

DTE Energy®



Prepared for

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**2016 ANNUAL INSPECTION REPORT
RANGE ROAD LANDFILL
ASH DISPOSAL FACILITY**

China Township, St. Clair County, Michigan

Prepared by

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consultants

engineers | scientists | innovators

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1. INTRODUCTION

1.1 Overview

This 2016 Annual Inspection Report (AIR) was prepared by Geosyntec Consultants (Geosyntec) to provide the results of the annual inspection of the coal combustion residuals (CCR) Range Road Ash Disposal Facility (Landfill) located in China Township, St. Clair County, Michigan. The annual inspection has been prepared to comply with United States Environmental Protection Agency (USEPA) Coal Combustion Residuals Rule (CCR Rule) published on 17 April 2015 (40 CFR 257.84). Under the CCR Rule, the Landfill is an “existing landfill” per 40 CFR 257.53 and must be inspected by a qualified professional engineer on a periodic basis, not to exceed one year.

The Landfill is located approximately one mile west of the St. Clair River between Lake Huron and Lake St. Clair. The Landfill is licensed by the Michigan Department of Environmental Quality (MDEQ) as a Type III Low Hazard Industrial Landfill. The property encompasses 514 acres of which 402 are designated for landfill development. The MDEQ Facility ID Number is 392562 and License Number 9395. The current license is set to expire on June 26, 2019.

During 2016 the Landfill accepted bottom ash and fly ash from the St. Clair, Belle River, and Harbor Beach Power Plants. The Maryville Power plant is included in the license but no longer sends ash to the landfill. Filling operations at the site began in the 1950s and the current Operating License issued to Detroit Electric Company and defined as Number 9395 replaced the previous license (#9207) which was issued to Detroit Edison Company on April 6, 2009. The Landfill has had an operating license since 1966.

The Landfill has multiple operating and planned phases defined by work areas as discussed in the Landfill Development Plan design drawings. Currently nine work areas are certified closed, three now active and three unconstructed.

1.2 Purpose

The purpose of the inspection under the CCR Rule [40 CFR 257.84(b)(1)] is:

“...to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- (i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspection by a qualified person, and results of previous annual inspections); and

- (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.”

The purpose is accomplished through periodic visual inspection (and photo-documentation) of the Landfill, review of instrumentation monitoring data and evaluations intended to detect signs of instability, and review of construction certification documentation, and review of available operating records.

1.3 **Report Organization**

The remainder of this report is organized as follows:

- Section 2 – Review of available information: summarizes various historical documents that were reviewed as part of this inspection
- Section 3 - Facility Description: provides information about the facility
- Section 4 – Visual Inspection Results: summarizes visual observations during inspections of the Landfill
- Section 5 – Instrumentation Monitoring: discusses the instrumentation and monitoring program
- Section 6 – Operation Activities: describes the operations organization and activities
- Section 7 – Evaluation: evaluates the results of the annual inspection
- Section 8 – Conclusions: provides the overall conclusions of the annual inspection

1.4 **Terms of Reference**

The annual visual inspection was performed by Mr. Daniel G. Bodine, P.E. of Geosyntec whose qualifications as a “qualified professional engineer” under the CCR Rule are presented in Appendix A. DTE’s “qualified person”, who conducts the weekly inspections, accompanied Mr. Bodine.

This report was prepared by Mr. Daniel G. Bodine, P.E. of Geosyntec. The peer review and senior review were completed by Mr. Omer Bozok, P.E. Mr. John Seymour, P.E., both of Geosyntec. They are qualified professional engineers per the requirements of §257.53 of the CCR Rule.

2. REVIEW OF AVAILABLE INFORMATION

Geosyntec reviewed the documents listed in Table 1 for the 2016 annual inspection. Geosyntec is not responsible for the accuracy of the documents reviewed that have been prepared by others and has prepared this inspection report based on good engineering judgement and data review. References to TRC refer to TRC Environmental Corporation, NTH to NTH Consultants, Ltd., AECOM to AECOM and Headwaters to Headwaters Plant Services, a division of Headwaters Inc.

Table 1 Available Information Reviewed for the 2016 Annual Inspection

Title	Prepared by	Month and Year	Content with 2016 Update Status
2015 Annual Inspection Report - Range Road Landfill Ash Disposal Facility	Geosyntec Consultants	January 2016	Results of 2015 RRLF Inspection Report on Review of Documents and Files Related to the Operating Record and Conducting a Visual Site Inspection of the Facility.
Landfill Development Plan with Plan Sheets	TRC	Final November 2013	Overall Development Plan for Landfill Including Design, Construction, Surface Water Management, Operation, Monitoring and Site Closure. Plan is Unchanged for the 2016 Inspection.
Range Road Ash Disposal Operating Number and License Facility No. 392562 License No. 9395	MDEQ	June 2014	Solid Waste Disposal Area Operating License, Including Terms and Conditions. License Remains Active for 2016 and Beyond.
Construction Certification /Soil Verification (Area G2) Range Road Landfill	MDEQ	September 2015	MDEQ Authorization for Waste Placement in Area G2. Waste Placement Active During 2016 Inspection.
2014 Site Plan TRC Figure 1	TRC	March 2014	Landfill Area Plan Locations and Designations, Status and Phasing Legend. Figure Marked up for Discussion and Use in 2016 Report by DTE and Geosyntec.

Title	Prepared by	Month and Year	Content with 2016 Update Status
Phasing Plan - Area F Sheet 4	TRC	November 2013	Landfill Phasing Showing South Half of Landfill Including Break Down of Area G. Area F Unchanged, North Area G2 Active.
Phased Excavation Work Plan Range Road Ash Landfill – Area G2	NTH	September 2015	Discussion of Excavation Grades, Material Requirements, Drainage and Survey Requirements for Area G2. Plan Drawing Included
Surface Water Flow Figure 00 (Working Copy)	TRC	December 2015	Plan Showing Ditch Flow Directions, Locations of Staff Gauges, Monitoring Wells Piezometers, Slurry Wall and Offsite Capture Systems. Copy used as Reference Drawing.
Closure Plan for Existing CCR Unit 40CFR 257.102 (b)	AECOM	October 2016	Closure Plan Description, Inventory and Area Estimates, Schedule and PE Certification
Post Closure Plan for Existing CCR Unit 40CFR 257.104	AECOM	October 2016	Post Closure Plan Description, Monitoring & Maintenance, Owner Operator Requirements and PE Certification
Run-On/Run-Off Control System Plan for CCR Disposal facility-Range Road	AECOM	October 2016	Plan to Address §257.81(c) of the USEPA CCR Final Rule. Appendices Included Historical Design Drawings and HydroCAD Analysis Output
Groundwater Contour Map November 2014 (Working Copy)	TRC	January 2015	Groundwater Flow Directions and Elevations Outside & Inside of Slurry Wall. Unchanged
Final Cover and Ash Stabilization Area F1 Construction Documentation Report	NTH	October 2009	NTH Professional Engineer's Certification and Report. Complete Report Received. Plans for Grades, Details and Tie-in on Slopes & Work Areas Reviewed. CQA Photos for Slope Tie-ins Viewed.

Title	Prepared by	Month and Year	Content with 2016 Update Status
Final Cover Construction Documentation Report Area F2 Closure	NTH	October 2012	NTH Professional Engineer's Declaration Statement and Report. (Text Only) Unchanged
F3 Area Survey as of 04-28-15, Top of Waste Grades	Headwaters	April 2015	Area F3 (Active Area) Waste Grades, Area and Waste Volume Estimates. Unchanged
Cut/Fill of Existing Grade Compared to Top of Cap Design (Preliminary)	NTH	November 2015	DWG Showing Closed Areas F1 & F2; F3 & G2 (Currently Active) and Future Areas G1 & G3 Existing Grades.
Area F3 Cap Borrow Areas	NTH	August 2016	Area F3 Fill Quantities Required and Borrow Area Locations and Quantities
Range Road Landfill Coal Combustion Residuals Fugitive Dust Plan	DTE	September 2015	Plan Certified by Professional Engineer to 40 CFR 257.80(b)(7) Revision 0. Unchanged
Remedial Action Plan for Off-Site Groundwater	RMT (TRC)	July 2008 (Rev 3)	Plan Text and Tables Only. Unchanged
CCR Groundwater Monitoring Well Locations (Working Copy)	TRC	April 2016	Plan Showing Name & Locations of Seven (7) Monitoring Wells Around Landfill
First Quarter 2016 Hydrogeologic Monitoring / Performance Monitoring Rpt. Cover Page	TRC	April 2016	Copy of Complete Report in DTE's Range Road Project Files. Obtained Copy of Cover Page Only because Copy of Entire Second Quarter Report Taken for Review.
Second Quarter 2016 Hydrogeologic Monitoring /Performance Monitoring Report	TRC	July 2016	Summary of Background, Field Activities, and Results of GW Monitoring, Inspection, Maintenance, and Performance. Cover Sheet 1 st Quarter Viewed. 3 rd Q in progress
2016 Quarterly Comprehensive Inspection Log (s)	DTE	Feb, June, July & Oct 2016	Inspection Condition and Notes: Final Cover for Areas, Surface Water Ditches & Signage.

Title	Prepared by	Month and Year	Content
2016 Weekly General Inspection Log (s)	DTE	Weekly Logs Jan thru Oct 2016	Inspection for General Site, Waste & Nuisance Control, Final Cover, Leachate & Surface Water Control. Viewed Weekly File Onsite. Log for 10-16-16 Copied.
Environmental Outside Rounds Log Sheet (A Daily Inspection Log)	DTE	October 2016	An Example of Daily Plant Environmental Inspection Log Sheet. Record Unusual Conditions, Gate Conditions, Flow Meter Readings, and Other Unusual Observations
Belle River Power Plant Environmental Outside Rounds Log Sheet	DTE	Shift #4 Dec 2015 Example	Includes Landfill Gate Security, Detention Basin Total Flow Reading and Pump Status & Any Usual Conditions.
Four Geosyntec Selected Headwaters Resources Standardized Work Sheet and JHAs	Headwaters, Inc.	9/18/13, 9/02/14, 10/14/14, 9/12/16	Signed Training Records for Seven (7) to Eight (8) Equipment Operators for the Four Selected Work Sheet and JHA Procedures. Additional JHAs were Provided for Site Inspection.

3. FACILITY DESCRIPTION

3.1 Overall Site Description

The overall site facility property is composed of the 514 acres of which 402 are designated for landfill development. The Landfill work areas are currently divided into fourteen (14) work areas, eight (8) that have been identified as “Certified Closed”, three (3) identified as “Active” and three (3) identified as “Unconstructed”. The work areas are listed below in **Table 2** and shown in **Figure 1**. **Figure 1** is taken from a Phasing Plan dated November 2013, but modified to include Active Area D3 shown on a Phasing Plan dated March 2014 and discussed in the current operating license. The March 2014 plan did not show the breakdown areas of Area G that have been referenced in recent September 2015 area certification for waste placement.

Table 2 Site Phasing Summary-October 2016

<u>Area</u>	<u>Status</u>	<u>Size, Acres</u>	<u>Comments</u>
A	Closed	7	Certified Closed, May 17, 2002
B	Closed	102	Certified Closed prior to Sept 2, 1999
B1	Closed	9	Certified Closed prior to Sept 2, 1999
C	Closed *	16	Cert. Report Approved Aug 25, 2009
D1	Closed*	21	Cert. Report Approved Aug 25, 2009
D2	Closed *	10	Cert. Report Approved Aug 25, 2009
D3	Active	3	Active with Interim Cover Placed
E	Unconstructed	117	No Cell Construction or Waste Placed
F1	Closed	17	Cert. Report Approved Jan 4, 2010
F2	Closed *	12	Cert. Report Approved Feb 28, 2013
F3	Active	22	Active Disposal & Preparing for Cap
G1	Unconstructed (see below)		No Cell Construction or Waste Placed
G2	Active	48.4	Active Disposal North End G2 per Approval

G3 Unconstructed (see below) No Cell Construction or Waste Placement

* Areas C, D1, D2 and F2 have been certified closed, but documents note that the southern edge or slopes that join active or unconstructed areas, such as E, F3, G1, G2 and/or G3 may have interim cover as designed and approved.

Table 2 does not list acreages for Areas G1 or G3 because the areas have not yet been developed. However, the total acreage for the combined G areas is 110 acres, as reported in the operating license. Using the 110 acres for G areas and adding the acreage for the other areas in Table 2 gives a Total Area of 446 acres that agrees with the totals given in the operating license for the active, certified and unconstructed areas. This is less than the 514 property acreage, but greater than the 402 acres stated in the November 2013 Landfill Development Plan. Geosyntec realizes that acreages for future unconstructed areas may only be estimates until actual design is completed and waste placement approved. Additional documents reviewed and observations made during the 2016 site inspection resulted in updating the status of placement of ash close to final grade in Area F3 nearing final ash grade, placement of ash at the north end of Area G2 and fill excavation plans for future capping of Area F3.

The Landfill Site includes perimeter ditches, road ways, a shallow perimeter slurry wall, earth berms, a 10 Acre NPDES Stormwater Detention Basin (SDB) and Basin Pump House. The detention basin has also been referred to as the sedimentation basin in some of the reviewed documents and figures. The SDB is located in the southeast corner of the property, the slurry wall, reported to be approximately 15 ft deep, surrounds the entire landfill along the property perimeter. The perimeter ditch surrounds nearly all of the closed and active portions of the landfill connecting and draining to the SDB. **Figure 2**, taken from TRC's December 2015 Surface Water Flow drawing, shows the location of these items, including flow and capture details of the two Offsite Groundwater Capture Systems. The pump controls for these systems and the SDB pumping system were observed in operation during the 2016 annual inspection.

The Landfill is a dry-handled (conditioned) CCR landfill licensed by MDEQ as a Type III low hazard industrial landfill with maximum 4 horizontal to 1 vertical final cover side slopes and 3 horizontal to 1 vertical interim cover slopes. The estimated annual total ash disposal rate is 233,300 in-place cubic yards/year (average). Assuming this annual rate and total remaining reported in the November 2013 Landfill Development Plan, the estimated amount of CCR in Landfill the end of 2015 was be approximately 20 million cubic yards. For 2016 the approximate volume of ash placed through 2016 is again estimated at 233,300 cubic yards (cumulative total of approximately 20.2 million cubic yards). This is based on information and data DTE obtains from the landfill ash placement contractor, Headwaters.

The Landfill subbase is reported to be, on the average, a 70-foot thick in-situ naturally occurring clay soil layer over most of the landfill. An exception to this is on the east side of the site where

an approximately 10-foot thick near-surface sand layer exists. To cutoff this sand layer and any near surface flow the entire site has been encircled along the property perimeter with a soil-bentonite slurry wall with a reported depth of 10 to 15 ft designed to key into the underlying clay Landfill subbase.

3.2 **Design**

The Landfill design and operation is summarized in the Landfill Development Plan, Remedial Action Plan, Run-on/Run-off Control System Plan and the Quarterly Monitoring Reports. The key components of the Landfill include:

- Perimeter Slurry Wall keyed into top of 70-foot thick subbase clay layer;
- Perimeter Drainage Ditch capturing surface water and near surface groundwater;
- 10-Acre Stormwater Detention Basin collecting ditch water and pumping to plant;
- Two Offsite Groundwater Capture Systems collecting impacted water;
- Final Cover installation from top to bottom that includes:
 - 6-inch thick vegetated topsoil layer (erosion layer);
 - 24-inch thick infiltration layer (select clay layer with hydraulic conductivity, $k \leq 1 \times 10^{-7}$ cm/sec);
 - Maximum 4H to 1V side slopes;
 - Minimum 1% grade top of closed areas and minimum 2% grade for future, and
 - Phasing plans and special conditions detailed in drawings, plans and the operating license.
- Closure and Post Closure Plans

Landfill design and construction are supported by construction phasing plans, surface water management plans and details, site operation (waste placement) plans and details, and leachate and environmental monitoring plans and reporting. Additionally, landfill monitoring systems maintenance and inspection, and site closure and post closure plans with long term care procedures are covered.

3.3 **Construction**

The Landfill has been operating since the 1950s. The Landfill Operating License discusses the work areas (see Section 3.1), references design, construction and monitoring documents submitted by DTE and includes conditions and criteria required for the Landfill operation, phase construction and monitoring. New Closure and Post Closure Plans in accordance with 40 CFR 257.102 (b) and 40 CFR 257.104, respectively, have been prepared with an operating record date of October 17, 2016.

The Landfill Development Plan discusses Site Operations in Section 4 of the plan. Included are discussions on dust control, noise control, odor control, and access and security requirements, among other operating aspects. Ash filling procedures and requirements for construction observation and documentation are also included in the development plan.

4. VISUAL INSPECTION RESULTS

The annual inspection was completed on 20 and 21 October 2016. The annual inspection log and photographs are presented in **Appendix B**.

In summary, no evidence of landfill instability, significant perimeter slope erosion or detrimental settlement was noted. The perimeter ditch, perimeter slurry wall, offsite capture system pumping and collection, and pumping of water in the SDB appeared to be working as designed and in accordance with recognized and generally accepted good engineering standards.

Specific results of the visual inspection are summarized below. All photographs referenced are provided in Appendix B. The weather on the two days of the inspection was light to moderate rain on Thursday the 20th of October with moderate to heavy rain that evening and light to a drizzle early morning on Friday the 21st of October. The reported temperature ranges were 51°F to 57°F for Thursday and 41°F to 51°F on Friday. Both days were cloudy with 0.92-inches rainfall Thursday and 0.15-inches Friday.

Stormwater Detention Basin: The basin and pump system appeared in good condition. Basin slopes and entrance flume appeared in acceptable condition with vegetation of varying heights as shown in Photographs 1, 2, 5 and 7. Pumps were tested for operation and all operated. Control panel and pumps are shown in Photographs 3 and 4. The discharge flow meter appeared to be working correctly. The basin intake screen was unblocked as shown in Photograph 6.

Landfill Final Cover: Closed work area phases were inspected including slopes. Conditions appeared generally good considering agreements approved with the MDEQ allowing trees remaining along and on the downstream slope at the north end of the Landfill, predominately in historical Areas A and B. Recent design and operating maintenance requirements for areas, such as Area F1, require removal of woody vegetation from the perimeter landfill slopes that are part of the final cover. The visual inspections in 2015 and 2016 identified some woody vegetation growing on the west slope of Area F1. DTE reported that removal of this woody vegetation was completed on 9 November 2016. Isolated small woody vegetation observed on top of the closed landfill areas during the 2015 inspection had been removed and no new locations were identified during the 2016 inspection. There also were no observed areas of pooled water on the top cover from the recent rain. In conclusion, the top and slopes of the closed landfill final cover areas appeared well vegetated and acceptable. Photographs 21 to 25, and 46 show views of the landfill top and slopes.

Active Area G2 and Temporary Landfill Runoff Control Berms: Conditioned CCR placement, grading and compaction at the north end of Area G2 was in progress on 21 October 2016. Photographs 14 and 15 show the compacted CCR surface where the haul trucks travel to and from the dumping location. At the far end of the work area in Photo 14 a side dump haul truck is

unloading CCR and a dozer is actively grading the surface. The water shown in these photos and Photograph 16 drains slowly to the east (see Photograph 17) where it then is collected and drained to the perimeter ditch system.

One of the documents reviewed is the revised Phased Excavation Work Plan for the remainder area of Area G2. DTE has indicated during the inspection that clay borrow removed from portions of Area G2 will be used in the final cover for Area F3. The leading eastern ash fill slope of Active Area F3 appears stable and is shown in Photograph 12. Photograph 26 shows the northern portion of Area G2 that was excavated and approved for ash placement in 2015. Diversion berms are used to control and direct surface runoff. The final cover berm for Closed Area F2 is still in place keeping surface flow from draining into Area G2. The interim clay slope along the boundary with Area G2 where CCR is being placed is planned to be removed and reused.

Perimeter Ditch System: The perimeter ditch and ditch flow directions to the SDB or northwest pump location are shown on **Figure 2**. Vegetation in the bottom of most ditch areas appeared excessive, but is of the non-woody type vegetation. As long as ditch flow is maintained and monitored to confirm adequate flow the vegetation can remain. The plant has put together a 3-year rotation ditch maintenance program where 1/3 of the ditch alignment length is cleared of excessive vegetation. The plan for 2017, 2018 and 2019 is one of the new documents provided to Geosyntec. In 2017 the scheduled maintenance will include the perimeter ditch alignment on the north side of the Landfill and the SDB perimeter slopes. In 2018 the scheduled maintenance is the eastern ditch alignment and in 2019 the southwest corner ditch alignment of the Landfill.

A ditch staff gauge system is used to monitor water level in the perimeter ditch. Review of the monitoring report for the Second Quarter 2016 (3rd Quarter report was in preparation by TRC) provided elevation results that confirms ditch flow in the appropriate flow direction as did some field visual examination during the annual inspection. See Photographs 32, 33, 42 to 44, 46, and 47 that show typical ditch conditions at various staff gauge locations. Additional perimeter ditch, ditch culverts, and drainage flume conditions are shown in Photographs 13, 18 to 20, 22, 25, 36 to 38, 41, 48, 49, 51 and 52. Note that some ditch locations are internal to the proposed final waste limits, but are currently located in unconstructed work areas but closer to active areas. Photographs 43 and 57 show slurry wall markers. The slurry wall is located outside of the ditch perimeter and along the property boundary.

Operation Activates Including Waste Placement: The landfill operating contractor is Headwaters Inc. Loaded trucks hauling conditioned CCR material were observed hauling to active waste placement Area G2. CCR dumping, placement and grading was discussed in report Section 4 above, but is shown in Photographs 14, 17 and 26.

DTE provides operation monitoring and this was discussed and pointed out specifically during the landfill inspection. An example is the daily log monitoring of pumping from the SDB (NPDES pond flow monitoring) and weekly and quarterly check list monitoring. SDB Pump operation and flow is inspected by DTE daily and weekly.

Record Keeping: At the start of the annual inspection records were obtained from the landfill engineer. Additional records exist, electronically or in project files not checked or specifically requested. The current operating license dated June 26, 2014 lists many documents that have been submitted to the MDEQ by DTE as part of the landfill design, plan preparation, construction certification and documentation, surface and groundwater monitoring, and landfill operation. The records for the Landfill appear comprehensive.

5. INSTRUMENTATION MONITORING

5.1 Surface Water and Groundwater Collection

Surface water and groundwater monitoring are conducted under a monitoring plan approved by the MDEQ. The surface water that falls within the landfill waste areas and within the perimeter ditch system is collected by the ditch system and flows, for the most part by gravity, to the SDB, as shown in **Figure 2**. Exception to this is the perimeter ditch located at the northwest corner of the property where the ditch water is collected and pumped to a portion of the ditch on the north side which gravity drains to the SDB. The perimeter slurry wall installed along the property line and outside of the ditch and basin system supplements and supports surface water collection as well as contains and directs any near-surface groundwater to the perimeter ditch.

Monitoring of the ditch water collection is accomplished through ditch visual inspection and maintenance, review of water elevations from a series of twelve (12) ditch staff gauges (SG) with their locations shown on **Figure 2**, and implementation of the Hydrogeologic Monitoring Plan (HMP) and Performance Monitoring Plan (PMP), both of which have been approved by the MDEQ (April 1, 2009 and February 11, 2009, respectively). Reporting of the monitoring is summarized in quarterly reports prepared by TRC. Review of the ditch water levels for the staff gauges show that the water gradient flows to the SDB, with its water elevation monitored with SG-13.

The perimeter ditch also collects near-surface groundwater and that is imported along the east side of the property where near-surface sand is located above the subsurface thick layer of clay. The slurry wall in that area acts as a barrier and supports collection by the perimeter ditch.

5.2 Groundwater Elevations and Offsite Capture System Monitoring

Monitoring well and piezometer locations are shown on **Figure 2** and monitoring water depths and elevations summarized in quarterly reports by TRC. Groundwater elevations and flow directions, groundwater sampling, and system maintenance, especially with respect to the offsite capture and French drain systems, are also discussed and summarized in the quarterly reports. TLC concluded in their 2016 second quarter report that “The site-wide slurry wall and conveyance trench/perimeter ditch network continue to perform as designed to prevent shallow groundwater beneath the RRLF site from migrating off-site; and The off-site groundwater capture systems are effectively capturing COCs-affected groundwater to the northwest, northeast, and east of RRLF.” The third quarter 2016 monitoring report had not been produced at the time of Geosyntec’s annual inspection. DTEs visual weekly inspections and quarterly monitoring logs were available and reviewed.

5.3 RRLF CCR Monitoring Wells

During the annual inspection locations of seven (7) groundwater monitoring wells were observed. The 7 wells with their protective bollards are shown in Photographs 53 to 59. They were all stick-up wells except for MW 16-05, a flush mount well, which was located within an alternate construction entrance for the landfill.

6. OPERATION ACTIVITIES

Operations are defined in Section 4 of the Landfill Development Plan. The following operation control measures are described in the plan:

1. Hours of Operation
2. Waste Types
3. Traffic Routing
4. Lines and Grades
5. Nuisance Control (includes Fugitive Dust Control)
6. Police and Fire Protection
7. Access Control
8. Inclement Weather Operations
9. Drainage and Erosion Control
10. Record Keeping
11. Personnel and Equipment
12. Ash Filling Procedures
13. Leachate Management
14. Environmental Monitoring

Engineering design and construction related to the Landfill design, waste type and volumes, subbase grades, site phasing, final cover, surface water management, construction observation and documentation, and final closure and long term care are included in the Landfill Development Plan. The Plan was written by DTE/TRC in November 2013, and contained the Landfill Operating License valid at that time. The current Landfill Operating License issued by MDEQ is dated 26 June 2014 prior to the effective date of the CCR Rule (19 October 2015).

In addition, the following plans and inspections are specifically currently required by the CCR Rule:

- Weekly inspections by a qualified person,
- Dust control in accordance with a Fugitive Dust Control Plan,
- Preparation and Implementation of a Run-on/Run-off Control System Plan,
- Preparation of the Closure Plan for the Existing CCR Unit, and
- Preparation of the Post-Closure Plan for the Existing CCR Unit.

These plans were available for inspection and are included in the project document file.

6.1 Observations

It was identified that the overall intent of the Operations Plan was being followed. Documentation that the Operations Plan was being followed in a method "...to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards" in accordance with the CCR Rule was for the most part verified.

Operating control measure Items 1 through 9, 10,11&12 (DTE records and contractor work sheet and JHA documents), 13 and 14 from above were verified during the annual inspection or with documents submitted and reviewed after the inspection. Those items appear to be compliant with the Landfill Development Plan. There is a full-time DTE guard shack or building near the entrance of the Landfill and the landfill is surrounded by security fencing and locked gates.

7. EVALUATION

7.1 Design

The Landfill design was completed by TRC and is well documented in the references listed in the 26 June 2014 Landfill Solid Waste Disposal Area Operating License, and the Landfill Development Plan, dated November 2013. The design is consistent with recognized and generally accepted good engineering standards, based on available information.

7.2 Construction

Construction of final cover Phase Work Areas is being well documented in area closure documentation reports by NTH. Construction certification or documentation reports or portions of those reports were viewed during the 2015 annual inspection for Work Areas C, D1, D2, F1 and F2 and they were signed by a professional engineer licensed in Michigan. The full construction certification and documentation report for Area F1 was requested and reviewed for the 2016 annual inspection. This was done to identify the design termination location of the final cover on the west side slope of the Area F1 where some woody vegetation was observed. The placement and termination of the final cover is downslope and is one of the reasons the woody vegetation growth has been removed.

7.3 Maintenance

Maintenance of final cover vegetation and erosion control has been identified by the DTE qualified person as an ongoing activity based on results of weekly inspections. The Quarterly Hydrogeologic Monitoring/Performance Monitoring Reports details results of the inspections and maintenance of the Off-Site Groundwater Capture Systems.

DTE has instituted a 3-year rotation ditch maintenance program where 1/3 of the perimeter ditch alignment is cleared of excessive vegetation.

7.4 Operations

7.4.1 Operations Plan

The Landfill Development Plan serves as DTE's main operations plan for the landfill. The plan has been discussed previously in this AIR and has again been reviewed as part of the annual inspection information review. The plan has not been revised. The landfill ash fill contractor, Headwaters, provided their Standardized Work Sheet and JHA documents that relate to the contractor's worker training and equipment operating procedures. Ten procedures were viewed and four were copied as document examples. All of these procedures included seven or eight Headwaters employee 2016 review signatures.

Records by DTE such as the daily shift report for the NPDES Pond (SDB), Landfill Weekly and Quarterly Inspection Logs were provided as part of the annual inspection information. These inspection logs are consistent with recognized and generally accepted good engineering standards.

7.4.2 Fugitive Dust Control

A Fugitive Dust Control Plan was provided by DTE. This is the same plan that was available in 2015. Dust Control is also discussed in the Landfill Development Plan. No dust control was required during the site inspection because rainfall occurred the first day and early morning the second day of the inspection. Basin water is used for dust control and signs limiting the use of the water in areas near the construction entrances have been posted by DTE. One of the signs is shown in Photograph 8. Dust control operation is considered consistent with recognized and generally accepted good engineering standards.

7.4.3 Run-on and Run-off Control

Run-on and run-off control is maintained by final cover temporary or permanent berms, the perimeter ditch system, the offsite pumping systems and the stormwater detention pond pump and discharge system. The Landfill Development Plan and Off-Site Quarterly Monitoring Reports discuss, in detail, run-on and run-off control. A copy of the Run-on and Run-off Control System Plan dated October 17, 2016 was provided to Geosyntec as one of the documents for review. The Run-on and Run-off Control System Plan appears to be consistent with recognized and generally accepted good engineering standards in accordance with the requirements of 40 CFR 257.81(c).

7.4.4 Inspections

Weekly and quarterly inspections have been ongoing and documented by qualified persons. Inspections reviewed have been discussed and are consistent with recognized and generally accepted good engineering standards, based on available information. A 2016 annual inspection form has been prepared by the qualified professional engineer and is provided in Appendix B.

7.4.5 Annual Visual Inspection

This annual visual inspection did not identify any evidence of structural weakness or instability. The perimeter ditch, perimeter slurry wall, offsite capture system pumping and collection and pumping of water in the SDB appeared to be working as designed and in accordance with recognized and generally accepted good engineering standards. Some maintenance needed to be scheduled for removal of some identified small woody vegetation. This was discussed with the

onsite DTE Landfill Engineer and removal of the identified woody vegetation has taken place. Additional ditch maintenance clearing of vegetation has been scheduled.

8. CONCLUSIONS AND CERTIFICATION

The annual visual inspection did not identify any evidence of structural weakness or instability.

Based on the annual inspection results and review of the available data, the Landfill was designed, constructed and maintained in accordance with general accepted good engineering standards.

Certified by:

Daniel G. Bodine Date 11/29/2016

Daniel G. Bodine, P.E. - Michigan P.E. No. 6201051139
Senior Consultant

Plot Data

Design File = J:\DTE\St Clair Co\212568\0000\212568.0000.01.plt
 Istormer Plot Date = Mon Mar 17 12:09:56 2014
 Plot File = J:\DTE\St Clair Co\212568\0000\212568.0000.01.prf
 Pen Table = \\msn-plot\quorum\TBL\MSV8 - KIP PDF - HALF WT.tbl
 Levels On = 1-63

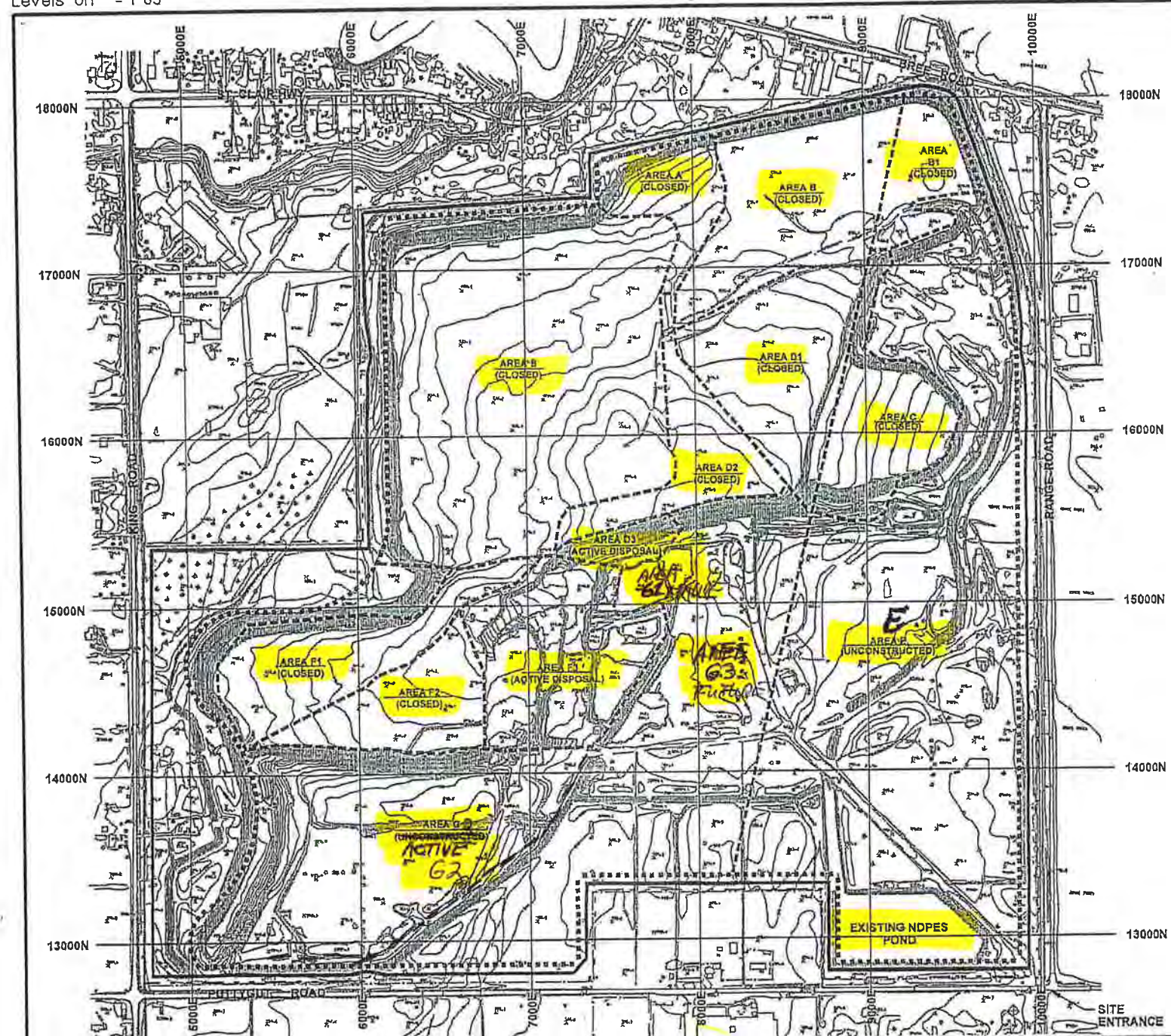
Reference Files

Ref. File 1 = J:\DTE\St Clair Co\212568\0000\REF\2013-04-27.dgn
 Ref. File 2 = J:\DTE\St Clair Co\212568\0000\REF\kbrmt.dgn
 Ref. File 3 = J:\DTE\St Clair Co\212568\0000\REF\proposed.dgn
 Ref. File 4 = J:\DTE\St Clair Co\212568\0000\REF\8x11bdr.dgn

Logical Names

Levels

(1) 45-50,53-56,58,59,61,63
 (2) 7-10,18,29,30
 (3)
 (4) 1-63



LEGEND

- PROPERTY BOUNDARY
- DESIGN LIMITS OF ASH FILL
- DISPOSAL AREA BOUNDARY
- SLURRY CUTOFF WALL
- AREA A DISPOSAL AREA A

NOTES

1. BASE MAP DEVELOPED FROM AERIAL SURVEY PERFORMED BY KUCERA INTERNATIONAL, INC., WILLOUGHBY, OHIO. DATE FLOWN: 4/27/2013.
2. GRID SYSTEM IS ON-SITE GRID - BELLE RIVER PLANT/RANGE ROAD PROPERTY SYSTEM.

SITE PHASING LEGEND				
Area	Status	Size (Acres)	Material Under Waste	Comments
A	Closed	7	Clay	Certified Closed, May 17, 2002
B	Closed	102	Clay	Certified Closed prior to September 2, 1999
B1	Closed	9	Sand	Certified Closed prior to September 2, 1999
C	Closed	16	Sand	Certification Report Approved by MDEQ, August 25, 2009
D1	Closed (Interim cover on southern sidestaps)	21	Clay	Certification Report Approved by MDEQ, August 25, 2009
D2	Closed	10	Clay	Certification Report Approved by MDEQ, August 25, 2009
D3	Active Disposal	3	Clay	Can be authorized to receive fill once a remediation plan is implemented
E	Unconstructed	147	Sand	Certification Report Approved by MDEQ January 4, 2010
F1	Closed	17	Clay	Certification report approved by MDEQ February 28, 2013
F2	Closed	12	Clay	
F3	Active Disposal	22	Clay	
G	Unconstructed	110	Clay	Future

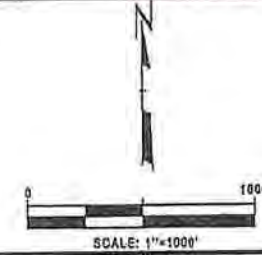


FIGURE 1
LANFILL WORK AREA PHASING PLAN

DRAWN BY:	Istormer
APPROVED BY:	V. BUENING
PROJECT NO.	212568.0000
FILE NO.	212568.0000.01.plt
DATE:	MARCH 2014

FIGURE 1

ATTACHMENT A

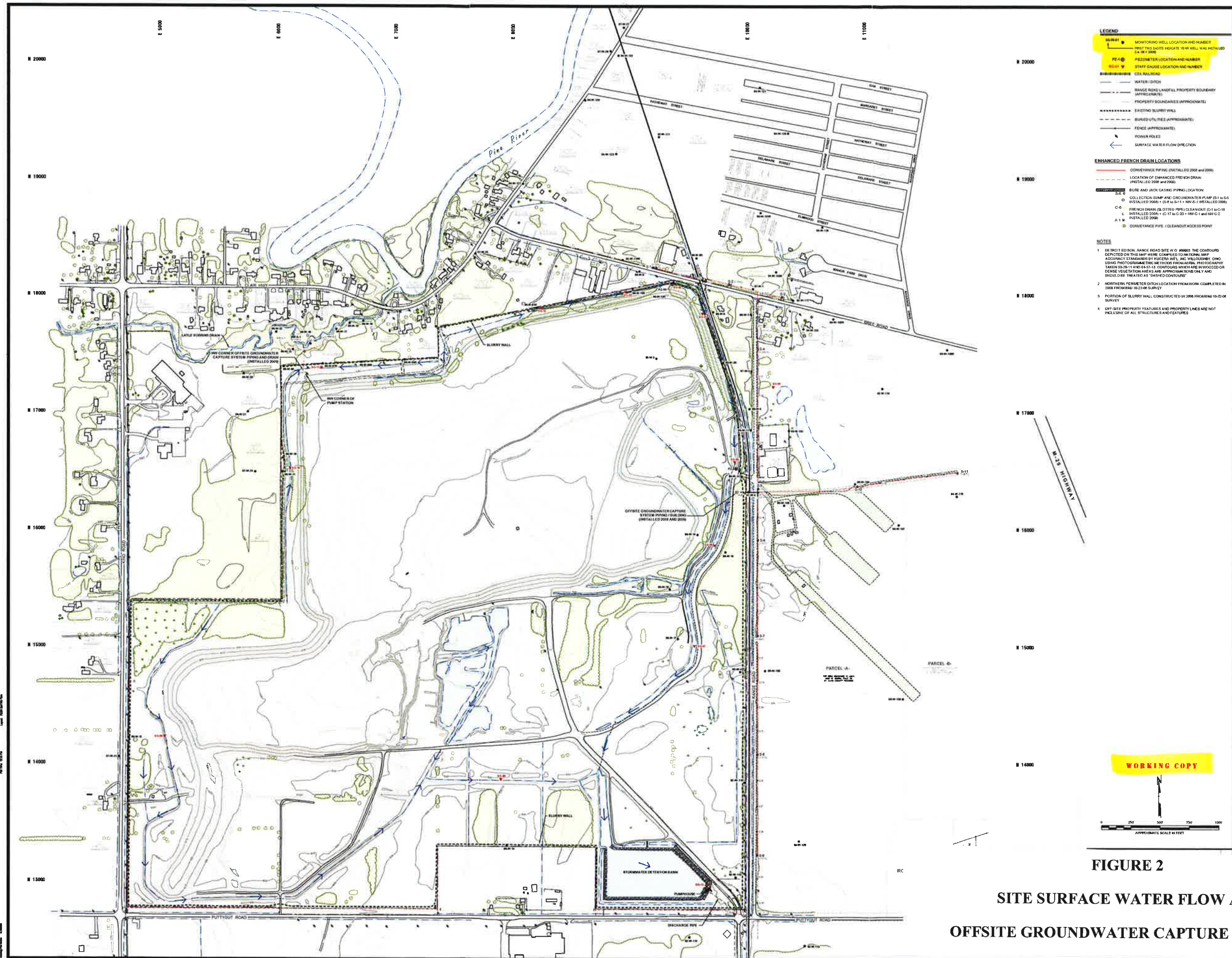


FIGURE 2
SITE SURFACE WATER FLOW AND
OFFSITE GROUNDWATER CAPTURE SYSTEMS

APPENDIX A

Resume of the Qualified Professional Engineer

DANIEL G. BODINE, P.E

**geotechnical and civil engineering
geo-environmental engineering
resident engineering
construction management
project management
litigation support**

EDUCATION

M.S., Geotechnical Engineering, Rutgers University, 1973
B.S., Civil Engineering, Rutgers University, 1970
Continuing Education Seminars

PROFESSIONAL REGISTRATION

Illinois, P.E. Number 0062-047218
Ohio, P.E. Number E-61363
Nebraska, P.E. Number E-9478
Michigan, P.E. Number 6201051139

Indiana, P.E. Number 920347
South Carolina, P.E. Number 15628
West Virginia, P.E. Number 14279
Colorado, P.E. Number 47434

CAREER SUMMARY

Mr. Bodine has over 40 years of experience in all aspects of civil and environmental engineering. He has worked 13 years for a large AE firm in the civil, geotechnical and site development departments on fossil and nuclear power plant facilities and the remainder time with two major geotechnical and environmental consultants. He has supervised and coordinated fossil and nuclear power plant geotechnical site investigations, foundation design, construction and post construction activities. He has also performed geotechnical design and construction monitoring work for recent projects for private, industrial, oil and chemical industry, and municipal and government clients. These projects involve design and construction for deep foundations including all types of piles and caissons, several types of barrier walls, site dewatering, insitu solidification and stabilization, runoff collection and treatment basins and landfill liners and caps. He has worked on dam projects such as the Ludington Pump Storage Project, Center Hill Dam Foundation Remediation, AEP Amos Fly Ash Dam, CCR Ash Disposal Dike and Dam Inspections, and numerous other dam safety inspections for the power industry. He has worked with attorneys related to litigation/arbitration and expert witness support related to geotechnical engineering and construction claims. Specialties include barrier wall design and construction, insitu solidification/stabilization, deep foundation design and landfill design & construction including design/build and bid package preparation.

Mr. Bodine's experience on various projects has included the following:

Wood River Refinery Sludge Basin Closure. Wood River, IL. Completed an oil refinery engineering design, bid document preparation and construction engineering involving in-situ solidification and capping of over 300,000 cubic yards of oily sludge for an in place RCRA closure of a 20-acre oil refinery sludge disposal basin located in Wood River, IL for Shell Oil Company. This project is unique in that there is approximately 550,000 cubic yards of sludge in the basin and that the design, permitting and construction was successfully completed saving millions of dollars over alternative closures. Design involved detailed geotechnical settlement analyses of the soils and sludge. Closure construction was completed and construction certification report issued to the client and IEPA. Mr. Bodine supervised the CQA monitoring and prepared and sealed the CQA certification report.

Steel Facility Landfill Cap & Tar Pond Solidification, NW IN, Confidential Owner. Working for contractor provided CQA project management, site work and construction certification of an approximate 60-acre landfill containing two large tar ponds. Geosyntec performed onsite CQA observation, testing, documentation and preparation of the construction completion report including onsite testing of tar solidification /stabilization activities. Project substantially completed in 2014 with Construction Completion Report issued in early 2015. Report for the landfill closure was approved by agency without comment.

BP-Amoco Refinery Sludge Basin Closure. Whiting, IN. Supervised design and prepared and evaluated construction bid documents for in-place closure of an oil refinery sludge disposal basin. Design included providing demolition of structural and mechanical equipment, slurry and grout cutoff wall containment, insitu solidification of the sludge, design of wells and pump control systems for surface water collection and as back-up for water level control beneath the solidified sludge. The design included a thicken RCRA type cap with HDPE and soil covers. Also managed construction oversight for the project, including setup and operation of all on-site laboratory testing operations. The design and oversight included structural (concrete, steel and asphalt), electrical and mechanical work (wiring, piping, pumps, motors, and controls in accordance with refinery standards) as well as geotechnical and environmental work. Closure of this project under jurisdiction of U.S. EPA Region 5 and IDEM was completed in July 1992 on schedule for Amoco Oil located in Whiting, Indiana. Test program and certification reports for these agencies were prepared under the direct supervision of Mr. Bodine. The thicken RCRA cap was designed and permitted to accommodate future structures on top of the landfill closure, prior to the widely used Brownfield concept. Twenty-two years later new structures have now been constructed and the new foundation settlement design remains consistent with the original design.

Casper Wyoming Barrier Wall, Casper, WY. Working for Wyoming Department Environmental Quality as a slurry wall specialist providing design document review and

comment and attended site review meetings. Design was complete, but the site redevelopment has expanded and barrier wall construction has been put off until 2017 or 2018 because of site wide re-development plans for a hotel convention center. Site was location of former refinery and review and comments were well received by lead oil company.

Boeing Design/Build Slurry Wall & Landfill Cap Expansion, Wichita, KS. Supervised the preparation of design and construction plans and specifications including technical reports and documents submitted to the KDEH. Served as the technical task manager for the construction QC/QA work including preparation of the construction completion report, completed in August 2010. The slurry wall and landfill cap extension, located adjacent to the Arkansas River, surrounded a closed landfill and was constructed without opening the closed landfill clay cover. Monitoring well drawdown on the down-gradient side along the river was noted by owner to drop almost immediately after completion of construction. This has been verified 1 year later, except during periods of river flooding that raise water levels outside of the wall containment.

Bofors Nobel Superfund Site. Muskegon, MI. Responsible for design and Geosyntec management of barrier wall and chemical sludge lagoon cap for the Bofors-Nobel superfund project located near Muskegon, Mi. Work included field and laboratory investigation work plan, 30%, 95% and 100% design, construction bid package preparation and construction and CQA documentation and performance of barrier wall onsite. Barrier wall construction was Phase 1 of the work and is 100% complete. The wall consists of a soil-bentonite (SB) slurry wall approximately 75 to 125 ft deep and 2000 ft long. Closure cap design and construction of 10 chemical sludge lagoons (portion of Phase 2 work) was completed in 2007. Mr. Bodine was the lead geotechnical engineer for the Phase 2 work. Other consulting team members provided team project management, conducted groundwater monitoring and treatment, designed and monitored construction of the treatment and diffuser wetlands, and phytoenhancement of the lagoon cover and surrounding area. Geosyntec assisted these team activities and provided geotechnical portions of the work.

US Forestry Holden Mine Barrier Wall, Chelan, WA. Working through USF Consultant, Hart Crowser, provided specialist consulting review for design and construction of deep 70-100 ft slag & Portland cement bentonite slurry wall located along river and tailings piles at a closed copper mine in the middle of a national forest. Work included review for agency of mix design and compatibility testing, construction procedures and quality control test results. Mr. Bodine provided onsite observation and review for US Forestry and their consultant. Field work was completed in 2015.

Design & Construction of Permeable Reactive Barrier (PRB) Slurry Wall. Ontario, Canada. Worked as the contractor's slurry wall specialist and prepared contractor plans and technical memorandums for bench scale testing and mix design and construction

quality control testing and monitoring procedures for a slurry wall that included design sheet pile control structures for the reactive material. This was for a funnel & gate PRB wall within soils and ground water impacted with radiation. Provided recommendations for onsite construction procedures and QC training of personnel performing slurry and soil-bentonite backfill mixing and testing. Project is completed, performing exceptionally well and is confidential.

Colorado Soil-Bentonite Slurry Wall Construction. Ft. Collins, CO. Responsible Project Manager and Lead Engineer for bid document preparation and construction of a 5400 ft long slurry wall around former sand, gravel and cobble pit. Project completed in September 2013 with both contractor construction and engineering oversight completed on schedule and under budget. A 90-day leakage test was performed by an independent consultant and exceeded all requirements by the state.

Gavin Power Plant Residual Waste Landfill Expansion, Cheshire, OH. Part of the project design team preparing a permit to install (PTI) package for the lateral and vertical expansion of a 58,000 cubic yards waste landfill. Performed design reviews of plans, drawings and specifications, including leachate treatment ponds and assisted in major field investigation program that had to be performed thru-out the winter months and during the holiday period. The PTI has been approved and owner waiting for formal permit to be issued in early 2014. A separate construction package for Stage 1 & Stage 2 construction of the landfill expansion has also been prepared and issued to the owner for bid and initial construction beginning in late 2014.

Ash Reservoir Dam Modification, Cheshire, OH. As part of the design and permitting for the closure and capping of a large ash reservoir the 100 ft high dam is being modified by reducing the dam height and providing a new discharge structure for safe discharge of the 100-year and PMF storm flows. Mr. Bodine is the Engineer of Record for the dam modification.

Cardinal FAR 1, Brilliant, OH. Responsible for Geosyntec design and major permit document preparation for a 127 acre 18 million cubic yards FGD gypsum landfill at a power plant facility in the State of Ohio. Major portion of new landfill is to be constructed over an existing closed fly ash disposal area. Design and permit documents included detailed geotechnical settlement and stability analyses. Agency has completed review and permit was issued in April 2007. Construction of Cell 1 has been completed and a minor permit modification to construct Cell 3 before Cell 2 was prepared with agency approval in 2008. Preparation of Cell 3 construction drawings was completed in 2010 and cell construction followed in 2011.

Chicago Public Building Commission (PBC). Chicago IL. Provided review of construction documents and report on lessons learned for a high school project that involved construction dewatering, excavation and earth retention that resulted in

schedule delay and some foundation redesign. Consulted on means and methods for turning around dewatering and excavation problems. With other Geosyntec team members worked on several other PBC projects related to dewatering and earth retention design, and permitting, including one high profile downtown Chicago project. Other projects also include preparation of foundation design recommendations for the architect engineer, and special consulting for the PBC, related to shoring and caisson foundation design.

CSX Talleyrand. Jacksonville, FL. Served as senior reviewer and in-house barrier wall consultant for design and construction of a Florida landfill slurry wall approximate 43 feet in depth. Designed and summarized the slurry wall compatibility and mix design testing program and trained others on the design and onsite for the slurry wall quality control/quality assurance testing and inspection. Site is unique because of high groundwater adjacent to a river, adjacent to a major city sewer line, and included a large portion of excavation within peat soils. Wall was completed in summer of 2011 and landfill cap late in 2011.

CSX Richmond. Richmond, VA. Serving as senior reviewer and in-house consultant on slurry design and permitting for 40 ft deep soil-bentonite wall at a former wood treating facility in Richmond, Virginia. Project design and review by the US EPA and VA DEQ is final. The slurry wall construction was started and completed in 2014.

Former Camilla Wood Preserving Site. Camilla, GA. Providing barrier wall consulting and in-house recommendations for design team on slurry wall compatibility testing and response to US EPA questions. Conventional soil-bentonite wall was selected and wall construction completed in 2013.

O'Hare Airport Stormwater Flood Control Reservoir. Chicago, IL. Provided review of existing reservoir design by others during construction to assist in solving design/construction problem involving slope seepage and erosion. Geosyntec provided recommendations for design changes and repairs, as well as additional monitoring to prevent slope erosion and reduce uplift pressures to acceptable factors of safety.

O'Hare Airport Stormwater Damage Mitigation Measures. Chicago IL. Provided investigation, evaluation and corrective measure design of stormwater related seepage damage to an underground training area located adjacent to an existing airport utility tunnel. Designed concrete retaining wall repairs and preventative measures to collect and transfer excessive groundwater during and immediately after stormwater events from causing future similar problems.

Rt 44 Barrier Wall, Tauton, MA. Served as in-house consultant for an 800-foot long, 50-foot deep slurry wall installed to contain contaminants present in the saturated portion of the soil. Barrier wall was part of an overall drum removal and thermal

desorption project. Provided onsite monitoring and training of others for the slurry wall quality control/quality assurance testing and inspection. Wall was completed in 2010.

McColl Superfund Site, CA. Served as in-house consultant and mentor for the field monitoring and site engineering of the slurry wall construction phase. Provided daily contact as needed for the two soil-bentonite slurry walls that transverse sloping topography and were tied into the final cover system.

Home Depot Site Redevelopment, Burbank, CA. Geosyntec provided concept and detail design, construction, operation, maintenance and monitoring of site remediation of a dual-phase extraction (DPE) and soil vapor extraction (SVE) systems at a redevelopment site. Part of the design included a 2,600 ft long, 55 ft deep soil-bentonite slurry wall. Mr. Bodine consulted on the design and led the construction quality assurance monitoring and testing of the barrier wall.

138th Street Landfill. Dalton, IL. Performed full time Resident Engineering and Construction Management for landfill client on an IEPA remedial action project located on the southeast side of Chicago. Project involved earthwork, slurry wall and leachate collection and transfer systems installation. Duties included review of project submittals, contractor invoices, CQA activities, preparation of progress reports, design modifications approved by the designer and preparation of the Construction Completion Report. Construction project was brought-in under budget.

Historical Slurry Wall Design & CQA. Provided full-time construction quality assurance activities for landfills and cooling lakes with slurry and grout cutoff walls, including preparing summary CQA reports. Cutoffs have performed exceptionally well, some for over 40 years. Slurry wall experience includes shallow and deep Soil Bentonite and Cement Bentonite walls, specification preparation, and full time CQA/CQC activities for approximately 1.5 million square feet of wall. Recent projects involved environmental remediation and closure at landfill and disposal projects where construction dewatering, containment and site closure were involved. Another involved slurry wall design and specifications for groundwater and flood control for a 4-lane state highway project with railroad and river overpass crossings. Total slurry wall experience involves walls totaling over 25 miles long. Completed local Midwest projects with deep walls (>50 ft and <130 ft) include Schaefer Power Station in Indiana and Braidwood Nuclear Power Station in Illinois and the Bofors Nobel project mentioned above. Projects with medium depth cutoff walls (>30 ft and <50 ft) include Collins Power Station in Illinois and Amoco Oil (now BP) Refinery in Indiana. The Amoco walls (4 total) involved cement bentonite, jet grout and chemical grout barriers. Specification and CQA monitoring review for soil bentonite walls was also performed for the McColl Superfund project and a Home Depot project in California. Two of the recent slurry walls have been design/build projects where Mr. Bodine, in addition to design and project management activities, supervised the QC/QA work and certified the

construction. The Amoco project is discussed in a paper listed at the end of this resume. Copy provided upon request.

Groundwater Remediation System CM and CQA. Provided design and construction bid document and specification review for a bedrock groundwater interceptor trench and surface water collection basin and controls. Performed CM and CQA activities at the site and prepared a project construction certification report. Reviewed all contractor draft invoices and assisted client negotiating settlement of work claims and revised contract when project changed from non-union to union labor and operator work. Project was successfully completed and performing as intended.

Naval Training Center and Power Plant Site, Newport, RI. Mr. Bodine has prepared designs, plans, specifications, and monitored installation and testing for numerous pile and drilled shaft construction projects. Most current pile installation and load test monitoring occurred in 2006 at Newport Navel Training Facility in Newport Rhode Island. Selected, monitored and evaluated dynamic pile testing and static load test at site of Fuel Oil Tank No. 2.

DOE Fernald Onsite Disposal Facility, Fernald, OH. Performed duties as responsible onsite Resident Engineer for construction of the leachate conveyance system and two onsite disposal facility (OSDF) cells at DOE's Fernald Environmental Management Project, located near Cincinnati, Ohio. Systems included structural, geotechnical, mechanical, electrical and environmental equipment. Duties included review of contractor submittals, preparation, review and approval of design modifications, preparation of reports, interaction with client and contractor construction management, engineering and quality assurance personnel and project's CQC staff. Cell 1 began accepting impacted material in 1997. During 1998 Mr. Bodine performed the duties of Geosyntec's onsite Managing Engineer and Certifying Engineer during which time filling of Cell 1 with low level impacted materials and construction of Cell 2 was completed. All 8 Cells of the OSDF were completed by end of 2006 ahead of schedule.

Willow Ranch Landfill Retaining Wall, Romeoville, IL. Provided Construction Management assistance and Construction Quality Assurance monitoring and Engineering Certification of the installation of a geogrid tieback concrete retaining wall located at a closed landfill site. The wall consists of 700 lineal feet of panels with 3 and 4 stepped levels, constructed at a 7 percent alignment grade. One hundred and seven (107) concrete panels twenty-foot long were formed, constructed and installed on site. Construction submittals, schedules and testing for concrete and soils was provided.

Elgin Illinois Landfill Closure. Elgin, IL. Managed CQA monitoring and provided CQA certification of Closure of Elgin Landfill Superfund Site located in Kane County, Illinois. Closure design by US Army Corps of Engineers (US ACE) involved a soil and geosynthetic cap. Project fieldwork completed end of Nov. 2001 and the remedial

construction completion report (RCCR) prepared in Dec. 2001. The US EPA and Corps without comment approved the RCCR. For the same landfill closure Mr. Bodine prepared the Operation and Maintenance Plan that involved normal landfill maintenance, long term groundwater monitoring and operation of the landfill gas management system.

City of Janesville Wisconsin Landfill. Provided management of project consisting of the review and evaluation of a poorly performing landfill gas system, and the design of a new dual well gas/leachate collection system. Services included field measurements, preparation of landfill permit modification and construction bid documents with contract requirements, specifications and drawings. Project began in May 2002 with construction of the new dual well collection system completed in December 2002.

Permits. Responsible for preparation and certification of NPDES permits, Construction permits, Joint permits, Dam safety permits, stormwater permits and plans, local permits and other agency documents for flood control projects, wastewater treatment facilities, landfills and various site remediation projects. Selected completed projects include the Meacham Grove Dam and Reservoir Flood Control Project in DuPage County Illinois and permitting activities for BASF, Amoco Chemical and Exxon Chemical.

Detroit Edison Power Company Ash Basin Evaluation & Design Modifications, Monroe, MI. Performed dike inspection of large ash basin to assist in evaluation of a large number of shallow slope failures. Project work included prepared construction plans and specifications for repair and reconstruction of slopes and related drainage facilities. Provided quality construction expertise for the 2009, 2010 and 2011 construction phases, all now completed. Mr. Bodine consults on designs as needed with team members on other site projects for DTE.

Detroit Edison Power Company Ash Basin Drainage Ditch Evaluation & Design. Managed and performed design of a large drainage ditch which is part of the Range Road Landfill existing ash basin that involved culvert alternatives including a large diameter structural pipe arch. Project completed in 2010.

DTE Energy Range Road Landfill Annual Inspections, St. Clair, MI. Conducted field inspection and office file review under the CCR Rule 40 CFR 257.84(b)(1) for the Range Road 418-acre landfill. The annual inspections and reports were for years 2015 and 2016.

American Electric Power Dam Inspections. Providing multi-year (1999-2001) independent annual dam safety inspections and reporting of dike and dam structures at 18 facilities for American Electric Power in the states of Indiana, Ohio, Kentucky, West Virginia and Virginia. Dams range from small dike containment structures to large high hazard classification dams. Internal inspections and repair recommendations for discharge pipes were also provided at 3 AEP facilities. Reports for the utility and state

agencies were prepared for all facilities. Prior to this project Mr. Bodine performed dike and dam inspections of ash disposal and power plant lake facilities in the states of Illinois, Wisconsin, Indiana, Ohio, Kentucky, Colorado and Texas.

American Electric Power CCR Location Restriction and Groundwater Monitoring Network Reports. Provided CCR facility evaluation and report preparation for Location Restriction Evaluation at two separate AEP plants. Assisted the Groundwater Monitoring Network report preparation and review for the same two plant.

Indianapolis Power & Light Ash Pond Dike Inspections. Provided ash pond facility inspection in 2008 for three coal fired power plant sites. Prepared inspection report findings and recommendations for maintenance and recommendations for critical dike re-evaluations.

Sylvan Lake Dam Evaluation, Rome City, In. Performed dam and spillway inspections and report for 2004 through 2016 at Rome City, Indiana. In 2004 Geosyntec prepared a special dam evaluation report reviewing a critical Dam safety report prepared by U.S. Army Corps of Engineers. In 2007 consulted with dam owner during periods of very heavy rainfall concerning opening of emergency flood gate, however, it was not necessary to open the gate. Attended and took part in the Emergency Action Plan table-top-exercise in 2007, 2011 and 2016. Prepared the project O&M Manual and provided owner training and annual inspection activities since 2004. Remain as Rome City's on-call engineer with respect to dam safety and inspection.

Boston Tunnel Construction Claim. Boston MA. Provided expert witness support for major geotechnical construction claim. Work consisted of technical assessment of contractor claims for extra compensation for excavation of Central Artery Tunnel. Mr. Bodine was a key member of the assessment team that resulted in full rejection of the \$25 million claim against the CA/T project.

Scottsville Landfill Construction Claim, Scottsville, MI. Provided technical assessment of construction claim for new landfill construction in the State of Michigan. Assessment resulted in nearly full rejection of contractor claim for 2 to 4 million of extra compensation for earthwork construction and schedule extension.

Unloading Dock Construction Claim, Honduras. Performed independent review of geotechnical foundation investigation and design for pile foundation for arbitration hearings concerning significant design-build cost extras for a large docking facility located in Central America.

Power Plant Circulating Water Pipe Evaluations, NW IN. Provided confidential evaluation of two large 14-ft diameter CMP pipe collapses for an AE designer and assisted field sampling and evaluation of two other power plant CMPs for long term integrity condition evaluations.

Foundation Site Investigation and Geotechnical Design. During the 1970's and 1980's coordinated site investigation and geotechnical foundation design of power plant and waste disposal structures for several fossil units between 500 MW to 750 MW in size located in the Midwest and South. Foundation and pond design included shallow and deep foundations (piles, caissons and drilled shafts) and water and waste holding ponds and dikes. The deep foundations were subject to a large range of loading conditions and conducting several large-scale load tests where necessary. One major project located along the Mississippi River in Louisiana is discussed in a paper listed at the end of this resume. Projects specific to Illinois and Indiana included those at several plants designed by Sargent & Lundy during the period.

Safety Analysis Report Preparation. Supervised and prepared geotechnical foundation design criteria and geotechnical and groundwater sections of safety analysis reports (SARs) for nuclear power plants located in Illinois, Indiana, and South Korea.

Cooling Lake and Dam Inspections. Conducted cooling lake and dam inspection and monitoring activities for lakes up to 3000 acres in size and over 25 miles of embankment dikes or dams. Prepared reports for submittal to client and appropriate state and federal agencies. The largest of these projects (Braidwood Nuclear Power Station Cooling Lake) involved dike construction and cutoffs constructed over and through extensive coal strip-mine spoils and over underground coal mines. Site monitoring included settlement monitoring of pre-load and dike fills over strip-mine spoils up to 120 ft thick, slope indicator movements, piezometer measurements and sampling for seepage and water quality evaluations.

SWMU's at Argonne National Lab, Illinois. Performed Visual Site Inspections and Structural Integrity Assessments for a large number of Solid Waste Management Units (SWMUs) at DOE's Argonne National Laboratory-East as part of a corrective action program under RCRA. Performed duties as the Certifying Professional Engineer.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Chicago/Oak Brook, IL, June 1996-Present

Woodward-Clyde Consultants, Chicago, IL, March 1989-June 1996

Sargent & Lundy Engineers, Chicago, IL, 1976-1989

Woodward-Clyde Consultants, Clifton, NJ, 1970-1972, Chicago IL, 1973-1976

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers - Life Member - Geo-Institute

Illinois Society of Professional Engineers (ISPE)

Deep Foundation Institute (DFI)

ADSC: International Association of Foundation Drilling

ACEC: American Council of Engineering Companies

Society of American Military Engineers

Three Rivers Manufacturing Association (Industry Association)

REPRESENTATIVE PUBLICATIONS

“Implementation of a Permeable Reactive Barrier for Treatment of Groundwater Impacted by Strontium-90”, Andrzej Przepiora, Dan Bodine, Peter Dollar and Jim Coughlin, *The 19th Pacific Basin Nuclear Conference (PBNC 2014)*, August 24-28, 2014, Vancouver, Canada.

“Analysis and Verification of Louisiana Pile Foundation Design Based on Pressuremeter Results”, D.G. Bodine and R. R. Davidson, in *The Pressuremeter and Its Marine Applications*: American Society for Testing and Materials, 1986.

“Effects of Clay Swelling on Permeability Calculations Obtained From Sealed Double Ring Infiltrometer Tests”, C. B. Avci, D. G. Bodine and E. Guler, in *The First International Congress on Environmental Geotechnics*, Edmonton, Canada; July 10-15, 1994.

“RCRA Closure of Refinery Sludge Basin Using In-situ Solidification and Containment”, D. G. Bodine and F. M. Trevino, in *The Proceedings of The Fourth Great Lakes Geotechnical/Geoenvironmental Conference: In-Situ Remediation of Contaminated Sites*, Krishna R. Reddy, Editor, University of Illinois at Chicago; May 17, 1996. Containment was by cement bentonite slurry wall and cement bentonite jet grout wall on the shore of Lake Michigan.

“Design and Permitting of a FGD Landfill Over and Existing Ash Reservoir” (2009), D. G. Bodine, B. F. Tanyu, P. J. Sabatini, M. A. Ajlouni and D. E. Limes, Geotechnical Special Publication No. 187, Contemporary Topics in Ground Modification, Problem Soils, and Geo-Support, pp. 496-503.

“Case Study: Stability of Two Horizontal to One Vertical Embankment” (2011), Tanyu, B. F., Neal, W., Seymour, J. P., Bodine, D. G, Bozok, O., Paper presented at the ASCE Geo-Frontiers March, 2011, Dallas, Texas.

APPENDIX B

Range Road Landfill Annual Inspection Log

Range Road Landfill Annual Inspection Photographs

Detroit Edison Company 2016 Range Road Ash Disposal Facility Annual Inspection Log

Inspector: Dan Bodine, P.E., Geosyntec
 Consultants Dave Huxhold, DTE Assisted &
Provided Documents
 Date: 20 & 21 October 2016

Weather: Lt. to Moderate Rain, 0.92 in Thur/0.15 in Fri
Temperature 51-57° F Highs, Light Wind, Rain
Most of Thursday and Very Early Morning Friday

Previous P.E. Annual Inspection Date 12-21-15

Item	Condition			Related Photo # (s)	Notes and Comments (LDP=Landfill Development Plan)
	Good	Adequate	CA Req.		
General Site					
1. Site Access Restricted / Attendant On-duty	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Visitor Sign in	Gates locked, except active ash haul road entrance near Guard.
2. Security Fence / Gates	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35	Good, one minor cut opening N side, DTE plans to repair.
3. Signs and Markers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8, 43, 57	Dust control signs updated. Signs at gates & Slurry wall alignment.
4. Access Roads	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11,14, 15, 34	Most very good. Some perimeter ditch alignment requires walking
5. Traffic Flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14, 26	Haul Trucks appeared moving safe & freely over firm wet roads
6. AST Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None Taken	One observed. Another not in use DTE planned to remove.
7. Universal Waste (properly labelled, container condition, less than one (1) year from accumulation start date)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None Taken	Reported only CCR waste hauled to landfill. Sources noted in documents have changed (reduced). License Updated in 2014.
Waste and Nuisance Control					
8. Ash Hauling Contractor On-site Safety/Training	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Copies Taken	Equipment worker training docs (work sheets & JHAs) provided.
9. Ash Hauling Contractor Equipment Condition/Adequacy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14, 26	Equipment appeared adequate; observed but no close-up photos.
10. Ash Hauling Contractor Filling Active Area to Appropriate Grade	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 17, 26	Filling Area G2. F3 top waste near grade. Rain on 20 th no work.
11. Waste Condition (i.e. - waste from approved source, no recyclables, no MSW, no liquids, no hazardous wastes, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12,14,15,27, 28 waste grading	Previous sources noted, but Operating License and plant shut down has resulted in Updates (reduced one source since 2015).
12. Noise Level	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Covered in LDP. No contractor noise heard during perimeter ditch inspection and closed cover areas walk thru inspections.
13. Dust Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rain, 8, 14, 15	Dust Control Plan available and discussed in LDP. New signs set.
14. Adequacy of Interim Cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14, 15, 29 Interim Slope & Berm on top	Closed or final cover area slopes joining active areas appeared stable and well vegetated. No erosion observed. Runoff Diversion Berms on Areas F2 and B (part) observed (are OK).
Final Cover					
15. Landfill Side Slope Condition (i.e.-no seeps, no cracking, no settling, no burrows, adequate vegetation)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31, 32 & 40 21,22,23,& 47	No erosion noted. Trees on N, NE, NW sides, reported approved to stay. Other (F1) woody veg. noted and scheduled for removal.

Detroit Edison Company
2016 Range Road Ash Disposal Facility
Annual Inspection Log

16. Final Cover Top Condition	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	21, 23, 24, 25, 29,30 are Typical	Top and slope final cover areas were well vegetated. Some small woody vegetation noted. DTE indicated they would remove. No Excessive Settlement Observed or Stability Conditions
Leachate and Surface Water Control			
17. Stormwater Detention Pond Water Quality (unnatural films, foams, oils, etc.) and pump operating condition (panel, meter etc)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1, 2,3, 4,5 & 6	Quality appeared Good. Pump Run & Light Conditions Checked (OK). Meters working and daily/weekly reports viewed at office.
18. Stormwater Detention Pond Side Slope Condition (erosion, riprap, vegetation) and any other operating observations not in	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1, 2, 6 & 60	Appeared Stable and Heavily Vegetated & Slope Protected. WL Also Monitored with Staff Gauge SG-13. Flow Meter Working.
19. NW Corner Lift Station Surface Water Ditch Level & Pump	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	38, 39	Ditch Level at Discharge Noted. Staff Gauge Levels Reviewed.
20. NW Corner Lift Station Operating Condition	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	39, 40, 41	Pump Control Panel Operation Observed. (DTE checked operation)
21. NE Off-site French Drain Operating Condition	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	9, 10, 11, 60	Pump Flow Condition & Discharge Checked. Reviewed Quart. Rpt.
22. NW Off-site French Drain Operating Condition	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	36 & 37	Pump Control/Op. Checked. Video of Discharge Taken. Reviewed.
23. NE/NW Off-site French Drain Outfall Water Quality	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Not part of this CCR Inspection. Covered in System Quarterly Rpt.
24. Perimeter Slurry Wall Marker Condition	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	43, 57	Slurry Wall Below Grade and Surrounds Entire Landfill at/near Property Line. Barrier to Any Below Grade GW Flow. Markers Show Alignment. Photos of Sign Examples Only
25. Perimeter Ditch System (Flow & Staff Gauge Monitoring)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7,13,18,19,20,3 2,33,36,37,38, 41,44,46,47,49, 51,52	Flow Observed. Staff Gauge Elev. in Quart. Rpt. Reviewed and we Confirmed Gradient Flow Direction. Photo 13 Int. Ditch, 36 & 37 DTE to Repair. Video of Flow from Offsite into Ditch Taken. See Photo 60 Slot.
26. Perimeter Ditch System (Slope & Bottom Conditions)	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	16,17,18,19,20, 21,29,30,31,32, 33,34,38,39,40, 41,46, 47 & 48	Perimeter Ditch Located Around Entire Active and Closed Landfill Areas. Run-on and Run-off Controlled. Flow Appears to be Maintained. DTE Indicates that Non-Woody Vegetation has been Approved to Remain as Long as Flow Maintained. Regardless, DTE has approved a 3-Year, 2017 -2019, Rotation Ditch Maintenance Program Now Scheduled to Start.

APPENDIX B
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1. Storm Water Detention Basin (SWDB), South and West Sides. Slopes are Protected with Stone. No Visible Slope Erosion or Woody Vegetation on Slope.



2. Storm Water Detention Basin, North and East Sides. Slopes are Protected with Stone. No Visible Slope Erosion or Woody Vegetation on Slope.



3. Pump House Pumps and Valves. Water from Basin is Pumped Back to Power Plant. DTE Plant Inspects Daily and Records Pump Observations and Flow.



4. Pump Control Panel. Each Pump was Run Checked. Pump #3 Running. Pumps Cycle Each Run Unless Higher Pond Level Needs More Pumps On.

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5. View of SWDB on Morning of 21 Oct. 16. Light Rain Falling.



6. Basin Intake Screens. No Significant Blockage Noted.



7. View of North/South Drainage Canal Leading to SWDB from Perimeter Ditch System.



8. Typical Signage at All Road Exits and Where Needed. Sign says: Notice No Water From Stormwater Pond to Be Applied Beyond This Point.

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9. Northeast Off-Site Groundwater Capture System Building. Capture System Inspected Routinely and Sumps Not at this Location Inspected and Cleaned.



10. Inside of NE Off-Site GW Capture System Building. Pump #1 (Left Green Light On) Running. Water Discharging to Ditch During Inspection.



11. One of Several NE GW Capture System Sumps Located Along Range Road.



12. View of Active Area F3 East Slope. Drainage Ditch Right Side of Photo.

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13. View of East End of Concrete Culvert Beneath Haul Road Crossing Ditch West of Area F3 Shown in Photo 12.



14. Active Area G2 North End. Rain Falling. Ash Being Placed at Far End Near Temporary Area F2 Slope. Little or No Tire Ruts in Ash Surface.



15. Another View of Ash Bottom of Area G2 North End Along Area F2 Temporary Slope.



16. Water in Area G2 Drains to the Left of Photo (See Photo 15). Ash Placement In progress Far Right Corner. Heavy Rain 0.92" for 20 Oct. 16.

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17. Looking at Edge of Ash Placement and Compaction..



18. View of Perimeter Ditch Along South Side that was Reconstructed in 2010. Slopes Appeared Stable, Well Vegetated and Erosion Free.



19. View of Another Portion of Reconstructed Perimeter Ditch Looking in Opposite Direction from that in Photo 18. Ditch is Open and Flowing.



20. Perimeter Ditch at Road Crossing on South Side. Flow was Observed Through the Culvert.

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21. West Southwest d/s Side of Landfill Slope. Well Vegetated and Stable with No Significant Areas of Slope Erosion. Couple Small Woody Vegetation Noted.



22. Ripped Downslope Drainage Flume Central West Side of Landfill at Corner of Closed Areas F1 and F2.



23. Looking at d/s Slope of Closed Area F1 where Small Woody Bushes/Trees Developing. Woody Vegetation was Scheduled for Removal.



24. View of Top of Closed Area F1. Typical Top Vegetation of Northern Closed Areas.

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25. Top of Landfill at Beginning of Downslope Drainage Flume at Closed Areas F1 and F2 Corner.



26. Looking East at the Active G2 Area Where Ash is Being Placed.



27. Looking North at Top of Active Area F3 Where Surface Being Graded for Final Cover.



28. Same as Photo 27 Looking Farther East.

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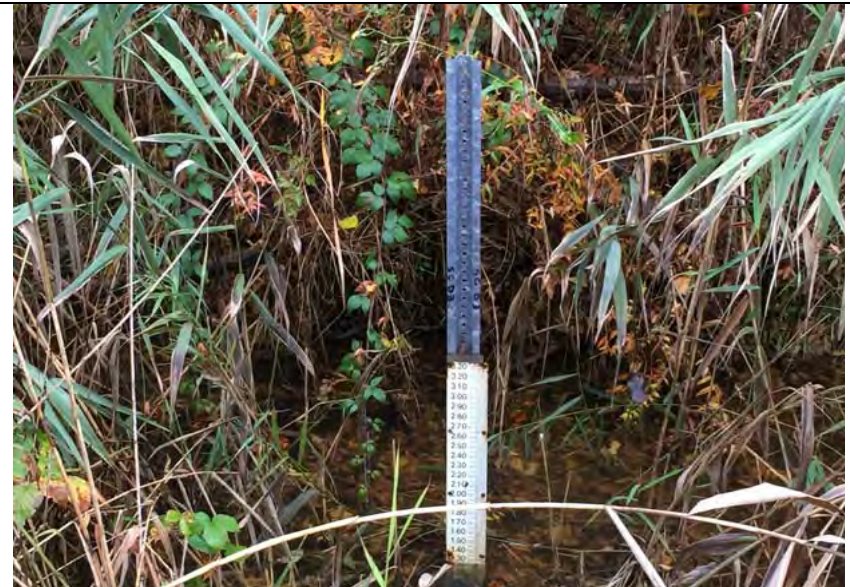
29. Top of Landfill Looking at Drainage Berm. Active Area F3 on Left. No Berm Erosion Noted.



30. Corner of Active Area F3 Looking Northwest.



31. Corner of Active Area F3 Looking Northwest. Matching Photo 30,



32. Perimeter Ditch Staff Gauge SG-03. Water Level Reading was About 1.25 ft.

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33. Perimeter Ditch Staff Gauge SG-02. Water Level Reading About 1.50 ft. Piezometer PZ-1R.



34. Roadway Along Perimeter Ditch on East Side.



35. Small Hole in Fence At North Side Scheduled for Repair.



36. Perimeter Ditch Along North Side That is Scheduled for Stone Slope Protection.

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37. Close-up of the Ditch Scheduled for Stone Slope Repair. Erosion Noted and Past Vegetation Seeding Did Not Take Hold.



38. Location of Discharge from Sump to Perimeter Ditch. Flow was Observed. Pump #2 was Pumping as Control Panel in Photo 40 Indicates.



39. Sump Observed at NW Pump Control Location. Water from Offsite Wells is Trickling in.



40. NW Pump Station Control Panel in Operation. Pump #2 Running.

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41. Perimeter Ditch Recently Cleared of Vegetation. Control Panel and Sump Location, Northwest Corner Pump Station for Offsite GW Collection System.



42. Perimeter Ditch Staff Gauge SG-12 Water Level Reading About 0.88 ft.



43. Typical Slurry Wall Marker. Roadway/Walkway Along Perimeter Ditch. Ditch on the Right. Fence on the Left.



44. Perimeter Ditch Staff Gauge SG-01. Water Level Reading About 1.65 ft.

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45. Monitoring Well 96-W-10R (Dark Gray in Center) Located Along Fence at North Side of Landfill.



46. Perimeter Ditch at Location of Staff Gauge SG-01. Water Level Reading About 1.25 ft.



47. Perimeter Ditch on SW Side at SG-09. Water Level Reading Not Readable on Photo.



48. Looking East at Drainage Flume as it Enters Perimeter Ditch. Some Woody Vegetation on Outside Existing Slope from Active Area G2.

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49. Looking South at Close-up of Perimeter Ditch. A 3-year Rotation Ditch Maintenance Schedule is Planned by DTE.



50. Looking North at Woody Vegetation on Outside Slope of Closed Areas F1 and Possibly B.



51. Looking South along SW Side at Perimeter Ditch. Vegetation has Not Blocked Ditch Flow. A 3-year Rotation Ditch Maintenance Schedule is Planned by DTE.



52.. Looking North at Perimeter Ditch. Ditch Slopes Appeared Stable and Well Vegetated.

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53. New CCR MW 16-01 Located Along Haul Road Inside Landfill Near Unconstructed Areas G3 and E.



54. New CCR MW 16-02 Located East of Unconstructed Area E Near the Perimeter Ditch, but Inside of the Property Perimeter Slurry Wall.



55. New CCR MW 16-03 Located NE Side of Landfill Outside of Slurry Wall and Perimeter Ditch



56. New CCR MW 16-04 Located at NE Corner of Property Outside of Slurry.

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57. New CCR MW 16-05 Located on South Side of Landfill Outside of Slurry Wall at Construction Entrance Near Puttygut Road. Slurry Wall Marker Shown.



58. New CCR MW 16-06 Located Along North Side of Landfill Near Property Fence.



59. New CCR 16-MW-07 Located Along South Side of Property Near Puttygut Road.

1. A short photographic movie (IMG4201) with sound was taken by the Geosyntec Inspector showing operation of the Stormwater Detention Basin (SDB) flow meter while one of the pumps was operating. The movie is retained in DTE's and Geosyntec's project inspection files.
2. A short photographic movie (IMG_4249) with sound was taken by the Geosyntec Inspector showing discharge of flow pumped from the sump of the NE Capture System to the Perimeter Ditch which flows to the SDB. The movie is retained in DTE's and Geosyntec's project inspection files.

60. Notes on Two Movie Photos Retained in Project Files.