UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Ohio Refining Company LLC, Oregon, Ohio
FROM:	Veronica Fischer, Environmental Engineer AECAB (MI/WI)
THRU:	Sarah Marshall, Section Supervisor AECAB (MI/WI)
TO:	File

BASIC INFORMATION

Facility Name: Ohio Refining Company LLC (ORC)

Facility Location: 4001 Cedar Point Rd, Oregon, Ohio 43616

Date of Inspection: March 6 – 9, 2023

EPA Inspector(s):

1. Veronica Fischer, Region 5, Environmental Engineer
2. Constantinos Loukeris, Region 5, Environmental Engineer
3. Erin DuMontelle, Region 5, Environmental Engineer
4. Craig Haas, OECA, Physical Scientist
5. Anthony Gaglione, Eastern Research Group (ERG), Inspector
6. Zachary Good, ERG, Inspector

Other Attendees:

1. Mary McAuliffe (virtual), EPA Region 5, Counsel
2. Heidi Hurst, ORC, Refinery Manager
3. Jake Siefert, ORC, HSE&C Senior Manager
4. Tom Menden, ORC, USW Health & Safety Representative
5. John Obery, Cenovus, Sr. Legal Counsel
6. Nathan Turner, Cenovus, H&S U.S. Downstream Operations Director
7. Karl Hessler, King & Spalding, Counsel
8. Tim Webster, Sidley Austin, Counsel
9. Mateo Delatorre, King & Spalding, Counsel
10. Rose Quam-Wickham, Sidley Austin, Counsel

11. Sarah Steen, ORC, Process Safety Manager
12. Sarah McFarland, Senior Manager of Engineering and Tech Services
13. Daniel Durci (virtual), Cenovus, Director of Downstream JVs
14. Duane Carlson, ORC, Integrity Manager
15. Tammy Eley, ORC, Learning Delivery Manager
16. Nicole Minor, ORC, Operations Excellence Manager
17. Shannon Potts, ORC, Operations Manager
18. Mary Culbertson, ORC, I&E Engineering Manager
19. Jim Leatherman, ORC, South Supervisor

Contact Email Address: jacob.siefert@cenovus.com

Purpose of Inspection: CAA Section 112(r) inspection of Crude 1 Unit, Fluidized Catalytic Cracking Unit, Coker Gas Plant, Naphtha Hydrotreater/Sat Gas Plant

Facility Type: Refinery

Regulations Central to Inspection: Chemical Accident Prevention Provisions, 40 C.F.R. Part 68; CAA Section 112(r)

Arrival Time: 8:30 AM EST, March 6, 2023
Departure Time: 3:30 PM EST, March 9, 2023

Inspection Type:
☐ Unannounced Inspection
☒ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☒ Small Business Resource Information Sheet not provided. Reason: Not a small business.
☒ Provided CBI warning to facility

The following information was obtained verbally from facility personnel unless otherwise noted.

Company Ownership: Ohio Refining Company LLC is a wholly-owned subsidiary of Cenovus Energy Inc (Cenovus). The refinery previously operated as BP-Husky Refining LLC, which was owned by Toledo Refinery Holding Company LLC. Toledo Refinery Holding Company LLC was a joint venture of BP Products North America Inc. (bp) and Husky Oil Toledo Company. In January of 2021 Cenovus acquired Husky Energy Inc. (Husky). Under the joint venture, bp operated the refinery. As of February 28, 2023, Cenovus purchased bp's 50% ownership of the refinery and took sole ownership and operatorship.

Process Description:
Ohio Refining Company LLC owns and operates a petroleum refinery in Oregon, Ohio (the Refinery). The Refinery processes sweet and heavy crude oils to make various petroleum products.

The inspection of the Refinery covered general implementation of the 112r program, the fire that occurred at the Refinery on September 20, 2022 and a focus on the following processes: the Crude 1 Unit, the Coker Gas Plant (CGP), the Naphtha Hydrotreater (NHT), the Saturated Gas Plant (Sat Gas), and the Fluid Catalytic Cracking Unit (FCC). The location of the fire and explosion was the Crude 1 Fuel Gas Mix Drum (FGMD). The Crude 1 Unit distills a blend of crude oils into various heavy cuts. The NHT removes sulfur and nitrogen compounds from naphtha streams prior to further processing. The Sat Gas Plant separates saturated gas into various alkane cuts. The CGP recovers coker gas and treats it to remove sulfur prior use as refinery fuel gas. The FCC Unit uses a fluidized catalyst to crack heavy hydrocarbons into lighter hydrocarbons that are further processed for use in various petroleum products.

Staff Interview:
During the inspection, the Refinery was preparing to start-up some of the units. According to the Refinery representatives, all units had been shut down since the September 20, 2022 incident and had not been restarted. Refinery representatives presented to the inspection team an overview of the facts of the incident known to the Refinery at the time. Refinery representatives explained that the Refinery's previous owner, BP, is actively investigating the incident through the change in facility owner and operatorship agreements and continuing the investigation that was initiated after the incident occurred. The Refinery representatives stated that they are also evaluating the incident and are accounting for incident facts known to-date as they conduct operational readiness reviews (ORRs) in preparation for start-up of the Refinery.

The inspection team also held discussions with Refinery representatives regarding the handling of incident investigations generally. Refinery representatives indicated that incidents and near-misses are reported by operators to their shift superintendents. Operators generally denote incidents and near-misses on the Operator's Log for the Unit Area in which they operate. Shift superintendents are required to log incidents within the Refinery's tracking system. Depending on the potential and/or actual consequences associated with an incident or near-miss, the incident investigation will either be led by a 5-Why Investigator, a Skillful Investigation Leader, or a Master Investigation Leader. Incidents are classified using an established decision tree that is part of the Refinery's incident investigation procedures.

The inspection team discussed the Refinery's emergency response program with Refinery representatives during the inspection. The Emergency Response Team (ERT) consists of approximately 75 members, where responsibilities are generally split between oil response, fire response, and medical/rescue operations. ERT members can overlap between responsibilities or focus on a single response team. The Refinery's Incident Management Team consists of approximately 25 members, which is a subset of the ERT.

Refinery representatives stated that they maintain three fire response apparatuses, an ambulance, a HAZMAT response vehicle, and multiple pieces of land/water oil spill response equipment.

Emergency response equipment is visually inspected monthly with more and/or less frequent inspections performed in accordance with equipment specifications.

The Refinery is a member of the Northwest Ohio/Michigan Mutual Aid District (NOMMAD) and engages in mutual aid with other surrounding facilities and fire departments. Refinery representatives indicated that they coordinate annually with the Oregon Fire Department in relation to onsite incident response.

Refinery representatives stated that they rely on the Hazard and Operability Study (HAZOP) methodology to conduct their process hazard analyses (PHAs) but that they will also include a Layers of Protection Analysis (LOPA) as part of the PHA for hazard scenarios that could result in a fatality and also meet other criteria. The Refinery generally assembles a team comprised of a Facilitator, Unit Engineer, Operator, and at least one Risk Management Plan (RMP)/Process Safety Management (PSM) Engineer for the purposes of conducting either initial, revalidation, or project-specific PHAs. Historically, the Refinery has used third-party facilitators when conducting PHAs. The Refinery maintains a list of approved facilitators to ensure that the facilitators used adequately understand the processes present and procedures used at the Facility. When conducting PHA revalidations the Refinery reported that it is their practice to conduct full PHA revalidations at least every five years, which reportedly includes a line-by-line re-evaluation of specific hazard scenarios and re-noding of P&IDs where necessary. HAZOPs are also required to be conducted for projects that meet a certain level of complexity, which is determined as part of the scoping process. At the conclusion of each HAZOP, the Facilitator and RMP/PSM Engineer lead an action close-out meeting where individuals on the HAZOP team are assigned actions and the results of the HAZOP study are reviewed with the Operations Superintendent and the RMP/PSM Manager.

Refinery representatives described that operating procedures are grouped into three different categories: Type 1 Procedures, Type 2 Procedures, and Type 3 Procedures. Type 1 Procedures do not require step-by-step sign-off and are used for refresher training purposes. Type 2 Procedures require step-by-step sign-off with operator initials and time/date stamps. Type 3 Procedures are those that need to be recalled from memory for actions during an emergency and require a step-by-step sign-off. According to the Refinery's procedures, deviations from all operating procedures are required to be documented in a tracking log and require signatures and/or initials from the supervisor, production coordinator, and shift manager which provide approval for deviations. Refinery representatives stated that operating procedures are reviewed and certified at least every five years.

The inspection team discussed the operating procedures that may have been used and/or signed off on during and after the September 20, 2022 incident with Refinery representatives. Specifically, the inspection team requested copies of the signed-off operating procedures associated with the following events that the inspection team understood occurred as part of the incident timeline: NHT Shutdown, CGP Bypass, and Crude 1 Unit Shutdown. In response to this request for documentation, the Refinery produced a copy of the Crude 1 Unit safe park procedure and the NHT/Sat Gas safe park procedure. Both the signed-off version of the Crude 1 safe park procedure and NHT/Sat Gas safe park procedure are dated to September 21, 2022 and include written statements indicating "… all systems are down." Based on interviews with Refinery

representatives and documentation provided to-date, signed off procedures and deviation tracking logs for the shutdown and bypass events that preceded the September 20, 2022 release event have not been provided to the inspection team.

During the inspection, the inspection team discussed operator training requirements with the Operations Excellence Manager and Learning Coordinator at the Refinery. Refinery representatives indicated that the process to become certified as an operator in an individual unit area can take approximately 8 to 12 months, depending on the unit area. This process includes initial testing and interviewing, Basic Operator Training (BOT), unit area classroom training, unit area field time, testing and checklist review, and "soak time" with a qualified operator. The Refinery has dedicated Unit Area Trainers that are experienced facility personnel (e.g., previous operators) that provide classroom training to new operators on the jobs they will perform. Active operators provide field training to new operators and assist with "Soak Time." Refresher training is required every three (3) years per Refinery policy and includes both a conceptual and field evaluation. According to training documentation that was reviewed by the inspection team, refresher training for thirteen (13) operators in the Crude/Vac 1 and NHT, FCC, and Sat and Coker Gas Plant areas occurred after three years had elapsed from the initial training/certification available in the training record for those operators.

The inspection team generally discussed the implementation of the Refinery's Mechanical Integrity program with the Integrity Manager and the Maintenance, Reliability, and Turnaround Manager. For fixed equipment (e.g., pressure vessels and process piping), the Refinery has developed a time-based inspection program aimed to be consistent with the requirements of American Petroleum Institute (API) 510 – Pressure Vessel Inspection Code: In-service Inspection, Rating, Repair, and Alteration and API 570 – Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems. The Refinery employs a set of API 510-certified and API 570-certified inspectors onsite, respectively, and will periodically bring third-party contractor inspectors on-site during turnarounds in case of additional inspection needs. For non-destructive evaluation testing, the Refinery uses embedded contractors employed by a third-party firm which are directed by the Facility Mechanical Integrity team in their workstreams. Mechanical Integrity inspection tasks are managed by the Refinery's inspection data management system which was implemented in approximately 2018.

Although ORC reported that they currently follow the interval-based inspection requirements as defined under API 510 and API 570 for fixed equipment, Refinery representatives indicated that they have collected the data necessary to implement a risk-based inspection (RBI) program as defined under API Recommended Practice (RP) 580 – Risk-based Inspection and API RP 581 – Risk-based Inspection Technology.

The inspection team also held a discussion with Refinery representatives that was focused on how the Refinery's Mechanical Integrity Program is implemented for the FCCU. Refinery representatives stated that they generally follow manufacturer's guidance for inspection and repair of the slide valves. The Refinery stated that they do not inspect and/or perform maintenance on the FCCU slide valves themselves; rather, they rely on outside contractors to conduct such maintenance. Historically, the FCCU has been on an approximately four- to five-year turnaround schedule and the FCCU and CO Boiler tend to come down together during

turnarounds. Refinery representatives stated that generally the CO Boiler is the limiting unit when it comes to scheduling turnarounds.

The Refinery conducts thermography studies on the slide valve refractory annually. A third-party contractor conducts the thermography studies and provides a full report of findings to the Refinery. The Refinery representatives stated that they have generally engaged in a "replace 1, repair 1" concept with respect to FCCU slide valves at the time of a turnaround; one will generally be replaced, and the other will generally be rebuilt.

The Refinery provides training to personnel serving in a wide range of roles (e.g., process engineers, instrumentation engineers, operators, maintenance/reliability staff) on initiating and shepherding changes through the management of change (MOCs) process to completion. Personnel who go through the MOC training are required to take a competency test and must receive Line Manager approval before being approved to initiate MOCs. The MOC initiator is considered the responsible person for a specific change requiring an MOC, where a separate Facilitator may be brought in to assist with scoping for major capital projects. The Operations Superintendent is ultimately responsible for reviewing the completed MOC/PSSR, ensuring that all action items are closed, and granting "ready to startup" authority.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
EPA and ERG inspectors performed piping and instrumentation diagram (P&ID) field walk-downs during the inspection. The inspection team selected several P&IDs within the Crude 1, Coker Gas Plant, FCCU, and NHT areas as well as P&IDs associated with the crude charge pumps located in the East Tank Field for in-the-field review and verification. The inspection team took photographs. One of the inspection team's cameras stopped working during the field review and Refinery representatives took photographs for the inspection team. However, the inspection team has not received the photographs taken by the Refinery on behalf of the inspection team at the time of this inspection report.

The inspection team observed discrepancies between the P&ID for the Toledo Integrated Unit (TIU) Fuel Gas Mix Drum (FGMD) in the Crude 1 unit and the equipment present in the field. The discrepancies included the presence of bleeder valves, the types of valves installed, and the presence of a blind.

The inspection team also observed a discrepancy involving the presence of a local pressure indicator between the P&ID for the absorber/stripper in the Coker Gas Plant and the equipment present in the field.

The inspection team observed discrepancies involving the presence of a check valve and a hose between the P&ID for the fractionator reflux drum in the FCCU area and the equipment present in the field. However, this discrepancy may be indicative of temporary operations associated with starting up the FCC Unit.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

The inspection team requested copies of the P&IDs for the following areas of the Facility:

1. TIU Fuel Gas Mix Drum.
2. NHT, Feed Effluent Exchanger.
3. NHT, Naphtha Feed Vac 1.
4. CGP, Gas Flow into Absorber/Stripper.
5. CGP, Knock-Out Pot.
6. Crude 1, Charge Pumps.
7. FCC, Frac Reflux Drum.
8. FCC, Spent Cat Slide Valve.
9. FCC, Stripper Side of FCC Reactor.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Copy of the refinery overview presentation given on March 6, 2023.
- Copy of the September 20, 2022 incident presentation given on March 6, 2023.
- Information describing the function and operating configuration of the uninterruptible power supply supporting the Refinery's primary control room, including information related to back-up power.
- Evacuation procedures related to lower explosive limit alarm actuations.
- Documentation of action items/recommendations generated as part of the September 20, 2022 incident investigation, to date.
- Confirmation and/or documentation of the time the Crude 1 Surge Drum can supply the Crude 1 unit.
- Pressure setpoints for the (1) entry line to the Crude 1 Absorber/Stripper and (2) Coker Gas Plant bypass line during bypass operations.
- Copies of P&IDs for the following areas of the Facility: east flare system and associated flare gas recovery system; and west flare system and associated flare gas recovery system.
- Training records for four (4) field operators in the field during the September 20, 2022 incident.
- Training records for all board operators active in the incident-affected area on September 20, 2022.
- Copies of all PHA/LOPA policy documents referenced in the PHA reports.
- List of team members for the incident investigation team for the September 20, 2022 incident.

- Signed-off operating procedures associated with the following events that occurred on September 20, 2022: NHT shutdown; CGP bypass; and Crude 1 unit shutdown.
- Ultrasonic thickness (UT) and fitness-for-service testing records for the TIU Fuel Gas Mix Drum.
- Summary of organizational structure for the operations team (area teams).
- Summary of organizational structure for the maintenance team (area teams).
- Copies of the following MOC packages: MOC-22-232; MOC-22-481; MOC-21-769; MOC-21-640; MOC-21-383; MOC-21-678; MOC-21-697; MOC-21-772; MOC-21-773.
- Maintenance procedure, inspection records related to API 510 re-endorsement.
- List of rotating equipment with on-stream monitoring capabilities, and parameters that are monitored.
- Maintenance procedure No. I-30.
- Maintenance procedure No. MR-001 (bad actor program).
- Equity engineering piping and valve specification standard (i.e., low leak technology).
- Copy of the purchase agreement between BP and Cenovus.
- Description and/or summary of safety traps implemented by the Facility in advance of initial Facility re-start the week of March 6, 2023.
- Documentation demonstrating who at the Facility approved the decision for re-start of the Facility the week of March 6, 2023.
- Copy of the metallurgy report for the bleeder valve that failed on September 20, 2022.
- Copies of the PSV investigation report(s) for the PSV(s) involved in the incidents that occurred on September 20, 2022.
- Copy of PSM 005 – Refinery Operator Training.
- Documentation from the Refinery's union contract defining minimum required training times.
- Blank Incident Investigation Form, former template (if available).
- Blank Incident Investigation Form, current template.
- Copy of Incident Investigation Policy.
- Copy of the MOC related to the replacement and setpoint change of the PRV-1457 and PRV-1462.
- Copy of Cenovus Risk Ranking Matrix for PHAs.
- Maximum intended inventory calculations, east flare system.
- Maximum intended inventory calculations, west flare system.
- Copy of PSM-004 – Operating Procedures.
- Copy of SAF-058 – Incident Investigation Guidance Document.
- Slide valve reports for each FCC slide valve associated with the last three (3) turnarounds.
- Annual thermography reports for each FCC Slide Valve, all since 2012 (as available).
- List of all operating procedures with the most recent revision date.
- Copies of South Area shift logs from 09/18/2022, 09/19/20222, and 09/20/2022.
- Copies of South Area unit logs from 09/18/2022, 09/19/20222, and 09/20/2022.
- "Troubleshooting Guide" or documentation of workflow for operators during alarm response.

- Copy of slides summarizing operations management structure, including BP/Cenovus nomenclature changes.
- List of "other deficiency" items identified in 2017 compliance audit, with current status and resolution date(s) (if applicable).
- List of "other deficiency" items identified in 2020 compliance audit, with current status and resolution date(s) (if applicable).
- Scoping Document(s) for any PSVs replaced during the 2022 TIU TAR in the CGP, Crude 1, and NHT/Sat Gas.
- RMP applicability determinations and any supporting calculations for the following processes: North Tank Field (without butane spheres); West Tank Field; Propane/Propylene Cavern.
- Most recent damage mechanism review (DMR) reports for the following: CGP; Crude 1; NHT/Sat Gas; FCC.
- P&IDs that include the FCC flue gas flows downstream of the regenerator to the exhaust stack (inclusive of the CO Boiler(s) and ESP(s)).
- Two most recent external visual and non-destructive examination (NDE) inspection reports for the following:
- CGP Absorber/Stripper overhead line and encompassing pipe circuit; CGP Sour Gas KO Drum; Crude 1 Tower.
- All maintenance, inspection, and testing reports for the last five years for the following equipment: Crude 1 Feed Charge Pumps; FCC Wet Gas Compressor; each of the Flare Gas Recovery System (FGRS) compressors.
- All inspection, testing, and preventative maintenance reports for the last five years for all components associated with the following SIS: low spent catalyst slide valve delta P; high main fractionator overhead drum pressure; recirculation (rotor) temperature high NHT pump.
- Flow data from the Crude 1 Charge Pumps for 12:00:00 AM EST on 09/19/2022 through 11:59:59 PM EST on 09/20/2022.
- Instrumentation data for 12:00:00 AM EST on 09/19/2022 through 11:59:59 PM EST on 09/20/2022.
- Description of the control loop, including information on whether PIC 860 is considered an interlock.

Concerns:
The inspection team identified and communicated the following areas of concern to the Refinery representatives:

- Discrepancies between P&IDs and field equipment.
- The Refinery did not implement its written operating procedures for temporary operations of the Coker Gas Plant or for emergency shutdown of the NHT/SGP and Crude 1 Unit in a manner consistent with the Refinery's policies and procedures governing implementation of its Operating Procedures. Specifically, operating procedures were not signed-off with initials and/or time stamps for the temporary and/or emergency operations that occurred on September 20, 2022.
- The Refinery does not certify all operating procedures annually.

DIGITAL SIGNATURES

Report Author: Fischer, Veronica Digitally signed by Fischer, Veronica Date: 2023.05.05 17:19:49 -05'00'

Section Supervisor: SARAH MARSHALL Digitally signed by SARAH MARSHALL Date: 2023.05.08 07:10:50 -05'00'

APPENDICES AND ATTACHMENTS

Attachments:

1. CBI Attachment

Appendices:

A. Digital Photo Log

CONFIDENTIAL BUSINESS INFORMATION ATTACHMENT

Facility Name: Ohio Refining Company LLC
Facility Location: 4001 Cedar Point Rd, Oregon, Ohio 43616
Date of Inspection: March 6, 2023

September 20, 2022 Incident:
During the early morning hours on September 20, 2022, a pressure relief valve (PRV) on the NHT feed system repeatedly opened and reseated, and eventually started chattering. The chattering PRV caused vibrations that led to damage to a bleeder nozzle on a piping spool resulting in the release of NHT feed. In response to the release, the Refinery began to shut down the NHT unit. As part of the NHT shutdown, the CGP was put into bypass mode. Refinery representatives stated at the time of the inspection that, while not a common practice, the Refinery had operated without the NHT and with the Coker Gas Plant in bypass mode in the past. During the afternoon and evening of September 20, 2022, liquid naphtha in the Crude 1 Unit was being pumped to storage tanks. On the evening of September 20, 2022, a crude feed pump failed resulting in Crude 1 feed that consisted of only heavy crude. This resulted in the overflow of the Crude 1 overhead. Crude 1 operators opened a control valve, which sent naphtha from the Crude 1 overhead to the CGP tower. The CGP tower quickly filled with liquid naphtha. Refinery representatives stated that while they are still investigating how the Crude 1 FGMD filled with naphtha, they think that the liquid naphtha back flowed into the vapor-only fuel gas piping leading to the FGMD. In response to the high level of liquid in the FGMD, field operators opened drain lines to the flare and oily water sewer. While field operators attempted to drain the FGMD, console operators began to shut down the Crude 1 unit. Within a few minutes of starting the Crude 1 shutdown, console operators initiated a refinery-wide shutdown. Local lower explosive limit detectors alarmed at 10 percent and 100 percent. Flammable vapors reached an ignition source and ignited, resulting in a fire. Two operators who responded to the FGMD suffered fatalities from the fire. Emergency response operations were initiated, and the fire was extinguished. During post-incident investigations, it was found that three valves on the FGMD were open to the atmosphere. One valve had been blinded and the blind had been removed.

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Veronica Fischer (EPA) and Zachary Good (ERG)	2. **Archival Record Location:** OneDrive

Image Number	File Name	Date	Description of Image
1	DSCN3119.JPEG	03/07/2023	Bottom of Crude 1 Fuel Gas Mix Drum (FGMD)
2	DSCN3120.JPEG	03/07/2023	Crude 1 FGMD process sewer drain line
3	DSCN3121.JPEG	03/07/2023	Crude 1 FGMD line to flare
4	DSCN3122.JPEG	03/07/2023	Crude 1 FGMD blinded maintenance line
5	DSCN3123.JPEG	03/07/2023	Crude 1 FGMD blinded maintenance line
6	DSCN3124.JPEG	03/07/2023	Crude 1 FGMD line to flare
7	DSCN3125.JPEG	03/07/2023	Crude 1 FGMD level indicator
8	DSCN3126.JPEG	03/07/2023	Crude 1 FGMD level indicator
9	DSCN3127.JPEG	03/07/2023	Crude 1 FGMD level indicator
10	DSCN3128.JPEG	03/07/2023	Crude 1 Naphtha Reflux Exchanger
11	DSCN3129.JPEG	03/07/2023	Line that had failed bleeder on September 20, 2022
12	DSCN3130.JPEG	03/07/2023	Line that had failed bleeder on September 20, 2022
13	DSCN3131.JPEG	03/07/2023	Location of PSVs involved in the September 20, 2022 incident
14	DSCN3132.JPEG	03/07/2023	Location of PSVs involved in the September 20, 2022 incident

Additional photos were taken by Ohio Refining Company LLC personnel and at the time of this report have not been provided to EPA.