

October 9, 2015

Ms. Stacy Ladner
Unit Manager
Division of Oil & Hazardous Waste Facility Regulation
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

**Subject: Monthly Progress Report – September 2015
Orrington Remediation Site
Orrington, Maine**

Dear Ms. Ladner:

This Monthly Progress Report is submitted to Maine Department of Environmental Protection (MEDEP) 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 MEDEP dated November 24, 2008. This Report covers the period from **September 1 – 30, 2015**, 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,

A handwritten signature in blue ink that reads "Kathy Zeigler".

Kathy Zeigler
Director, Environmental Remediation

cc: Patricia Duft – Mallinckrodt US LLC
Melanie Loyzim - Maine Department of Environmental Protection
Paul White – Town of Orrington
Audrey Snowden – Orrington Town Library

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
September 2015**

Report Date: October 9, 2015

This Monthly Progress Report is submitted to the Maine Department of Environmental Protection (MEDEP) 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.

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

- Held monthly conference call with MEDEP on September 2, 2015 to discuss site activities.
- Held a meeting with MEDEP on September 23 and 24, 2015 to discuss various site activities described in more details below.
- Began construction of the permanent air monitoring stations to be installed at the locations approved by MEDEP.
- Continued air monitoring (Lumex readings) in accordance with the approved Phase 7 air monitoring plan.
- Completed rail modifications on September 4, completed the scale house installation on September 18, and completed calibration of the scale on October 1, 2105.
- Completed paving of the temporary soil stockpile area on September 15, and completed the stone berm on September 24, 2015
- Submitted the 2014 Annual Hazardous Waste Report and Universal Waste Reporting Form to MEDEP and USEPA on September 4, 2015.
- Permitting
 - Participated on a conference call on September 14, 2015 with the USACE to discuss the new Maine General Permit.
- Facility Dismantling Plan
 - No update
- Current Conditions / Comprehensive Monitoring Plan
 - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
 - Downloaded pressure transducers from staff gauge locations on September 8.
 - Drilled and installed MW-704-O1, MW-704-O2, MW-705-O1, MW-706-O1, and MW-706-B1 between August 31 and September 14.
 - Installed staff gauge and data logging pressure transducer at SG-1A, located in the eastern portion of the former gravel pit northeast of Landfill 2.
 - Surveyed locations and elevations of newly-installed monitoring wells and SG-1A.
 - Developed newly-installed monitoring wells.
 - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
 - Prepared draft materials summarizing preliminary packer testing results in B-701, and proposed monitoring well screen intervals for MW-701-B1 and MW-701-B2. Submitted to MEDEP on September 21, and submitted updated proposal on September 23 following discussion with John Beane.
 - Installed MW-701-B1 and MW-701-B2 on September 25 and 28.
 - Developed newly-installed bedrock monitoring wells.
 - Conducted groundwater density measurements on September 28 and 29.

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- Manufacturing Area Current Conditions Assessment
 - Began quality control review of laboratory analytical reports and electronic data deliverables from the comprehensive groundwater quality monitoring round conducted between July 27 and August 7.
 - Coordinated with CDM Smith/Geosyntec team for SME observation and logging of GB-PA-07, SB-PA-22, SB-PA-24, SB-PA-25, and SB-PA-26.
- Landfill Ridge Area
 - Completed 80 borings for waste characterization sampling beginning on September 9, 2015.
 - Submitted the Excavation Work Plan and Water Management Plan to MEDEP for comments.
- Landfills 1-2
 - Continued evaluation of pre-design data collected per the Pre-Design Phase II Work Plan.
 - Submitted Response to Comments to MEDEP's Conditional Approval to the Pre-Design Phase II Work Plan on July 22, 2015 which included the proposed confirmation sampling approach.
- Landfills 3-5
 - Submitted the Landfills Cap CMIP to MEDEP on August 7, 2015.
 - Discussed the proposed design with MEDEP at the September 24, 2015 meeting.
- Plant Area
 - Submitted the Revised Plant Area Pre-Design Work Plan to MEDEP on September 4, 2015.
 - Completed the Scrap Metal Yard borings and began the Plant Area Stage 1 borings on September 22, 2015.
 - Presented the conceptual design for the Scrap Metal Yard remedial action to MEDEP on September 23, 2015.
- Southern Cove
 - Submitted an amendment to the Southern Cove Pre-Design Work Plan on September 4, 2015 for additional sediment samples and received MEDEP approval.
 - Completed pre-design field work on September 22, 2015.
 - Present design concepts to MEDEP at the meeting on September 23, 2015.
 - Started hydrodynamic model to support turbidity control design
- Groundwater
 - Interim Extraction System:
 - Collected grab groundwater samples from the five extraction wells on September 8, and submitted for laboratory analysis of mercury, chloropicrin, and chloride.
 - Downloaded and reviewed pressure transducer data, and assessed water level elevations during operation of the interim extraction well system.
 - Three-dimensional Groundwater Model:
 - Drilled and installed four piezometers along the bedrock scarp during the week of September 14, 2015.
 - Surveyed location and elevation of newly-installed piezometers PZ15-04 through -07.
 - Communicated with MEDEP regarding additional proposed geotechnical boring in the vicinity of the former salt storage pad. Following verbal approval from John Beane, drilled geotechnical boring and installed piezometer PZ15-11.
 - Continued updates to the three-dimensional groundwater model according to action items established during the July 20 meeting.
 - Submitted a Pre-Design Groundwater Control Work Plan for the groundwater beneath Landfills 3, 4, and 5 to MEDEP on August 3, 2015.
 - Drilled soil borings and installed piezometers PZ15-08, -09, and -10 at locations in Landfills 3, 4, and 5 (respectively) during the week of September 21.

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- Groundwater Treatment Plant (GWTP) Operation
 - Submitted the August 2015 eDMR to MEDEP on September 9, 2015.
 - 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 additional samples on September 2, 2015 for volatiles, semivolatiles, herbicides, and manganese in compliance with the “new waste stream” requirements in the MEPDES permit. Samples were sent to Katahdin for analysis. This is the 9th month of the minimum 10 months required under the new wastestream sampling requirements.
 - Collected weekly samples from Outfall 003 and the Southerly Stream and transported to Katahdin for analysis. Per previous protocol, all samples are analyzed for mercury using USEPA Method 245.1. If analytical results are ≤ 200 ng/L, the applicable sample will be re-analyzed using USEPA Method 1631.
 - Submitted the July and August 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP on September 24, 2015.
 - Pumped out and pressure washed the CoMag unit in preparation for the winter season.
 - Re-piped the entire CoMag caustic injection system (note that replacement is typical of this type of system over the long term given the nature of the chemicals used).
 - Conducted a test call with the generator provider at 2:00 am to be assured they would deliver within the 4-hour contract time frame; their response time was 90 minutes.
 - Other Site Activities
 - Completed cleanout of Outfall 003 (paved sump) on September 3, 2015.
 - Collected weather station data.
 - Completed routine maintenance activities
2. **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. This includes the additional analyses for “new waste streams” as described above.
 - Weekly air monitoring data (Lumex readings and current air monitoring stations) are provided to MEDEP via email.
 - Monthly weather station data is maintained electronically and included with this monthly report.
 - Weekly Southerly Stream and Outfall 003 mercury data is included with this monthly report.
 - Quarterly groundwater monitoring data is reported in the quarterly groundwater reports and/or the annual Landfill 5 monitoring report.
 - Data submittals this month included:
 - DMA laboratory reports for previously submitted data in accordance with the format approved by MEDEP.
 - Daily EGAD EDDs submitted to MEDEP via the automated database system
 - Validated EGAD EDDs and laboratory reports submitted to MEDEP via the automated database system or the ftp site (for large laboratory reports) as they are available.
3. **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 October 29, 2015 to discuss various site activities.
 - Hold a conference call with MEDEP regarding the Updated DMA/Alpha Comparison Technical Report, submit additional data analysis and a proposed resolution to this issue.

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- Respond to MEDEP comments on the draft Perimeter Air Monitoring Plan and submit a Revised PAMP for MEDEP review and approval.
- Install permanent air monitoring stations in accordance with MEDEP approved locations.
- If applicable, respond to MEDEP comments on the Logistics Work Plan.
- Permitting
 - Hold a meeting with USACE and NMFS, and MEDEP (NRPA) to discuss Southern Cove permitting requirements, including Section 7.
- Facility Dismantling Plan
 - The temporary wells in the Leach Field area are currently dry. As soon as groundwater is available, these wells will be sampled for all MPS constituents as outlined in the MEDEP approved Phase 7 Work Plan Addendum. Mercury will also be resampled so all results are from the same date.
 - If results are less than the MPS the wells will be abandoned. If not the next steps will be coordinated with MEDEP.
- Current Conditions / Comprehensive Monitoring Plan
 - Landfill 2 Current Conditions Assessment Work Plan (MEDEP CAL May 20, 2015)
 - Conduct initial sampling of newly-installed Landfill 2 monitoring wells.
 - Ferry Road Current Conditions Assessment Work Plan (MEDEP CAL May 6, 2015)
 - Complete development of Ferry Road bedrock monitoring wells
 - Conduct initial sampling of Ferry Road area wells, including newly-installed overburden and bedrock monitoring wells.
 - Complete groundwater density measurements of monitoring wells in the Ferry Road Plant Areas.
 - Manufacturing Area Current Conditions Assessment Work Plan
 - Conduct initial surface water sampling and sediment sampling according to the conditionally-approved Manufacturing Area Current Conditions Work Plan.
 - Continue reviewing data from the comprehensive site-wide groundwater sampling event.
- Landfill Ridge Area
 - Complete the waste profile samples in preparation for construction.
 - Revise the Excavation Plan and Water Management Plan in response to MEDEP comments, resolve any outstanding issues and submit the final Landfill Ridge CMIP.
 - Issue final design documents after Maine DEP Review.
 - Begin installation of Erosion and Sediment controls and access road construction.
- Landfills 1-2
 - Evaluate data from the Pre-Design Phase II field work to develop the conceptual remedial design for Landfill 2 and begin evaluating remedial design options for Landfill 1.
- Landfills 3-5
 - Respond to MEDEP comments on the Landfill 3-5 Cap CMI Plan.
- Plant Area
 - Respond to MEDEP comments on the Revised Plant Area Pre-Design Work Plan.
 - Continue pre-design activities in the Scrap Metal Yard, Southerly Stream and North Ditch and the Plant Area.
 - Submit the draft Scrap Metal Yard CMI Plan to MEDEP for initial comments.

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- Southern Cove
 - Receive additional PD Investigation data, validate and re-evaluate dredge delineation.
 - Submit a Sediment Removal Area Delineation Technical Memorandum to MEDEP.
 - Complete the hydrodynamic model and evaluate potential loadings on turbidity control alternatives.
 - Groundwater
 - Conduct sampling and water elevation monitoring of the Interim Extraction System.
 - Continue updates to three-dimensional groundwater model.
 - Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Continue the expanded monitoring and reporting program under the “new waste stream” requirement in the MEPDES permit as described above.
 - Submit September 2015 eDMR to MEDEP.
 - Submit the September 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP.
 - Other Site Activities
 - Complete pavement sweeping on October 7, 2015.
 - Complete routine maintenance activities.
 - Collect weather station data.
- 4. 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**
- A revised master schedule will be submitted to MEDEP in October 2015.
- 5. The quantity of waste shipped to the various disposal locations**
- September 4, 2015 – General Debris (13,640 lbs) shipped to Juniper Ridge.
 - Roll Off Sample Results for total mercury 0.041 mg/kg and 0.08 mg/kg.
 - September 9, 2015 – Recyclable Metal (19,980 lbs) shipped to AIM.
 - Roll Off Sample Results for total mercury 0.06 mg/kg and 0.15 mg/kg
- 6. Additional information regarding the progress of the work**
- None