

July 14, 2017

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

**Subject: Monthly Progress Report – June 2017
Orrington Remediation Site
Orrington, Maine**

Dear Mr. Jellison:

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, 2017**, 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: (all electronic copies)
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 2017**

Report Date: July 14, 2017

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 7 (conference call/WebEx) to discuss site remediation and technical submittals, and held various conference calls to discuss remediation topics.
- Attended the Town of Orrington Annual Meeting with DEP to present an update on the Orrington Site.
- 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.
- Permitting (Upland)
 - Submitted the Maine Construction General Permit Notice of Intent for the Landfill 1 remedial construction to Jim Beyer at DEP.
- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
 - The Short-Term CMP includes monitoring of potential remediation impacts as well as ongoing monitoring of groundwater, the IES and Landfill 5.
 - Conducted remediation monitoring in the vicinity of the Scrap Metal Yard, Southerly Stream, and Landfill 2 remediation areas during the week of Jun 19, 2017.
 - Submitted a data transmittal report with 1st quarter 2017 data collected in accordance with the Short-Term CMP to DEP on Jun 29, 2017.
- Landfill Ridge Area (CMI Closure Report Feb 3, 2017)
 - Continued to maintain erosion and sediment control measures.
- Landfill 1 (Draft CMI Plan Apr 25, 2017)
 - Completed the field work as outlined in Appendix K of the Draft CMI Plan.
 - Began drafting a Response to DEP comments on the Draft Landfill 1 CMI Plan.
 - Received contractor proposals to implement the remedial work at the Landfill 1 Area.
- Landfill 2 (CMI Plan Rev1 Oct 7, 2016; Addendums 1-3, final DEP Approval Apr 26, 2017)
 - Continued excavation and confirmation sampling activities per CMI Plan and Addendums 1-3 and tracking of non-hazardous and hazardous soil shipments.
- Landfills 3, 4 and 5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval, Jul 12, 2016)
 - Continued to maintain erosion and sediment control measures and cap inspections.
 - Continued preparation of the Landfills 3-5 CMI Closure Report

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- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Continued construction of TSSA #3.
 - Completed field work to collect additional samples for mercury speciation testing, and data related to the design of the in situ treatment of the chloropicrin impacted soils.
 - Continued dosing studies for the in-situ treatment of the chloropicrin area.
 - Continued discussions about the proposed remedial design for the Plant Area with DEP including both technical and strategic approaches to resolve the issues.
- Scrap Metal Yard (CMI Plan – Rev 1, June 22, 2016; DEP Approval, July 22, 2016)
 - Continued to maintain erosion and sediment control measures.
 - Continued preparation of the Scrap Metal Yard CMI Closure Report
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Completed remedial action including and backfilling activities.
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Continued final grading of the remediation area and the staging area.
 - Began preparation of the Northern Drainage Ditch CMI Closure Report
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Submitted the Maine Bureau of Submerged Lands permit to the Town of Orrington on Jun 17 for the 30-day review period.
 - Conducted pre-construction work including verification sampling.
- Groundwater
 - Completed and developed monitoring wells P-13-B1 and P-13-B2 the week of Jun 5, 2017.
 - Developed piezometers installed in 2015 in the Plant Area and a newly-installed piezometer in the Landfill 1 area and sampled these piezometers and monitoring wells in and near the Plant Area during the week of Jun 19, 2017.
 - Interim Extraction System (IES):
 - Repaired EW-2 on Jun 7, 2017 (leaking pitless adapter union) and reactivated the well. EW-2 was inspected daily for the following week to ensure the leak was resolved.
 - Continued operation of extractions wells and quarterly monitoring and reporting.
 - Groundwater Model (submitted Feb 22, 2016, DEP comments Jan 6, RTC Apr 28, 2017)
 - No new activity
 - Pre-Design for Groundwater at Landfills 3,4,5 (WP Aug 3, 2015; DEP CAL Sept 18,2015)
 - The pump test in the area of Landfills 3, 4, and 5 has been postponed until 2018 in order to evaluate the impact of the new caps on area groundwater levels and quality.
- 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.

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- Continued expanded Outfall 001 effluent monitoring (volatiles, semivolatiles, herbicides and manganese) for “new wastestreams” (i.e. construction water from each remedial area) per the MEPDES Discharge permit. Expanded monitoring for each new wastestream is required for 10 months or until wastestream ends. June was month 3 for the Landfill 2 area.
- The average daily flow through the GWTP was 79,107 gallons with 1,033,672 gallons of construction-related water. Summer weather reduced precipitation during June, however deeper excavations increased groundwater flow into the plant.
- Installed a new carbon bed on Jun 15, 2017.
- Generated 13 cubic yards of non-hazardous sludge.
- Submitted the May 2017 NetDMR to DEP on Jun 7 and the Toxsheet and Effluent Mercury Test Report form to DEP on Jun 8, 2017.
- Completed routine GWTP 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

- Air monitoring and meteorological data is collected continuously by the perimeter air monitoring system and stored in the computer system with weekly reports submitted 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.
- Submitted EGAD EDDs of validated April remediation monitoring data to DEP on Jun 15, 2017.

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.

- Meet with DEP on Jul 13 and Jul 26 to discuss technical details of the designs of the remaining areas and remedy implementation at Landfill 2 and the Southern Cove.
- Continue operation of the perimeter air monitoring system and 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 (Upland)
 - Receive approval of the Maine Construction General Permit Notice of Intent for the Landfill 1 remedial construction.
- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
 - Conduct Short-Term CMP remediation monitoring in the vicinity of the Scrap Metal Yard, Southerly Stream, and Landfill 2 remediation areas and site perimeter monitoring, Landfill 5 assessment monitoring, and IES monitoring during the week of June 19, 2017.

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- Landfill Ridge Area (CMI Closure Report Feb 3, 2017)
 - Continue to maintain erosion and sediment control measures.
- Landfill 1 (Draft CMI Plan Apr 25, 2017)
 - Select the remediation contractor to implement the Landfill 1 Area remedy.
 - Respond to DEP comments on the Draft Landfill 1 CMI Plan received on May 31, 2017.
 - Finalize the draft Excavation and Restoration and Construction Water Management Work Plans for the Landfill 1 remedy for submittal to DEP.
- Landfill 2 (CMI Plan Rev1 Oct 7, 2016; Addendums 1-3, final DEP Approval Apr 26, 2017)
 - Continue excavation, confirmation sampling and backfill activities as outlined in the approved CMIP and Addendums 1-3 and tracking of non-hazardous and hazardous soil shipments.
 - Remediation is expected to be completed in summer 2017 with restoration to follow.
- Landfills 3-5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval July 12, 2016)
 - Continue to maintain erosion and sediment control measures and complete cap inspections.
 - Submit the Landfills 3-5 CMI Closure Report to DEP.
 - Complete final restoration in summer 2017.
- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Prepare the Scope of Work and design drawings for the in situ treatment of the chloropicrin area to be submitted to DEP.
 - Continue preparing detailed technical information on key issues identified by DEP related to the Plant Area design for submittal to DEP.
- Scrap Metal Yard (CMI Plan – Rev 1, June 22, 2016; DEP Approval, July 22, 2016)
 - Continue to maintain erosion and sediment control measures.
 - Submit the Scrap Metal Yard CMI Closure Report to DEP.
 - Complete final restoration in Summer 2017.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Submit Southerly Stream CMI Plan Drawings Revision 1 Addendum 2 (change in stone size for the channel and the inlet/outlet areas) to DEP
 - Complete final restoration of both the northern and southern segments of the Southerly Stream.
 - Begin preparation of the Southerly Stream Closure Report.
- Northern Drainage Ditch (CMI Plan Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Complete final restoration of the remediated Northern Ditch area.
 - Continue to maintain erosion and sediment control measures.
 - Continue preparation of the Northern Drainage Ditch Closure Report.
 - A draft figure showing the Southern Cove sediments adjacent to the Northern Ditch sheet pile area meet the MPS will be reviewed with DEP.
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Receive the permit from the Bureau of Submerged Lands
 - Begin remediation of SMA-1 the week of July 17 with in-water work starting July 31.

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- Groundwater
 - Interim Extraction System (IES):
 - Continue operation of extraction wells and quarterly monitoring and reporting per the Revised Short-Term CMP.
 - Groundwater Model (submitted Feb 22, 2016, DEP comments Jan 6, RTC Apr 28, 2017)
 - Respond to any comments on the Response to DEP Comments on the GW model.
 - Pre-Design for Groundwater at Landfills 3,4,5 (WP Aug 3, 2015; DEP CAL Sept 18,2015)
 - No current activity other than ongoing monitoring of groundwater levels and quality.
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit June 2017 NetDMR and Toxsheet and Effluent Mercury Test Report to DEP.
 - Continue maintenance activities and routine GWTP maintenance.
- 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

- The overall schedule was modified to begin remediation of Landfill 1 in late 2017 and remediation of the Plant Area in 2018. A revised master schedule was presented to DEP at the May 10, 2017 meeting and will be updated for the July meeting.

The quantity of waste shipped to the various disposal locations

- As of the end of June 2017:
 - **Leach Field: Soil excavation and off-site disposal is complete.**
 - A total of 14 railcars, containing 1379 tons of non-hazardous Leach Field soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York.
 - **Landfill Ridge: Soil excavation and off-site disposal is complete.**
 - A total of 564 railcars, containing 55,158 tons of non-hazardous Landfill Ridge soils, have been shipped offsite.
 - 534 railcars to the Republic disposal facility in Niagara Falls, New York
 - 30 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
 - **Scrap Metal Yard: Soil excavation and off-site disposal is complete.**
 - A total of 413 railcars, containing 40,556 tons of non-hazardous Scrap Metal Yard soils, have been shipped offsite
 - 412 railcars to the Republic disposal facility in Niagara Falls, New York
 - 1 railcar to the US Ecology Stablex disposal facility in Quebec, Canada.
 - **Northern Drainage Ditch: Soil excavation and off-site disposal is complete.**
 - A total of 207 railcars, containing 19,583 tons of non-hazardous Northern Drainage Ditch soils, have been shipped offsite.
 - 207 railcars to the Republic disposal facility in Niagara Falls, New York
 - 0 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.

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- **Southerly Stream: Soil excavation and off-site disposal is complete.**
 - A total of 85 railcars, containing 8,302 tons of non-hazardous Southerly Stream soils, have been shipped offsite.
 - 75 railcars to the Republic disposal facility in Niagara Falls, New York
 - 10 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Landfill 2:**
 - 98 railcars of Landfill 2 soils were shipped in June 2017.
 - 22 railcars containing 2,162 tons of non-hazardous Landfill 2 soils to the Republic disposal facility in Niagara Falls, New York
 - 76 railcars containing 7,404 tons of listed waste soils from Landfill 2 to the US Ecology Stablex disposal facility in Quebec, Canada
 - A total of 199 railcars containing Landfill 2 soils have been shipped offsite to date.
 - 64 railcars containing over 6,279 tons of non-hazardous Landfill 2 soils
 - 54 railcars of non-hazardous soils to the Republic disposal facility in Niagara Falls, New York
 - 10 railcars of non-hazardous soils to the US Ecology Stablex disposal facility in Quebec, Canada.
 - 135 railcars containing 13,150 tons of listed waste soils to the US Ecology Stablex disposal facility in Quebec, Canada
 - US Ecology has paid Hazardous Waste Transporter Fees on 8,960.55 tons to date.

Additional information regarding the progress of the work

- The next *On The Penobscot* community newsletter will be drafted in late summer and mailed to residents and key community contacts in September.
- The BeyondHoltraChem.com website is periodically updated to reflect ongoing remediation activities.