



**VIA ELECTRONIC MAIL**

November 6, 2024

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Remedial Project Manager  
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**Subject: Quarterly Progress Report No. 32  
Former Kop-Flex Facility Site, Hanover, Maryland  
USEPA ID No. MDD043373935  
Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA**

Dear Moshood:

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. (Emerson), WSP USA, Inc. (WSP) is submitting this quarterly progress report describing the activities conducted in the 3<sup>rd</sup> Quarter of calendar year 2024 (July 1<sup>st</sup> through September 30<sup>th</sup>) 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). The report also describes the activities planned for the 4<sup>th</sup> Quarter of calendar year 2024 (October 1<sup>st</sup> through December 31<sup>st</sup>).

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 perform the remedial activities specified in the October 2015 Response Action Plan (RAP) approved by the Maryland Department of the Environment (MDE) Voluntary Cleanup Program, and that EMERSUB 16 copies USEPA on all submittals required under that program.

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

Kind regards,

Robert E. Johnson  
Vice President – Earth & Environment

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cc: Mr. Stephen Clarke, EMERSUB 16 LLC  
Mr. Tate Stevens, Voluntary Cleanup Program Section, MDE  
Mr. Brian Deitz, Site Assessment and Remediation Division, MDE

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## 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:

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## Quarterly Progress Report No. 32

Former Kop-Flex Inc. Site

July 2024 through September 2024

**Site Name:** Former Kop-Flex Inc.  
**Site Address:** 7555 Harmans Road  
Hanover, Maryland 21077

**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 JULY 2024 – SEPTEMBER 2024 REPORTING PERIOD

### 1.1 HYDRAULIC CONTAINMENT SYSTEM OPERATION

- The hydraulic containment system (System) operated for 35 of the 92 days during the third quarter of 2024, which equates to a 38% run-time efficiency over this 3-month period. There were multiple brief system shutdowns throughout the third quarter, as well as one prolonged (36-day) shutdown due to a ruptured fire tube in the boiler that required replacement. The brief shutdowns were due to the triggering of various “watchdog” alarms.

During a routine Operations and Maintenance (O&M) visit on July 5<sup>th</sup>, a water leak at the boiler was identified. A ruptured fire tube was confirmed upon inspection by the mechanical boiler contractor (Tate Engineering) (A similar incident regarding damage to one of the boiler fire tubes occurred in April 2023.) Work was scheduled to complete replacement of the ruptured fire tube, and the boiler was successfully returned to operation. The System was brought back online on August 15<sup>th</sup>.

Following redevelopment activities at shallow recovery well RW-3S (discussed further in Section 1.2), this well was brought back online on August 16<sup>th</sup>. The well has pumped approximately 3 to 3.5 gallons per minute (GPM) during the remainder of the reporting period.

- A total of approximately 1.35 million gallons of impacted groundwater were extracted and treated during the third quarter of 2024, with a combined average withdrawal rate of up to 40 GPM. This combined flow is less than the typical flow, which has averaged 68 GPM over the operational lifetime of the System. The relatively low combined flow reflects the operation of the System with only deep recovery well RW-1D in operation. Effluent samples were collected for chemical analysis in accordance with the requirements specified in the National Pollutant Discharge Elimination System (NPDES) Permit for the System. The analytical results for all monitoring parameters complied with the effluent limitations specified in the NPDES Permit.
- To monitor chlorinated volatile organic compounds (CVOCs) and 1,4-dioxane mass removal and treatment efficiency by the System, samples of both the influent and effluent were collected and analyzed during the reporting period. Monthly effluent samples were collected from July 2024 through September 2024 in accordance with the NPDES Permit. The total concentration of CVOCs and 1,4-dioxane in the July influent sample was 471 micrograms per liter ( $\mu\text{g/L}$ ), which remains higher than the results for the samples collected in 2023 and in the second quarter of 2024, but lower than the results for the sample collected in the first quarter of 2024. As of the end of September 2024, an estimated total of 545 pounds of CVOCs and 218 pounds of 1,4-dioxane have been recovered from the impacted portion of the Lower Patapsco aquifer.
- Non-detect CVOC and 1,4-dioxane results were reported for the effluent samples collected during the reporting period, with the exception of the July 2024 monitoring event where 1,4-dioxane was present at a concentration of 3.1  $\mu\text{g/L}$ . This 1,4-dioxane level is well below the site-specific cleanup level and permit reporting value of 15  $\mu\text{g/L}$  and generally consistent with concentrations



detected in previous samples of the treated groundwater. The non-detect to very low concentrations of 1,4-dioxane in the samples reflect the presence of sufficient treatment capacity for the System resin.

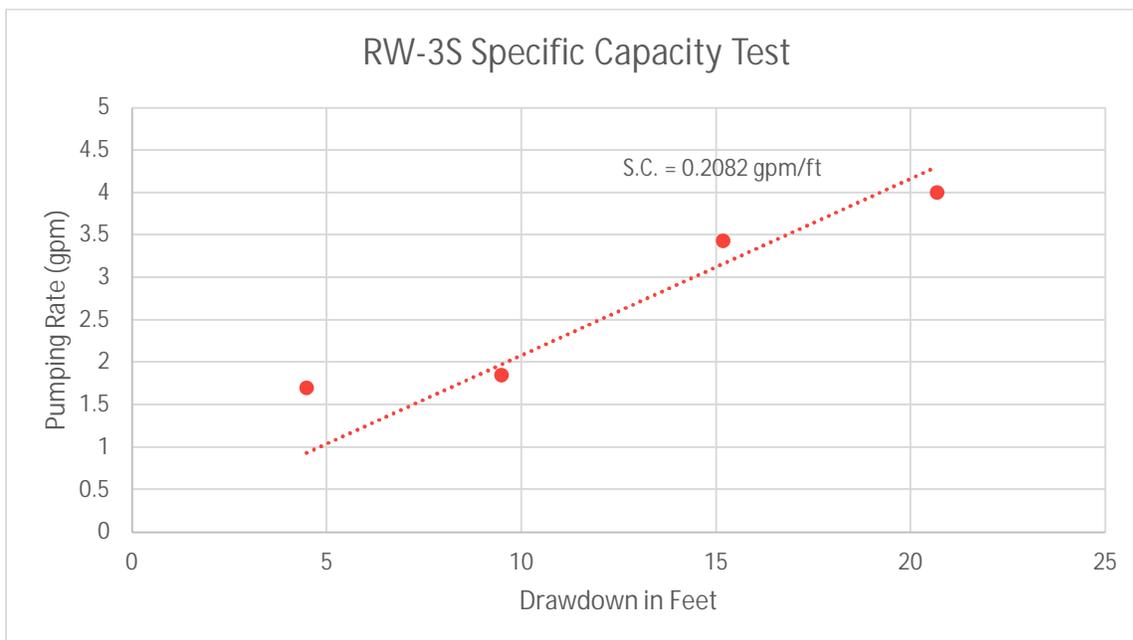
## 1.2 RE-DEVELOPMENT OF SHALLOW RECOVERY WELL RW-3S

### RE-DEVELOPMENT USING JETTING METHOD

- On July 2, 2024, WSP oversaw redevelopment activities at shallow recovery well RW-3S. The work was conducted using high-velocity hydraulic jetting tool operated by a drilling contractor (Parratt-Wolff Inc.). The jetting tool was lowered to the bottom of the well over the course of two separate jetting runs, and water was injected horizontally into the well screen while moving the tool upwards through the entire screened interval.
- The water column length above the top of the screen (approximately 10 feet) was too short to affect simultaneous airlift pumping during water jetting. Therefore, after each jetting run, the jetting tool was removed from the well and the solids-containing water within the well was extracted using the airlift pumping system. The pump was placed at the bottom of the well in order to lift sediments through the entire water column, and the water level in the well was kept below the non-pumping level to maintain continuous flow of water from the aquifer and to remove suspended material loosened by the jetting operation.

### SPECIFIC CAPACITY TEST

- After completion of the redevelopment activities, a specific capacity (S.C.) test was conducted to assess the improvement in the performance of well RW-3S. The test was performed by continuously extracting groundwater in a series of pumping steps ranging from 1.7 GPM to 4 GPM. Simultaneously, the water level was monitored during groundwater extraction using an electronic water level indicator. The depth to water from the top of the polyvinyl chloride (PVC) well casing was measured at periodic intervals until the water level in the well stabilized.
- The stabilized water levels were used to calculate the S.C. of the well in the field, which is defined as the slope of a plot of stabilized drawdown versus the pumping rate at the end of each step. After the well re-development activities, the calculated S.C. was 0.21 gallons per minute/foot (GPM/ft) (see plot below).





During the step pumping test activities conducted in the fall of 2023, the calculated S.C. for RW-3S was between 0.1 and 0.2 GPM/ft. Thus, the test results indicate minimal improvement in the well performance after the recent re-development activities, with the S.C. comparable to values determined during the rehabilitation work conducted in the summer of 2022 (0.25 GPM/ft). However, the recent S.C. is below the baseline value of 0.65 GPM/ft, which are based on testing conducted following installation of RW-3S in 2016,

## INVESTIGATION-DERIVED WASTE HANDLING

The extracted water was stored in a temporary holding tank at the well head during redevelopment and testing activities, and then routed via hose to the flow equalization tank in the treatment building. All disposable material (e.g., tubing, nylon line, and PPE) was placed into heavy-duty trash bags and managed offsite with similar waste materials generated during routine System O&M activities.

### 1.3 DEEP RECOVERY WELL REPAIRS

WSP continued work to bring deep recovery well RW-2D back in operation during the third quarter of 2024. Based on an earlier diagnosis of the condition of components after the RW-2D pump became inoperable, a new variable-frequency drive (VFD) and load reactor for RW-2D were installed in the electrical panel for the wells on September 12, 2024. In addition, the load reactor for well RW-1D was replaced due to visible signs of overheating. Both new load reactors were installed and oriented to allow for better airflow through the coils, thus extending the service life for these components. Programming of the new RW-2D VFD will be conducted in the fourth quarter following the completion of repairs to the submersible pump and restoration of electrical power service to the well.

## 2.0 PLANNED ONSITE ACTIVITIES FOR THE FOURTH QUARTER OF 2024

- Continue with the operation and as needed maintenance activities for the System, along with the collection and assessment of operational data to evaluate System performance.
- Complete the necessary repairs to the submersible pump in recovery well RW-2D and bring this well back on-line.
- Conduct the required monthly effluent monitoring and reporting pursuant to the NPDES Permit.
- Collect 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 contaminant plumes in the shallow and deep zones of the Lower Patapsco aquifer.
- Conduct semi-annual sampling of the monitoring wells and recovery well discharge in mid-November 2024 pursuant to the approved Groundwater Monitoring Plan.

## 3.0 KEY PERSONNEL/FACILITY CHANGES

There were no changes to key personnel for the corrective action or onsite conditions regarding activities being conducted by the current facility owner (Catalent) during the reporting period