KSingh | Engineers Scientists Consultants

August 25, 2023

Ms. Jane K. Pfeiffer
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1027 West St. Paul Avenue
Milwaukee, WI 53233

Project # 40443A

Subject: **Response to Requested Information Regarding Sample Collection and Analysis**
Community Within the Corridor Limited Partnership – West Block
2748 N. 32nd Street, Milwaukee, WI 53210
BRRTS #: 02-41-587376, FID #: 341333190

Dear Ms. Pfeiffer:

On behalf of the Community Within the Corridor Limited Partnership (CWC), K. Singh & Associates, Inc. (KSingh) in consultation with Hartman Environmental Geoscience (HEG) is pleased to submit a response to WDNR's request for information for the referenced project.

On July 10, 2023, the Wisconsin Department of Natural Resources (WDNR) received the Fifth Round of Commissioning for CWC – West Block – Buildings 6, 7, 8A, and 8B (the Report) presented without a technical assistance fee by KSingh on behalf CWC for the CWC West Block Site. The WDNR requested technical information after reviewing the Report to demonstrate that the quality of the data collected from the Gas Chromatograph (GC) units is acceptable to confirm that the building conditions are protective of human health. The requests from WDNR are itemized below (written in ***bolded italics***) with responses for the individual item:

1. ***Personnel qualifications: Document whether sampling technicians meet the minimum qualifications and training for operating the GC.***

   HEG acted as the primary technical support by providing the Portable Gas Chromatograph (GC) and the training required to operate the instrument. Dr. Blayne Hartman and Mr. Clint Hartman from HEG assisted in setting up the instrument and conducted the initial calibration. Mr. Clint Hartman provided in-person training in sample collection, instrument operation, and using analytical software. Dr. Hartman has provided remote support throughout the project in analysis of the data and troubleshooting as needed. The two key personnel from KSingh responsible for sample collection and analysis are:

   - Sameer Neve, Ph.D. ENV SP
     Dr. Neve is an Environmental Engineer with masters and doctoral degrees in environmental engineering. Sameer has over 7 years of experience with analytical instruments like Inductively Coupled Plasma – Optical Emission Spectroscopy, High Performance Liquid Chromatography, Gas Chromatography – Mass Spectrometry, FTIR, etc. He has trained other undergraduate and graduate students in the operation, maintenance, and calibration of such analytical instruments.

   - Samuel Ramirez
     Mr. Ramirez is a Geologist with over one year of experience in conducting sub-slab vapor

investigation, installing vapor pins, sub-slab vacuum measurements, and installing vapor mitigation systems. Sam is also experienced in air quality monitoring for PCB remediation and has significant experience in environmental sampling. Further, Sam is involved in early action remediation activities where he has been documenting remedial action and taking confirmatory samples to document residual contamination. He is trained in operating analytical instruments and VOC sampling. In addition to this work, Sam has experience in groundwater sampling, geotechnical investigations, and remediation of large-scale environmental projects.

2. ***Reporting limits: Indicate what method detection limit and reporting (quantitation) limits are being achieved for trichloroethene (TCE). TCE concentrations of 0.00 µg/m³ are portrayed on Table 2, but other concentrations are reported at 0.3 µg/m³. It appears that the reporting limit may be between these values.***

   An initial multipoint calibration was performed by Dr. Blayne Hartman on March 1, 2023. The lowest calibration concentration was 0.1 ppbv which is equivalent to 0.55 µg/m³, which rounded up is 0.6 µg/m³. This value is listed on the tables of discrete sample results as the reporting limit. In automated monitoring mode, the software might report values lower than 0.6 µg/m³, but these should be treated as non-detect. Any zeros in tables should be reported as non-detect. The Method Detection Limit (MDL) of the instrument is 0.3 µg/m³.

3. ***Sample collection: Provide a description of how the sample analyzed was collected and delivered to the GC unit.***

   Air grab samples are collected in 50 cc gas-tight, ground-glass syringes with on-off valves. Glass syringes are preferred because the sample can be readily and directly introduced into the analytical instrument, there is no adsorption of TCE onto the glass surface and there is no carry-over between samples. The syringes are transferred to the on-site gas chromatograph and analyzed within 10 minutes of collection.

4. ***Quality Assurance and Quality Control (QA/QC): Provide a description of how the procedures described in Section 11 of the HEG SOP were complied with, including:***

   a. ***Initial calibration: Procedure, date, and results from calibration of the GC unit prior to its use.***

      An initial multipoint calibration was performed by Dr. Blayne Hartman on March 1, 2023, using the procedure described in the SOP. The initial calibration file is also attached. The text 'Last calibrated: May 16, 2023' on the print-out refers to the date on which the March 1st initial calibration data were installed on a new laptop after the original laptop was stolen.

   b. ***On-going QA/QC: A description of the procedures and frequency used to check the accuracy of the device during use, including calibration analysis, blank analysis, replicate analysis, a description of how calibration sample results were used to correct for instrument drift or determine the need for recalibration, and method used for standard preparation. Provide all QA/QC results.***

      Calibration samples were collected from the concentrated source of the scotty canister and diluted

from 1000 ppbv to 100 ppbv, 10 ppbv, 1 ppbv, and 0.1 ppbv. The instrument calibration checks were conducted on about a weekly basis with the results given in Table 1 below. Since the calibration results were within 35% of the Relative Standard Deviation (RSD), there was no need to correct for instrument drift or recalibration of the instrument.

The early measurements were not a concern as the TCE detections were high. When the TCE detection levels came down, we used a lower number to plot trends which needed a specific number not ND with occasional calibration at high levels.

Table 1 – Calibration Results

Sample ID	Date	Sample Time	TCE (ppbv)	%RSD
1 ppbv	5/30/2023	14:41	0.96	-4%
0.1 ppbv	6/8/2023	14:48	0.08	-22%
0.1 ppbv	6/14/2023	13:00	0.09	-6%
1 ppbv	6/20/2023	15:43	0.92	-8%
10 ppbv	6/20/2023	17:03	11.27	13%
0.1 ppbv	6/27/2023	12:59	0.09	-10%
100 ppbv	7/3/2023	12:06	70.66	-29%
10 ppbv	7/11/2023	13:58	12.44	24%
0.1 ppbv	7/17/2023	16:40	0.08	-24%
1 ppbv	7/24/2023	14:38	0.71	-29%
0.1 ppbv	8/1/2023	7:02	0.13	30%
100 ppbv	8/8/2023	16:03	94.48	-6%
Allowable %RSD: ± 35%				

Conclusion

In conclusion, the GC was properly calibrated by HEG, continues to be operated by trained personnel at all times, that samples were collected in accordance with standard practice, and that the QA/QC procedures indicate that the GC is operating within specifications (± 35%). This is indicative of the data collected to be reliable and that the compliance of the VALs can also be verified with the data from the Passive samplers.

Please contact us if you have any questions or seek clarification regarding this information.

Sincerely,

K. SINGH & ASSOCIATES, INC.

Sameer Neve, Ph.D. ENV SP
Staff Environmental Engineer

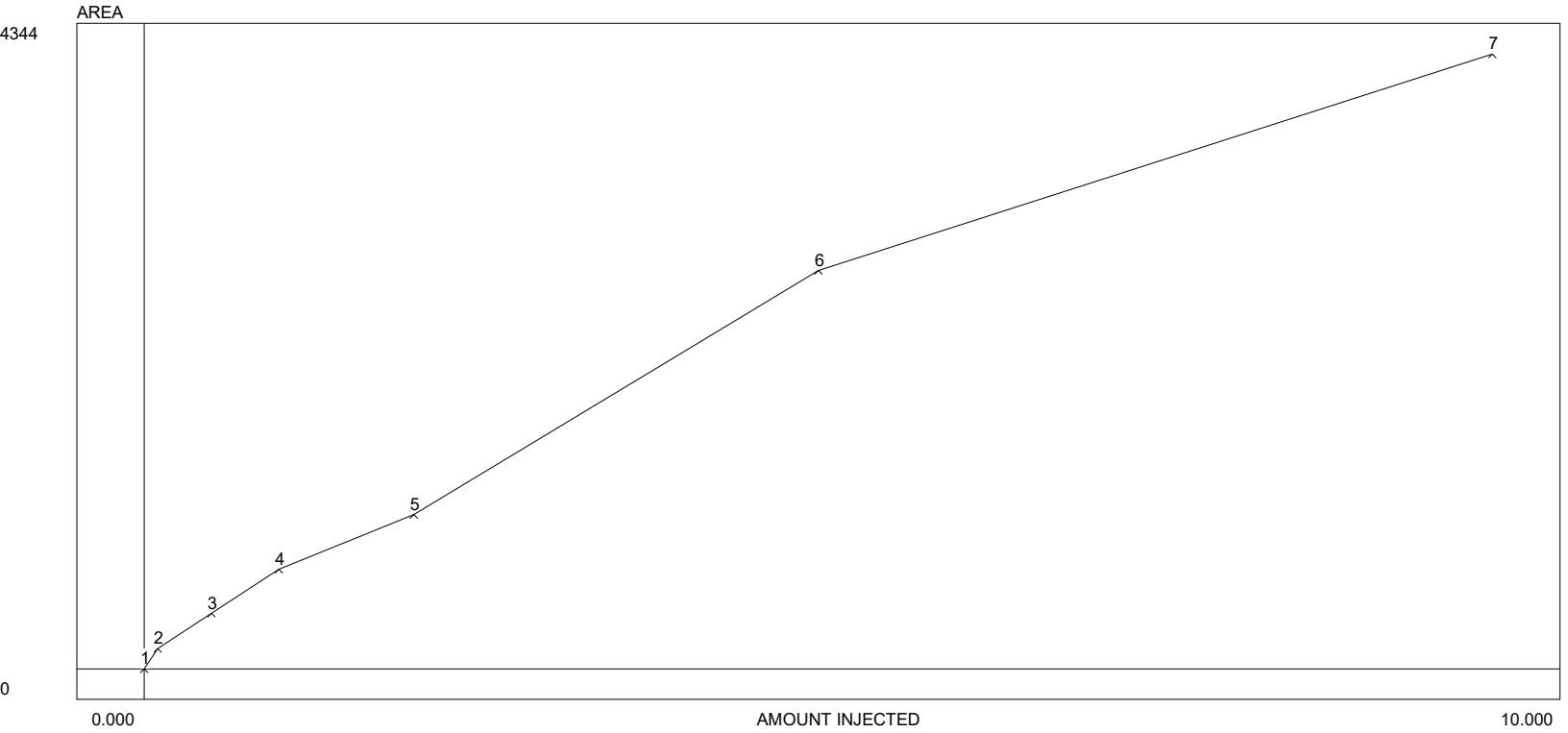
Robert T. Reineke, P.E
Senior Engineer

KSingh | Engineers Scientists Consultants

Pratap N. Singh, Ph.D., P.E.
Principal Engineer

cc: Shane LaFave / Roers Companies
Que El-Amin / Scott Crawford, Inc.
Dr. Blayne Hartman / Hartman Environmental Geoscience

Calibration file: C:\Peak489Win10\TCE ECD2 3-1-2023.cal



Avg slope of curve: 656.05
Y-axis intercept: 0.00
Linearity: 0.46
Number of levels: 7
SD/rel SD of CF's: 428.3/67.3
Y=<multi-line>
r2: 1.0000
Last calibrated: Tue May 16 14:01:44 2023

Lvl.	Area/ht.	Amount	CF	Current	Previous #1	Previous #2
1	0.000	0.000	0.000	0.000	N/A	N/A
2	142.000	0.100	1420.000	142.000	N/A	N/A
3	393.000	0.500	786.000	393.000	N/A	N/A
4	704.000	1.000	704.000	704.000	N/A	N/A
5	1090.000	2.000	545.000	1090.000	N/A	N/A
6	2815.000	5.000	563.000	2815.000	N/A	N/A
7	4344.000	10.000	434.400	4344.000	N/A	N/A