

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5**

In the Matter of:	)	
	)	
WRB Refining, LP and Phillips 66 Company	)	FINDING OF VIOLATION
Roxana, Illinois	)	
	)	EPA-5-24-IL-07
Proceedings Pursuant to	)	
the Clean Air Act,	)	
42 U.S.C. §§ 7401 et seq.	)	

FINDING OF VIOLATION

The U.S. Environmental Protection Agency finds that WRB Refining, LP and Phillips 66 Company (P66) is violating Sections 111 and 112 of the Clean Air Act (CAA), 42 U.S.C. §§ 7411, 7412, and regulations promulgated under those sections at the refinery located in Roxana, Illinois. Specifically, P66 is violating the National Emission Standard for Benzene Waste Operations (Benzene Waste NESHAP), codified at 40 C.F.R. Part 61, Subpart FF (Subpart FF) and New Source Performance Standards for Volatile Organic Compounds from Petroleum Refinery Wastewater Systems, codified at 40 C.F.R. Part 60, Subpart QQQ (Subpart QQQ). P66 is also violating the refinery's Title V operating permit.

Regulatory Authority

1. Section 111 of the CAA, 42 U.S.C. § 7411, authorizes EPA to promulgate regulations establishing New Source Performance Standards (NSPS).
2. Section 111(e) of the CAA, 42 U.S.C. § 7411(e), states that after the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source.
3. Section 112(b) of the CAA, 42 U.S.C. § 7412(b) lists 188 Hazardous Air Pollutants (HAPs) that cause adverse health or environmental effects.
4. Section 112(d) of the CAA, 42 U.S.C. § 7412(d), requires EPA to promulgate regulations establishing emissions standards for each category or subcategory of major and area sources of HAPs that are listed for regulation pursuant to Section 112(c), 42 U.S.C. § 7412(c).
5. Section 112(q) of the CAA, 42 U.S.C. § 7412(q), provides, in pertinent part, that any standard under this section in effect before the date of enactment of the CAA Amendments of 1990 (November 15, 1990) shall remain in force and effect after such date.

NESHAP General Provisions

6. 40 C.F.R. § 61.05(c) requires that ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the CAA.

7. 40 C.F.R. § 61.12(a) provides that compliance with numerical emission limits shall be determined in accordance with emission tests established in 40 C.F.R. § 61.13 or as otherwise specified in an individual subpart.

8. 40 C.F.R. § 61.12(b) provides that compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart.

9. 40 C.F.R. § 61.12(c) requires that the owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

Benzene Waste NESHAP

10. Under Section 112(d) of the CAA, 42 U.S.C. § 7412(d), EPA promulgated the Benzene Waste NESHAP on March 7, 1990. *See 55 Fed. Reg.* 8346.

11. The Benzene Waste NESHAP, as amended pursuant to Section 112(q) of the CAA, became effective on January 7, 1993, and is codified at 40 C.F.R. Part 61, Subpart FF.

12. 40 C.F.R. § 61.340(a) states that the provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.

13. 40 C.F.R. § 61.342(b) states that each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Megagrams per year (Mg/yr) or 11 ton/yr as determined in 40 C.F.R. § 61.342(a) shall be in compliance with the requirements of 40 C.F.R. § 61.342(c) through (h) no later than 90 days following the effective date, unless a waiver of compliance has been obtained under 40 C.F.R. § 61.11, or by the initial startup for a new source with an initial startup after the effective date.

14. 40 C.F.R. § 61.341 defines “cover” as “a device or system which is placed on or over a waste placed in a waste management unit so that the entire waste surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Example of covers include a fixed

roof installed on a tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.”

15. 40 C.F.R. § 61.341 defines “fixed roof” as “a cover that is mounted on a waste management unit in a stationary manner and that does not move with fluctuations in liquid level.”

16. 40 C.F.R. § 61.341 defines “individual drain system” as “the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit.”

17. 40 C.F.R. § 61.341 defines “no detectable emissions” as “less than 500 parts per million by volume (ppmv) above background levels, as measured by a detection instrument reading in accordance with the procedures specified in § 61.355(h) of this subpart.”

18. 40 C.F.R. § 61.341 defines “oil-water separator” as “a waste management unit, generally a tank or surface impoundment, used to separate oil from water. An oil-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.”

19. 40 C.F.R. § 61.341 defines “tank” as “a stationary waste management unit that is designed to contain an accumulation of waste and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.”

20. 40 C.F.R. § 61.341 defines “waste management unit” as “a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.”

21. 40 C.F.R. § 61.342(c)(1)(ii) states that for each waste stream that contains benzene, including but not limited to, organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall comply with the standards specified in 40 C.F.R. §§ 61.343 through 61.347 for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with 40 C.F.R. § 61.342(c)(1)(i).

22. 40 C.F.R. § 61.342(c)(1)(iii) states that each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in 40 C.F.R. §§ 61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to 40 C.F.R. § 61.342(c).

23. 40 C.F.R. § 61.342(e)(2)(i) states that the benzene quantity for the wastes described in 40 C.F.R. § 61.342(e)(2) must be equal to or less than 6.0 Mg/yr (6.6 ton/yr), as determined in 40 C.F.R. § 61.355(k). Wastes as described in 40 C.F.R. § 61.342(e)(2) that are transferred offsite shall be included in the determination of benzene quantity as provided in 40 C.F.R. § 61.355(k). The provisions of 40 C.F.R. § 61.342(f) shall not apply to any owner or operator who elects to comply with the provisions of 40 C.F.R. § 61.342(e).

24. 40 C.F.R. § 61.343(a) states that except as provided in 40 C.F.R. § 61.343(b) and in 40 C.F.R. § 61.351, the owner or operator must meet the standards in 40 C.F.R. § 61.343(a)(1) or (2) for each tank in which the waste stream is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii). The standards in this section apply to the treatment and storage of the waste stream in a tank, including dewatering.

25. 40 C.F.R. § 61.343(a)(1) states that the owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.

26. 40 C.F.R. § 61.343(a)(1)(i)(A) states that for fixed-roof tanks, the cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 parts per million by volume (ppmv) above background, as determined initially and thereafter at least once per year by the methods specified in 40 C.F.R. § 61.355(h).

27. 40 C.F.R. § 61.343(b)(3) states that for each tank complying with 40 C.F.R. § 61.343(b), one or more devices which vent directly to the atmosphere may be used on the tank provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

28. 40 C.F.R. § 61.343(d) states that when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 45 calendar days after identification.

29. 40 C.F.R. § 61.344(a)(1) states that the owner or operator shall meet the following standard for each surface impoundment in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): The owner or operator shall install, operate, and maintain on each surface impoundment a cover (e.g., air-supported structure or rigid cover) and closed-vent system that routes all organic vapors vented from the surface impoundment to a control device.

30. 40 C.F.R. § 61.344(a)(1)(i)(A) states that the cover and all openings on each surface impoundment (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above

background, initially and thereafter at least once per year by the methods specified in 40 C.F.R. § 61.355(h).

31. 40 C.F.R. § 61.344(a)(1)(i)(B) states that each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the surface impoundment except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

32. 40 C.F.R. § 61.344(c) states that when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

33. 40 C.F.R. § 61.346(a)(1) states that except as provided in 40 C.F.R. § 61.346(b), the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device.

34. 40 C.F.R. § 61.346(a)(1)(i)(A) states that except as provided in 40 C.F.R. § 61.346(b), the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): The cover and all openings (e.g., access hatches, sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in 40 C.F.R. § 61.355(h).

35. 40 C.F.R. § 61.346(a)(1)(i)(B) states that except as provided in 40 C.F.R. § 61.346(b), the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the drain system except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

36. 40 C.F.R. § 61.346(a)(3) states that when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

37. 40 C.F.R. § 61.347(a)(1) states that except as provided in 40 C.F.R. § 61.352, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

38. 40 C.F.R. § 61.347(a)(1)(i)(A) states that except as provided in 40 C.F.R. § 61.352, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with 40 C.F.R. § 61.342(c)(1)(ii): The cover and all openings (e.g., access hatches,

sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 C.F.R. § 61.355(h).

39. 40 C.F.R. § 61.347(c) states that when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

40. 40 C.F.R. § 61.351(a)(2) provides that as an alternative to the standards for tanks specified at 40 C.F.R. § 61.343, an external floating roof tank may meet the requirements of 40 C.F.R. § 60.112b(a)(2).

41. 40 C.F.R. § 61.355(h)(1) states that an owner or operator shall test equipment for compliance with no detectable emissions as required in 40 C.F.R. §§ 61.343 through 61.347, and 40 C.F.R. § 61.349, in accordance with the following requirements: monitoring shall comply with Method 21 from appendix A of 40 C.F.R. Part 60 (Method 21).

42. 40 C.F.R. § 61.355(k) requires that “[a]n owner or operator shall determine the benzene quantity for the purposes of the calculation required by 40 C.F.R. § 61.342(e)(2) by the following procedure: (1) For each waste stream that is not controlled for air emissions in accordance with 40 C.F.R. §§ 61.343, 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by 40 C.F.R. § 61.342(e)(2).”

43. 40 C.F.R. § 61.356(d) states that an owner or operator using control equipment in accordance with 40 C.F.R. §§ 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by 40 C.F.R. § 61.356(f).

44. 40 C.F.R. § 61.357 sets forth the reporting requirements of Subpart FF, including annual inspection reports required by 40 C.F.R. § 61.357(d)(8).

NSPS Subpart QQQ

45. EPA promulgated Subpart QQQ on November 23, 1988. 53 *Fed. Reg.* 47623.

46. 40 C.F.R. § 60.690(a) states that the provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

47. 40 C.F.R. § 60.692-2(a)(1) states that each drain shall be equipped with water seal controls.

48. 40 C.F.R. § 60.692-2(a)(2) states that each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

49. 40 C.F.R. § 60.692-2(a)(5) states that whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in 40 C.F.R. § 60.692-6.

50. 40 C.F.R. § 60.692-2(b)(1) states that junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

51. 40 C.F.R. § 60.692-2(b)(2) states that junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

52. 40 C.F.R. § 60.692-2(b)(3) states that junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

53. 40 C.F.R. § 60.692-2(b)(4) states that if a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 C.F.R. § 60.692-6.

54. 40 C.F.R. § 60.692-2(c)(1) states that sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

55. 40 C.F.R. § 60.692-2(c)(2) states that the portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

56. 40 C.F.R. § 60.692-2(c)(3) states that whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 C.F.R. § 60.692-6.

57. 40 C.F.R. § 60.698 sets forth the semi-annual reporting requirements of Subpart QQQ, including a requirement to report all inspections when a water seal was dry or otherwise breached, or when cracks, gaps, or other problems were identified that could result in VOC emissions.

NSPS Subpart Kb

58. 40 C.F.R. § 60.112b(a)(2)(ii) requires that on an external floating roof tank, “[a]utomatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports...Automatic bleeder vents and rim space vents are to be gasketed...”

Title V

59. Pursuant to Section 502(a) of the CAA, 42 U.S.C. § 7661a(a), it is unlawful for any person to, among other things, operate a major source subject to Title V except in compliance with a Title V operating permit after the effective date of any permit program approved or promulgated under Title V of the CAA. EPA first promulgated regulations governing state operating permit programs on July 21, 1992. *See* 57 *Fed. Reg.* 32295; 40 C.F.R. Part 70. EPA promulgated regulations governing the federal operating permit program on July 1, 1996. *See* 61 *Fed. Reg.* 34228; 40 C.F.R. Part 70.

60. 40 C.F.R. § 70.7(b) states that, with minor exceptions inapplicable to the violations alleged herein, “no part 70 source may operate after the time that it is required to submit a timely and complete application under an approved permit program, except in compliance with a permit issued under a part 70 program.”

61. EPA gave final interim approval to the Illinois Title V Permit program, effective March 7, 1995. 60 *Fed. Reg.* 12478 (March 7, 1995). EPA fully approved the Illinois Title V Permit program, effective November 30, 2001. 66 *Fed. Reg.* 62946 (December 4, 2011). Illinois’ Title V Permit program requirements are codified at IAC Title 35, Part 270.

62. The Illinois Environmental Protection Agency (IEPA) issued a Title V Permit to the Refinery on November 7, 2003 (Title V Permit). This permit is still the effective Title V Permit for the Refinery.

63. Section 5.0 of the Permit is titled “Overall Source Conditions.” Condition 5.2.7 of the Title V Permit states that the requirements of 40 C.F.R. Part 61, Subpart FF are applicable because the source is a petroleum refinery with a total annual benzene quantity in excess of 10 megagrams per year, and that P66 has chosen to comply with the compliance option set forth at 40 C.F.R. § 61.342(e)(2).

Factual Background

64. WRB Refining LP owns a petroleum refinery at 900 South Central Avenue, Roxana, Illinois (the Refinery). Phillips 66 Company operates the Refinery.

65. The Refinery is subject to requirements at Part 61, Subpart FF.

66. The Refinery is a facility with a total annual benzene quantity of greater than 10 Mg/yr since at least 2005.

67. P66 operates individual drain systems and associated junction boxes and oil-water separators at the Refinery that have been constructed, modified, or reconstructed after May 4, 1987, and are subject to NSPS Subpart QQQ.

68. EPA conducted an on-site Subpart FF and Subpart QQQ inspection on July 24-27, 2023 (July 2023 Inspection) at the Refinery.

69. In reports required by 40 C.F.R. § 61.357 (BWON report), P66 reported the following controlled and uncontrolled total annual benzene quantities in Mg/yr for the listed calendar years:

- a. 2022: Controlled – 340, Uncontrolled – 4.24
- b. 2021: Controlled – 376, Uncontrolled – 4.32
- c. 2020: Controlled – 352, Uncontrolled – 4.99
- d. 2019: Controlled – 245, Uncontrolled – 3.11

70. The table below summarizes the Subpart FF detectable emissions that EPA identified using Method 21 monitoring during its July 2023 Inspection:

Row #	Location Description	EPA's Reading (ppm)	Phillips 66's Reading (ppm)	Additional Notes
1	Seal on LLS	42,000		-
2	Cover plate, Tag B10042	85,000	Confirmed.	-
3	CPI hatch	533		-
4	Conservation vent/vacuum breaker on CPI	2,100	Not confirmed.	-
5	WWTP API Sump Tag 13697	1,103	4,090	-
6	WWTP API Sump west side of two North plates	90,000	Confirmed.	-
7	WWTP API Sump between two north eastern plates	650	Confirmed.	-
8	WWTP API Sump east side	2,300	4,400	-
9	WWTP API Sump center of plates	1,253	Confirmed.	-
10	WWTP API Sump center of south plates	1,300	6,012	-
11	WWTP API Sump north side of north plate	60,000	Confirmed.	Summa canister sample collected.
12	WWTP API Sump northeast corner of southwest plate	7,000	19,289	-
13	Mixed tank #2 cap on south end of tank	86,000	30,000	-
14	DNF sump northwest edge	3,000	Confirmed.	-
15	DNF sump west edge	600	Confirmed.	-
16	DNF sump southwest edge	1,400	Confirmed.	-
17	DNF sump southwest edge	700	Confirmed.	-
18	DNF sump southwest edge	1,100	Confirmed.	-

19	DNF sump west plate	550	532	-
20	DNF sump center plate	1,200	Confirmed.	-
21	DNF sump east plate	1,200	1,461	-
22	Tag 10050	70,000	68,000	-
23	Tag 10050 second interface	36,000	91,000	-
24	Tag 10050 third interface	11,100	9,000	-
25	Tag 10050 fourth interface	7,150	10,000	-
26	Diamond head plate on LLS	7,500	Not confirmed.	-
27	South bar screen cover south end	2,800	2,300	-
28	South bar screen cover north end	600	1,300	-
29	Seam between B10223 and B10221	1,102	17,000	-
30	North bar screen cover south end	700	500	-
31	North bar screen cover north end	2,700	2,000	-
32	North bar screen back side	2,600	5,800	-
33	South bar screen back side	2,800	1,300	-
34	B10108 on LLS	9,800	Confirmed.	Summa canister sample collected.
35	B10329	3,500	Not confirmed.	-
36	B16025	1,200	883	-
37	B13605	6,000	Confirmed.	-
38	B13575	800	Not confirmed.	-
39	B16068	3,000	2,895	-
40	B16022	3,000	2,449	-
41	B13574	1,100	2,063	-
42	B16006	1,100	Confirmed.	-
43	DNF #3 northwest center circle	2,400	Not confirmed.	-
44	DNF #1 crack on patch between P-1191 and P-1192	11,700	11,270	Visible oil came out of crack when the cover plate was stepped on.
45	Plate on P-1192	540	514	-
46	DNF #1 pinhole on outer seam	15,500	2,600	-
47	West API bolt on east side	1,652	29,752	-
48	West API northwest side unsealed seam	1,443	2,000	-
49	West API north side of seam	541	Not confirmed.	-
50	West API northeast corner of seam	521	900	-
51	West API northwest plate	1,886	1,800	-
52	West API pump/gearbox 5020-6201	42,000	96,293	Summa canister sample collected.
53	Veolia Mix Tank 2 conservation vent	995	2,800	-

54	Septic offloading east side concrete wall	1,248	3,735	-
55	Septic offloading east side concrete wall plate seam	6,000	89,407	-
56	Septic offloading east side concrete wall plate seam	1,400	1,013	-
57	Septic offloading east side concrete wall plate seam	80,000	Confirmed.	Gap in epoxy.
58	DNF #1 southeast side overflow	15,500	26,000	-
59	Tank D-54 vacuum breaker B27506	14,000	19,387	-
60	Tank D-53 vacuum breaker B26694	59,000	5,457	-
61	Tank D-52 vacuum breaker B11354	4,400	95,783	-
62	Tank C-77 EV	2,100	1,363	-
64	Tank B-121 vacuum breaker	8,000	689	-
65	Site 9.5	2,275	24,237	Cover had missing caulk. Summa canister sample collected. TVA reading was 92,600 when sample was collected.
66	East API vacuum breaker B28232	980	568	Vacuum breaker is partially insulated.
67	East API B23909	3,700	1,374	-
68	West API	92,600	96,340	-
69	ULD Sump	21,000	10,609	-

71. The table below summarizes the Subpart QQQ visual defects that EPA identified during its July 2023 Inspection:

Row #	Process Unit	Drain Number	Observation
1	Aromatics ULD	3	Too much steam to see water seal.
2	Aromatics ULD	4	Too much steam to see water seal.
3	Aromatics ULD	5	Too much steam to see water seal.
4	Aromatics ULD	6	Too much steam to see water seal.
5	Aromatics ULD	7	Too much steam to see water seal.
6	Aromatics ULD	10	Too much steam to see water seal.
7	Aromatics ULD	11	Debris in drain.
8	Aromatics ULD	12	Debris in drain.
9	VF5	8	Too much steam to see water seal.
10	VF5	9	Too much steam to see water seal.
11	VF5	17	Can't see water seal due to equipment.

12	VF5	20	Can't see water seal due to equipment.
13	VF5	31	Oily liquid.
14	VF5	37	Debris in drain.
15	VF5	38	Oily liquid.
16	VF5	43	Debris in drain.
17	VF5	48	Too much steam to see water seal.
18	VF5	49	Debris in drain.
19	DC&H	1	Oily liquid.
20	DC&H	2	Oily liquid.
21	DC&H	6	Too much steam to see water seal.
22	DC&H	9	Too much steam to see water seal.
23	DC&H	13	Debris in drain.
24	DC&H	15	Debris in drain.
25	DC&H	16	Debris in drain.
26	DC&H	24	Water level too low to see or dry drain.

72. During the July 2023 inspection, EPA observed Tank A-149 with an optical gas imaging camera. Three of the four self-centering vacuum breakers on the tank were observed to be venting hydrocarbons.

73. During the July 2023 inspection, EPA observed numerous visual deficiencies throughout the controlled waste management unit, including:

- a. many leak interfaces on waste management units where caulk was being used to try to seal the interface, but the caulk was old, dried out, cracked, and/or excessive caulking had been applied in an attempt to seal the interface;
- b. oily liquid and/or staining at various locations within the controlled waste management units, including on the DNF effluent sump, where an EPA inspector stepped onto the cover and oil seeped out of a crack in the cover;
- c. a hole in a large diamond plate at the lower lift station;
- d. The p trap for WWTP 100001 drain was observed to be dry and had odors coming from it, and EPA measured 2,600 ppm in the drain and P66 measured 6,000 ppm in the drain; and
- e. missing bolts which are necessary to ensure a tight seal at various locations within the controlled waste management units.

74. During or as follow-up to the July 2023 inspection, P66 identified several points of generation which had not previously been identified or included as uncontrolled streams in its TAB:

- a. EPA observed active flow of oily liquid into a drain near tank D-53 and monitored 12,000 ppm from the drain. P66 confirmed a reading of over 500 ppm. P66 also confirmed that a tri line or an automated water draw valve can be used to decant water from the D-Tanks, and that the use of the tri line is uncontrolled

under BWON. The D-53 tri line had not been included in the Refinery's BWON reports for 2019 through 2022.

- b. During the July 2023 inspection, EPA observed active liquid draining from tank D-54 via a flex hose. P66 confirmed that the material being drained with the flex hose was the centrate (water phase back from the lower lift station) from the Multiple Season Installation three-phase centrifuges. P66 did not have any data on when the flex hose was installed or when it is used. The D-54 flex hose is uncontrolled under BWON and P66 had not included it in the Refinery's BWON reports for 2019 through 2022.
- c. Tank B-121 is a controlled tank which sends process water back to the lower lift station via an uncontrolled process sewer. During the July 2023 inspection, EPA measured 645 ppm from this drain and P66 measured 566 ppm. This wastewater stream is uncontrolled under BWON and P66 had not included it in its TAB reports for 2019 through 2022.

75. The 2022 BWON report identified the below-listed 5 waste streams routed to process sewers as controlled for BWON, but during the July 2023 inspection, P66 told EPA that there are no controlled process sewers at the Refinery:

- a. P-69205/6 Pump Seal Piping Detail to Process Sewer
- b. V-1840 1st Stage Desalter Brine to Process Sewer
- c. V-1841 2nd Stage Desalter Brine to Process Sewer
- d. FSVOC-A-STK Flare A Stack (West) to Process Sewer
- e. FSVOC-B-STK Flare B Stack (East) to Process Sewer

76. During the July 2023 inspection, EPA requested that P66 provide the engineering design documentation required by 40 C.F.R. § 61.356(d). P66 was unable to locate or provide the requested documentation.

77. During the July 2023 inspection, EPA inspectors observed two manway covers subject to Subpart QQQ that were not sealed.

78. During the annual Method 21 testing conducted by P66 covering the period from January 1, 2019 through June 30, 2023, P66 identified 774 instances of detectable emissions above 500 ppm, as summarized below:

- a. January 1, 2019 – December 31, 2019: 199
- b. January 1, 2020 – December 31, 2020: 151
- c. January 1, 2021 – December 31, 2021: 225
- d. January 1, 2022 – December 31, 2022: 152
- e. January 1, 2023 – June 30, 2023: 47

79. Of the 774 detectable emissions found by P66 from January 1, 2019 through June 30, 2023, 700 had an initial attempt at repair which included only cleaning the component or leak area. 200 second and/or third attempts at repair also included only cleaning the component.

80. In the third quarter 2019 BWON report, submitted October 18, 2019, P66 reported 5 instances where the carbon adsorber systems were not changed out within the predetermined interval as described in 40 C.F.R. § 61.354(d).

81. P66 samples the inlets to the activated sludge unit (ASU) from the CH-278 tank and the A-149 tank monthly and analyzes the benzene concentration of the samples as part of its determination that the inlet to the ASU is less than 10 ppm of benzene. During the July 2023 inspection, EPA requested and P66 subsequently provided the results of this sampling. The results for February 2022, March 2022, April 2022, and February 2023 for CH-278 were all greater than 10 ppm of benzene. Additionally, the sampling results indicate that P66 is not properly sampling all of the sources to the ASU.

82. In semiannual Subpart QQQ reports submitted by P66, P66 reported the following deficiencies:

- a. January 1, 2020 – June 30, 2020: 14 drains had water added
- b. July 1, 2020 – December 31, 2020: 11 drains had water added
- c. January 1, 2021 – June 30, 2021: 9 drains had water added
- d. July 1, 2021 – December 31, 2021: 26 drains had water added
- e. January 1, 2022 – June 30, 2022: 18 drains had water added
- f. July 1, 2022 – December 31, 2022: 22 drains had water added
- g. January 1, 2023 – June 30, 2023: 39 drains had water added

83. Of the findings identified in Paragraph 82 above, the below-listed drains have repeatedly been found dry, but no permanent repair has been made to prevent recurrence:

- a. PSH045 in Merox: water added 13 times
- b. PSH043 in Merox: water added 6 times
- c. PSH041 in Merox: water added 4 times
- d. PSH071 in NP Vols Tues: water added 8 times
- e. PSH070 in NP Vols Tues: water added 4 times
- f. PSH04 in ULD2: water added 12 times
- g. PSH03 in ULD2: water added 11 times
- h. PSH033 in VF5 DCNH: water added 12 times
- i. PSH020 in VF5 DCNH: water added 9 times
- j. PSH021 in VF5 DCNH: water added 4 times

84. P66's Subpart QQQ semiannual reports have only reported instances when drains were found dry and have not reported other instances of breached drains or other issues that could affect VOC emissions (*e.g.*, instances when drains were found with debris).

Violations

BWON NESHAPE Violations

85. Based on the detectable emissions identified by EPA during EPA's July 2023 Inspection (Paragraph 70), and by P66 in its BWON reports covering January 1, 2019 through June 30, 2023

(Paragraph 78), P66 failed to ensure that all covers and openings were designed to operate with no detectable emissions, as required by 40 C.F.R. §§ 61.343(a)(1)(i)(A), 61.344(a)(1)(i)(A), 61.345(a)(1)(i), 61.346(a)(1)(i)(A), and 61.347(a)(1)(i)(A), and the Refinery's Title V Permit.

86. Based on the detectable emissions and visual deficiencies identified by EPA during the July 2023 Inspection (Paragraphs 70 and 73), P66 failed to ensure that each opening in the fixed roof or cover was maintained in a closed, sealed position, in violation of 40 C.F.R. §§ 61.343(a)(1)(i)(B), 61.344(a)(1)(i)(B), 61.345(a)(1)(ii), 61.346(a)(1)(i)(B) 61.347(a)(1)(i)(B), and the Refinery's Title V Permit.

87. As described in Paragraph 75, P66 failed to the control five process sewers which it has designated as controlled, in violation of 40 C.F.R. § 61.346.

88. As described in Paragraph 76, P66 failed to create or maintain engineering design documentation when using control equipment in accordance with 40 C.F.R. §§ 61.343 through 61.347, that is installed on the waste management unit, in violation of 40 C.F.R. § 61.356(d) and the Refinery's Title V Permit.

89. Based on the number of visual inspection failures identified in Paragraph 73 (during EPA's July 2023 Inspection), P66 failed to properly conduct monthly visual inspections, in violation of 40 C.F.R. §§ 61.343(c), 61.344(b), 61.345(b), 61.346(a)(2), 61.347(a)(2), and the Refinery's Title V Permit.

90. By not conducting the proper monthly visual inspections of the individual drain systems, junction boxes, and sewers, as described in Paragraph 89, and by only cleaning components in response to detectable emissions, as described in Paragraph 79, P66 failed to make necessary and timely repairs, in violation of 40 C.F.R. §§ 61.343(d), 61.344(c), 61.345(c), 61.346(a)(3), 61.347(a)(3), and the Refinery's Title V Permit.

91. Based on the violations identified in Paragraphs 70, 72 through 75, 78 through 80, 85, 86, and 87, as well as the improper design of many waste management units in the wastewater treatment plant for at least the period of 2005 through July 2023, P66 failed to comply with the 6.0 Mg/yr control option, in violation of 40 C.F.R. § 61.342(e) and (e)(2)(i), and the Refinery's Title V Permit.

92. By not designing and/or operating each waste management unit with no detectable emissions, P66 failed to route all emissions to a closed-vent system, in violation of 40 C.F.R. §§ 61.343(a)(1), 61.344(a)(1), 61.346(a)(1), and 61.347(a)(1), and the Refinery's Title V Permit.

93. By identifying leaks above the no detectable emissions standard for waste management units, and not calculating a quantity of uncontrolled benzene for these leaks, P66 failed to demonstrate compliance with the uncontrolled emissions level, in violation of 40 C.F.R. §§ 61.355(k) and 61.342(e)(2)(i), and the Refinery's Title V Permit.

94. Due to the significant visible defects and detectable emissions reported by P66 (Paragraph 78) and observed by EPA during the September 2023 Inspection (Paragraphs 70 and 73), which allow for volatilization of the benzene, and the CH-278 tank outlet benzene concentration sampling results (Paragraph 81), P66 failed to demonstrate compliance with the removal of benzene from waste streams to a level less than 10 ppmw, as required by 40 C.F.R. § 61.348(b)(2)(i).

95. Due to the improper determination of the ASU inlet benzene concentration (Paragraph 81), P66 failed to properly determine the benzene content of each waste stream entering the ASU as required by 40 C.F.R. §§ 61.348(b)(2)(i) and 61.355(c).

96. By not identifying all points of generation and by failing to include all points of generation in the total annual benzene report (Paragraph 74), P66 failed to accurately account for all waste streams in its total annual benzene report as required by 40 C.F.R. §§ 61.342(e), 61.355(a)(3), and 61.357(a)(1).

97. As described in Paragraph 80, P66 failed to change out all carbon adsorber systems within the predetermined interval, in violation of 40 C.F.R. § 61.354(d).

98. P66 failed to maintain the vacuum breakers of Tank A149 in the closed position while the roof was floating, as described in Paragraph 72, in violation of 40 C.F.R. §§ 60.112b(a)(2)(ii) and 61.351(a)(2) and the Refinery's Title V Permit.

NSPS Subpart QQQ Violations

99. As described in Paragraphs 71 and 82, P66 failed to maintain water seal controls on each drain, in violation of 40 C.F.R. § 60.692-2(a)(1) and the Refinery's Title V Permit.

100. Based on the number of visual inspection failures identified in Paragraph 73 (during EPA's July 2023 Inspection), P66 failed to properly conduct monthly visual inspections, in violation of 40 C.F.R. § 60.692-2(a)(2), (b)(3), and (c)(2) and the Refinery's Title V Permit.

101. By not conducting the proper monthly visual inspections of the individual drain systems, junction boxes, and sewers, P66 failed to make necessary and timely repairs, in violation of 40 C.F.R. § 60.692-2(a)(5), (b)(4), and (c)(3), and the Refinery's Title V Permit.

102. As described in Paragraph 83, P66 failed to complete repairs of the water seals, in violation of 40 C.F.R. § 60.692-2(a)(5).

103. P66 failed to maintain the junction boxes (including the manhole covers to the junction box) identified in Paragraph 77 with a seal as required by 40 C.F.R. § 60.692-2(b)(2).

104. As described in Paragraph 84, P66 failed to report all inspections when a water seal was found dry or otherwise breached, in violation of 40 C.F.R. § 60.698(c).

Environmental Impact of Violations

105. Violations of benzene standards increase the amount of benzene in the atmosphere. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, and headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidences of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene.

106. Violations of VOC standards increase the amount of a pollutant which has the ability to create photochemical smog under certain conditions.

**MICHAEL
HARRIS**

Digitally signed by
MICHAEL HARRIS
Date: 2024.03.26
15:51:36 -05'00'

Michael D. Harris
Division Director
Enforcement and Compliance Assurance Division