REGION 5
CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Valero St. Charles Refinery, Norco, Louisiana

FROM: Constantinos Loukeris, Environmental Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Supervisor
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Valero St. Charles Refinery

Facility Location: 14902 River Rd, Norco, LA 70079

Date of Inspection: November 6-9, 2023

EPA Inspector(s):

1. Constantinos Loukeris, Environmental Engineer
2. Jason Schenandoah, Environmental Engineer
3. James Haynes, Physical Scientist
4. Ben Rosenthal, Physical Scientist

Other Attendees:

1. Nathan Ward, Louisiana, DEQ
2. Ashley Cessac, Louisiana DEQ, Inspector
3. Mary Claire Petit, Valero, Environmental Manager
4. Derek Bessler, Valero, Director of Environmental/Safety Affairs
5. Margaret Hamilton, Valero, BWON Lead/Coordinator
6. Tal Logbck, Valero, Corporate Environmental
7. Cody Sheets, Valero, Unit Superintendent

8. Jim Holsapple, Valero, Complex Manager
9. Scott Burton, Valero, Environmental Specialist
10. John Gautreaux, Montrose Environmental
11. Rachel Dickerson, Valero, Environmental Specialist
12. Jennifer Barraco, Valero
13. Mike McLeod, Valero
14. Travis Bourgeios, Valero, Alky Superintendent
15. Troy Rhodes, Valero, Complex Manager
16. Andy Rivere, Valero, Coker Superintendent

Contact Email Address: MaryClaire.Petit@valero.com

Purpose of Inspection: Inspect the benzene waste operations and volatile organic compounds (VOC) emissions from wastewater systems

Facility Type: Petroleum Refinery

Regulations Central to Inspection: Refinery wastewater subject to the New Source Performance Standards for VOC Emissions from Petroleum Refinery Wastewater Systems, at 40 C.F.R. Part 60, Subpart QQQ (Subpart QQQ), and the National Emissions Standards for Hazardous Air Pollutants for Benzene Waste Operations, at 40 C.F.R. Part 61, Subpart FF (Subpart FF)

Arrival Time: November 6, 2023, 8:50 AM
Departure Time: November 9, 2023, 1:45 PM

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 Valero personnel unless otherwise noted.

Process Description:
Valero provided a brief overview of the benzene wastewater operations at the St. Charles Refinery as well as individual drain system equipment and oil-water separators used for managing VOC wastewater. The St. Charles Refinery is broken up into the East Plant and West Plant. The East Plant is where wastewater is managed. Valero operates six docks, of which Dock#2 generates a benzene containing wastewater stream.

Valero operates three API oil-water separators (API OWS). Vapor emissions from the API OWS are routed to a carbon adsorption system. The normal vent route is to a 2,000-pound carbon system; however, from September 2023 through EPA's November 2023 inspection, that system has been down for maintenance. A temporary carbon canister system has been assembled consisting of three 55-gallon carbon canister drums in series.

The St. Charles Refinery is complying with the 6 Megagram per year compliance option under Subpart FF. Valero indicated that there is no active judicial Clean Air Act consent decree for this refinery and that the most recent decree was terminated in 2018.

In 2011/2012, Valero installed two Poseidon-modeled dissolved gas flotation (DGF) units. All controlled vacuum trucks are monitored visually quarterly and with Method 21 annually.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

- EPA conducted breakthrough monitoring using Thermo Scientific's Toxic Vapor Analyzers, Model 2020, equipped with a flame ionization detector between the primary and secondary and secondary and tertiary carbon drums, as well as the outlet of the tertiary carbon drum with results as follows: primary canister outlet: 81 parts per million (ppm), secondary canister outlet: 20 ppm, and tertiary canister outlet to atmosphere: 15 ppm. The carbon canister system receives a vent stream that has nitrogen blanketing. Valero uses a photo-ionization detector when conducting breakthrough monitoring on the carbon canisters.
- Valero labeled the drips and drab lift station as subject to Subpart QQQ at the base; however, the flare header line located above the lift station was labeled as subject to Subpart FF.
- EPA observed visible defects on vacuum breaker located on the roof of tank, TK-13-16, which is a sphere.
- EPA monitored the guidepole on floating roof tank, TK-13-15, and detected 40 ppm.
- EPA walked on the platform above the enhanced biodegradation unit (EBU). Approximately 4-6 feet away from the C-grate inlet, personnel hydrogen sulfide alarms sounded at 20 ppm. EPA monitoring equipment detected 100 ppm at that same spot. Valero routes the effluent of the DGFs to the EBU; however, the line is an open sewer

line that is not submerged fill. In addition, Valero routes a recirculation line from the C-tanks.

- EPA took four pictures at the East Plant sump that identified visible defects at multiple locations in addition to detecting emissions from those visible defects ranging from 1,700-6,300 ppm.
- EPA observed a kid-sized pool full of oil next to P-04-118-A strainer/oil-skimmer sump.
- Valero operates bypass vents on the API OWS A, B, and C that have a car-seal on the bypass valve. However, EPA observed detectable emissions testing with Method 21, and also recorded infrared images using a FLIR optical gas imaging camera.
- EPA conducted a walkthrough of the North 40 sump, which receives tank water draws from the liquefied petroleum gas bullet tanks. The piping was labeled as "FF/BWON Inspection and QQQ Inspection." Valero personnel were unclear which standard applied to this sump.
- Valero reported a total annual benzene (TAB) under 10 Megagrams per year until 2021, however, they reported >10 Megagrams per year for 2022. Valero indicated that the TAB report was not being performed correctly in all was inaccurate for prior years.
- EPA observed the MSAT sump to have visible defects including multiple holes on each side of the concrete. EPA was able to place the monitoring probe into the holes at least 2 inches.
- EPA observed the oil-tank centrifuge located near the coker injection area to have visible steam and hydrocarbon emissions venting from the cover of the centrifuge with detectable emissions at 35,000 ppm.
- Valero indicated that the old API West and associated sump been taken out of service and isolated in 2009; however, it was unclear from Valero how much waste was still in the API. EPA detected 5,000-7,800 ppm from multiple interfaces on the API cover and sump.

Photos and/or Videos: were taken during the inspection and are listed in Appendix A.
EPA imaged hydrocarbon emissions using a FLIR optical gas imaging camera, Model GFx-320. In addition, this camera was also used to take digital pictures and videos. See Appendix A for the summary of the videos and pictures taken.

Field Measurements: were taken during this inspection and are listed in Appendix B.

1. EPA conducted Method 21 monitoring and testing using Thermo Scientific's Toxic Vapor Analyzers, Model 2020, equipped with a flame ionization detector. See Appendix B for the summary of the monitoring and testing. EPA also collected six summa canisters that were analyzed per Method TO-15 by Eastern Research Group, a contractor to EPA. The results of the summa canisters are attached in Appendix D.

CLOSING CONFERENCE

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

Requested documents:

1. 5 years of Subpart FF quarterly and annual reports
2. 5 years of TAB reports
3. NESHAP FF visual inspections, paper logs since July 2023
4. 5 years of Subpart QQQ quarterly reports
5. Subpart QQQ visual inspections, paper logs since July 2023
6. LeakDAS backup files
7. Engineering design documents for all NEHSAP FF waste management units
8. 3 years of quarterly end of line sampling
9. End of line Drawing and sampling plan
10. Last API 653 inspection for NESHAP FF and Subpart QQQ tanks
11. Last primary seal gap measurements for all NESHAP FF and Subpart QQQ floating roof tanks
12. Carbon canister breakthrough monitoring for all systems
13. Last annual secondary seal gap measurement for NESHAP FF and Subpart QQQ floating roof tanks

Concerns: At the closing conference, EPA identified the follow areas of concern:

Subpart QQQ

1. Based on the number of visible observations, Valero does not properly conduct visual inspections of all equipment in each individual drain system.
2. Valero does not maintain the covers without visual defects (e.g., EPA observed cracks/gaps and peeled off caulk and in some instances missing seals/bolts).
3. Valero had several missing covers, dry drains, and oil in various drain hubs.

Subpart FF

4. Valero has not designed and operated all of its waste management units controlled for Subpart FF, including the following units: three API oil/water separators, dissolved gas flotation units, lab sump, not a submerged fill into the aeration basins, coker injection, vacuum truck sump, and the following tanks: 13-15, 13-16, 100-2, and 180-9.
5. Valero may not be meeting the 6 Megagram (6 BQ) compliance option based on several of the waste management units identified as controlled by Valero that were not controlled and had not been designed to be controlled.
6. Valero has not identified all points of generation.
7. Valero reported a TAB under 10 Megagrams per year until 2021, and reported greater than 10 Megagrams per year for 2022 (65 Megagrams). Valero indicated that the TAB was inaccurate for prior years.
8. Valero may not be maintaining any engineering design documentation required in 40 C.F.R. § 61.356(d).

9. Valero self-reported repair attempts with a water rinse repeatedly, and in many instances the equipment tested had detectable emissions at the next testing interval. Water rinse is not an acceptable repair methodology.
10. Valero should not be using the enhanced biodegradation unit exception of less than 10 ppm benzene that is allowed under the 6 BQ compliance option, since all waste management units upstream were not tested, designed and operated with no detectable emissions (NDE), including the lack of submerged fill for the individual drain system into the aeration basins.

DIGITAL SIGNATURES

Report Author: CONSTANTINOS LOUKERIS Digitally signed by CONSTANTINOS LOUKERIS Date: 2025.06.04 07:24:55 -05'00'

Section Supervisor: SARAH MARSHALL Digitally signed by SARAH MARSHALL Date: 2025.06.04 07:31:31 -05'00'

APPENDICES

1. Appendix A: Digital Image/Video Log
2. Appendix B: Field Measurement Data
3. Appendix C: Visual Observations
4. Appendix D: Summa Canister Results

Facility Name: Valero St. Charles Refinery
Facility Location: 14902 River Rd, Norco, LA 70079
Date of Inspection: November 6-9, 2023

APPENDIX A: DIGITAL IMAGE/VIDEO LOG

1. Inspector Names: James Haynes and Ben Rosenthal	**2. Archival Record Location: C:\Users\Cloukeri\OneDrive - Environmental Protection Agency (EPA)\EPAWork\Valero Norco\Valero Norco - Internal Folder - Case File\Valero Norco Photo Log - November 2023 Inspection\VSCR - Photos and Videos**

Image Number	File Name	Date	Image Description
Number	**File Name**	**Date**	**Description**
1	R0010224	11/6/2023	Accidental photo
2	R0010225	11/6/2023	"FF BWON Inspection" labeled vent pipe at API
3	R0010226	11/6/2023	"QQQ Inspection" labeled vent pipe at API
4	R0010227	11/6/2023	P-13-013-B.
5	R0010228	11/6/2023	Accidental photo
6	R0010229	11/6/2023	Filter dripping liquid. Oily stains. Near valve tagged 000933.
7	R0010230	11/6/2023	Same as R0010229.
8	R0010231	11/6/2023	Ladder base plate/flange on Tank TK-13-13.
9	R0010232	11/6/2023	Degraded caulk, white arrow pointing to measured NDE exceedance. Close to Tag 000702.
10	R0010233	11/6/2023	Degraded caulk, white arrow pointing to measured NDE exceedance. Close to Tag 000702.
11	R0010234	11/6/2023	Vacuum breaker on API SE 1307-B. Exceedance on vacuum side.
12	DC_309	11/7/2023	D-943-108 oily water sump.
13	DC_311	11/7/2023	"QQQ Inspection" labeled sump cover

14	DC_312	11/7/2023	Catch basin with grate and boom.
15	MOV_0313	11/7/2023	Catch basin with grate. Detectable emissions.
16	DC_314	11/7/2023	Cleanout with debris.
17	DC_315	11/7/2023	Q186 leak tag.
18	DC_316	11/7/2023	Q186 with detectable emissions.
19	DC_317	11/7/2023	Old stormwater QQQ sump with detectable emissions.
20	DC_318	11/7/2023	Old stormwater QQQ sump with detectable emissions.
21	DC_319	11/7/2023	Old stormwater QQQ sump with detectable emissions.
22	DC_320	11/7/2023	Old stormwater QQQ sump with detectable emissions.
23	DC_321	11/7/2023	Old stormwater QQQ sump with detectable emissions.
24	DC_322	11/7/2023	Old stormwater QQQ sump with detectable emissions.
25	MOV_0323	11/7/2023	Old stormwater QQQ sump gooseneck vent.
26	DC_324	11/7/2023	Old stormwater QQQ sump with detectable emissions.
27	DC_325	11/7/2023	Old stormwater QQQ sump with detectable emissions.
28	DC_326	11/7/2023	Hole in asphalt next to old stormwater QQQ sump. Elevated emissions.
29	DC_327	11/7/2023	Fuel gas line leak from open pipe in Unit 37.
30	MOV_0328	11/7/2023	Fuel gas line leak from open pipe in Unit 37.
31	MOV_0329	11/7/2023	P37-504 detectable emissions in Unit 37.
32	DC_330	11/7/2023	P37-504 detectable emissions in Unit 37.
33	DC_331	11/7/2023	P37-503 detectable emissions in Unit 37.

34	MOV_0332	11/7/2023	P37-503 detectable emissions in Unit 37.
35	DC_333	11/8/2023	Sump in "North 40" area.
36	DC_334	11/8/2023	Sump in "North 40" area.
37	DC_335	11/8/2023	Sump in "North 40" area.
38	DC_336	11/8/2023	Q050 visual defect at pipe.
39	DC_337	11/8/2023	CB30 dirt and debris.
40	DC_338	11/8/2023	CB31 partially dry with mud on top.
41	DC_339	11/8/2023	Q99 sump with cracked and peeled sealant.
42	DC_340	11/8/2023	Q99 sump with cracked and peeled sealant.
43	DC_341	11/8/2023	Q99 sump with cracked and peeled sealant.
44	R0010235	11/8/2023	Catch basins in Cat Unit with dirt/debris.
45	R0010236	11/8/2023	Catch basins in Cat Unit with dirt/debris.
46	R0010237	11/8/2023	Catch basins in Cat Unit with dirt/debris.
47	R0010238	11/8/2023	Catch basin drain in Cat Unit with oil.
48	R0010239	11/8/2023	Catch basin drain in Cat Unit with oil.
49	R0010240	11/8/2023	Sump 74 QQQ degraded caulk, pump plates, and gaps.
50	R0010241	11/8/2023	Sump 74 QQQ degraded caulk, pump plates, and gaps.
51	R0010242	11/8/2023	Sump 74 QQQ degraded caulk, pump plates, and gaps.
52	R0010243	11/8/2023	Sump 74 QQQ degraded caulk, pump plates, and gaps.
53	R0010244	11/8/2023	Accidental photo
54	R0010245	11/8/2023	Sump 74 QQQ cover of sump with gaps.
55	R0010246	11/8/2023	Accidental photo
56	R0010247	11/8/2023	Breaker drain filled in with debris. DB-53-05

57	R0010248	11/8/2023	Detectable emissions at skid in Coker Unit.
58	R0010249	11/8/2023	Detectable emissions at skid in Coker Unit.
59	R0010250	11/8/2023	Coker feed tank hatch. Detectable emissions.
60	R0010251	11/8/2023	Other coker feed tank hatch on smaller tank. Detectable emissions.
61	R0010252	11/8/2023	Other coker feed tank hatch on smaller tank. Detectable emissions.
62	R0010253	11/8/2023	Rear photo of other coker feed tank hatch on smaller tank.
63	R0010254	11/8/2023	Sump with holes in P-53-161 pump plate.
64	R0010255	11/8/2023	Rear photo of detectable emissions at skid in Coker Unit.
65	R0010256	11/8/2023	Sewer cover in Coker Unit. Detectable emissions.
66	R0010257	11/8/2023	38-08 oil water separator cover with detectable emissions.
67	R0010258	11/8/2023	38-08 oil water separator cover with detectable emissions.
68	R0010259	11/8/2023	38-08 oil water separator cover with detectable emissions.
69	IR_342	11/8/2023	IR image of other coker feed tank hatch on smaller tank.
70	MOV_0343	11/8/2023	Other coker feed tank hatch on smaller tank.
71	MOV_0344	11/8/2023	Emissions from cooling tower next to coker unit.
72	MOV_0345	11/9/2023	T 100-2 emissions with OGI.
73	MOV_0346	11/9/2023	T 100-2 emissions with OGI.
74	MOV_0347	11/9/2023	T 180-9 emissions with OGI.
75	DC_348	11/9/2023	Vacuum truck sump cover with cracks and gaps.

76	DC_349	11/9/2023	Oil on plug below valve Tag #2235.
77	DC_350	11/9/2023	Stormwater pipe.
78	DC_351	11/9/2023	Catch basin with drain.
79	DC_352	11/9/2023	Catch basin with drain.
80	MOV_0353	11/9/2023	Manhole #2 next to QQQ sump in north end of crude unit.
81	DC_355	11/9/2023	Manhole #2 next to QQQ sump in north end of crude unit.
82	R0010260	11/9/2023	QQQ sump in north end of crude unit showing deteriorated sealant and gaps.
83	R0010261	11/9/2023	QQQ sump in north end of crude unit showing deteriorated sealant and gaps.
84	R0010262	11/9/2023	Manhole #2 next to QQQ sump in north end of crude unit.
85	R0010263	11/9/2023	QQQ sump in north end of crude unit showing deteriorated sealant and gaps.
86	R0010264	11/9/2023	PRV on oil water separator following desalters.
87	R0010265	11/9/2023	Preparation for maintenance on oil water separator following desalters.
88	R0010266	11/9/2023	"QQQ INSP" labeled sump in crude unit.
89	R0010267	11/9/2023	"QQQ INSP" labeled sump in crude unit.

APPENDIX B: FIELD MEASUREMENT DATA

The table below summarizes the field measurements by EPA conducting Method 21 with a Thermo Scientific Toxic Vapor Analyzer, Model 2020, and when available, confirmed by Valero.

Component ID	Equipment Type	EPA's Reading (ppm)	Valero's Reading (ppm)*	Additional Notes
API A Cover	Emergency PRV North	1,350	1,900	-
API A Cover	Emergency PRV South	320	270	-

API B	Tag# 000688	1,455	1,300	-
API B	Oil Roll Skimmer Drive	>10,000	2,866	SEM-13-078
API B	Tag# 000699	3,720	5,500	North side gasket, middle
API B	Tag# 000704	714	1,200	-
API B	Vacuum Side (PVRV)	4,515	4,400	-
API B	Tag# 000691	3,491	2,945	West middle seam
API C	Tag# 000761	la1,371	1,300	Visual leak from bolt nut
DGF 13-110-A	Gasket	861	1,200	Main gasket, west
DGF 13-110-A	Manway	>10,000	2,800	Multiple visual leaks
DGF 13-110-A	Gasket	2,800	3,300	Main gasket, north
Lab – South Sump	Gasket	6,840	6,000	Closest Tag# 2735
Lab – South Sump	Manway	9,114	13,000	Center manway
TK-13-16	Sphere tank, Vacuum breaker	30,000		Emissions to Atmosphere
TK-13-16	Sphere tank, PSV	8,000		Emissions to Atmosphere
East Plant Sump	West Pump Manway	5,700	5,700	Cover plate on pump manway is uneven
East Plant Sump	East Pump Manway	2,700	2,100	-
East Plant Sump	Plate	6,300	6,000	Bubble in plate
East Plant Sump	Gooseneck Vent	1,700	-	Cover for entire sump was not flat
EBU Inlet	About 6 feet from surface (C-grate inlet)	100	-	Hydrogen Sulfide (H_2S) alarm went off at 20 ppm H_2S
API A	Bypass Vent E	102	-	Using extension probes
API B	Bypass Vent E	1,448	Confirmed	-
API C	Bypass Vent E	1,200	Confirmed	-
API A	Bypass Vent W	25	-	-
API B	Bypass Vent W	257	-	-
API C	Bypass Vent W	380	-	-
Coker – West Plant	Manhole	8,000	6,888	Visually not sealed

Coker – West Plant	Oil-tank Centrifuge	35,000	32,000	Visible steam/hydrocarbon venting out on cover
Tank 1004	Thief Hatch	3,800	5,200	-
Tank 1004	Manway	6,200	5,300	-
Tank 1002	Manway	19,000	34,000	Visible steam/hydrocarbon venting out
Tank 1000	Thief Hatch	1,000	Confirmed	Oil on and around thief hatch
Tank 1000	Manway	1,200	870	-
Tank 1001	Agitator Lid	19,700	28,200	-
Tank 1001	Agitator Plate, Missing Bolt	6,400	1,700	-
Tank 1001	Manway	1,700	670	-
Old API Sump	Cover - Spot 1	7,800	7,100	Valero indicated the equipment is out of service, visible defects
Old API Sump	Cover - Spot 2	5,500	5,200	Valero indicated the equipment is out of service, visible defects
Old API Sump	Cover - Spot 3	5,300	5,600	Valero indicated the equipment is out of service, visible defects
T325.2	Water Draw Pump	1,078	1,800	Visible liquid present
CB Q81.16		10,600	2,089	-
Q99 Sump	Cover – Spot 1	711	1,000	Visible seal cracking/caulk peeled off
Q99 Sump	Cover - Spot 1	626	Confirmed	Visible seal cracking/caulk peeled off
Q050	Gooseneck Vent	1,600	Confirmed	-
Old Stormwater Sump	Bolt missing	1,900	1,750	Missing multiple bolts/opening and caulk peeled off
Old Stormwater Sump	Pump	1,900	1,400	-

Old Stormwater Sump	Next to Gooseneck Vent	1,000	1,600	-
Old Stormwater Sump	Missing caulk around P-04-950A under inflow pipe	1,400	1,600	-
Old Stormwater Sump	Gooseneck Vent	2,800	2,000	-
Old Stormwater Sump	Right of E. Pump (P04-950A)	2,300	2,200	-
Old Stormwater Sump	Left of E. Pump (P04-950A)	2,200	2,000	-
Old Stormwater Sump	SW corner where metal meets crack	620	1,800	-
Unit 3700	STK# 402892 (P37-503) 1st Pump Bolt	90,000	113,000	-
Unit 3700	P37-504 (manhole cover pin)	62,000	73,000	-
Unit 3700	STK# 402892 (P37-503) 2nd Pump Bolt	90,000	113,000	-
Unit 1600, V16-101	LDAR 086 (Nitrogen Connect OEL)	40,000 (flameout)	Confirmed	Valero confirmed with FLIR video
Unit 1600	P67-503, DEA Sump Pump	3,500	5,000	-
Unit 1600	P67-503, DEA Sump Pump, other side	1,300	Confirmed	-
Q186		1,200	750	-
Vac Truck Sump	Cover Spot #1	5,700	5,700	Main gasket, cracked caulking/holes
Vac Truck Sump	Cover Spot #2	4,000	1,400	-
Vac Truck Sump	Cover Spot #3	830	446	-

Vac Truck Sump	Cover Spot #4	2,571	1,978	Main gasket, cracked caulking/holes
Vac Truck Sump	Vacuum breaker, Tag#1634A	1,430	670	-
Vac Truck Sump	Carbon Canister	1,060	3,300	Montrose confirmed using Microrae, Carbon canister tagged in March 2023 for most recent replacement
Oily Water Sump	D-943-108	2,300	1,000	-
Drain Hub	Stripper Bottom Pump, P-943-006B	900	-	-
Kerosene Pump	P-943-013A	693	719	-
Splitter Bottom Pump	P66-17B	600	-	Technician had left
Splitter Bottom Pump	P66-17A	1,600		Technician had left
North 40	Sump Vent Pipe	1,700		-
North 40	Northwest corner	520		-
North 40	LDAR Tag# 584 (Strainer)	1,078	1,800	-
Crude	Manhole #2	2,900	2,300	-
Crude	Plate cover where pump was removed	1,800	3,500	-

APPENDIX C: VISUAL OBSERVATIONS

The table below summarizes the visual inspection observations made by EPA.

Component ID or Unit	Component Type	Visual Observation	Additional Notes
CB053-02	Catch basin	Oil Sheen	-
P053-02B	Drain	Oil drain clogged	-
P053-02C	Drain	Oil drain clogged	-
CB053-08	Catch basin	No cover	127 ppm open area

CB053-18	Catch basin	Oil in Puddle immediately near basin	-
053 Unit	Drain 1	Oil drain clogged	-
Coker	DB-53-05	Filled with debris	-
Coker	71-66	Oily	-
Coker	LDAR Tag# 3599	Oily	-
Coker	LDAR Tag# 3598	Oily	-
Coker	71.59	Oily sheen	-
Coker	Drain 80	Not covered	-
Coker	Drain 90	Oil drain clogged	-
Coker	Drain 92	Not covered	-
Coker	Drain 95	Oil drain clogged	-
Hydrocracker	Drain (P943-037B)	Oily	-
Hydrocracker	Drain Q112	Oily	-
Hydrocracker	Drain Q116	700 ppm/confirmed at 1,100 ppm	-
Hydrocracker	Drain Q117	Oily/Crystal layer	-
Hydrocracker	Drain Q118	8,000 ppm/5,200	D943-015, 2nd Stage Feed Surge Drum drain
Hydrocracker	Drain Q122	Oily	-
Hydrocracker	Drain Q119	Oily	-
Hydrocracker	Drain Q120	Oily (lube oil pump drain)	-
Hydrocracker	Drain Q123	Oily	-
Hydrocracker	Drain Q124	Oily and Debris	-
Hydrocracker	Drain Q125	Oily	-
Hydrocracker	Drain Q127	Oily and debris	-
Hydrocracker	Drain Q130	Oily and debris	-
Hydrocracker	Drain Q132	Oily and particles floating	-
Hydrocracker	Drain Q133	Oily and half sludge	-
Hydrocracker	Drain Q134	Dry Drain	-
Hydrocracker	Drain Q136	Oily and sludge	-
Hydrocracker	Drain 137	Oily and mud	-
Hydrocracker	Drain 139	Oily	-
Hydrocracker	Drain Q140	Oily, but mostly sludge	-

Hydrocracker	Drain Q142	Dry with some oil present on walls	-
Hydrocracker	Drain Q161	Dry with some oil present on walls	-
Hydrocracker	Drain Q163	White liquid filled	-
Hydrocracker	Drain Q175	Oily	-
Hydrocracker	Sump Q 175	No seal around/pinhole opening	-
Hydrocracker	Q 173.02		-
Hydrocracker	Q186	1,200 ppm/750 ppm	EPA confirmed the M21 reading
CB-13	Drain	Clogged with debris	-
CB-23	Drain	Oily	-
CB-28	Drain	Oily	-
P-53-161 pump plate	Sump	Hole in sump cover north side	-
Crude	Separator Bypass Lines After Desalter	Missing car seals	-
Crude	Drain Hub 12	Oil	-
Crude	Drain	Dry Drain	Two identified as dry drains, but identification not provided by Valero

APPENDIX D: SUMMA CANISTER RESULTS

SEE ATTACHED PDF

CERTIFICATE OF ANALYSIS

OECA
2890 Woodbridge Avenue
Edison, NJ 08837
ATTN: Shaun Burke
PHONE: (202) 564-1039 **FAX:** (732) 321-6616

FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
Old API - out of service - nea	3111622-01	Air	11/08/23 04:25	11/15/23 14:54
Aeration Basin	3111622-02	Air	11/07/23 16:28	11/15/23 14:54
943-Q118 Drain	3111622-03	Air	11/07/23 10:57	11/15/23 14:54
Pump P37-503 bolts	3111622-04	Air	11/07/23 15:25	11/15/23 14:54
Coker injection centrifuge	3111622-05	Air	11/08/23 15:27	11/15/23 14:54
Manhole # 2 in crude unit	3111622-06	Air	11/09/23 11:53	11/15/23 14:54

CERTIFICATE OF ANALYSIS

OECA
2890 Woodbridge Avenue
Edison, NJ 08837
ATTN: Shaun Burke
PHONE: (202) 564-1039 **FAX:** (732) 321-6616

FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Old API - out of service - near
Pressure @ Receipt: 15.0 "Hg
Comments: (FID:5000ppm)

Lab ID: 3111622-01
Canister #: 43382

Sampled: 11/08/23 04:25
Received: 11/15/23 14:54
Analyzed: 12/13/23 17:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
Dichlorodifluoromethane	ND	ND	D, O-04, U	7.13
Chloromethane	ND	ND	D, O-04, U	11.5
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	6.21
Vinyl chloride	ND	ND	D, O-04, U	6.06
1,3-Butadiene	ND	ND	D, O-04, U	26.0
Ethylene oxide	ND	ND	D, O-04, U	41.7
Bromomethane	ND	ND	D, O-04, U	25.3
Chloroethane	ND	ND	D, O-04, U	16.1
Acetonitrile	ND	ND	D, O-04, U	39.0
Acrolein	ND	ND	D, O-04, U	97.5
Trichlorofluoromethane	ND	ND	D, O-04, U	11.2
Acrylonitrile	ND	ND	D, O-04, U	13.7
1,1-Dichloroethene	ND	ND	D, O-04, U	18.7
Dichloromethane	ND	ND	D, O-04, U	27.6
Carbon Disulfide	ND	ND	D, O-04, U	19.8
Trichlorotrifluoroethane	ND	ND	D, O-04, U	24.8
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	4.96
1,1-Dichloroethane	ND	ND	D, O-04, U	16.8
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	11.9
Chloroprene	ND	ND	D, O-04, U	14.5
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	15.5
Bromochloromethane	ND	ND	D, O-04, U	10.7
Chloroform	ND	ND	D, O-04, U	15.8
Ethyl tert-Butyl Ether	ND	ND	D, O-04, U	10.5
1,2-Dichloroethane	ND	ND	D, O-04, U	13.7
1,1,1-Trichloroethane	ND	ND	D, O-04, U	11.2
Benzene	**169**	**541.00**	D, O-04	**11.9**
Carbon Tetrachloride	ND	ND	D, O-04, U	8.85
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	14.9
1,2-Dichloropropane	ND	ND	D, O-04, U	25.4
Ethyl Acrylate	ND	ND	D, O-04, U	9.21
Bromodichloromethane	ND	ND	D, O-04, U	10.5
Trichloroethylene	ND	ND	D, O-04, U	8.03
Methyl Methacrylate	ND	ND	D, O-04, U	39.0
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	4.20
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	68.2
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	9.70
1,1,2-Trichloroethane	ND	ND	D, O-04, U	4.72
Toluene	**826**	**3,120.00**	D, O-04	**17.9**
Dibromochloromethane	ND	ND	D, O-04, U	22.7
1,2-Dibromoethane	ND	ND	D, O-04, U	7.79

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PHONE: (202) 564-1039 **FAX:** (732) 321-6616

FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Old API - out of service - near
Pressure @ Receipt: 15.0 "Hg
Comments: (FID:5000ppm)

Lab ID: 3111622-01
Canister #: 43382

Sampled: 11/08/23 04:25
Received: 11/15/23 14:54
Analyzed: 12/13/23 17:36

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
n-Octane	ND	ND	D, O-04, U	30.5
Tetrachloroethylene	ND	ND	D, O-04, U	10.2
Chlorobenzene	ND	ND	D, O-04, U	9.68
Ethylbenzene	**117**	**509.00**	D, O-04	**15.3**
m,p-Xylene	**931**	**4,050.00**	D, O-04	**49.3**
Bromoform	ND	ND	D, O-04, U	12.7
Styrene	ND	ND	D, O-04, U	32.2
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	22.4
o-Xylene	**382**	**1,660.00**	D, O-04	**27.7**
1,3,5-Trimethylbenzene	ND	ND	D, O-04, U	37.3
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	37.8
m-Dichlorobenzene	ND	ND	D, O-04, U	43.6
p-Dichlorobenzene	ND	ND	D, O-04, U	43.2
o-Dichlorobenzene	ND	ND	D, O-04, U	43.0
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	93.5
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	42.8

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FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Aeration Basin
Pressure @ Receipt: 17.0 "Hg
Comments: (FID:140ppm) - possible H2S

Lab ID: 3111622-02
Canister #: 42190

Sampled: 11/07/23 16:28
Received: 11/15/23 14:54
Analyzed: 12/13/23 18:37

Air Toxics by EPA Compendium Method TO-15

	Results			MDL
Analyte	**ppbv**	**ug/m³**	**Flag**	**ppbv**
Dichlorodifluoromethane	ND	ND	D, O-04, U	0.0670
Chloromethane	ND	ND	D, O-04, U	0.108
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	0.0584
Vinyl chloride	ND	ND	D, O-04, U	0.0569
1,3-Butadiene	ND	ND	D, O-04, U	0.244
Ethylene oxide	ND	ND	D, O-04, U	0.392
Bromomethane	ND	ND	D, O-04, U	0.237
Chloroethane	ND	ND	D, O-04, U	0.151
Acetonitrile	ND	ND	D, O-04, U	0.366
Acrolein	ND	ND	D, O-04, U	0.916
Trichlorofluoromethane	ND	ND	D, O-04, U	0.105
Acrylonitrile	ND	ND	D, O-04, U	0.129
1,1-Dichloroethene	ND	ND	D, O-04, U	0.175
Dichloromethane	ND	ND	D, O-04, U	0.260
Carbon Disulfide	ND	ND	D, O-04, U	0.186
Trichlorotrifluoroethane	ND	ND	D, O-04, U	0.233
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	0.0466
1,1-Dichloroethane	ND	ND	D, O-04, U	0.158
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	0.112
Chloroprene	ND	ND	D, O-04, U	0.136
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	0.145
Bromochloromethane	ND	ND	D, O-04, U	0.100
Chloroform	ND	ND	D, O-04, U	0.149
Ethyl tert-Butyl Ether	ND	ND	D, O-04, U	0.0991
1,2-Dichloroethane	ND	ND	D, O-04, U	0.129
1,1,1-Trichloroethane	ND	ND	D, O-04, U	0.106
Benzene	**16.0**	**51.20**	D, O-04	**0.112**
Carbon Tetrachloride	ND	ND	D, O-04, U	0.0832
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	0.140
1,2-Dichloropropane	ND	ND	D, O-04, U	0.239
Ethyl Acrylate	ND	ND	D, O-04, U	0.0865
Bromodichloromethane	ND	ND	D, O-04, U	0.0986
Trichloroethylene	ND	ND	D, O-04, U	0.0754
Methyl Methacrylate	ND	ND	D, O-04, U	0.366
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	0.0395
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	0.641
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	0.0912
1,1,2-Trichloroethane	ND	ND	D, O-04, U	0.0444
Toluene	**96.7**	**365.00**	D, O-04	**0.169**
Dibromochloromethane	ND	ND	D, O-04, U	0.213
1,2-Dibromoethane	ND	ND	D, O-04, U	0.0732

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FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Aeration Basin **Lab ID:** 3111622-02 **Sampled:** 11/07/23 16:28
Pressure @ Receipt: 17.0 "Hg **Canister #:** 42190 **Received:** 11/15/23 14:54
Comments: (FID:140ppm) - possible H2S **Analyzed:** 12/13/23 18:37

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
n-Octane	ND	ND	D, O-04, U	0.286
Tetrachloroethylene	ND	ND	D, O-04, U	0.0954
Chlorobenzene	ND	ND	D, O-04, U	0.0910
Ethylbenzene	**20.4**	**88.80**	D, O-04	**0.144**
m,p-Xylene	**67.3**	**293.00**	D, O-04	**0.464**
Bromoform	ND	ND	D, O-04, U	0.120
Styrene	ND	ND	D, O-04, U	0.303
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	0.211
o-Xylene	**34.4**	**150.00**	D, O-04	**0.261**
1,3,5-Trimethylbenzene	ND	ND	D, O-04, U	0.351
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	0.355
m-Dichlorobenzene	ND	ND	D, O-04, U	0.409
p-Dichlorobenzene	ND	ND	D, O-04, U	0.406
o-Dichlorobenzene	ND	ND	D, O-04, U	0.404
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	0.879
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	0.403

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REPORTED: 01/16/24 16:04
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AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: 943-Q118 Drain
Pressure @ Receipt: 14.0 "Hg
Comments: (FID:8000PPM

Lab ID: 3111622-03
Canister #: 35134

Sampled: 11/07/23 10:57
Received: 11/15/23 14:54
Analyzed: 12/13/23 19:37

Air Toxics by EPA Compendium Method TO-15

	Results			MDL
Analyte	**ppbv**	**ug/m³**	**Flag**	**ppbv**
Dichlorodifluoromethane	ND	ND	D, O-04, U	34.1
Chloromethane	ND	ND	D, O-04, U	54.7
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	29.7
Vinyl chloride	ND	ND	D, O-04, U	28.9
1,3-Butadiene	ND	ND	D, O-04, U	124
Ethylene oxide	ND	ND	D, O-04, U	199
Bromomethane	ND	ND	D, O-04, U	121
Chloroethane	ND	ND	D, O-04, U	76.7
Acetonitrile	ND	ND	D, O-04, U	186
Acrolein	ND	ND	D, O-04, U	466
Trichlorofluoromethane	ND	ND	D, O-04, U	53.6
Acrylonitrile	ND	ND	D, O-04, U	65.4
1,1-Dichloroethene	ND	ND	D, O-04, U	89.1
Dichloromethane	ND	ND	D, O-04, U	132
Carbon Disulfide	ND	ND	D, O-04, U	94.7
Trichlorotrifluoroethane	ND	ND	D, O-04, U	118
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	23.7
1,1-Dichloroethane	ND	ND	D, O-04, U	80.1
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	57.0
Chloroprene	ND	ND	D, O-04, U	69.4
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	73.9
Bromochloromethane	ND	ND	D, O-04, U	51.0
Chloroform	ND	ND	D, O-04, U	75.6
Ethyl tert-Butyl Ether	ND	ND	D, O-04, U	50.4
1,2-Dichloroethane	ND	ND	D, O-04, U	65.4
1,1,1-Trichloroethane	ND	ND	D, O-04, U	53.7
Benzene	**11800**	**37,800.00**	D, O-04	**57.0**
Carbon Tetrachloride	ND	ND	D, O-04, U	42.3
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	71.0
1,2-Dichloropropane	ND	ND	D, O-04, U	121
Ethyl Acrylate	ND	ND	D, O-04, U	44.0
Bromodichloromethane	ND	ND	D, O-04, U	50.1
Trichloroethylene	ND	ND	D, O-04, U	38.3
Methyl Methacrylate	ND	ND	D, O-04, U	186
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	20.1
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	326
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	46.4
1,1,2-Trichloroethane	ND	ND	D, O-04, U	22.6
Toluene	**28100**	**106,000.0(**	D, O-04	**85.7**
Dibromochloromethane	ND	ND	D, O-04, U	108
1,2-Dibromoethane	ND	ND	D, O-04, U	37.2

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REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: 943-Q118 Drain
Pressure @ Receipt: 14.0 "Hg
Comments: (FID:8000PPM

Lab ID: 3111622-03
Canister #: 35134

Sampled: 11/07/23 10:57
Received: 11/15/23 14:54
Analyzed: 12/13/23 19:37

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
n-Octane	ND	ND	D, O-04, U	145
Tetrachloroethylene	ND	ND	D, O-04, U	48.5
Chlorobenzene	ND	ND	D, O-04, U	46.2
Ethylbenzene	**5450**	**23,700.00**	D, O-04	**73.3**
m,p-Xylene	**12400**	**54,000.00**	D, O-04	**236**
Bromoform	ND	ND	D, O-04, U	60.9
Styrene	ND	ND	D, O-04, U	154
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	107
o-Xylene	**5260**	**22,900.00**	D, O-04	**133**
1,3,5-Trimethylbenzene	ND	ND	D, O-04, U	178
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	180
m-Dichlorobenzene	ND	ND	D, O-04, U	208
p-Dichlorobenzene	ND	ND	D, O-04, U	206
o-Dichlorobenzene	ND	ND	D, O-04, U	205
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	447
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	205

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FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Pump P37-503 bolts **Lab ID:** 3111622-04 **Sampled:** 11/07/23 15:25
Pressure @ Receipt: 11.0 "Hg **Canister #:** 35132 **Received:** 11/15/23 14:54
Comments: (FID:90,000 PPM) - High VOC **Analyzed:** 12/13/23 15:31

Air Toxics by EPA Compendium Method TO-15

	Results			MDL
Analyte	**ppbv**	**ug/m³**	**Flag**	**ppbv**
Dichlorodifluoromethane	ND	ND	D, O-04, U	4.40
Chloromethane	ND	ND	D, O-04, U	7.06
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	3.83
Vinyl chloride	ND	ND	D, O-04, U	3.73
1,3-Butadiene	ND	ND	D, O-04, U	16.0
Ethylene oxide	ND	ND	D, O-04, U	25.7
Bromomethane	ND	ND	D, O-04, U	15.6
Chloroethane	ND	ND	D, O-04, U	9.90
Acetonitrile	ND	ND	D, O-04, U	24.0
Acrolein	ND	ND	O-04, D, U	60.1
Trichlorofluoromethane	ND	ND	D, O-04, U	6.92
Acrylonitrile	ND	ND	D, O-04, U	8.45
1,1-Dichloroethene	ND	ND	D, O-04, U	11.5
Dichloromethane	ND	ND	D, O-04, U	17.0
Carbon Disulfide	ND	ND	D, O-04, U	12.2
Trichlorotrifluoroethane	ND	ND	O-04, D, U	15.3
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	3.06
1,1-Dichloroethane	ND	ND	D, O-04, U	10.3
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	7.35
Chloroprene	ND	ND	D, O-04, U	8.95
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	9.54
Bromochloromethane	ND	ND	D, O-04, U	6.59
Chloroform	ND	ND	D, O-04, U	9.76
Ethyl tert-Butyl Ether	ND	ND	D, O-04, U	6.50
1,2-Dichloroethane	ND	ND	D, O-04, U	8.45
1,1,1-Trichloroethane	ND	ND	D, O-04, U	6.93
Benzene	**2130**	**6,820.00**	CF, D, LK, O-04	**7.35**
Carbon Tetrachloride	ND	ND	D, O-04, U	5.46
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	9.17
1,2-Dichloropropane	ND	ND	D, O-04, U	15.7
Ethyl Acrylate	ND	ND	D, O-04, U	5.68
Bromodichloromethane	ND	ND	D, O-04, U	6.47
Trichloroethylene	ND	ND	D, O-04, U	4.95
Methyl Methacrylate	ND	ND	D, O-04, U	24.0
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	2.59
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	42.1
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	5.98
1,1,2-Trichloroethane	ND	ND	D, O-04, U	2.91
Toluene	**5610**	**21,200.00**	D, O-04	**11.1**
Dibromochloromethane	ND	ND	D, O-04, U	14.0
1,2-Dibromoethane	ND	ND	D, O-04, U	4.80

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FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Pump P37-503 bolts **Lab ID:** 3111622-04 **Sampled:** 11/07/23 15:25
Pressure @ Receipt: 11.0 "Hg **Canister #:** 35132 **Received:** 11/15/23 14:54
Comments: (FID:90,000 PPM) - High VOC **Analyzed:** 12/13/23 15:31

Air Toxics by EPA Compendium Method TO-15

	Results			MDL
Analyte	**ppbv**	**ug/m³**	**Flag**	**ppbv**
n-Octane	ND	ND	O-04, D, U	18.8
Tetrachloroethylene	ND	ND	D, O-04, U	6.26
Chlorobenzene	ND	ND	D, O-04, U	5.97
Ethylbenzene	**901**	**3,920.00**	D, O-04	**9.46**
m,p-Xylene	**3620**	**15,800.00**	D, O-04	**30.4**
Bromoform	ND	ND	D, O-04, U	7.86
Styrene	ND	ND	D, O-04, U	19.9
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	13.8
o-Xylene	**1130**	**4,920.00**	D, O-04	**17.1**
1,3,5-Trimethylbenzene	ND	ND	D, O-04, U	23.0
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	23.3
m-Dichlorobenzene	ND	ND	D, O-04, U	26.9
p-Dichlorobenzene	ND	ND	D, O-04, U	26.6
o-Dichlorobenzene	ND	ND	D, O-04, U	26.5
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	57.7
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	26.4

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PHONE: (202) 564-1039 **FAX:** (732) 321-6616

FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Coker injection centrifuge **Lab ID:** 3111622-05 **Sampled:** 11/08/23 15:27
Pressure @ Receipt: 7.5 "Hg **Canister #:** 41655 **Received:** 11/15/23 14:54
Comments: (FID:10-20,000 PPM) **Analyzed:** 12/15/23 13:05

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
Dichlorodifluoromethane	ND	ND	D, O-04, U	18.8
Chloromethane	ND	ND	D, O-04, U	30.2
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	16.4
Vinyl chloride	ND	ND	D, O-04, U	15.9
1,3-Butadiene	ND	ND	D, O-04, U	68.4
Ethylene oxide	ND	ND	D, O-04, U	110
Bromomethane	ND	ND	D, O-04, U	66.5
Chloroethane	ND	ND	D, O-04, U	42.3
Acetonitrile	ND	ND	D, O-04, U	103
Acrolein	ND	ND	D, O-04, U	257
Trichlorofluoromethane	ND	ND	D, O-04, U	29.5
Acrylonitrile	ND	ND	D, O-04, U	36.1
1,1-Dichloroethene	ND	ND	D, O-04, U	49.1
Dichloromethane	ND	ND	D, O-04, U	72.7
Carbon Disulfide	ND	ND	D, O-04, U	52.2
Trichlorotrifluoroethane	ND	ND	D, O-04, U	65.3
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	13.1
1,1-Dichloroethane	ND	ND	D, O-04, U	44.1
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	31.4
Chloroprene	ND	ND	D, O-04, U	38.2
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	40.7
Bromochloromethane	ND	ND	D, O-04, U	28.1
Chloroform	ND	ND	D, O-04, U	41.7
Ethyl tert-Butyl Ether	ND	ND	O-04, D, U	27.8
1,2-Dichloroethane	ND	ND	D, O-04, U	36.1
1,1,1-Trichloroethane	ND	ND	D, O-04, U	29.6
Benzene	**5800**	**18,600.00**	D, O-04	**31.4**
Carbon Tetrachloride	ND	ND	D, O-04, U	23.3
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	39.2
1,2-Dichloropropane	ND	ND	D, O-04, U	66.8
Ethyl Acrylate	ND	ND	D, O-04, U	24.2
Bromodichloromethane	ND	ND	D, O-04, U	27.6
Trichloroethylene	ND	ND	D, O-04, U	21.1
Methyl Methacrylate	ND	ND	D, O-04, U	103
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	11.1
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	180
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	25.6
1,1,2-Trichloroethane	ND	ND	D, O-04, U	12.4
Toluene	**31900**	**120,000.0(**	D, O-04	**47.3**
Dibromochloromethane	ND	ND	D, O-04, U	59.7
1,2-Dibromoethane	ND	ND	D, O-04, U	20.5

CERTIFICATE OF ANALYSIS

OECA
2890 Woodbridge Avenue
Edison, NJ 08837
ATTN: Shaun Burke
PHONE: (202) 564-1039 **FAX:** (732) 321-6616

FILE #: 0453.14.003.120
REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Coker injection centrifuge **Lab ID:** 3111622-05 **Sampled:** 11/08/23 15:27
Pressure @ Receipt: 7.5 "Hg **Canister #:** 41655 **Received:** 11/15/23 14:54
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Air Toxics by EPA Compendium Method TO-15

	Results			MDL
Analyte	**ppbv**	**ug/m³**	**Flag**	**ppbv**
n-Octane	ND	ND	D, O-04, U	80.2
Tetrachloroethylene	ND	ND	D, O-04, U	26.7
Chlorobenzene	ND	ND	D, O-04, U	25.5
Ethylbenzene	**8680**	**37,800.00**	D, O-04	**40.4**
m,p-Xylene	**38000**	**165,000.0(**	D, O-04	**130**
Bromoform	ND	ND	D, O-04, U	33.6
Styrene	ND	ND	D, O-04, U	84.9
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	59.1
o-Xylene	**14800**	**64,400.00**	D, O-04	**73.1**
1,3,5-Trimethylbenzene	ND	ND	O-04, D, U	98.2
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	99.5
m-Dichlorobenzene	ND	ND	D, O-04, U	115
p-Dichlorobenzene	ND	ND	D, O-04, U	114
o-Dichlorobenzene	ND	ND	D, O-04, U	113
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	246
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	113

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REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Manhole # 2 in crude unit
Pressure @ Receipt: 4.5 "Hg
Comments: (FID:2,000 PPM)

Lab ID: 3111622-06
Canister #: 41644

Sampled: 11/09/23 11:53
Received: 11/15/23 14:54
Analyzed: 12/13/23 20:39

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
Dichlorodifluoromethane	ND	ND	D, O-04, U	8.91
Chloromethane	ND	ND	D, O-04, U	14.3
Dichlorotetrafluoroethane	ND	ND	D, O-04, U	7.76
Vinyl chloride	ND	ND	D, O-04, U	7.57
1,3-Butadiene	ND	ND	D, O-04, U	32.5
Ethylene oxide	ND	ND	D, O-04, U	52.1
Bromomethane	ND	ND	D, O-04, U	31.6
Chloroethane	ND	ND	D, O-04, U	20.1
Acetonitrile	ND	ND	D, O-04, U	48.7
Acrolein	ND	ND	D, O-04, U	122
Trichlorofluoromethane	ND	ND	D, O-04, U	14.0
Acrylonitrile	ND	ND	D, O-04, U	17.1
1,1-Dichloroethene	ND	ND	D, O-04, U	23.3
Dichloromethane	ND	ND	O-04, D, U	34.5
Carbon Disulfide	ND	ND	D, O-04, U	24.8
Trichlorotrifluoroethane	ND	ND	D, O-04, U	31.0
trans-1,2-Dichloroethylene	ND	ND	D, O-04, U	6.20
1,1-Dichloroethane	ND	ND	D, O-04, U	20.9
Methyl tert-Butyl Ether	ND	ND	D, O-04, U	14.9
Chloroprene	ND	ND	D, O-04, U	18.1
cis-1,2-Dichloroethylene	ND	ND	D, O-04, U	19.3
Bromochloromethane	ND	ND	D, O-04, U	13.3
Chloroform	ND	ND	D, O-04, U	19.8
Ethyl tert-Butyl Ether	ND	ND	D, O-04, U	13.2
1,2-Dichloroethane	ND	ND	D, O-04, U	17.1
1,1,1-Trichloroethane	ND	ND	D, O-04, U	14.0
Benzene	**850**	**2,720.00**	D, O-04	**14.9**
Carbon Tetrachloride	ND	ND	D, O-04, U	11.1
tert-Amyl Methyl Ether	ND	ND	D, O-04, U	18.6
1,2-Dichloropropane	ND	ND	D, O-04, U	31.7
Ethyl Acrylate	ND	ND	D, O-04, U	11.5
Bromodichloromethane	ND	ND	D, O-04, U	13.1
Trichloroethylene	ND	ND	D, O-04, U	10.0
Methyl Methacrylate	ND	ND	D, O-04, U	48.7
cis-1,3-Dichloropropene	ND	ND	D, O-04, U	5.25
Methyl Isobutyl Ketone	ND	ND	D, O-04, U	85.3
trans-1,3-Dichloropropene	ND	ND	D, O-04, U	12.1
1,1,2-Trichloroethane	ND	ND	D, O-04, U	5.90
Toluene	**9130**	**34,500.00**	D, O-04	**22.4**
Dibromochloromethane	ND	ND	D, O-04, U	28.3
1,2-Dibromoethane	ND	ND	O-04, D, U	9.74

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REPORTED: 01/16/24 16:04
SUBMITTED: 11/15/23
AQS SITE CODE:
SITE CODE: Valero Norco Inspection

Description: Manhole # 2 in crude unit
Pressure @ Receipt: 4.5 "Hg
Comments: (FID:2,000 PPM)

Lab ID: 3111622-06
Canister #: 41644

Sampled: 11/09/23 11:53
Received: 11/15/23 14:54
Analyzed: 12/13/23 20:39

Air Toxics by EPA Compendium Method TO-15

Analyte	Results ppbv	Results ug/m³	Flag	MDL ppbv
n-Octane	ND	ND	D, O-04, U	38.1
Tetrachloroethylene	ND	ND	D, O-04, U	12.7
Chlorobenzene	ND	ND	D, O-04, U	12.1
Ethylbenzene	**1640**	**7,140.00**	D, O-04	**19.2**
m,p-Xylene	**7600**	**33,100.00**	D, O-04	**61.7**
Bromoform	ND	ND	D, O-04, U	15.9
Styrene	ND	ND	D, O-04, U	40.3
1,1,2,2-Tetrachloroethane	ND	ND	D, O-04, U	28.0
o-Xylene	**2890**	**12,600.00**	D, O-04	**34.7**
1,3,5-Trimethylbenzene	ND	ND	D, O-04, U	46.6
1,2,4-Trimethylbenzene	ND	ND	D, O-04, U	47.2
m-Dichlorobenzene	ND	ND	D, O-04, U	54.4
p-Dichlorobenzene	ND	ND	D, O-04, U	54.0
o-Dichlorobenzene	ND	ND	D, O-04, U	53.7
1,2,4-Trichlorobenzene	ND	ND	D, O-04, U	117
Hexachloro-1,3-butadiene	ND	ND	D, O-04, U	53.5