

August 10, 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 – July 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 **July 1 – 31, 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,



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
July 2015**

Report Date: August 10, 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

- Submitted the DMA/Alpha data comparison memo to MEDEP on July 15, 2015. Held a conference call with MEDEP and agreed to collect additional data.
- Continued air monitoring (Lumex readings) in accordance with the approved Phase 7 air monitoring plan.
- Submitted the Perimeter Air Monitoring Plan to MEDEP on July 22, 2015.
- Received a response to the USACE Jurisdictional Determination for the three ditches/swales at the Site on July 31, 2015.
- Facility Dismantling Plan
 - Received mercury data from the temporary wells in the Leach Field area and validated that all results were less than the MPS for mercury.
- Current Conditions / Comprehensive Monitoring Plan
 - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
 - Abandoned former production well 8-8 on July 2
 - Conducted water level elevation monitoring and downloaded pressure transducers from staff gauge locations on July 6
 - Received laboratory analytical data from groundwater, surface water, and sediment samples collected in June and transmitted EGAD EDDs to MEDEP on July 2 and 23.
 - Summarized water level elevations and data from initial sampling and presented to MEDEP during a July 20, 2015 meeting.
 - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
 - Conducted bedrock drilling at locations MW-701, MW-702, and MW-703 between July 6 and 17. Installed casing approximately 10 feet into bedrock using mud rotary drilling and drilled through bedrock to the target elevation of approximately -100 feet (NAVD 88) using air rotary drilling.
 - Conducted borehole geophysical logging of bedrock boreholes MW-701, MW-702, and MW-703 during the week of July 20, 2015.
 - Installed temporary packers in the bedrock boreholes.
 - Plant Area Current Conditions Assessment
 - Discussed a comprehensive site-wide groundwater sampling event with MEDEP on July 20, 2015 and received verbal approval to proceed.
 - Inventoried monitoring wells not included in the routine quarterly monitoring program and prepared wells for the comprehensive groundwater sampling event.
 - Submitted a response to MEDEP comments on data gaps in the Plant Area (aka Manufacturing Area) and a Work Plan for Current Conditions Assessment in the Manufacturing Area on July 23, 2015.
 - Began comprehensive groundwater quality monitoring on July 27.

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- Landfill Ridge Area
 - Continued Pre-Construction activities including construction of the temporary soil stockpile area, rail loading area and repair of access roads.
 - Submitted a response to MEDEP's June 23, 2015 comments on the Landfill Ridge CMI Plan on July 15, 2015.
 - Selected Envirocon as the remediation contractor for the Landfill Ridge remedy construction.
 - Received approval to complete borings outlined in the CMIP to define the limits of the excavation area. Submitted emails with data tables and figures requesting approval of step-out borings to delineate the horizontal and vertical limits responded to MEDEP comments and received approval of each request to date.
- Landfills 1-2
 - Submitted a response to MEDEP's comments on the Conditional Approval Letter (CAL) for Landfills 1 & 2 Phase II Pre-Design Work Plan (June 16, 2015) to MEDEP on July 22, 2015.
 - Continued field work outlined in the Pre-Design Phase II Work Plan. Submitted emails with data tables and figures requesting approval of step-out borings around both Landfills 1 and 2. Responded to MEDEP comments and received approval of each request to date.
- Landfills 3-5
 - Continued design activities and CMI Plan preparation for the caps on Landfills 3, 4, and 5.
- Plant Area
 - Began development of the response to MEDEP's comments on the Plant Area Phase I Pre-Design Work Plan. Upon review of MEDEP comment and based on the pre-design work at Landfills 1 & 2, it was determined that the formal Phase I/II approach is not the most efficient approach therefore the Plant Area Pre-Design Work Plan is being significantly revised to include additional borings and/or parameters in numerous areas.
 - Completed the geotechnical borings in the scrap metal yard on July 20, and started the Geoprobe borings in the same area on July 27, 2015.
- Southern Cove
 - Evaluating data to determine if additional pre-design work is necessary before the Southern Cove CMI Plan is started.
- Groundwater
 - Interim Extraction System:
 - Collected grab groundwater samples from the five extraction wells on July 6, 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.
 - Submitted June 2015 Interim Extraction System operation summary, including operations information and laboratory EGAD EDDs, to MEDEP on July 23, 2015.
 - Three-dimensional Groundwater Model:
 - Sent updated model files to MEDEP and Milovan Beljin on July 10, 2015.
 - Met with MEDEP on July 20, 2015 to review updates to the groundwater model since August 2014, final model calibration, and goals, objectives, and uses of the three-dimensional groundwater model.
 - Began drafting a Pre-Design Work Plan for the groundwater beneath Landfills 3, 4, and 5, data from which will be used to design a groundwater extraction system in this area.

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- Groundwater Treatment Plant (GWTP) Operation
 - Submitted the June 2015 eDMR to MEDEP on July 15, 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 July 6, 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 7th 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.
 - Received a follow-up request on July 23, 2015 from MEDEP (Tanya Hovell) requesting completion of the Toxsheet and Effluent Mercury Test Report forms however the questions and concerns submitted on June 4, 2015 were not addressed. A response was sent to MEDEP on July 24, 2015 requesting further clarification and reiterating that all requested data can be provided more efficiently if an alternate format can be used.
 - Treated approximately 90,000 gallons of water from the former process lagoon at Landfill 1 and smaller volumes from drilling activities.
 - Other Site Activities
 - 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 will include the additional analyses for “new waste streams” as described above.
 - Weekly air monitoring data (Lumex readings) are provided to MEDEP via email.
 - Monthly weather station data is maintained electronically and available upon request.
 - Quarterly groundwater monitoring data is reported in the quarterly groundwater reports and/or the annual Landfill 5 monitoring report.
 - Data submittals this month included:
 - Daily EGAD EDDs submitted via automated system to MEDEP
 - June 2015 Interim Extraction System Operation EGAD EDDs – July 23, 2015
 - Landfill 2 groundwater, surface water, and sediment data - July 2 and July 23, 2015.
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.**
- Hold monthly conference call with MEDEP on August 5, 2015 to discuss site activities.
 - Submit a revised DMA/Alpha data comparison memo to MEDEP.
 - Respond to MEDEP comments on the draft Perimeter Air Monitoring Plan
 - Receive MEDEP comments on the Logistics Work Plan (submitted April 15) and prepare response to comments.
 - Complete onsite rail upgrades and repairs including installation of weigh scale.

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- Facility Dismantling Plan
 - Receive groundwater data from temporary wells in Leach Field area for non-mercury parameters. 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)
 - Determine overburden monitoring well locations in collaboration with MEDEP.
 - Ferry Road Current Conditions Assessment Work Plan (MEDEP CAL May 6, 2015)
 - Conduct packer testing of Ferry Road bedrock boreholes
 - Determine screen elevations for Ferry Road wells in collaboration with MEDEP.
 - Plant Area Current Conditions Assessment Work Plan
 - Respond to MEDEP comments and initiate sampling activities if approved.
 - Complete the comprehensive site-wide groundwater sampling event.
- Landfill Ridge Area
 - Submit the Excavation Plan and Water Management Plan to MEDEP for review.
 - Once agreement is reached on the contractor submittals, submit the Revised Landfill Ridge CMI Plan to MEDEP.
 - Complete the construction of the temporary soil stockpile area, rail loading area and repair of access roads.
- Landfills 1-2
 - Complete field work outlined in the Pre-Design Phase II Work Plan.
- Landfills 3-5
 - Submit the Landfill 3-5 Cap CMI Plan to MEDEP and respond to comments as applicable.
- Plant Area
 - Submit a response to MEDEP's comments and a Revised Plant Area Pre-Design Work Plan to MEDEP.
- Southern Cove
 - Evaluate data, submit to MEDEP and begin developing Southern Cove CMI Plan.
- Groundwater
 - Meet with MEDEP on August 12 to discuss multiple groundwater issues.
 - Conduct monthly sampling and water elevation monitoring of the Interim Extraction System.
 - Submit the July 2015 Interim Extraction System operation summary to MEDEP.
 - Continue updates to three-dimensional groundwater model.
 - Submit the Pre-Design Work Plan for the groundwater beneath Landfills 3, 4, and 5 to MEDEP and respond to comments as applicable.
- 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 July 2015 eDMR to MEDEP.
 - Submit the 2014 Annual Hazardous Waste Report and Universal Waste Reporting Form to MEDEP and USEPA (due date to be determined upon receipt of the Orrington Annual Hazardous Waste Report form from MEDEP.)
- Other Site Activities
 - Complete routine maintenance activities.
 - Collect weather station data.

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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

- MEDEP and Mallinckrodt have both missed internal deadlines related to submittals, comments and approvals. Based on the experience with the submittals to date, the overall schedule is being revised to reflect more realistic review times. Tasks and submittal dates will be shifted however existing meeting dates and construction seasons for each of the areas of remediation will not change. This revised schedule will be submitted to MEDEP in August 2015.

5. The quantity of waste shipped to the various disposal locations

- Shipped General Debris to Casella, Juniper Ridge
 - 7/8/15 Roll-Off: 19,240 lbs; Total mercury 0.292 mg/kg (1027A) and 0.262 mg/kg (1027B)
 - 7/8/15 Roll-Off: 14,480 lbs; Total mercury 1.98 mg/kg (1028A) and 0.637 mg/kg (1028B)
 - 7/7/15 Roll-Off: 15,690 lbs; Total mercury 0.217 mg/kg (1029A) and 0.287 mg/kg (1029B)
 - 7/7/15 Roll-Off: 19,380 lbs; Total mercury 0.093 mg/kg (1030A) and 0.13 mg/kg (1030B)
 - 7/9/15 Roll-Off: 14,840 lbs; Total mercury 0.10 mg/kg (1031A) and 0.12 mg/kg (1031B)
- Shipped metals to be recycled to AIM Recycle Metals
- Shipped six 55-gallon drums of hazardous waste from the former chlorate building sump to Waste Management, Mercury Waste Solutions.

6. Additional information regarding the progress of the work

- None.