

April 11, 2019

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

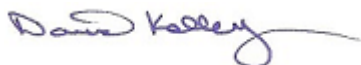
**Subject: Monthly Progress Report – March 2019  
Orrington Remediation Site  
Orrington, Maine**

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 of **March 2019** and is submitted on behalf of Mallinckrodt US LLC.

If you have questions regarding this report, please contact me at 774-284-2207.

Sincerely,



David Kelley  
Remediation Program Manager

cc: (all electronic copies)  
Kelly Bay – Director, Orrington Town Library  
Susan Carson –Town Clerk, Town of Orrington  
Keith Bowden– Chairman of Board of Selectman, Town of Orrington  
Patricia Duft – Mallinckrodt US LLC  
Susanne Miller – Maine DEP, Bangor  
David Wright – Maine DEP

**MONTHLY PROGRESS REPORT  
ORRINGTON REMEDIATION SITE  
Orrington, Maine  
March 2019**

**Report Date: April 11, 2018**

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**

- The monthly Mallinckrodt – DEP scheduled for March 6, 2019 was cancelled as a call with DEP occurred on February 28, 2019 to discuss the Plant Area Phase 2 activities and additional other discussions took place to discuss site activities as needed.
- Continued inspection and maintenance of site erosion and stormwater controls
- 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. The on-site inspector also continued daily emails to summarize activities to ensure all parties agree on what is planned/accomplished.
- Continued operation of the perimeter air monitoring system and meteorological station.
- Continued operation of the Maine certified on-site lab.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Landfill 1 (CMI Plan – Rev2 Apr 30, 2018; DEP Conditional Approval Letter May 10, 2018; CMI Plan – Rev2 May 17, 2018 (revised to incorporate all conditions in DEP CAL)
  - Submitted landfill 1 Closure report to DEP on 1/30/19
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
  - Startup of the repaired SVE system occurred on March 8, 2019. The system began 24 /7 Operation on March 11, 2019 and has operated continuously.
  - Submitted response to DEP comments to the Plant Area Concrete Sampling Results Memo on March 7, 2019
  - Submitted responses to DEP comments to the Plant Area Phase 2 CMI Plan Scope of work letter dated February 8, 2019 on March 7, 2019
  - Submitted Plant Area Phase 2 Scope of Work Letter Rev-1 and attachments on March 29,2019 this submittal includes:
    - Revised text in the Phase 2 Scope of Work Letter
      - Updated drawings
    - Addition of technical specifications
      - Addition of Remediation Contractor’s Excavation and Restoration Work Plan
      - Addition of revised Construction Quality Assurance Plan
      - Revised geotechnical information package

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**ORRINGTON REMEDIATION SITE**  
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- Submitted response to DEP comments on Chloropicrin Area Treatment Report (10/18 to 12/18) on March 29, 2019
- Continued chloropicrin groundwater performance monitoring
  
- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017, DEP Approval Oct 16, 2018)
  - Continued to maintain erosion and sediment control measures.
- Southern Cove (CMI Closure Report Jan 14, 2018, DEP Approval Aug 3, 2018)
  - Continued to maintain erosion and sediment control measures adjacent to the Cove.
  
- 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 GW extraction system (GWES) and Landfill 5.
  - Conducted monitoring according to the Short-Term Comprehensive Monitoring Plan (CMP) during the week of March 18. March monitoring included monthly and quarterly sampling of surface water, sediment, and groundwater in the vicinity of the Plant Area and Landfill 1 remediation areas, and quarterly monitoring according to the Interim Extraction System, Site Perimeter, and Landfill 5 monitoring programs.
  - Submitted response to DEP comments to the 3<sup>rd</sup> Quarter 2018 Short-Term Comprehensive Monitoring Plan Data Report on March 15, 2019
  - Submitted the 4<sup>th</sup> Quarter 2018 Short-Term Comprehensive Monitoring Plan Data Report to DEP on March 18, 2019
  - Attended DEP RCRA 2020 Conference on March 20, 2019. Met with DEP on March 20, 2019 to have initial discussions for proposed monitoring wells in Landfill 1.
  
- Groundwater Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
  - Following receipt of DEP comments in the Final GWES design, submitted response and two revised drawings on Nov 6, 2018 and received DEP approval on Nov 7, 2018.
  - Began Final GWES construction on December 3, 2018.
  - Updated the force-main and electrical/communication conduit alignment and provided updated site plan to DEP on January 16, 2019. DEP provided approval on January 17, 2019.
  - March Construction activities included subsurface piping from extraction wells to control building, control building construction, and interior piping. Also installed Force Main Tie in to Vault, also completed majority of pipe fusion and started excavation and pipe installation.
  
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Submitted Landfill 5 annual monitoring report 2018-on March 12, 2019
  - Received DEP comments on Landfill 5 annual monitoring report 2018 on March 26, 2019.
  - Met with DEP March 20, 2019 to discuss long-term monitoring possibilities, and results of hydrogeologic testing in the Landfills 3-5 area and conceptual GWES design
- Groundwater Model (Model Feb 22, 2016, DEP Acceptance of Model Sept 15, 2017)

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- No new activity
- 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).
  - Provided support to CDM as necessary for ongoing remedial site activities including routine treatment of excavation/ construction water generated during remedial activities.
  - The average daily flow through the GWTP was 59,547 gallons with 248,575 gallons of construction-related water.
  - Submitted the February 2019 NetDMR to MEDEP on March 12<sup>th</sup>, 2019
  - Submitted the February 2019 Toxsheet on March 11<sup>th</sup>, 2019
  - Educted a fresh final carbon bed on March 13<sup>th</sup> and Replaced filter press hydraulic oil and blew out air feed lines.
  - Completed routine GWTP maintenance activities.
- Awaiting issuance of MEPDES permit renewal, application submitted May 20, 2018. Draft permit was reviewed and comments provided to DEP on March 21, 2019.
- 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. Weekly reports are sent to Mallinckrodt. Mallinckrodt will notify the DEP of exceedances in accordance with the updated notification protocol sent to DEP on Aug 28, 2018. An annual report of all data for the preceding year will be submitted to DEP by March 1 of the following year.
  - Received DEP Comments on the 2018 Annual Perimeter Air monitoring report letter dated March 26, 2019.
- Unvalidated data and laboratory reports are submitted to DEP via the automated database system as they are available. Data validation is conducted by TechLaw as outlined in the Maine DEP approved Data Validation Protocol dated Jan 29, 2018 and a summary of the validation results sent to DEP and Mallinckrodt.
  - Received laboratory analytical data from March monitoring according to the Short-Term CMP. Data will be submitted to MEDEP following internal quality control review.

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**Completed Areas:**

- Landfill Ridge Area (CMI Closure Report Feb 3, 2017; DEP Acceptance Aug 21, 2017)
- Landfill 2 (CMI Closure Report Dec 21, 2017; DEP Approval Jul 2, 2018)
- Landfills 3, 4 and 5 (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
- Scrap Metal Yard (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
- Southerly Stream (CMI Closure Report Nov 15, 2017, DEP Approval Oct 16, 2018)
  - Continue to maintain erosion and sediment control measures and cap inspections as appropriate.

**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.**

- Continue technical discussions with DEP on remediation activities and pending submittals.
- Continue to include the on-site DEP oversight inspector in weekly construction meetings.
- Continue to review the on-site DEP oversight inspector emails outlining planned and completed activities to ensure no miscommunication.
- Continue operation of the perimeter air monitoring system.
- Continue operation of the on-site lab in compliance with Maine certification.
- Continue stockpile management of excavated materials and loading railcars for shipment
- Continue to maintain and improve erosion and sediment control measures and cap inspections as appropriate in completed areas listed above.
  
- Landfill 1 (CMI Plan – Rev2 Apr 30, 2018; DEP Conditional Approval Letter May 10, 2018; CMI Plan – Rev2 May 17, 2018 (revised to incorporate all conditions in DEP CAL)
  - Maintain erosion and sediment controls to be in place over the winter.
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
  - Submit response to DEP comments for the Plant area Concrete sampling Results memo submittal dated 3-7-19
  - Continue development of Contractor Work Plans and submittals for Plant Area CMI Phase 2 work
  - Respond to DEP comments as received for various Plant Area Phase 2 CMI submittals.
  - Maintain erosion and sediment controls.
  - Excavate area PA1-13 and backfill areas PA1-11 and PA1-12 – weather dependent
  - Continue to implement the Phase 2 chloropicrin treatment injections per the Phase 2 design.
  - Continue operation of the SVE system and performance monitoring.
- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017, DEP Approval Oct 16, 2018)
  - Continue to maintain erosion and sediment control measures.
- Southern Cove (CMI Closure Report Jan 14, 2018, DEP Approval Aug 3, 2018)

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- Monitor vegetation growth and maintain as needed.
- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
  - Conduct Short-Term CMP remediation monitoring in accordance with the approved plan.
- Groundwater
  - Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
  - Continue construction of the Final GWES.
  - Continue quarterly monitoring and reporting per the approved Short-Term CMP.
  - Submit proposal for Monitoring wells in the Landfill 1 area
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Prepare and submit report transmitting hydrogeological testing data and conceptual GWES design for the Landfills 3-5 area
  - Respond to DEP comments on 2018 Landfill 5 annual monitoring report letter dated March 26,2019
  - Groundwater Model (Model Feb 22, 2016, DEP Acceptance of Model Sept 15, 2017)
  - No planned activity
- Groundwater Treatment Plant (GWTP) Operation
  - Receive the final MEPDES permit renewal.
  - Continue compliance sampling of Outfall 001 and 002 per the MEPDES permit.
  - Submit. Submit March 2019 NetDMR to MEDEP.
  - Complete and submit to MEDEP the March 2019 Toxscan Report. and Effluent Mercury Test Report forms.
  - Continue maintenance activities and routine GWTP maintenance.
- Other Site Activities
  - Continue routine site maintenance activities.
    - Submit response to DEP comments to the 2018 Annual Perimeter Air monitoring report letter dated March 26, 2019.

**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

**As of the end of December 2018, the quantity of waste shipped is shown below:**

- **Leach Field: Soil excavation and off-site disposal is complete.**
  - A total of 14 railcars, containing 1,379 tons (TSDF weight) of non-hazardous Leach Field soils, have been shipped off site to Republic 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 off site.
    - 534 railcars to the Republic disposal facility in Niagara Falls, New York

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- 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 off site
    - 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 307 railcars, containing 29,440 tons (TSDf weight) of non-hazardous Northern Drainage Ditch soils, have been shipped off site.
    - 307 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 and off-site disposal is complete.**
  - A total of 112 railcars, containing 10,583 tons (TSDf weight) of non-hazardous Southerly Stream soils, have been shipped off site.
    - 102 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 and off-site disposal is complete.**
  - A total of 441 railcars containing Landfill 2 soils have been shipped off site to date.
    - 118 railcars of 11,557 tons (TSDf weight) of non-hazardous Landfill 2 soils
      - 108 railcars to the Republic disposal facility in Niagara Falls, New York
      - 10 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
    - 323 railcars containing 31,497 tons (Site weight) of hazardous (listed waste) soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **Southern Cove: Sediment removal and off-site disposal is complete.**
  - A total of 190 railcars containing 18,548 tons (TSDf weight) of non-hazardous Southern Cove sediments, have been shipped off site.
    - 190 railcars to the Republic disposal facility in Niagara Falls, New York
    - 0 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Plant Area: Soil excavation and shipments are ongoing.**
  - In March 2019, 0 railcars of Plant Area non-hazardous soils were shipped off site.
  - A total of 226 railcars containing 21,863.47 tons (TSDf weight) of non-hazardous soils have been shipped from the Site:
    - 206 railcars to the Republic disposal facility in Niagara Falls, New York
    - 20 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Landfill 1: Soil excavation and shipments are ongoing.**
  - In March 2019, a total of 50 railcars of Landfill 1 soils were shipped off site:
    - 50 rail cars containing 4885.15 tons of Non-Hazardous soils
  - A total of 769 railcars containing Landfill 1 soils have been shipped off site to date.
    - 559 railcars of 54689.55 (Site weight) of non-hazardous soils
      - 559 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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- 210 railcars containing 20506.1 tons (Site weight) of hazardous soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **General Debris**
  - General Debris, Juniper Ridge 6,000lbs 3/20/19
    - Total Mercury Sample A= 0.065
    - Total Mercury Sample B= ND
- **GWTP Sludge**
  - None

**Maine Hazardous Waste Fees**

Under the DEP Hazardous Waste Transporter Program, EQ Northeast, Inc. pays \$60/ton to the Maine Hazardous Waste Fund for hazardous wastes transported and disposed off-site. **As of Dec 31, 2018, the total paid under this program is \$3,118,368.00**

- The 2<sup>nd</sup> Quarter 2017 report lists 13,150.65 tons of hazardous soil transported by rail and disposed off site for a total fee of \$789,039 which was paid 9/28/17.
- The 3<sup>rd</sup> Quarter 2017 report lists 14,125.95 tons of hazardous soil transported by rail and disposed off site for a total fee of \$847,557 which was paid 12/1/17.
- The 4<sup>th</sup> Quarter 2017 report lists 4,190.10 tons of hazardous soil transported by rail and disposed off site for a total fee of \$251,406 which was paid.
- On Nov 13, 2017 an additional 30 tons of hazardous waste was transported by truck and disposed off site for a total fee of \$1,800.
- The 1<sup>st</sup> Quarter 2018 report lists 0 tons of hazardous soil transported and disposed off site.
- The 2<sup>nd</sup> Quarter 2018 report lists 4,288.20 tons of hazardous soil transported by rail and disposed off site for a total fee of \$257,292 which was paid 8/22/18.
- The 3<sup>rd</sup> Quarter 2018 report lists 8,4170.10 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$ 505,026.00
- The 4<sup>th</sup> Quarter 2018 report lists 7800.08 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$ 468,048.00

Maine Statute 1319-I requires transporters of regulated hazardous materials (per 49 CFR 172.101) by rail to pay 15 cents/ton on the shipments. As of December 31, 2018, the total paid under this requirement is \$ **\$38,776.76**

**Additional information regarding the progress of the work**

- BeyondHoltraChem.com is periodically updated to reflect ongoing site activities.
- The *On The Penobscot* newsletter is issued periodically to update area residents on the Site.