

January 17, 2017

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 – December 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 **December 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: (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
December 2016**

Report Date: January 17, 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

- Held monthly conference call with DEP on Dec 7 and met with DEP on Dec 14, 2016 to discuss site activities, design concepts and ongoing construction work.
- 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 (Upland)
 - No new activity.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP submitted Apr 12, 2016)
 - No new activity. 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 plan is approved, the current groundwater monitoring programs continue to be implemented.
- Landfill Ridge Area (CMI Plan Rev 1 - Oct 28, 2015; DEP Conditional Approval - Dec 10, 2015)
 - Continued to maintain erosion and sediment control measures.
 - Continued preparation of the Landfill Ridge CMI Closure Report.
- Landfill 1
 - Continued preparing the Draft Landfill 1 CMI Plan including a work plan for additional field *work*.
- Landfill 2 (CMI Plan – Rev 1, Oct 7, 2016, Addendum 1 Nov 29, 2016)
 - Received DEP comments on the Addendum 1 on Dec 12 and submitted a response to comments to DEP on Dec 28, 2016.
- Landfills 3, 4 and 5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval, Jul 12, 2016)
 - Continued to inspect and maintain winter erosion control measures.
- Plant Area
 - Continued developing the Draft Plant Area CMIP and discussed the design with DEP at the meeting on Dec 14, 2016.
- Scrap Metal Yard (CMI Plan – Rev 1, Jun 22, 2016; DEP Conditional Approval, Jul 22, 2016)
 - Continued to inspect and maintain winter erosion control measures.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Submitted Southerly Stream By-Pass Discharge Pad detail to Maine DEP on 12/1/16.
 - Completed bypass construction in December
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Completed sheet piling installation and continued excavation and backfilling activities.

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- Southern Cove (Draft CMI Plan, Jun 8, 2016; DEP Comments Aug 26 & Sept 27, 2016)
 - Held a conference call with DEP to continue discussions of confirmation sampling issues.
 - Received DEP Comments on the Draft Construction Plan and Environmental Monitoring Plan for the Southern Cove CMIP to DEP on Dec 19, 2016.
 - Continued preparing responses to DEP comments on the Draft Southern Cove CMI Plan and Draft Contractor Work Plans.
- Groundwater
 - Continued preparation of Ferry Road Current Conditions Assessment report.
 - Conducted 4th quarter 2016 routine quarterly and Interim Extraction System (IES) water quality monitoring during the week of Dec 5.
 - Conducted a synoptic round of water level elevation measurements during the week of Dec 5.
 - Collected a surface water sample from monitoring location SW15-5A during the week of Dec 12.
 - Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
 - 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)
 - Conducted a location and elevation survey of 12 newly-installed monitoring wells in the Landfills 3-5 area.
 - Conducted three short-duration pumping tests in the Landfills 3-5 area at MW-710-B3, MW-709-B2, and MW-410-B1 during the week of December 12. Following completion of test, collected a water quality sample and submitted for laboratory analysis.
- 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 additional water being treated in the GWTP from remedial construction activities.
 - The Scrap Metal Yard work is underway and December was month 5 of the “new wastestream” (construction water) monitoring required for this area.
 - The Northern Drainage Ditch work began and December was month 1 of the “new wastestream” (construction water) monitoring required for this area.
 - The average daily plant discharge flow was approximately 48,000 gpd with 173,674 gallons of construction-related water and approximately 2,000 gallons of well development water treated in the GWTP this month.
 - Submitted the November 2016 NetDMR and Toxsheet and Effluent Mercury Test Report forms to DEP on Dec 14, 2016.
 - Submitted the annual Chapter 530 Toxicity Notification letter on Dec 30, 2016.
 - Completed routine GWTP maintenance activities.
- Other Site Activities
 - Completed routine site maintenance activities

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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.
- 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 January 7 to discuss site activities and meet with DEP on January 19, 2017 to discuss groundwater topics.
- Submit an update to the master schedule for the Orrington Remediation Site to DEP.
- Submit a Revised Winter Erosion & Sedimentation Control Plan to DEP.
- 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)
 - No activity planned
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP April 12, 2016)
 - Receive DEP comments on the Draft Short-Term CMP and prepare response to comments based on discussions at Jan 19 meeting.
- Landfill Ridge Area (CMI Plan Rev 1, Oct 28, 2015; DEP CAL, Dec 10, 2015)
 - Continue inspections and maintenance of erosion and sediment control measures.
 - Submit the Landfill Ridge CMI Closure Report.
- Landfill 1
 - Continue developing the remedial design and the work plan for additional field work.
- Landfill 2 (CMI Plan – Rev 1, Oct 7, 2016, Addendum 1 Nov 29, 2016)
 - Receive DEP Approval of the Landfill 2 CMI Plan Rev 1 and Addendum 1.
 - Construction will begin after the Northern Drainage Ditch remedy is complete, and final restoration is expected to be complete by early summer 2017.
- Landfills 3-5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval July 12, 2016)
 - Continue inspections and maintenance of caps and erosion and sediment control measures.
 - Complete final restoration in Spring 2017.
- Plant Area
 - Continue developing the remedial design and the work plan for additional field work.
- Scrap Metal Yard (CMI Plan – Rev 1, June 22, 2016; DEP CAL, July 22, 2016)
 - Continue inspections and maintenance of caps and erosion and sediment control measures.
 - Complete final restoration in Spring 2017.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Commence construction of the remedial action and begin confirmation sampling.
 - Construction is expected to be completed in Spring 2017 including final restoration of both the northern and southern segments of the Southerly Stream.

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- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Continue construction of the remedial action and continue confirmation sampling.
 - Construction and final restoration is expected to be completed in Spring 2017.
- Southern Cove (Draft CMI Plan, Jun 8, 2016; DEP Comments, Aug 26 & Sept 27, 2016)
 - Submit responses to DEP comments on the Draft Southern Cove CMI Plan and the Draft Construction Plan and Environmental Monitoring Plan
 - Continue discussions with DEP on confirmation sampling issues and submit a revised Sampling Protocol to DEP.
 - Coordinate with USACE and NMFS on permit application reviews
 - Construction in the dry is expected to start late Summer 2017. The start date for in-water work will be established in agency permits and may be as late as September or October 2017.
- Groundwater
 - Finalize report summarizing Ferry Road Current Conditions for submittal to DEP in early February.
 - Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
 - Three-dimensional Groundwater Model (Feb 22, 2016)
 - Receive DEP comments on the Draft Short-Term CMP and prepare response to comments based on discussions at Jan 19 meeting.
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
 - Prepare summaries of physical observations, laboratory analytical data, and hydraulic testing data from recent investigations in the Landfills 3-5 area.
 - Present Landfills 3-5 data and preliminary findings to MEDEP during a meeting on Jan 19.
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit December 2016 NetDMR and Toxsheet and Effluent Mercury Test Report forms to DEP.
 - Replace MW601 pump which is currently operating but unable to deliver the prescribed flow.
 - Continue winter 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

- None

The quantity of waste shipped to the various disposal locations

- As of the end of **December 2016:**
 - 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 over 55,158 tons of non-hazardous Landfill Ridge soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York or the Stablex disposal facility in Quebec, Canada.

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- Scrap Metal Yard:
 - 46 railcars of Scrap Metal Yard soils were shipped in December 2016.
 - A total of 413 railcars, containing over 40,300 tons of non-hazardous Scrap Metal Yard soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York or the Stablex disposal facility in Quebec, Canada.
- Northern Drainage Ditch:
 - 35 railcars of Scrap Metal Yard soils were shipped in December 2016.
 - A total of 35 railcars, containing over 3410 tons of non-hazardous Scrap Metal Yard soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York.

Additional information regarding the progress of the work

- None