



VIA ELECTRONIC MAIL

May 1, 2020

John Hopkins
Remedial Project Manager
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Mail Code – 3LD10
Philadelphia, PA 19103-2029

**Subject: Quarterly Progress Report No. 14
Former Kop-Flex Facility Site, Hanover, Maryland
USEPA ID No. MDD043373935
Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA**

Dear John:

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co., WSP USA, Inc. (WSP) is submitting this quarterly progress report describing the remedial activities conducted in the first quarter of calendar year 2020 (January 1 through March 31) as part of the corrective measures implementation at the former Kop-Flex, Inc. facility property located at 7555 Harmans Road (Site) in Hanover, Maryland. The Site is identical to the area described as the “Facility” in the Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA (Consent Order) for the Site. The report also describes the activities planned for the second quarter of calendar year 2020 (April 1 through June 30).

This progress report is being submitted to the U.S. Environmental Protection Agency (EPA) pursuant to Section VI.C.3 of the Consent Order. Please note that, in addition to performing the work conducted under the Consent Order, EMERSUB 16 continues to fulfill its remedial obligations under the October 2015 Response Action Plan (RAP) approved by the Maryland Department of the Environment (MDE) Voluntary Cleanup Program, and that EMERSUB 16 copies EPA on all submittals required under that program.

If you have any questions, please do not hesitate to contact us at 703-709-6500.

Kind regards,

Robert E. Johnson
Senior Technical Manager
Water & Environment

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Encl.

cc: Mr. Stephen Clarke, EMERSUB 16 LLC
Ms. Richelle Hanson, Maryland Department of the Environment

WSP USA
Suite 300
13530 Dulles Technology Drive
Herndon, VA 20171

Tel.: +1 703 709-6500
Fax: +1 703 709-8505
wsp.com



CERTIFICATION

I certify that the information contained in or accompanying this quarterly progress report is true, accurate, and complete.

As to those portions of this quarterly progress report for which I cannot personally verify their accuracy, I certify under penalty of law that this quarterly report and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature:

A handwritten signature in blue ink, appearing to read 'Stephen L. Clarke', written over a horizontal line.

Name:

Stephen L. Clarke

Title:

President of EMERSUB 16, LLC

WSP USA
Suite 300
13530 Dulles Technology Drive
Herndon, VA 20171

Tel.: +1 703 709-8500
Fax: +1 703 709-8505
wsp.com

Quarterly Progress Report No. 14

Former Kop-Flex Facility Site

January 2020 through March 2020

Site Name: Former Kop-Flex Facility
Site Address: 7555 Harmans Road
Hanover, Maryland 21076

Consultant: WSP USA Inc.
Address: 13530 Dulles Technology Drive, Suite 300
Herndon, Virginia 20171
Phone No.: (703) 709-6500

Project Coordinator: Eric Johnson
Alternate: Lisa Kelly

1.0 ACTIVITIES COMPLETED DURING JANUARY 2020 – MARCH 2020 REPORTING PERIOD

1.1 HYDRAULIC CONTAINMENT SYSTEM OPERATION

- The hydraulic containment system (System) was non-operational for the first few days of January 2020 due to issues with the pH adjustment system that raises the effluent pH prior to discharge. The System resumed operation on January 6, 2020 following replacement of a defective valve for the caustic delivery system. The System operated continuously through the end of February except for a few brief shutdowns (a few hours on three occasions and once for 2 days) during the month of January due to additional issues associated with the operational efficiency of the caustic feed pump for the pH adjustment system. Upon completion of the pump maintenance, the System ran continuously from January 27 through February 25 with no disruptions.
- System operation was suspended from February 25 through March 11 to allow for the cleaning of the resin using a heated caustic solution to remove foulants that had gradually accumulated on the media and conducting post-cleaning steam regenerations of the resin to remove residual caustic and additional foulants from the media. Given the continued presence of residual caustic in the resin, the System ran intermittently from March 11 through March 17 to allow for the controlled temporary addition of muriatic acid in place of the normal 25% caustic solution to maintain the effluent pH within the discharge permit limits. Temporary acid addition was discontinued, and the System resumed normal, automated, continuous operation on the afternoon of March 17th. Additional information concerning the resin cleaning activities is provided in Section 1.2.
- While in operation during the first quarter of 2020, a total of approximately 6.23 million gallons of impacted groundwater were extracted by the recovery wells and treated by the System, with the combined withdrawal rate ranging from 70-75 gallons per minute. During System operation, water samples were collected for chemical analysis in January (influent) and January through March (effluent) to monitor and evaluate concentrations of volatile organic compounds (VOCs) and 1,4-Dioxane in the untreated and treated water. The total concentration of chlorinated VOCs (CVOCs) and 1,4-Dioxane for the System influent sample was 400 micrograms per liter ($\mu\text{g/l}$), which is slightly lower than the concentrations in the quarterly influent samples collecting during 2019. The extracted groundwater continued to have higher concentrations of chlorinated ethanes and ethenes ($290 \mu\text{g/l}$) compared to 1,4-dioxane ($110 \mu\text{g/l}$). As of the end of March 2020, a total of 308 pounds of CVOCs and 127 pounds of 1,4-dioxane had been recovered from the aquifer system.
- Monthly effluent samples were collected for chemical analysis in accordance with State Discharge Permit Number 15-DP-3442 and National Pollutant Discharge Elimination System (NPDES) Permit MD 0069094 issued by the MDE (Discharge Permit). Analysis of the effluent samples indicated non-detect concentrations of VOCs and 1,4-Dioxane. The analytical results for these and the other monitoring parameters were in compliance with the effluent limitations specified in the Discharge Permit.



1.2 SPECIALTY RESIN CLEANING

- During the early part of 2020, WSP continued working with the treatment system vendor, Emerging Compound Treatment Technologies (ECT2), to implement the heated caustic cleaning of the specialty resin material used to treat the contaminated groundwater. ECT2 retained Recirculation Technologies, LLC (RTI), a vendor specializing in the cleaning and maintenance of regenerable resins used for water treatment, to perform the onsite *ex-situ* cleaning of the resin. In preparation for the resin cleaning activities, the System was shut down on February 25, 2020, to allow for the steam regeneration of both resin vessels to remove any Site-related CVOCs and 1,4-dioxane from the media. (The steam regeneration process for each vessel takes approximately 24 hours to complete.)
- The resin cleaning was completed over the weekend of February 28, 2020 through March 1, 2020. On February 28th, the resin was removed from the vessels and transferred to separate tanks on RTI's mobile cleaning trailer. The resin was cleaned by adding heated caustic solution to the tanks, agitating the mixture for approximately one hour using compressed air, and then transferring the spent caustic solution to a double-walled frac tank for subsequent management and disposal. This process was repeated a total of four times for the resin from each vessel, after which the resin was returned to its original vessel. Subsequent analysis of samples of the pre- and post-cleaned resin, as well as the observed color change in the high pH water in contact with the media, suggests that the cleaning process was successful at removing a significant amount of adsorbed organic compounds as well as very fine sediment from the resin.
- During the week of March 2nd, the cleaned resin in each vessel was regenerated twice to desorb additional organic carbon foulants and remove residual caustic from the media. The condensate and rinse water generated during these regeneration events was transferred to the double-walled frac tank because of the elevated pH and brownish color of the water, which indicated the continued removal of organic carbon from the resin at relatively high concentrations. Following the completion of the back-to-back regenerations for each vessel, controlled operation of System began on March 11, 2020. Given the continued presence of residual caustic on the resin, it was determined that muriatic acid would need to be temporarily added to the System effluent to maintain the pH within the discharge permit limits. Manual operation of the System was conducted intermittently from March 11th through March 17th, to allow for the controlled addition of the acid to ensure compliance with the effluent limitations. The Industrial and General Permits Division of MDE approved the temporary acid addition for pH adjustment under the existing NPDES permit in a March 5, 2020 letter to WSP (Enclosure A). Normal, automated, continuous operation of the System, with caustic addition for pH adjustment, resumed on the afternoon of March 17, 2020.
- As mentioned above, the spent caustic cleaning solution containing the organics desorbed from the resin was containerized, neutralized, and transported to an approved offsite wastewater treatment facility. In addition, the high pH, organic-rich water produced during the post-cleaning regenerations of each vessel was handled in a same manner. Most of the wastewater was managed as a non-hazardous waste. However, approximately 5,000 gallons had to be managed as a characteristically hazardous waste (D002) due to a pH slightly above the regulatory threshold level of 12.5 standard units.

The amount of hazardous wastewater generated during this one-time event would necessitate the System's generator status be temporarily changed from small quantity to large quantity. Since the production of this high pH wastewater reflects the episodic generation of a hazardous waste, EMERSUB 16 and WSP contacted MDE to request relief from the large quantity generator requirements under the Code of Maryland Administrative Regulations. A copy of the change in generator status waiver request sent to MDE via electronic mail is provided in Enclosure B.

1.3 GROUNDWATER QUALITY MONITORING

- As indicated in the Groundwater Monitoring Plan for the response action, groundwater level monitoring to evaluate the head distribution in response to remedial pumping is to be conducted on a semi-annual basis, with the next measurement event



scheduled for late May 2020. No conditions occurred that warranted the collection of an additional round(s) of water level data from the unconfined or semi-confined portions of the Lower Patapsco aquifer (LPA) during the first quarter of 2020.

- Long-term groundwater monitoring to assess changes in VOC concentrations in the unconfined and semi-confined portions of the LPA during System operation is also conducted semi-annually at the Site. The next sampling event for the groundwater recovery wells and onsite monitoring wells will be performed during late May 2020.

2.0 PLANNED ONSITE ACTIVITIES FOR THE SECOND QUARTER OF 2020

- Continue with the normal operation and maintenance activities for the System and collect and assess operational data to ensure optimum System performance.
- Conduct breakthrough sampling for 1,4-Dioxane in the treated water to quantify the improved treatment capacity of the resin material following the *ex-situ* caustic cleaning.
- Evaluate proven pre-treatment technologies that could remove natural and anthropogenic organic carbon from the influent, thereby preventing fouling of the resin media. This evaluation will include the collection of water samples for the analysis of natural organic material and other potential sources of organic carbon.
- Conduct the required effluent monitoring and monthly reporting pursuant to the Discharge Permit.
- Collect a synoptic round of water level measurements from the monitoring and recovery wells and evaluate the data to assess the aquifer response to remedial pumping and capture of the VOC plumes in the unconfined and semi-confined portions of the LPA at the Site.
- Conduct semi-annual sampling of the monitoring wells and recovery well discharge in late May 2020 pursuant to the approved Groundwater Monitoring Plan.
- Submit the 2019 OM&M Report for the hydraulic containment system to EPA and MDE.

Given the ongoing COVID-19 pandemic, it is possible that planned field activities could be delayed and re-scheduled to ensure conformance with government-issued directives and to address potential health concerns raised by the current property owner – Catalent Pharma Solutions. EMERSUB 16 will coordinate Site activities with EPA and MDE to the extent possible to avoid any delays or disruptions regarding the completion of these field tasks.

3.0 KEY PERSONNEL/FACILITY CHANGES

There were no changes to key project personnel during the reporting period.

ENCLOSURE A – MARCH 5, 2020 APPROVAL LETTER FROM MDE FOR
TEMPORARY ACID ADDITION TO TREATED EFFLUENT



Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

March 5, 2020

Stephen J. Kretschman
Vice President
WSP USA
13530 Dulles Technology Drive, Suite 300
Herndon, VA 20171

Re: Response to Request to Temporarily Treat Groundwater with Hydrochloric Acid Following Resin Cleaning at the Harmons Road Groundwater Remediation System; State Number 15-DP-3442 \ NPDES MD0069094

Dear Mr. Kretschman:

The Department has received your letter dated March 5, 2020 which requests that the Department allow acid to be pumped into the effluent leaving the lag resin treatment vessel at the groundwater remediation system at 7555 Harmons Road in Hanover. The remediation system extracts groundwater from the site of the former Kop-Flex manufacturing facility and treats it for several constituents. Synthetic resin is used to remove VOCs. Since start-up in 2017, a build-up of carbon has fouled the resin and a caustic was used to clean the resin. The cleaning was completed March 1, 2020. Residual caustic will raise the pH when groundwater treatment is resumed. Therefore, WSP wants to add hydrochloric acid to adjust the pH to the permit range of 6.5 to 8.5 SU using the remediation system's existing feed pump for caustic solution. The estimated time of acid addition is one day with an additional day needed to reinstall the caustic feed system.

After a review of your request, the Department considers the temporary addition of acid to adjust pH an acceptable request because State Permit 15-DP-3442 contains pH limits within the range of 6.5 to 8.5 SU. Please notify the Department when typical operating conditions are restored.

If you have any questions regarding this response, please feel free to contact me at marjorie.mewbourn@maryland.gov or 410-537-3323.

Sincerely,

A handwritten signature in cursive script that reads "Marjorie Mewbourn".

Marjorie Mewbourn
Project Manager, Industrial and General Permits Division

cc: MDE-WSA Compliance - Central Division
MDE WSA Enforcement
File 15-DP-3442 (right side)

ENCLOSURE B – EPISODIC HAZARDOUS WASTE NOTIFICATION TO MDE
(MARCH 11, 2020)

From: Zarghamee, Reza S. <reza.zarghamee@pillsburylaw.com>
Sent: Wednesday, March 11, 2020 2:56 PM
To: brian.coblentz@maryland.gov
Cc: richelle.hanson@maryland.gov; Johnson, Eric
Subject: Maryland HW Generator Issue Followup

Brian-

Pursuant to our telephone conversation the afternoon of Thursday, March 5th, I am providing the Maryland Department of the Environment (MDE) with information regarding the episodic generation of hazardous waste between February 28th and March 2nd, 2020 as part of the Voluntary Cleanup Program (VCP) remediation of the former Kop-Flex Facility site in Hanover, Maryland being conducted by my client EMERSUB 16, LLC. Under the MDE VCP, EMERSUB 16, LLC has installed a hydraulic containment system to control the migration of chlorinated volatile organic compounds (VOCs) and 1,4-dioxane in the groundwater. The groundwater contaminants are removed from extracted groundwater using a specialty synthetic resin that is regularly regenerated using steam.

To ensure that the treatment system operates efficiently, it is necessary to remove the buildup of organic carbon that results from the extracted groundwater passing through the resin. Unless the organic carbon is removed prior to the groundwater passing through the resin, this process must be conducted periodically, and this is the first time that EMERSUB 16, LLC has had to perform a cleaning of the resin since the installation and startup of the system in early 2017. Cleaning the resin involves using a heated caustic cleaning solution. After application, the 'spent' caustic solution containing the removed organic carbon is transferred into a double-walled, mini-frac tank for elementary neutralization, pursuant to the exemption codified at COMAR 26.13.15.01 A.(3)(g), so that it could be managed as a non-hazardous waste. Also placed into the frac tank is some water condensate produced during the steam regeneration of the resin from post-cleaning activities conducted prior to startup of the system. Once full the contents of the frac tank are sent offsite for disposal.

When the remediation subcontractor engaged by WSP (EMERSUB 16, LLC's environmental consultant) completed the elementary neutralization from the cleanout on March 1st, 2020, the pH of the water contained in the mini-frac tank was measured as 8.6 standard units (SU) the afternoon of Sunday, March 1st. However, the subcontractor continued with the steam regeneration of the cleaned resin and containment of the condensate in the mini-frac tank on Monday, March 2nd, without appreciating that residual caustic remained on the cleaned resin. As a result, the pH of the water in the mini-frac tank was not measured following the work done on March 2nd. On the morning of Tuesday, March 3rd, Clean Harbors Environmental Services pumped approximately 4,900 gallons of water from the mini-frac tank and transported the water to their Baltimore wastewater treatment facility for management as a non-hazardous waste. Upon delivery, the treatment facility checked the pH of the water and determined it to be 12.9 SU, thereby making the water a D002 characteristically hazardous waste. The elevated water pH was due to the presence of residual caustic on the cleaned resin, which subsequently dissolved in the condensate that was generated during the steam regenerations and transferred to the mini-frac tank. WSP immediately worked with Clean Harbors to update the waste profile, and prepare a hazardous waste manifest and land disposal restriction form for the water to ensure the proper treatment and disposal of the water as a hazardous waste.

I understand that, as a result of this incident and the fact that MDE has not formally adopted the Hazardous Waste Generator Improvement Rule, EMERSUB 16, LLC is now a large quantity generator ("LQG") of hazardous waste. Having to comply with the LQG requirements would be impractical and burdensome for EMERSUB 16, LLC, because EMERSUB 16, LLC no longer owns the Site and no longer has any employees or contractors permanently onsite. In addition, EMERSUB 16, LLC does not routinely generate any hazardous waste. The most recent time hazardous waste was generated as part

of EMERSUB 16, LLC's site investigation and remediation activities was in 2016. Thus, since 2016, EMERSUB 16, LLC has operated as Conditionally Exempt Small Quantity Generators ("CESQG"). It would be impractical to obligate EMERSUB 16, LLC to comply with LQG requirements, such as the development of a contingency plan and emergency procedures or routine employee training for technical personnel engaged at the Site. Consequently, EMERSUB 16, LLC, respectfully requests that MDE continue to regulate it as a CESQG and not as an LQG.

I am happy to coordinate a telephone call between MDE, WSP, and myself to discuss any questions you may have.

Regards,

Reza

Reza S. Zarghamee | Special Counsel

Pillsbury Winthrop Shaw Pittman LLP

1200 Seventeenth Street NW | Washington, DC 20036-3006

t +1.202.663.8580 | m +1.703.965.4927

reza.zarghamee@pillsburylaw.com | website bio

From: Richelle Hanson -MDE- <richelle.hanson@maryland.gov>

Sent: Thursday, March 5, 2020 2:16 PM

To: Eric Johnson <eric.johnson@wsp.com>; Zarghamee, Reza S. <reza.zarghamee@pillsburylaw.com>

Subject: Maryland HW Generator Issue Followup

Eric and Reza,

You will want to call and self-report your issue to Brian Coblentz of our Solid Waste Program as soon as possible. He will likely ask additional questions that I didn't know to ask and will provide you with further requirements.

He has indicated that he will be in the office for about a half hour and then will be in the field tomorrow.

His number is 410-537-4175. His email is brian.coblentz@maryland.gov

Please copy me on any followup emails that you will need to send.

Thanks,
Richelle

—



Richelle Hanson

Project Manager/Land Use Control Compliance Coordinator
Land and Materials Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite 625
Baltimore, Maryland 21230
richelle.hanson@maryland.gov
410-537-3493 (O)
410-537-3467 (Direct)*
[Website](#) | [Facebook](#) | [Twitter](#)

*Please note that when teleworking, I cannot pick up this line when dialed directly.

[Click here](#) to complete a three question customer experience survey.

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