

**May 2025**  
**Monthly Progress Update**  
**Former Circle K 1461, Seattle, WA**

**Purpose.**

To provide monthly progress updates under Contract: C2400059 to the State of Washington, Department of Ecology on work progress, upcoming activities, schedule updates, and deliverable status.

This Monthly Progress Update Report for the period covering 01 May 2025 through 31 May 2025 for the Former Circle K 1461 Site in Seattle, WA.

**Summary of operations, monitoring, and maintenance activities performed during the reporting period.**

- ERRG continued operation, monitoring, and maintenance of the system under Phase 1 conditions.
- ERRG shutdown system on May 30, 2025 based on PID measurements of the vapor treatment system dropping below 90% control efficiency and greater than 10 ppm effluent.
- ERRG to complete carbon change out in June 2025.
- ERRG performed monitoring and sampling as follows:
  - Task 3, Subtask 3B – vapor sampling with summa canisters at vapor treatment system (Vapor GAC vessels) influent and effluent for TO-15 on May 30, 2025
  - Task 3, Subtask 3B –vapor monitoring of vapor treatment system for VOCs using PID on May 2, 2025, May 8, 2025, May 16, 2025, and May 30, 2025.
  - Task 3, Subtask 3B –vapor monitoring of extraction wells for VOCs using PID on May 2, 2025.
  - Task 3, Subtask 3C - water treatment sampling performed at influent, midpoint, and effluent of liquid GAC vessel trains for GRO, VOCs, and FOG on May 23, 2023.
  - Task 3, Subtask 3D – Phase 1 month 2 groundwater sampling performed at 13 wells for GRO and BTEX, as well as select chlorinated VOCs on May 23, 2025.

# May 2025

## Monthly Progress Update

### Former Circle K 1461, Seattle, WA

#### Summary of system performance:

- System flows range from 59.8 to 88.2 cfm.
- Approximately 21,506 gallons of treated water was discharged.
- System vapor concentrations presented in table below.

Analyte	Inlet Concentration	Effluent Concentration	Control Efficiency <sup>1</sup>	Influent Emission <sup>2,3</sup>	Influent Rates to Operate without Controls <sup>2</sup>	Effluent Emissions <sup>3</sup>	SQER <sup>3</sup>	Di Minimis <sup>3</sup>
PID calibrated to isobutylene (x 3.4 hexane conversion factor) – Vapor GAC 5/2/2025	206 ppm x 3.4 = 700.4 ppm	0.9 ppm x 3.4 = 3.1 ppm	99.56%	N/A	N/A	N/A	N/A	N/A
PID calibrated to isobutylene (x 3.4 hexane conversion factor) – Vapor GAC 5/8/2025	376 ppm x 3.4 = 1278.4 ppm	3.3 ppm x 3.4 = 2.7 ppm	99.78%	N/A	N/A	N/A	N/A	N/A
PID calibrated to isobutylene (x 3.4 hexane conversion factor) – Vapor GAC 5/16/2025	537 ppm x 3.4 = 1825.8 ppm	6.4 ppm x 3.4 = 21.8 ppm	98.81%	N/A	N/A	N/A	N/A	N/A
PID calibrated to isobutylene (x 3.4 hexane conversion factor) – Vapor GAC 5/30/2025	560 ppm x 3.4 = 1,904 ppm	72.1 ppm x 3.4 = 245.1 ppm	87.13%	N/A	N/A	N/A	N/A	N/A
PID calibrated to isobutylene (x 3.4 hexane conversion factor) – Vapor GAC 5/30/2025	168.4 ppm x 3.4 = 572.6 ppm	43.2 ppm x 3.4 = 146.9 ppm	74.35%	N/A	N/A	N/A	N/A	N/A
TPH (GRO) – Vapor GAC 5/30/2025	117,000 µg/m <sup>3</sup>	190,000 µg/m <sup>3</sup>	X	1.05 lb/24-hr	2.74 lb/24-hr	623.4 lb/year	N/A	N/A
n-hexane – Vapor GAC 5/30/2025	30,700 µg/m <sup>3</sup>	23,300 µg/m <sup>3</sup>	24.10%	0.28 lb/24-hr	N/A	0.21 lb/24-hr	52 lb/24-hr	2.6 lb/24-hr
Benzene – Vapor GAC 5/30/2025	1,490 µg/m <sup>3</sup>	658 µg/m <sup>3</sup>	55.83%	0.013 lb/24-hr	0.018 lb/24-hr	2.16 lb/year	21 lb/year	1.0 lb/year

#### Notes:

- The control efficiency of the MPE system abatement device shall meet the following requirements, as applicable:
    - ≥97% if inlet TPH ≥ 200 ppmv, measured as hexane or its equivalent; or,
    - ≥90% if inlet TPH < 200 ppmv, measured as hexane or its equivalent; or
    - ≤10 ppmv at the outlet of the control device, measured as hexane or its equivalent.
  - The owner or operator may operate the soil vapor extraction system without any controls when inlet sampling data from two or more consecutive months shows all of the following:
    - Pre-control TPH emission rate is equal to or less than 2.74 lbs/day
    - Pre-control Benzene emission rate is equal to or less than 0.018 lbs/day.
  - Estimated emissions based on system flow 100 cubic feet per minute.
  - SQER and Di Minimis values provided in their respective averaging period
- N/A = not applicable  
 MPE = multiphase extraction  
 PID = photoionization device  
 ppm = parts per million  
 SQER = small quantity emission rate  
 TPH = total petroleum hydrocarbons  
 µg/m<sup>3</sup> = micrograms per cubic meter

**May 2025  
Monthly Progress Update  
Former Circle K 1461, Seattle, WA**

**Summary of operations, monitoring, and maintenance activities to be performed in the next month.**

- ERRG to collect sample of vapor GAC material for spent carbon profile.
- ERRG to replace vapor GAC with virgin carbon and restart system.
  - Carbon vendor to reactivate spent carbon for reuse in lieu of landfill disposal.
- ERRG to continue operation of system and perform monitoring and sampling as follows:
  - Task 1 – perform routine and as-needed O&M activities for Phase 1 operation with Vapor GAC treatment.
  - Task 3, Subtask 3B – vapor sampling with summa canisters at vapor treatment system (Vapor GAC) influent and effluent for TO-15
  - Task 3, Subtask 3B – vapor sampling with summa canisters at vapor pins.
  - Task 3, Subtask 3B – vapor monitoring with PID at vapor treatment system (Vapor GAC) influent, midpoint and effluent and extraction wells.
  - Task 3, Subtask 3C - water treatment sampling at influent, midpoint, and effluent of liquid GAC vessel trains for GRO, VOCs, and FOG.
  - Task 3, Subtask 3D – groundwater monitoring and sampling for GRO, BTEX, and select chlorinated VOCs.
- ERRG to submit the following deliverables:
  - EIM uploads pending validated data for samples collected through April 2025.
  - May 2025 Monthly progress update
  - KCIW May 2025 Self-Monitoring Report.

**Comparison of work completed to scheduled activities.**

- Operation, monitoring, and maintenance activities completed as required.

**Potential problems identified and suggested resolutions.**

- Vapor GAC experienced breakthrough sooner than the estimated 60 days (~45 days).
  - ERRG will use virgin carbon in lieu of reactivated carbon for improved performance and extended life.
  - Extraction wells will be adjusted to minimize influent vapor concentrations.
- ERRG will submit request for reduction in discharge monitoring/sampling to KCIW to reduce monthly monitoring/sampling to quarterly.

**Deliverables submitted during the reporting period.**

- KCIW April 2025 Self-Monitoring Report on May 15, 2025.

**EIM field and laboratory analytical results submitted during the reporting period.**

- EIM data uploaded:
  - January 2025 groundwater level measurements, field parameters, and groundwater analytical results
  - February 2025 groundwater level measurements, field parameters, and groundwater analytical results
  - March 2025 groundwater level measurements, field parameters, and groundwater analytical results
- Laboratory results submitted:
  - April 2025 groundwater sampling analytical results
  - April 2025 vapor treatment system analytical results
  - April 2025 water treatment system analytical results