

# Mallinckrodt US LLC

August 14, 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 – July 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 **July 1 – 31, 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: 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  
July 2016**

**Report Date: August 14, 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 the DEP Commissioner and his staff on July 6, 2016 for a site visit.
- Held monthly conference call with DEP on July 6, 2016 to discuss site activities.
- Met with DEP on July 19, 2016 to discuss the Landfill 1 geochemistry study and chloropicrin treatability study as well as various other technical issues.
- Submitted a revised Confirmation Sampling and DEP Split Sampling Protocol based on discussions during the July 19 meeting to DEP on July 20, 2016.
- 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, including quarterly calibration, 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.
- Permitting
  - No new information
- Facility Dismantling Plan
  - Abandoned the temporary monitoring wells in the former Leach Field Area in accordance with DEP requirements on July 21, 2016.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP submitted April 12, 2016)
  - No new activity.
- Landfill Ridge Area (CMI Plan Revision 1 - Oct 28, 2015; DEP CAL - Dec 10, 2015)
  - CDM Smith maintained erosion and sediment control measures and continued watering grass and plants until fully established.
  - Continue preparation of the Landfill Ridge CMI Closure Report.
- Landfill 1
  - Continued testing associated with the Landfill 1 Geochemical Analysis and Leaching Study.
- Landfill 2 (Draft CMI Plan, Jan 13, 2016; DEP Comments, May 26, 2016)
  - Submitted Response to DEP Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan to DEP on July 29, 2016.
- Landfills 3, 4 and 5(CMI Plan – Revision 1, May 26, 2016; DEP Approval, July 12, 2016)
  - Received Maine DEP approval of Final CMIP on July 12, 2016.
  - Began removal of existing landfill cover soils on Landfills 4 and 5.
  - Began construction of access road adjacent to Landfills 4 and 5.
- Plant Area
  - Continued bench scale treatability work associated with the chloropicrin study.

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- Scrap Metal Yard (CMI Plan – Revision 1, June 22, 2016; DEP CAL, July 22, 2016)
  - Submitted revised confirmation sampling plan to DEP on July 20, 2016.
  - Received DEP Conditional Approval Letter (CAL) of the Scrap Metal Yard CMI Plan - Revision 1 on July 22, 2016 with condition related to Soil Reuse Plan.
  - Submitted response to DEP Condition related to Soil Reuse Plan sampling frequency on July 29.
  - Began bypass construction, construction of decontamination pad, access road and staging area.
  - Started excavation of impacted soils on July 26, 2016.
- Southerly Stream (Draft CMI Plan, Jan 13, 2016; DEP Comments, Jun 22, 2016)
  - Submitted Response to DEP Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan to DEP on July 22, 2016.
- Northern Ditch (Draft CMI Plan, Feb 5, 2016; DEP Comments, May 17, 2016)
  - Submitted Response to DEP Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan to DEP on July 29, 2016.
- Southern Cove (Draft CMI Plan, Jun 8, 2016)
  - Submitted an Addendum to the Technical Memo on Delineation of Removal Areas to DEP on July 18, 2016 and also submitted updated Figures, Drawings and Specifications to the Draft Southern Cove CMI Plan to DEP reflecting the final proposed removal areas.
  - Issued the Request for Proposal to contractors on July 8 and held pre-bid site walk on July 14, 2016
- Groundwater
  - Continued preparation of Ferry Road Current Conditions Assessment report.
  - Searched for former water supply production wells (east of the Landfill 2 area) on July 18, 2016.
  - Interim Extraction System (IES):
    - 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)
    - Continued review of water quality data collected during the week of June 6 and data from newly-installed MW-708-B2.
- Groundwater Treatment Plant (GWTP) Operation
  - 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.
  - 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 July was month 8 of the 10 consecutive month minimum requirement.
  - The average daily plant discharge flow was approximately 40,300 gallons per day, with approximately 23,000 total gallons of construction-related water treated in the GWTP this month.
  - Submitted the June 2016 eDMR and June 2016 Toxsheet and Effluent Mercury Test Report forms to DEP on July 12, 2016.
  - Completed equipment installation and start-up activities associated with GWTP flow modifications to accommodate treatment of remediation construction water. As of July 27, 2016, the GWTP is equipped to accommodate increased flows allowed under the Site’s revised MEPDES Permit.

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- Submitted the signed NetDMR Subscriber agreement paper work to MEDEP on July 20, 2016.
- Completed routine maintenance activities.
- 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 and EGAD EDDs to DEP.
  - 1<sup>st</sup> quarter 2016 routine groundwater monitoring data – July 12, 2016
  - 2<sup>nd</sup> quarter Interim Extraction System monitoring data – July 22, 2016
- 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 August 3, 2016 to discuss site activities.
- Receive DEP approval of the revised Confirmation Sampling and DEP Split Sampling Protocol submitted to DEP on July 20, 2016.
- 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
  - Begin preparing final Closure Report for the Dismantling Work Plan including Addendum 1 & Addendum 2.
- 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 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 Smith maintained erosion and sediment control measures and continued watering grass and plants until fully established.
  - Continue preparation of the Landfill Ridge CMI Closure Report.
- Landfill 1
  - Continue laboratory testing associated with the Geochemical Analysis and Leaching Study.

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- Landfill 2 (Draft CMI Plan, Jan 13, 2016; DEP Comments, May 26, 2016)
  - Receive DEP comments on the revised Confirmation Sampling Plan.
  - Receive DEP comments on the Response to Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan.
- Landfills 3-5 (CMI Plan – Revision 1, May 26, 2016)
  - Continue removal of existing landfill cover material.
  - Commence new landfill cover placement starting with Landfill 5.
- Plant Area
  - Continue conducting the chloropicrin treatability study and evaluating options for implementation.
  - Begin development of conceptual design to discuss at meeting with DEP on Oct 26, 2016.
- Scrap Metal Yard (CMI Plan – Revision 1, June 22, 2016; DEP CAL, July 22, 2016)
  - Receive DEP's approval of the revised Soil Reuse Plan.
  - Complete bypass construction, construction of decontamination pad, access road and staging area.
  - Continue excavation and confirmation sampling in accordance with the approved CMI Plan.
- Southerly Stream (Draft CMI Plan, Jan 13, 2016; DEP Comments, Jun 22, 2016)
  - Receive DEP comments on the Response to Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan.
- Northern Ditch (Draft CMI Plan, Feb 5, 2016; DEP Comments, May 17, 2016)
  - Receive DEP comments on the Response to Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan.
- Southern Cove (Draft CMI Plan, Jun 8, 2016)
  - Receive contractor bids for the Southern Cove project.
  - Receive DEP's initial comments on the Draft Southern Cove CMI Plan, including the revised Removal Areas described in the Technical Memo Addendum.
  - Begin preparing permit application materials. These materials cannot be finalized until DEP's initial comments on the CMI Plan are received to ensure DEP is in agreement with the overall design approach is acceptable.
- Groundwater
  - Finalize and submit report summarizing Ferry Road Current Conditions data and observations.
  - Conduct water quality sampling for groundwater background assessment.
  - Interim Extraction System (IES):
    - Continue operation of extractions wells and quarterly monitoring and reporting.
  - 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 MEDEP
- Groundwater Treatment Plant (GWTP) Operation
  - Continue compliance sampling of Outfall 001 and 002 as described above.
  - 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.

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- Begin updates to the GWTP O&M Plan to reflect modifications to the GWTP, due within 90 days of the equipment upgrade (i.e., October 25, 2016). Because the modifications are considered a minor equipment upgrade, submittal of the revised O&M Plan is not required, however the revised plan is maintained on Site and available for DEP review upon request.
- Submit July 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 submittal and due dates for various documents are included in the description above.
- No changes to the anticipated construction periods described above.

**The quantity of waste shipped to the various disposal locations**

- As of the end of July 2016:
  - Leach Field: Soil excavation and off-site disposal is complete. 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 53,300 tons of non-hazardous soil has been shipped offsite in 544 railcars to the Republic disposal facility in Niagara Falls, New York or the Stablex disposal facility in Quebec, Canada.

**Additional information regarding the progress of the work**

- None.