



**VIA ELECTRONIC MAIL**

May 14, 2025

Moshood Oduwole  
Remedial Project Manager  
U.S. Environmental Protection Agency, Region III  
4 Penn Center  
Mail Code – 3LD10  
Philadelphia, PA 19103

**Subject: Quarterly Progress Report No. 34  
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 1<sup>st</sup> Quarter of calendar year 2025 (January 1<sup>st</sup> through March 31<sup>st</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 2<sup>nd</sup> Quarter of calendar year 2025 (April 1<sup>st</sup> through June 30<sup>th</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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Encl.

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

WSP USA  
Suite 300  
13530 Dulles Technology Drive  
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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:

President of EMERSUB 16, LLC

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13530 Dulles Technology Drive  
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## Quarterly Progress Report No. 34

Former Kop-Flex Inc. Site

January 2025 through March 2025

**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 JANUARY 2025 – MARCH 2025 REPORTING PERIOD

### 1.1 HYDRAULIC CONTAINMENT SYSTEM OPERATION

- The hydraulic containment system (System) operated for 22 of the 90 days during the first quarter of 2025, which equates to a 24% run-time efficiency over this 3-month period. There were two system shutdowns during the first quarter, which included a prolonged shutdown that started during the fourth quarter of 2024 (on December 23, 2024) and continued into January 2025, due to a fire tube rupture in the boiler used for onsite regeneration of the ion exchange resin that treats the contaminated groundwater. The ruptured fire tube was replaced between January 16-17, 2025, by the mechanical boiler contractor (Tate Engineering), and System operations resumed on January 17, 2025. An additional shutdown occurred on January 27, 2025, due to additional fire tubes rupturing in the boiler. A full assessment of all fire tubes in the boiler by Tate Engineering identified more fire tubes at risk of rupture in the near future. The system remained offline while a full replacement of all fire tubes was scheduled. The System was restarted on March 21, 2025, after all fire tubes in the boiler were replaced between March 19-21, 2025.
- A total of approximately 1.01 million gallons of impacted groundwater were extracted and treated during the first quarter of 2025, with a combined average withdrawal rate of 57 gallons per minute (GPM) during the operating days. This combined flow is below typical flow, which has averaged 68 GPM over the operational lifetime of the System. The below average withdrawal rate during the first quarter of 2025 is related to limited operations for the overall System and intermittent pumping at individual recovery wells. Withdrawal rates are expected to improve during the second quarter of 2025.
- 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 during the months of operation (January and March). The System did not operate in February 2025; therefore, no effluent sample was collected. All monitoring parameters met the limits set forth in the NPDES permit. One effluent sample contained 1,4-dioxane at a concentration above its site-specific cleanup level. Also, additional sampling for copper was conducted in January 2025. Further details for both of these are discussed below.

Two discharge samples were collected in January 2025 for total copper. The total copper concentration measured 10 micrograms per liter ( $\mu\text{g/L}$ ) in the first sample and 7.2  $\mu\text{g/L}$  in the second sample. Both concentrations were below the daily maximum limit specified in the NPDES Permit (13  $\mu\text{g/L}$ ). The calculated monthly average total copper concentration of the samples was 8.6  $\mu\text{g/L}$ , which is below the average monthly concentration specified in the NPDES Permit (9  $\mu\text{g/L}$ ). Since the result for the second sample was not obtained until several days after the first sample, WSP provided the appropriate notification of the first sample's exceedance to the Compliance Program of the MDE Water Management Administration in accordance with the reporting requirements in the NPDES Permit. (A copy of the written notification to MDE for the NPDES Permit noncompliance is included as Enclosure A.) The total copper concentration in the March 2025 sample (4.5  $\mu\text{g/L}$ ) was below the NPDES Permit daily maximum and monthly average limitations. WSP implemented a sampling plan to assess the total copper concentrations in



the extracted groundwater from the shallow and deep zones of the aquifer and combined water processed through segments of the treatment system. The copper evaluation is also summarized in Section 1.2.

- 1,4-dioxane was measured at 26.6 µg/L in the January 2025 effluent sample, which exceeds the site-specific cleanup level of 15 µg/L. The 1,4-dioxane concentration in the March 2025 effluent sample (3.5 µg/L) was below the site-specific cleanup level. An email notification will be submitted to MDE Water Management Administration to report the 1,4-dioxane level in the January 2025 sample.
- 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. A quarterly influent sample was collected in January. Monthly effluent samples were collected in the operating months of the first quarter of 2025 (January and March) in accordance with the NPDES Permit. The total concentration of CVOCs and 1,4-dioxane in the January influent sample was 369 µg/L, which is below influent concentrations measured in recent quarterly samples but within range of historical levels of total CVOC concentrations. Through the end of the first quarter of 2025, an estimated total of 562 pounds of CVOCs and 222 pounds of 1,4-dioxane have been recovered from the impacted portion of the Lower Patapsco aquifer.

Very low concentrations of 1,1,1-trichloroethane (1.1 µg/L), 1,1-dichloroethane (2.0 µg/L), and 1,1-dichloroethene (6.1 µg/L) were detected in the January 2025 effluent sample. The total VOC concentration for the January sample (9.2 µg/L) was below the NPDES Permit limit of 100 µg/L. All CVOCs were non-detect in the March 2025 effluent sample. 1,4-dioxane was measured at 26.6 µg/L in January 2025 and 3.5 µg/L in March 2025. As described earlier in this section, the 1,4-dioxane level in January 2025 was above the site-specific cleanup level of 15 µg/L and below in March 2025. The synthetic resin cleaning planned for the second quarter of 2025 is expected to improve 1,4-dioxane absorption capacity of the synthetic resin and therefore reduce the concentrations of 1,4-dioxane in the effluent stream.

## 1.2 EVALUATION OF COPPER LEVELS IN EXTRACTED GROUNDWATER AND PROCESS WATER FLOW

- On January 24, 2025, WSP implemented a sampling plan to determine if the elevated total copper concentrations in the recent effluent samples were attributed to a particular groundwater recovery well(s) or segment(s) of the treatment process. Total and dissolved copper samples were collected to measure the portion of dissolved versus particulate copper in the water samples. The sampling evaluated the copper concentrations under two pumping scenarios:
  - Scenario 1 included operation of all five groundwater recovery wells. Samples were collected from the three shallow (RW-1S, RW-2S, and RW-3S) and two deep (RW-1D and RW-2D) wells and four treatment process sample points (VSP-1 [influent], mid-process points VSP-2 and VSP-3 upstream of the resin vessels, and VSP-4 [effluent]).
  - Scenario 2 included operation of all recovery wells except RW-3S. Samples were collected from the four treatment process sample points.

Copies of the laboratory analytical reports for these water samples are provided in Enclosure B.

At all sampling points except VSP-4, the concentrations of total and dissolved copper were comparable, which indicates this constituent was in an aqueous or ionic state in the water. The copper concentration measured in samples from the recovery wells ranged from 4.3 µg/L to 12.1 µg/L, with higher levels detected in the water collected from the shallow wells. The levels of copper in the water from sample ports VSP-1 (influent), VSP-2, and VSP-3 were consistently around 6 µg/L and below the NPDES Permit limits and lower than the VSP-4 (effluent) samples, suggesting that the recovery wellfield is not the sole source of the relatively high total copper concentrations in the recent discharge samples. The total copper concentrations in the samples collected from VSP-4 (effluent) fluctuated from 10.0 µg/L to 7.2 µg/L between Scenarios 1 and 2 with a duplicate sample from Scenario 1 measuring 6.7 µg/L. Although the VSP-4 (effluent) total copper concentrations fluctuated, the levels in the upstream samples remained consistent between Scenarios. The dissolved copper concentrations decreased in both Scenarios between VSP-3 and VSP-4. These results suggest that some variable process(s) in the latter part of the treatment train appears to be causing a)



variable total copper loading in the discharge and b) a reduction in the dissolved copper concentrations noted in the effluent samples.

- Additional copper testing was conducted in early April 2025 to further assess the concentrations along the treatment segments and help elucidate potential contributors of total copper between sample ports VSP-3 and VSP-4 (effluent). Softened tap water is used to quench and rinse the resin, which is located between the VSP-3 and VSP-4 sampling points, during each resin regeneration event. Therefore, a potable water sample from the treatment building’s sink was also collected to evaluate whether tap water is a potential contributing source of copper in the effluent. A letter report of the copper results, including data from both the January and April sampling activities, will be submitted to MDE Water Compliance Program in the second quarter of 2025.

### **1.3 BOILER MAINTENANCE ACTIVITIES**

- A ruptured fire tube was identified on December 23, 2024, and subsequently replaced between January 16-17, 2025. System operations resumed following its replacement on January 17, 2025.
- Two additional ruptured fire tubes and several highly corroded tubes were noted during an inspection of the boiler on January 27, 2025. Given the increased frequency of fire tube failures during 2024 and early 2025, WSP evaluated maintenance options regarding the remaining original tubes in the boiler. Based on this review, a decision was made to replace all fire tubes in the boiler to prevent additional ruptures, and associated System down-time. A full replacement of all boiler fire tubes was conducted by Tate Engineering between March 19-21, 2025, and the System was restarted on March 21, 2025.
- The boiler fire tube ruptures to date have occurred at operational lives between approximately 6 years (April 2023) and 8 years (January 2025), which is below the typical fire tube lifespan of 10 years. Given the premature rupture of multiple fire tubes and the additional corroded tubes noted in January 2025, WSP worked with Tate Engineering investigated possible reasons for the fire tube failures and strategies to prolong the lifespan in the future in conjunction with the March 2025 tube replacement. Inspection of the ruptured fire tubes and boiler interior showed indications of oxygen pitting likely due to water chemistry and the intermittent ‘on demand’ boiler operation. To extend the lifespan of the replaced fire tubes, WSP began conducting weekly boiler water testing in early April 2025 to ensure optimal water chemistry is maintained during operation. WSP is also planning to transition from ‘on demand’ to continuous operation of the boiler to reduce oxygen pitting. The continuous operational mode will maintain a consistent temperature in the boiler, which will reduce the potential for oxygen to enter the boiler and create an atmosphere where dissolved oxygen has greater potential to attach to the fire tubes.

## **2.0 PLANNED ONSITE ACTIVITIES FOR THE SECOND QUARTER OF 2025**

- 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.
- Conduct the required monthly effluent monitoring and reporting pursuant to the NPDES Permit.
- Complete additional sampling of the process water flow in early April to further evaluate copper concentrations during treatment to minimize future non-compliance with the total copper Permit limitations and provide the January and April copper results to the MDE Water Compliance Program.
- Perform *ex-situ* chemical cleaning of the resin in early May 2025 to remove natural organic constituents and fine-grained particulates that have accumulated in the treatment media as part of normal System operation.
- 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-May 2025 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 related to the activities conducted by the facility operator during the reporting period.

ENCLOSURE A – JANUARY 2025 COPPER EXCEEDANCE NOTIFICATION



**VIA ELECTRONIC MAIL**

February 03, 2025

Compliance Program  
Water and Science Administration  
Maryland Department of the Environment  
1800 Washington Boulevard  
Suite 425  
Baltimore, Maryland 21230-1708

**Subject: Non-compliance with Effluent Limitation for Total Copper  
State Discharge Permit No. 21-DP-3442/NPDES Permit MD0069094  
7555 Harmans Road, Hanover, MD 21076**

Discharge Monitoring Reports:

On behalf of EMERSUB 16, LLC (EMERSUB 16), WSP USA Inc. (WSP) is submitting this letter to provide written notice to the Maryland Department of the Environment (MDE) of an exceedance of the monthly average effluent limitation for total copper set forth in National Pollutant Discharge Elimination System (NPDES) Permit MD0069094, which MDE tracks as State Discharge Permit No. 21-DP-3442 (Permit). The Permit is issued to EMERSUB 16 in connection with the operation of a groundwater remediation system (System) located at 7555 Harmans Road in Hanover, Anne Arundel County, Maryland (the Site).

More specifically, this notice is being made under General Condition II.B.2 of the Permit. As required under this provision, WSP also notified the MDE Inspection and Compliance Program of the exceedance by telephone on the late afternoon of January 29, 2025. WSP received the analytical results indicating the total copper exceedance around noon on January 29<sup>th</sup>. The following information is provided in accordance with items a through f under General Condition II.B.2.

As discussed below and a previous exceedance notification, the current thinking is that the non-compliance with the monthly average effluent limitation is due to the natural levels of copper, which can be relatively high in groundwater moving through fine-grained (silt and clay) materials in the shallow zone of the impacted aquifer. WSP recently completed some additional sampling to confirm the provenance of the copper present in the groundwater routed to and treated by the System. These sampling results will be provided to MDE in a subsequent submittal.

## **A. DESCRIPTION OF THE NON-COMPLYING DISCHARGE**

Under the MDE Voluntary Cleanup Program, response actions have been developed for the Site, including the installation and operation of the System. The purpose of the System is to hydraulically contain groundwater impacted by volatile organic compounds (VOCs) and 1,4-dioxane and prevent the affected groundwater from discharging to Stony Run or migrating off the property. Notably, copper is not a contaminant of concern with respect to the groundwater remedial action implemented at the Site. Groundwater is extracted from three (3) shallow recovery wells and two (2) deep recovery wells and conveyed via separate sub-grade pipelines to the treatment system located at 7555 Harmans Road. Initially, the separate flows from the shallow and deep recovery wells are placed

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into a flow equalization tank where the groundwaters can combine and mix. The groundwater is then treated to meet the Permit effluent limitations using bag filters for suspended solids removal, ion exchange resin to adsorb the VOCs and 1,4-dioxane, addition of caustic soda for pH buffering, and in-line aerators to increase dissolved oxygen levels. WSP began operation of the System in March 2017.

Typically, the System effluent is sampled once a month for all Permit-required monitoring parameters, except for biochemical oxygen demand for which a sample is collected quarterly. Given that only one discharge sample is collected each month, the sample results are reported for both the monthly average and daily maximum values for all monitoring parameters in the Discharge Monitoring Reports (DMRs). During the January 2025 monitoring period, two (2) discharge samples were collected for total copper analysis from the same sampling point on January 24, 2025. The first sample was collected in the mid-morning (10:15 AM), with the influent water obtained from the pumping of all 5 groundwater recovery wells. After the collection of this sample, one of the shallow recovery wells – RW-3S – was shut down and a second discharge sample was collected in the mid-afternoon (2:25 PM). Both samples were submitted to the same certified laboratory for analysis. The System operated with groundwater pumping from the 2 shallow and 2 deep recovery wells until it was shut down in the early morning of January 27, 2025, because of damage to one of the equipment components.

The analytical results for the first discharge sample were received from the laboratory around noon on January 29, 2025. The total copper concentration in this sample was 10 micrograms per liter ( $\mu\text{g/L}$ ). This total copper concentration exceeded the monthly average limit of 9  $\mu\text{g/L}$  but complied with the daily maximum limit of 13  $\mu\text{g/L}$ . The analytical results for the second sample were not received until the mid-afternoon on January 31, 2025. The total copper concentration in this sample was 7.2  $\mu\text{g/L}$ , which complied with both the monthly average and daily maximum effluent limitations. Given the results for the January 24<sup>th</sup> samples, the calculated monthly average total copper concentration came out as 8.6  $\mu\text{g/L}$ , which is also compliant with the Permit limitations. The copper results for both effluent samples will be included in the January 2025 DMR.

Based on the operational data for the System, an estimated maximum total of 15,600 gallons of treated water was discharged to Outfall 001 between the times the first and second samples were collected on January 24, 2025. To our knowledge, this short-lived incident has not resulted in any detrimental impact to Stony Run.

## B. CAUSE OF NON-COMPLIANCE

Given the presence of relatively high total copper levels in recent discharge samples, WSP initiated an evaluation of potential causes, including a review of available groundwater data and System components. Historical sampling data from the Site indicates natural (*i.e.*, background) concentrations of total copper above the Permit effluent limitations in the shallow groundwater, particularly for water obtained from wells screened in portions of the aquifer with abundant fine-grained (silt and clay) sediments. Hydrogeochemical data has not been collected to determine the natural total copper concentrations in the deep aquifer zone. However, given the predominance of coarse-grained (sand and gravel) sediments in this portion of the aquifer, it is highly likely that the total copper levels in the deep groundwater are relatively low when compared to groundwater within the shallow aquifer zone where clayey sediments are more prevalent.

A review of the discharge monitoring data from the beginning of System operation to present indicates four (4) instances when the concentration of total copper exceeded the monthly average limitation of 9  $\mu\text{g/L}$ :

- November 9, 2022 – 9.5  $\mu\text{g/L}$
- October 18, 2024 – 16  $\mu\text{g/L}$
- December 16, 2024 – 12.9  $\mu\text{g/L}$
- January 24, 2025 – 10  $\mu\text{g/L}$

For all dates except the most recent, the discharge sample was collected when one of the deep recovery wells had been temporarily shut down. These results support the inferred differences in the copper concentrations in groundwater flowing through the shallow and deep aquifer zones. The approximately 50% reduction in the flow contribution from the deep, low copper aquifer zone coincided with an increase in the proportion of shallow, high copper groundwater routed to the flow equalization tank and subsequently treated by the



System. The most recent (January 2025) samples were collected with all recovery wells in operation. However, as discussed above, the total copper concentration declined to below the permit limitations when a sample was collected with shallow recovery well RW-3S off-line. This recovery well is screened in an area of the shallow zone with abundant silty and clayey aquifer materials and thus, likely to have relatively high total copper levels in the groundwater. It is also worth noting that the November 2022 discharge sample, which has the smallest exceedance of the monthly average permit limit, was collected when there was no groundwater pumping from well RW-3S. Thus, it that appears the relatively high total copper concentrations in the groundwater withdrawn from the shallow aquifer zone can also be linked to pumping from this well.

WSP conducted sampling activities to further assess the elevated copper concentration in the October 2024 through January 2025 discharge samples. The sampling results are still being evaluated to better understand the relative contributions of copper from the shallow and deep groundwater extracted and treated by the System. The investigation findings will be provided to MDE in a separate submittal, along with practical measures to be implemented in the future to prevent a recurrence of the total copper Permit exceedance.

### C. ANTICIPATED TIME FOR NON-COMPLIANCE CONDITION

As indicated in Item A above, the System was shut down in the early morning of January 27, 2025, due to equipment problems and remains off-line. WSP anticipates completing the necessary equipment maintenance and resuming operation of the System sometime in early March 2025. Given this presumed re-start schedule, WSP will have completed its evaluation of the data for the additional samples already collected to assess the copper concentrations in the extracted groundwater and process water flow through the treatment system. Based on the evaluation results, the System will be re-started in a configuration that will minimize the possibility that copper concentrations in the flow contributions from the shallow and deep aquifer zones result in a copper level in the treated water discharge that is non-compliant with the effluent limitation. A discharge sample will be collected approximately one day after the resumption of System operation and analyzed for total copper. WSP will expedite the sample analysis and review the results to confirm that non-compliant copper levels no longer exist under the selected System operating conditions.

### D. STEPS TO REDUCE AND ELIMINATE THE NON-COMPLYING DISCHARGE

Based on evaluation of the available sampling data, it is reasonable to conclude the total copper concentration in the effluent will comply with the respective Permit limitations when (1) groundwater pumping occurs from both deep recovery wells and (2) no groundwater pumping occurs from shallow recovery well RW-3S. Given this determination, WSP will resume System operation with pumping from all groundwater recovery wells, with the likely exception of RW-3S. Adjustments may be necessary to the pumping rates for the shallow and deep recovery wells following evaluation of the respective total copper concentrations from the additional January 2025 sampling. After operating the System in this configuration for a sufficient time period, a decision will be made whether to resume groundwater pumping from shallow well RW-3S.

If there is an exceedance in the discharge sample collected shortly after System re-start, WSP will cease operation of the System until actions are implemented to identify the source of the issue and/or reduce the total copper concentration in the effluent, so they comply with the respective Permit limitations. To the extent necessary, EMERSUB 16 and WSP will take practical and appropriate measures to eliminate the copper exceedance in the treated water discharge.

### E. STEPS TO PREVENT RECURRENCE OF THE CONDITION OF NON-COMPLIANCE

During late January 2025, WSP completed additional sampling to better understand the total copper concentrations in the shallow and deep groundwater extracted and treated by the System. The sample data will be evaluated to assess the relative contributions of total copper from the different aquifer zones targeted for groundwater extraction and develop operational parameters in regard to pumping from the different aquifer zones to prevent future exceedances of the copper limits based on the 'natural' presence of this trace metal in the groundwater system. Given the presumed difference in the copper levels between the shallow and deep aquifer zones, groundwater pumping rates for the shallow and deep recovery wells will be determined to maintain a target total copper concentration in the water mixed in the flow equalization tank before it is routed through the treatment train.



## F. DESCRIPTION OF ACCELERATED OR ADDITIONAL MONITORING TO DETERMINE THE NATURE AND IMPACT OF THE NON-COMPLYING DISCHARGE

As discussed above, WSP has conducted additional sampling activities to assess the nature of the total copper exceedance in the discharge to Stony Run. This work involved the sampling of (1) the extracted groundwater from the shallow and deep recovery wells and (2) combined water flow at various points in the treatment process following the resumption of System operation. One group of samples was collected during the pumping of all 5 recovery wells and a second group obtained with shallow well RW-3S off-line. The receipt of the laboratory analytical report and evaluation of the data should be completed no later than early March 2025. After completing the data evaluation, the results of the sampling activities and planned corrective action(s) to ensure compliance with the total copper effluent limitations will be transmitted to MDE in a separate submittal.

Please do not hesitate to contact me with any questions concerning the information provided in this written notification.

Sincerely,

Robert E. Johnson  
Vice President - Earth & Environment

REJ

K:\Emerson\Kop-Flex\\_SONSITE AREA\NPDES Permit\MDE Exceedance Notifications\2025\01-January - Cu Exceedance\31405608.010\_Kopflex\_01-2025 Cu Exceedance\_MDE Notification\_FINAL 020325.DOCX

cc: Steve Clarke, EMERSUB 16, LLC  
Amber Crouch, EMERSUB 16 LLC  
Reza Zarghamee, Pillsbury Winthrop Shaw Pittman LLP.

ENCLOSURE B – LAB REPORTS FOR JANUARY 2025 COPPER SAMPLING

Project Name: Kop-Flex  
PSS Project No.: 25012415

January 29, 2025

**Eric Johnson**  
**WSP USA - Herndon**  
13530 Dulles Technology Dr, Ste 300  
Herndon, VA 20171



Reference: PSS Project No: **25012415**  
Project Name: Kop-Flex  
Project Location: Hanover, MD  
Project ID.: 31405608.010

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **25012415**.

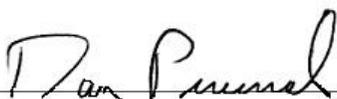
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 28, 2025, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

  
Dan Prucnal

Laboratory Manager

## Sample Summary

Project Name: Kop-Flex  
PSS Project No.: 25012415

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The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/24/2025 at 12:29 pm  
Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any  
sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

<b>PSS Sample ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date/Time Collected</b>
25012415-001	Effluent-VSP4	WASTE WATER	01/24/25 10:15

## Report Information

Project Name: Kop-Flex  
PSS Project No.: 25012415

### Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Samples prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements

### Standard Flags/Abbreviations:

B	A target analyte was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results pending final confirmation.
Dil	Dilution Factor is the factor applied to the reported data due to dilution of the sample aliquot.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
F	RPD exceeded the laboratory control limits.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
H	Recovery of BKS, BSD or both exceeded the laboratory control limits.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
L	Recovery of BKS, BSD or both below the laboratory control limits.
MCL	The Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water as determined by the EPA.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level.
ND	Not Detected at or above the reporting limit (or MDL if shown).
RL	PSS Reporting Limit.
X	Recovery outside of QC criteria.
%Rec	Percent Recovery

### QC Types:

CCV	Continuing Calibration Verification	MD	Sample Duplicate
ICV	Initial Calibration Verification	MRL	Minimum Reporting Level
LCS / BKS	Laboratory Control Sample	MS	Matrix Spike
LCSD / BSD	Laboratory Control Sample Duplicate	MSD	Matrix Spike Duplicate
LLCCV	Low Level Continuing Calibration Verification	PDS	Post Digestion Spike
MB / BLK	Method Blank	RPD	Relative Percent Difference

### Certifications:

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>
Maryland - MDE	State - Certification of Drinking Water Laboratories	179
MWAA	LDBE	LD1997-0041-2015
Pennsylvania - PADEP	NELAP	68-03330
USCG	NSWC	Accepted Laboratory
USDA	Regulated Soil Permit	P330-12-00268
Virginia - VELAP	NELAP	460156
West Virginia - WVDEP	State - Certified Laboratories	303

**Certificate of Analysis**

Project Name: Kop-Flex  
 PSS Project No.: 25012415

**Sample ID: Effluent-VSP4** **PSS Sample ID: 25012415-001**  
**Date/Time Sampled: 01/24/2025 10:15** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	<b>10.0</b>	ug/L	1.00		1	0.98	01/27/25	01/28/25 17:25	1073
Lead	ND	ug/L	1.0		1	0.66	01/27/25	01/28/25 17:25	1073
Nickel	<b>16.4</b>	ug/L	1.00		1	0.95	01/27/25	01/28/25 17:25	1073
Zinc	<b>39.4</b>	ug/L	20.0		1	7.1	01/27/25	01/28/25 17:25	1073

## Case Narrative

Project Name: Kop-Flex

PSS Project No.: 25012415

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Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

### **Sample Receipt:**

All sample receipt conditions were acceptable.

**NELAP accreditation was held for all analyses performed unless noted below. See [www.phaseonline.com](http://www.phaseonline.com) for complete PSS scope of accreditation.**

**Lab Chronology**

Project Name: Kop-Flex  
 PSS Project No.: 25012415

Method	PSS Sample ID	Container ID	Analysis Type	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
<b>EPA 200.8</b>	25012415-001	883	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 17:25
	103393-1-BKS		BKS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:19
	103393-1-BLK		BLK	W	103393	219015	01/27/2025 14:00	01/28/2025 17:14
	25012415-001 S	883	MS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:30
	25012415-001 SD	883	MSD	W	103393	219015	01/27/2025 14:00	01/28/2025 17:35

**QC Summary**

Project Name Kop-Flex  
PSS Project No.: 25012415

**Analytical Method: EPA 200.8**

Seq Number: 219015

MB Sample ID: 103393-1-BLK

Matrix: Water

LCS Sample ID: 103393-1-BKS

Prep Method: E200.8\_PREP

Date Prep: 01/27/25

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<0.9800	50.00	51.44	103	85-115	ug/L	
Lead	<0.6600	50.00	51.65	103	85-115	ug/L	
Nickel	<0.9500	50.00	50.04	100	85-115	ug/L	
Zinc	<7.100	100	103.1	103	85-115	ug/L	

**Analytical Method: EPA 200.8**

Seq Number: 219015

Parent Sample ID: 25012415-001

Matrix: Waste Water

MS Sample ID: 25012415-001 S

Prep Method: E200.8\_PREP

Date Prep: 01/27/25

MSD Sample ID: 25012415-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	10.04	50.00	61.56	103	61.59	103	70-130	0	25	ug/L	
Lead	<0.6600	50.00	51.05	102	51.14	102	70-130	0	25	ug/L	
Nickel	16.43	50.00	67.28	102	67.60	102	70-130	0	25	ug/L	
Zinc	39.43	100	141.7	102	141.3	102	70-130	0	25	ug/L	

Project Name Kop-Flex  
PSS Project No.: 25012415

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 1      Seq Number: 219015  
Analyzed Date: 01/28/25 18:06

Parameter	CCV %Rec	Limits	Flag
Copper	99	85-115	
Lead	101	85-115	
Nickel	98	85-115	
Zinc	100	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 2      Seq Number: 219015  
Analyzed Date: 01/28/25 19:08

Parameter	CCV %Rec	Limits	Flag
Copper	100	85-115	
Lead	100	85-115	
Nickel	99	85-115	
Zinc	101	85-115	

**Analytical Method: EPA 200.8**

Parent Sample Id: ICV 1      Seq Number: 219015  
Analyzed Date: 01/28/25 16:59

Parameter	ICV %Rec	Limits	Flag
Copper	101	90-110	
Lead	102	90-110	
Nickel	99	90-110	
Zinc	102	90-110	



**Sample Receipt Checklist**

Project Name: Kop-Flex  
 PSS Project No.: 25012415

**Client Name** WSP USA - Herndon  
**Disposal Date** 02/28/2025

**Received By** Tyler Enwright  
**Date Received** 01/24/2025 12:29 PM  
**Delivered By** Trans Time Express  
**Tracking #** Not Applicable  
**Logged In By** Tyler Enwright

**Shipping Container(s)**

# of Coolers 1

Custody Seal(s) Intact? N/A  
 Seal(s) Signed / Dated? N/A

Ice Present  
 Temp (°C) 1.7  
 Temp Blank Present Yes

**Documentation**

COC agrees with sample labels? Yes  
 Chain of Custody Yes

Sampler Name Stevie Henrick, Mikayla Schoff  
 MD DW Cert. No. N/A

**Sample Container**

Appropriate for Specified Analysis? Yes  
 Intact? Yes  
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable  
 Seal(s) Signed / Dated Not Applicable

**Holding Time**

All Samples Received Within Holding Time(s)? Yes

Total # of Samples Received 1  
 Total # of Containers Received 1

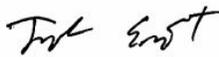
**Preservation**

Total Metals (pH<2) Yes  
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A  
 Orthophosphorus, filtered within 15 minutes of collection N/A  
 Cyanides (pH>12) N/A  
 Sulfide (pH>9) N/A  
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A  
 TOX, TKN, NH3, Total Phos (pH<2) N/A  
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A  
 Do VOA vials have zero headspace? N/A  
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A  
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

**Comments: (Any "No" response must be detailed in the comments section below.)**

For any improper preservation conditions, the sample ID, preservative added, documentation of any client notification, and subsequent client instructions are noted below. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C, and <=4°C for EPA 524. Samples that are received by the lab on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that thermal preservation has begun.

Samples Inspected/Checklist Completed By:



Tyler Enwright

Date: 01/24/2025

PM Review and Approval:



Amber Confer

Date: 01/24/2025

Project Name: Kop-Flex  
PSS Project No.: 25012421

February 7, 2025

**Eric Johnson**  
**WSP USA - Herndon**  
13530 Dulles Technology Dr, Ste 300  
Herndon, VA 20171



Reference: PSS Project No: **25012421**  
Project Name: Kop-Flex  
Project Location: Hanover, MD  
Project ID.: 31405608.010

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **25012421**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 28, 2025, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

  
**Dan Prucnal**

Laboratory Manager



## Sample Summary

Project Name: Kop-Flex  
PSS Project No.: 25012421

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/24/2025 at 03:34 pm. Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
25012421-001	VSP-4-FILT	WASTE WATER	01/24/25 11:00
25012421-002	VSP-3-TOT	WASTE WATER	01/24/25 11:03
25012421-003	VSP-3-FILT	WASTE WATER	01/24/25 11:05
25012421-004	VSP-2-TOT	WASTE WATER	01/24/25 11:10
25012421-005	VSP-2-FILT	WASTE WATER	01/24/25 11:12
25012421-006	VSP-1-TOT	WASTE WATER	01/24/25 11:15
25012421-007	VSP-1-FILT	WASTE WATER	01/24/25 11:17
25012421-008	VSP-200-TOT	WASTE WATER	01/24/25 09:45
25012421-009	VSP-200-FILT	WASTE WATER	01/24/25 09:46
25012421-010	RW-2D-TOT	WASTE WATER	01/24/25 11:45
25012421-011	RW-2D-FILT	WASTE WATER	01/24/25 11:47
25012421-012	RW-1D-TOT	WASTE WATER	01/24/25 11:50
25012421-013	RW-1D-FILT	WASTE WATER	01/24/25 11:52
25012421-014	RW-1S-FILT	WASTE WATER	01/24/25 11:58
25012421-015	RW-1S-TOT	WASTE WATER	01/24/25 11:55
25012421-016	RW-2S-TOT	WASTE WATER	01/24/25 12:05
25012421-017	RW-2S-FILT	WASTE WATER	01/24/25 12:07
25012421-018	RW-3S-TOT	WASTE WATER	01/24/25 12:10
25012421-019	RW-3S-FILT	WASTE WATER	01/24/25 12:15
25012421-020	RW-100-TOT	WASTE WATER	01/24/25 12:30
25012421-021	RW-100-FILT	WASTE WATER	01/24/25 12:35
25012421-023	VSP-4-FILT-OFF	WASTE WATER	01/24/25 14:27
25012421-024	VSP-3-TOT-OFF	WASTE WATER	01/24/25 14:30
25012421-025	VSP-3-FILT-OFF	WASTE WATER	01/24/25 14:32
25012421-026	VSP-2-TOT-OFF	WASTE WATER	01/24/25 14:35
25012421-027	VSP-2-FILT-OFF	WASTE WATER	01/24/25 14:37
25012421-028	VSP-1-TOT-OFF	WASTE WATER	01/24/25 14:40
25012421-029	VSP-1-FILT-OFF	WASTE WATER	01/24/25 14:42

## Report Information

Project Name: Kop-Flex  
PSS Project No.: 25012421

### Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Samples prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements

### Standard Flags/Abbreviations:

B	A target analyte was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results pending final confirmation.
Dil	Dilution Factor is the factor applied to the reported data due to dilution of the sample aliquot.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
F	RPD exceeded the laboratory control limits.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
H	Recovery of BKS, BSD or both exceeded the laboratory control limits.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
L	Recovery of BKS, BSD or both below the laboratory control limits.
MCL	The Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water as determined by the EPA.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level.
ND	Not Detected at or above the reporting limit (or MDL if shown).
RL	PSS Reporting Limit.
X	Recovery outside of QC criteria.
%Rec	Percent Recovery

### QC Types:

CCV	Continuing Calibration Verification	MD	Sample Duplicate
ICV	Initial Calibration Verification	MRL	Minimum Reporting Level
LCS / BKS	Laboratory Control Sample	MS	Matrix Spike
LCSD / BSD	Laboratory Control Sample Duplicate	MSD	Matrix Spike Duplicate
LLCCV	Low Level Continuing Calibration Verification	PDS	Post Digestion Spike
MB / BLK	Method Blank	RPD	Relative Percent Difference

### Certifications:

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>
Maryland - MDE	State - Certification of Drinking Water Laboratories	179
MWAA	LDBE	LD1997-0041-2015
Pennsylvania - PADEP	NELAP	68-03330
USCG	NSWC	Accepted Laboratory
USDA	Regulated Soil Permit	P330-12-00268
Virginia - VELAP	NELAP	460156
West Virginia - WVDEP	State - Certified Laboratories	303

**Certificate of Analysis**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Sample ID: VSP-4-FILT** **PSS Sample ID: 25012421-001**  
**Date/Time Sampled: 01/24/2025 11:00** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	4.1	ug/L	1.0		1	0.98	01/29/25	01/30/25 20:34	1073

**Sample ID: VSP-3-TOT** **PSS Sample ID: 25012421-002**  
**Date/Time Sampled: 01/24/2025 11:03** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 20:50	1073

**Sample ID: VSP-3-FILT** **PSS Sample ID: 25012421-003**  
**Date/Time Sampled: 01/24/2025 11:05** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.9	ug/L	1.0		1	0.98	01/29/25	01/30/25 20:55	1073

**Sample ID: VSP-2-TOT** **PSS Sample ID: 25012421-004**  
**Date/Time Sampled: 01/24/2025 11:10** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:00	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Sample ID: VSP-2-FILT** **PSS Sample ID: 25012421-005**  
**Date/Time Sampled: 01/24/2025 11:12** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.9	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:14	1073

**Sample ID: VSP-1-TOT** **PSS Sample ID: 25012421-006**  
**Date/Time Sampled: 01/24/2025 11:15** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.5	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:19	1073

**Sample ID: VSP-1-FILT** **PSS Sample ID: 25012421-007**  
**Date/Time Sampled: 01/24/2025 11:17** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:25	1073

**Sample ID: VSP-200-TOT** **PSS Sample ID: 25012421-008**  
**Date/Time Sampled: 01/24/2025 09:45** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:30	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Sample ID: VSP-200-FILT** **PSS Sample ID: 25012421-009**  
**Date/Time Sampled: 01/24/2025 09:46** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	3.8	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:35	1073

**Sample ID: RW-2D-TOT** **PSS Sample ID: 25012421-010**  
**Date/Time Sampled: 01/24/2025 11:45** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.6	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:40	1073

**Sample ID: RW-2D-FILT** **PSS Sample ID: 25012421-011**  
**Date/Time Sampled: 01/24/2025 11:47** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:45	1073

**Sample ID: RW-1D-TOT** **PSS Sample ID: 25012421-012**  
**Date/Time Sampled: 01/24/2025 11:50** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	4.3	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:51	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Sample ID: RW-1D-FILT** **PSS Sample ID: 25012421-013**  
**Date/Time Sampled: 01/24/2025 11:52** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	4.4	ug/L	1.0		1	0.98	01/29/25	01/30/25 21:56	1073

**Sample ID: RW-1S-FILT** **PSS Sample ID: 25012421-014**  
**Date/Time Sampled: 01/24/2025 11:58** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	7.7	ug/L	1.0		1	0.98	01/29/25	01/30/25 22:01	1073

**Sample ID: RW-1S-TOT** **PSS Sample ID: 25012421-015**  
**Date/Time Sampled: 01/24/2025 11:55** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	7.4	ug/L	1.0		1	0.98	01/29/25	01/30/25 22:15	1073

**Sample ID: RW-2S-TOT** **PSS Sample ID: 25012421-016**  
**Date/Time Sampled: 01/24/2025 12:05** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	12.1	ug/L	1.00		1	0.98	01/29/25	01/30/25 22:20	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Sample ID: RW-2S-FILT** **PSS Sample ID: 25012421-017**  
**Date/Time Sampled: 01/24/2025 12:07** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	13.2	ug/L	1.00		1	0.98	01/29/25	01/30/25 22:26	1073

**Sample ID: RW-3S-TOT** **PSS Sample ID: 25012421-018**  
**Date/Time Sampled: 01/24/2025 12:10** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.3	ug/L	1.0		1	0.98	01/29/25	01/30/25 22:31	1073

**Sample ID: RW-3S-FILT** **PSS Sample ID: 25012421-019**  
**Date/Time Sampled: 01/24/2025 12:15** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.3	ug/L	1.0		1	0.98	01/29/25	01/30/25 22:36	1073

**Sample ID: RW-100-TOT** **PSS Sample ID: 25012421-020**  
**Date/Time Sampled: 01/24/2025 12:30** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.0	ug/L	1.0		1	0.98	01/29/25	01/30/25 22:41	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
 PSS Project No.: 25012421

**Sample ID: RW-100-FILT** **PSS Sample ID: 25012421-021**  
**Date/Time Sampled: 01/24/2025 12:35** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.1	ug/L	1.0		1	0.98	01/27/25	01/28/25 17:40	1073

**Sample ID: VSP-4-FILT-OFF** **PSS Sample ID: 25012421-023**  
**Date/Time Sampled: 01/24/2025 14:27** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	3.8	ug/L	1.0		1	0.98	01/27/25	01/28/25 17:50	1073

**Sample ID: VSP-3-TOT-OFF** **PSS Sample ID: 25012421-024**  
**Date/Time Sampled: 01/24/2025 14:30** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.1	ug/L	1.0		1	0.98	01/27/25	01/28/25 17:55	1073

**Sample ID: VSP-3-FILT-OFF** **PSS Sample ID: 25012421-025**  
**Date/Time Sampled: 01/24/2025 14:32** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.2	ug/L	1.0		1	0.98	01/27/25	01/28/25 18:01	1073

**Certificate of Analysis**

Project Name: Kop-Flex  
 PSS Project No.: 25012421

**Sample ID: VSP-2-TOT-OFF** **PSS Sample ID: 25012421-026**  
**Date/Time Sampled: 01/24/2025 14:35** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.0	ug/L	1.0		1	0.98	01/27/25	01/28/25 18:16	1073

**Sample ID: VSP-2-FILT-OFF** **PSS Sample ID: 25012421-027**  
**Date/Time Sampled: 01/24/2025 14:37** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.9	ug/L	1.0		1	0.98	01/27/25	01/28/25 18:21	1073

**Sample ID: VSP-1-TOT-OFF** **PSS Sample ID: 25012421-028**  
**Date/Time Sampled: 01/24/2025 14:40** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	5.9	ug/L	1.0		1	0.98	01/27/25	01/28/25 18:26	1073

**Sample ID: VSP-1-FILT-OFF** **PSS Sample ID: 25012421-029**  
**Date/Time Sampled: 01/24/2025 14:42** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	6.5	ug/L	1.0		1	0.98	01/27/25	01/28/25 18:32	1073

## Case Narrative

Project Name: Kop-Flex

PSS Project No.: 25012421

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Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

### **Sample Receipt:**

All sample receipt conditions were acceptable.

### **General Comments:**

Refer to work order 25013006 for sample 022.

**NELAP accreditation was held for all analyses performed unless noted below. See [www.phaseonline.com](http://www.phaseonline.com) for complete PSS scope of accreditation.**

**Lab Chronology**

Project Name: Kop-Flex  
PSS Project No.: 25012421

Method	PSS Sample ID	Container ID	Analysis Type	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed	
<b>EPA 200.8</b>	25012421-021	934	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 17:40	
	25012421-023	936	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 17:50	
	25012421-024	937	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 17:55	
	25012421-025	938	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 18:01	
	25012421-026	939	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 18:16	
	25012421-027	940	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 18:21	
	25012421-028	941	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 18:26	
	25012421-029	942	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 18:32	
	103393-1-BKS			BKS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:19
	103393-1-BLK			BLK	W	103393	219015	01/27/2025 14:00	01/28/2025 17:14
	25012415-001 S	883		MS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:30
	25012415-001 SD	883		MSD	W	103393	219015	01/27/2025 14:00	01/28/2025 17:35
	25012421-001	914		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 20:34
	25012421-002	915		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 20:50
	25012421-003	916		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 20:55
	25012421-004	917		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:00
	25012421-005	918		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:14
	25012421-006	919		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:19
	25012421-007	920		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:25
	25012421-008	921		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:30
	25012421-009	922		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:35
	25012421-010	923		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:40
	25012421-011	924		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:45
	25012421-012	925		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:51
	25012421-013	926		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 21:56
	25012421-014	927		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:01
	25012421-015	928		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:15
	25012421-016	929		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:20
	25012421-017	930		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:26
	25012421-018	931		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:31
	25012421-019	932		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:36
	25012421-020	933		Initial	W	103419	219065	01/29/2025 11:45	01/30/2025 22:41
	103419-1-BKS			BKS	W	103419	219065	01/29/2025 11:45	01/30/2025 20:29
	103419-1-BLK			BLK	W	103419	219065	01/29/2025 11:45	01/30/2025 20:24
	25012421-001 S	914		MS	W	103419	219065	01/29/2025 11:45	01/30/2025 20:39
	25012421-020 S	933		MS	W	103419	219065	01/29/2025 11:45	01/30/2025 22:46
	25012421-001 SD	914		MSD	W	103419	219065	01/29/2025 11:45	01/30/2025 20:45

**QC Summary**

Project Name Kop-Flex  
PSS Project No.: 25012421

**Analytical Method: EPA 200.8**

Seq Number: 219015 Matrix: Water  
MB Sample ID: 103393-1-BLK LCS Sample ID: 103393-1-BKS

Prep Method: E200.8\_PREP  
Date Prep: 01/27/25

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<0.9800	50.00	51.44	103	85-115	ug/L	

**Analytical Method: EPA 200.8**

Seq Number: 219065 Matrix: Water  
MB Sample ID: 103419-1-BLK LCS Sample ID: 103419-1-BKS

Prep Method: E200.8\_PREP  
Date Prep: 01/29/25

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<0.9800	50.00	49.33	99	85-115	ug/L	

**Analytical Method: EPA 200.8**

Seq Number: 219065 Matrix: Waste Water  
Parent Sample ID: 25012421-001 MS Sample ID: 25012421-001 S

Prep Method: E200.8\_PREP  
Date Prep: 01/29/25  
MSD Sample ID: 25012421-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Copper	4.080	50.00	53.23	98	51.61	95	70-130	3	25	ug/L	

**Analytical Method: EPA 200.8**

Seq Number: 219065 Matrix: Waste Water  
Parent Sample ID: 25012421-020 MS Sample ID: 25012421-020 S

Prep Method: E200.8\_PREP  
Date Prep: 01/29/25

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Copper	6.019	50.00	55.80	100	70-130	ug/L	

Project Name Kop-Flex  
PSS Project No.: 25012421

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 1                      Seq Number: 219015  
Analyzed Date: 01/28/25 18:06

Parameter	CCV %Rec	Limits	Flag
Copper	99	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 2                      Seq Number: 219015  
Analyzed Date: 01/28/25 19:08

Parameter	CCV %Rec	Limits	Flag
Copper	100	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 2                      Seq Number: 219065  
Analyzed Date: 01/30/25 20:05

Parameter	CCV %Rec	Limits	Flag
Copper	98	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 3                      Seq Number: 219065  
Analyzed Date: 01/30/25 21:05

Parameter	CCV %Rec	Limits	Flag
Copper	97	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 4                      Seq Number: 219065  
Analyzed Date: 01/30/25 22:06

Parameter	CCV %Rec	Limits	Flag
Copper	99	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 5                      Seq Number: 219065  
Analyzed Date: 01/30/25 23:07

Parameter	CCV %Rec	Limits	Flag
Copper	100	85-115	

**Analytical Method: EPA 200.8**

Parent Sample Id: ICV 1                      Seq Number: 219015  
Analyzed Date: 01/28/25 16:59

Parameter	ICV %Rec	Limits	Flag
Copper	101	90-110	

**Analytical Method: EPA 200.8**

Parent Sample Id: ICV 1                      Seq Number: 219065  
Analyzed Date: 01/30/25 17:57

Parameter	ICV %Rec	Limits	Flag
Copper	103	90-110	

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① PSS CLIENT: <b>wsp USA</b>		OFFICE LOCATION: <b>Herndon, VA</b>		PSS Work Order #: <b>25012421</b>				PAGE <b>1</b> OF <b>3</b>									
BILL TO (if different):		PHONE #: <b>703-709-6500</b>		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe													
CONTACT: <b>Eric Johnson</b>		EMAIL: <b>eric.johnson@wsp.com</b>		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes <b>3</b>						Preservative Codes 1 - HCL 2 - H <sub>2</sub> SO <sub>4</sub> 3 - HNO <sub>3</sub> 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit					
PROJECT NAME: <b>Kop Flex</b>		PROJECT #: <b>31405608.010</b>				Analysis/Method Required ③ <b>CH EPA 2008</b>											
SITE LOCATION: <b>Hanover, MD</b>		P.O. #:															
SAMPLER(S): <b>Stevie Henrick, Mikayla Schip</b>		DW CERT #:															
② PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB											
1	VSP-4-FILT	1/24/25	1100	WW	1	G	1										
2	VSP-3-TOT	1/24/25	1103	WW	1	G	1										
3	VSP-3-FILT		1105	WW	1	G	1										
4	VSP-2-TOT		1110	WW	1	G	1										
5	VSP-2-FILT		1112	WW	1	G	1										
6	VSP-1-TOT		1115	WW	1	G	1										
7	VSP-1-FILT		1117	WW	1	G	1										
8	VSP-200-TOT		0945	WW	1	G	1										
9	VSP-200-FILT		0946	WW	1	G	1										
③ Relinquished By: (1) <b>M. [Signature]</b>			Date	Time	Received By:	④ Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input type="checkbox"/> Other				Ice Present: <b>PMes</b>							
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Custody Seal: <b>ASs</b>								
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW				# Coolers: <b>2</b> Temp: <b>1.5-2.0°C</b>								
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE				Shipping Carrier: <b>2</b> Special Instructions: <b>Temp Blanks: 0.7°C Temp Blanks 2: 1.2°C</b> <b>Standard 10-day TAT</b>								

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BILL TO (if different):		PHONE #: <b>703-709-6500</b>		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe													
CONTACT: <b>Eric Johnson</b>		EMAIL: <b>eric.johnson@wsp.com</b>		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes <b>3</b>										Preservative Codes	
PROJECT NAME: <b>Kop Flex</b>		PROJECT #: <b>31405608.010</b>				Analysis/Method Required <b>③</b> <i>Cu EPA 2008</i>										1 - HCL	
SITE LOCATION: <b>Hanover, MD</b>		P.O. #:														2 - H <sub>2</sub> SO <sub>4</sub>	
SAMPLER(S): <b>Steve Henrick, Mike York, Jeff</b>		DW CERT #:				3 - HNO <sub>3</sub>											
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required										Preservative Codes
10	RW-2D-TOT	1/24/25	1145	WW	1	G	<i>Cu EPA 2008</i>										4 - NaOH
4	RW-2D-FILT		1147	WW	1	G											5 - E624KIT
12	RW-1D-TOT		1150	WW	1	G											6 - ICE
13	RW-1D-FILT		1152	WW	1	G											7 - Sodium Thiosulfate
14	RW-1S-FILT		1158	WW	1	G											8 - Ascorbic Acid
15	RW-1S-TOT		1155	WW	1	G											9 - TerraCore Kit
16	RW-2S-TOT		1205	WW	1	G											
17	RW-2S-FILT		1207	WW	1	G											
18	RW-3S-TOT		1210	WW	1	G											
19	RW-3S-FILT		1215	WW	1	G											
Relinquished By: (1) <i>M. Hoff</i>		Date	Time	Received By:	Requested TAT (One TAT per COC)				Ice Present: <b>Yes</b>								
		1/24/25	1539	<i>[Signature]</i>	<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				Custody Seal: <b>AGS</b>								
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO:				# Coolers: <b>2</b> Temp: <b>1.3-2.0°C</b>								
					<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Shipping Carrier: <b>Cherry</b>								
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE?		Special Instructions: <b>Temp Blank 1: 0.7°C Temp Blank 2: 1.2°C</b>										
					<input type="checkbox"/> DW <input type="checkbox"/> WW		<b>Standard 10-day TAT</b>										
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE												

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PSS CLIENT: <i>WSP USA</i>		OFFICE LOCATION: <i>Herndon, VA</i>		PSS Work Order #: <b>25012421</b>				PAGE <u>3</u> OF <u>3</u>											
BILL TO (if different):		PHONE #: <i>703-709-6500</i>		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe															
CONTACT: <i>Eric Johnson</i>		EMAIL: <i>eric.johnson@wsp.com</i>		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes <b>3</b>										Analysis/Method Required <b>③</b>	Preservative Codes		
PROJECT NAME: <i>KapFlex</i>		PROJECT #:				<i>14 EPA 200.8</i>											1 - HCL		
SITE LOCATION: <i>Hanover, MD</i>		P.O. #:															2 - H <sub>2</sub> SO <sub>4</sub>		
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:															3 - HNO <sub>3</sub>		
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		4 - NaOH															
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		5 - E624KIT															
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		6 - ICE															
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		7 - Sodium Thiosulfate															
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		8 - Ascorbic Acid															
SAMPLER(S): <i>Stevie Hennick, Mikoyla Schiff</i>		DW CERT #:		9 - TerraCore Kit															
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	Analysis/Method Required	Preservative Codes										
20	RW-100-TOT	1/24/25	1230	WW	1	G	1												
21	RW-100-FILT		1235	WW	1	G	1												
22	VSP-4-TOT-OFF		1425	WW	1	G	1												
23	VSP-4-FILT-OFF		1427	WW	1	G	1												
24	VSP-3-TOT-OFF		1430	WW	1	G	1												
25	VSP-3-FILT-OFF		1432	WW	1	G	1												
26	VSP-2-TOT-OFF		1435	WW	1	G	1												
27	VSP-2-FILT-OFF		1437	WW	1	G	1												
28	VSP-1-TOT-OFF		1440	WW	1	G	1												
29	VSP-1-FILT-OFF		1442	WW	1	G	1												
Relinquished By: (1) <i>M. Schiff</i>		Date	Time	Received By: <i>TR</i>		Requested TAT (One TAT per COC)			Ice Present: <i>yes Pres</i>										
Relinquished By: (2)		Date	Time	Received By:		<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Custody Seal: <i>yes Abs</i>										
Relinquished By: (3)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			# Coolers: <i>2</i> Temp: <i>1.3-2.0°C</i>										
Relinquished By: (4)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			Shipping Carrier: <i>Cher</i>										
						Special Instructions: <i>Temp Blank 1: 27°C    Temp Blank 2: 1.2°C</i>			Standard 10-day TAT										
						EDD FORMAT TYPE													

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation. Page 17 of 18 Version 1.000

**Sample Receipt Checklist**

Project Name: Kop-Flex  
PSS Project No.: 25012421

**Client Name** WSP USA - Herndon  
**Disposal Date** 02/28/2025

**Received By** Tyler Enwright  
**Date Received** 01/24/2025 03:34 PM  
**Delivered By** Client  
**Tracking #** Not Applicable  
**Logged In By** Tyler Enwright

**Shipping Container(s)**

# of Coolers 2

Custody Seal(s) Intact? N/A  
Seal(s) Signed / Dated? N/A

Ice Present  
Temp (°C) 2.0  
Temp Blank Present Yes

**Documentation**

COC agrees with sample labels? Yes  
Chain of Custody Yes

Sampler Name Stevie Henrick, Mikayla Schoff  
MD DW Cert. No. N/A

**Sample Container**

Appropriate for Specified Analysis? Yes  
Intact? Yes  
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable  
Seal(s) Signed / Dated Not Applicable

**Holding Time**

All Samples Received Within Holding Time(s)? Yes

Total # of Samples Received 29  
Total # of Containers Received 29

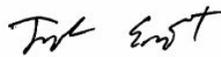
**Preservation**

Total Metals (pH<2) Yes  
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A  
Orthophosphorus, filtered within 15 minutes of collection N/A  
Cyanides (pH>12) N/A  
Sulfide (pH>9) N/A  
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A  
TOX, TKN, NH3, Total Phos (pH<2) N/A  
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A  
Do VOA vials have zero headspace? N/A  
624 VOC (Rcvd at least one unpreserved VOA vial) N/A  
524 VOC (Rcvd with trip blanks) (pH<2) N/A

**Comments: (Any "No" response must be detailed in the comments section below.)**

For any improper preservation conditions, the sample ID, preservative added, documentation of any client notification, and subsequent client instructions are noted below. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C, and <=4°C for EPA 524. Samples that are received by the lab on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that thermal preservation has begun.

Samples Inspected/Checklist Completed By:



Tyler Enwright

Date: 01/24/2025

PM Review and Approval:



Amber Confer

Date: 01/27/2025

Project Name: Kop-Flex  
PSS Project No.: 25013006

January 31, 2025

**Eric Johnson**  
**WSP USA - Herndon**  
13530 Dulles Technology Dr, Ste 300  
Herndon, VA 20171



Reference: PSS Project No: **25013006**  
Project Name: Kop-Flex  
Project Location: Hanover, MD  
Project ID.: 31405608.010

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **25013006**.

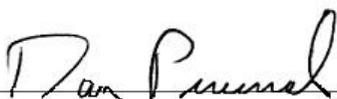
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 28, 2025, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

  
Dan Prucnal

Laboratory Manager

## Sample Summary

Project Name: Kop-Flex  
PSS Project No.: 25013006

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The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/24/2025 at 03:34 pm  
Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any  
sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

<b>PSS Sample ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date/Time Collected</b>
25013006-022	VSP-4-TOT-OFF	WASTE WATER	01/24/25 14:25

Project Name: Kop-Flex  
PSS Project No.: 25013006

**Notes:**

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Samples prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements

**Standard Flags/Abbreviations:**

B	A target analyte was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results pending final confirmation.
Dil	Dilution Factor is the factor applied to the reported data due to dilution of the sample aliquot.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
F	RPD exceeded the laboratory control limits.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
H	Recovery of BKS, BSD or both exceeded the laboratory control limits.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
L	Recovery of BKS, BSD or both below the laboratory control limits.
MCL	The Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water as determined by the EPA.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level.
ND	Not Detected at or above the reporting limit (or MDL if shown).
RL	PSS Reporting Limit.
X	Recovery outside of QC criteria.
%Rec	Percent Recovery

**QC Types:**

CCV	Continuing Calibration Verification	MD	Sample Duplicate
ICV	Initial Calibration Verification	MRL	Minimum Reporting Level
LCS / BKS	Laboratory Control Sample	MS	Matrix Spike
LCSD / BSD	Laboratory Control Sample Duplicate	MSD	Matrix Spike Duplicate
LLCCV	Low Level Continuing Calibration Verification	PDS	Post Digestion Spike
MB / BLK	Method Blank	RPD	Relative Percent Difference

**Certifications:**

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>
Maryland - MDE	State - Certification of Drinking Water Laboratories	179
MWAA	LDBE	LD1997-0041-2015
Pennsylvania - PADEP	NELAP	68-03330
USCG	NSWC	Accepted Laboratory
USDA	Regulated Soil Permit	P330-12-00268
Virginia - VELAP	NELAP	460156
West Virginia - WVDEP	State - Certified Laboratories	303

**Certificate of Analysis**

Project Name: Kop-Flex  
 PSS Project No.: 25013006

**Sample ID: VSP-4-TOT-OFF** **PSS Sample ID: 25013006-022**  
**Date/Time Sampled: 01/24/2025 14:25** **Matrix: WASTE WATER**

Total Metals Analytical Method: EPA 200.8 Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Copper	7.2	ug/L	1.0		1	0.98	01/27/25	01/28/25 17:45	1073

## Case Narrative

Project Name: Kop-Flex

PSS Project No.: 25013006

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Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

### **Sample Receipt:**

All sample receipt conditions were acceptable.

### **General Comments:**

Per client, report sample 022 on an expedited turnaround. Refer to work order 25012421 for remaining results.

**NELAP accreditation was held for all analyses performed unless noted below. See [www.phaseonline.com](http://www.phaseonline.com) for complete PSS scope of accreditation.**

**Lab Chronology**

Project Name: Kop-Flex  
 PSS Project No.: 25013006

Method	PSS Sample ID	Container ID	Analysis Type	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
<b>EPA 200.8</b>	25013006-022	935	Initial	W	103393	219015	01/27/2025 14:00	01/28/2025 17:45
	103393-1-BKS		BKS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:19
	103393-1-BLK		BLK	W	103393	219015	01/27/2025 14:00	01/28/2025 17:14
	25012415-001 S	883	MS	W	103393	219015	01/27/2025 14:00	01/28/2025 17:30
	25012415-001 SD	883	MSD	W	103393	219015	01/27/2025 14:00	01/28/2025 17:35

**QC Summary**

Project Name Kop-Flex  
PSS Project No.: 25013006

**Analytical Method: EPA 200.8**

Seq Number: 219015

MB Sample ID: 103393-1-BLK

Matrix: Water

LCS Sample ID: 103393-1-BKS

Prep Method: E200.8\_PREP

Date Prep: 01/27/25

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<0.9800	50.00	51.44	103	85-115	ug/L	

Project Name Kop-Flex  
PSS Project No.: 25013006

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 1      Seq Number: 219015  
Analyzed Date: 01/28/25 18:06

Parameter	CCV %Rec	Limits	Flag
Copper	99	85-115	

**Analytical Method: EPA 200.8**

CCV Sample Id: CCV 2      Seq Number: 219015  
Analyzed Date: 01/28/25 19:08

Parameter	CCV %Rec	Limits	Flag
Copper	100	85-115	

**Analytical Method: EPA 200.8**

Parent Sample Id: ICV 1      Seq Number: 219015  
Analyzed Date: 01/28/25 16:59

Parameter	ICV %Rec	Limits	Flag
Copper	101	90-110	

**PHASE  
SEPARATION  
SCIENCE**

**CHAIN OF CUSTODY FORM**

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

25013006

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

① PSS CLIENT: <u>WSP USA</u>		OFFICE LOCATION: <u>Herndon, VA</u>		PSS Work Order #: <b>25012421</b>			PAGE <u>3</u> OF <u>3</u>								
BILL TO (if different):		PHONE #: <u>703-709-6500</u>		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe											
CONTACT: <u>Eric Johnson</u>		EMAIL: <u>eric.johnson@wsp.com</u>		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes <u>3</u>						Preservative Codes 1 - HCL 2 - H <sub>2</sub> SO <sub>4</sub> 3 - HNO <sub>3</sub> 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit			
PROJECT NAME: <u>KopFlex</u>		PROJECT #:				Analysis/Method Required <u>3</u> <u>USE EPA 200.8</u>									
SITE LOCATION: <u>Hanover, MD</u>		P.O. #:													
SAMPLER(S): <u>Steve Hennick, Mikoyla Schff</u>		DW CERT #:													
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	1	2	3	4	5	6	7	8	9
20	RW-100-TOT	1/24/25	1230	WW	1	G	1								
21	RW-100-FILT		1235	WW	1	G	1								
22	VSP-4-TOT-OFF		1425	WW	1	G	1								
23	VSP-4-FILT-OFF		1427	WW	1	G	1								
24	VSP-3-TOT-OFF		1430	WW	1	G	1								
25	VSP-3-FILT-OFF		1432	WW	1	G	1								
26	VSP-2-TOT-OFF		1435	WW	1	G	1								
27	VSP-2-FILT-OFF		1437	WW	1	G	1								
28	VSP-1-TOT-OFF		1440	WW	1	G	1								
29	VSP-1-FILT-OFF		1442	WW	1	G	1								
⑤ Relinquished By: (1) <u>M. Schff</u>		Date	Time	Received By: <u>TZ</u>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: <u>yes Pres</u>						
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: <u>yes AHS</u>						
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: <u>2</u> Temp: <u>1.3-2.0°C</u>						
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE			Shipping Carrier: <u>Cherry</u>						
						Special Instructions: <u>Temp Blank 1: 27°C Temp Blank 2: 1.2°C</u>			Standard 10-day TAT						

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

**Sample Receipt Checklist**

Project Name: Kop-Flex  
 PSS Project No.: 25013006

**Client Name** WSP USA - Herndon  
**Disposal Date** 02/28/2025

**Received By** Tyler Enwright  
**Date Received** 01/24/2025 03:34 PM  
**Delivered By** Client  
**Tracking #** Not Applicable  
**Logged In By** Tyler Enwright

**Shipping Container(s)**

# of Coolers 2

Custody Seal(s) Intact? N/A  
 Seal(s) Signed / Dated? N/A

Ice Present  
 Temp (°C) 2.0  
 Temp Blank Present Yes

**Documentation**

COC agrees with sample labels? Yes  
 Chain of Custody Yes

Sampler Name Stevie Henrick, Mikayla Schoff  
 MD DW Cert. No. N/A

**Sample Container**

Appropriate for Specified Analysis? Yes  
 Intact? Yes  
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable  
 Seal(s) Signed / Dated Not Applicable

**Holding Time**

All Samples Received Within Holding Time(s)? Yes

Total # of Samples Received 29  
 Total # of Containers Received 1

**Preservation**

Total Metals (pH<2) Yes  
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A  
 Orthophosphorus, filtered within 15 minutes of collection N/A  
 Cyanides (pH>12) N/A  
 Sulfide (pH>9) N/A  
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A  
 TOX, TKN, NH3, Total Phos (pH<2) N/A  
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A  
 Do VOA vials have zero headspace? N/A  
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A  
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

**Comments: (Any "No" response must be detailed in the comments section below.)**

For any improper preservation conditions, the sample ID, preservative added, documentation of any client notification, and subsequent client instructions are noted below. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C, and <=4°C for EPA 524. Samples that are received by the lab on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that thermal preservation has begun.

Samples Inspected/Checklist Completed By: Amber Confer  
 Date: 01/30/2025

PM Review and Approval: Amber Confer  
 Date: 01/30/2025