

August 15, 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 – July 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 **July 1 – 31, 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
July 2017**

Report Date: August 15, 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 Jul 13 to discuss the conceptual design of the final groundwater extraction system.
- Met with DEP on Jul 26 at the Orrington Site to discuss site remediation and technical submittals, and held various conference calls to discuss remediation topics.
- 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)
 - No new activity
- 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 accordance with the Short-Term CMP the week of Jul 17, 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, DEP Comments May 31, 2017)
 - Submitted a Response to DEP comments on the Draft Landfill 1 CMI Plan to DEP on Jul 25, 2017.
 - Selected Charter Environmental as the remediation contractor for the Landfill 1 remediation.
- 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 Closure Report Jul 25, 2017)
 - Continued to maintain erosion and sediment control measures and cap inspections.
 - Submitted the Landfills 3 4, and 5 CMI Closure Report to DEP on Jul 25, 2017.

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- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Continued dosing studies for the in-situ treatment of the chloropicrin area.
 - Submitted the Design (text and drawings) for the in situ treatment of the chloropicrin area to DEP on Jul 21, 2017
 - 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 Closure Report Jul 25, 2017)
 - Continued to maintain erosion and sediment control measures.
 - Submitted the Scrap Metal Yard CMI Closure Report to DEP on Jul 25, 2017.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Submitted the Southerly Stream CMI Plan Drawings Revision 1 Addendum 2 to DEP Jul 6, 2017 and received approval the same day.
 - Continued to maintain erosion and sediment control measures.
 - Continued restoration activities
 - Began preparation of Southerly Stream CMI Closure Report.
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Completed 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)
 - Received the Maine Bureau of Submerged Lands permit on Jul 17, 2017.
 - Constructed staging area and access road, and installed turbidity monitoring equipment and performed baseline monitoring
 - Completed the excavation, sampling and backfill at SMA-1.
 - Started remediation at SMA-2 with the “in the dry” excavation, sampling and backfill activities.
- Groundwater
 - Extraction System (IES and Final):
 - Continued operation of extractions wells and quarterly monitoring and reporting.
 - Began preparation of draft design for final groundwater extraction system.
 - 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. July was month 4 for Landfill 2 area.
- The average daily flow through the GWTP was 50,807 gallons with 349,049 gallons of construction-related water which was reduced from June.
- Generated 3.5 cubic yards of sludge during July and 2 cubic yards of spent carbon/Mersorb.
- Submitted the June 2017 NetDMR to DEP on Jul 12 and the Toxsheet and Effluent Mercury Test Report form to DEP on Jul 13, 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 May remediation monitoring data to DEP on Jul 26, 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 and/or have conference calls with DEP as needed to discuss ongoing remediation activities and pending / draft submittals.
- 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 accordance with the approved plan.
- 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, DEP Comments May 31, 2017)
 - Finalize the draft Excavation and Restoration and Construction Water Management Work Plans for the Landfill 1 remedy for submittal to DEP.

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- Receive DEP comments on the proposed excavation limits (& revised limits if applicable), the confirmation sampling plan (& revised sampling plan if applicable) and the approach to “record” or “as-built” data that represents soils left in place. (DEP Comments on the draft contractor work plans will be due Sept 8 – 30 days after submittal.)
- Landfill 2 (CMI Plan Rev1 Oct 7, 2016; Addendums 1-3, final DEP Approval Apr 26, 2017)
 - Complete excavation, confirmation sampling and backfill activities and continue tracking non-hazardous and hazardous soil shipments.
 - Remove the sheet piling and begin restoration activities.
- Landfills 3-5 (CMI Closure Report Jul 25, 2017)
 - Continue to maintain erosion and sediment control measures and complete cap inspections.
- Plant Area (Draft CMI Plan Feb 13, 2017)
 - 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 Closure Report Jul 25, 2017)
 - Continue to maintain erosion and sediment control measures.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Continue to maintain erosion and sediment control measures.
 - Continue restoration activities
 - Continue preparation of CMI Closure Report.
- Northern Drainage Ditch (CMI Plan Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Continue to maintain erosion and sediment control measures.
 - Continue preparation of the Northern Drainage Ditch Closure Report.
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Continue remediation with “in the dry” excavation and sampling at SMA-2.
 - Mobilize the barge / moonpool equipment and begin dredging SMA-2.
- Groundwater
 - Extraction System (IES & Final):
 - Continue operation of extraction wells and quarterly monitoring and reporting per the Revised Short-Term CMP.
 - Submit the draft design for final groundwater extraction system to DEP.
 - Groundwater Model (submitted Feb 22, 2016, DEP comments Jan 6, RTC Apr 28, 2017)
 - Respond to any 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 July 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.

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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 Jul 26, 2017 meeting and will be updated again for the Sept 28, 2017 meeting.

The quantity of waste shipped to the various disposal locations

- As of the end of July 2017:
 - **Leach Field: Soil excavation and off-site disposal is complete.**
 - A total of 14 railcars, containing 1379 tons (TSDf weight) 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 (TSDf weight) 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 (TSDf weight) 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 (TSDf weight) 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.
 - **Southerly Stream: Soil excavation is complete, off-site disposal continued.**
 - In July 2017, 6 railcars, containing 593 tons of non-hazardous Southerly Stream soils, were shipped to the Republic disposal facility in Niagara Falls, New York.
 - A total of 91 railcars, containing 8895 tons (Site weight) of non-hazardous Southerly Stream soils, have been shipped offsite.
 - 81 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: Soil excavation is complete, off-site disposal continued.**
 - In July 2017, 46 railcars of Landfill 2 soils were shipped off site.
 - 26 railcars containing 2,541 tons of non-hazardous Landfill 2 soils to the Republic disposal facility in Niagara Falls, New York
 - 20 railcars containing 1,948 tons of listed waste soils from Landfill 2 to the US Ecology Stablex disposal facility in Quebec, Canada

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- A total of 245 railcars containing Landfill 2 soils have been shipped offsite to date.
 - 90 railcars containing over 8,821 tons of non-hazardous Landfill 2 soils
 - 80 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.
 - 155 railcars containing 15,099 tons of listed waste soils to the US Ecology Stablex disposal facility in Quebec, Canada

Maine Hazardous Waste Tax

- The total Maine Hazardous Waste Tax paid as of July 31, 2017 is \$789,039.
 - Note: These taxes are paid quarterly so the total tax paid is not directly related to the total tons of hazardous waste shipped as of July 31.)

Additional information regarding the progress of the work

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