



Shell Chemical Appalachia LLC
300 Frankfort Rd
Monaca, PA 15061

April 18, 2023

Director
Air Protection Section
Mail Code 3AP00
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Mark Gorog, P.E., Air Quality Program Regional Manager
Pennsylvania Department of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222 1650

**RE: Shell Chemical Appalachia LLC
Shell Polymers Monaca Site
Potter and Center Townships, Beaver County
Plan Approval PA-04-00740A & C
Revised Initial Report for 40 CFR Part 61 Subpart FF
National Emission Standard for Benzene Waste Operations**

Mark:

On December 22, 2023, Shell Chemical Appalachia LLC (Shell) provided its initial report for 40 CFR Part 61, Subpart FF – National Emission Standard for Benzene Waste Operations (BWON). Shell is revising its initial report for the aqueous waste streams at the facility based on estimates associated with current operations.

Based on vendor design data, Shell will generate approximately 60.0 Mg/year of benzene in its waste and wastewater. The plant is equipped with strippers in combination with the onsite wastewater treatment facility that controls benzene emissions in wastewater. Shell will utilize the compliance option under 40 CFR 61.342(e), which is known as the Benzene Quantity 6 Mg/year (i.e. the “BQ6”) option.

With this submittal I certify that the equipment necessary to comply with applicable BWON wastewater provisions have been installed. The required initial and quarterly inspections have been conducted in 2Q2023. Note, as the site continues to work to ramp production to its normal operation, once at maximum rates Shell may choose to update this information in its annual report with sampling data. As per the provisions at 40 CFR 61.357(a), attached is a table that summarizes the regulatory status of each benzene containing BWON regulated waste stream.

Please contact me at 724.709.2467 or Kimberly.kaal@shell.com if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Kimberly Kaal", with a long horizontal flourish extending to the right.

Kimberly Kaal

Environmental Manager, Attorney-in-Fact

Attachment: Revised Initial BWON Source List

Table 1 - Total Annual Benzene (TAB) quantity, as determined by §61.355(a)
Shell Polymers Monaca

ID #	Controlled	Water Content	Estimated Water Content, %**	Type of Waste	Point of Waste Generation	Next downstream vessel, where is the waste stream is routed	Flow (m ³ /hr)	Annual Waste Quantity (gallons)	Aqueous Benzene Concentration (mg/l)	Organic Benzene Concentration (mg/l)**	Range of Benzene Concentration (µg/yr) [§61.357(a)(2)]	Annual Average Flow-Weighted Benzene Concentration (mg/yr) [§61.357(a)(3)]	Annual Benzene Quantity (kg/yr) [§61.357(a)(1)]
1	Yes	Yes	100%	Process	Exit of Spent Caustic Separator V-13411	Spent Caustic Stripper C-13501	4.7	31,976.689	800	N/A	N/A	31,976.689	1,215E-01
2	Yes	Yes	100%	Process	Exit of Spent Caustic Separator V-13432	Spent Caustic Stripper C-13501	4.7	31,976.689	800	N/A	N/A	31,976.689	1,215E-01
3	Yes	Yes	100%	Process	Exit of Process Water Condenser V-12832	Process Water Condenser V-12832	18.0	431,866.556	<2*	N/A	0-5ppm	800	3,884E-01
4	Yes	Yes	100%	Process	Exit of Liquid-Liquid Separator V-12833	Flow Equalization Oil Recovery (FEOR) Tanks A/B	2.0	4,628.293	<2*	N/A	0-5ppm	2	3,194E-02
5	Yes	Yes	100%	Process	Exit of High Pressure Flow V-59001	Flow Equalization Oil Recovery (FEOR) Tanks A/B	NA	12000	<2*	N/A	0-5ppm	2	9,084E-02
6-4	No	Yes	100%	Process	Wash water runoff from EQU/OSBL Units	Flow Equalization Box T-59703	26.0	57,853.668	<2*	N/A	0-5ppm	2	4,380E-01
18	Yes	Yes	100%	Process	Exit of Gasoline/H2O Separator V-15831	Gasoline/H2O Separator V-12831	0.5	1,157.073	<2*	N/A	0-5ppm	2	8,295E-01
20	Yes	Yes	100%	Process	Exit of Gasoline/H2O Separator V-12831	Process Water Condenser V-12832	223	516,054.719	<2*	N/A	0-5ppm	2	3,907E-01
21	No	Yes	100%	Blowdown	Furnace Steam	Furnace Steam Drums	0.5	1,157.073	<2*	N/A	0-5ppm	2	8,295E-01
TA-1	Yes	Yes	10%	Turnaround	Heavy Hydrocarbon Absorber (column bottoms) C-13001	Off-site Disposal	NA	518	285	28,500	27,000-30,000 ppm	25,679	5,033E-02
TA-2	Yes	Yes	100%	Turnaround	Water/H/C Heater (exchanger tubes side) E-13054	Off-site Disposal	NA	100	28,500	0	27,000-30,000 ppm	28,500	1,079E-02
TA-3	Yes	Yes	10%	Turnaround	Water/H/C Heater (exchanger shell side) E-13054	Off-site Disposal	NA	100	0.4	35	20-50 ppm	32	1,194E-05
TA-4	Yes	Yes	50%	Turnaround	Gasoline/Water Separator V-12831	Off-site Disposal	NA	240	900	28,500	0-1800 ppm	14,700	1,335E-02
TA-5	Yes	Yes	100%	Turnaround	Quench Water Side Stream Filter S-12863	Off-site Disposal	NA	160	900	0	0-1800 ppm	900	5,400E-04
TA-6	Yes	Yes	10%	Turnaround	Liquid - Liquid Separator V-12833	Off-site Disposal	NA	400	900	90,000	0-1800 ppm	81,000	1,228E-01
TA-7	Yes	Yes	10%	Turnaround	Coalescer Prefilter I S-12863A/B	Off-site Disposal	NA	500	900	90,000	0-1800 ppm	81,000	1,535E-01
TA-8	Yes	Yes	10%	Turnaround	Coalescer Filter I S-12862 A/B	Off-site Disposal	NA	500	900	90,000	0-1800 ppm	81,000	1,535E-01
TA-9	Yes	Yes	10%	Turnaround	Pyrolysis Gasoline Pump I P-12877 A/B	Off-site Disposal	NA	100	900	90,000	0-1800 ppm	900	3,099E-02
TA-10	Yes	Yes	100%	Turnaround	Process Water Pump I P-12876 A/B	Off-site Disposal	NA	100	900	90,000	0-1800 ppm	900	3,099E-02
TA-11	Yes	Yes	100%	Turnaround	Warm Quench Water Pumps P-12873 A/B	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-12	Yes	Yes	100%	Turnaround	Cold Quench Water Pumps P-12872 A/B	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-13	Yes	Yes	100%	Turnaround	Process Water Stripper Feed Preheater E-13014	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-14	Yes	Yes	100%	Turnaround	Process Steam Generator E-13011A	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-15	Yes	Yes	100%	Turnaround	Process Steam Generator E-13011B	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-16	Yes	Yes	100%	Turnaround	Process Steam Generator E-13011C	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-17	Yes	Yes	100%	Turnaround	Process Steam Generator E-13011D	Off-site Disposal	NA	500	3	0	0-60 ppm	3	3,407E-06
TA-18	Yes	Yes	100%	Turnaround	Process Water Pump II P-12071B	Off-site Disposal	NA	100	3	0	0-60 ppm	3	3,407E-06
TA-19	Yes	Yes	100%	Turnaround	Process Water Pump II P-12071A	Off-site Disposal	NA	100	3	0	0-60 ppm	3	3,407E-06
TA-20	Yes	Yes	100%	Turnaround	Process Water Preheater V-13015	Off-site Disposal	NA	100	3	0	0-60 ppm	3	3,407E-06
TA-21	Yes	Yes	100%	Turnaround	Process Steam Separator V-13031	Off-site Disposal	NA	460	3	0	0-60 ppm	3	1,136E-06
TA-22	Yes	Yes	100%	Turnaround	Process Water Blowdown Cooler I E-13015	Off-site Disposal	NA	460	3	0	0-60 ppm	3	1,136E-06
TA-23	Yes	Yes	10%	Turnaround	Process Water Blowdown Cooler II E-13012 A/B	Off-site Disposal	NA	500	3	300	0-60 ppm	3	4,542E-07
TA-24	Yes	Yes	10%	Turnaround	Process Water Stripper C-13001	Off-site Disposal	NA	500	3	300	0-60 ppm	270	4,542E-07
TA-25	Yes	Yes	10%	Turnaround	Spent Caustic Gasoline Separator V-13431	Off-site Disposal	NA	100	3	300	0-60 ppm	270	5,115E-04
TA-26	Yes	Yes	10%	Turnaround	Spent Caustic Gasoline Separator II V-13432	Off-site Disposal	NA	100	3	300	0-60 ppm	270	5,115E-04
TA-27	Yes	Yes	90%	Turnaround	Gasoline Condensate Drum, cont. process water V-15831	Off-site Disposal	NA	132	900	225,000	0-1800 ppm aqueous; 170,000-450,000 ppm organic	23,310	1,023E-04
TA-28	Yes	Yes	10%	Turnaround	Gasoline Condensate Drum V-15831	Off-site Disposal	NA	500	900	90,000	0-1800 ppm	81,000	1,535E-01
TA-29	Yes	Yes	10%	Turnaround	Condensate Lift Station V-15852	Off-site Disposal	NA	100	900	90,000	0-1800 ppm	81,000	3,099E-02
TA-30	Yes	Yes	10%	Turnaround	Light Gasoline Pumps P-15877 A/B	Off-site Disposal	NA	100	900	90,000	0-1800 ppm	81,000	3,099E-02

Total TAB (61.357(a)(1)) 59.23 (kg/yr)

Notes:
 The streams represented are limited to the waste streams subject to §61.344 that contain benzene as determined by the procedures specified in §61.355(c)
 * Vendor design data identifies that no benzene should be contained in this material; thus, for the purposes of estimating potential benzene quantities for this submittal concentration was estimated to be 2 ppm.
 ** When a waste stream contained an organic contribution (i.e., is not 100% aqueous) and neither vendor design data nor process knowledge was able to provide a representative benzene concentration, for conservatism it was assumed the benzene concentration in the organic phase was 100x the aqueous phase concentration.