at SB-21D sheared by waste settlement prior to 12/14/18 reading.
26. Began construction of cut-off trench on 5/6/19. Liquid levels in MP 2-2 and MP 2-3 may be affected by dewatering efforts. Dewatering pumps set below top of clay near MP 2-2.

Appendix D - Rainfall Data
Liquid Assessment Monitoring
Southeast County Landfill

Week Ending	Rainfall (in.)	Week Ending	Rainfall (in.)	Week Ending	Rainfall (in.)	Week Ending	Rainfall (in.)
1/1/16	0	1/6/17	0	1/5/18	0.72	1/4/19	0.55
1/8/16	0.3	1/13/17	0.23	1/12/18	0.86	1/11/19	0.00
1/15/16	2.55	1/20/17	0.09	1/19/18	0.00	1/18/19	0.00
1/22/16	1.97	1/27/17	0.6	1/26/18	0.00	1/25/19	0.96
1/29/16	2.54	2/3/17	0.44	2/2/18	2.05	2/1/19	1.98
2/5/16	0.2	2/10/17	0.66	2/9/18	0.82	2/8/19	0.00
2/12/16	0.35	2/17/17	0.08	2/16/18	0.00	2/15/19	0.52
2/19/16	0.17	2/24/17	1.22	2/23/18	0.00	2/22/19	0.00
2/26/16	0.89	3/3/17	0	3/2/18	0.00	3/1/19	0.00
3/4/16	0	3/10/17	0	3/9/18	0.00	3/8/19	0.93
3/11/16	0	3/17/17	0.65	3/16/18	0.00	3/15/19	0.00
3/18/16	0.43	3/24/17	0.01	3/23/18	1.06	3/22/19	0.73
3/25/16	0.96	3/31/17	0.01	3/30/18	0.00	3/29/19	0.00
4/1/16	0.92	4/7/17	2.58	4/6/18	0.01	4/5/19	0.21
4/8/16	2.01	4/14/17	0	4/13/18	1.11	4/12/19	0.48
4/15/16	0	4/21/17	0	4/20/18	0.65	4/19/19	1.21
4/22/16	0.01	4/28/17	0	4/27/18	0.90	4/26/19	0.03
4/29/16	0.48	5/5/17	0.36	5/4/18	0.00	5/3/19	0.12
5/6/16	3.05	5/12/17	0.33	5/11/18	0.95	5/10/19	2.02
5/13/16	0	5/19/17	0.01	5/18/18	6.67	5/17/19	1.34
5/20/16	4.95	5/26/17	0.96	5/25/18	2.90	5/24/19	0.00
5/27/16	0	6/2/17	0.35	6/1/18	3.14	5/31/19	0.00
6/3/16	0.69	6/9/17	3.48	6/8/18	1.59	6/7/19	0.00
6/10/16	8.23	6/16/17	2.78	6/15/18	1.61	6/14/19	5.31
6/17/16	0.18	6/23/17	3.02	6/22/18	2.39	6/21/19	1.29
6/24/16	1.63	6/30/17	0.79	6/29/18	3.64	6/28/19	0.28
7/1/16	0.76	7/7/17	2.8	7/6/18	3.37	7/5/19	1.49
7/8/16	1.88	7/14/17	3.8	7/13/18	0.45	7/12/19	3.68
7/15/16	1.61	7/21/17	3.59	7/20/18	2.68	7/19/19	2.34
7/22/16	0.59	7/28/17	0.6	7/27/18	3.27	7/26/19	8.40
7/29/16	1.05	8/4/17	4.92	8/3/18	3.89	8/2/19	2.60
8/5/16	1.66	8/11/17	0.39	8/10/18	1.66	8/9/19	2.17
8/12/16	4.52	8/18/17	1.24	8/17/18	1.17	8/16/19	3.90
8/19/16	0.05	8/25/17	1.09	8/24/18	2.86	8/23/19	0.00
8/26/16	0.12	9/1/17	9.01	8/31/18	3.16	8/30/19	2.58
9/2/16	6.92	9/8/17	1.9	9/7/18	0.78	9/6/19	0.10
9/9/16	0.81	9/15/17	7.28	9/14/18	2.42	9/13/19	1.11
9/16/16	0.86	9/22/17	0	9/21/18	0.05	9/20/19	0.29
9/23/16	0.54	9/29/17	0.28	9/28/18	1.80	9/27/19	0.00
9/30/16	1.21	10/6/17	0.82	10/5/18	0.01		
10/7/16	3.61	10/13/17	0.02	10/12/18	0.78		
10/14/16	0	10/20/17	0.83	10/19/18	0.00		
10/21/16	0	10/27/17	0.08	10/26/18	0.00		
10/28/16	0	11/3/17	0.28	11/2/18	0.60		
11/4/16	0	11/10/17	0	11/9/18	0.35		
11/11/16	0	11/17/17	0.04	11/16/18	0.51		
11/18/16	0	11/24/17	0.09	11/23/18	0.01		
11/25/16	0	12/1/17	0	11/30/18	0.32		
12/2/16	0	12/8/17	1.13	12/7/18	0.05		
12/9/16	0.09	12/15/17	0.66	12/14/18	1.67		
12/16/16	0	12/22/17	0	12/21/18	7.07		
12/23/16	0	12/29/17	0.09	12/28/18	0.00		
12/30/16	0.25						

Appendix D


Weekly Rainfall at SCLF
Rainfall (in.)
10
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7
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10/1/19
Date

Appendix E
Proposed Leachate Management Plan Revisions

9.2.3 Bottom Liner Clay Evaluation

Approximately one year before a particular phase of Phases I-VI is entered, an in-situ, undisturbed, clay sample will be collected from beneath the phase proposed to be filled. The collected clay sample will be tested and the shear strengths computed.

The in-situ, undisturbed, clay sample will be tested either using a direct shear test (ASTM D-3080) or tri-axial test (ASTM D-2850/4767) method to determine the clay strength. Three individual testing points—covering the existing, proposed filling, and proposed final build-out pressures—will be conducted. A representative phi and cohesion value will be determined to cover proposed filling and final build-out strengths.

Slope stability models, using both sliding block and circular failure methods, will be conducted on the proposed filling and the final-build out conditions. If a factor of safety (FS) of 1.5 or greater is achieved for a particular filling scenario, that particular phase is deemed complete and no further testing for that phase is necessary. If a particular filling scenario does not achieve a FS of 1.5 or greater, recommendations for filling the phase will be provided.

Results of the slope stability models, along with a report and recommendations signed and sealed by a professional engineer, will be submitted to FDEP for approval at least six months before filling begins in that phase.

9.2.4 LCRS Monitoring Locations

The SWMG will collect daily liquid level measurements from the PS-B sump, from within the MP 2-2 riser, and from within the CO 2-1 header access cleanout, near the PS-2 intake. The liquid level in PS-B (PS-B reading) will be operated at or below 30 inches, the PS-B maintenance level. The liquid level in MP 2-2 will be maintained at or below 30 inches, the MP 2-2 maintenance level. The liquid level near the PS-2 intake, located within the primary LCRS, header pipe will be maintained at or below 30 inches, the CO 2-1 maintenance level. Should the liquid level within PS-B or the MP 2-2 monitoring point fall out of the maintenance level range for four (4) consecutive days, the SWMG will enact LCRS inspections and liquids management actions, with the exception of an extraordinary rainfall event. In the event of an extraordinary rainfall event, a 30 day exception would be allowed to achieve maintenance levels. The monitoring locations, maintenance levels, and liquids management actions that the SWMG will conduct are outlined in **Table 9.2.4**.

Table 9.2.4 Liquid Levels Maintenance Schedule

Monitoring Location	Performance Criteria	Liquids Management Actions
PS-B	At or Below 30 inches as measured from the PS-B reading	1. If the maintenance level rises above 30 inches for four (4) consecutive days, SWMG will inspect the pressure level sensor and verify proper operation. If the pressure level sensor is operating correctly and the PS-B maintenance level is not being met, proceed to the next appropriate corrective action. 2. If the maintenance level is above 30 inches for four (4) consecutive days a temporary pump will be installed into either CO 3-1, CO 1-1, or CO 2-4 header until the PS-B reading returns to the maintenance level.
MP 2-2	At or Below 30 inches as measured from the MP 2-2 pressure level sensor	1. If the maintenance level rises above 30 inches for four (4) consecutive days, SWMG will remove and inspect the PS-2 intake pipe. If the proper function of the intake pipe is verified, and the MP 2-2 maintenance level is not being met, proceed to the next step. 2. If the maintenance level rises above 30 inches for four (4) consecutive days, the SWMG will install a temporary pump to remove liquid directly from the cutoff trench until the maintenance level can be maintained in MP 2-2 without the assistance of a temporary pump.
CO 2-1	At or Below 30 inches as measured from the CO 2-1 pressure level sensor	1. If the maintenance level rises above 30 inches for four (4) consecutive days, SWMG will inspect the pressure level sensor and verify proper operation. If the measurement device is operating correctly and the CO 2-1 maintenance level is not being met, proceed to the next step. 2. If the maintenance level rises above 30 inches for four (4) consecutive days, SWMG will remove and inspect the PS-2 intake pipe. If the proper function of the intake pipe is verified, and the CO 2-1 maintenance level is not being met, proceed to the next step. 3. If the maintenance level rises above 30 inches for four (4) consecutive days, the SWMG will install a temporary pump to remove liquid directly from the cutoff trench (CO 1-4, CO 2-2, or CO 2-3) until maintenance levels can be maintained in CO 2-1 without the assistance of a temporary pump.

Appendix F
Conceptual Fill Sequence and Accelerated Closure Plan

Conceptual Fill Sequence and Accelerated Closure Plan

Hillsborough County - Public Utilities Department
Solid Waste Management Division (SWMD)
332 N. Falkenburg Road
Tampa, FL 33619

SCS ENGINEERS

09215600.09 | November 26, 2019

3922 Coconut Palm Drive, Suite 102
Tampa, FL 33619
813-621-0080

Conceptual Fill Sequence and Accelerated Closure Plan

Southeast County Landfill
Lithia, Florida

Submitted to:

Hillsborough County
Solid Waste Management Division
332 North Falkenburg Road
Tampa, Florida 33619

Prepared by:

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November 26, 2019
File No. 09215600.09

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3 Accelerated Closure Plan 2
4 Anticipated Schedule 2

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Appendices

Appendix A 2019 Annual Site Life Estimate

1 BACKGROUND

On behalf of Hillsborough County, Solid Waste Management Division (SWMD), SCS Engineers (SCS) has prepared this plan to present a Conceptual Fill Sequence and Accelerated Closure Plan (Conceptual Plan) for Phase I-VI of the Southeast County Landfill Facility (SCLF) located in Lithia, Florida. This Conceptual Plan is being prepared as an action item following an Alternate Procedure meeting between the SWMD and the Florida Department of Environmental Protection (FDEP) conducted on September 25, 2019. During the meeting, SWMD agreed to record daily liquid levels at the Pump Station B (PS-B) sump, Monitoring Point 2-2 (MP 2-2), and within the Phase II Leachate Collection and Removal System (LCRS) header access Cleanout 2-1 (CO 2-1). Supplementary liquids management actions will be enacted by the SWMD should any of the liquid maintenance levels fall outside of their associated performance criteria.

Additionally, the SWMD agreed to maintain and upkeep the Phase II Cut-off Trench as part of the LCRS and to implement stormwater management measures. The stormwater management measures will reduce leachate generation within Phase I-VI of the SCLF. This Conceptual Plan will address two aspects of the stormwater management; revising the Fill Sequence Plan to incorporate increased slopes across the upper crown of the landfill and implementing an accelerated closure approach to a majority of Phase II and Phase III in an effort to reduce stormwater infiltration.

Upon FDEP approval of the November 2019 Request for Alternate Procedure Approval, the SWMD will commence preparation of an Operation Permit Modification Application to incorporate a revised fill sequence and closure plan based on this Conceptual Plan.

2 REVISED FILL SEQUENCE

The first component of the Conceptual Plan incorporates a revised fill sequence. Upon FDEP acceptance of the Request for Alternate Procedure Approval, the SWMD will begin preparation of an Operation Permit Modification Application to incorporate detailed waste filling plans. At the approval of the Operation Permit Modification, waste filling operations will be moved from Lift 16A to Lift 18A which is included as a conceptual drawing as **Figure 1**.

Lift 18A includes filling the crown of Phases II and III with municipal solid waste (MSW) and MSW ash to increase the slopes to 7.5 percent. Increasing the slopes across the crown of Phases II and III will promote stormwater runoff, reducing infiltration of water that would become leachate. SCS anticipates that Lift 18A will take approximately 1.3 years to complete based on current tonnage records and achievable in place waste density. Following completion of Lift 18A, the SWMD would commence Lift 18B.

Lift 18B will resume filling operations in the southwestern part of Phase II and continue in a northerly direction to the permitted design elevations. As shown in **Figure 2**, the Lift 18B conceptual plan incorporates filling to the maximum permitted elevation in Phase VI to promote drainage toward the PS-B sump by applying consolidating pressure to the waste phosphatic clay liner. In conjunction with filling Phases II and III to the permitted elevations, the SWMD will conduct an accelerated closure of Phases II and III which is shown in **Figure 3** and described in Section 3 of this Conceptual Plan. While SCS estimates that the completion of Lift 18B will take approximately 3.8 years to complete, closure of Phases II and III will be conducted concurrent to waste filling operations, as described in Section 3 and Section 4.

Upon completion of filling Phases II and III to the maximum achievable capacity, waste filling operations will relocate to Lift 19A. As shown in **Figure 4**, Lift 19A will proceed from the southern edge of Phase IV, northward over Phases V and VI to increase the slope across the crown of the landfill to 7.5 percent using MSW and MSW ash. SCS estimates that the completion of lift 19A will take approximately 1.4 years. Following completion of Lift 19A, Lift 19B will fill Phases IV – VI to the permitted elevations with MSW and MSW ash, as shown in **Figure 5**. Lift 19B is depicted in **Figure 6** and represents completion of waste filling operations in Phases II – VI. SCS expects that Lift 19B will be completed approximately 2.0 years following initiation. Lastly, Phase I will be filled to the maximum permittable elevation as shown in **Figure 7**. The final waste lift will be designated Lift 20A and will coincide with the expected closure of Phase I-VI. SCS estimates that Lift 20A will take approximately 1.0 year to complete.

3 ACCELERATED CLOSURE PLAN

The second component of the Conceptual Plan consists of an Accelerated Closure Plan. Upon FDEP acceptance of the Request for Alternate Procedure Approval, the SWMD will begin preparation of an Operation Permit Modification Application to include a detailed closure plan that incorporates an expedited final closure of a majority of Phases II and III.

Approximately one-third of the way through the completion of Lift 18B, the SWMD will begin to install final closure cover over a majority of Phase II (Accelerated Closure Area 1). SCS estimates that the filling of the southern half of Phase II will take approximately one year following the completion of Lift 18A. SCS anticipates that filling the remainder of Phases II and III will take approximately three years. Approximately half-way through the remainder of Lift 18B, the SWMD will commence final closure activities for Accelerated Closure Area 2. Following completion of Lift 18B and relocation of waste filling operations to Lift 19A, the SWMD will initiate final closure activities for Accelerated Closure Area 3, as shown in **Figure 3**.

Accelerated Closure Area 1 will consist of approximately 20.3 acres while Accelerated Closure Area 2 will consist of approximately 16.4 acres and Accelerated Closure Area 3 will consist of approximately 17.5 acres. The Accelerated Closure Areas in Phases II and III, combined with the expedited enhancement of the upper crown slopes, will reduce the generation of leachate within Phases II and III. Below, Section 4 includes an anticipated implementation schedule for the Conceptual Plan.

4 ANTICIPATED SCHEDULE

SCS has calculated an anticipated implementation schedule based on the 2019 Annual Site Life Estimate (**Appendix A**), AutoCAD volumes of the conceptual fill sequence surfaces, and the information available at this time. The estimated schedule is summarized in Table 1. The implementation schedule of the Conceptual Plan is an estimate and will vary based on FDEP approval schedule, Operation Permit Modification Application preparation, the final design of each lift, and future air space utilization. However, SCS and the SWMD are committed to preparing the necessary plans and specifications in advance of sideslope closure activities to prevent unnecessary delays.

Table 1. Anticipated Implementation Schedule

Approximate Date	Milestone
November 2019	SWMD submits Request for Alternate Procedure Approval to FDEP.
December 2019	FDEP approves SWMD's Request for Alternate Procedure Approval.
February 2020	SWMD submits an Operations Permit Modification to FDEP which includes a revised Fill Sequence Plan, Accelerated Closure Plan, and Accelerated Closure Construction Quality Assurance Plan.
April 2020	FDEP approves the Operation Permit Modification to include the Fill Sequence Plan, Accelerated Closure Plan, and Accelerated Closure Construction Quality Assurance Plan.
April 2020	SWMD relocates waste filling operations to Phase II as part of Lift 18A. It is the SWMD's intent to commence Lift 18A prior to rainy season in an effort to reduce stormwater infiltration and mitigate leachate generation in Phases II and III.
August 2021	SWMD completes Lift 18A and begins filling Lift 18B with MSW and MSW ash.
August 2022	SWMD completes Lift 18B to the northeast corner of Phase II and begins closure of Accelerated Closure Area 1.
March 2023	SWMD completes the closure of Accelerated Closure Area 1. This schedule assumes that construction begins in October 2022 to mitigate weather delays and the chance of hurricanes during construction.
April 2024	SWMD completes Lift 18B to the western boundary of Accelerated Closure Area 2. Waste filling continues in Lift 18B westward and Accelerated Closure Area 2 is concurrently prepared for closure activities.
February 2025	SWMD completes the closure of Accelerated Closure Area 2. This schedule assumes that construction begins in October 2024 to mitigate weather delays and the chance of hurricanes during construction.
August 2025	SWMD completes Lift 18B and relocates waste filling to Phase IV, Lift 19A. Concurrently, SWMD begins final closure of Accelerated Closure Area 3.
August 2025	SWMD relocates waste filling operations to Phase IV as part of Lift 19A.
February 2026	SWMD completes the closure of Accelerated Closure Area 3. This schedule assumes that construction begins in October 2025 to mitigate weather delays and the chance of hurricanes during construction.
November 2026	SWMD completes Lift 19A and begins Lift 19B.
November 2028	SWMD completes Lift 19B and begins Lift 20A.
November 2029	SWMD completes Lift 20A and discontinues waste disposal in Phase I-VI.
November 2029	SWMD initiates final closure activities for areas of Phases I-VI that have not received final closure cover.

FIGURES

N

0 100 200 400

1" = 200'

THIS DRAWING IS INTENDED TO BE 24"x36" REPRODUCTION AT ANY OTHER SIZE WILL INVALIDATE THIS SCALE.

LEGEND:

- 175 — EXISTING CONTOURS
- 205 — CONCEPTUAL CONTOURS
- PHASE BOUNDARIES
- LIMITS OF WASTE
- APPROXIMATE FUTURE ACCESS ROAD

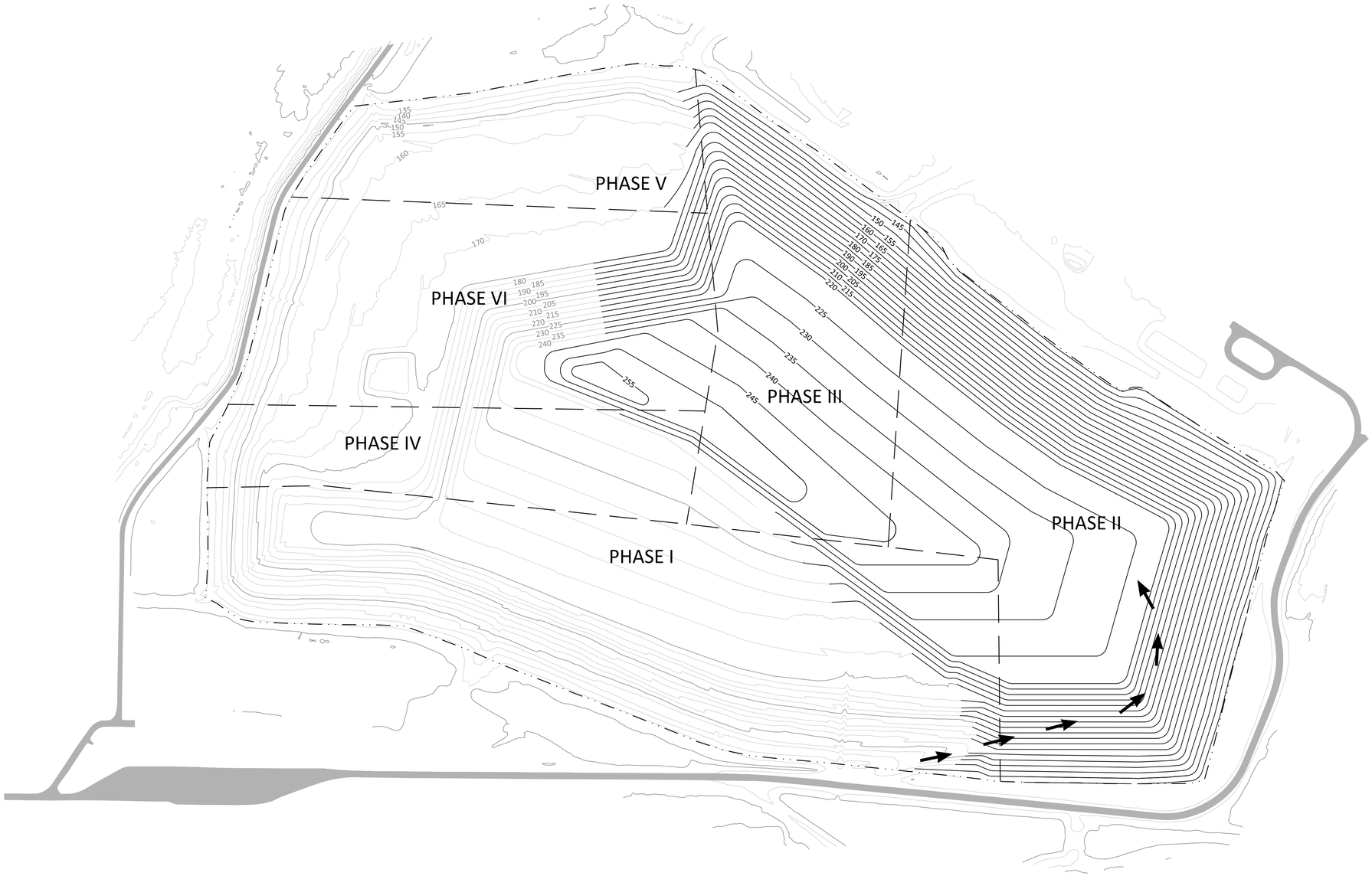
NOTE:

1. EXISTING CONTOURS BASED ON AERIAL SURVEY DATED JULY 5, 2019 PROVIDED BY PICKETT AND ASSOCIATES, INC.
2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF INTERMEDIATE COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

FIGURE 1. CONCEPTUAL LIFT 18A
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

F:\PROJECT\Hillsborough_SE Landfill\Active Landfill\Phases I IV – Conceptual Permit set\Figures\Fig 1 Conceptual 18A.dwg Nov 25, 2019 – 6:25pm Layout Name: Layout1 By: 4745ald



NOTE:

1. EXISTING CONTOURS BASED ON AERIAL SURVEY DATED JULY 5, 2019 PROVIDED BY PICKETT AND ASSOCIATES, INC.
2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF FINAL COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

FIGURE 2. CONCEPTUAL LIFT 18B
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

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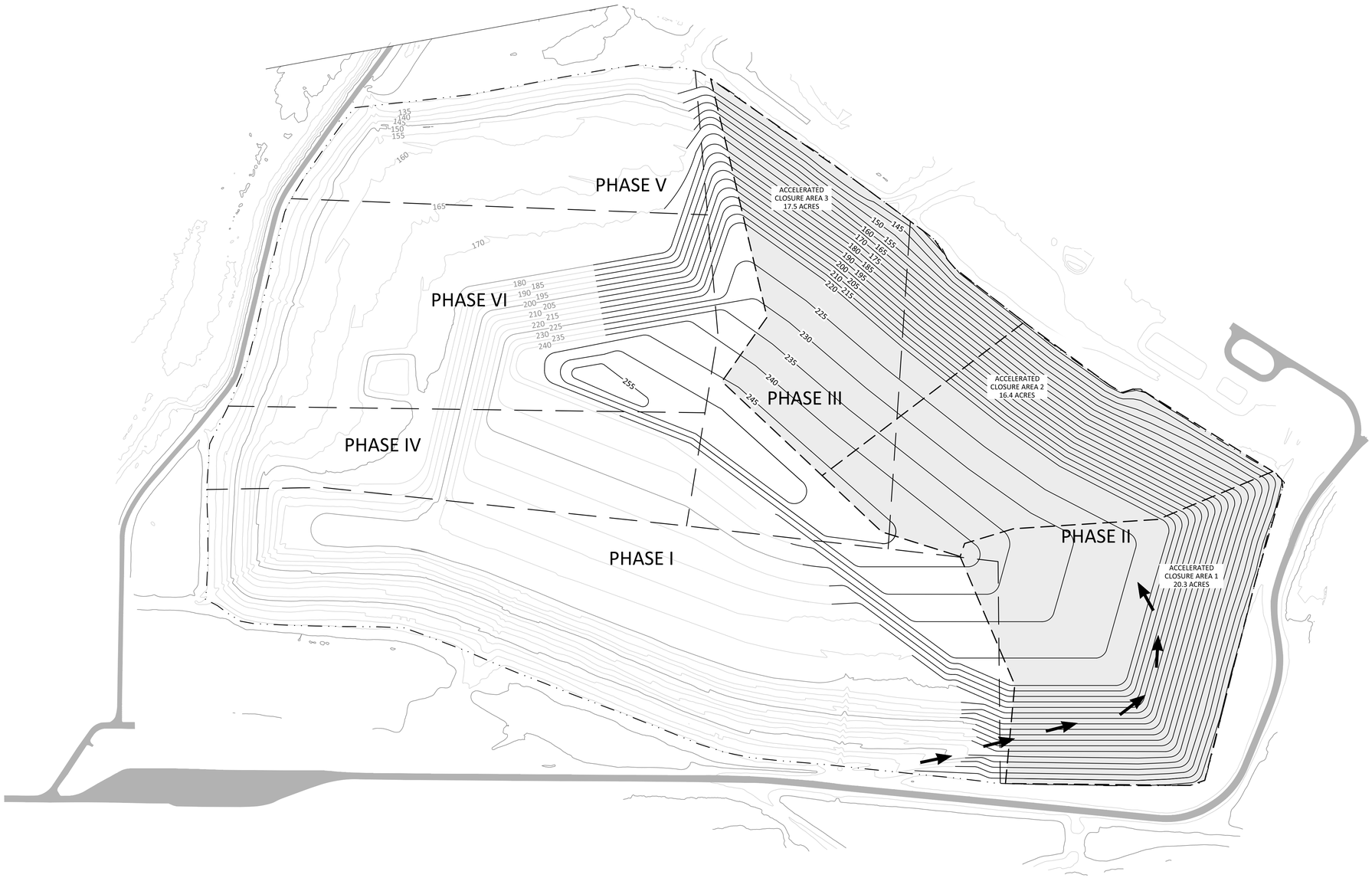

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THIS DRAWING IS INTENDED TO BE 24"x36" REPRODUCTION AT ANY OTHER SIZE WILL INVALIDATE THIS SCALE.

LEGEND:

- 175 — EXISTING CONTOURS
- 205 — CONCEPTUAL CONTOURS
- PHASE BOUNDARIES
- LIMITS OF WASTE
- APPROXIMATE FUTURE ACCESS ROAD
- ACCELERATED CLOSURE AREAS

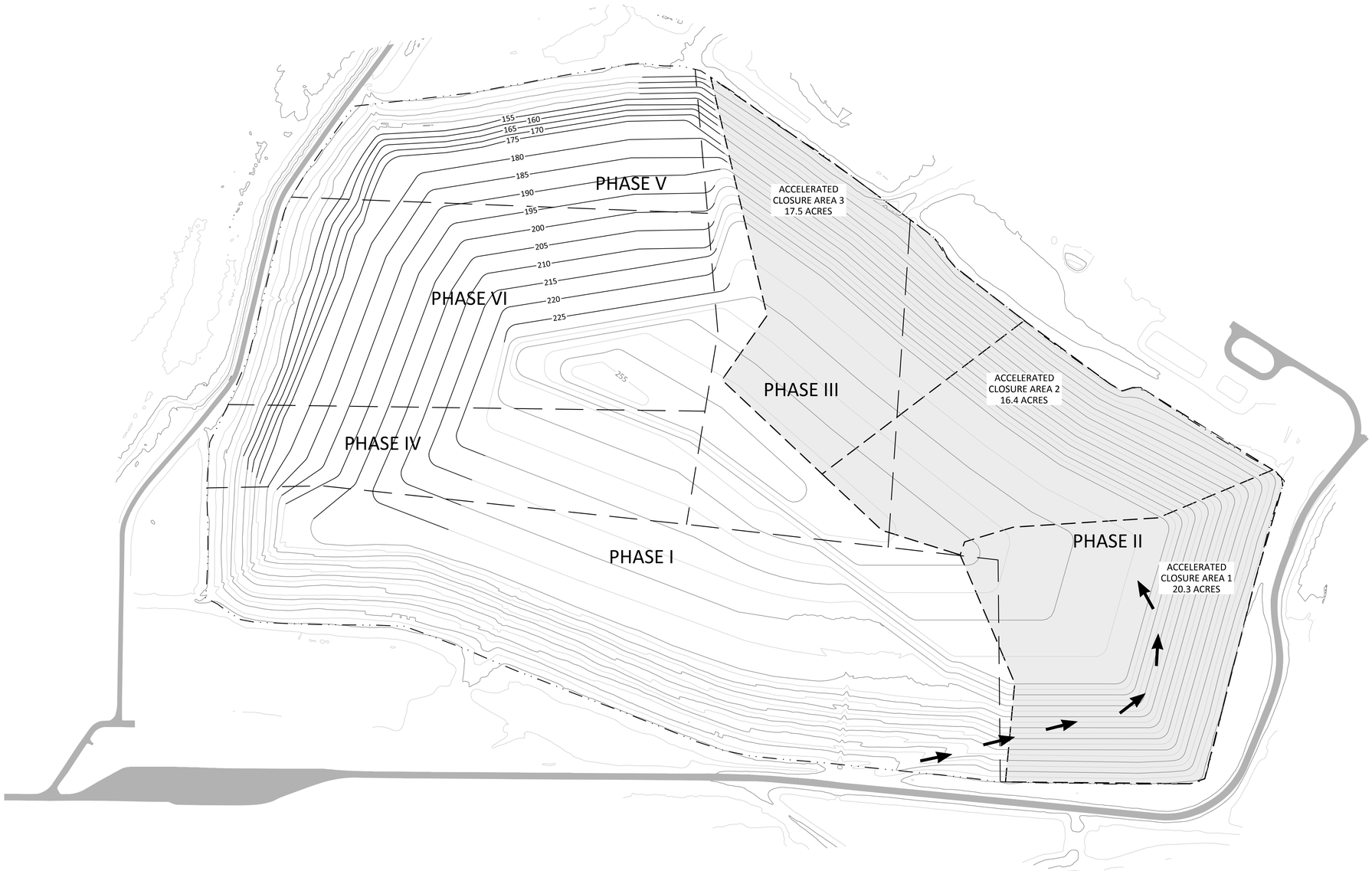
NOTE:

1. EXISTING CONTOURS BASED ON AERIAL SURVEY DATED JULY 5, 2019 PROVIDED BY PICKETT AND ASSOCIATES, INC.
2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF FINAL COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

FIGURE 3. ACCELERATED CLOSURE AREAS
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

F:\PROJECT\Hillsborough_SE Landfill\Active Landfill\Phases I IV – Conceptual Permit set\Figures\Fig 2 Conceptual 18 V2.005.dwg Nov 25, 2019 – 6:36pm Layout Name: Figure 3 By: 4745ald



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1" = 200'

THIS DRAWING IS INTENDED TO BE 24"x36" REPRODUCTION AT ANY OTHER SIZE WILL INVALIDATE THIS SCALE.

LEGEND:

- 175 — EXISTING CONTOURS
- 205 — CONCEPTUAL CONTOURS
- PHASE BOUNDARIES
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- ACCELERATED CLOSURE AREAS

NOTE:

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2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF INTERMEDIATE COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

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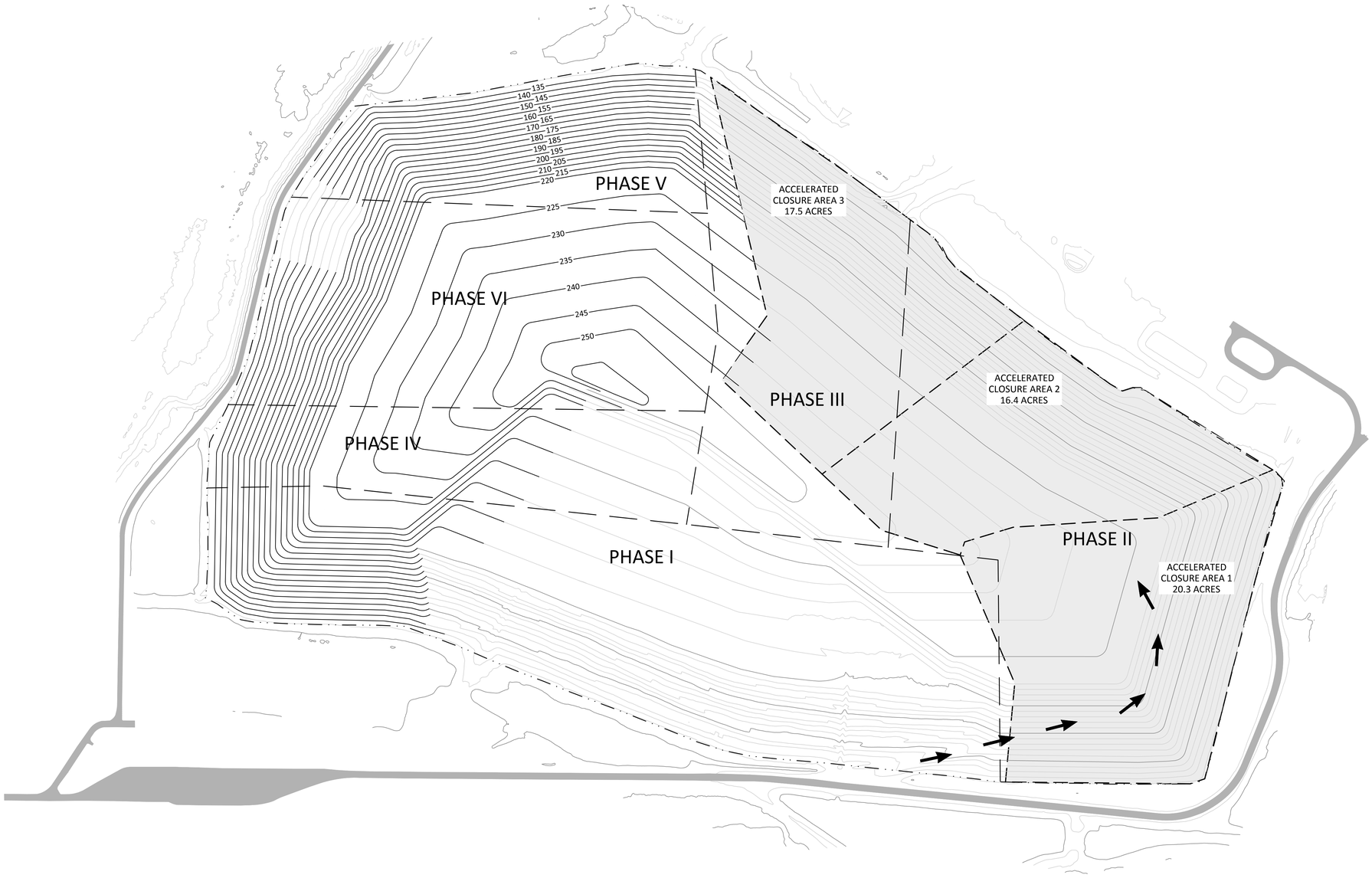
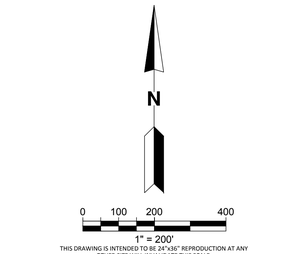
FIGURE 4. CONCEPTUAL LIFT 19A
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019





LEGEND:

- 175 — EXISTING CONTOURS
- 205 — CONCEPTUAL CONTOURS
- PHASE BOUNDARIES
- LIMITS OF WASTE
- APPROXIMATE FUTURE ACCESS ROAD
- ACCELERATED CLOSURE AREAS

NOTE:

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2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF FINAL COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

FIGURE 5. CONCEPTUAL LIFT 19B
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

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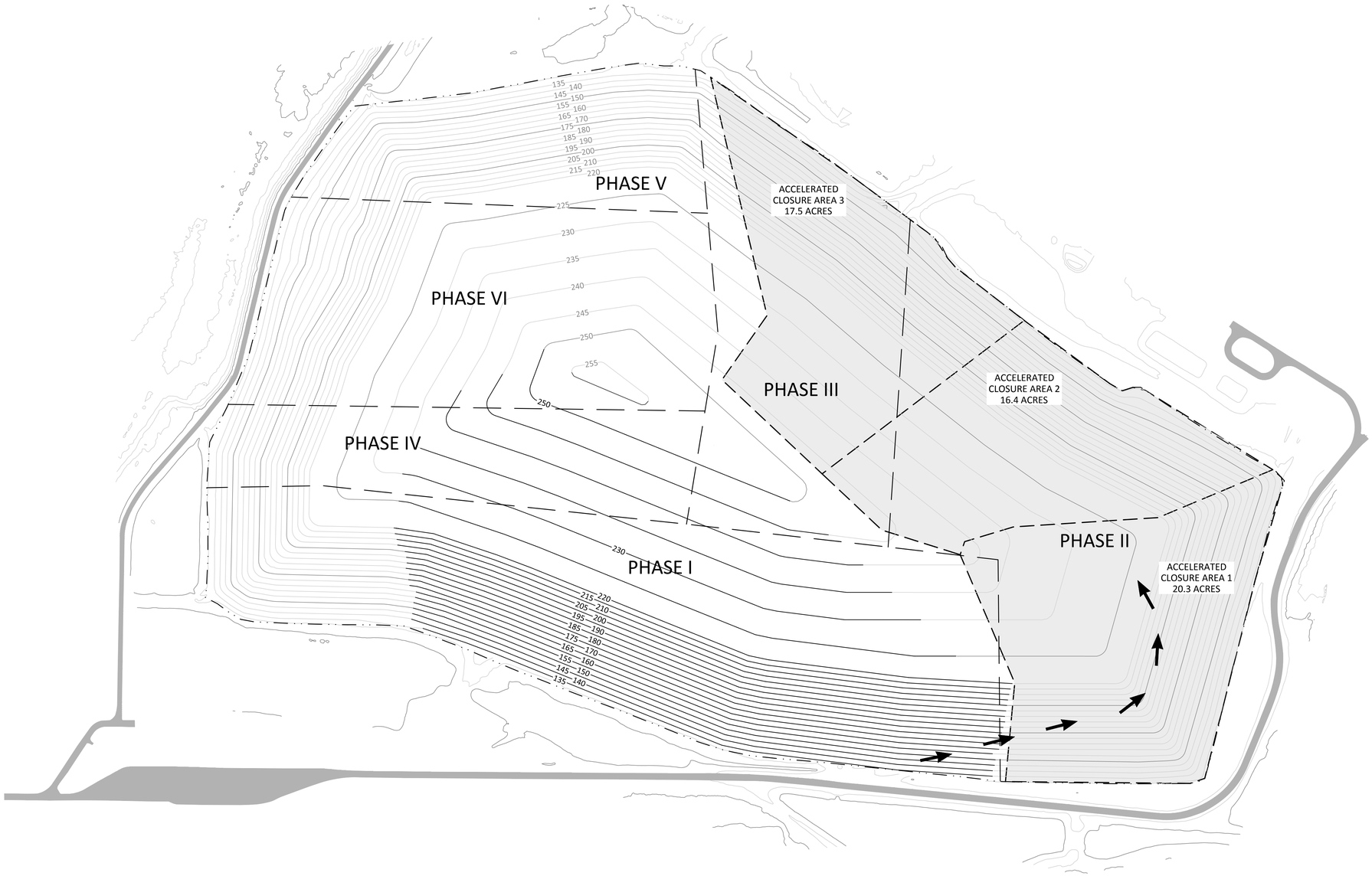

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1" = 200'

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2. PROPOSED CONTOURS ON THIS FIGURE REPRESENT TOP OF FINAL COVER.
3. CONCEPTUAL FIGURE. FINAL GRADING TO BE DEVELOPED FOR OPERATIONS PERMIT MODIFICATION APPLICATION.
4. FUTURE ACCESS ROAD BASED ON A MAXIMUM SLOPE OF 10 PERCENT. LOCATION TO BE DETERMINED.

SCS ENGINEERS

FIGURE 6. CONCEPTUAL LIFT 20A
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

F:\PROJECT\Hillsborough_SE Landfill\Active Landfill\Phases I IV - Conceptual Permit set\Figures\FIGURE 6 CONCEPTUAL 20A.dwg Nov 25, 2019 - 6:27pm Layout Name: FIGURE 6 By: 4745ald

F:\PROJECT\Hillsborough_SE Landfill\Active Landfill\Phases I IV – Conceptual Permit set\Figures\FIGURE 7 CLOSURE DETAIL.dwg Nov 25, 2019 – 6:27pm Layout Name: Layout1 By: 4745ald

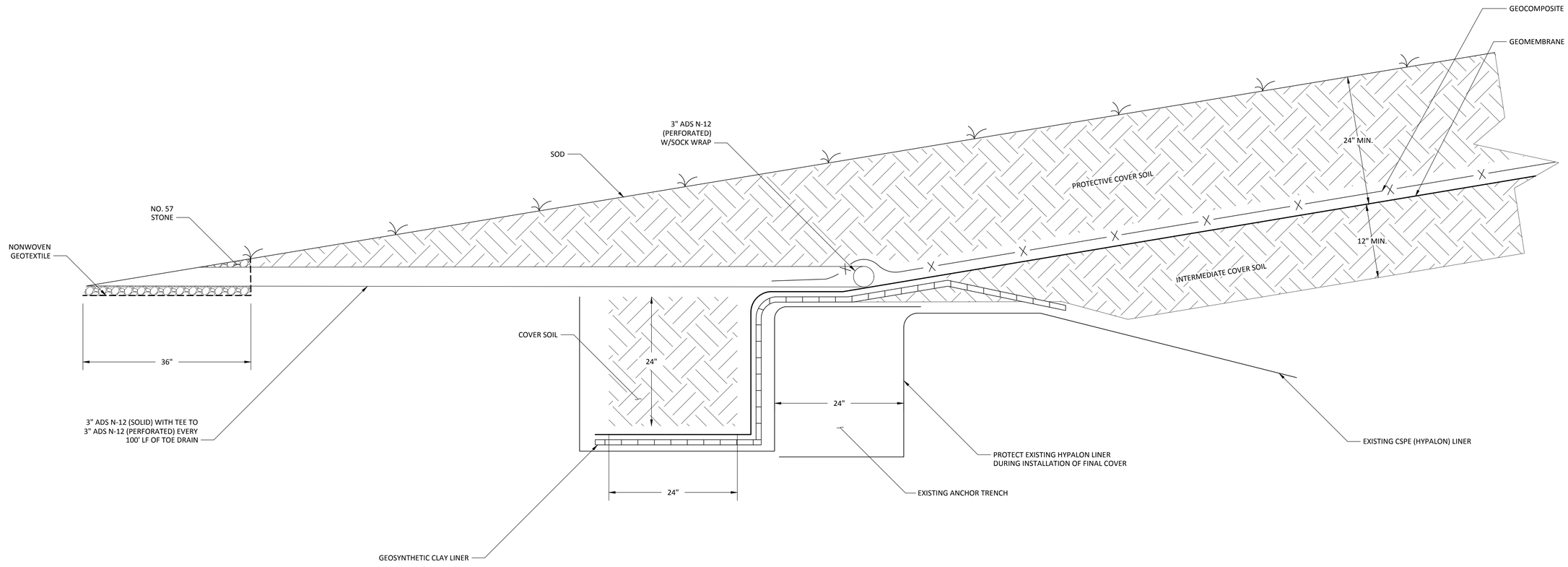


FIGURE NOT TO SCALE

FIGURE 7. ACCELERATED CLOSURE AREA DETAIL
SOUTHEAST COUNTY LANDFILL
NOVEMBER 2019

Appendix A
2019 Annual Site Life Estimate

August 30, 2019
File No. 09218500.08

Mr. Phillip J. Ciaravella
Florida Department of Environmental Protection
Solid Waste Section, MS 4565
2600 Blair Stone Road
Tallahassee, Florida, 32399-2400

SUBJECT: Remaining Disposal Capacity and Site Life – Reporting Year 2019
Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Permit No.: 35435-026-SO-MM

Dear Mr. Ciaravella,

On behalf of the Hillsborough County Public Utilities Department, Solid Waste Management Division (SWMD), SCS Engineers (SCS) has prepared the remaining disposal capacity and site life estimates for Phases I-VI and the Capacity Expansion Area (CEA) (Permit No 35435-025-SO-MM), Southeast County Landfill (SCLF), Hillsborough County, Florida. This letter is in accordance with Rule 62-701.500(13)(c) and Specific Condition Part C.16.b of the facility's solid waste operations permit.

ANNUAL TOPOGRAPHIC SURVEY AND REMAINING CAPACITY ANALYSIS

The aerial topographic survey was performed by Pickett and Associates, Inc. (Pickett) on July 5, 2019 (**Attachment 1**). The survey demonstrates that Phases I-VI and the CEA Sections 7, 8, and 9 have been filled in general accordance with the permitted operations sequence plans including that the side slopes are no greater than 4H to 1V (Phases I-VI) and 3H to 1V (CEA Sections 7, 8, and 9). In addition, the peak elevations do not exceed the permitted maximum design height elevation of 255 feet NGVD and 285 feet NGVD for Phases I-VI and the CEA Sections 7, 8, and 9, respectively. Waste has not been placed outside the permitted limits of waste/liner in either Phases I-VI or the CEA Sections 7, 8, and 9.

Using AutoCAD software, the gross remaining airspace volumes were calculated by comparing the permitted conceptual final build-out contours for the Phases I-VI and the CEA Sections 7, 8, and 9 to the July 5, 2019 topographic survey (refer to attachments for volume summaries). The estimated gross remaining airspace for the Phases I-VI and the CEA Sections 7, 8, and 9 is 7,750,034 cubic yards (cy) based on the airspace analyses performed using AutoCAD. The estimated gross remaining airspace does not include volume that may be regained through the removal of intermediate cover soil or landfill settlement.

WASTE FILLING FROM JULY 2018 THROUGH JUNE 2019

Based on the information provided by the SWMD, approximately 357,405 tons of municipal solid waste (MSW) was disposed of at the SCLF between July 1, 2018 and June 30, 2019. This is 61,533 tons more than reported during the same time period the previous year. The total volume used between July 2018 and July 2019 was 296,551 cy.

In accordance with the permitted operating sequence plan, waste was placed in Phases I-VI from July 1, 2018 through June 30, 2019.

REMAINING CAPACITY ANALYSIS METHOD

SCS used the most recent topographic data to evaluate the remaining site life of the SCLF using our Remaining Capacity Method, developed by SCS founder Bob Sterns. This method differs from previous SCLF site life evaluations submitted by SCS in that historic volume utilization is used to predict remaining available tonnage, encompassing tonnage and density trends into one number.

The Remaining Capacity Method includes a graph that plots cumulative net remaining volume versus utilized tonnage. A trend line is added to the known data points from the previous five years to estimate the maximum available tonnage remaining based on historic Airspace Utilization Factor (AUF). The AUF is a measurement of waste in place density (lbs/cy). We have included a graph that utilizes historic volume and tonnage data to estimate remaining available tonnage as Attachment 2.

COMBINED FACILITY SITE LIFE

In previous site life evaluations, SCS and other engineering consultants assumed that future waste density would be comparable to previously observed density and that tonnage trends would be directly proportional to population growth; however, tonnage records from recent years indicate that incoming waste is increasing at a rate greater than the unincorporated County population growth rate. Additionally, the waste composition ratio of MSW to ash is increasing. This is at least partly attributable to increased waste diversion from the Resource Recovery Facility (RRF).

Below, Table 1 summarizes the annual and cumulative net remaining volume, tonnages, and AUF for 2014 through 2019. The estimated tonnages for future years are based on an annual increase of 27,707 tons per year, the observed average annual increase from 2014 through 2019. The net remaining volume is defined as the gross available volume minus final cover, ash study area piles, and biosolids composting windrows.

SCS assumes that the AUF will decrease as the RRF reaches capacity and a higher percentage of landfilled waste is composed of MSW (as opposed to RRF ash). Therefore, SCS assumed that the future AUF will be 90% of the 5-year observed AUF of 2,010 lbs/cy or 1,809 lbs/cy.

Table 1. Southeast County Landfill Combined Site Life Estimate

Survey Date	Per Year			Cumulative		
	Volume Used Between Air Surveys (cy)	Waste Disposed Between Air Surveys (tons)	Airspace Utilization Factor Between Air Surveys (lb/cy)	Volume Remaining (cy)[1]	Waste Disposed (tons)	Airspace Utilization Factor (lb/cy)
July 2014	-	218,868	-	8,260,576	218,868	-
July 2015	275,823	211,808	1,536*	7,984,753	430,676	1,536
July 2016	165,321	206,761	2,501*	7,819,432	637,437	1,898
July 2017	248,414	256,689	2,067*	7,571,018	894,126	1,959
July 2018	335,902	295,872	1,762*	7,235,116	1,189,998	1,894
July 2019	296,551	357,405	2,410*	6,938,565	1,547,403	2,010
July 1, 2020	425,801	385,112	1,809**	6,512,764	1,932,515	1,961
July 1, 2021	456,435	412,819	1,809**	6,056,329	2,345,334	1,929
July 1, 2022	487,070	440,526	1,809**	5,569,259	2,785,860	1,908
July 1, 2023	517,704	468,233	1,809**	5,051,555	3,254,093	1,892
July 1, 2024	548,338	495,940	1,809**	4,503,217	3,750,033	1,880
July 1, 2025	578,973	523,647	1,809**	3,924,244	4,273,680	1,870
July 1, 2026	609,607	551,354	1,809**	3,314,637	4,825,034	1,863
July 1, 2027	640,242	579,061	1,809**	2,674,395	5,404,095	1,856
July 1, 2028	670,876	606,768	1,809**	2,003,519	6,010,863	1,851
July 1, 2029	701,510	634,475	1,809**	1,302,009	6,645,338	1,847
July 1, 2030	732,145	662,182	1,809**	569,864	7,307,520	1,843
April 2031	**569,864**	**515,409**	**1,809****	**0**	**7,822,929**	**1,841**

* Annual Airspace Utilization Factors not used in calculations.
** Future Airspace Utilization Factor assumed to be 90% of 5-year cumulative Airspace Utilization Factor

As discussed in the previous section, the Remaining Capacity Method uses known airspace utilization to estimate remaining available tonnage. The five-year trend line on the site life graph estimates that the SCLF can accept approximately 7,000,000 more tons based on historic AUF. SCS had added an additional trend line (red) that is based on the annual tonnage increase of 27,707 tons per year and a future AUF of 90% of the five-year AUF.

Assuming that the future AUF averages 90% of the historic AUF and that annual tonnage will increase at 27,707 tons per year, the effective site life for the facility (Phases I-VI and the CEA) is 11.7 years, with a projected final closure in 2031.

REMAINING DISPOSAL CAPACITY AND SITE LIFE FOR PHASES I-VI

The estimated remaining disposal capacity (remaining airspace) of Phases I-VI is 6,050,639 cy (87% of the total available disposal volume) which was calculated by subtracting the final cover soil volume of 665,869 cy from the gross remaining air space (not including ash stockpiles) of 6,716,508 cy. The remaining site life of Phases I-VI is estimated to be approximately 10.2 years based on an annual tonnage increase of 27,707 tons per year and an assumed AUF of 1,809 lbs/cy (90% of 5-year observed AUF).

The estimated remaining site life will fluctuate depending on the future waste composition (MSW vs RRF ash), disposal rates, and in-situ waste density. SCS memorandums containing AutoCAD volume calculations are included as **Attachment 3.**

REMAINING DISPOSAL CAPACITY AND SITE LIFE FOR THE CEA (SECTION 7, 8, AND 9)

The estimated remaining disposal capacity (remaining airspace) of CEA Sections 7, 8, and 9 is 887,926 cy. This was calculated by subtracting the final cover soil volume of 145,600 cy from the gross remaining air space (not including biosolids composting windrows) of 1,033,526 cy. The remaining site life of the CEA is estimated to be approximately 1.5 years based on an annual tonnage increase of 27,707 tons per year and an assumed AUF of 1,809 lbs/cy (90% of 5-year observed AUF).

The estimated remaining site life will fluctuate depending on the future waste composition (MSW vs RRF ash), disposal rates, and in-situ waste density. SCS memorandums containing AutoCAD volume calculations are included as **Attachment 3.**

SUMMARY

The effective site life for the facility as of July 1, 2019, which includes Phases I-VI and the CEA, is 11.7 years. The estimated life of Phases I-VI is 10.2 years and the estimated life of the CEA is 1.5 years. The projected final closure of the landfill is 2031.

Please call us if you require any clarifications or additional information.

Sincerely,

Kollan L. Spradlin, P.E.
Project Professional
SCS Engineers

Robert B. Curtis, P.E.
Senior Project Manager
SCS Engineers

KLS/RBC:kls

cc: Kimberly Byer, SWMD
Larry Ruiz, SWMD
Ron Cope, EPC

Attachments

ATTACHMENT 1

PICKETT – SEMI-ANNUAL TOPOGRAPHIC SURVEY

SURVEYOR'S REPORT

Southeast Landfill
Hillsborough County, Florida

Prepared for:

WASTE MANAGEMENT

Prepared by:

PICKETT
SURVEYING • ENGINEERING

PICKETT AND ASSOCIATES PROJECT NO.: 11994-19
TITLE/TYPE OF SURVEY: TOPOGRAPHIC SURVEY
DATE OF SURVEY: 07/05/19

NOTE: THIS REPORT AND ACCOMPANYING MAP TITLED SOUTHEAST LANDFILL ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

Pickett and Associates, Inc. • 475 South First Avenue • Bartow, FL 33830 • (863) 533-9095

ACCURACY STATEMENT: The following stated plus or minus tolerances encompass a minimum of 90% of the difference between photogrammetrically measured values and any ground truth of all well-identified features. Mapped features will meet or exceed the Florida Standards of Practice.

VERTICAL: Contours may be measured to an estimated vertical positional accuracy of 0.5'. Spot elevations and well-identified features have been measured to an estimated vertical accuracy of 0.25'.

HORIZONTAL: Well-identified features have been measured to an estimated horizontal positional accuracy of 1.66', as per Florida Standards of Practice. All measurements are in U.S. Survey Feet.

MAP PLOTTING: This map is intended to be displayed at a scale of 1" = 50' (1:600) or smaller.

DATUM:

HORIZONTAL: Coordinates are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83/90 adjustment. Referenced to Hillsborough County Horizontal Control Monuments LW-E and LW-D.

VERTICAL: Elevations are to National Geodetic Vertical Datum of 1929, and are referenced to Hillsborough County Horizontal Control Monuments LW-E and LW-D.

Control Points Used for Image Rectification:

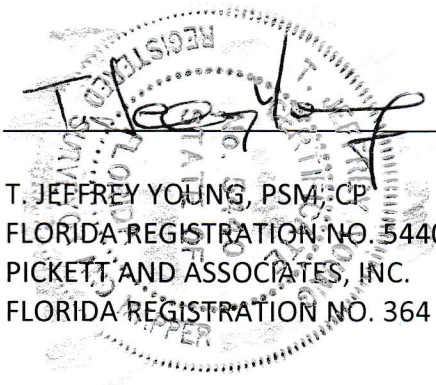
Pt#	Easting	Northing	Elevation
10000	596658.59	1249409.50	126.59
10002	594444.64	1249416.46	127.42
10004	598710.90	1249383.77	126.01
10006	598999.12	1250855.31	137.37
10014	599697.57	1251577.37	134.55
10021	598104.00	1254421.53	114.20
10023	595105.45	1254273.93	96.12
16273	596207.45	1252551.28	127.03
4532	594975.02	1250721.80	130.97
6426	600531.06	1252289.80	148.43
92529	597302.98	1253570.42	126.15
96069	601089.83	1254397.19	122.54

Measurement Methods:

Color digital imagery was acquired at an average altitude of 3054' using a metric precision digital camera whose focal length is 70.3mm. The planimetrics shown are limited to those features visible on aerial imagery. Mapping was performed using LiDAR and softcopy photogrammetric techniques. The LiDAR data has an estimated point sample distance of 0.5 foot and a density of 4.095 points per square foot (±44.08 points per square meter). For a vertical accuracy check, the LiDAR data was compared to the twelve (12) points set as targets for aerial imagery. The Root Mean Square Error of the Elevations (RMSEZ) is 0.101 foot, being the equivalent of 0.198' FGDC/NSSDA Vertical Accuracy. All measurements are in U.S. Survey Feet.

Limitations:

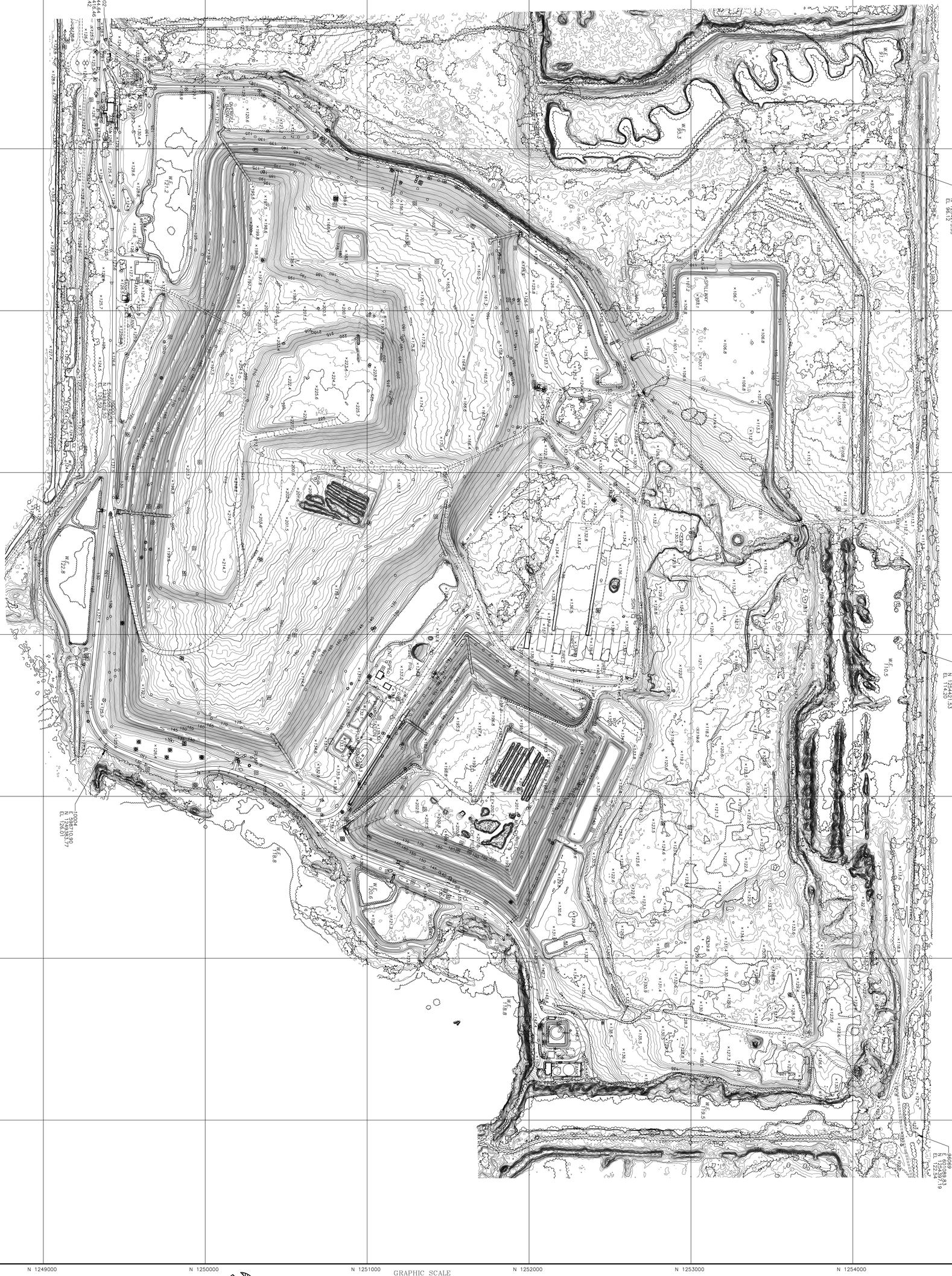
This mapping should be used for preliminary design work only and should not replace an actual field survey where the required accuracy is greater than the accuracy stated in this report. No responsibility is assumed for areas outside the contracted scope.



T. JEFFREY YOUNG, PSM, CP
FLORIDA REGISTRATION NO. 5440
PICKETT AND ASSOCIATES, INC.
FLORIDA REGISTRATION NO. 364

7/5/19

SURVEY DATE



NORTH

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

TOPOGRAPHIC SURVEY

SOUTHEAST LANDFILL
LOCATED IN SECS 14,15,22,&23 TWP 32S
RNG 23E, HILLSBOROUGH COUNTY, FLORIDA
PREPARED FOR: WASTE MANAGEMENT

PROJECT No.	No.
11994-19	1
DRAWING No.	OF
LD-6572	1

SURVEYOR'S NOTES:

1.) North, the grid, and the coordinates shown hereon are referenced to the West Zone of the Florida State Plane Coordinate System, NAD 83, 1990 adjustment

2.) Elevations are to National Geodetic Vertical Datum of 1929.

3.) This topographic survey was prepared by photogrammetric and LiDAR methods. See the attached report for map accuracy and surveyor's signature and seal.

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FAX: (863)-534-1464
LICENSED BUSINESS No. LB364

Horiz. Scale: 1" = 200'	Edited by: RP	Compiled by: PL	Flight Date: 7/5/19
Contour Interval: 1'			Drawing Name: 11994-19.DWG

THIS MAP AND ATTACHED REPORT ARE NOT FULL AND COMPLETE WITHOUT THE OTHER AND ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

No.	DATE	APPROVED	REVISION
O.R.	7/23/19	TJY	ORIGINAL RELEASE

LEGEND:

(THESE FEATURES ARE REPRESENTED BY SYMBOLS NOT TO SCALE)

- CONTROL
- PT# TARGET NUMBER
- N NORTHING
- E EASTING
- EL ELEVATION
- UTILITY POLE
- LIGHT POLE
- SIGN
- POST
- CATCH BASIN
- MISCELLANEOUS SYMBOL
- CULVERT
- SWAMP/MARSH
- MANHOLE
- HYDRANT
- TREE
- PALM
- SHRUB

(THESE FEATURES ARE TO SCALE)

- PAVED ROAD
- CONCRETE SURFACE
- UNPAVED ROAD
- FENCE
- GUARDRAIL
- WALL
- STRUCTURE
- TREE LINE
- SHRUB LINE
- PIPELINE
- EDGE OF WATER
- SWIMPLINE

(THESE INFORMATIVE LABELS ARE NOT SCALE DEPENDENT)

- W.E. WATER ELEVATION
- × 120.1 SPOT ELEVATION
- MISC MISCELLANEOUS

ATTACHMENT 2

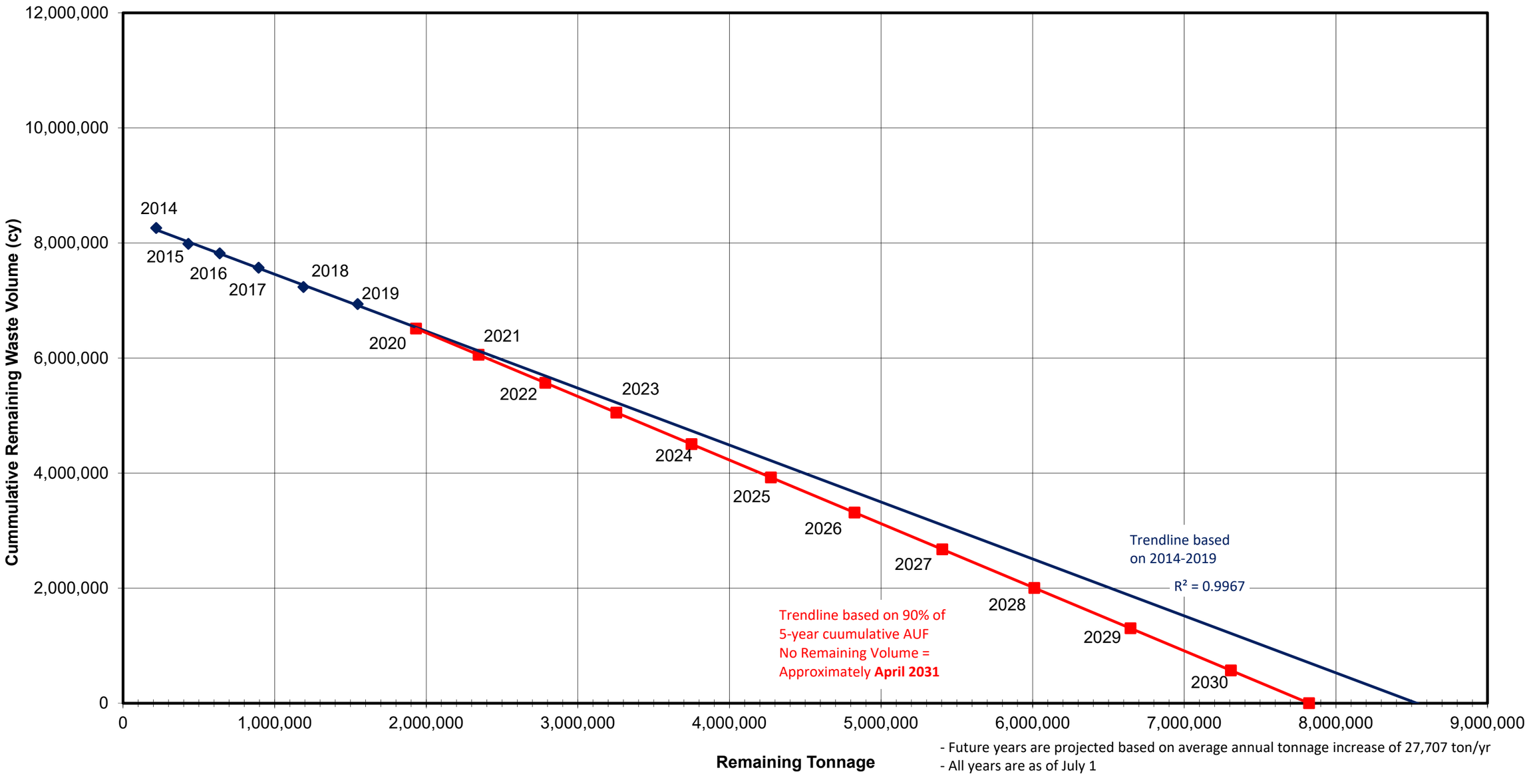
SITE LIFE GRAPH

Southeast County Landfill Site Life
Phases I-VI and Capacity Expansion Area
Total Remaining Disposal Volume

5-year Airspace Utilization Factor = 2,010 lb/cy

Assumed future Airspace Utilization Factor 90% of current= 1,809 lb/cy

Average Tonnage Increase Per Year = 27,707 tons



- Future years are projected based on average annual tonnage increase of 27,707 ton/yr
- All years are as of July 1

ATTACHMENT 3

SCS VOLUME MEMORANDUMS

August 23, 2019
File No. 09215600.08

MEMORANDUM

TO: Kollan Spradlin, P.E., Bob Curtis, P.E.

FROM: Caroline Devitt, E.I.T. CED

SUBJECT: **SCLF - Phases I-VI**
Semi-Annual Volume Calculations – July 2019

Below I have included the available volume in Phases I-VI. The Lift 23 Permitted conceptual final build-out contours from HDR were compared to the July 5, 2019 semi-annual topographic survey by Pickett using AutoCAD Civil 3D 2018.

The results from Phase I-VI are as follows:

CAD File – 070519 Phase I-VI Ash Piles Removed vs Buildout

Volume Surface: Phase I-VI 7-5-19 vs Buildout
Description: Full Volume Remaining for Phases I-VI

Volume Fill: 6,716,508.37 Cubic Yards

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phases I-VI Ash Piles Removed

Total Remaining Volume Following Restoration of Ash Study Area: 6,716,508.37

Gross Remaining Volume Per Phase:

Phase I - **CAD File –** 070519 Phase I vs Buildout

Volume Surface: Phase I 7-5-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase I Boundary)

Volume Fill: 910,635.79

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase I Ash Piles Removed

Phase II - **CAD File –** 070519 Phase II vs Buildout

Volume Surface: Phase II 7-5-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase II Boundary)

Volume Fill: 1,490,850.85

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase II Ash Piles Removed

Phase III – **CAD File –** 070519 Phase III vs Buildout

Volume Surface: Phase III 7-5-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase III Boundary)

Volume Fill: 1,263,907.25

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase III Ash Piles Removed

Phase IV - **CAD File –** 070519 Phase IV vs Buildout

Volume Surface: Phase I-VI 7-5-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase IV Boundary)

Volume Fill: 698,508.88

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase IV Ash Piles Removed

Phase V – CAD File – 070519 Phase V vs Buildout

Volume Surface: Phase V 7-05-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase V Boundary)

Volume Fill: 571,306.13

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase V Ash Piles Removed

Phase VI - CAD File – 070519 Phase VI vs Buildout

Volume Surface: Phase VI 7-5-19 vs Buildout
Description: Full Volume remaining for Phase I-VI (limited to Phase VI Boundary)

Volume Fill: 1,781,302.82

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: 070519 Phase VI Ash Piles Removed

August 23, 2019
File No. 09215600.08

MEMORANDUM

TO: Kollan Spradlin, P.E., Bob Curtis, P.E.

FROM: Caroline Devitt, E.I.T. CED

SUBJECT: **SCLF - Capacity Expansion Area Sections 7, 8, and 9**
Semi-Annual Volume Calculations – July 2019

Below I have included the available volume in Section 7-9. The Lift 18 Permitted conceptual final build-out contours from HDR were compared to the July 5, 2019 semi-annual topographic survey by Pickett using AutoCAD Civil 3D 2018.

The results from Capacity Expansion Area (CEA) are as follows:

CAD File – 070510 Sections 7-9 Compost Piles Removed vs Buildout

Volume Surface: Sections 7-9 7-5-19 vs Buildout
Description: Full Volume Remaining for Sections 7-9

Volume Fill (Total Remaining Volume Following Restoration of the Biosolids Composting Area):
1,033,525.76 Cubic Yards

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 20190705 CEA Compost Piles Removed

Gross Remaining Volume Per Phase:

Section 7 - **CAD File –** 070519 Section 7 Compost Piles Removed vs Buildout

Volume Surface: Section 7 7-5-19 vs Buildout
Description: Full Volume Remaining for Sections 7-9 (Limited to Section 7 Boundary)

Volume Fill: 441,913.67

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 20190705 CEA Compost Piles Removed

Section 8 - **CAD File** – 070519 Section 8 Compost Piles Removed vs Buildout

Volume Surface: Section 8 7-5-19 vs Buildout
Description: Full Volume Remaining for Sections 7-9 (Limited to Section 8 Boundary)

Volume Fill: 156,836.98

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 20190705 CEA Compost Piles Removed

Section 9 - **CAD File** – 070519 Section 9 Compost Piles Removed vs Buildout

Volume Surface: Section 9 7-5-19 vs Buildout
Description: Full Volume Remaining for Sections 7-9 (Limited to Section 9 Boundary)

Volume Fill: 434,760.81

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 20190705 CEA Compost Piles Removed