STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PAUL MERCER
COMMISSIONER

July 2, 2018

Kathryn Zeigler
Director, Environmental remediation
Mallinckrodt US LLC
7777 Bonhomme Ave, Suite 1800
St Louis, MO 63105

RE: Landfill 2 Closure Report

Dear Kathy:

The Department has reviewed the Landfill 2 Construction Closure Report dated December 21, 2017 and offer the following comments. The Landfill 2 remediation was completed in accordance with the Department approved Corrective Measures Implementation Plan-Revision 1 (CMIP) dated October 2016 and amended with Department approval on February 2, 2017 and on April 26, 2017.

Based upon our review of the Closure Report, the daily reporting of the Department's oversight inspector, staff engineer's attendance at 18 progress meetings held at the site and 17 on-site inspections, and other staff oversight, the Department concludes that the remedial activities at Landfill 2 were completed in accordance with the approved CMIP, amendments, and applicable protocols.

Please accept this letter as approval of the Landfill 2 Construction Closure Report, and do not hesitate to contact me if you should have questions or comments.

Sincerely,

Chris Swain
RCRA Corrective Action Program Manager
Maine Department of Environmental Protection
Chris.Swain@Maine.Gov
207-485-3852

Mallinckrodt US LLC

December 21, 2017

Mr. Kyle Jellison
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

Subject: Landfill 2 Closure Report
Orrington Remediation Site
Orrington, Maine

Dear Mr. Jellison:

Please find enclosed the **Landfill 2 Closure Report** for the Orrington Remediation Site. This Closure Report includes a summary of the remedial construction activities completed in accordance with the Landfill 2 Corrective Measures Implementation (CMI) Plan – Rev 1 dated October 7, 2016 and the associated addenda as approved by the Maine DEP on February 2, 2017 and April 26, 2017. The report also summarizes the construction quality assurance (CQA) program, operations and submittals completed as part of the remedial work and related quality control documentation.

If you have questions or comments regarding this report please feel free to contact me at 314-281-5947.

Sincerely,

Kathy Zeigler

Kathy Zeigler
Remediation Program Manager

cc: Chris Greene, Geosyntec
John Weston, CDM Smith
Pat Duft, Mallinckrodt US LLC
Susanne Miller, DEP-Bangor

CLOSURE REPORT

Landfill 2

Construction Closure Report

Orrington Remediation Site

Orrington, Maine

Prepared by:

CDM Smith, Inc.
25 Industrial Ave.
Chelmsford, MA 01824

Geosyntec Consultants, Inc.
289 Great Road, Suite 202
Acton, MA 01720

Mallinckrodt US LLC

December 2017

CDM Smith Geosyntec consultants

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Acronyms and Definitions

Alpha	Alpha Analytical
BEP	Board of Environmental Protection
CDM Smith	CDM Smith, Inc.
CES	CES, Inc.
CF1	Common Fill Type 1
Charter	Charter Contracting Company, LLC
Clisham	Clisham Construction LLC
CMI	Corrective Measures Implementation
CMI Plan	Landfill 2 CMI Plan
CQA	Construction Quality Assurance
DEP	Department of Environmental Protection
ECB	Erosion Control Blanket
E&S	Erosion and Sediment
FDT	Field Density Test
Frac	Fractionation Tank
Geosyntec	Geosyntec Consultants, Inc.
GWTP	Ground Water Treatment Plant (on-site)
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
Mallinckrodt	Mallinckrodt US LLC
MEPDES	Maine Pollutant Discharge Elimination System
MPS	Media Protection Standard
Order	State of Maine Board of Environmental Protection Order
OSM	Onsite Re-use Material
PAMP	Perimeter Air Monitoring Plan
LF2	Landfill 2
Lyford	P.A. Lyford
QA	Quality Assurance
QC	Quality Control
Report	Landfill 2 Construction Closure Report
RFI	Requests for Information
SMY	Scrap Metal Yard
SS	Southerly Stream
Site	Orrington Remediation Site
TechLaw	TechLaw, Inc.
TSSA	Temporary Soil Stockpile Area

Section 1.
Introduction and Project Organization

1.1 Purpose

The purpose of the Landfill 2 (LF2) Construction Closure Report (Report) is to summarize the construction activities, quality control (QC) documentation, and quality-assurance (QA) monitoring and QA documentation activities (Closure Activities) during the Landfill 2 Corrective Measures Implementation (CMI) construction at the Orrington Remediation Site (Site) located at 99 Industrial Way, Orrington, Maine. The work occurred between March 7, 2017 and November 2, 2017. The location of the LF2 construction area is shown on the Site Plan in **Figure 1-1**. Requirements for the LF2 Closure Activities were set forth in the State of Maine Board of Environmental Protection (BEP) Order (Order) (ME BEP, 2014) effective April 3, 2014, the Landfill 2 CMI Plan (CMI Plan)[1] (CDM Smith, 2017a), and other relevant contract documents herein referred to as the Project Documents, listed in Section 1.4.

1.2 Report Organization

The Report is organized as follows:

- Section 1 – Introduction and Project Organization;
- Section 2 – Summary of Construction Activities;
- Section 3 – Summary of Construction Quality Assurance (CQA) Program;
- Section 4 – Summary of QC and CQA Activities;
- Section 5 – Conclusion; and
- Section 6 – References.

Documentation presenting the results of the CQA monitoring and testing activities performed by Geosyntec Consultants Inc. (Geosyntec) and record drawings are provided in the appendices to this Report.

1.3 Project Team

Key stakeholders and companies for the LF2 CMI are presented below, along with their roles and responsibilities.

<u>Oversight Agency – Maine Department of Environmental Protection, Augusta, Maine</u>

The Maine Department of Environmental Protection (DEP) provided oversight of the remediation work including remediation construction activities, and provided feedback and approvals of the Project Documents submitted to them for review.

[1] Because of the numerous citations herein to the Landfill 2 CMI Plan, the reference (CDM Smith, 2017a) has not been inserted into the report text next to each citation.

Owner – Mallinckrodt US LLC

The Owner of the Site is Mallinckrodt US LLC (Mallinckrodt). Mallinckrodt was responsible for the remediation of the LF2 area and contracted with the Remediation Project Manager to implement the Project Documents.

Remediation Project Manager – CDM Smith Inc., Boston, Massachusetts

CDM Smith Inc. (CDM Smith) was hired by Mallinckrodt to provide construction management services during the LF2 CMI activities. CDM Smith retained a Design Engineer, drilling subcontractor, Remediation Contractor, and a CQA Engineer to implement the CMI Plan and perform the Closure Activities in accordance with the approved CMI Plan and the Order (BEP, 2014). CDM Smith provided health and safety oversight, constructed the Southerly Stream (SS) by-pass, managed the Temporary Soil Stockpile Areas (TSSAs) and rail car loading, and implemented the site-wide perimeter air-monitoring plan (PAMP) (CDM Smith, 2015a).

- Geosearch Inc., of Fitchburg, Massachusetts was the drilling contractor who provided drilling services to obtain pre-excavation confirmation samples.

Design Engineer, CQA Engineer, and On-site Analytical Laboratory – Geosyntec Consultants, Acton, MA

Geosyntec prepared design documents presented in the CMI Plan and performed CQA activities in accordance with the Construction Quality Assurance Plan provided in the CMI Plan. Geosyntec was directly accessible to the Owner and the Remediation Project Manager for technical direction and issues relating to quality control/quality assurance (QC/QA) activities during construction. The CQA Engineer was responsible for carrying out the field sampling, QC/QA oversight, and QC/QA documentation portion of the CMI activities to ensure that the requirements of the Project Documents were met during construction. Geosyntec also operated and managed the Maine-certified on-site Analytical Laboratory during construction for confirmation sample analytical testing. Geosyntec also used the following off-site laboratory services:

- Alpha Analytical (Alpha) of Westborough, Massachusetts was the CQA Engineer's off-site analytical testing laboratory with experience and familiarity with mercury testing.
- CDM Smith Geotechnical Laboratory, Somerville, MA was the CQA Engineer's off-site Geotechnical Testing Laboratory with experience in the physical testing of soils and is familiar with, and properly equipped to perform the geotechnical testing required by the CQA Plan.

Remediation Contractor – Charter Contracting Company, LLC. (Charter), Boston Massachusetts

Charter performed the construction portion of the Closure Activities to satisfy the requirements of the Project Documents. Additionally, Charter performed construction QC activities to document that materials being used, and activities being completed were in accordance with the project specifications and drawings. The Remediation Contractor employed the services of subcontractors, coordinated material sources, and interfaced with the Remediation Project Manager and the CQA Engineer throughout the Closure Activities. Charter subcontracted the following companies to support QC activities:

- Alpha Analytical (Alpha) of Westborough, Massachusetts was Charter's off-site analytical testing laboratory for construction materials QC testing.
- CES, Inc. (CES) of Brewer, Maine was Charter's Maine Land Surveyor and provided survey control and as-built surveys of the remedial construction.
- P.A. Lyford, Inc. (Lyford) of Hermon, Maine was Charter's landscaping subcontractor for hydroseeding and erosion control blanket installation.

- S. W. Cole of Bangor, Maine was Charter's Geotechnical Testing Laboratory and provided geotechnical soil testing on QC samples throughout construction and restoration.
- Spectrum Analytical of Washington Court House, Ohio was Charter's off-site analytical testing laboratory conducting soil testing on QC samples of topsoil.
- H.B. Fleming of South Portland, Maine was Charter's sheet pile contractor and provided sheet pile installation and removal services during construction.

Remediation Transportation and Disposal Contractor – US Ecology, Boise, Idaho

US Ecology was responsible for transporting and disposing of soils designated for offsite disposal. US Ecology was responsible for providing railcars for transportation, coordination with Pan Am Railways, Inc. for picking up railcars, tracking railcars, weighing railcars, and preparing associated paperwork.

Ground Water Treatment Plant Operator - Woodard and Curran, Portland, Maine

Woodard and Curran operated the onsite ground water treatment plant (GWTP). Contact water from the construction activities was transported to the onsite GWTP for treatment prior to discharge in accordance with Maine Pollutant Discharge Elimination System (MEPDES) Permit ME0000C39.

Onsite Agency Representative – TechLaw, Inc. North Chelmsford, Massachusetts

The Regulatory Agency Onsite Representative provided onsite oversight for the Regulatory Agency (Maine DEP) and coordinated with the CQA Engineer for confirmation sampling. TechLaw, Inc. (TechLaw) also subcontracted off-site laboratory services to the following:

- Katahdin Analytical Services of Scarborough, Maine was the Onsite Agency Representative's analytical test laboratory.

1.4 Project Documents and Communication

The requirements for the LF2 Closure Activities are described in the following Project Documents:

- The State of Maine BEP Order, effective April 3, 2014.
- *Landfill 2 Corrective Measures Implementation (CMI) Plan Revision 1* prepared by Geosyntec and issued by CDM Smith dated October 7, 2016, including;
    - *Landfill 2 Corrective Measures Implementation (CMI) Plan Revision 1, Addendum 1* prepared by Geosyntec and issued by CDM Smith dated November 21, 2016;
    - *Landfill 2 Corrective Measures Implementation (CMI) Plan Revision 1, Addendum 2* prepared by Geosyntec and issued by CDM Smith dated December 21, 2016;
    - *Landfill 2 Corrective Measures Implementation (CMI) Plan Revision 1, Addendum 3* prepared by Geosyntec and issued by CDM Smith dated April 10, 2017;

  This document and associated addenda were approved by the Maine DEP on February 2, 2017 and April 26, 2017 and are herein referred to collectively as the Landfill 2 CMI Plan.
- *Health and Safety Plan (HASP)*, Orrington Remediation Site, prepared by CDM Smith Inc. dated October 9, 2014
- *Perimeter Air-Monitoring Plan (PAMP), Orrington Remediation Site, prepared by CDM Smith Inc. dated July 22, 2015*

- *Contractor Construction Work Plans*, prepared by Charter, including:
  - *Excavation and Restoration Plan,* issued February 16, 2017;
  - *Dust Control (Air Monitoring) Plan,* issued October 24, 2016;
  - *Construction Water Management Plan,* issued July 29, 2016;
  - *Traffic Control Plan*, issued February 13, 2017;
  - *Sheet Pile Lift Plan – installation,* issued March 20, 2017;
  - *Excavation Support Design Package,* issued April 27, 2017; and
  - *Sheet Pile Lift Plan - removal,* issued August 11, 2017.
- General Guidelines for Confirmation Sampling and Split Sampling Protocols, dated August 8, 2016;
- *Construction Submittals*, prepared by Charter, and *Construction Submittal Responses*, prepared by Geosyntec; and
- *Contractor Requests for Information (RFIs),* prepared by Charter, and Responses to Contractor RFIs, prepared by Geosyntec.

The organization structure and lines of communications for the Project Team were set forth in the CQA Plan provided as an appendix in the CMI Plan. Members of the project team including CDM Smith, Charter, TechLaw, and Geosyntec held weekly construction site progress meetings to review progress updates, address questions, and convey schedule updates. As part of the CQA Engineer responsibilities, Geosyntec issued daily field reports summarizing construction progress, QC/QA activities, and highlighting matters requiring action. Daily field reports were issued to CDM Smith, and are included in **Appendix A**. A photographic log of construction activities is included as **Appendix B** Additional communications made throughout the closure activities were documented in Contractor RFIs and subsequent responses (**Appendix C**), QC submittals and subsequent responses (**Appendix D**), and Charter daily field reports. Weekly teleconferences with Maine DEP and daily toolbox meetings were held to review construction progress and disseminate communications to the project team.

Section 2.
Summary of Construction Activities

2.1 Permitting

Permitting requirements were summarized in the CMI Plan. The following is a list of permits obtained for the LF2 Closure Activities:

- Land Use Application (Shoreland Protection Act), approved by the Orrington Code Enforcement Officer on April 9, 2016;
- Natural Resources Protection Act Permit approved by Maine DEP on June 9, 2015;
- US Army Corps of Engineers Maine General Permit Pre-Construction Notification, approved by the US Army Corps of Engineers on April 14, 2016; and
- Maine Construction General Permit, approved by the Maine DEP on June 2, 2016, for construction activity greater than 1 acre.

The general construction permit required weekly Erosion and Sediment (E&S) Control inspection and reports. E&S reports are discussed in Section 4.2 below.

2.2 Scope of Activities

The activities described herein address the plans and designs set forth in the LF2 CMI Plan. These activities include excavation of soils with mercury concentrations greater than the mercury media protection standard (MPS) of 2.2 mg/kg (e.g., materials requiring off-site disposal) and restoration of LF2. Restoration activities performed in the SS revegetation area adjacent to LF2 are documented in the SS Closure Report (CDM Smith, 2017c). Remedial construction in LF2 included the following primary components in the general order in which they were executed:

- Construction of the SS Bypass;
- Pre-construction activities, site setup, establishment of railroad monitoring points, and implementation of the PAMP;
- Demarcation of the listed waste boundary;
- Installation of sheet piles for groundwater control and excavation stability;
- Excavation, transportation, and disposal of materials requiring off-site disposal;
- Surveying, re-use soil sampling, and confirmation sampling of the excavation area;
- Backfilling the excavation to the proposed restoration subgrade elevations;
- Topsoil placement to restoration grades and vegetating the area; and
- Reconstruction of the access road.

A photographic log summarizing the major construction components is provided in **Appendix B**.

Approval of the LF2 CMI Plan was received from the Maine DEP on February 2, 2017. Pre-construction activities commenced on March 7, 2017 with snow clearing and decontamination pad construction. Excavation in the LF2 area commenced on April 19, 2017 and restoration commenced on August 10,

2017. The following subsections describe the work performed for each component of construction. **Table 2-1** summarizes the construction equipment Charter used for each component of the construction.

2.2.1 Southerly Stream Bypass

Prior to commencement of excavation activities, a bypass was installed by CDM Smith to divert non-contact water flowing in the Southerly Stream. The bypass started upstream of the Landfill 2 and included the construction of an inlet bypass at the outlet of the existing gravel pit northeast of Landfill 2. A 12-inch diameter HDPE pipe was installed from the inlet structure at the gravel pit to the existing 30-inch culvert southwest of the Scrap Metal Yard. The bypass pipes and supporting infrastructure adjacent to LF2 and SMY was removed by CDM Smith after completion of restoration activities.

2.2.2 Site Preparation and Pre-Construction Activities

CDM Smith implemented and operated the perimeter air monitoring stations across the Site in accordance with the PAMP. Air monitoring stations were setup around the Site at designated locations as shown on **Figure 1-1**.

Charter imported construction materials and constructed a temporary decontamination pad per the LF2 CMI Plan. The temporary decontamination pad was established adjacent to the LF2 access road and was removed upon completion of excavation activities on July 31, 2017. The location of the decontamination pad is shown on the Site Layout figure in Appendix A of Charter's Excavation and Restoration Plan, which is provided as Submittal 001 in **Appendix D** of this Closure Report. An exclusion zone and contaminant reduction zone were established in accordance with Charter's Excavation and Restoration work plan. Charter established E&S controls including silt fence and fiber rolls. Charter's surveying subcontractor, CES, established railroad monitoring points, which were survey pins used to monitor deflections of the active rail line on a daily basis during periods of active excavation within the zone of influence of the rail line as defined in Charter's Excavation and Restoration Plan. Railroad monitoring points were installed at 25-foot intervals along the railroad lines with 2 points located adjacent to each rail. Survey pins were installed at locations outside of the steel rails on both sides for the track. Railroad monitoring was conducted in accordance with the Project Documents and Charter's Excavation and Restoration Plan.

2.2.3 Listed Waste Demarcation

Charter initially marked the listed waste boundary on LF2 with spray paint, and on April 10, 2017 Charter added grade stakes to the listed waste boundary. Charter maintained the boundary with spray paint on a routine basis throughout the duration of excavation activities. Charter installed soil berms in open excavation areas to ensure sediments within the listed waste boundary did not migrate beyond the boundary.

Temporary Soil Stockpile Area (TSSA) No. 1 was divided into two sections separated by concrete blocks. Listed waste soil from LF2 was placed in one section of the TSSA and special waste soil from LF2 was placed in the other section. Listed waste was placed at the downgradient end of the TSSA so that water draining from listed waste soils would drain directly to the sump without contacting the special waste stockpile.

2.2.4 Sheet Pile Installation

Sheet piles were installed in LF2 to facilitate deep excavation and dewatering activities. Maine DEP approved the LF2 sheet pile design on March 14, 2017. The sheet pile locations and design calculations are provided in Submittal 003 in **Appendix D** of this Closure Report. H. B. Fleming (Fleming) mobilized a 60-ton crane to LF2 on March 16, 2017, and in the following days mobilized sheet piles and pile driving

equipment for the crane. Charter constructed a crane mat to prevent crane activities from disturbing LF2 soils. On March 20, 2017 Charter excavated frozen soils to prepare for sheet pile installation, and Fleming started installing sheet piles the same day along the border of LF2-13 and LF2-8. Fleming installed sheet piles in a clockwise direction and completed installation of the sheet piles on April 13, 2017.

2.2.5 Excavation and Confirmation Sampling

Excavation of LF2 began on April 19, 2017 and was completed on July 31, 2017. Charter excavated 23,377 yd^3 of material for off-site disposal from LF2 based on a comparison of the existing conditions (pre-construction) survey and the bottom of excavation survey. The material was relocated to TSSA No. 1 between April 19, 2017 and August 16, 2017. All fill material in the former Landfill 2 boundary was excavated during the project and managed appropriately based on its characteristics.

Excavation of each cell (e.g., LF2-1, LF2-2, etc.) began in LF2-27 and progressed generally from west to east; each cell was excavated to the lateral extent and elevations specified on the drawings. Excavation near the listed waste boundary was conducted in accordance with the procedure outlined in Charter's Excavation and Restoration Plan to prevent cross-contamination between listed waste and special waste areas.

Daily surveys of the railroad monitoring points were conducted during excavation of areas within the zone of influence of the railroad as defined in Charter's Excavation and Restoration Plan. The railroad line was temporarily shut down between July 17 and July 27, 2017 to allow for excavation of areas immediately adjacent to the railroad line.

Confirmation samples were collected as described in Section 2.2.5.6. Charter performed excavation progress surveys to verify the extents and elevations of excavation. Excavation slopes were maintained by benching sidewalls in accordance with the Contractor Excavation and Restoration Plan, Site HASP, and applicable safety regulations.

2.2.5.1 Materials for Off-Site Disposal (Special Waste)

Charter excavated special waste from the cells outside the listed waste boundary. Charter transported special waste soils requiring off-site disposal to a designated area of TSSA No. 1, where it was stockpiled separately from listed waste. Special waste was loaded into railcars and transported to offsite disposal facilities by US Ecology.

2.2.5.2 Materials for Off-Site Disposal (Listed Waste)

Charter excavated listed waste from within the listed waste boundary. Charter followed the procedure outlined in the Excavation and Restoration Plan when transitioning from areas of special waste to areas of listed waste to prevent cross-contamination. Charter transported listed waste soils requiring off-site disposal to a designated area of TSSA No. 1 where it was stockpiled separately from special waste, loaded into railcars operated by US Ecology, and transported to offsite disposal facilities.

2.2.5.3 Water Line Removal

Charter excavated three test pits along the LF2 access road adjacent to cell LF2-3 beginning on March 28, 2017 to expose an inactive water line that ran from the gravel pit northeast of LF2 toward the on-site GWTP. The pipe was located south of the LF2 excavation area and intersected the LF2 excavation in cell LF2-11. Groundwater was pumped out of the test pits to the on-site GWTP, and the pipe was cut at two locations adjacent to LF2-3. A section of the pipe was removed, and ends of the pipe that remained in place were plugged with mechanical pipe plugs on March 30, 2017. The excavated soils

were used to backfill the test pits. On April 3, 2017 Charter dug two additional test pits and removed 2-3-foot sections of the same pipe for sheet piles to be installed along the excavation boundary south of LF2-3 and LF2-11. The pipe sections left in place were plugged with mechanical plugs and abandoned, and excavated soils were used as backfill. During the Landfill 2 excavation, Charter removed the remaining portion of the water line within the LF2 excavation area up to the excavation boundary on the southwest side of LF2-11; the end of the pipe southwest of the excavation boundary of LF2-11 was plugged with a mechanical plug and left in place. The removed section of pipe was cut into approximate 12-foot lengths and transported to TSSA No. 1 where it was decontaminated prior to offsite disposal.

2.2.5.4 On-site Re-use Materials

On-site re-use material (OSM) was excavated from one area in LF2 located in the western portion of LF2-26. Charter started excavation of OSM on April 25, 2017. OSM from LF2-26 was excavated in stages and transported to the concrete pad west of the Maintenance Building where it was stockpiled. Geosyntec sampled the OSM to confirm the material is acceptable for re-use. Equipment used to excavate and transport OSM was decontaminated prior to excavating and transporting the OSM. Additional details regarding OSM sampling procedures, results, and approvals are provided in Section 4 of this Report.

2.2.5.5 Stormwater Management and Dewatering

The 30-inch diameter culvert that conveyed water under the rail spur in LF2 and the rail spur itself were removed during the LF2 excavation activities. An existing 12-inch diameter culvert that conveyed water under the LF2 access road near the southwest end of the LF2 excavation area was removed and replaced with a 15-inch HDPE culvert as part of the LF2 excavation activities. The locations of the rail spur and pipes that were removed are shown on the Site Layout figure in Appendix A of Charter's Excavation and Restoration Work Plan provided as Submittal 001 in **Appendix D** of this closure report. The rail spur and the 30-inch diameter culvert will be subsequently replaced as part of the Plant Area CMI, and the replacement will be documented in the Plant Area Construction Closure Report.

Prior to the start of excavation in LF2, CDM Smith installed a temporary clay plug in the culvert inlet located at the downgradient end of LF2. Charter pumped the surface water that accumulated behind (upstream of) the clay plug to a stone dissipation pad in the SS adjacent to the SMY. Prior to pumping, CDM Smith collected a sample of the surface water and submitted it to Alpha for analysis of mercury to confirm that the mercury concentration was less than the MPS. Beginning on April 13, 2017, Charter conducted excavation dewatering. Contact water was collected in sumps and pumped to fractionation tanks then to the on-site GWTP.

Soil berms constructed around the active excavations allowed stormwater from clean areas outside the active excavation to flow towards the adjacent SS. Charter and CDM Smith used a combination of trash pumps and a 6-inch diameter trailer-mounted pump to pump stormwater accumulating in low spots outside of the active excavation areas to the SS.

2.2.5.6 Confirmation Sampling

Geosearch, Inc. of Fitchburg, Massachusetts performed pre-excavation confirmation sampling in the LF2 area using a track-mounted Geoprobe/7822DT drill rig on March 13, 2017 and March 22, 2017. Sample locations were surveyed and sample results were reviewed by Geosyntec. The results of the pre-excavation confirmation samples were incorporated into the LF2 Confirmation Sampling Plan Revision 1, Addendum 3 prior to excavation activities.

Post-excavation confirmation samples were obtained throughout the excavation, and the location of each sample was surveyed. Geosyntec reviewed the confirmation sample results and discussed the results with Charter, CDM Smith, TechLaw, and the Maine DEP. Written notification was sent by

Geosyntec to the Maine DEP to indicate that soils requiring offsite disposal had been removed based on the results of the confirmation samples, and that the results and backfilling area had been discussed with TechLaw. CDM Smith then provided notification to Charter when it was acceptable to backfill each area or group of areas. Additional details regarding confirmation sample results and approvals are provided in Section 4 of this Closure Report.

Charter was notified by Geosyntec and CDM Smith if confirmation sample results exceeded the mercury MPS. If the results exceeded the MPS, Charter performed additional excavation around the sample location as described in Section 4 of this Closure Report. Charter excavated and transported the additional material to TSSA No. 1. Additional confirmation samples were obtained by Geosyntec, results were reviewed, and approvals were issued according to the methods described above. Once excavation for an area(s) was complete, Charter's surveyor (CES) obtained as-built survey information of the lateral extent and elevations of the applicable excavation area(s).

2.2.5.7 Rail Monitoring

CES conducted surveys of the railroad monitoring points in accordance with the Excavation and Restoration Plan and provided the data to Charter. Charter forwarded the survey results to CDM Smith, and Geosyntec for review. Charter was prepared to implement corrective actions to reduce deflections if the data had shown deflections exceeded recommended values provided in the Project Documents. However, as described in the additional details regarding the results of railroad monitoring point surveys provided in Section 4 of this Closure Report, corrective actions were not required during the LF2 CMI activities.

2.2.6 Backfill

Backfill activities including material delivery, placement, and compaction occurred between May 3, 2017 and August 24, 2017. Two types of backfill material were used: OSM and imported Common Fill Type 1 (CF1). Charter began importing CF1 on March 13, 2016 for use in pre-construction activities. CF1 was directly placed as backfill or stockpiled within completed excavation areas of LF2.

Excavated OSM was stockpiled and sampled on the concrete pad west of the Maintenance Building. After review of the sampling results by CQA personnel, OSM with mercury concentrations less than the MPS was used as backfill in LF2. Additional details regarding OSM sampling procedures, results, and approvals are provided later in Section 4 of this Report.

Backfill of soil materials began upon notification by CDM Smith that the confirmation sampling results were less than the MPS for mercury and Geosyntec had notified the Maine DEP in a backfill notification email. Backfill was placed in excavation areas in 12-inch thick loose lifts, moisture conditioned if necessary, and compacted. In locations where standing water was observed on the excavation surface (e.g., due to runoff accumulation or groundwater), Charter dewatered the area prior to backfilling.

2.2.7 Sheet Pile Removal

Fleming mobilized a Link-Belt LS 108B crane and pile driving equipment for the crane to LF2 on August 15, 2017. Charter decontaminated the sheet piles after excavation and as the sheet piles were being removed. Charter placed plastic sheeting on the ground and manually decontaminated sheets using hand shovels and brushes as necessary. Fleming commenced sheet pile removal on August 16, 2017 and completed removal on August 23, 2017. Charter staged sheets on plastic in the LF2 area and placed them on low bed trailers for demobilization. The soil debris generated and plastic sheeting used during sheet pile removal were taken to TSSA No. 1 and stockpiled as listed waste, and the equipment used to decontaminate the sheet piles was decontaminated in the TSSA.

2.2.8 Revegetation and Restoration

Restoration activities included placement of topsoil, placement of seed, installation of erosion control blankets (ECBs), and placement of fiber rolls per the LF2 CMI Plan. Portions of the LF2 excavation area were within the wetland boundary of the SS. Restoration and revegetation activities performed by Charter in the SS adjacent to LF2 are described in the closure report for the SS.

Charter began placing topsoil over the LF2 area on August 23, 2017 in one continuous 12-inch thick layer. PA Lyford applied seed and tackifier to the LF2 area on September 12, 2017 and completed installation of the ECBs on September 21, 2017.

2.3 Requests for Information

During construction activities, Charter issued six RFIs for clarification regarding the Project Documents. Responses to RFIs were prepared by Geosyntec. A summary of RFIs and responses can be found listed in **Table 2-2;** copies of the RFI's are presented in **Appendix C**.

Consistent with CQA procedures for CMI construction in other areas of the Site, the responses to RFIs, were marked with either a "Yes (Y)" or "No (N)" indicating whether the response includes a modification to the approved design as presented in the CMI Plan. As shown on **Table 2-2**, none of the LF2 Responses to RFIs were marked (Y) (i.e., each of the six Responses to RFIs that were marked as (N)). For responses marked as (N), the issues were addressed in the field and additional guidance was given, if necessary, regarding the intent of the design.

Section 3.
Summary of CQA Program

3.1 Overview of CQA Program

The scope of CQA activities performed by Geosyntec during the LF2 CMI included review of quality control (QC) documents, coordination of QC / CQA sampling and testing, obtaining and testing post-excavation confirmation samples, review of confirmation sampling test results, and monitoring and documentation of the Remediation Contractor's work and associated field CQA operations to ensure that work was performed according to the CMI Plan.

3.2 Field CQA Operations

Geosyntec monitored construction activities, reviewed QC documentation provided by Charter, reviewed test results for QA samples collected by Geosyntec, and compared observations and construction progress to the requirements of the Project Documents. Geosyntec notified CDM Smith and Charter when construction practices and/or QC/CQA results were not in compliance with the Project Documents. Charter implemented appropriate corrective actions upon notification of noncompliance and their corrective actions were monitored and/or tested and documented by Geosyntec.

The main components of the field CQA operations included:

- observing construction activity and performing quality assurance inspection and testing;
- verifying that the QC testing of materials was implemented in accordance with the LF2 CQA Plan and Specifications;
- performing independent on-site inspections of the work to assess compliance with design criteria, drawings, and specifications;
- monitoring listed waste demarcation and equipment decontamination practices and procedures;
- reviewing results from railroad monitoring point surveys and comparing daily survey results to baseline monitoring;
- obtaining post-excavation confirmation samples in accordance with the Confirmation Sample Protocol and the drawings presented in the CMI Plan;
- obtaining OSM stockpile samples in accordance with the Re-use Stockpiling and Soil Sample Protocol included as part of the Soil Use Plan in the CMI Plan;
- verifying that QC and CQA tests were conducted according to the requirements of the specifications and CQA Plan presented in the CMI Plan; and
- reporting the results of inspections and corrective actions to the Maine DEP.

Weekly meetings were held on site to discuss the following:

- health and safety, construction progress and schedule;
- site management activities (E&S control, dust, noise, traffic, air monitoring, trespassing, etc.);
- project management activities (e.g., status of submittals and RFIs); and

- additional project-related topics as necessary.

As previously mentioned, daily CQA activities and construction activities were documented by Geosyntec in daily field reports, which are provided in **Appendix A**.

Section 4.
Summary of QC and CQA Activities

A description of the material pre-qualification process including QC document review, and CQA activities associated with remediation of the LF2 is provided below. Each section summarizes the scope of QC and CQA activities associated with construction work performed.

4.1 Materials Pre-Qualification and QC Submittal Review

Charter provided contractor work plans, material QC information, and as-built survey information in the form of submittals to CDM Smith and Geosyntec as required by the CMI Plan (specifically, the drawings and specifications). Geosyntec reviewed the submittals and generated corresponding submittal responses. Submittal responses marked as "Reviewed – no comments," 'Comments as noted," or "Revise and Resubmit" were issued to Charter. For submittal responses marked as "Revise and Resubmit", Charter revised the submittal according to the comments, and Geosyntec reviewed the updated submittal to verify that the materials, products, and/or methods met the requirements of the CMI Plan drawings and specifications. Submittals included QC results and source information for imported soils (CF1, topsoil, and ¾" stone, etc.), riprap material, geosynthetics, E&S controls, and restoration materials, as well as contractor work plans, and as-built surveys.

A complete list of material pre-qualification and QC submittals and corresponding responses are provided in the Submittal Register and Log in **Table 4-1**. Below is a brief description of the pre-qualification and QC submittal review process relating to specific products. Further details are provided in the submittals and corresponding submittal responses provided in **Appendix D**.

Prior to delivery, imported soils were tested in accordance with the analytical testing requirements of the Soil Use Plan and the requirements of the specifications provided in the CMI Plan. Imported soils (CF1, Drainage Sand Type 2, and Topsoil) used by Charter were from Thornton Construction's Pit 5 mine in Orrington, ME. Stockpiled OSM was also tested according to the requirements of the Soil Use Plan prior to use.

Charter, or Charter's geotechnical laboratory, S. W. Cole, collected QC samples of imported soil material and OSM either from the borrow source or as material was stockpiled on-site. The samples were sent to S. W. Cole's geotechnical laboratory for testing based on the frequencies set forth in the specifications. For each soil and riprap material, the required test, the required test frequency, the total quantity of imported material (as determined by truck count volumes (i.e., loose volume)), required number of QC test results, the number of tests performed, the actual frequency at which the test was performed, and whether or not the QC test result was passing (e.g., met the requirements of the CMI Plan specifications and drawings) are documented in **Table 4-2A**.

Product data sheets for the geosynthetics, E&S controls, and restoration materials listed above were submitted by Charter and evaluated by Geosyntec prior to material deliveries to the Site. Charter submitted product data sheet certifications for each geosynthetic material and roll-specific manufacturers' QC (MQC) test data for the geotextiles. In addition, several clarifications regarding material prequalification and QC requirements were made during this process and were recorded in the responses to RFIs for:

- RFI 001 – addressing the requirements for ¾ inch stone in the decontamination pad;
- RFI 002 – addressing the requirements for 1.5-inch stone alternate grading;
- RFI 003 – addressing the requirements for the substitution of the 12-inch CMP culvert;

- RFI 004– addressing the requirements for the construction of the full depth access road;
- RFI 005– addressing the requirements for the upgrade of the existing access road; and
- RFI 006– addressing the restoration along the railroad.

Additional details regarding the response to RFIs, including the original RFIs, are summarized in **Table 2-2** and provided in **Appendix C**. Materials and products submitted as part of the material pre-qualification and QC submittal review process met the requirements of the CMI Plan drawings and specifications and the response to RFIs identified above.

4.2 Summary of CQA Activities

Primary components of the Field Oversight Activities included CQA materials testing, confirmation sampling, and monitoring and performing independent inspections of construction activities. The following subsections provide a summary of those activities performed by Geosyntec in the field.

4.2.1 CQA Laboratory Testing

Samples of imported soil materials were obtained by on-site personnel from Geosyntec and sent to the CDM Smith Geotechnical Laboratory for CQA testing in accordance with the CQA Plan included in the CMI Plan. Geosyntec reviewed the laboratory test results and verified whether they met the requirements of the CQA Plan and Specifications included in the CMI Plan. The required CQA test, the test frequency, the total quantity of imported material (as determined by truck count volumes (i.e., loose volume)), required number of CQA test results, the number of CQA tests performed, the actual frequency at which the tests were performed, sample information, and whether the CQA test result met the requirements of the Project Documents are provided for each soil in **Table 4-2B**. The actual frequency at which the CQA tests were performed was calculated as determined by truck count volumes (i.e., loose volume). Laboratory CQA test result reports are provided in **Appendix E.**

4.2.2 Confirmation Sampling

Geosyntec monitored the excavation and relocation of soil requiring off-site disposal, inspected active excavation areas (including the bottom of each excavation area) for visual indications or beads of mercury, reviewed preliminary bottom and lateral extent of excavation surveys provided by Charter, coordinated collection of the post-excavation confirmation samples, and reviewed the results and a post confirmation sampling as-built survey provided by Charter. Post-excavation confirmation samples were collected and delivered to the on-site analytical laboratory where they were entered into the project database and prepared for analytical testing. Split samples were created at the on-site analytical laboratory and provided to the Maine DEP off-site analytical laboratory as required for samples identified ending in "-DEP", or as requested by the Maine DEP on-site representative (TechLaw), in accordance with the Confirmation Sampling Protocol incorporated as part of the CMI Plan. Results were provided to the Maine DEP regularly throughout construction activities.

The on-site analytical laboratory's two Direct Mercury Analyzers underwent maintenance on July 12, 2017 and July 13, 2017, therefore, 14 post excavation confirmation samples were sent to Alpha Analytical for analysis. Laboratory test result reports are provided in **Appendix F.**

4.2.2.1 Pre-Excavation Confirmation Sampling

Prior to excavation, sidewall confirmation samples were collected from nine locations in the Landfill 2 area on March 13, 2017 and March 22, 2017. Pre-excavation confirmation sample results are summarized in **Table 4-3A** and **Table 4-3B** and the confirmation sample laboratory reports are

provided in **Appendix F**. Additional pre-design samples were taken and used as pre-excavation confirmation samples. The data from the pre-design sampling is presented in the Landfill 2 CMI Plan.

Pre-excavation confirmation samples were tested at the on-site analytical laboratory and the results were incorporated in Revision 1.1, Addendum 3 of the LF2 CMI Plan drawings. The sample results were used to define the extents of the excavation boundary along the east side of LF2. One location (SW-LF2-01) had one or more depth intervals that exceeded the mercury MPS. To delineate the lateral extents of the excavation, additional sampling was performed at SW-LF2-01B, SW-LF2-26, SW-LF2-27, and SW-LF2-28. The lateral extents of the excavation were extended to the east where mercury concentrations were found to be less than the MPS. The depth of excavation in this area was two feet below the existing ground surface, which was below the lowest depth with a mercury exceedance at location SW-LF2-01.

4.2.2.2 Confirmation Sample Collection and Results

Geosyntec collected bottom-of-excavation confirmation samples at 100 locations and post-excavation sidewall confirmation samples at 35 locations in accordance with the CMI Plan. Of the 100 bottom-of-excavation confirmation samples taken: 7 were in special waste areas and 93 were in the listed waste area. Of the 35 post-excavation sidewall confirmation samples taken: 33 were in special waste areas and 2 were in the listed waste area. Results of the confirmation sample testing performed for post-excavation confirmation bottom and sidewall sample locations are summarized in **Table 4-3A**, **Table 4-3B,** and **4-3C**. Confirmation sample laboratory reports from the on-site analytical laboratory are provided in **Appendix F**.

4.2.2.3 Re-Sampling

For locations where confirmation samples exceeded the mercury MPS, Geosyntec and CDM Smith, identified the required extent of additional excavation, and Charter performed the additional excavation. Additional excavation along sidewalls generally consisted of extension of the excavation area by 10-15 ft laterally outward from the sample with the exceedance. Geosyntec collected additional sidewall confirmation samples at 11 locations each of which were in special waste areas where initial sidewall confirmation samples exceeded the MPS. Additional excavation in areas where bottom confirmation samples exceeded the MPS generally consisted of excavation of a 20 ft by 20 ft area centered around the sample with the exceedance to a depth of 1 foot below the depth where the sample was collected. Geosyntec collected additional bottom of excavation confirmation samples at 21 locations each of which were in listed waste area where initial bottom confirmation samples exceeded the MPS. Results and details regarding the additional excavations and confirmation samples are provided in **Table 4-3C**, corresponding laboratory reports are provided in **Appendix F,** and the locations are shown on **Figure 4-1.**

4.2.2.4 Maine DEP Notification and Backfilling

Prior to backfilling, Geosyntec issued written e-mail notifications to the Maine DEP summarizing each completed excavation area and the post-excavation confirmation samples and their results. The backfill notifications were discussed with the Maine DEP onsite representative (TechLaw) prior to being submitted. Once a backfill notification had been submitted to the Maine DEP, backfill could commence in the areas discussed in the backfill notification in accordance with the General Guidelines for Confirmation Sampling and Split Sampling Protocols, dated August 8, 2016. A list of backfill notifications showing the excavation areas and corresponding notification dates is provided in **Table 4-4**.

4.2.2.5 Onsite Re-use Materials

Soils designated as OSM based on the pre-design investigation activities were excavated to the elevations and lateral extents presented in the CMI Plan and segregated from impacted soils. The only area identified as OSM in LF2 was located in a special waste area in LF2-26. No OSM was identified in the listed waste area. Charter provided Geosyntec with as-built surveys at the top of the re-use layer and at the bottom of the re-use layer. Geosyntec reviewed survey results confirming that the lateral extent and elevations of excavation were correct and notified CDM Smith and Charter upon completing review of each survey. OSM was excavated and transported using decontaminated excavators and haul trucks. OSM was transported to the concrete slab located west of the maintenance garage. OSM was stockpiled as presented in the Soil Use Plan (included in Appendix I of the CMI Plan).

Three grab samples of equal volume (greater than or equal to 60 ml) were collected from different areas of each haul truck load that was added to each stockpile. Samples were collected after the truck was unloaded in the stockpile area, but before the soil was moved into the stockpile. Each of the grab samples from each haul truck load was aggregated into three separate composite samples for each of the stockpiles presented in the Soil Use Plan. Each of the three composite samples was homogenized and analyzed for mercury following the procedures utilized for the pre-design investigation samples. If each of the three samples contained mercury concentrations less than the MPS, the stockpile was considered acceptable to be reused. If any of the three samples contained mercury concentrations greater than the MPS, the soil would have been transported to TSSA No. 1 to be disposed of offsite as special waste since there was no re-use layer in the listed waste area.

Confirmation sample results of each composite sample that made up the OSM stockpiles were less than the mercury MPS. Re-use soil testing results for mercury are presented in **Table 4-5A.**

Soils from the OSM area were also analyzed by Alpha for VOCs, ethylbenzene, cadmium, xylene, and chloropicrin during the pre-design investigation described in the CMI Plan. The results of VOC testing are presented in **Table 4-5B**, and results of ethylbenzene, cadmium, xylene, and chloropicrin testing are presented in **Table 4-5C.** All results met the criteria for reuse.

4.2.2.6 Analysis of Rail Monitoring Data

CES conducted daily surveys of the railroad monitoring points each day that excavation occurred within the zone of influence defined in Charter's Excavation and Restoration Plan and the railroad was active. For each monitoring location, CES provided an easting, northing, and elevation (X,Y, and Z coordinate) relative to the North American Datum of 1983 (NAD83) and the North American Vertical Datum of 1988 (NAVD88). Geosyntec compared the coordinates measured for each point to two sets of baseline coordinates that were recorded by CES in March and May 2017. Two sets of baseline coordinates were collected to account for deflections due to seasonal thermal variations. On June 28 and 29, the maximum deflection measured at an individual survey point exceeded the limit value of 0.5 inches (0.042 feet) defined in the specifications. Geosyntec notified CDM Smith and Charter of the exceedances. In each case, the deflections were within 10 percent of the limit value and the maximum deflection was less than the limiting value the following day and remained so until July 13. The exceedances measured on July 13 occurred immediately before the start of the temporary shutdown of the railroad to allow for excavations in Phase 3 (adjacent to the tracks). The railroad monitoring data are provided in **Appendix G**.

4.2.2.7 As-Built Survey

The horizontal and vertical extent of excavation is presented on the LF2 Bottom of Excavation As-Built Record Drawing submittal provided in **Figure 4-1**. Geosyntec received and reviewed the bottom of excavation survey prepared and submitted by CES. The restoration and regrading details are presented

on the LF2 Final Restoration As-Built Record Drawing submittal provided in **Figure 4-5**. Final Restoration As-Built Record documentation for the area of SS adjacent to LF2 was documented in the SS Construction Closure Report.

4.2.3 CQA Field Oversight Activities

CQA field oversight activities included routine inspection of E&S controls, observation of construction activities, monitoring the demarcation of the listed waste area, monitoring material deliveries, performing field density tests (FDTs) and thickness verifications for backfill materials, attending daily and weekly construction meetings, and coordinating confirmation soil sampling. A summary of the daily CQA activities is provided in the Geosyntec daily field reports provided in **Appendix A**. A brief description of these CQA activities is provided below.

E&S controls inspections were performed weekly and after precipitation events accumulating ≥0.25 inches of rainfall. Forms completed during E&S inspections are provided in **Appendix H.** Geosyntec notified Charter when areas requiring repair or improvement of the E&S control measures were identified during Geosyntec's inspections. Charter then performed necessary corrective actions (e.g., repair/replacement of silt fences and removal of sediment buildup). Based on Geosyntec's observations, CDM Smith and Charter installed and maintained E&S controls in accordance with the requirements set forth in the CMI Plan.

On a regular basis Geosyntec monitored the demarcation of the listed waste area boundary. Geosyntec notified CDM Smith and Charter when the demarcation required remarking as identified during Geosyntec's inspections. Geosyntec inspected the LF2 area daily during construction which entailed looking at soil berms separating clean and impacted areas, observing decontamination procedures at the decon pad, and checking the construction area for cross contamination. Geosyntec notified CDM Smith and Charter when issues were identified, and Charter promptly performed countermeasures.

Geosyntec monitored the placement and compaction of imported soil materials including:

- CF1, Drainage Sand Type 2, and 1.5-inch stone for the decontamination pad;
- CF1 and OSM for general backfill;
- CF1 and Structural Fill for the reconstruction of the rail spur[2];
- Topsoil for final restoration; and
- Dense Graded Gravel (DGG) for the LF2 access road.

Geosyntec visually inspected the imported materials to minimize the use of soils containing undesirable constituents such as rubbish, oversized stones, and large organic debris. Geosyntec inspected the subgrade prior to backfill material placement. FDTs and thickness verifications were performed for each lift of DGG and CF1 material to verify compaction and thicknesses met the requirements of the Project Documents. Thickness verifications were performed by visual monitoring and/or test holes at each location where a FDT was performed, and for each lift of soil placed. **Tables 4-6A and 4-6B** summarize the number of FDT and thickness verification tests performed for CF1 and DGG, the locations of FDTs and thickness verifications for each lift of DGG and CF1 are shown on **Figure 4-2** and **Figure 4-3A** through **Figure 4-3Q**. **Table 4-6C** summarizes the number of FDT and thickness verification tests performed for OSM and the locations of FDTs and thickness verifications for each lift of OSM are shown on **Figure 4-4.** If a lift did not meet FDT requirements, it was recompacted and retested. If the FDT still did not meet the requirements the lift was moisture conditioned and/or recompacted and retested. If

[2] Reconstruction of the rail spur adjacent to LF2 will be conducted as part of the Plant Area CMI and will be documented in the Plant Area Construction Closure Report.

the lift failed a third time, then the lift was removed, and new material was placed in the subject area and recompacted before retesting.

During restoration activities, Geosyntec inspected topsoil as it was delivered and stored at the Site, monitored topsoil placement, and monitored the installation of erosion control blankets. Geosyntec confirmed the following:

- Topsoil was placed in one continuous 12-inch lift from the bottom of the slope to the top, and raked prior to hydroseeding with seed and tackifier;
- Topsoil was free of brush, litter, or deleterious material prior to mulch and erosion control blanket installation; and
- Erosion control blankets were properly stored, and deployed.

Hydroseeding was completed on September 12, 2017 and ECB was installed on September 21, 2017. Seeding, revegetation, and ECB installation of the SS wetland restoration area adjacent to LF2 was documented in the SS Construction Closure Report.

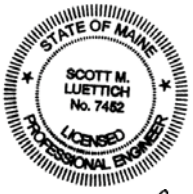
After completion of the restoration and revegetation activities described above, restoration area limits were surveyed and submitted by Charter. Geosyntec reviewed the Final Restoration As-Built Survey of LF2 shown on **Figure 4-5**, and verified that the surveyed lateral extents and final elevations met the requirements set forth in the Project Documents and the responses to the RFIs discussed above.

Section 5.
Conclusions

Geosyntec observed the construction and implementation of the LF2 CMI Plan at the Orrington Remediation Site during the period of March 7, 2017 to November 3, 2017. During that time, CQA field personnel monitored the construction of the temporary decontamination pad, installation of sheet piles, demarcation of the listed waste boundary, monitoring of railroad deflections, excavation of soils requiring off-site disposal (e.g., soils with mercury > MPS), backfilling and restoration of the LF2 area.

Geosyntec CQA personnel collected bottom and sidewall confirmation samples from the completed excavation areas to verify mercury concentrations were less than the MPS of 2.2 mg/kg. Notifications of backfill were issued to the Maine DEP upon completion of confirmation sampling. CQA personnel verified that conformance and CQA testing were performed on the construction materials at the frequencies required in the Project Documents, and that materials meeting the requirements set forth in the Project Documents were used for the remedy. CQA personnel verified that conditions or materials identified as not conforming to the Project Documents were removed, replaced, repaired and/or retested, as described in this Report.

As of November 2017, excavation, revegetation, and restoration activities described herein are complete, and the results of the CQA activities performed by Geosyntec confirm that the excavation and restoration activities as described herein for the LF2 area were performed in accordance with the Project Documents and changes approved through the RFI process.



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Section 6.
References

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CDM Smith, Inc. and Geosyntec Consultants, 2017a. Landfill 2 Corrective Measures Implementation Plan Revision 1, Addendum 3, Orrington Remediation Site, Orrington, Maine, April 10, 2017.

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Maine BEP, 2014. Mallinckrodt US LLC et al. v. Department of Environmental Protection. April 3, 2014.

Maine DEP, 2008. Compliance Order: Designation of Uncontrolled Hazardous Substance Site and Order in the Matter of United States Surgical Corporation, Mallinckrodt LLC Concerning a Chloralkali Manufacturing Facility in Orrington, Penobscot County, Maine Formerly Owned and Operated by Mallinckrodt Inc., Proceeding Under 38 M.R.S.A. § 1365, Uncontrolled Hazardous Substance Sites Law; November 24.

TABLES

Table 2-1 - List of Construction Equipment
Landfill 2
Orrington Remediation Site
Orrington, ME

	Activity				
	Site Setup, E&S Controls	Excavation and Disposal of Soils with Concentrations > MPS	Backfill	Reuse Soil Sampling and Stockpiling	Revegetation and Restoration
CDM Constructors, Inc. (CCI)					
CAT 950K Front End Loader		X			
Bobcat T590 Skid Steer			X		
Hitachi 160LC Excavator	X	X			X
Bomag BW 145D Smooth Drum Vibratory Roller			X		
Mack E7-460 Dump Truck			X		X
CAT D3K2 XL Bulldozer			X		
CAT CS563E Smooth Drum Vibratory Roller			X		
Komatsu Articulating Haul Truck			X		
CAT 335F Excavator					X
Volvo A35C Haul Truck with Tailgate			X		
Charter					
Komatsu 380 WA Front End Loader	X	X	X	X	X
Komatsu 490PC Excavator with GPS	X	X	X	X	
CAT CS563E Smooth Drum Vibratory Roller	X		X		
Volvo A35C Haul Truck with Tailgate	X	X		X	
Komatsu Articulating Haul Truck		X	X	X	
CAT 289C Skid Steer	X		X		X
Komatsu D61PX Bulldozer with GPS	X		X		X
Komatsu 228LC Excavator	X	X	X		
CAT 305.5E Mini Excavator	X	X			
CAT Articulating Haul Truck	X				
CAT 950K Front End Loader	X	X			
Sterling Water Truck WT-1		X			X
John Deere Skid Steer	X				
Takeuchi TL10 Skid Steer			X		X
Komatsu 31PX Bulldozer			X		X
Volvo ECR 58 Mini Excavator		X			
H.B. Fleming					
Link-Belt LS 108B Crane	X				
P.A. Lyford					
fiNN T170 Hydro Seeder					X
Maine Track					
John Deere 444K Front End Loader					X

Table 2-2 - Request for Information Log
Landfill 2
Orrington Remediation Site

RFI Number	Description	Date Received	Design Modification	Date Sent to CDM Smith	CMI Document Reference	Comments
001	Decon pad - 1.5 in stone substitute for 3/4 inch stone	2/23/2017	N	3/3/2017	Drawing No. 18	1.5 inch stone has been proven to work better for decontaminatino pads in other areas and requires less maintenance. The use of 1.5 inch stone in place of 3/4 inch stone is acceptable.
002	1.5 in stone alternate grading	2/23/2017	N	3/3/2017	Section 02200	The 1.5 inch stone gradation that is available during the winter months varies from the gradation specfication. The proposed gradation is acceptable.
003	Culvert Pipe Size Substitution	4/12/2017	N	4/12/2017	Drawing No. 10 and No. 13	A replacement of the 12 inch CMP culvert under the LF2 access road with a 15 inch HDPE corrugated pipe was considered acceptable.
004	Full Depth Access Road Construction	8/2/2017	N	8/7/2017	Drawing No. 15 and No. 18	Clarifications for the construction of the full depth access road.
005	Existing Access Road Upgrade	8/2/2017	N	8/7/2017	Drawing No. 6 and No. 18	Clarifications for the upgrade to the existing access road.
006	Restoration Along Railroad	8/2/2017	N	8/11/2017	Drawing No. 15	Clarifications for the restoration of areas adjacent to the railroad.

Table 4-1 - Submittal Register and Log
Landfill 2
Orrington Remediation Site
Orrington, ME

Response No.	Description of Submittal	Rev.	Referenced Section	Date Received	Date Sent to CDM Smith	Comments
001R7	Excavation and Restoration Plan	7	13020 1.04 A	15-Feb-17	16-Feb-17	
002R1	Construction Water Management Plan	1	02140 1.04 B	21-Jun-16	29-Jun-16	
003R3	Excavation Support Design Package	3	13020 1.04 A	24-Apr-17	27-Apr-17	
004	Dust control plan [Air Monitoring Plan]	0	02050 1.04	8-Aug-16	24-Oct-16	
004	Dust control products data sheets [Air Monitoring Plan]	0	02050 1.04	8-Aug-16	24-Oct-16	
005	Fiber Roll	0	02120 2.01 C	20-Nov-16	30-Nov-16	
006	Erosion Control Blanket	0	02120 2.01 B	20-Nov-16	30-Nov-16	
007	Silt Fence	0	02120 2.01 A	20-Nov-16	30-Nov-16	
008	Woven Geotextile for access roadways Product Info	0	02710 2.01	8-Dec-16	16-Dec-16	
008A	Woven Geotextile for access roadways - MQC Results	0	02710 2.01	21-Aug-17	24-Aug-17	
009	32 oz/yd2 Non-Woven Geotextile for Cushion Application - Product Info	0	02710 2.01	8-Dec-16	16-Dec-16	
009A	32 oz/yd2 Non-Woven Geotextile for Cushion Application - MQC Results	0	02710 2.01	27-Feb-17	3-Mar-17	
010	Topsoil - Analytical test results	0	02200 2.05	12-Dec-16	23-Jan-17	
011	Dense Graded Gravel- Analytical test results	0	02200 2.11	12-Dec-16	23-Jan-17	
011A	Dense Graded Gravel - Location of proposed material source	0	02200 2.11	10-Aug-17	16-Aug-17	
011A	Dense Graded Gravel - Statement that soil conforms to requirements of Soil Use Plan	0	02200 2.11	10-Aug-17	16-Aug-17	
011A	Dense Graded Gravel - Analytical test results (2nd set)	0	02200 2.11	10-Aug-17	16-Aug-17	
011A	Dense Graded Gravel - Initial Source test result	0	02200 2.11	10-Aug-17	16-Aug-17	
012	Drainage Sand Type 2 - Analytical test results	0	02200 2.04	12-Dec-16	23-Jan-17	
012AR1	Drainage Sand Type 2 - Location of proposed material source	1	02200 2.04	6-Mar-17	13-Mar-17	
012AR1	Drainage Sand Type 2 - Statement that soil conforms to requirements of Soil Use Plan	1	02200 2.04	6-Mar-17	13-Mar-17	
012AR1	Drainage Sand Type 2 - Initial Source test result	1	02200 2.04	6-Mar-17	13-Mar-17	
013	Common Fill Type 1- Analytical test results	0	02200 2.12	12-Dec-16	23-Jan-17	
013A	Common Fill Type 1 - Location of proposed material source	0	02200 2.12	6-Mar-17	13-Mar-17	
013A	Common Fill Type 1 - Statement that soil conforms to requirements of Soil Use Plan	0	02200 2.12	6-Mar-17	13-Mar-17	
013A	Common Fill Type 1- Initial Source test result	0	02200 2.12	6-Mar-17	13-Mar-17	
013B	Common Fill Type 1- QC test results	0	02200 2.02	11-May-17	11-May-17	
013C	Common Fill Type 1- QC test results	0	02200 2.02	16-May-17	19-May-17	
013D	Common Fill Type 1- QC test results	0	02200 2.02	16-May-17	19-May-17	
013E	Common Fill Type 1- QC test results	0	02200 2.02	6-Jul-17	13-Jul-17	
013F	Common Fill Type 1- QC test results	0	02200 2.02	17-Jul-17	24-Jul-17	
013G	Common Fill Type 1- QC test results	0	02200 2.02	24-Jul-17	8-Aug-17	
013H	Common Fill Type 1- QC test results	0	02200 2.02	24-Jul-17	8-Aug-17	
013I	Common Fill Type 1- QC test results	0	02200 2.02	24-Jul-17	8-Aug-17	
013J	Common Fill Type 1- QC test results	0	02200 2.02	24-Jul-17	8-Aug-17	
013K	Common Fill Type 1- QC test results	0	02200 2.02	9-Aug-17	11-Aug-17	
013L	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013M	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013N	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013O	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013P	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013Q	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013R	Common Fill Type 1- QC test results	0	2200 2.02	14-Aug-17	16-Aug-17	
013S	Common Fill Type 1- QC test results	0	2200 2.02	30-Aug-17	8-Sep-17	
013T	Common Fill Type 1- QC test results	0	2200 2.02	30-Aug-17	8-Sep-17	
013U	Common Fill Type 1- QC test results	0	2200 2.02	30-Aug-17	8-Sep-17	
014R2	Traffic Control Plan	2	01500 1.09 B	8-Feb-18	13-Feb-17	
015	Surveyor Contact Info and Qualifications	0	02100 1.04 A	30-Jan-16	31-Jan-17	
016R4	Pre-construction survey	4	02100 3.02 A	2-May-17	10-May-17	
017	Decon pad liner	0	Drawings	1-Mar-17	3-Mar-17	
018	1 1/2-in. Stone - Location of proposed material source	0	02200 2.06	9-Mar-17	20-Mar-17	
018	1 1/2-in. Stone - Statement that soil conforms to requirements of Soil Use Plan	0	02200 2.06	9-Mar-17	20-Mar-17	
018	1 1/2-in. Stone - Initial Source test result	0	02200 2.06	9-Mar-17	20-Mar-17	
019	Sheet Piling Lift Plan - installation	0	Drawings	13-Mar-17	20-Mar-17	
019A	Sheet Piling Lift Plan - removal	0	Drawings	8-Aug-17	11-Aug-17	
020R1	Deformation Monitoring	1	13020 3.08	4-Apr-17	12-Apr-17	
021	1.5-inch Culvert Pipe	0	Drawings	26-Apr-17	27-Apr-17	
022	On-Site Re-Used Material - QC test results	0	02200 2.03	1-May-17	11-May-17	
022A	On-Site Re-Used Material - QC test results	0	02200 2.03	24-Jul-17	11-Aug-17	
023	Topsoil - Location of proposed material source	0	02200 2.05	7-Aug-17	10-Aug-17	
023	Topsoil - Statement that soil conforms to requirements of Soil Use Plan	0	02200 2.05	7-Aug-17	10-Aug-17	
023	Topsoil - Analytical test results	0	02200 2.05	7-Aug-17	10-Aug-17	
023	Topsoil - Initial Source test result	0	02200 2.05	7-Aug-17	10-Aug-17	
023	Topsoil Plant Suitability Soil Analysis	0	02920 2.01	7-Aug-17	10-Aug-17	
024R1	Bottom of Excavation - including soil sample locations	1	02100 3.05	24-Oct-17	3-Nov-17	
025	Seed, Mulch, Tackifier, and Fertilizer - product data, certificate of compliance	0	02920 2.01	21-Aug-17	23-Aug-17	
026	Post-Construction topopgraphic Survey	0	02100 3.05	25-Oct-17	3-Nov-17	

Notes:

1. Summary assumes that analytical testing (per Soil Use Plan) of stone products will NOT be required.

2. Specification Section 02200 Article 2 requires a 50-lb sample of each material be provided. This requirement has been removed, and 50-lb samples are no longer required.

Table 4-2A - Soils QC Test Results Tracking
Landfill 2
Orrington Remediation Site
Orrington, ME

Test	Frequency of Testing Required	Material Amount [1] (yd^3)	Number of Tests Required[2]	Number of Tests Performed	Frequency of Testing Performed (yd^3/Test)	Sample Name	Date Collected	Date Results Received	Passing (Y/N)	Comments
Common Fill Type 1										
Grain Size	1,000 yd^3	19,267	20	20	963	0-1000CY	3/2/2017	3/6/2017	Y	Reference Appendix D
						1000-2000CY	5/4/2017	5/11/2017	Y	Reference Appendix D
						2000-3000CY	5/9/2017	5/16/2017	Y	Reference Appendix D
						3000-4000CY	5/9/2017	5/16/2017	Y	Reference Appendix D
						4000-5000CY	6/14/2017	7/6/2017	Y	Reference Appendix D
						5000-6000CY	7/10/2017	7/17/2017	Y	Reference Appendix D
						6000-7000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						7000-8000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						8000-9000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						9000-10000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						10000-11000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						11000-12000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						12000-13000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						13000-14000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						14000-15000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						15000-16000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						16000-17000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						17000-18000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						18000-19000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						19000-20000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
Moisture Content	1,000 yd^3	19,267	20	21	917	0-1000CY	3/2/2017	3/6/2017	Y	Reference Appendix D
						1000-2000CY	5/4/2017	5/11/2017	Y	Reference Appendix D
						2000-3000CY	5/9/2017	5/16/2017	Y	Reference Appendix D
						3000-4000CY	5/9/2017	5/16/2017	Y	Reference Appendix D
						4000-5000CY	6/14/2017	7/6/2017	Y	Reference Appendix D
						5000-6000CY	7/10/2017	7/17/2017	Y	Reference Appendix D
						6000-7000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						7000-8000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						8000-9000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						9000-10000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						9000-10000CYR	7/31/2017	8/9/2017	Y	An additional sample was analyzed due to field testing results. Reference Appendix D.
						10000-11000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						11000-12000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						12000-13000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						13000-14000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						14000-15000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						15000-16000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						16000-17000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						17000-18000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						18000-19000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						19000-20000CY	8/22/2017	8/30/2017	Y	Reference Appendix D

Table 4-2A - Soils QC Test Results Tracking
Landfill 2
Orrington Remediation Site
Orrington, ME

Test	Frequency of Testing Required	Material Amount [1] (yd^3)	Number of Tests Required[2]	Number of Tests Performed	Frequency of Testing Performed (yd^3/Test)	Sample Name	Date Collected	Date Results Received	Passing (Y/N)	Comments
Standard Proctor	5,000 yd^3	19,267	13	14	1376	0-1500CY	3/2/2017	3/6/2017	Y	Reference Appendix D
						1500-3000CY	5/4/2017	5/11/2017	Y	Reference Appendix D
						3000-4500CY	5/9/2017	5/16/2017	Y	Reference Appendix D
						4500-6000CY	6/14/2017	7/6/2017	Y	Reference Appendix D
						6000-7500CY	7/10/2017	7/17/2017	Y	Reference Appendix D
						7500-9000CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						9000-10500CY	7/18/2017	7/24/2017	Y	Reference Appendix D
						9000-10500CYR	7/31/2017	8/9/2017	Y	An additional sample was analyzed due to field testing results. Reference Appendix D.
						10500-12000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						12000-13500CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						13500-15000CY	8/2/2017	8/14/2017	Y	Reference Appendix D
						15000-16500CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						16500-18000CY	8/22/2017	8/30/2017	Y	Reference Appendix D
						18000-19500CY	8/22/2017	8/30/2017	Y	Reference Appendix D
Analytical Testing/ Clean Fill Certification	1/Source	19,267	1	1	N/A	Common Fill Type 1	9/12/2016	12/12/2017	Y	Reference Appendix D
Onsite Reuse										
Moisture Content	1,000 yd^3	770	1	2	385	0-1000	4/27/2017	5/1/2017	Y	Reference Appendix D
						1000-2000	7/20/2017	7/24/2017	Y	Reference Appendix D
Standard Proctor	5,000 yd^3	770	1	2	385	0-1000	4/27/2017	5/1/2017	Y	Reference Appendix D
						1000-2000	7/20/2017	7/24/2017	Y	Reference Appendix D
Drainage Sand Type 2										
Grain Size	1,000 yd^3	112	1	1	>1,000	0-1000CY	2/21/2017	2/23/2017	Y	Reference Appendix D
Analytical Testing/ Clean Fill Certification	1/Source	112	1	1	N/A	Drainage Sand Type 2	9/12/2016	12/12/2017	Y	Reference Appendix D
Topsoil										
Grain Size	1,000 yd^3	1,190	2	1	1190	0-1000CY	8/2/2017	8/7/2017	Y	The placed volume of topsoil was lower than the imported volume calculated by the source. An additional test was not required. Reference Appendix D
Organic Content	1,000 yd^3	1,190	2	1	1190	0-1000CY	8/2/2017	8/7/2017	Y	The placed volume of topsoil was lower than the imported volume calculated by the source. An additional test was not required. Reference Appendix D

Table 4-2A - Soils QC Test Results Tracking
Landfill 2
Orrington Remediation Site
Orrington, ME

Test	Frequency of Testing Required	Material Amount [1] (yd^3)	Number of Tests Required[2]	Number of Tests Performed	Frequency of Testing Performed (yd^3/Test)	Sample Name	Date Collected	Date Results Received	Passing (Y/N)	Comments
pH	1,000 yd^3	1,190	2	1	1190	0-1000CY	8/2/2017	8/7/2017	Y	The placed volume of topsoil was lower than the imported volume calculated by the source. An additional test was not required. Reference Appendix D
Analytical Testing/ Clean Fill Certification	1/Source	1,190	1	2	N/A	Topsoil	9/12/2016	12/12/2016	Y	Reference Appendix D
							6/26/2017	8/7/2017	Y	Reference Appendix D
Dense Graded Gravel										
Grain Size	1,000 yd^3	544	1	1	544	0-1000CY	8/7/2017	8/10/2017	Y	Reference Appendix D
Moisture Content	1,000 yd^3	544	1	1	544	0-1000CY	8/7/2017	8/10/2017	Y	Reference Appendix D
Standard Proctor	5,000 yd^3	544	1	1	544	0-1500CY	8/7/2017	8/10/2017	Y	Reference Appendix D
Analytical Testing/ Clean Fill Certification	1/Source	544	1	2	N/A	Dense Graded Gravel	9/12/2016	12/12/2016	Y	Reference Appendix D
1.5" Stone										
Grain Size	1,000 yd^3	540	1	1	540	0-1000CY	2/7/2017	3/9/2017	Y	Reference Appendix D

Notes:
1. For all materials, the amount presented in the Material Amount column refers to the volume of material delivered from off site sources (i.e., loose volume) and not the volume of in-place material (i.e., compacted volume), with the exception of Onsite Reuse Material, therefore volume estimates are conservative.
2. The required number of tests is based on the testing frequency provided in the project Specifications (which refers to in place volumes as calculated by survey comparison), and represents the required number of tests based on in-place volumes as determined by survey.
3. The amount of Onsite Reuse Material was calculated based on survey comparisons provided by Charter.
4. Onsite Reuse Material Sample "bench soils 0-1000 CY" test results are for material obtained outside of the limits of excavation while installing a benched slope along the excavation sidewall. Material was reused as backfill within the excavation limits.
5. NA = Not Applicable; NR = Not Required
6. Analytical samples of Onsite Reuse Material were sent to the analytical CQA laboratory by the CQA Engineer and are therefore provided in Table 4-2B.

Table 4-2B - Soils QA Test Results Tracking
Landfill 2
Orrington Remediation Site
Orrington, ME

Test	Frequency of Testing Required	Material Amount [1] (yd^3)	Number of Tests Required[2]	Number of Tests Performed	Frequency of Testing Performed (YD^3/Test)	Sample Name	Date Collected	Date Results Received	Passing (Y/N)	Comments
Common Fill Type 1										
Grain Size	10,000 yd^3	19,267	2	2	9634	0-10000CY	5/1/2017	5/12/2017	Y	Reference Appendix E
						10000-20000CY	8/2/2017	8/15/2017	Y	Reference Appendix E
Moisture Content	10,000 yd^3	19,267	2	2	9634	0-10000CY	5/1/2017	5/12/2017	Y	Reference Appendix E
						10000-20000CY	8/2/2017	8/15/2017	Y	Reference Appendix E
Standard Proctor	10,000 yd^3	19,267	2	2	9634	0-10000CY	5/1/2017	5/12/2017	Y	Reference Appendix E
						10000-20000CY	8/2/2017	8/15/2017	Y	Reference Appendix E
In-Place Density/ Moisture Content	1/10,000 ft^2/lift	66,452 ft^2/ 17 lifts	119	174	NA	--	--	--	--	Reference Table 4.6
Thickness Verification	200 ft grid/ lift	66,452 ft^2/ 17 lifts	136	174	NA	--	--	--	--	Reference Table 4.6
Onsite Reuse										
Moisture Content	10,000 yd^3	770	1	1	770	RSP-01-LF2	4/27/2017	5/11/2017	Y	Reference Appendix E
Standard Proctor	10,000 yd^3	770				RSP-01-LF2	4/27/2017	5/11/2017	Y	Reference Appendix E
In-Place Density/ Moisture Content	1/10,000 ft^2/lift	4,799 ft^2/ 3 lifts	3	7	NA	--	--	--	--	Reference Table 4.6
Thickness Verification	200 ft grid/ lift	4,799 ft^2/ 3 lifts	3	7	NA	--	--	--	--	Reference Table 4.6
Topsoil										
Organic Content	10,000 yd^3	1,350	1	1	1,350	LF2-TS-01	8/24/2017	9/1/2017	Y	Reference Appendix E
pH	10,000 yd^3	1,350	1	1	1,350	LF2-TS-01	8/24/2017	9/1/2017	Y	Reference Appendix E
Thickness Verification	200 ft grid	66,452 ft^2	8	Visual	NA	--	--	--	--	
Dense Graded Gravel										
Grain Size	10,000 yd^3	544	1	1	544	LF2-DGG-001	8/31/2017	8/14/2017	Y	Reference Appendix E
Standard Proctor	10,000 yd^3	544	1	1	544	LF2-DGG-001	8/31/2017	8/14/2017	Y	Reference Appendix E
In-Place Density/ Moisture Content	1 per 250 linear ft of access road	1,500 linear ft	6	14	NA	--	--	--	--	Reference Table 4.6
Thickness Verification	200 ft grid/ lift	14,688 ft^2/ 1 lift	8	14	NA	--	--	--	--	Reference Table 4.6
1.5" Stone										
Grain Size	10,000 yd^3	540	1	1	540	1.5"Stone-001-LF2	5/12/2017	5/16/2017	Y	Reference Appendix E

Notes:
1. For all materials, the amount presented in the Material Amount column refers to the volume of material delivered from off site sources (i.e., loose volume) and not the volume of in-place material (i.e., compacted volume), with the exception of Onsite Reuse Material, therefore volume estimates are conservative.
2. The required number of tests is based on the testing frequency provided in the project CQA Plan, and represents the required number of tests based on in-place volumes as determined by survey.
3. The amount of Onsite Reuse Material was calculated based on survey comparisons provided by Charter.
4. NA = Not Applicable; NR = Not Required

Table 4-3A - Confirmation Sample Summary Table - Original Samples in Special Waste
Landfill 2
Orrington Remediation Site
Orrington, ME

Location ID	Date Collected	Area	Waste Type	Original Ground Surface El. (ft)[2]	Start Elevation[3]	End Elevation[3]	DMA Result (mg/kg)[4]	DMA Qual[5]	Alpha Result (mg/kg)	Alpha Qual	TechLAw Result (ug/g)	TechLaw Qual	Passing (Y/N)	Comments
BS-LF2-21A	4/24/2017	LF2-27	Special Waste	66	60.4	60.4	0.3	U	--		0.13		Y	See note 8
BS-LF2-99A-DEP	4/24/2017	LF2-27	Special Waste	66.9	60.3	60.3	0.3	U	--		0.04	U	Y	See note 8
BS-LF2-22	4/25/2017	LF2-27	Special Waste	66.8	60.6	60.6	0.3	U	--		--		Y	
BS-LF2-06	4/27/2017	LF2-26	Special Waste	70.7	63.5	63.5	0.6	J	--		--		Y	
BS-LF2-98A	5/4/2017	LF2-26	Special Waste	74.2	63.5	63.5	0.3	U	--		0.185		Y	See note 8
BS-LF2-05A	7/26/2017	LF2-26	Special Waste	71.95	63.68	63.68	0.3	U	--		0.117		Y	See note 8
BS-LF2-08	7/26/2017	LF2-26	Special Waste	71.65	63.69	63.69	0.3	U	--		--		Y	
SW-LF2-26	3/13/2017	LF2-1	Special Waste	67.5	67.5	66.5	0.7	J	--		--		Y	See note 6
SW-LF2-26	3/13/2017	LF2-1	Special Waste	67.5	66.5	65.5	0.3	U	--		--		Y	See note 6
SW-LF2-01	3/13/2017	LF2-2	Special Waste	67.6	67.6	66.6	12.8		--		--		N	See notes 6 and 9
SW-LF2-01	3/13/2017	LF2-2	Special Waste	67.6	66.6	65.6	38.2		--		--		N	See notes 6 and 9
SW-LF2-01	3/13/2017	LF2-2	Special Waste	67.6	65.6	64.6	0.8	J	--		--		Y	See note 6
SW-LF2-03	3/13/2017	LF2-11	Special Waste	79.2	75.2	74.2	0.3	U	--		--		Y	See note 6
SW-LF2-03	3/13/2017	LF2-11	Special Waste	79.2	74.2	73.2	0.3	U	--		--		Y	See note 6
SW-LF2-04	3/13/2017	LF2-11	Special Waste	79.4	75.4	74.4	0.3	U	--		--		Y	See note 6
SW-LF2-05	3/13/2017	LF2-20	Special Waste	77.9	75	74	0.3	U	--		--		Y	See note 6
SW-LF2-28	3/22/2017	LF2-2A	Special Waste	67.9	67.9	66.9	0.5	U	--		--		Y	See note 6
SW-LF2-28	3/22/2017	LF2-2A	Special Waste	67.9	66.9	65.9	0.3	U	--		--		Y	See note 6
SW-LF2-27	3/22/2017	LF2-2A	Special Waste	69.3	69.3	68.3	0.4	U	--		--		Y	See note 6
SW-LF2-27	3/22/2017	LF2-2A	Special Waste	69.3	68.3	67.3	0.3	U	--		--		Y	See note 6
SW-LF2-09	4/24/2017	LF2-27	Special Waste	66.2	64.2	63.2	0.3	U	--		--		Y	
SW-LF2-10	4/24/2017	LF2-27	Special Waste	66.2	64.2	63.2	0.3	U	--		--		Y	
SW-LF2-11	4/24/2017	LF2-27	Special Waste	70.8	63.8	62.8	0.3	U	--		--		Y	
SW-LF2-12	4/24/2017	LF2-27	Special Waste	72	64	63	0.3	J	--		--		Y	
SW-LF2-13	4/24/2017	LF2-27	Special Waste	72	64	63	0.3	U	--		--		Y	
SW-LF2-14	4/24/2017	LF2-27	Special Waste	68.2	64.2	63.2	0.3	U	--		--		Y	
SW-LF2-15	4/24/2017	LF2-27	Special Waste	68.3	64.3	63.3	0.3	U	--		--		Y	
SW-LF2-08	4/25/2017	LF2-27	Special Waste	67.7	63.7	62.7	0.3	U	--		--		Y	
SW-LF2-16	4/27/2017	LF2-26	Special Waste	74.7	65	64	0.3	U	--		--		Y	
SW-LF2-19	5/4/2017	LF2-23	Special Waste	66.99	66	65	0.4	J	--		--		Y	
SW-LF2-18A	5/4/2017	LF2-23	Special Waste	70.81	66	65	0.3	U	--		0.078		Y	See note 8
SW-LF2-17	5/4/2017	LF2-23	Special Waste	66.67	66	65	12.9		--		--		N	Organic layer observed. See note 9
SW-LF2-20A	6/14/2017	LF2-23	Special Waste	67.67	65.67	65.17	2.4		--		1.63		N	See notes 8 and 9
SW-LF2-21	6/14/2017	LF2-23	Special Waste	66.99	65.49	64.99	7.6		--		--		N	See note 9
SW-LF2-22	6/14/2017	LF2-23	Special Waste	66.99	65.49	64.99	0.3	U	--		--		Y	
SW-LF2-23	6/14/2017	LF2-23	Special Waste	67.92	65.92	65.42	0.3	U	--		--		Y	
SW-LF2-24	6/14/2017	LF2-23	Special Waste	67.96	65.76	65.46	0.3	U	--		--		Y	
SW-LF2-25	6/14/2017	LF2-23	Special Waste	67.98	65.78	65.48	14.2		--		--		N	See note 9
SW-LF2-06	7/25/2017	LF2-26	Special Waste	73.47	65	64	0.3	U	--		--		Y	
SW-LF2-07	7/26/2017	LF2-26	Special Waste	71.99	65	64	0.3	U	--		--		Y	

Notes:

1. Data provided in the above table is based on the daily confirmation sample results issued from the project database.
2. "Original Ground Surface El. is not applicable to bottom samples. For sidewall samples, original ground surface represents the elevation used to calculate the "Start Elevation" and "End Elevation" sampling intervals.
3. "Start Elevation" and "End Elevation" represent bottom of excavation elevations for Post-excavation Bottom Samples (e.g., samples beginning with "BS"). For sidewall samples (e.g., samples beginning with "SW") those entries represent the Start and End elevations for which the sample was taken. Start and End elevations for sidewall samples are chosen based on the maximum Hg concentration of near-by pre-excavation confirmation samples.
4. DMA Result represents the final dry weight corrected DMA result as reported by the On-site Laboratory.
5. DMA qualifiers: U = concentration is non-detect; J =concentration estimated; refer to On-site lab reports for more details.
6. Samples were collected prior to excavation using a track-mounted Geoprobe/7822DT.
7. Samples were analyzed for mercury by Alpha Analytical.
8. Samples were split and sent to Katahdin Analytical Services for testing by TechLaw.
9. Samples containing mercury concentrations greater than the MPS were recollected after additional excavation. Results for the additional samples are given in Table 4-3B.

Table 4-3B - Confirmation Sample Summary Table - Original Samples in Listed Waste
Landfill 2
Orrington Remediation Site
Orrington, ME

Location ID	Date Collected	Area	Waste Type	Original Ground Surface El. (ft)[2]	Start Elevation[3]	End Elevation[3]	DMA Result (mg/kg)[4]	DMA Qual[5]	Alpha Result (mg/kg)	Alpha Qual	TechLAw Result (ug/g)	TechLaw Qual	Passing (Y/N)	Comments
BS-LF2-97	5/4/2017	LF2-26	Listed Waste	72.32	63.4	63.4	0.3	U	--		--		Y	
BS-LF2-23	5/18/2017	LF2-3	Listed Waste	74.45	69.47	69.47	0.3	U	--		--		Y	
BS-LF2-09	5/18/2017	LF2-3	Listed Waste	76.1	69.83	69.83	0.4	J	--		--		Y	
BS-LF2-29	5/18/2017	LF2-4	Listed Waste	76.49	68.58	68.58	0.4	J	--		--		Y	
BS-LF2-31	5/18/2017	LF2-4	Listed Waste	77.63	68.6	68.6	163.0		--		--		N	Organic layer observed Onsite Lab Result is XRF result. Sample not analyzed on the DMA
BS-LF2-01A	5/18/2017	LF2-4	Listed Waste	78.2	66.22	66.22	169.0		--		--		N	Organic layer observed Onsite Lab Result is XRF result. Sample not analyzed on the DMA
BS-LF2-32	5/18/2017	LF2-6	Listed Waste	75.39	64.87	64.87	18.0		--		--		N	Organic layer observed. See note 9
BS-LF2-30	5/22/2017	LF2-5	Listed Waste	77.31	65.28	65.28	126.0		--		--		N	Organic layer observed Onsite Lab Result is XRF result. Sample not analyzed on the DMA
BS-LF2-34	5/22/2017	LF2-5	Listed Waste	77.7	65.8	65.8	0.3	U	--		--		Y	
BS-LF2-36A	5/22/2017	LF2-5	Listed Waste	77.7	65.8	65.8	0.3	U	--		0.04	U	Y	See note 8
BS-LF2-41	5/22/2017	LF2-5	Listed Waste	75.92	65.32	65.32	25.6		--		--		N	Organic layer observed. See note 9
BS-LF2-10	5/22/2017	LF2-5	Listed Waste	74.38	65.2	65.2	1.3		--		--		Y	
BS-LF2-27	5/22/2017	LF2-2	Listed Waste	73.72	64.62	64.62	0.5	J	--		--		Y	
BS-LF2-28	5/22/2017	LF2-2	Listed Waste	74.89	64.61	64.61	8.4		--		--		N	Organic layer observed. See note 9
BS-LF2-26	5/22/2017	LF2-2	Listed Waste	75.32	64.58	64.58	0.4	J	--		--		Y	
BS-LF2-24	5/22/2017	LF2-2	Listed Waste	71.67	64.61	64.61	0.3	U	--		--		Y	
BS-LF2-94	6/6/2017	LF2-25	Listed Waste	74.12	61.26	61.26	43.9	J	--		--		N	Dark grey to black sand observed. See note 9
BS-LF2-17A	6/6/2017	LF2-25	Listed Waste	75.44	60.85	60.85	0.3	U	--		--		Y	
BS-LF2-89	6/6/2017	LF2-25	Listed Waste	74.21	61	61	2.6		--		--		N	Dark grey to black sand observed. See note 9
BS-LF2-93	6/6/2017	LF2-25	Listed Waste	73.08	61.22	61.22	0.6		--		--		Y	
BS-LF2-90	6/6/2017	LF2-22	Listed Waste	70.7	63.77	63.77	0.4	J	--		--		Y	
BS-LF2-81	6/14/2017	LF2-7	Listed Waste	66.99	62.34	62.34	2.1		--		--		Y	
BS-LF2-74A	6/14/2017	LF2-7	Listed Waste	69.01	62.81	62.81	0.3	U	--		0.1		Y	See note 8
BS-LF2-68	6/14/2017	LF2-7	Listed Waste	69.78	62.78	62.78	0.3	U	--		--		Y	
BS-LF2-25A	6/15/2017	LF2-1	Listed Waste	69.49	64.74	64.74	0.3	U	--		0.043	U	Y	See note 8
BS-LF2-65	6/15/2017	LF2-15	Listed Waste	74.67	62.66	62.66	1.5		--		--		Y	
BS-LF2-70	6/15/2017	LF2-15	Listed Waste	73.59	62.85	62.85	5.3		--		--		N	See note 9
BS-LF2-20	6/15/2017	LF2-15	Listed Waste	69.75	62.77	62.77	4.0		--		--		N	See note 9
BS-LF2-84	6/15/2017	LF2-16/17	Listed Waste	73.99	58.94	58.94	9.2		--		--		N	See note 9
BS-LF2-87	6/15/2017	LF2-16/17	Listed Waste	70.57	57.82	57.82	0.8		--		--		Y	
BS-LF2-80	6/15/2017	LF2-16/17	Listed Waste	72.62	58.1	58.1	1.7		--		--		Y	
BS-LF2-18A	6/15/2017	LF2-16/17	Listed Waste	75.48	58.24	58.24	0.8		--		0.076		Y	See note 8
BS-LF2-85	6/15/2017	LF2-16/17	Listed Waste	75.54	57.83	57.83	6.5		--		--		N	See note 9
BS-LF2-72	6/15/2017	LF2-16/17	Listed Waste	76.4	57.95	57.95	1.1		--		--		Y	
BS-LF2-73	6/15/2017	LF2-16/17	Listed Waste	73.54	57.89	57.89	1.1		--		--		Y	
BS-LF2-77	6/15/2017	LF2-16/17	Listed Waste	73.96	58.09	58.09	0.5	J	--		--		Y	
BS-LF2-35	6/22/2017	LF2-8	Listed Waste	76.53	64.5	64.5	0.4	U	--		--		Y	
BS-LF2-40	6/22/2017	LF2-8	Listed Waste	76.96	64.68	64.68	1.1		--		--		Y	
BS-LF2-38A	6/22/2017	LF2-8	Listed Waste	77.6	64.4	64.4	0.3	U	--		0.074		Y	See note 8
BS-LF2-33	6/22/2017	LF2-8	Listed Waste	77.65	64.5	64.5	0.3	U	--		--		Y	
BS-LF2-37	6/22/2017	LF2-8	Listed Waste	78.49	64.57	64.57	0.3	U	--		--		Y	
BS-LF2-42	6/22/2017	LF2-8	Listed Waste	78.42	64.63	64.63	0.3	U	--		--		Y	
BS-LF2-44	6/22/2017	LF2-8	Listed Waste	79	64.7	64.7	0.4	J	--		--		Y	
BS-LF2-02	6/22/2017	LF2-8	Listed Waste	78.9	64.59	64.59	0.3	U	--		--		Y	
BS-LF2-43A	6/22/2017	LF2-8	Listed Waste	78.24	63.9	63.9	14.5		--		10.7		N	See notes 8 and 9
BS-LF2-39	6/22/2017	LF2-8	Listed Waste	78.57	64.46	64.46	0.4	J	--		--		Y	
BS-LF2-45A	6/22/2017	LF2-8	Listed Waste	73.01	64.1	64.1	0.6		--		0.75		Y	See note 8
BS-LF2-58	6/26/2017	LF2-7	Listed Waste	69.24	62.9	62.9	0.3	U	--		--		Y	
BS-LF2-49A	6/26/2017	LF2-7	Listed Waste	70.59	62.7	62.7	0.9		--		0.745		Y	See note 8
BS-LF2-46A	6/27/2017	LF2-8	Listed Waste	78.7	64.37	64.37	0.5	J	--		0.824		Y	See note 8
BS-LF2-52	6/27/2017	LF2-8	Listed Waste	78.97	64.03	64.03	0.3	U	--		--		Y	
BS-LF2-48	6/27/2017	LF2-8	Listed Waste	79	64.61	64.61	0.3	U	--		--		Y	
BS-LF2-11	6/28/2017	LF2-14	Listed Waste	71.82	62.12	62.12	0.3	U	--		--		Y	
BS-LF2-56	6/28/2017	LF2-13	Listed Waste	72.78	60.89	60.89	0.3	U	--		--		Y	
BS-LF2-50	6/28/2017	LF2-13	Listed Waste	75.32	60.81	60.81	0.3	U	--		--		Y	
BS-LF2-51	6/28/2017	LF2-13	Listed Waste	77.8	60.96	60.96	8.4		--		--		N	See note 9
BS-LF2-54A	6/28/2017	LF2-13	Listed Waste	76.88	61.15	61.15	0.9		--		1.46		Y	See note 8
BS-LF2-62	7/10/2017	LF2-13	Listed Waste	77.98	60.89	60.89	1.0		--		--		Y	
BS-LF2-03	7/10/2017	LF2-13	Listed Waste	77.89	60.79	60.79	0.3	U	--		--		Y	
BS-LF2-55A	7/10/2017	LF2-13	Listed Waste	78.84	60.64	60.64	0.3	U	--		0.0441	U	Y	See note 8
BS-LF2-57	7/10/2017	LF2-13	Listed Waste	76.19	60.73	60.73	0.3	U	--		--		Y	
BS-LF2-63A	7/10/2017	LF2-13	Listed Waste	74.97	60.43	60.43	0.3	U	--		0.238		Y	See note 8
BS-LF2-53	7/10/2017	LF2-9	Listed Waste	78.59	67.42	67.42	8.0	J-	--		--		N	See note 9
BS-LF2-07	7/10/2017	LF2-9	Listed Waste	77.29	67.96	67.96	0.3	U	--		--		Y	
BS-LF2-47	7/10/2017	LF2-9	Listed Waste	77.16	67.96	67.96	1.4		--		--		Y	
BS-LF2-13	7/11/2017	LF2-12	Listed Waste	78.2	68.1	68.1	0.3	J	--		--		Y	
BS-LF2-59	7/11/2017	LF2-12	Listed Waste	78.94	63.32	63.32	0.3	U	--		--		Y	
BS-LF2-60A	7/12/2017	LF2-13	Listed Waste	78.9	61.1	61.1	0.5	J	0.12		0.0936		Y	See notes 7 and 8
BS-LF2-12	7/12/2017	LF2-13	Listed Waste	78.38	60.9	60.9	0.5	J	0.86		--		Y	See note 7
BS-LF2-64	7/12/2017	LF2-13	Listed Waste	78.09	61.16	61.16	0.3	U	0.03	J	--		Y	See note 7
BS-LF2-61A	7/12/2017	LF2-10	Listed Waste	77.96	70.16	70.16	0.8		0.58		0.796		Y	See notes 7 and 8
BS-LF2-100A-DEP	7/12/2017	LF2-10	Listed Waste	77.99	70.09	70.09	0.3	U	0.06	J	0.0416	U	Y	See notes 7 and 8
BS-LF2-71	7/13/2017	LF2-16/17	Listed Waste	77.8	58.1	58.1	0.3	U	0.08		--		Y	See note 7

Table 4-3B - Confirmation Sample Summary Table - Original Samples in Listed Waste
Landfill 2
Orrington Remediation Site
Orrington, ME

Location ID	Date Collected	Area	Waste Type	Original Ground Surface El. (ft)[2]	Start Elevation[3]	End Elevation[3]	DMA Result (mg/kg)[4]	DMA Qual[5]	Alpha Result (mg/kg)	Alpha Qual	TechLAw Result (ug/g)	TechLaw Qual	Passing (Y/N)	Comments
BS-LF2-04	7/13/2017	LF2-16/17	Listed Waste	77.84	57.93	57.93	0.3	U	0.16		--		Y	See note 7
BS-LF2-67	7/13/2017	LF2-16/17	Listed Waste	77.68	57.88	57.88	0.3	U	0.02	J	--		Y	See note 7
BS-LF2-69	7/13/2017	LF2-16/17	Listed Waste	77.99	58.11	58.11	1.5		1.90		--		Y	See note 7
BS-LF2-66A	7/13/2017	LF2-16/17	Listed Waste	77.1	58.16	58.16	4.6		6.60		6.01		N	See notes 7, 8, and 9
BS-LF2-75	7/13/2017	LF2-16/17	Listed Waste	77.12	58.17	58.17	19.9		0.98		--		N	See notes 7 and 9
BS-LF2-76	7/13/2017	LF2-16/17	Listed Waste	77.31	58.16	58.16	0.3	U	0.76		--		Y	See note 7
BS-LF2-19A	7/13/2017	LF2-16/17	Listed Waste	77.06	58.29	58.29	--		0.50		0.358		N	See notes 7, 8, and 9
BS-LF2-14	7/18/2017	LF2-18	Listed Waste	77.9	68.1	68.1	0.3	U	--		--		Y	
BS-LF2-79A	7/18/2017	LF2-11	Listed Waste	77.89	68	68	0.3	U	--		0.313		Y	See note 8
BS-LF2-16	7/18/2017	LF2-11	Listed Waste	77.9	70.49	70.49	0.3	U	--		--		Y	
BS-LF2-78	7/19/2017	LF2-19	Listed Waste	77.41	65.56	65.56	0.3	U	--		--		Y	
BS-LF2-86	7/19/2017	LF2-20	Listed Waste	78	62.58	62.58	0.3	U	--		--		Y	
BS-LF2-92	7/20/2017	LF2-21	Listed Waste	77.03	60.13	60.13	0.3	U	--		--		Y	
BS-LF2-88	7/20/2017	LF2-21	Listed Waste	77.03	59.14	59.14	0.3	U	--		--		Y	
BS-LF2-91A	7/20/2017	LF2-21	Listed Waste	76.17	60.07	60.07	2.1		--		1.8		Y	See note 8
BS-LF2-83	7/20/2017	LF2-21	Listed Waste	78.01	60.16	60.16	2.3		--		--		N	See note 9
BS-LF2-82	7/20/2017	LF2-21	Listed Waste	77.39	60.02	60.02	1.1		--		--		Y	
BS-LF2-15	7/20/2017	LF2-21	Listed Waste	76.58	59.75	59.75	64.0		--		--		N	Onsite Lab Result is XRF result. Sample not analyzed on the DMA . See note 9
BS-LF2-96A	7/25/2017	LF2-26	Listed Waste	76.96	63.51	63.51	0.3	U	--		0.04	U	Y	See note 8
BS-LF2-95	7/25/2017	LF2-26	Listed Waste	76.79	63.48	63.48	0.3	U	--		--		Y	
SW-LF2-02	3/13/2017	LF2-3	Listed Waste	75.5	73.5	72.5	0.3	U	--		--		Y	See note 6
SW-LF2-02	3/13/2017	LF2-3	Listed Waste	75.5	72.5	71.5	0.3	U	--		--		Y	See note 6

Notes:

1. Data provided in the above table is based on the daily confirmation sample results issued from the project database.
2. "Original Ground Surface El. is not applicable to bottom samples. For sidewall samples, original ground surface represents the elevation used to calculate the "Start Elevation" and "End Elevation" sampling intervals.
3. "Start Elevation" and "End Elevation" represent bottom of excavation elevations for Post-excavation Bottom Samples (e.g., samples beginning with "BS"). For sidewall samples (e.g., samples beginning with "SW") those entries represent the Start and End elevations for which the sample was taken. Start and End elevations for sidewall samples are chosen based on the maximum Hg concentration of near-by pre-excavation confirmation samples.
4. DMA Result represents the final dry weight corrected DMA result as reported by the On-site Laboratory.
5. DMA qualifiers: U = concentration is non-detect; J =concentration estimated; refer to On-site lab reports for more details.
6. Samples were collected prior to excavation using a track-mounted Geoprobe/7822DT.
7. Samples were analyzed for mercury by Alpha Analytical.
8. Samples were split and sent to Katahdin Analytical Services for testing by TechLaw.
9. Samples containing mercury concentrations greater than the MPS for mercury were recollected after additional excavation. Results for the additional samples are given in Table 4-3B.

Table 4-3C - Confirmation Sample Summary Table - Additional Samples
Landfill 2
Orrington Remediation Site
Orrington, ME

Location ID	Date Collected	Area	Waste Type	Original Ground Surface El. (ft)[2]	Start Elevation[3]	End Elevation[3]	DMA Result (mg/kg)[4]	DMA Qual[5]	Alpha Result (mg/kg)	Alpha Qual	TechLAw Result (ug/g)	TechLaw Qual	Passing (Y/N)	Comments
BS-LF2-31A	5/24/2017	LF2-4	Listed Waste	71.67	59.03	59.03	0.3	U	--		--		Y	Resample of BS-LF2-31.
BS-LF2-01D	5/24/2017	LF2-4	Listed Waste	78.19	64.54	64.54	0.3	U	--		0.14		Y	Resample of BS-LF1-01A. See Note 6
BS-LF2-30A	5/24/2017	LF2-5	Listed Waste	77.31	64.34	64.34	0.3	U	--		--		Y	Resample of BS-LF2-30.
BS-LF2-32A	5/25/2017	LF2-6	Listed Waste	75.38	63.6	63.6	0.3	U	--		0.052	U	Y	Resample of BS-LF2-32. See Note 6
BS-LF2-28A	5/25/2017	LF2-2	Listed Waste	74.84	63.54	63.54	0.3	U	--		--		Y	Resample of BS-LF2-28.
BS-LF2-41A	5/25/2017	LF2-5	Listed Waste	75.91	63.9	63.9	1.7		--		--		Y	Resample of BS-LF2-41.
BS-LF2-94D	6/7/2017	LF2-25	Listed Waste	74.11	59.95	59.95	0.3	U	--		0.04	U	Y	Resample of BS-LF2-94. See Note 6
BS-LF2-89A	6/7/2017	LF2-25	Listed Waste	74.22	59.82	59.82	0.3	U	--		1.57		Y	Resample of BS-LF2-89. See Note 6
BS-LF2-43D	6/26/2017	LF2-8	Listed Waste	78.25	62.58	62.58	0.3	U	--		0.092		Y	Resample of BS-LF2-43A. See Note 6
BS-LF2-85A	6/27/2017	LF2-16/17	Listed Waste	75.5	56.47	56.47	0.3	U	--		0.75		Y	Resample of BS-LF2-85. See Note 6
BS-LF2-84A	6/27/2017	LF2-16/17	Listed Waste	74.02	56.58	56.58	1.0		--		0.772		Y	Resample of BS-LF2-84. See Note 6
BS-LF2-20A	6/27/2017	LF2-15	Listed Waste	69.69	61.46	61.46	18.0		--		--		N	Resample of BS-LF2-20.
BS-LF2-70A	6/27/2017	LF2-15	Listed Waste	73.2	61.64	61.64	2.2	J	--		--		N	Resample of BS-LF2-70.
BS-LF2-20D	7/7/2017	LF2-15	Listed Waste	69.76	59.91	59.91	0.3	U	--		0.176		Y	Resample of BS-LF2-20D. See Note 6
BS-LF2-70D	7/7/2017	LF2-15	Listed Waste	59.92	46.14	46.14	0.3	U	--		0.04	U	Y	Resample of BS-LF2-70A. See Note 6
BS-LF2-51A	7/7/2017	LF2-13	Listed Waste	58.52	39.28	39.28	1.9		--		1.08		Y	Resample of BS-LF2-51. See Note 6
BS-LF2-53A	7/12/2017	LF2-9	Listed Waste	78.58	66.34	66.34	0.3	U	0.02	U	--		Y	Resample of BS-LF2-53.
BS-LF2-75A	7/19/2017	LF2-16/17	Listed Waste	77.11	56.79	56.79	0.3	U	--		--		Y	Resample of BS-LF2-75.
BS-LF2-66D	7/19/2017	LF2-16/17	Listed Waste	77.21	56.93	56.93	0.9		--		0.505		Y	Resample of BS-LF2-66A. See Note 6
BS-LF2-83A	7/24/2017	LF2-21	Listed Waste	77.96	58.89	58.89	0.3	U	--		--		Y	Resample of BS-LF2-83.
BS-LF2-15A	7/24/2017	LF2-21	Listed Waste	76.49	58.32	58.32	1.3		--		--		Y	Resample of BS-LF2-15.
SW-LF2-01A	3/13/2017	LF2-2	Special Waste	67.6	67.6	66.6	4.5		--		--		N	Step-out boring to resample SW-LF2-01.
SW-LF2-01A	3/13/2017	LF2-2	Special Waste	67.6	66.6	65.6	0.5	J	--		--		Y	Step-out boring to resample SW-LF2-01.
SW-LF2-01A	3/13/2017	LF2-2	Special Waste	67.6	65.6	64.6	0.3	U	--		--		Y	Step-out boring to resample SW-LF2-01.
SW-LF2-01A	3/13/2017	LF2-2	Special Waste	67.6	64.6	63.6	0.3	U	--		--		Y	Step-out boring to resample SW-LF2-01.
SW-LF2-01A	3/13/2017	LF2-2	Special Waste	67.6	63.6	62.6	0.4	J	--		--		Y	Step-out boring to resample SW-LF2-01.
SW-LF2-01B	3/22/2017	LF2-2	Special Waste	67.6	67.6	66.6	0.3	U	--		--		Y	Step-out boring to resample SW-LF2-01A.
SW-LF2-01B	3/22/2017	LF2-2	Special Waste	67.6	66.6	65.6	0.3	U	--		--		Y	Step-out boring to resample SW-LF2-01A.
SW-LF2-17D	5/25/2017	LF2-23	Special Waste	65.46	65	64.92	0.3	U	--		0.12		Y	Resample of SW-LF2-17. See Note 6
SW-LF2-21A	6/20/2017	LF2-23	Special Waste	68.74	65.34	65.18	0.3	U	--		--		Y	Resample of SW-LF2-21.
SW-LF2-20D	6/20/2017	LF2-23	Special Waste	67.09	65.51	65.49	0.3	U	--		0.06		Y	Resample of SW-LF2-20A. See Note 6
SW-LF2-25A	6/21/2017	LF2-23	Special Waste	67.94	65.44	64.99	0.3	U	--		0.04	U	Y	Resample of SW-LF2-25A. See Note 6

Notes:

1. Data provided in the above table is based on the daily confirmation sample results issued from the project database.
2. "Original Ground Surface El. is not applicable to bottom samples. For sidewall samples, original ground surface represents the elevation used to calculate the "Start Elevation" and "End Elevation" sampling intervals.
3. "Start Elevation" and "End Elevation" represent bottom of excavation elevations for Post-excavation Bottom Samples (e.g., samples beginning with "BS").
   For sidewall samples (e.g., samples beginning with "SW") those entries represent the Start and End elevations for which the sample was taken.
   Start and End elevations for sidewall samples are chosen based on the maximum Hg concentration of near-by pre-excavation confirmation samples.
4. Mercury Concentration represents the final dry weight corrected DMA result as reported by the On-site Laboratory unless otherwise noted.
5. DMA qualifiers: U = concentration is non-detect; J =concentration estimated; refer to On-site lab reports for more details.
6. Samples were split and sent to Katahdin Analytical Services for testing by TechLaw.
7. Samples were analyzed for mercury by Alpha Analytical.

Table 4-4 - Backfill Notification Log
Landfill 2
Orrington Remediation Site
Orrington, ME

Area	Notification Submitted	Notes
LF2-1	7/11/2017	
LF2-2	6/26/2017	
LF2-2A	8/8/2017	
LF2-3	6/26/2017	
LF2-4	6/26/2017	
LF2-5	6/26/2017	
LF2-6	6/26/2017	
LF2-7	6/29/2017	
LF2-8	6/29/2017	
LF2-9	7/18/2017	
LF2-10	7/18/2017	
LF2-11	7/19/2017	
LF2-12	7/12/2017	
LF2-13	7/7/2017 7/12/2017 7/18/2017	
LF2-14	7/5/2017	
LF2-15	7/11/2017	
LF2-16/17	6/29/2017 7/20/2017	
LF2-18	7/19/2017	
LF2-19	7/20/2017	
LF2-20	7/20/2017	
LF2-21	7/25/2017	
LF2-22	6/13/2017	
LF2-23	6/26/2017	
LF2-24	5/9/2017	
LF2-25	6/13/2017	
LF2-26	5/9/2017 7/27/2017	
LF2-27	4/25/2017 5/4/2017 7/27/2017	

Notes:

1. Backfill notifications were discussed with the Maine DEP's onsite representive prior to being submitted.
2. Backfill notifications were submitted to the Maine DEP upon receiving confirmation sample results with concentrations less than the MPS.
3. Validated confirmation sample results were obtained from the On-site Laboratory and were submitted to the Maine DEP within two weeks of of the backfill notification being sent.
4. Backfill notifications were submitted to the Maine DEP via email correspondence on the date listed above.

Table 4-5A - Reuse Stockpile Mercury Results
Landfill 2
Orrington Remediation Site
Orrington, ME

Sample ID	Date Collected	Area(s)	DMA Result (mg/kg)[2]	DMA Qualifier[3]	Passing (Y/N)
RSP-01-LF2-170425-01	4/25/2017	LF2-26	0.685	J	Y
RSP-01-LF2-170425-02	4/25/2017	LF2-26	0.291	U	Y
RSP-01-LF2-170425-03	4/25/2017	LF2-26	0.388	J	Y
RSP-02-LF2-170720-01	7/20/2017	LF2-26	0.284	U	Y
RSP-02-LF2-170720-02	7/20/2017	LF2-26	0.286	U	Y
RSP-02-LF2-170720-03	7/20/2017	LF2-26	0.285	U	Y
RSP-02A-LF2-170724-01	7/24/2017	LF2-26	0.281	U	Y
RSP-02A-LF2-170724-02	7/24/2017	LF2-26	0.282	U	Y
RSP-02A-LF2-170724-03	7/24/2017	LF2-26	0.282	U	Y
RSP-03-LF2-170725-01	7/25/2017	LF2-26	0.290	U	Y
RSP-03-LF2-170725-02	7/25/2017	LF2-26	0.292	U	Y
RSP-03-LF2-170725-03	7/25/2017	LF2-26	0.284	U	Y

Notes:

1. Data provided in the above table is based on the daily sample results issued from the project database.
2. DMA Result represents the final dry weight corrected DMA result as reported by the On-site Laboratory.
3. DMA qualifiers: U = concentration is non-detect; J =concentration estimated; refer to onsite lab reports for more details.

Table 4-5B - Reuse Stockpile VOC Results
Landfill 2
Orrington Remediation Site
Orrington, ME

Sample ID	Date Collected	Area(s)	Chemical Name	Result	Qualifier	Units
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1,1,2-Tetrachloroethane	0.3	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1,1-Trichloroethane	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1,2,2-Tetrachloroethane	0.1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1,2-Trichloroethane	0.29	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1-Dichloroethane	0.08	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1-Dichloroethene	0.25	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,1-Dichloropropene	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2,3-Trichlorobenzene	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2,3-Trichloropropane	0.16	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2,4-Trichlorobenzene	0.17	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2,4-Trimethylbenzene	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dibromo-3-chloropropane	0.38	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichlorobenzene	0.15	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichloroethane	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichloroethene	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichloroethene, cis-	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichloroethene, trans-	0.2	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,2-Dichloropropane	0.22	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3,5-Trimethylbenzene (Mesitylene)	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3-Dichlorobenzene	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3-Dichloropropane	0.14	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3-Dichloropropene	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3-Dichloropropene, cis-	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,3-Dichloropropene, trans-	0.12	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,4-Dichloro-2-butene, trans-	0.38	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	1,4-Dichlorobenzene	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	2,2-Dichloropropane	0.22	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	2-Butanone (MEK)	0.26	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	2-Chlorotoluene	0.15	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	2-Hexanone (Methyl butyl ketone)	0.64	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	4-Chlorotoluene	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Acetone	1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Acrolein	7.8	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Acrylonitrile	0.49	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Benzene	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Bromobenzene	0.2	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Bromochloromethane	0.26	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Bromodichloromethane	0.17	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Bromoform (Tribromomethane)	0.23	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Bromomethane (Methyl bromide)	0.32	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Carbon disulfide	1.1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Carbon tetrachloride (Tetrachloromethane)	0.2	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Chlorobenzene	0.33	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Chloroethane	0.3	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Chloroform	0.36	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Chloromethane	0.28	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Cymene, p- (4-Isopropyltoluene)	0.12	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Dibromochloromethane	0.15	ND	ug/kg

Table 4-5B - Reuse Stockpile VOC Results
Landfill 2
Orrington Remediation Site
Orrington, ME

Sample ID	Date Collected	Area(s)	Chemical Name	Result	Qualifier	Units
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Dibromomethane	0.16	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Dichlorodifluoromethane	0.18	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Dichloromethane (Methylene chloride)	1.1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Ethylbenzene	0.12	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Ethylene dibromide (1,2-Dibromoethane)	0.17	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.22	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Isopropylbenzene (Cumene)	0.1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	m,p-Xylene	0.19	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	0.23	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Methyl tert-butyl ether (MTBE)	0.08	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Naphthalene	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	n-Butylbenzene	0.11	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	n-Propylbenzene	0.1	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	o-Xylene	0.16	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	sec-Butylbenzene	0.12	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Styrene	0.39	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	tert-Butylbenzene	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Tetrachloroethene (PCE)	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Tetrahydrofuran	0.96	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Toluene	0.19	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Total Xylene	0.16	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Trichloroethene (TCE)	0.12	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Trichlorofluoromethane (Fluorotrichloromethane)	0.37	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Vinyl acetate	0.13	ND	ug/kg
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	Vinyl chloride	0.11	ND	ug/kg

Notes:
1. Qualifiers: ND = concentration is non-detect.

Table 4-5C - Reuse Stockpile Other COC Results
Landfill 2
Orrington Remediation Site
Orrington, ME

Sample ID	Date Collected	Area(s)	Cadmium (mg/kg)	Cadmium Qualifier	Chloropicrin (mg/kg)	Chloropicrin Qualifier	Ethylbenzene (mg/kg)	Ethylbenzene Qualalifier	Total Xylenes (mg/kg)	Total Xylenes Qual
SB-LF2-56A-150810-0-2	8/10/2015	LF2-26	0.03	ND	0.0037	ND	0.0001	ND	0.0002	ND

Notes:

1. Qualifiers: ND = concentration is non-detect.

Table 4-6A- Common Fill Type 1 Field Density Tests
Landfill 2
Orrington Remediation Site
Orrington, ME

Material Name: Common Fill Type 1 (CF1)					Specifications and Test Information:	
Test Date	Proctor Sample ID	Optimum Moisture	Maximum Dry Density	Source	Gauge Type/ID:	Troxler 3440/Serial No. 36269
					Max Lift Thickness:	12 inches
3/3/2017	LF2-CF1-001	8.8	127.2	Thornton	Minimum Compaction Percent:	95
5/4/2017	LF2-CF1-002	8.5	130.8	Thornton	Moisture Content Range:	+/-3%
5/9/2017	LF2-CF1-003	7.9	135.9	Thornton	Moisture Correction Factor:	
6/14/2017	LF2-CF1-004	9.2	131.1	Thornton		
7/10/2017	LF2-CF1-005	8.8	131.5	Thornton		
7/18/2017	LF2-CF1-006	7.4	136.5	Thornton		
7/31/2017	LF2-CF1-007	10.7	125.9	Thornton		
8/2/2017	LF2-CF1-008	8.0	134	Thornton		
8/2/2017	LF2-CF1-009	8.2	134.9	Thornton		
8/2/2017	LF2-CF1-010	7.8	135.5	Thornton		
8/22/2017	LF2-CF1-011	8.5	135.1	Thornton		
8/22/2017	LF2-CF1-012	8.8	133.7	Thornton		
8/22/2017	LF2-CF1-013	8.8	132.7	Thornton		

Date	FDT Test No.	Test Location	Probe Depth/Lift No.	Field Density Test Results			Pass	Fail	Retest	Laboratory Results			Target 95% Density
				Field Moisture Content	Dry Unit Weight	Percent Compaction				Proctor Sample ID	Opt. Moisture	Max Dry Unit Weight	
(-)	(-)	(ref grid)	(inch)/(Lift)	(%)	(lb/ft^3)	(%)					(%)	(lb/ft^3)	(lb/ft^3)
5/3/2017	CF1-001	LF2-27	6/1'	8.6	127.6	100%	x			LF2-CF1-001	8.8	127.2	120.8
5/3/2017	CF1-002	LF2-27	6/1'	7.5	127.8	100%	x			LF2-CF1-001	8.8	127.2	120.8
5/3/2017	CF1-003	LF2-27	6/2'	8.3	129.7	100%	x			LF2-CF1-001	8.8	127.2	120.8
5/3/2017	CF1-004	LF2-27	6/2'	8.9	130.8	100%	x			LF2-CF1-001	8.8	127.2	120.8
6/7/2017	CF1-005	LF2-23	6/1'	6.7	123.8	95%	x			LF2-CF1-002	8.5	130.8	124.3
6/7/2017	CF1-006	LF2-23	6/1'	6.3	126.2	96%	x			LF2-CF1-002	8.5	130.8	124.3
6/7/2017	CF1-007	LF2-23	6/2'	8.8	128.8	95%	x			LF2-CF1-003	7.9	135.9	129.1
6/7/2017	CF1-008	LF2-23	6/2'	7.1	131.7	97%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-009	LF2-24/25	6/1'	7.7	129.7	95%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-010	LF2-24/25	6/1'	6.5	130.6	96%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-011	LF2-24/25	6/2'	7.2	129.5	95%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-012	LF2-24/25	6/2'	8.0	126.7	93%		x	CF1-013	LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-013	LF2-24/25	6/2'	7.6	131.3	97%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-014	LF2-24/25	6/3'	5.7	132.3	97%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-015	LF2-24/25	6/4'	6.2	129.2	95%	x			LF2-CF1-003	7.9	135.9	129.1
6/13/2017	CF1-016	LF2-22	6/1'	6.4	130.5	96%	x			LF2-CF1-003	7.9	135.9	129.1
7/5/2017	CF1-017	LF2-16/17	6/1'	7.1	127.9	94%		x	CF1-018	LF2-CF1-003	7.9	135.9	129.1
7/5/2017	CF1-018	LF2-16/17	6/1'	6.8	128.6	95%	x			LF2-CF1-003	7.9	135.9	129.1
7/5/2017	CF1-019	LF2-16/17	6/1'	6.7	131.9	97%	x			LF2-CF1-003	7.9	135.9	129.1
7/5/2017	CF1-020	LF2-7/23	6/1'	7.1	135.8	100%	x			LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-021	LF2-16/17	6/2'	6.5	126.3	93%		x	CF1-022	LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-022	LF2-16/17	6/2'	5.6	135.7	100%	x			LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-023	LF2-16/17	6/2'	6.3	132.5	97%	x			LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-024	LF2-16/17	6/2'	5.7	129.2	95%	x			LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-025	LF2-16/17	6/3'	7.5	124.7	92%		x	CF1-026	LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-026	LF2-16/17	6/3'	6.2	132.8	98%	x			LF2-CF1-003	7.9	135.9	129.1
7/6/2017	CF1-027	LF2-16/17	6/3'	7.4	131.2	97%	x			LF2-CF1-003	7.9	135.9	129.1
7/12/2017	CF1-028	LF2-15	6/1'	6.7	135.5	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-029	LF2-15	6//1'	6.1	129.0	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-030	LF2-16/17	6/3'	5.5	134.9	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-031	LF2-16/17	6/3'	7.3	129.4	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-032	LF2-7/23	6/1'	6.7	132.2	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-033	LF2-7/23	6/2'	7.0	130.8	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-034	LF2-14	6/1'	6.5	141.7	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-035	LF2-7/23	6/2'	7.3	130.4	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/12/2017	CF1-036	LF2-14	6/2'	6.2	130.1	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-037	LF2-16/17	6/1'	8.2	131.8	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-038	LF2-16/17	6/1'	6.2	134.9	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-039	LF2-15	6/1'	7.7	128.6	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-040	LF2-15	6/1'	8.1	131.2	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-041	LF2-11	6/1'	8.6	136.0	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-042	LF2-11	6/1'	9.0	131.7	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-043	LF2-13	6/1'	8.8	129.9	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-044	LF2-13	6/1'	8.6	127.6	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-045	LF2-16/17	6/2'	9.6	125.0	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/20/2017	CF1-046	LF2-16/17	6/2'	9.2	129.1	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-047	LF2-16/17	6/3'	8.4	125.0	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-048	LF2-12/13	6/1'	7.6	126.2	96%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-049	LF2-12/13	6/1'	7.8	124.3	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-050	LF2-11/18/19	6/1'	8.1	129.7	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-051	LF2-11/18/19	6/1'	8.5	127.7	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-052	LF2-11/18/19	6/1'	8.6	130.2	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-053	LF2-9/10	6/1'	7.6	126.7	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-054	LF2-9/10	6/1'	6.4	125.0	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-055	LF2-16/17	6/3'	6.8	126.5	96%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-056	LF2-12/13	6/2'	7.8	130.1	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-057	LF2-9/10	6/2'	8.9	129.7	99%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-058	LF2-9/10	6/2'	7.5	126.9	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-059	LF2-11/18/19	6/2'	8.3	127.4	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-060	LF2-11/18/19	6/2'	6.6	119.6	91%		x	CF1-061	LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-061	LF2-11/18/19	6/2'	7.8	133.6	100%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-062	LF2-11/18/19	6/3'	6.9	124.9	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-063	LF2-11/18/19	6/3'	7.1	128.1	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/21/2017	CF1-064	LF2-11/18/19	6/3'	7.6	126.7	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-065	LF2-11/18/19	6/4'	7.7	124.5	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-066	LF2-11/18/19	6/4'	7.4	125.2	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-067	LF2-11/18/19	6/4'	8.1	128.5	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-068	LF2-11/18/19	6/5'	7.6	125.2	95%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-069	LF2-11/18/19	6/5'	7.3	125.9	96%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-070	LF2-16/17	6/4'	8.2	126.6	97%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-071	LF2-9/10	6/3'	6.5	125.4	96%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-072	LF2-16/17	6/4'	7.8	125.6	96%	x			LF2-CF1-004	9.2	131.1	124.5
7/24/2017	CF1-073	LF2-9/10	6/4'	7.2	128.6	98%	x			LF2-CF1-004	9.2	131.1	124.5
7/26/2017	CF1-074	LF2-16/17	6/5'	6.7	127.9	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-075	LF2-21/26	6/1'	7.5	127.4	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-076	LF2-21/26	6/2'	6.5	125.2	95%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-077	LF2-21/26	6/3'	7.0	127.6	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-078	LF2-21/26	6/3'	8.1	123.9	94%		x	CF1-079	LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-079	LF2-21/26	6/4'	5.9	133.0	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-080	LF2-21/26	6/4'	7.2	129.6	99%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-081	LF2-21/26	6/4'	7.8	126.3	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-082	LF2-21/26	6/5'	8.3	127.6	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-083	LF2-9/10	6/5'	6.0	132.7	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-084	LF2-21/26	6/6'	7.0	131.4	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/26/2017	CF1-085	LF2-21/26	6/6'	7.0	126.0	96%	x			LF2-CF1-005	8.8	131.5	124.9

Table 4-6A- Common Fill Type 1 Field Density Tests
Landfill 2
Orrington Remediation Site
Orrington, ME

Date	FDT Test No.	Test Location	Probe Depth/Lift No.	Field Density Test Results			Pass	Fail	Retest	Laboratory Results			Target 95% Density
				Field Moisture Content	Dry Unit Weight	Percent Compaction				Proctor Sample ID	Opt. Moisture	Max Dry Unit Weight	
(-)	(-)	(ref grid)	(inch)/(Lift)	(%)	(lb/ft^3)	(%)					(%)	(lb/ft^3)	(lb/ft^3)
7/27/2017	CF1-086	LF2-26 (SE)	6/5'	8.2	130.0	99%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-087	LF2-26 (SE)	6/5'	7.5	123.8	94%		x	CF1-088	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-088	LF2-26 (SE)	6/5'	7.1	127.0	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-089	LF2-26 (SE)	6/6'	8.3	124.9	95%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-090	LF2-26 (SE)	6/6'	8.2	124.2	94%		x	CF1-091	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-091	LF2-26 (SE)	6/6'	8.2	126.6	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-092	LF2-26 (SW)	6/1'	7.7	134.3	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-093	LF2-26 (SW)	6/1'	8.5	130.1	99%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-094	LF2-26 (SW)	6/1'	7.2	128.2	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-095	LF2-26 (SW)	6/2'	8.1	122.4	93%		x	CF1-096	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-096	LF2-26 (SW)	6/2'	6.7	126.1	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-097	LF2-26 (SW)	6/2'	7.8	122.2	93%		x	CF1-098	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-098	LF2-26 (SW)	6/2'	7.6	123.2	94%		x	CF1-099	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-099	LF2-26 (SW)	6/2'	8.5	120.6	92%		x	CF1-100	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-100	LF2-26 (SW)	6/2'	8.2	123.2	94%		x	CF1-101	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-101	LF2-26 (SW)	6/2'	8.1	121.2	92%		x	CF1-102	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-102	LF2-26 (SW)	6/2'	7.3	123.3	94%		x	CF1-103	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-103	LF2-26 (SW)	6/2'	7.9	121.6	92%		x	See note 3	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-104	LF2-16/17/18/19	6/6'	8.7	130.2	99%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-105	LF2-10/12/13	6/5'	10.6	127.6	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-106	LF2-13 (N)	6/5'	10.3	127.2	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-107	LF2-16/17/7/22/25	6/5'	6.1	124.1	94%		x	CF1-111	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-108	LF2-16/17/7	6/5'	6.8	140.1	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-109	LF2-16/17	6/5'	8.0	129.9	99%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-110	LF2-21	6/7'	5.5	127.7	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-111	LF2-16/17/7/22/25	6/5'	5.7	120.6	92%		x	CF1-113	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-112	LF2-7	6/5'	5.3	126.9	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-113	LF2-7/22/25	6/5'	7.3	127.9	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-114	LF2-10/12/13	6/5'	7.2	126.3	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-115	LF2-10/12/13	6/5'	5.5	121.4	92%		x	CF1-116	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-116	LF2-10/12/13	6/5'	5.7	125.9	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-117	LF2-26 (SW)	6/3'	5.4	124.7	95%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-118	LF2-26 (SW)	6/3'	5.9	124.4	95%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-119	LF2-26 (SW)	6/3'	8.2	134.3	100%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-120	LF2-26 (SW)	6/4'	6.2	124.3	95%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-121	LF2-26 (SW)	6/4'	7.4	128.6	98%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-122	LF2-26 (SW)	6/5'	8.4	126.8	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-123	LF2-26 (SW)	6/5'	6.1	123.0	94%		x	CF1-124	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-124	LF2-26 (SW)	6/5'	5.7	120.6	92%		x	CF1-125	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-125	LF2-26 (SW)	6/5'	6.2	118.5	90%		x	CF1-126	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-126	LF2-26 (SW)	6/5'	5.7	127.9	97%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-127	LF2-26 (SW)	6/6'	5.2	122.4	93%		x	CF1-128	LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-128	LF2-26 (SW)	6/6'	5.8	125.8	96%	x			LF2-CF1-005	8.8	131.5	124.9
7/27/2017	CF1-129	LF2-26 (SW)	6/7'	5.2	121.3	92%		x	See note 3	LF2-CF1-005	8.8	131.5	124.9
7/31/2017	CF1-130	LF2-13/16/17	6/9'	8.4	129.9	95%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-131	LF2-13/16/17	6/9'	8.7	131.8	97%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-132	LF2-21	6/8'	6.5	124.4	91%		x	CF1-133	LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-133	LF2-21	6/8'	7.4	132.7	97%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-134	LF2-27	6/1'	6.6	137.8	100%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-135	LF2-27	6/2'	5.5	134.6	99%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-136	LF2-27	6/3'	7.0	132.5	97%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-137	LF2-21	6/9'	8.0	134.5	99%	x			LF2-CF1-006	7.4	136.5	129.7
7/31/2017	CF1-138	LF2-27	6/4'	8.1	129.3	95%	x			LF2-CF1-006	7.4	136.5	129.7
8/1/2017	CF1-139	LF2-12/13/16/17	6/10'	7.0	143.1	100%	x			LF2-CF1-006	7.4	136.5	129.7
8/1/2017	CF1-140	LF2-12/13/16/17	6/10'	7.2	134.5	99%	x			LF2-CF1-006	7.4	136.5	129.7
8/1/2017	CF1-141	LF2-27	6/5'	7.1	127.7	94%		x	CF1-142	LF2-CF1-006	7.4	136.5	129.7
8/1/2017	CF1-142	LF2-27	6/5'	6.0	137.5	100%	x			LF2-CF1-006	7.4	136.5	129.7
8/1/2017	CF1-143	LF2-20/21	6/10'	8.4	128.9	98%	x			LF2-CF1-005	8.8	131.5	124.9
8/1/2017	CF1-144	LF2-12/13/16/17	6/10'	6.1	126.3	96%	x			LF2-CF1-005	8.8	131.5	124.9
8/2/2017	CF1-145	LF2-7/9/10/13/14/15/16/17/21	6/11'	6.3'	130.0	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-146	LF2-7/9/10/13/14/15/16/17/21	6/11'	6.3'	135.9	100%	x			LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-147	LF2-7/9/10/13/14/15/16/17/21	6/12'	6.8'	134.4	100%	x			LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-148	LF2-7/9/10/13/14/15/16/17/21	6/12'	6.0'	125.7	93%		x	CF1-149	LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-149	LF2-7/9/10/13/14/15/16/17/21	6/12'	6.3'	130.6	97%	x			LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-150	LF2-7/9/10/13/14/15/16/17/21	6/13	9.7	126.8	94%		x	CF1-151	LF2-CF1-009	8.2	134.9	128.2
8/2/2017	CF1-151	LF2-7/9/10/13/14/15/16/17/21	6/13	8.6	129.4	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-152	LF2-7/9/10/13/14/15/16/17/21	6/14	6.9	130.9	97%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-153	LF2-7/9/10/13/14/15/16/17/21	6/14	8.3	126.0	93%		x	CF1-154	LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-154	LF2-7/9/10/13/14/15/16/17/21	6/14	5.6	129.5	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-155	LF2-7/9/10/13/14/15/16/17/21	6/15	6.3	129.7	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-156	LF2-7/9/10/13/14/15/16/17/21	6/15	6.3	129.9	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-157	LF2-7/9/10/13/14/15/16/17/21	6/16	6.0	129.3	96%	x			LF2-CF1-009	8.2	134.9	128.2
8/3/2017	CF1-158	LF2-7/9/10/13/14/15/16/17/21	6/16	7.9	132.7	98%	x			LF2-CF1-009	8.2	134.9	128.2
8/8/2017	CF1-159	LF2-1	6/1	7.4	127.4	95%	x			LF2-CF1-008	8.0	134.0	127.3
8/8/2017	CF1-160	LF2-1	6/1	7.2	128.0	96%	x			LF2-CF1-008	8.0	134.0	127.3
8/8/2017	CF1-161	LF2-10 (subbase for road)	6/17	9.0	131.9	98%	x			LF2-CF1-008	8.0	134.0	127.3
8/8/2017	CF1-162	LF2-19 (subbase for road)	6/17	10.4	126.7	95%	x			LF2-CF1-008	8.0	134.0	127.3
8/17/2017	CF1-163	LF2-2, 5, 6	6/1	7.7	122.6	90%		x	CF1-166	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-164	LF2-8	6/1	7.5	123.9	91%		x	CF1-168	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-165	LF2-4	6/1	10.9	118.2	87%		x	CF1-170	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-166	LF2-2, 5, 6	6/1	8.8	128.2	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-167	LF2-2, 5, 6	6/1	7.8	129.4	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-168	LF2-8 (south)	6/1	8.1	129.5	96%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-169	LF2-8 (north), 5, 6	6/1	8.9	128.4	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-170	LF2-4	6/1	8.9	127.6	94%		x	CF1-171	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-171	LF2-4	6/1	8.2	131.2	97%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-172	LF2-2, 5, & 8 (south) & LF2-4	6/2	7.6	125.9	93%		x	CF1-173	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-173	LF2-2, 5, & 8 (south) & LF2-4	6/2	6.9	126.9	94%		x	CF1-174	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-174	LF2-2, 5, & 8 (south) & LF2-4	6/2	7.0	125.8	93%		x	CF1-175	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-175	LF2-2, 5, & 8 (south) & LF2-4	6/2	7.9	134.3	99%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-176	LF2-2, 5, & 8 (south) & LF2-4	6/2	6.6	129.1	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-177	LF2-2, 5, & 8 (south) & LF2-4	6/3	7.2	125.8	93%		x	CF1-178	LF2-CF1-010	7.8	135.5	128.7
8/17/2017	CF1-178	LF2-2, 5, & 8 (south) & LF2-4	6/3	8.2	129.5	96%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-179	LF2-2, 5, & 8 (south) & LF2-4	6/4	8.1	131.3	97%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-180	LF2-2, 5, & 8 (south) & LF2-4	6/4	7.4	131.2	97%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-181	LF2-2, 5, & 8 (south) & LF2-4	6/5	8.6	128.1	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-182	LF2-2, 5, & 8 (south) & LF2-4	6/5	8.7	130.4	96%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-183	LF2-5 & 8 (north)	6/2	7.5	127	94%		x	CF1-184	LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-184	LF2-5 & 8 (north)	6/2	9.6	126.4	93%		x	CF1-185	LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-185	LF2-6 & 2 (north)	6/2	8.1	120.2	89%		x	CF1-186	LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-186	LF2-5 & 8 (north)	6/2	8.2	125.6	93%		x	CF1-187	LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-187	LF2-5 & 8 (north)	6/2	8.9	132.5	98%	x			LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-188	LF2-6 & 2 (north)	6/2	8.9	128.4	95%	x			LF2-CF1-010	7.8	135.5	128.7

Table 4-6A- Common Fill Type 1 Field Density Tests
Landfill 2
Orrington Remediation Site
Orrington, ME

Date	FDT Test No.	Test Location	Probe Depth/Lift No.	Field Density Test Results			Pass	Fail	Retest	Laboratory Results			Target 95% Density
				Field Moisture Content	Dry Unit Weight	Percent Compaction				Proctor Sample ID	Opt. Moisture	Max Dry Unit Weight	
(-)	(-)	(ref grid)	(inch)/(Lift)	(%)	(lb/ft^3)	(%)					(%)	(lb/ft^3)	(lb/ft^3)
8/21/2017	CF1-189	LF2-2, 5, 6, & 8 (north)	6/3	7.7	127.1	94%		x	CF1-190	LF2-CF1-010	7.8	135.5	128.7
8/21/2017	CF1-190	LF2-2, 5, 6, & 8 (north)	6/3	9.6	129	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/22/2017	CF1-191	LF2-5 & 8 (north)	6/4	8.4	126.2	93%		x	CF1-192	LF2-CF1-010	7.8	135.5	128.7
8/22/2017	CF1-192	LF2-5 & 8 (north)	6/4	8.7	130.4	96%	x			LF2-CF1-010	7.8	135.5	128.7
8/22/2017	CF1-193	LF2-6 & 2 (north)	6/4	8.3	127.9	94%		x	CF1-194	LF2-CF1-010	7.8	135.5	128.7
8/22/2017	CF1-194	LF2-6 & 2 (north)	6/4	8.5	128.7	95%	x			LF2-CF1-010	7.8	135.5	128.7
8/23/2017	CF1-195	LF2-8 (south) & LF2-4	6/6	6.9	131.4	97%	x			LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-196	LF2-11 (east) & LF2-3	6/1	7.6	125.7	93%		x	CF1-197	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-197	LF2-11 (east) & LF2-3	6/1	7.8	129.9	96%	x			LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-198	LF2-11 (east) & LF2-3	6/2	6.6	120.9	89%		x	CF1-199	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-199	LF2-11 (east) & LF2-3	6/2	6.6	125.7	93%		x	CF1-200	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-200	LF2-11 (east) & LF2-3	6/2	6.7	126.1	93%		x	CF1-201	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-201	LF2-11 (east) & LF2-3	6/2	7	125.6	93%		x	CF1-202	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-202	LF2-11 (east) & LF2-3	6/2	6.9	126.9	94%		x	CF1-203	LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-203	LF2-11 (east) & LF2-3	6/2	6.3	132.4	98%	x			LF2-CF1-011	8.5	135.1	128.3
8/23/2017	CF1-204	LF2-11 (east) & LF2-3	6/3	5.9	134.9	100%	x			LF2-CF1-011	8.5	135.1	128.3
8/24/2017	CF1-205	LF2-11 (east) & LF2-3	6/4	7.4	128.5	95%	x			LF2-CF1-011	8.5	135.1	128.3
8/24/2017	CF1-206	LF2-11 (east) & LF2-3	6/4	7.3	130.1	96%	x			LF2-CF1-011	8.5	135.1	128.3

Notes:

1. Retest indicates the previous test failed compaction. Retests corresponding to a failed density test are listed in order below the first failed test until a "Pass" result is obtained.
2. For locations where compaction does not meet specification (e.g., Failed locations), material was recompacted using vibratory smooth drum roller.
3. Due to low compaction results in LF2-26, Charter collected a new proctor (LF2-CF1-007). See DFR dated July 27, 2017. Previously failing tests on 7/27/17 passed based on the results of the new proctor and are included in Figure 4-3.

Table 4-6B- Dense Graded Gravel Field Density Tests
Landfill 2
Orrington Remediation Site
Orrington, ME

Material Name: Dense Graded Gravel (DGG)					Specifications and Test Information:	
Test Date	Proctor Sample ID	Optimum Moisture	Maximum Dry Density	Source	Gauge Type/ID:	Troxler 3440 / Serial No. 36269
					Max Lift Thickness:	12 inches
8/7/2017	DGG-001	7.5	119.6	Thornton	Minimum Compaction Percent:	95
9/5/2017	DGG-002	9.3	129.5	Thornton	Moisture Content Range:	+/-3%
					Moisture Correction Factor:	

Date	FDT Test No.	Test Location	Probe Depth/Lift No.	Field Density Test Results			Pass	Fail	Retest	Laboratory Results			
				Field Moisture Content	Dry Unit Weight	Percent Compaction				Proctor Sample ID	Opt. Moisture	Max Dry Unit Weight	Target 95% Density
(-)	(-)	(ref grid)	(inch)/(Lift)	(%)	(lb/ft^3)	(%)					(%)	(lb/ft^3)	(lb/ft^3)
9/5/2017	DGG-001	LF2 access road (SMY)	2/1	3.6	123.7	96%	X			DGG-002	9.3	129.5	123.0
9/5/2017	DGG-002	LF2 access road (SMY)	2/1	3	123.9	96%	X			DGG-002	9.3	129.5	123.0
9/5/2017	DGG-003	LF2 access road (SMY)	2/1	4.4	124.6	96%	X			DGG-002	9.3	129.5	123.0
9/7/2017	DGG-004	LF2 access road (SMY)	6/1	4.4	124.1	100%	X			DGG-002	9.3	129.5	123.0
9/7/2017	DGG-005	LF2 access road (SMY)	4/1	7.2	133.3	100%	X			DGG-002	9.3	129.5	123.0
9/7/2017	DGG-006	LF2 access road (SMY)	4/1	8.5	130.3	100%	X			DGG-002	9.3	129.5	123.0
9/7/2017	DGG-007	LF2 access road (SMY)	4/1	8.6	129.1	100%	X			DGG-002	9.3	129.5	123.0
9/12/2017	DGG-008	LF2 access road (LF2-3)	6/1	3.5	127.3	100%	X			DGG-002	9.3	129.5	123.0
9/12/2017	DGG-009	LF2 access road (LF2-3)	6/1	3.9	125.7	100%	X			DGG-002	9.3	129.5	123.0
9/18/2017	DGG-010	LF2 access road (LF2-26)	6/1	3.3	128.0	100%	X			DGG-002	9.3	129.5	123.0
9/18/2017	DGG-011	LF2 access road (LF2-26)	6/1	3.4	127.5	100%	X			DGG-002	9.3	129.5	123.0
9/18/2017	DGG-012	LF2 access road (LF2-27)	6/1	3.0	130.3	100%	X			DGG-002	9.3	129.5	123.0
10/27/2017	DGG-013	LF2 access road (LF2-20)	6/1	6.9	133.9	100%	X			DGG-002	9.3	129.5	123.0
10/27/2017	DGG-014	LF2 access road (LF2-11)	6/1	7.7	133.0	100%	X			DGG-002	9.3	129.5	123.0

Notes:
1. Proctor DGG-002 is a QA sample.
2. The lift of DGG was 6 to 12 inches.
3. DGG-001 through 003 were 2 inch tests taken along the access road south of Scrap Metal Yard. DGG-005 through 007 were 4 inch retests in the same locations of DGG-001 through 003. Tests were not 6 inch tests due to the compaction of the 6 inch lift in these locations.
4. The moisture content was out of range for many of the tests performed due to dry conditions at the source and on site. Areas were considered to be acceptably compacted based on the percent compaction.

Table 4-6C - On-Site Reuse Material Field Density Tests
Landfill 2
Orrington Remediation Site
Orrington, ME

Material Name: On-Site Reused Material (OSM)					Specifications and Test Information:	
Test Date	Proctor Sample ID	Optimum Moisture	Maximum Dry Density	Source	Gauge Type/ID:	Troxler 3440/Serial No. 36269
					Max Lift Thickness:	12 inches
4/27/2017	OSM-001	8	131.5	On-site LF2-26	Minimum Compaction Percent:	95
7/20/2017	OSM-002	8.5	133.1	On-site LF2-26	Moisture Content Range:	+/- 3%
					Moisture Correction Factor:	

Date	FDT Test No.	Test Location	Probe Depth/Lift No.	Field Density Test Results			Pass	Fail	Retest	Laboratory Results			
				Field Moisture Content	Dry Unit Weight	Percent Compaction				Proctor Sample ID	Opt. Moisture	Max Dry Unit Weight	Target 95% Density
(-)	(-)	(ref grid)	(inch)/(Lift)	(%)	(lb/ft^3)	(%)					(%)	(lb/ft^3)	(lb/ft^3)
7/25/2017	OSM-001	LF2-21	6/1'	9.5	127.3	96%	x			OSM-002	8.5	133.1	126.4
7/25/2017	OSM-002	LF2-21	6/1'	9.6	131.3	99%	x			OSM-002	8.5	133.1	126.4
7/26/2017	OSM-003	LF2-11/18/19	6.6'	12.8	122	92%		x	OSM-005	OSM-002	8.5	133.1	126.4
7/26/2017	OSM-004	LF2-11/18/19	6/6'	11.3	124.6	94%	x			OSM-002	8.5	133.1	126.4
7/26/2017	OSM-005	LF2-11/18/19	6/6'	11.5	125.9	95%	x			OSM-002	8.5	133.1	126.4
7/26/2017	OSM-006	LF2-11/18/19	6/6'	11.3	125.4	94%	x			OSM-002	8.5	133.1	126.4
7/26/2017	OSM-007	LF2-11/18/19	6/6'	10.9	127.4	96%	x			OSM-002	8.5	133.1	126.4
7/26/2017	OSM-008	LF2-12/13	6/3'	11.2	122.5	92%		x	OSM-009	OSM-002	8.5	133.1	126.4
7/26/2017	OSM-009	LF2-12/13	6/3'	10.9	125.2	94%	x			OSM-002	8.5	133.1	126.4

Notes:
1. Retest indicates the previous test failed compaction. Retests corresponding to a failed density test are listed in order below the first failed test until a "Pass" result is obtained.
2. For locations where compaction does not meet specification (e.g., Failed locations), material was recompacted using vibratory smooth drum roller.

FIGURES

LEGEND

- PROPERTY LINE
- EXISTING GROUND ELEVATION (FT)
- FENCE LINE
- ROADWAY
- RAILROAD
- SOUTHERLY STREAM CULVERT
- SOUTHERLY STREAM / NORTHERN DITCH

0 150' 300'
SCALE IN FEET

NOTES:
1. THE EXISTING TOPOGRAPHY AND SITE FEATURES SHOWN ARE AS OF JUNE 22, 2017.

SITE PLAN		
ORRINGTON REMEDIATION SITE ORRINGTON, MAINE		
CDM Smith	Geosyntec consultants	Figure: 1-1
Acton, MA	NOVEMBER 2017	

HORIZONTAL DATUM:

MAINE STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 DATUM.

VERTICAL DATUM:

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

NOTES:

1) MONITORING WELLS AND SIDEWALL SAMPLE LOCATIONS LOCATED BY FIELD SURVEY ON MARCH 9, 2017.

2) CONTROL POINTS AND UTILITY POLES LOCATED BY FIELD SURVEY ON MARCH 28, 2017.

3) FIELD SURVEY FOR PARTIAL CELL 27 COMPLETED ON APRIL 25, 2017.

4) FIELD SURVEY FOR PARTIAL CELL 27 AND PARTIAL CELL 26 COMPLETED ON MAY 2, 2017.

5) FIELD SURVEY FOR CELL 24 AND PARTIAL CELLS 23 AND 26 COMPLETED ON MAY 8, 2017.

6) FIELD SURVEY FOR CELLS 2,3,4,5,6 AND PARTIAL CELL 11 COMPLETED ON MAY 18, 2017.

7) FIELD SURVEY FOR CELLS 22 AND 25 COMPLETED ON JUNE 6, 2017.

8) FIELD SURVEY FOR CELL 25 REDIG COMPLETED ON JUNE 8, 2017.

9) FIELD SURVEY FOR CELLS 1,7,15 AND PARTIAL CELLS 2,16,17 AND 23 COMPLETED ON JUNE 15, 2017.

10) FIELD SURVEY FOR CELL 8 COMPLETED ON JUNE 27, 2017.

11) FIELD SURVEY FOR CELL 14 COMPLETED ON JUNE 30, 2017.

12) FIELD SURVEY FOR CELLS 9,10,12,13,16 / 17 & PARTIAL 18 COMPLETED ON JULY 14, 2017.

13) FIELD SURVEY FOR CELLS 11 AND PARTIAL 18 COMPLETED ON JULY 18, 2017.

14) FIELD SURVEY FOR CELLS 19 AND 20 COMPLETED ON JULY 20, 2017.

15) FIELD SURVEY FOR CELL 21 COMPLETED ON JULY 21, 2017.

16) FIELD SURVEY FOR PARTIAL CELL 26 COMPLETED ON JULY 26, 2017.

17) FIELD SURVEY FOR PARTIAL CELL 27 COMPLETED ON JULY 27, 2017.

CUT VOLUME SUMMARY

Name	2d Area	Cut
1 CELL	801.88 Sq. Ft.	99.63 Cu. Yd.
5 CELL	1574.82 Sq. Ft.	663.94 Cu. Yd.
9 CELL	787.74 Sq. Ft.	290.84 Cu. Yd.
13 CELL	4296.70 Sq. Ft.	2584.88 Cu. Yd.
18 CELL	754.94 Sq. Ft.	270.71 Cu. Yd.
22 & 25 CELLS	2021.11 Sq. Ft.	896.69 Cu. Yd.
27 CELL	2084.40 Sq. Ft.	436.36 Cu. Yd.
2 CELL	3212.22 Sq. Ft.	943.98 Cu. Yd.
6 CELL	361.89 Sq. Ft.	137.06 Cu. Yd.
10 CELL	773.59 Sq. Ft.	239.09 Cu. Yd.
14 CELL	504.21 Sq. Ft.	175.60 Cu. Yd.
19 CELL	470.72 Sq. Ft.	227.33 Cu. Yd.
23 CELL	8241.00 Sq. Ft.	823.17 Cu. Yd.
3 CELL	1485.90 Sq. Ft.	280.31 Cu. Yd.
7 CELL	3202.08 Sq. Ft.	736.40 Cu. Yd.
11 CELL	5282.97 Sq. Ft.	1386.83 Cu. Yd.
15 CELL	874.56 Sq. Ft.	433.81 Cu. Yd.
20 CELL	773.03 Sq. Ft.	313.01 Cu. Yd.
24 CELL	260.22 Sq. Ft.	30.15 Cu. Yd.
4 CELL	997.00 Sq. Ft.	376.70 Cu. Yd.
8 CELL	5413.01 Sq. Ft.	2571.23 Cu. Yd.
12 CELL	741.87 Sq. Ft.	307.89 Cu. Yd.
16 & 17 CELLS	5548.87 Sq. Ft.	3630.23 Cu. Yd.
21 CELL	2850.26 Sq. Ft.	1786.87 Cu. Yd.
26 CELL	11441.60 Sq. Ft.	3577.54 Cu. Yd.
2A CELL	1695.30 Sq. Ft.	156.55 Cu. Yd.
Totals	66451.88 Sq. Ft.	23376.80 Cu. Yd.

LEGEND:

- EDGE OF GRAVEL
- CHAIN LINK FENCE
- LISTED WASTE BOUNDARY
- LIMITS OF ADDITIONAL EXCAVATION (REDIGS)
- TREELINE
- RIP RAP

BOTTOM OF EXCAVATION AS-BUILT SURVEY

ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

CDM Smith | Geosyntec consultants | Figure: 4-1

Acton, MA | DECEMBER 2017

BOTTOM OF EXCAVATION AND CONFIRMATION SAMPLE AS-BUILT SURVEY OF LANDFILL 2 AT ORRINGTON REMEDIATION SITE

PREPARED FOR

CHARTER

ORRINGTON, PENOBSCOT COUNTY, MAINE

GRAPHIC SCALE

25 0 12.5 25 50 100

(IN FEET)
1 inch = 25 ft.

CES INC
Engineers • Environmental Scientists • Surveyors

PROJECT TITLE: CHARTER ORRINGTON REMEDIATION SITE, ORRINGTON, MAINE

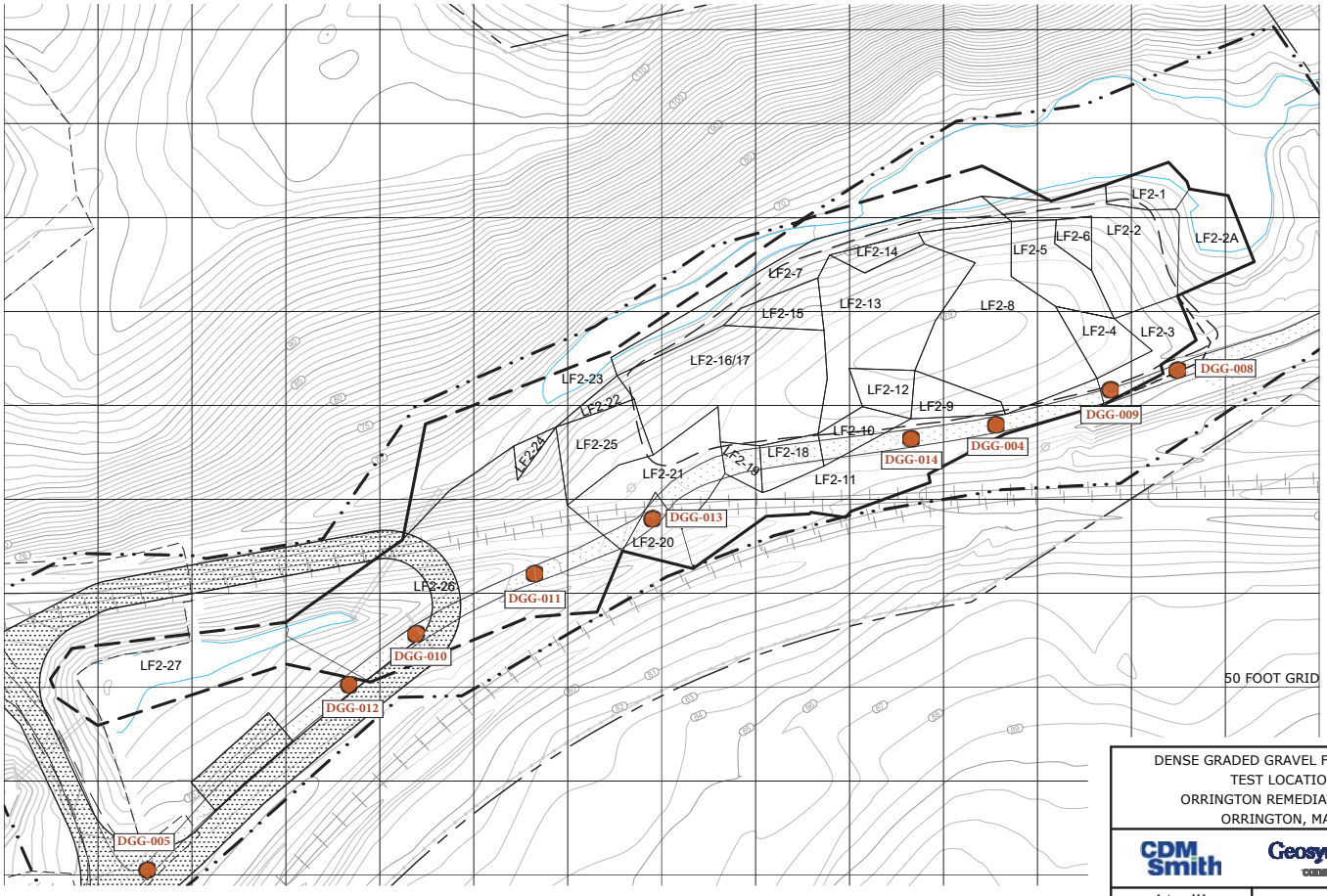
SHEET TITLE: BOTTOM OF EXCAVATION AND CONFIRMATION SAMPLE AS-BUILT SURVEY

SCALE: 1" = 25'

DATE: October 24, 2017

JOB NUMBER: 11671.001

1 OF 1



DENSE GRADED GRAVEL FIELD DENSITY
TEST LOCATIONS
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Acton, MA | DECEMBER 2017

Figure: 4-2

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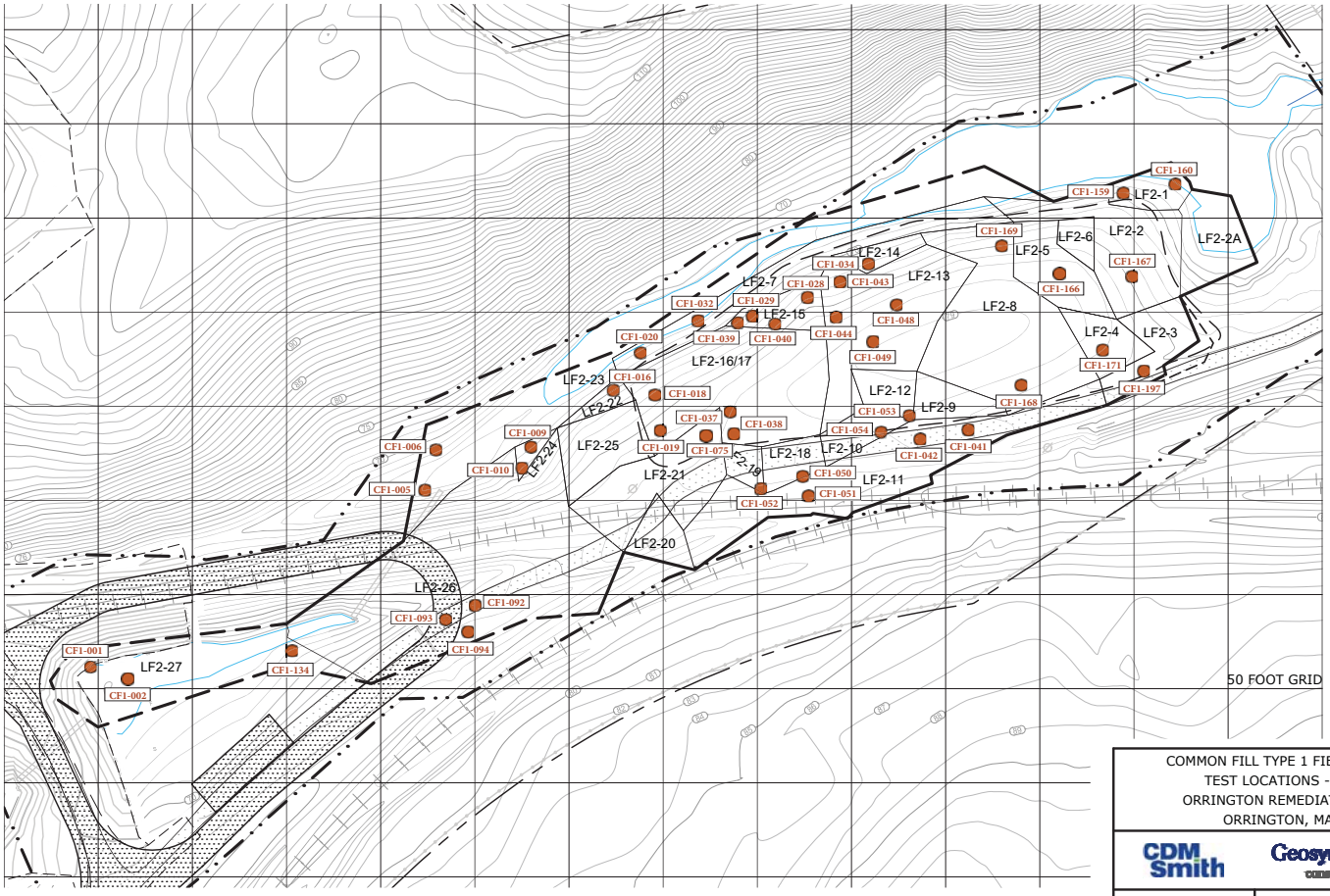

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 1
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3A

T:\PROJECTS_CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 2
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3B

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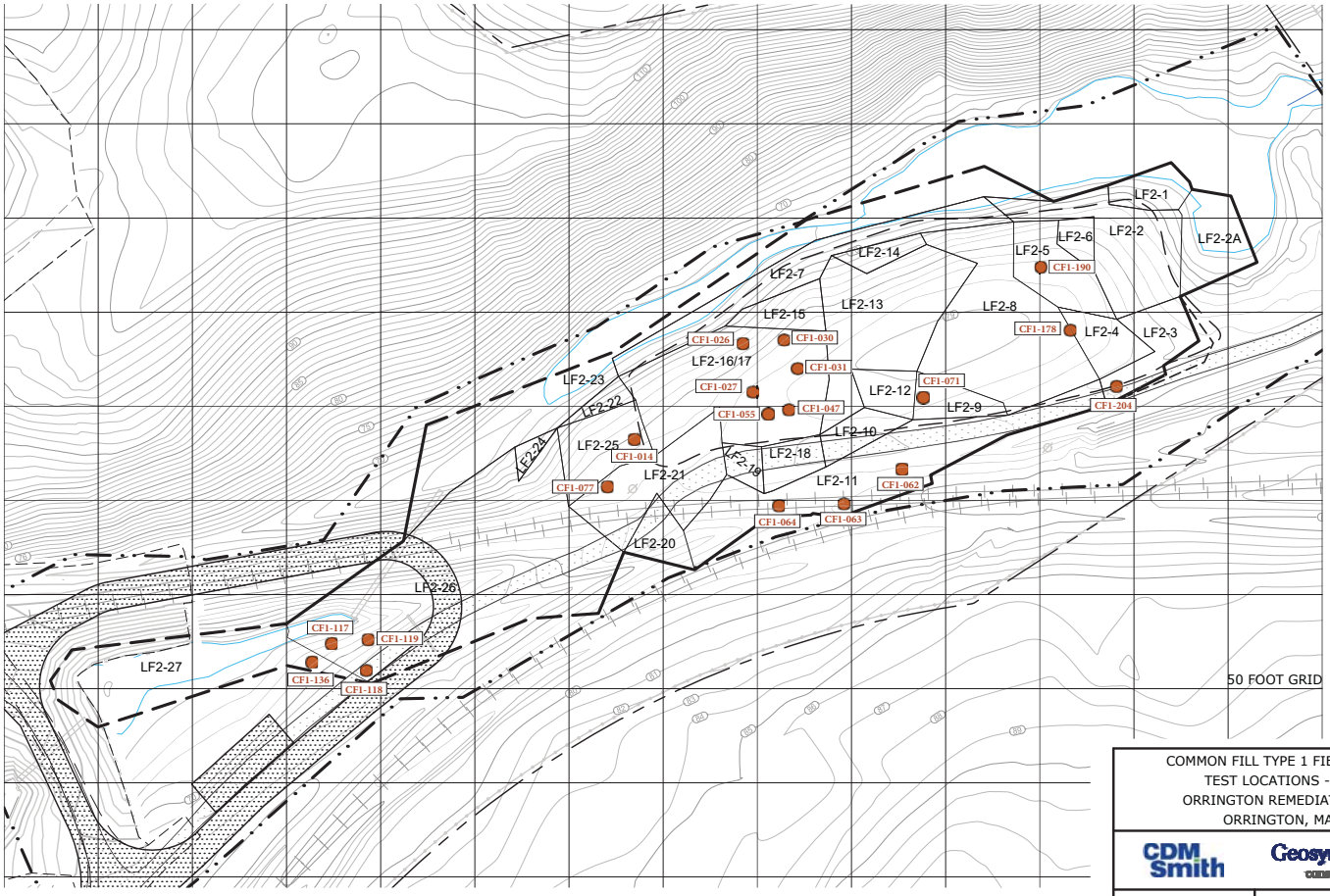

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 3
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3C

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR0292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 4
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3D

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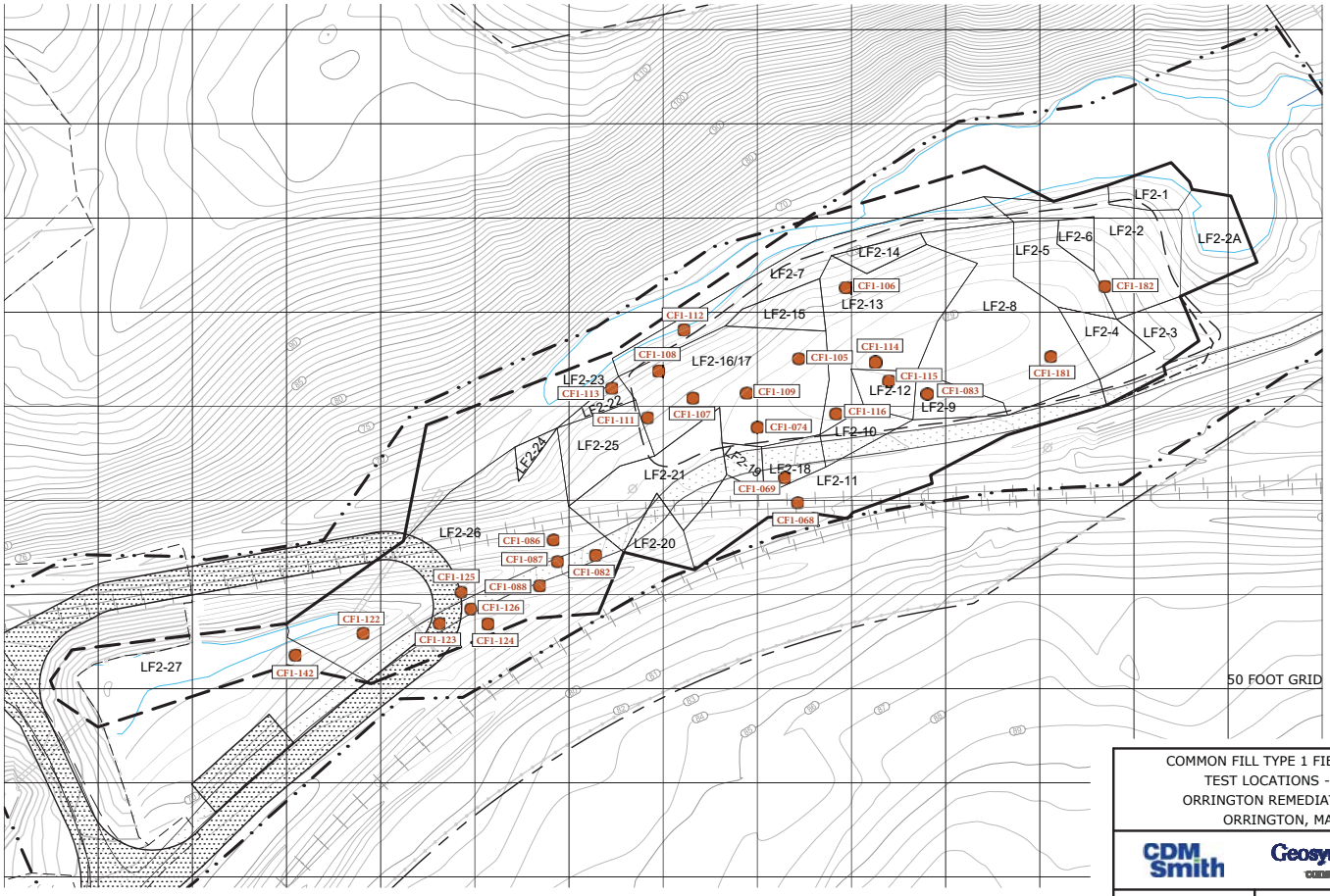

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 5
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Acton, MA | DECEMBER 2017

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION IN\DESIGN\LANDFILL 2\FIGURES\BRO292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 6
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3F

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COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 7
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3G

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BRO292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 8
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3H

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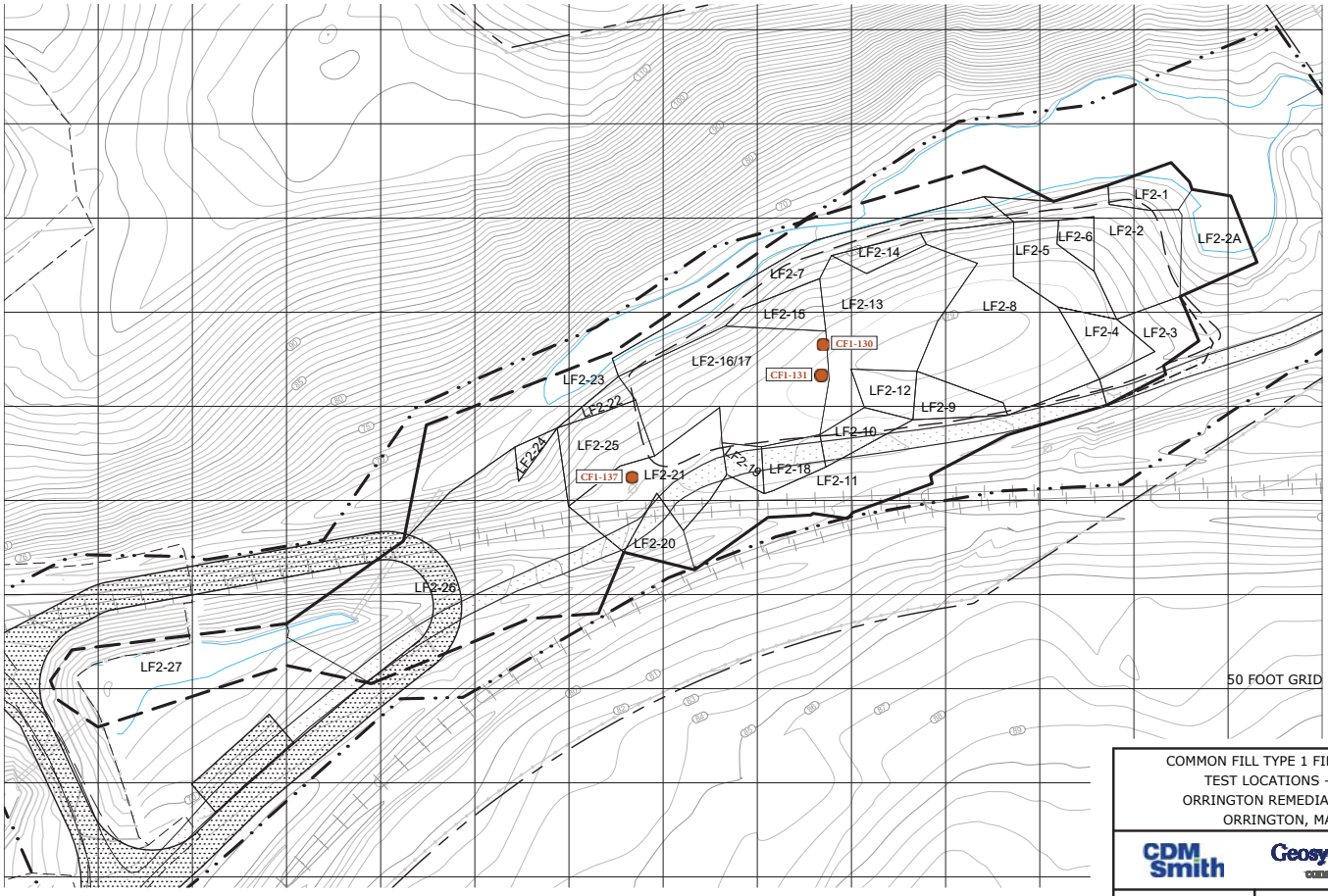

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 9
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Acton, MA | DECEMBER 2017

Figure: 4-3I

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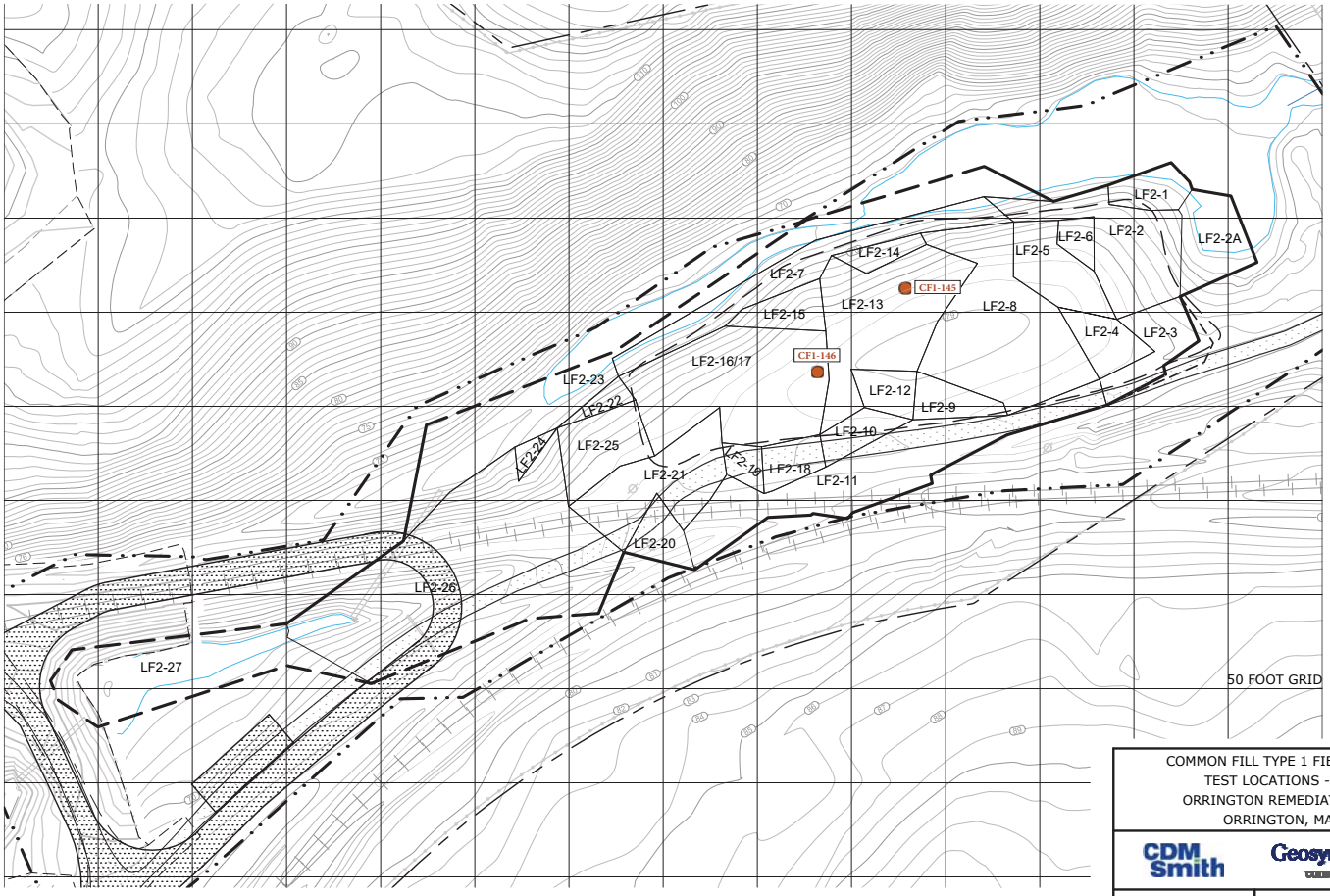
COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 10
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

CDM Smith | Geosyntec consultants

Acton, MA | DECEMBER 2017

Figure: 4-3J

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID



COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 11
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3K

T:\PROJECTS_CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 12
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3L

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 13
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3M

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 14
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3N

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BRO292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 15
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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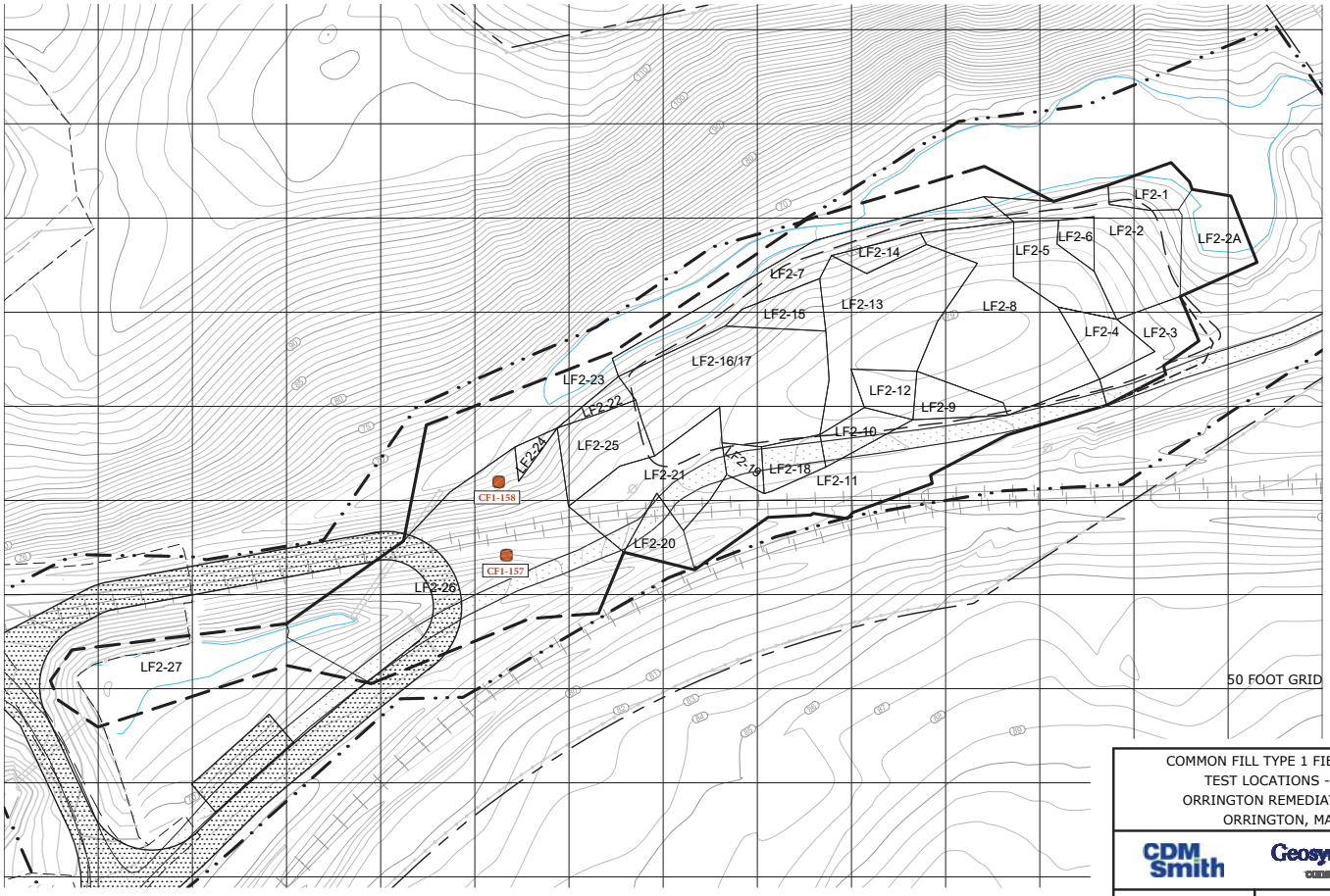
Figure: 4-30

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BRO292-LF2_CMI-F06-FIELD GRID



COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 16
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3P

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

COMMON FILL TYPE 1 FIELD DENSITY
TEST LOCATIONS - LIFT 17
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-3Q

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BRO292-LF2_CMI-F06-FIELD GRID

ON-SITE RE-USE MATERIAL FIELD
DENSITY TEST LOCATIONS
ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Figure: 4-4

T:\PROJECTS__CADD\O\ORRINGTON\ORRINGTON ME REMEDIATION II\DESIGN\LANDFILL 2\FIGURES\BR02292-LF2_CMI-F06-FIELD GRID

HORIZONTAL DATUM:

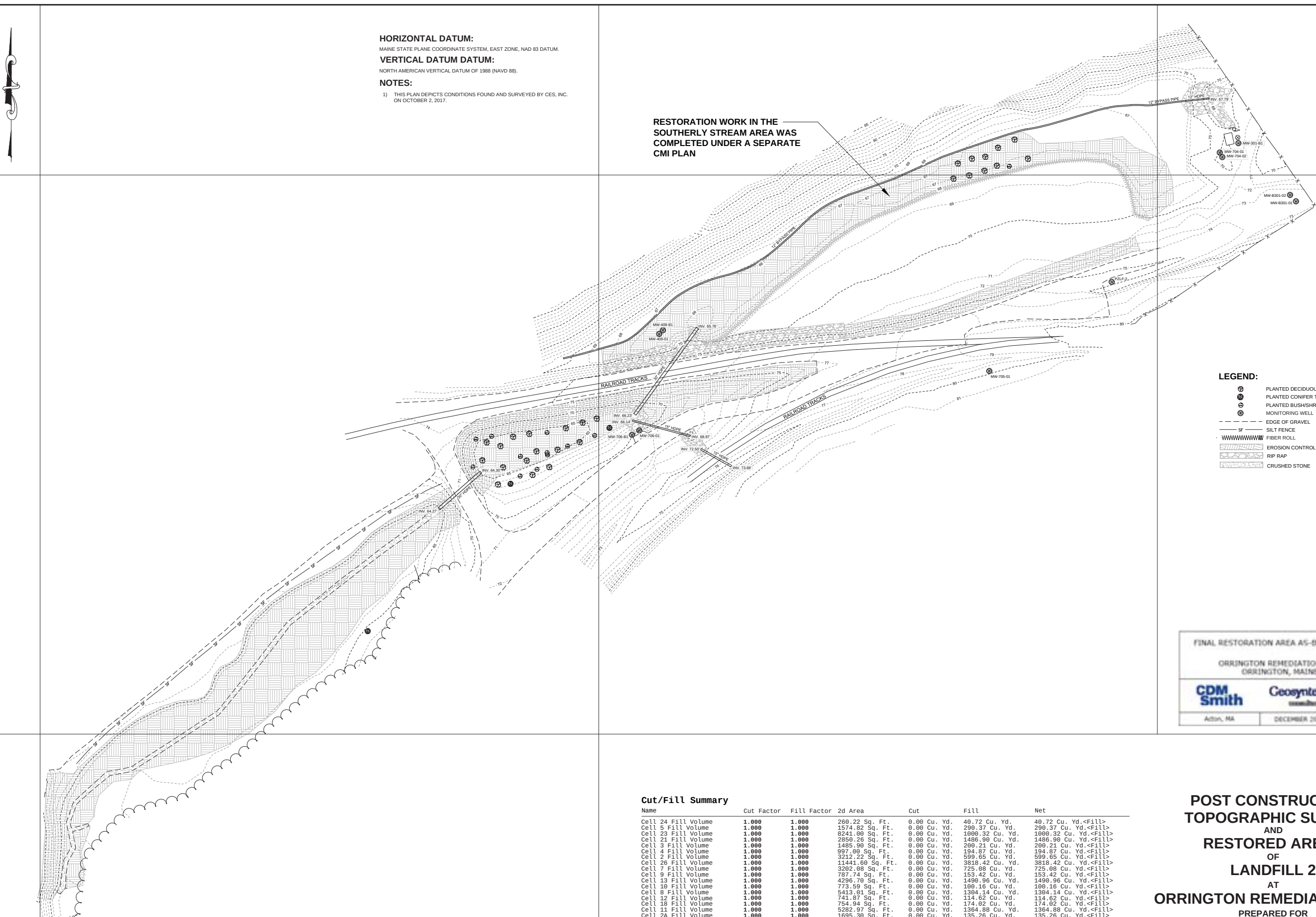
MAINE STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 DATUM.

VERTICAL DATUM DATUM:

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

NOTES:

1) THIS PLAN DEPICTS CONDITIONS FOUND AND SURVEYED BY CES, INC. ON OCTOBER 2, 2017.



FINAL RESTORATION AREA AS-BUILT SURVEY

ORRINGTON REMEDIATION SITE
ORRINGTON, MAINE

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Acton, MA | DECEMBER 2017

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Cell 24 Fill Volume	1.000	1.000	260.22 Sq. Ft.	0.00 Cu. Yd.	40.72 Cu. Yd.	40.72 Cu. Yd.<Fill>
Cell 5 Fill Volume	1.000	1.000	1574.82 Sq. Ft.	0.00 Cu. Yd.	290.37 Cu. Yd.	290.37 Cu. Yd.<Fill>
Cell 23 Fill Volume	1.000	1.000	8241.00 Sq. Ft.	0.00 Cu. Yd.	1000.32 Cu. Yd.	1000.32 Cu. Yd.<Fill>
Cell 21 Fill Volume	1.000	1.000	2850.26 Sq. Ft.	0.00 Cu. Yd.	1486.90 Cu. Yd.	1486.90 Cu. Yd.<Fill>
Cell 3 Fill Volume	1.000	1.000	1485.90 Sq. Ft.	0.00 Cu. Yd.	200.21 Cu. Yd.	200.21 Cu. Yd.<Fill>
Cell 4 Fill Volume	1.000	1.000	997.00 Sq. Ft.	0.00 Cu. Yd.	194.87 Cu. Yd.	194.87 Cu. Yd.<Fill>
Cell 2 Fill Volume	1.000	1.000	3212.22 Sq. Ft.	0.00 Cu. Yd.	599.65 Cu. Yd.	599.65 Cu. Yd.<Fill>
Cell 26 Fill Volume	1.000	1.000	11441.60 Sq. Ft.	0.00 Cu. Yd.	3818.42 Cu. Yd.	3818.42 Cu. Yd.<Fill>
Cell 7 Fill Volume	1.000	1.000	3202.08 Sq. Ft.	0.00 Cu. Yd.	725.08 Cu. Yd.	725.08 Cu. Yd.<Fill>
Cell 9 Fill Volume	1.000	1.000	787.74 Sq. Ft.	0.00 Cu. Yd.	153.42 Cu. Yd.	153.42 Cu. Yd.<Fill>
Cell 13 Fill Volume	1.000	1.000	4296.70 Sq. Ft.	0.00 Cu. Yd.	1490.96 Cu. Yd.	1490.96 Cu. Yd.<Fill>
Cell 10 Fill Volume	1.000	1.000	773.59 Sq. Ft.	0.00 Cu. Yd.	100.16 Cu. Yd.	100.16 Cu. Yd.<Fill>
Cell 8 Fill Volume	1.000	1.000	5413.01 Sq. Ft.	0.00 Cu. Yd.	1304.14 Cu. Yd.	1304.14 Cu. Yd.<Fill>
Cell 12 Fill Volume	1.000	1.000	741.87 Sq. Ft.	0.00 Cu. Yd.	114.62 Cu. Yd.	114.62 Cu. Yd.<Fill>
Cell 18 Fill Volume	1.000	1.000	754.94 Sq. Ft.	0.00 Cu. Yd.	174.02 Cu. Yd.	174.02 Cu. Yd.<Fill>
Cell 11 Fill Volume	1.000	1.000	5282.97 Sq. Ft.	0.00 Cu. Yd.	1364.88 Cu. Yd.	1364.88 Cu. Yd.<Fill>
Cell 2A Fill Volume	1.000	1.000	1695.30 Sq. Ft.	0.00 Cu. Yd.	135.26 Cu. Yd.	135.26 Cu. Yd.<Fill>
Cell 16 & 17 Fill Volume	1.000	1.000	5548.87 Sq. Ft.	0.00 Cu. Yd.	2567.64 Cu. Yd.	2567.64 Cu. Yd.<Fill>
Cell 6 Fill Volume	1.000	1.000	361.89 Sq. Ft.	0.00 Cu. Yd.	68.88 Cu. Yd.	68.88 Cu. Yd.<Fill>
Cell 19 Fill Volume	1.000	1.000	470.72 Sq. Ft.	0.00 Cu. Yd.	152.74 Cu. Yd.	152.74 Cu. Yd.<Fill>
Cell 1 Fill Volume	1.000	1.000	801.88 Sq. Ft.	0.00 Cu. Yd.	82.39 Cu. Yd.	82.39 Cu. Yd.<Fill>
Cell 14 Fill Volume	1.000	1.000	504.21 Sq. Ft.	0.00 Cu. Yd.	129.15 Cu. Yd.	129.15 Cu. Yd.<Fill>
Cell 15 Fill Volume	1.000	1.000	874.56 Sq. Ft.	0.00 Cu. Yd.	317.84 Cu. Yd.	317.84 Cu. Yd.<Fill>
Cell 27 Fill Volume	1.000	1.000	4521.07 Sq. Ft.	0.00 Cu. Yd.	858.34 Cu. Yd.	858.34 Cu. Yd.<Fill>
Cell 20 Fill Volume	1.000	1.000	773.03 Sq. Ft.	0.00 Cu. Yd.	327.56 Cu. Yd.	327.56 Cu. Yd.<Fill>
Cell 22 & 25 Fill Volume	1.000	1.000	2021.11 Sq. Ft.	0.00 Cu. Yd.	653.51 Cu. Yd.	653.51 Cu. Yd.<Fill>
Totals			68888.54 Sq. Ft.	0.00 Cu. Yd.	18352.04 Cu. Yd.	18352.04 Cu. Yd.<Fill>

POST CONSTRUCTION TOPOGRAPHIC SURVEY
AND
RESTORED AREAS
OF
LANDFILL 2
AT
ORRINGTON REMEDIATION SITE
PREPARED FOR
CHARTER
ORRINGTON, PENOBSCOT COUNTY, MAINE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

PROJECT TITLE: CHARTER ORRINGTON REMEDIATION SITE, ORRINGTON, MAINE

SHEET TITLE: POST CONSTRUCTION TOPOGRAPHIC SURVEY AND RESTORED AREAS OF LANDFILL 2 AT ORRINGTON REMEDIATION SITE

CES INC
Engineers • Environmental Scientists • Surveyors

ISSUE STATUS

SCALE	1"=40'
DATE	October 25, 2017
DRAWN BY	JWH
CHECKED BY	
DESIGNED BY	
APPROVED BY	
JOB NUMBER	11671.001
DRAWING NUMBER	1 OF 1