



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217-524-3301

JAN 26 2024

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

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Shell Oil Products US
Attn: Leroy Bealer
128 East Center Street
Nazareth, PA 18064

1191150002 – Madison County
Equilon Enterprises LLC dba Shell Oil Products US
ILD080012305
Log No. B-43R-CA-113, CA-114, CA-115
RCRA Permit
Permit Approval

Mr. Leroy Bealer:

This letter is in response to the following submittals prepared and submitted to the Illinois EPA by AECOM on behalf of Shell Oil Products US (SOPUS), regarding corrective action activities at the Public Works Yard (PWY) in the Village of Roxana. These documents were submitted to the Illinois EPA to address certain aspects of the corrective action requirements of the RCRA Post-Closure Permit for the above-referenced facility (Log No. B-43R):

1. A document entitled “Former Public Works Yard Steam Enhanced Extraction – Response to 5/5/2023 Illinois EPA Letter”, dated August 3, 2023, and received on August 4, 2023 (Log No. B-43R-CA-113). This letter was submitted as a response to the Illinois EPA’s letter dated May 5, 2023.
2. A document entitled “Former Public Works Yard Steam Enhanced Extraction – Additional Information to Final Design Report and Construction Work Plan (Area C)”, dated September 22, 2023, and received on September 26, 2023 (Log No. B-43R-CA-114). This letter was submitted to satisfy the additional information required by the Illinois EPA’s letter dated May 5, 2023.
3. A document entitled “Additional Information to the FPWY SEE FDRCWP – SEE System Startup Plan”, dated November 29, 2023, and received on November 30, 2023 (Log No. B-43R-CA-115). This letter was submitted requesting to delay the startup of the Steam Enhanced Extraction (SEE) system.

The contamination present within the Village of Roxana, Illinois, is required to be addressed in accordance with the corrective action section of the facility’s aforementioned RCRA Permit. As part of the remediation efforts conducted within the Village, a Soil Vapor Extraction (SVE) system has been installed and operated to reduce subsurface vapors originating from elevated concentrations of benzene and other volatile organic compounds (VOCs).

These VOCs are present in groundwater and soil at the PWY, and in-situ thermal remediation (ISTR), specifically SEE, is being implemented to reduce and remediate benzene and other VOCs in the targeted treatment zone (TTZ) at the PWY. The Final Design Report and Construction Work Plan (FDRCWP) for the SEE system at PWY, dated December 16, 2022 along with its addendum, dated January 30, 2023 were conditionally approved by the Illinois EPA on May 5, 2023 (Log No. B-43R-CA-109). The subject submittals were submitted in response to the Illinois EPA's May 5, 2023 letter to provide additional information regarding the SEE system.

The Illinois EPA has reviewed the subject submittals and hereby approves them subject to the following conditions and modifications:

1. SOPUS must prevent the mobilization of chloroform to the residential homes while the SEE system is operational regardless of the source. Once the SEE system is operational, any exceedances in the indoor air inhalation exposure route for chloroform or any other VOCs based on residential settings as defined in Title 35 Illinois Administrative Code (35 IAC) Part 742 at any steam vapor monitoring points (SVPs), adjustments to the system must be made.
2. The Illinois EPA acknowledges that the high concentration of chloroform detected at Soil Vapor Monitoring Point-14 (SVP-14) is potentially not associated with the contamination being addressed at the PWY or the Village. Thus, the facility is not required to address this elevated concentration of chloroform detected at SVP-14 at this time, provided there is no significant increase in chloroform concentration from the results provided in subject submittal. If there is an increase or decrease in chloroform concentrations, SOPUS must follow Condition 3 of this letter.
3. Chloroform as a contaminant cannot be excluded at this time; therefore, the steam extraction vapor monitoring plan must be modified as specified below. Adjustments to the SEE system must be made, if there is a chloroform exceedance in any of the SVPs except SVP-14. The system may still need to be adjusted, if there is an increase or decrease in chloroform at SVP-14 as mentioned in Conditions 2 and 3.c of this letter. SOPUS must add an additional SVP directly north of SVP-14 to monitor the chloroform exceedance or drop, if detected.

In addition to milestone samples, stainless steel canister TO-15 samples may be triggered according to the following logic:

- a. At primary row SVPs, if routine field screened Tedlar© bag petroleum hydrocarbon (PHC) results exceed baseline field screening results by 5% or greater (as measured using Flame Ionization Detector (FID)), a confirmation Tedlar© bag sample will be collected. An increase of 10 parts per million volume (ppmv) of PHC will be the minimum increase required to trigger a confirmation sample in the primary row.
 - i. If PHC results of the SVP's primary row confirmation sample exceed baseline field screening results by 5% or greater (as measured using FID), a stainless-steel canister TO-15 sample(s) will be collected at the exceeding SVP. An increase of 10 ppmv PHC will be the minimum increase required to trigger a TO-15 sample in the primary row.

6. The Illinois EPA acknowledges the concerns and risks brought forth by SOPUS in starting the SEE system in winter and hereby approves the request to delay the startup of the SEE system until Spring of 2024.
7. An updated Project Schedule must be submitted to the Illinois EPA thirty (30) days prior to the startup of the SEE system since startup of the SEE system is delayed per Condition 6 above.
8. SOPUS must obtain and maintain regulatory requirements in all obtained permits from the appropriate local, state, and/or federal agencies, as appropriate for the proposed activities.
9. SOPUS must evaluate conditions following SEE treatment to determine whether additional remediation is needed for groundwater within the Village, including the evaluation of MW-4 and MW-25. This evaluation must be provided when reporting confirmation sampling and proposed next steps.
10. Condition 14.b of the Illinois EPA's May 5, 2023, letter required in part, *"If the results are higher than the Csat value for benzene (580 mg/kg) or TPH value (2,000 mg/kg), SOPUS must designate the area surrounding the sampling zone as the third treatment area..."* Area C has been added based on data obtained; however, the step-out locations did not adequately define the extent of Soil Saturation Limits (Csat) exceedances for benzene south of GP-17 or the Diesel-Range Organics (DRO) and kerosene results at SB-107. The extent of contamination must be further defined beyond the southern extent of Area C, and those exceedances be remediated as this is a continuous source of contamination contributing to groundwater.
 - a. A workplan must be submitted to the Illinois EPA for review and approval, either;
 - i. Within 30 days of the date of this letter, if potential contamination can be addressed with the SEE system; or
 - ii. Within 180 days of the date of this letter, so remediation can be conducted in accordance with a future proposal.
 - b. The workplan required in Condition 10.a above must propose a minimum of four (4) borings to investigate the area to the southwest, south, and southeast of the southern extent of Area C. The Illinois EPA is aware of a former kerosene release associated with Shell, and a Buckeye release to the south. Any available data collected to date may be used to aid in delineation; however, the date of data collection will be considered, and the depths of sampling must include depths consistent with known exceedances. At a minimum, the following borings showed exceedances of concern and delineation beyond these areas is necessary:
 - i. GP-17 as outlined in the May 5, 2023 Illinois EP letter (Log No. B-43R-CA-109);

- ii. SB-103 at 68 ft bgs has a benzene concentration of 1,030 mg/kg;
 - iii. SB-106 at 58 feet bgs has a benzene concentration of 1,580 mg/kg; and
 - iv. SB-107 at 15 ft bgs has a DRO concentration of 5,040 mg/kg and a kerosene concentration of 1,240 mg/kg.
11. Quality assurance/quality control procedures which meet the requirements of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846) must be implemented during all required sampling/analysis efforts.
12. Corrective action efforts at this facility must eventually adequately address all contamination at this site as required in Section V of the facility's permit.
13. All wastes generated as part of this project must be managed in accordance with the requirements of 35 IAC Parts 721, 722, 723, 728, 808 and 809.
14. Except as modified herein, RCRA corrective action activities at this facility must be carried out in accordance with: (1) 35 IAC Parts 724 and 742; (2) the facility's RCRA Permit; and (3) Illinois EPA letters regarding such activities.
15. Under the provisions of 29 CFR 1910, cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination, and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of forty (40) hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.

This action shall constitute Illinois EPA's final action on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782 5544

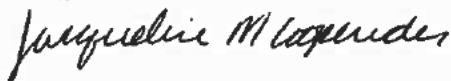
For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph Street, Suite 11 500
Chicago, IL 60601
312/814 3620

Work required by this letter, the submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Any questions regarding this letter, please feel free to contact Amy Butler at (217) 558-4716 for specific questions related to groundwater issues. All other questions regarding this letter should be referred to Visal Poornaka at (217) 558-4717.

Sincerely,



Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

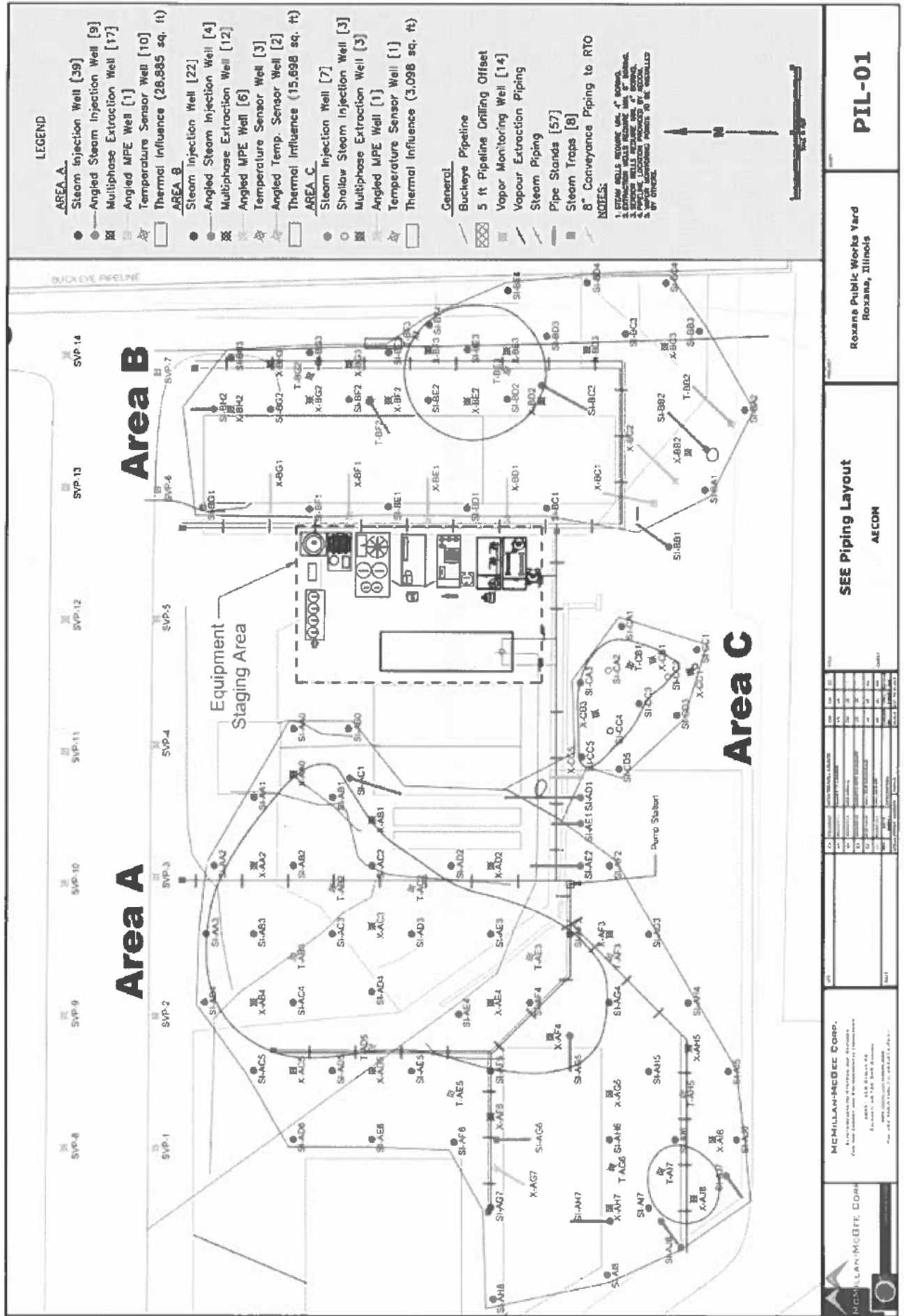
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VP AMB

Attachment: 1. SEE System Layout with Area C

Cc: Wendy Pennington (electronic copy only)

Attachment 1: SEE System Layout with Area C



LEGEND

- AREA A**
- Steam Injection Well [39]
 - Angled Steam Injection Well [9]
 - ⊠ Multiphase Extraction Well [17]
 - ⊡ Angled MPE Well [1]
 - ⊣ Temperature Sensor Well [10]
 - Thermal Influence (28,885 sq. ft)
- AREA B**
- Steam Injection Well [22]
 - Angled Steam Injection Well [4]
 - ⊠ Multiphase Extraction Well [12]
 - ⊡ Angled MPE Well [6]
 - ⊣ Temperature Sensor Well [3]
 - ⊤ Angled Temp. Sensor Well [2]
 - Thermal Influence (15,898 sq. ft)
- AREA C**
- Steam Injection Well [7]
 - Shallow Steam Injection Well [3]
 - ⊠ Multiphase Extraction Well [3]
 - ⊡ Angled MPE Well [1]
 - ⊣ Temperature Sensor Well [1]
 - Thermal Influence (3,098 sq. ft)

General

- ▨ Buckeye Pipeline
- ⊞ 5 ft Pipeline Drilling Offset
- ⊞ Vapor Monitoring Well [14]
- ⊞ Vapor Extraction Piping
- ⊞ Steam Piping
- ⊞ Pipe Stands [57]
- ⊞ Steam Traps [8]
- ⊞ 8" Conveyance Piping to RTO

NOTES:

1. STEAM WELLS RECEIVE GAS FROM AREA A
2. STEAM WELLS RECEIVE GAS FROM AREA B
3. STEAM WELLS RECEIVE GAS FROM AREA C
4. VAPOR MONITORING WELLS ARE LOCATED AS SHOWN
5. VAPOR EXTRACTION PIPING IS TO BE INSTALLED AS SHOWN



SEE Piping Layout

AECOM

Roxane Public Works Yard
Roxana, Illinois

PIL-01

McMILLAN-MEYBE CORP.
A CORPORATION OF ILLINOIS
1000 W. MONROE ST. SUITE 200
ROXANA, ILLINOIS 62451
TEL: 618-236-1100
FAX: 618-236-1101
WWW.MCMILLAN-MEYBE.COM

| NO. | DATE | DESCRIPTION | BY | CHKD |
|-----|----------|-----------------------|----|------|
| 1 | 01/15/14 | ISSUED FOR PERMITTING | JM | JK |
| 2 | 01/22/14 | REVISED PER COMMENTS | JM | JK |
| 3 | 02/03/14 | REVISED PER COMMENTS | JM | JK |
| 4 | 02/10/14 | REVISED PER COMMENTS | JM | JK |
| 5 | 02/17/14 | REVISED PER COMMENTS | JM | JK |
| 6 | 02/24/14 | REVISED PER COMMENTS | JM | JK |
| 7 | 03/03/14 | REVISED PER COMMENTS | JM | JK |
| 8 | 03/10/14 | REVISED PER COMMENTS | JM | JK |
| 9 | 03/17/14 | REVISED PER COMMENTS | JM | JK |
| 10 | 03/24/14 | REVISED PER COMMENTS | JM | JK |
| 11 | 04/07/14 | REVISED PER COMMENTS | JM | JK |
| 12 | 04/14/14 | REVISED PER COMMENTS | JM | JK |
| 13 | 04/21/14 | REVISED PER COMMENTS | JM | JK |
| 14 | 04/28/14 | REVISED PER COMMENTS | JM | JK |
| 15 | 05/05/14 | REVISED PER COMMENTS | JM | JK |
| 16 | 05/12/14 | REVISED PER COMMENTS | JM | JK |
| 17 | 05/19/14 | REVISED PER COMMENTS | JM | JK |
| 18 | 05/26/14 | REVISED PER COMMENTS | JM | JK |
| 19 | 06/02/14 | REVISED PER COMMENTS | JM | JK |
| 20 | 06/09/14 | REVISED PER COMMENTS | JM | JK |
| 21 | 06/16/14 | REVISED PER COMMENTS | JM | JK |
| 22 | 06/23/14 | REVISED PER COMMENTS | JM | JK |
| 23 | 06/30/14 | REVISED PER COMMENTS | JM | JK |
| 24 | 07/07/14 | REVISED PER COMMENTS | JM | JK |
| 25 | 07/14/14 | REVISED PER COMMENTS | JM | JK |
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| 27 | 07/28/14 | REVISED PER COMMENTS | JM | JK |
| 28 | 08/04/14 | REVISED PER COMMENTS | JM | JK |
| 29 | 08/11/14 | REVISED PER COMMENTS | JM | JK |
| 30 | 08/18/14 | REVISED PER COMMENTS | JM | JK |
| 31 | 08/25/14 | REVISED PER COMMENTS | JM | JK |
| 32 | 09/01/14 | REVISED PER COMMENTS | JM | JK |
| 33 | 09/08/14 | REVISED PER COMMENTS | JM | JK |
| 34 | 09/15/14 | REVISED PER COMMENTS | JM | JK |
| 35 | 09/22/14 | REVISED PER COMMENTS | JM | JK |
| 36 | 09/29/14 | REVISED PER COMMENTS | JM | JK |
| 37 | 10/06/14 | REVISED PER COMMENTS | JM | JK |
| 38 | 10/13/14 | REVISED PER COMMENTS | JM | JK |
| 39 | 10/20/14 | REVISED PER COMMENTS | JM | JK |
| 40 | 10/27/14 | REVISED PER COMMENTS | JM | JK |
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| 44 | 11/24/14 | REVISED PER COMMENTS | JM | JK |
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| 48 | 12/22/14 | REVISED PER COMMENTS | JM | JK |
| 49 | 12/29/14 | REVISED PER COMMENTS | JM | JK |
| 50 | 01/05/15 | REVISED PER COMMENTS | JM | JK |

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