

Mallinckrodt US LLC

July 12, 2016

Mr. Chris Swain
Environmental Specialist
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

**Subject: Monthly Progress Report – June 2016
Orrington Remediation Site
Orrington, Maine**

Dear Mr. Swain:

This Monthly Progress Report is submitted to Maine Department of Environmental Protection (DEP) in compliance with reporting requirements in the Board of Environmental Protection (BEP) Order (Order) effective April 3, 2014 for the Orrington Remediation Site (Site) in Orrington, Maine, which incorporates, with modifications, the Compliance Order issued by the DEP dated November 24, 2008. This Report covers the period from **June 1 – 30, 2016**, and is submitted on behalf of Mallinckrodt US LLC.

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

Sincerely,



Kathy Zeigler
Remediation Program Manager

cc: Leslie Anderson – Maine DEP
Patricia Duft – Mallinckrodt US LLC
Susanne Miller – Maine DEP, Bangor
Audrey Snowden – Orrington Town Library
Paul White – Town of Orrington
David Wright – Maine DEP

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
June 2016**

Report Date: July 11, 2016

This Monthly Progress Report is submitted to the Maine Department of Environmental Protection (DEP) documenting the activities completed by Mallinckrodt US LLC (Mallinckrodt) and/or its representatives at the Orrington Remediation Site (the Site) along with a description of upcoming activities.

A discussion of all tasks and actions completed during the reporting period toward achieving compliance with the Order

- Met with DEP on Jun 15, 2016 to discuss various Draft CMI Plans and other topics.
- Met with DEP and DMR on Jun 16, 2016 at the Orrington Site to discuss the Southern Cove.
- The on-site DEP oversight inspector continued to participate in weekly construction meetings in which current activities as well as a two-week look ahead are discussed.
- Continued operation of the perimeter air monitoring system and meteorological station and submitted weekly PAM reports to DEP.
- Continued operation of the on-site lab in compliance with DEP certification.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Completed construction of Temporary Soil Stockpile Area #2.
- Submitted payment for the DEP 2016 funding request for the Oversight Inspector on Jun 30, 2016
- Permitting
 - No new information
- Facility Dismantling Plan
 - Submitted updated groundwater data to DEP on Jun 7, 2016 and requested DEP approval to abandon the temporary monitoring wells in the former Leach Field Area.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP Apr 12, 2016)
 - No new activity.
- Landfill Ridge Area (CMI Plan Revision 1 - Oct 28, 2015; DEP CAL - Dec 10, 2015)
 - Completed swale construction, final grading, seeding, placement of erosion control mat and all plantings. Envirocon demobbed from the site Jun 30, 2016.
- Landfill 1
 - Continued testing associated with the Landfill 1 Geochemical Analysis and Leaching Study.
 - Submitted the Geochemistry Study Update #2 to DEP on Jun 28, 2016.
- Landfill 2 (Draft CMI Plan, Jan 13, 2016; DEP Comments, May 26, 2016)
 - Submitted a revised Confirmation Sampling Plan to DEP on Jun 24, 2016, incorporating the approach used at the Scrap Metal Yard and discussions with DEP regarding features specific to Landfill 2.
 - Continued development of the response to DEP comments, the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan for submittal to DEP.
- Landfills 3-5 (CMI Plan – Revision 1, May 26, 2016)
 - Held a Pre-Construction meeting, including a DEP representative from Augusta, on Jun 22, 2016.
 - Began silt fence installation on Jun 27, 2016.
 - Received on-site deliveries of geomembrane, GCL and geocomposite materials on Jun 22 and Jun 27, 2016.
- Plant Area
 - Continued bench scale treatability work associated with the chloropicrin study.

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- Scrap Metal Yard (CMI Plan – Revision 1, Jun 22, 2016)
 - Submitted the Scrap Metal Yard CMI Plan – Revision 1 to DEP on Jun 22, 2016. This Final Revision 1 includes the revised excavation and confirmation sampling plans as well as the final Excavation and Restoration Plan and Construction Water Management Plans.
 - Charter Environmental mobilized to the site.
- Southerly Stream (Draft CMI Plan, Jan 13, 2016; DEP Comments, Jun 22, 2016)
 - Received DEP’s comments on the Draft Southerly Stream CMI Plan on Jun 22, 2016.
 - Began developing the response to DEP comments and continued drafting the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan for submittal to DEP.
- Northern Ditch (Draft CMI Plan, Feb 5, 2016; DEP Comments, May 17, 2016)
 - Continued development of the response to DEP comments and the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan for submittal to DEP.
- Southern Cove (Draft CMI Plan, Jun 8, 2016)
 - Completed sediment sampling in the Southern Cove using a Sonic drill rig to collect over 100 feet of sediment core in accordance with the May 27 submittal to DEP. The purpose of this sampling was to finalize the boundaries of the removal areas.
 - Submitted the Draft Southern Cove CMI Plan to DEP on Jun 8, 2016.
- Groundwater
 - Conducted site-wide synoptic round of water level measurements during the week of Jun 6, 2016.
 - Continued preparation of Ferry Road Current Conditions Assessment report.
 - Interim Extraction System (IES):
 - Conducted second quarter IES sampling during the week of Jun 6, 2016.
 - Continued operation with no issues.
 - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
 - No new activity.
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
 - Submitted proposed piezometer screen intervals for MW-709 and MW-710 to DEP on Jun 2 and collected water quality samples from MW-708-B2 during the week of Jun 6, 2016.
- Groundwater Treatment Plant (GWTP) Operation
 - Received notice on Jun 21, 2016 that Clarissa G. Trasko (Eastern Maine Region DEP Wastewater Compliance) should receive the DMR Supplemental Data sheet. The May 2016 data was sent to Ms. Trasko and future monthly data will be as well.
 - Collected mercury compliance samples from Outfall 001 (3x/week with analysis per USEPA Method 1631) and Outfall 002 (one sample per discharge day with analysis per USEPA Method 245.1) for analysis by Katahdin Analytical Labs.
 - Collected weekly samples from Outfall 003 and the Southerly Stream and transported to Katahdin for analysis. Per the previously agreed upon protocol, samples were analyzed for mercury using USEPA Method 245.1 and if results are ≤ 200 ng/L, the applicable sample will be re-analyzed using USEPA Method 1631.
 - Neither the southerly stream sampling nor the Outfall 003 sampling is required by the MEPDES permit or other current permit. The Southerly Stream will be routed through a bypass pipe as part of the remediation of Landfill 2, the Scrap Metal Yard and the Southerly Stream, therefore sampling of the Southerly Stream was discontinued at the end of Jun 2016. Groundwater which flows to Outfall 003 from beneath the area of the former Chlorate Building will be intercepted by a

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new vault being installed as part of the North Ditch remediation and pumped to the on-site GWTP, therefore sampling of Outfall 003 was also discontinued at the end of Jun 2016.

- Continued monthly Outfall 001 effluent monitoring and reporting (volatiles, semivolatiles, herbicides and manganese) per the MEPDES permit requirements for a “new wastestream” to address the construction water (storm water from TSSA #1) related to the Landfill Ridge corrective measures implementation. Only those organics specified in the permit are reported as part of the monthly sampling and Jun was month 7 of the 10 consecutive month minimum requirement.
- The average daily plant discharge flow was approximately 43,000 gallons per day, with approximately 47,000 total gallons of construction-related water treated in the GWTP this month.
- Submitted the May 2016 eDMR and May 2016 Toxsheet and Effluent Mercury Test Report forms to DEP on Jun 8 and Jun 9 respectively.
- Completed routine maintenance activities including modifications to pumps and equipment to accommodate the increased groundwater flow capabilities approved by DEP on May 10, 2016.
- Other Site Activities
 - Completed routine site maintenance activities

A detailed summary of all results of sampling, tests, shipments from the Site and other data received by Mallinckrodt in the prior (previous month) reporting period pursuant to this Order

- Routine operational data is reported on the DMR per the MEPDES Permit.
- Air monitoring and meteorological data is collected continuously by the perimeter air monitoring system and stored in the computer system. Weekly reports are submitted to DEP.
- Quarterly groundwater monitoring data and Interim Extraction System monitoring data is reported in quarterly reports to DEP.
- Validated EGAD EDDs and laboratory reports are submitted to DEP via the automated database system or the ftp site (for large laboratory reports) as they are available.

A discussion of all tasks and actions scheduled for the coming reporting period including the date for initiating and completing such activities including percent completion where applicable.

- Hold monthly conference call with DEP on Jul 6, 2016 to discuss site activities.
- Meet with DEP on Jul 19 to discuss geochemistry and chloropicrin updates and other topics.
- Meet with DEP Commissioner and his staff on Jul 6 for a site visit.
- Continue operation of the perimeter air monitoring system and meteorological station and submittal of weekly PAM reports to DEP.
- Continue operation of the on-site lab in compliance with DEP certification.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Permitting
 - No new information
- Facility Dismantling Plan
 - Receive DEP approval to abandon the temporary monitoring wells in the former Leach Field Area.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP April 12, 2016)
 - Receive DEP comments on the Draft Short-Term Comprehensive Monitoring Plan and discuss and/or respond as applicable. The Short-Term CMP includes monitoring of potential remediation impacts as well as ongoing groundwater monitoring, quarterly IES monitoring, and annual

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- monitoring of Landfill 5. Until the revised groundwater monitoring components of this CMP are approved, the current groundwater monitoring plans will continue to be implemented as usual.
- Landfill Ridge Area (CMI Plan Revision 1, Oct 28, 2015; DEP CAL, Dec 10, 2015)
 - CDM will continue watering seeded areas and plantings, and maintaining erosion and sediment controls during the plant establishment period.
 - Begin preparation of the Landfill Ridge CMI Closure Report.
 - Landfill 1
 - Continue laboratory testing associated with the Geochemical Analysis and Leaching Study.
 - Discuss next steps and future submittals with DEP at the meeting on Jul 19, 2016.
 - Landfill 2 (Draft CMI Plan, Jan 13, 2016; DEP Comments, May 26, 2016)
 - Submit the response to comments on the Draft CMI Plan, along with the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan to DEP for review. (Submittal of these plans is later than indicated on the current Remediation Schedule (May 3, 2016) however this delay is not expected to affect the construction schedule.)
 - Landfills 3-5 (CMI Plan – Revision 1, May 26, 2016)
 - Receive DEP Approval of the Landfills 3-5 CMI Plan – Revision 1.
 - Install erosion and sediment controls.
 - Begin removal of the existing cover layers of each landfill.
 - Plant Area
 - Continue conducting the chloropicrin treatability study and evaluating options for implementation.
 - Scrap Metal Yard (CMI Plan – Revision 1, Jun 22, 2016)
 - Receive DEP approval of the Scrap Metal Yard CMI Plan – Revision 1.
 - Construct erosion and sediment controls and the southerly steam bypass.
 - Begin excavation and confirmation sampling in accordance with the CMIP.
 - Southerly Stream (Draft CMI Plan, Jan 13, 2016; DEP Comments, Jun 22, 2016)
 - Submit the response to comments on the Draft CMI Plan, along with the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan to DEP for review. (Submittal of these plans is later than indicated on the current Remediation Schedule (May 3, 2016) however this delay is not expected to affect the construction schedule.)
 - Northern Ditch (Draft CMI Plan, Feb 5, 2016; DEP Comments, May 17, 2016)
 - Submit the response to comments on the Draft CMI Plan, along with the Draft Excavation and Restoration Plan and the Draft Construction Water Management Plan to DEP for review. (Submittal of these plans is later than indicated on the current Remediation Schedule (May 3, 2016) however this delay is not expected to affect the construction schedule.)

 - Southern Cove (Draft CMI Plan, Jun 8, 2016)
 - Submit an Amendment to the removal areas technical memo summarizing recent sampling results and proposed final sediment removal areas to DEP.
 - Update CMI Plan figures and drawings with the revised proposed sediment removal areas and submit to DEP for review and approval.
 - Issue a Request for Bids to contractors for the Southern Cove project.
 - Receive DEP’s initial comments on the Draft Southern Cove CMI Plan in late Jun 2016.
 - Groundwater

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- Finalize and submit report summarizing Ferry Road Current Conditions data and observations.
 - Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
 - Evaluate the data from the second quarter IES sampling event.
 - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
 - Respond to any DEP comments received and revise GW model as appropriate.
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
 - Install well materials to construct proposed piezometers MW-709-B1, MW-709-B2, MW-710-B1, and MW-710-B2 to DEP.
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit the NetDMR Subscriber agreement to DEP.
 - Respond to any comments on the letter to DEP (Mar 9, 2016) regarding the MEPDES permit requirement for increased monitoring and reporting during the ongoing remediation activities.
 - Submit Jun 2016 eDMR and Toxsheet and Effluent Mercury Test Report forms to DEP.
- Other Site Activities
 - Complete routine site maintenance activities.

Tasks not completed as required, original and revised completion dates, reasons for delay, actions taken to minimize the delay and any other problems or anticipated problems

- Specific notes included in the description of each remedial area above.

The quantity of waste shipped to the various disposal locations

- As of the end of June 2016:
 - Leach Field: 1380 tons of non-hazardous soil has been shipped offsite in 14 railcars to the Republic disposal facility in Niagara Falls, New York
 - Landfill Ridge: Over 49,00 tons of non-hazardous soil has been shipped offsite with 470 railcars to the Republic disposal facility in Niagara Falls, New York and 30 railcars to the Stablex disposal facility in Quebec, Canada.

Additional information regarding the progress of the work

- None.