42-045-00070

Owen Supplee

Monroe Energy

Monroe Energy, L.L.C.
4101 Post Road
Trainer, PA 19061
(610) 364-8000

RECEIVED
APR 7 2015
Air Protection Division

April 4, 2015

James Rebarchak
Regional Air Program Manager
PA Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

Re: Monroe Energy, LLC – Trainer Refinery
40 CFR 61, Subpart FF: Annual Report per §61.357
Reporting Period: January 1, 2014 – December 31, 2014

Dear Mr. Rebarchak:

Monroe Energy, LLC – Trainer Refinery (Monroe Energy) transmits with this letter the annual report required by the Benzene Waste Operations NESHAP (BWON) regulations at 40 CFR §61.357(d)(2), (d)(5) and (d)(8). This report covers the timeframe starting on January 1, 2014 through December 31, 2014. Please note that there are two (2) parts to this annual report. They are as follows:

1. The 2014 annual inspection and monitoring summary required by 40 CFR §61.357(d)(8). Please note that during the reporting period no annual detectable emission (NDE) monitoring leaks were identified.

   During the reporting period, five (5) corrective actions were made resulting from deficiencies identified during quarterly visual inspections:

   - A valve on a 4" aboveground line at the Crude/BTU area (ID # 4420-R-02-014 (3-13)) was observed to be missing a plug on August 11, 2014. The plug was replaced the same day.

   - A valve on 3" aboveground line at the Crude/BTU area (4420-R-02-014 (4-13)) was observed to be missing a plug on August 11, 2014. The plug was replaced on the same day.

   - A valve on a 6" aboveground line at the Crude/BTU area (ID # 4420-R-02-014 (11-13)) was observed to be missing a plug on September 3, 2014. The plug was replaced on September 11, 2014.

   - A valve on a 4" aboveground line at the Crude/BTU area (ID # 4420-R-02-014 (12-13)) was observed to be missing a plug on September 3, 2014. The plug was replaced on September 11, 2014.

   - A valve on a 4" aboveground line at the Crude/BTU area (ID # 4420-R-02-014 (12-13)) was observed to be missing a plug on September 3, 2014. The plug was replaced on September 11, 2014.

As reported in the quarterly reports required by 40 CFR§ 61.357(d)(6), all inspections and NDE monitoring required by 40 CFR §61.343 -40 CFR §61.354 have been completed for calendar year 2014.

2. The 2014 total annual benzene (TAB) report required by 40 CFR §61.357(d)(2) and 40 CFR §61.357(d)(5). This report is included as Attachment A.

Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and complete for the period of January 1, 2014 to December 31, 2014.

If you have any questions about this report or need additional information, please contact Stephani Ski Szymanski, Environmental Engineer, or Matt Torell, Environmental Lead at 610-364-8399.

Sincerely,

Jeffrey K. Warmann
CEO & President

Enclosure

Cc: Office of Air Enforcement & Compliance Assistance
U.S. EPA, Region 3
Mail Code 3AP20
1650 Arch Street
Philadelphia, PA 19103-2029
Via FedEx

Matt Torell (Monroe Energy)
Stephani Szymanski (Monroe Energy)

Monroe Energy

Monroe Energy, L.L.C.
4101 Post Road
Trainer, PA 19061
(610) 364-8000

Attachment A

2014 Total Annual Benzene (TAB) Report
40 CFR 61.357(d)(2)

&

6 BQ Table
40 CFR 61.357(d)(5)

Table A.1: Summary Table 2013 Total Annual Benzene (TAB) Report
Monroe Energy, LLC
Trainer, Pennsylvania

Source	Table	CY2014 TAB Quantity (Mg)	6.0 Mg Total (Mg)
Isocracker Unit	A.2	0.041	0.041
Fluidized Catalytic Cracking Unit (FCCU)	A.3	<0.001	<0.001
Platformer Unit	A.4	0.006	0.006
Alkylation Unit	A.5	<0.001	<0.001
Crude Units	A.6	100.609	0.058
Vacuum Units	A.7	0.565	<0.001
Vacuum Gas Oil (VGO) Unit	A.8	<0.001	<0.001
Kerosene Hydrotreating Unit (KHT)	A.9	34.336	<0.001
Diesel Hydrotreating Unit (DHT)	A.10	0.819	<0.001
Lowline Compressor	A.11	0.007	0.007
SunOlin Compressor	A.12	-0.00-	-0.00-
Sour Water Stripper	A.13	0.005	0.004
Process Streams Area 6	A.14	0.060	-0.00-
Tank Water Draws	A.15	6.618	0.759
Laboratory Waste	A.16	0.881	0.022
Dock Waste	A.17	0.555	0.555
Knock Engines	A.18	0.023	<0.001
Flare	A.19	0.014	-0.00-
Solid Waste	A.20	<0.001	<0.001
Spills and Miscellaneous Waste Streams	A.21	0.046	0.046
Vacuum Truck Waste	A.22	2.267	-0.00-
Pump Maintenance	A.23	0.017	0.017
Exchanger Maintenance	A.24	0.046	0.046
Compressor Maintenance	A.25	<0.001	<0.001
Tanker Truck Waste	A.26	<0.001	<0.001
Railcar Waste	A.27	0.523	0.523
Turnaround Waste	A.28	0.015	0.015
	Total:	**147.454**	**2.101**

Table A.2: 2014 Process Waste Streams, Isocracker Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Stream Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/l)	Organic Benzene (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
21-V-20	Deethanizer Feed Drum Water Draw	Uncontrolled	OWS	90	10	0.57	0.1	50	25	75	3.1	7.98	0.125	<0.001	<0.001
21-V-18	Fuel Gas KO Drum	Uncontrolled	OWS	90	10	0.73	32	3,150	1,575	4,725	265	8.11	0.040	0.020	0.020
NA	Combined Feed Sample Station	Uncontrolled	OWS	0	100	0.88	0	5,100	190	11,500	5,100	7.34	<0.001	0.006	0.006
NA	Second Stage Feed Sample Station	Uncontrolled	OWS	0	100	0.88	0	5,100	190	11,500	5,100	7.34	<0.001	0.006	0.006
NA	Heavy Isocrackate Sample Station	Uncontrolled	OWS	0	100	0.76	0	3,960	260	8,100	3,960	6.34	<0.001	0.004	0.004
NA	Splitter Bottoms Sample Station	Uncontrolled	OWS	0	100	0.76	0	3,080	260	8,180	3,080	6.34	<0.001	0.003	0.003
NA	Light Isocrackate Sample Station	Controlled	MACT Loop	0	100	0.66	0	19,050	5,020	228,180	19,050	5.50	-0.00-	-0.00-	-0.00-

TAB Total (Mg/yr)	6.0 Mg Total (Mg/yr)
0.041	0.041

Table A.3: 2014 Process Waste Streams, Fluidized Catalytic Cracking Unit (FCCU)
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
PV-6047	Raw Feed Drum	Uncontrolled	OWS	90	10	0.93	0.01	1.1	1	5	0.1	8.28	0.063	<0.001	<0.001
PV-7765	Dry Gas KO Pot	Uncontrolled	OWS	90	10	0.73	5	18	6	18	5.8	8.12	0.008	<0.001	<0.001
NA	FCC Feed Sample Station	Uncontrolled	OWS	0	100	0.93	0.01	1.1	1	5	1.1	7.76	<0.001	<0.001	<0.001
NA	Decant (Clarified) Oil Sample Station	Uncontrolled	OWS	0	100	1.02	0	54	54	54	54	8.51	<0.001	<0.001	<0.001
NA	Slurry Oil Sample Station	Uncontrolled	OWS	0	100	1.03	0	55	55	55	55	8.59	<0.001	<0.001	<0.001
NA	Light Cycle Oil Sample Station	Uncontrolled	OWS	0	100	0.92	0	40	1	95	40	7.67	<0.001	<0.001	<0.001
NA	Heavy Cycle Oil Sample Station	Uncontrolled	OWS	0	100	0.96	0	65	5	80	65	8.01	<0.001	<0.001	<0.001
NA	Fractionator Bottoms Sample Station	Uncontrolled	OWS	0	100	0.75	0	73	50	100	73	6.26	<0.001	<0.001	<0.001
NA	Light Cat Naphtha Sample Station	Controlled	MACT Loop	0	100	0.71	0	5,730	4,400	7,390	5,730	5.92	-0.00-	-0.00-	-0.00-
NA	Heavy Cat Naphtha Sample Station	Controlled	MACT Loop	0	100	0.80	0	2,090	1,500	3,080	2,090	6.67	-0.00-	-0.00-	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001

Table A.4: 2014 Process Waste Streams, Platformer Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
13-K-2	H_2 Compressor Case Draw	Uncontrolled	OWS	0	100	0.84	0	0.4	0	15	0.4	6.97	-0.00-	-0.00-	-0.00-
11-K-1	Naphtha H_2 Recycle Comp Seal Oil	Uncontrolled	OWS	0	100	0.87	0	218	7	250	218	7.26	<0.001	<0.001	<0.001
13-K-8T2	Platformer Debutanizer Accumulator	Uncontrolled	OWS	90	10	0.82	20	39,440	7,040	56,940	3,311	8.19	<0.001	0.001	0.001
13-K-1	Platformer H_2 Recycle Comp Seal Oil	Uncontrolled	OWS	0	100	0.87	0	218	160	250	218	7.26	<0.001	<0.001	<0.001
NA	Plat. AB Exch. Eff. Sample Station	Uncontrolled	OWS	0	100	0.85	0	7,340	880	258,370	7,340	7.09	<0.001	0.002	0.002
NA	Plat. CD Exch. Eff. Sample Station	Uncontrolled	OWS	0	100	0.85	0	7,340	880	258,370	7,340	7.09	<0.001	0.002	0.002
NA	Platformer Feed Sample Station	Controlled	MACT Loop	0	100	0.76	0	7,340	880	258,370	7,340	6.34	-0.00-	-0.00-	-0.00-
NA	Platformate Sample Station	Controlled	MACT Loop	0	100	0.82	0	47,860	7,040	71,020	47,860	6.84	-0.00-	-0.00-	-0.00-
NA	Light Reformate Sample Station	Controlled	MACT Loop	0	100	0.73	0	261,850	145,990	401,280	261,850	6.09	-0.00-	-0.00-	-0.00-
NA	Heavy Reformate Sample Station	Controlled	MACT Loop	0	100	0.86	0	2,740	260	7,570	2,740	7.17	-0.00-	-0.00-	-0.00-
NA	Naphtha Feed Sample Station	Controlled	MACT Loop	0	100	0.73	0	7,340	880	258,370	7,340	6.09	-0.00-	-0.00-	-0.00-
NA	Light Naphtha Sample Station	Controlled	MACT Loop	0	100	0.66	0	12,410	5,630	66,260	12,410	5.50	-0.00-	-0.00-	-0.00-
NA	Heavy Naphtha Sample Station	Controlled	MACT Loop	0	100	0.73	0	8,000	1,670	174,860	8,000	6.09	-0.00-	-0.00-	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.006	0.006

Table A.5: 2014 Process Waste Streams, Alkylation Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
NA	Alkylate Sample Location	Uncontrolled	OWS	0	100	0.70	0.00	0	50	0	0	5.84	<0.001	<0.001	<0.001
AV-1	Alkylation Feed Surge Drum	Uncontrolled	OWS	90	10	0.70	0.01	60	50	70	4.3	8.09	0.042	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg/yr Total (Mg/yr)
<0.001	<0.001

Table A.6: 2014
Process Waste Streams, Crude Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
01-V-1	543 1st Stage Desalter	Controlled	Brine Stripper	98	2	0.84	19	1,046	674	2,338	36	8.31	78.450	5.606	-0.00-
02-V-1	544 1st Stage Desalter	Controlled	Brine Stripper	98	2	0.84	19	1,046	674	2,338	36	8.31	78.450	5.606	-0.00-
D-543	543 Desalter Crude Surge Drum	Uncontrolled	OWS	90	10	0.84	19	1,046	674	2,338	106	8.21	0.010	0.002	0.002
D-544	544 Desalter Crude Surge Drum	Uncontrolled	OWS	90	10	0.84	19	1,046	674	2,338	106	8.21	0.010	0.002	0.002
D-543	543 Desalter Upsets	Controlled	Brine Stripper	50	50	0.84	19	1,046	674	2,338	487	7.67	0.400	0.356	-0.00-
D-544	544 Desalter Upsets	Controlled	Brine Stripper	50	50	0.84	19	1,046	674	2,338	487	7.67	0.400	0.356	-0.00-
D-543	543 Desalter Rag Tests	Uncontrolled	OWS	50	50	0.84	19	1,046	674	2,338	487	7.67	0.004	0.004	0.004
D-544	544 Desalter Rag Tests	Uncontrolled	OWS	50	50	0.84	19	1,046	674	2,338	487	7.67	0.004	0.004	0.004
21407	543 Salt Dryer KO Pot	Uncontrolled	OWS	90	10	0.84	5	49	46	52	9	8.21	0.139	0.002	0.002
21408	544 Salt Dryer KO Pot	Uncontrolled	OWS	90	10	0.84	5	49	46	52	9	8.21	0.139	0.002	0.002
D-301	543 Crude Overhead Accumulator	Controlled	544 Hotwell	90	10	0.73	19	7,340	3,170	258,370	568	8.11	40.300	44.313	-0.00-
D-401	544 Crude Overhead Accumulator	Controlled	544 Hotwell	90	10	0.73	19	7,340	3,170	258,370	568	8.11	40.300	44.313	-0.00-
NA	543 Diesel Sample Station	Uncontrolled	OWS	0	100	0.84	0	178	78	355	178	7.01	<0.001	<0.001	<0.001
NA	544 Diesel Sample Station	Uncontrolled	OWS	0	100	0.84	0	178	78	355	178	7.01	<0.001	<0.001	<0.001
NA	543 AGO Sample Station	Uncontrolled	OWS	0	100	0.87	0	63	5	880	63	7.26	<0.001	<0.001	<0.001
NA	544 AGO Sample Station	Uncontrolled	OWS	0	100	0.87	0	63	5	880	63	7.26	<0.001	<0.001	<0.001
NA	Brine Treatment Unit Bypass	Uncontrolled	OWS	98	2	1.00	19	1,046	14	62	39	8.34	0.486	0.038	0.038
NA	Brine Treatment Unit Effluent	Uncontrolled	OWS	100	0	1.00	0.009	1,046	0.003	0.025	0.009	8.34	156.900	0.003	0.003
NA	543 Kero Sample Station	Controlled	MACT Loop	0	100	0.81	0	155	29	390	155	6.76	-0.00-	-0.00-	-0.00-
NA	544 Kero Sample Station	Controlled	MACT Loop	0	100	0.81	0	155	29	390	155	6.76	-0.00-	-0.00-	-0.00-
NA	543 Naphtha Sample Station	Controlled	MACT Loop	0	100	0.73	0	7,340	3,170	258,370	7,340	6.09	-0.00-	-0.00-	-0.00-
NA	544 Naphtha Sample Station	Controlled	MACT Loop	0	100	0.73	0	7,340	3,170	258,370	7,340	6.09	-0.00-	-0.00-	-0.00-

TAB (Mg/yr)	6.0 Mg/yr Total (Mg/yr)
100.609	0.058

Table A.7: 2014 Process Waste Streams, Vacuum Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
25419	541 & 542 Vacuum Jet	Controlled	541/542 Hotwell	98	2	0.86	0.6	60	25	75	2	8.32	167.100	0.537	-0.00-
21905	544 Vacuum Jet	Controlled	544 Hotwell	98	2	0.86	0.6	60	25	75	2	8.32	8.900	0.029	-0.00-
PV-2316	Fuel Gas KO Drum	Uncontrolled	OWS	90	10	0.73	5	490	300	680	41	8.12	<0.001	<0.001	<0.001
NA	541 Vac Gas Oil (VGO) Sample Stn	Uncontrolled	OWS	0	100	0.91	0	2	1	5	2	7.59	<0.001	<0.001	<0.001
NA	542 Vac Gas Oil (VGO) Sample Stn	Uncontrolled	OWS	0	100	0.91	0	2	1	5	2	7.59	<0.001	<0.001	<0.001
NA	544 Vac Gas Oil (VGO) Sample Stn	Uncontrolled	OWS	0	100	0.91	0	2	1	5	2	7.59	<0.001	<0.001	<0.001
NA	544 Lt Vac Gas Oil (LVGO) Sample Stn	Uncontrolled	OWS	0	100	0.88	0	2	1	5	2	7.34	<0.001	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.565	<0.001

Table A.8: 2014 Process Waste Streams, Vacuum Gas Oil (VGO) Unit
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
32-K-1	H_2 Recycle Compressor Seal Oil	Uncontrolled	OWS	0	100	0.87	0	218	150	250	218	7.26	<0.001	<0.001	<0.001
NA	VGO Feed Sample Station	Uncontrolled	OWS	0	100	0.91	0	1.6	1	5	1.6	7.59	<0.001	<0.001	<0.001
NA	Stripper Feed Sample Station	Uncontrolled	OWS	0	100	0.88	0	1.6	1	5	1.6	7.35	<0.001	<0.001	<0.001
NA	Stripper Bottoms Sample Station	Uncontrolled	OWS	0	100	0.88	0	1.6	1	5	1.6	7.35	0.003	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001

Table A.9: 2014 Process Waste Streams, Kerosene Hydrotreating Unit (KHT)
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	2.0 Mg Exemption (Mg/yr)
									Min	Max					
PV-1640	Stripper OH Receiver	Controlled	544 Hotwell	20	80	0.80	15	1,340	930	1,700	1,025	7.02	20.000	34.336	-0.00-
PV-1642	Fuel Gas KO Pot	Uncontrolled	OWS	90	10	0.73	5	490	15	490	41	8.12	<0.001	<0.001	<0.001
V-1633	Kero Compressor Post Pot (MH)	Uncontrolled	OWS	100	0	1.00	2	0	1	3	2	8.34	<0.001	<0.001	<0.001
V-1733	Kero Compressor Post Pot (CS)	Uncontrolled	OWS	100	0	1.00	2	0	1	3	2	8.34	<0.001	<0.001	<0.001
PV-1738	Kero Compressor Suction KO Drum	Uncontrolled	OWS	90	10	0.82	0	2	1	3	0.2	8.19	0.003	<0.001	<0.001
NA	Kero Product Sample Station	Uncontrolled	OWS	0	100	0.82	0	155	29	390	155	6.84	<0.001	<0.001	<0.001
3-V-108	Kero Feed Drum Water Boot	Uncontrolled	OWS	95	5	0.82	15	155	29	39	20	8.27	<0.001	<0.001	<0.001
NA	Kero Feed Sample Station	Uncontrolled	OWS	0	100	0.82	0	155	29	390	155	6.84	<0.001	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg/yr Exemption (Mg/yr)
34.336	<0.001

Table A.10: 2014 Process Waste Streams, Diesel Hydrotreating Unit (DHT)
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
D-506	Diesel Overhead Receiver	Controlled	544 Hotwell	20	80	0.82	1.2	116	50	150	89	7.12	5.400	0.819	-0.00-
PV-1609	Fuel Gas KO Pot	Uncontrolled	OWS	90	10	0.90	4.9	490	15	490	49	8.25	<0.001	<0.001	<0.001
V-22130	Diesel Compressor Post Pot (CS)	Uncontrolled	OWS	90	10	0.90	0.6	0	1	3	1	8.25	<0.001	<0.001	<0.001
V-22131	Diesel Compressor Post Pot (MH)	Uncontrolled	OWS	90	10	0.90	0.6	0	1	3	1	8.25	<0.001	<0.001	<0.001
PV-2127	Diesel Recycle Compressor KO Drum	Uncontrolled	OWS	90	10	0.90	2.3	0	1	3	2	8.25	0.003	<0.001	<0.001
NA	Diesel Feed Sample Station	Uncontrolled	OWS	0	100	0.86	0	116	75	175	116	7.17	<0.001	<0.001	<0.001
NA	Diesel Product Sample Station	Uncontrolled	OWS	0	100	0.86	0	116	75	175	116	7.17	<0.001	<0.001	<0.001
NA	Diesel Reactor Out Sample Station	Uncontrolled	OWS	0	100	0.86	0	116	75	175	116	7.17	<0.001	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.819	<0.001

Table A.11: 2014 Process Waste Streams, Lowline Compressor
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
05-K-1	Lowline Compressor Sour Oil Trap	Uncontrolled	OWS	0	100	0.82	0.004	2,067	330	4,200	2,067	6.83	0.002	0.007	0.007

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.007	0.007

Table A.12: 2014 Process Waste Streams, SunOlin Compressor
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
05-K-1	SunOlin Compressor Sour Oil Trap	Exempt	OWS	0	100	0.82	0	0			0	6.83	-0.00-	-0.00-	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
-0.00-	-0.00-

Table A.13: 2014 Process Waste Streams, Sour Water Stripper
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
34-P-4B	Sour Water Stripper Bottoms to OWS	Uncontrolled	OWS	100	0	1.00	0.011	0	0	0.2	0.011	8.34	181.000	0.004	0.004
34-P-4B	SWS Bottoms to 544 Hotwell	Controlled	544 Hotwell	100	0	1.00	0.011	0	0	0.2	0.011	8.34	37.960	<0.001	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.005	0.004

Table A.14: 2014 Process Streams Area 6
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Annual Flow (gal)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
N/A	Gasoline Blender Sample Location	Controlled	Crude Tank	0	100	0.73	0	20,670	2,380	9,860	20,670	6.09	754.000	0.043	-0.00-
	Proto Tank Drain (RBOB)	Controlled	Crude Tank	0	100	0.72	0	4,965	0	10,430	4,965	6.00	300.000	0.004	-0.00-
	Proto Tank Drain (PBOB)	Controlled	Crude Tank	0	100	0.74	0	5,810	4,490	7,130	5,810	6.17	200.000	0.003	-0.00-
	Proto Tank Drain (Conv. Regular)	Controlled	Crude Tank	0	100	0.72	0	7,700	4,500	17,760	7,700	6.00	300.000	0.006	-0.00-
	Proto Tank Drain (Conv. Premium)	Controlled	Crude Tank	0	100	0.72	0	5,810	4,490	7,130	5,810	6.00	200.000	0.003	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.060	-0.00-

Table A.15: 2014 Tank Water Draws
Monroe Energy, LLC
Trainer, Pennsylvania

Tank Number	Tank Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gal)	TAB Quantity (Mg)	6.0 Mg Total (Mg)
151	Alkylate	Controlled	Vac Trk/Lt Slop	90	10	0.73	5	50	5	70	8	8.11	26,280	<0.001	-0.00-
168	Alkylate	Controlled	Vac Trk/Lt Slop	90	10	0.73	5	50	5	70	8	8.11	26,280	<0.001	-0.00-
159	Basestock	Controlled	Vac Trk/Lt Slop	90	10	0.71	98	9,800	7,830	12,060	805	8.10	52,560	0.155	-0.00-
93	Crude Oil	Uncontrolled	OWS	95	5	0.83	14	1,370	674	2,338	71	8.27	0	-0.00-	-0.00-
94	Crude Oil	Uncontrolled	OWS	95	5	0.83	28	3,384	674	2,338	169	8.27	0	-0.00-	-0.00-
95	Crude Oil	Uncontrolled	OWS	95	5	0.83	9	1,109	674	2,338	55	8.27	87,769	0.018	0.018
96	Crude Oil	Uncontrolled	OWS	95	5	0.83	10	1,224	674	2,338	61	8.27	87,769	0.020	0.020
162	Crude Oil	Uncontrolled	OWS	95	5	0.83	32	3,888	674	2,338	194	8.27	142,624	0.104	0.104
163	Crude Oil	Uncontrolled	OWS	95	5	0.83	7	844	674	2,338	42	8.27	142,624	0.023	0.023
164	Crude Oil	Uncontrolled	OWS	95	5	0.83	9	1,068	674	2,338	53	8.27	142,624	0.029	0.029
165	Crude Oil	Uncontrolled	OWS	95	5	0.83	11	1,368	674	2,338	68	8.27	142,624	0.037	0.037
166	Crude Oil	Uncontrolled	OWS	95	5	0.83	25	2,964	674	2,338	148	8.27	142,624	0.079	0.079
174	Crude Oil	Uncontrolled	OWS	95	5	0.83	25	2,940	674	2,338	147	8.27	222,557	0.123	0.123
175	Crude Oil	Uncontrolled	OWS	95	5	0.83	11	1,260	674	2,338	63	8.27	222,557	0.053	0.053
178	Crude Oil	Uncontrolled	OWS	95	5	0.83	12	1,416	674	2,338	71	8.27	142,624	0.038	0.038
181	Crude Oil	Uncontrolled	OWS	95	5	0.83	11	1,333	674	2,338	67	8.27	222,557	0.056	0.056
182	Crude Oil	Uncontrolled	OWS	95	5	0.83	9	1,111	674	2,338	55	8.27	222,557	0.046	0.046
185	Crude Oil	Uncontrolled	OWS	95	5	0.83	8	1,014	674	2,338	51	8.27	222,557	0.042	0.042
186	Crude Oil	Uncontrolled	OWS	95	5	0.83	1	138	674	2,338	7	8.27	222,557	0.006	0.006
443	Cutter Stock	Uncontrolled	OWS	90	10	0.92	1	100	100	100	10	8.27	52,560	0.002	0.002
445	Cutter Stock	Uncontrolled	OWS	90	10	0.92	1	100	100	100	10	8.27	52,560	0.002	0.002
447	Cutter Stock	Uncontrolled	OWS	90	10	0.92	1	100	100	100	10	8.27	52,560	0.002	0.002
448	Cutter Stock	Uncontrolled	OWS	90	10	0.92	1	100	100	100	10	8.27	52,560	0.002	0.002
60	Decant (Clarified) Oil	Uncontrolled	OWS	90	10	1.02	1	50	50	50	6	8.36	26,280	<0.001	<0.001
61	Cutter Stock	Uncontrolled	OWS	90	10	0.92	1	100	100	100	10	8.27	52,560	0.002	0.002
155	Diesel Fuel	Uncontrolled	OWS	90	10	0.86	1	100	100	100	10	8.22	52,560	0.002	0.002
157	Diesel Fuel	Uncontrolled	OWS	90	10	0.86	1	100	100	100	10	8.22	52,560	0.002	0.002
158	Diesel Fuel	Uncontrolled	OWS	90	10	0.86	1	100	100	100	10	8.22	52,560	0.002	0.002
152	Gasoline	Controlled	Vac Trk/Lt Slop	90	10	0.69	157	5,810	2,380	9,860	552	8.08	115,106	0.233	-0.00-
171	Gasoline	Controlled	Vac Trk/Lt Slop	90	10	0.69	157	5,810	2,380	9,860	552	8.08	115,106	0.233	-0.00-
153	Jet Fuel	Controlled	Vac Trk/Lt Slop	90	10	0.86	1	116	116	116	11	8.22	2,102	<0.001	-0.00-
160	Jet Fuel	Controlled	Vac Trk/Lt Slop	90	10	0.86	1	116	116	116	11	8.22	2,102	<0.001	-0.00-
161	Light Cat Naphtha	Controlled	Vac Trk/Lt Slop	90	10	0.65	160	5,730	4,400	7,390	530	8.05	105,120	0.203	-0.00-
99	Alkylate Wash	Uncontrolled	OWS	90	10	0.73	5	50	5	70	8.3	8.11	189,216	0.006	0.006
100	Diesel Fuel	Uncontrolled	OWS	90	10	0.86	1	100	100	100	10	8.22	189,216	0.007	0.007
101	Alkylate Wash	Uncontrolled	OWS	90	10	0.73	5	50	5	70	8.3	8.11	0	-0.00-	-0.00-
132	Reformate (Light)	Controlled	Vac Trk/Lt Slop	90	10	0.82	2,100	261,850	145,990	401,280	23,755	8.19	26,280	2.320	-0.00-
134	Reformate (Light)	Controlled	Vac Trk/Lt Slop	90	10	0.82	2,100	261,850	145,990	401,280	23,755	8.19	26,280	2.320	-0.00-
66	Naphtha	Controlled	Vac Trk/Lt Slop	90	10	0.71	55	7,340	3,170	258,370	583	8.09	38,369	0.082	-0.00-
67	Naphtha	Controlled	Vac Trk/Lt Slop	90	10	0.71	55	7,340	3,170	258,370	583	8.09	38,369	0.082	-0.00-
513	Naphtha (Wild)	Controlled	Vac Trk/Lt Slop	90	10	0.71	55	7,340	3,170	258,370	583	8.09	38,369	0.082	-0.00-
177	No.6 Fuel Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	294,336	0.003	0.003
183	No.6 Fuel Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	0	-0.00-	-0.00-
332	No.6 Fuel Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	294,336	0.003	0.003
333	No.6 Fuel Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	294,336	0.003	0.003

Table A.15: 2014 Tank Water Draws
Monroe Energy, LLC
Trainer, Pennsylvania

Tank Number	Tank Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gal)	TAB Quantity (Mg)	6.0 Mg Total (Mg)
									Min	Max					
334	No.6 Fuel Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	294,336	0.003	0.003
335	Slurry Oil	Uncontrolled	OWS	90	10	0.86	0.4	25	25	25	2.5	8.22	294,336	0.003	0.003
156	Raffinate	Controlled	Vac Trk/Lt Slop	90	10	0.95	18	1,800	1,800	1,800	188	8.30	52,560	0.037	-0.00-
170	Raffinate	Controlled	Vac Trk/Lt Slop	90	10	0.95	18	1,800	1,800	1,800	188	8.30	52,560	0.037	-0.00-
169	Reformate (Heavy)	Controlled	Vac Trk/Lt Slop	90	10	0.84	18	2,740	180	7,570	250	8.21	38,316	0.036	-0.00-
172	Reformate (Heavy)	Controlled	Vac Trk/Lt Slop	90	10	0.84	18	2,740	180	7,570	250	8.21	38,316	0.036	-0.00-
154	Toluene	Controlled	Vac Trk/Lt Slop	90	10	0.80	0.2	18	18	18	1.7	8.17	0	-0.00-	-0.00-
54	Diesel Fuel	Uncontrolled	OWS	90	10	0.86	1	100	100	100	10	8.22	294,336	0.011	0.011
55	Vacuum Gas Oil (VGO)	Uncontrolled	OWS	85	15	0.88	0.4	55	38	60	7.7	8.19	294,336	0.008	0.008
56	Vacuum Gas Oil (VGO)	Uncontrolled	OWS	85	15	0.88	0.4	55	38	60	7.7	8.19	294,336	0.008	0.008
173	Vacuum Gas Oil (VGO)	Uncontrolled	OWS	85	15	0.88	0.4	55	38	60	7.7	8.19	294,336	0.008	0.008
176	Vacuum Gas Oil (VGO)	Uncontrolled	OWS	85	15	0.88	0.4	55	38	60	7.7	8.19	294,336	0.008	0.008

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
6.618	0.759

Table A.16: 2014 Laboratory Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Unit	Sample Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Sample/ Week	Annual Flow (gal)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
Crude	543 OVHD Water	Uncontrolled	OWS	100	0	1	5.7	0.00	3.2	9.8	5.7	8.33	15	195.000	<0.001	<0.001
	543 Naphtha	Controlled	Lab Tank	0	100	0.73	0.00	7,340	3,170	258,370	7,340	6.09	31	403.000	0.008	-0.00-
	543 Kero	Uncontrolled	OWS	0	100	0.82	0.00	475	390	1,485	475	6.84	82	1,066.000	0.002	0.002
	543 Diesel	Uncontrolled	OWS	0	100	0.86	0.00	12	12	12	12	7.17	117	1,521.000	<0.001	<0.001
	543 AGO	Uncontrolled	OWS	0	100	0.87	0.00	63	63	63	63	7.26	35	455.000	<0.001	<0.001
	543 Desalter Crude	Uncontrolled	OWS	0	100	0.83	10.46	1045.68	674.30	2338.29	1,046	7.34	7	91.000	<0.001	<0.001
	543 Cold Crude	Uncontrolled	OWS	0	100	0.83	10.46	1045.68	674.30	2338.29	1,046	7.34	7	91.000	<0.001	<0.001
	544 OVHD Water	Uncontrolled	OWS	100	0	1	0	0.00	0	0	0.0	8.33	15	195.000	-0.00-	-0.00-
	544 Desalter Crude	Uncontrolled	OWS	0	100	0.83	10.46	1045.68	674.30	2338.29	1,046	7.34	7	91.000	<0.001	<0.001
	544 Cold Crude	Uncontrolled	OWS	0	100	0.83	10.46	1045.68	674.30	2338.29	1,046	7.34	7	91.000	<0.001	<0.001
	544 Naphtha	Controlled	Lab Tank	0	100	0.73	0.00	7,340	3,170	258,370	7,340	6.09	31	403.000	0.008	-0.00-
	544 Kero	Uncontrolled	OWS	0	100	0.82	0.00	475	390	1,485	475	6.84	82	1,066.000	0.002	0.002
	544 Diesel	Uncontrolled	OWS	0	100	0.86	0.00	12	12	12	12	7.17	117	1,521.000	<0.001	<0.001
	544 AGO	Uncontrolled	OWS	0	100	0.87	0.00	63	63	63	63	7.26	35	455.000	<0.001	<0.001
Vacuum	541 VGO	Uncontrolled	OWS	0	100	0.91	0.00	55	38	60	55	7.59	10	130.000	<0.001	<0.001
	542 VGO	Uncontrolled	OWS	0	100	0.91	0.00	55	38	60	55	7.59	10	130.000	<0.001	<0.001
	544 VGO	Uncontrolled	OWS	0	100	0.91	0.00	55	38	60	55	7.59	14	182.000	<0.001	<0.001
	544 Stink Oil	Uncontrolled	OWS	0	100	0.85	0.00	55	38	71	55	7.09	47	611.000	<0.001	<0.001
Kero	Kero Product	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	308	4,004.000	0.006	0.006
	Coalescer	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	3	39.000	<0.001	<0.001
	#1 Salt Drier	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	3	39.000	<0.001	<0.001
	#2 Salt Drier	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	3	39.000	<0.001	<0.001
	#1 Clay Drier	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	4	52.000	<0.001	<0.001
	#2 Clay Drier	Uncontrolled	OWS	0	100	0.82	0.00	476	390	1,483	476	6.84	4	52.000	<0.001	<0.001
Diesel	HCN Product	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	96	1,248.000	<0.001	<0.001
	HCN Combined Feed	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	28	364.000	<0.001	<0.001
	D1 Combined Feed	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	86	1,118.000	<0.001	<0.001
	D2 Combined Feed	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	51	663.000	<0.001	<0.001
	D2 Rundown	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	371	4,823.000	0.002	0.002
	D1 Rundown	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	361	4,693.000	0.002	0.002
	Lowline Seal Oil	Uncontrolled	OWS	0	100	0.80	10.00	10	0	20	10	6.67	7	91.000	<0.001	<0.001
	USLD	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	252	3,276.000	0.001	0.001
	HSD	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	252	3,276.000	0.001	0.001
	Sour Diesel	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	21	273.000	<0.001	<0.001
	Reactor Out	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	21	273.000	<0.001	<0.001
	Diesel Stripper Bottoms	Uncontrolled	OWS	0	100	0.86	0.00	116	100	116	116	7.17	49	637.000	<0.001	<0.001
Alkylation	Alkylate	Controlled	Lab Tank	0	100	0.70	0.00	786	550	786	786	5.84	25	325.000	<0.001	-0.00-
	Prewash Caustic	Uncontrolled	OWS	100	0	0.92	0.20	20	550	786	0	8.34	6	78.000	<0.001	<0.001
	Regen Merox	Uncontrolled	OWS	0	100	0.80	0.00	2,600	550	786	2,600	6.67	6	78.000	<0.001	<0.001
	HF Acid	Uncontrolled	OWS	100	0	1.00	1.00	100	125	150	1	8.34	3	39.000	<0.001	<0.001
	KOH Scrbr	Uncontrolled	OWS	0	100	0.70	0.00	786	550	786	786	5.84	10	130.000	<0.001	<0.001
FCC	FCC Feed	Uncontrolled	OWS	0	100	0.91	0.00	1,410	1,410	1,410	1,410	7.59	18	234.000	0.001	0.001
	FCC LCO	Uncontrolled	OWS	0	100	0.91	0.00	40	40	40	40	7.59	79	1,027.000	<0.001	<0.001
	FCC ICO	Uncontrolled	OWS	0	100	0.85	0.00	65	65	65	65	7.09	35	455.000	<0.001	<0.001
	FCC HCO	Uncontrolled	OWS	0	100	0.85	0.00	65	65	65	65	7.09	16	208.000	<0.001	<0.001
	Light Fluid	Controlled	Lab Tank	0	100	0.85	0.00	5,730	4,400	7,390	5,730	7.09	37	481.000	0.009	-0.00-
	Heavy Fluid	Controlled	Lab Tank	0	100	0.85	0.00	2,090	1,500	3,080	2,090	7.09	76	988.000	0.007	-0.00-

Table A.16: 2014 Laboratory Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Unit	Sample Description	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Sample/ Week	Annual Flow (gal)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
	CSO	Uncontrolled	OWS	0	100	1.02	0.43	43	32	54	43	8.47	16	208.000	<0.001	<0.001
	Outfall	Uncontrolled	OWS	100	0	1.00	0.00	0	0	0	0	8.34	2	26.000	-0.00-	-0.00-
	Circulation Water	Uncontrolled	OWS	100	0	1.00	0.00	0	0	0	0	8.34	3	39.000	-0.00-	-0.00-
	Stabilizer Bottoms	Uncontrolled	OWS	0	100	0.75	0.00	73	73	73	73	6.26	14	182.000	<0.001	<0.001
Naphtha	Naphtha Feed	Controlled	Lab Tank	0	100	0.74	0.00	7,340	3,170	258,370	7,340	6.17	32	416.000	0.009	-0.00-
	Light Naphtha	Controlled	Lab Tank	0	100	0.75	0.00	12,410	5,630	66,260	12,410	6.26	64	832.000	0.029	-0.00-
	Heavy Naphtha	Controlled	Lab Tank	0	100	0.73	0.00	8,000	1,670	174,860	8,000	6.09	22	286.000	0.006	-0.00-
Platformer	Total Feed	Controlled	Lab Tank	0	100	0.72	0.00	7,340	3,170	258,370	7,340	6.00	28	364.000	0.007	-0.00-
	Platformate	Controlled	Lab Tank	0	100	0.82	0.00	47,860	9,800	71,020	47,860	6.84	55	715.000	0.106	-0.00-
	Light Reformate	Controlled	Lab Tank	0	100	0.74	0.00	261,850	145,990	401,280	261,850	6.17	49	637.000	0.467	-0.00-
	Heavy Reformate	Controlled	Lab Tank	0	100	0.86	0.00	2,740	180	7,570	2,740	7.17	70	910.000	0.008	-0.00-
	Stripper Overhead	Controlled	Lab Tank	0	100	0.74	0.00	261,850	145,990	401,280	261,850	6.17	14	182.000	0.133	-0.00-
	Regen Catalyst	Controlled	Lab Tank	0	100	0.72	0.00	2,740	180	7,570	2,740	6.00	14	182.000	0.001	-0.00-
	Chl-Sorb Catalyst	Controlled	Lab Tank	0	100	0.72	0.00	2,740	180	7,570	2,740	6.00	14	182.000	0.001	-0.00-
	Spent Catalyst	Controlled	Recycled	0	100	0.72	0.00	2,740	180	7,570	2,740	6.00	14	182.000	-0.00-	-0.00-
Isocracker	Combined Feed	Uncontrolled	OWS	0	100	0.88	0.00	65	65	65	65	7.34	40	520.000	<0.001	<0.001
	Second Stage Feed	Uncontrolled	OWS	0	100	0.88	0.00	65	65	65	65	7.34	33	429.000	<0.001	<0.001
	Light Isocrackate	Controlled	Lab Tank	0	100	0.66	0.00	19,050	5,020	228,180	19,050	5.50	66	858.000	0.041	-0.00-
	Heavy Isocrackate	Controlled	Lab Tank	0	100	0.75	0.00	3,960	260	8,100	3,960	6.26	40	520.000	0.006	-0.00-
	LPG Rundown	Controlled	OWS	0	100	0.75	0.00	514	390	1,485	514	6.26	14	182.000	<0.001	-0.00-
	Splitter Bottoms	Controlled	Lab Tank	0	100	0.75	0.00	58	5	95	58	6.26	161	2,093.000	<0.001	-0.00-
VGO	VGO Feed	Uncontrolled	OWS	0	100	0.91	0.00	55	38	60	55	7.59		-0.00-	-0.00-	-0.00-
	Stripper Feed	Uncontrolled	OWS	0	100	0.85	0.00	55	38	65	55	7.09		-0.00-	-0.00-	-0.00-
	Stripper Bottoms	Uncontrolled	OWS	0	100	0.85	0.00	55	38	65	55	7.09		-0.00-	-0.00-	-0.00-
Miscellaneous	Rich Amine	Controlled	Lab Tank	0	100	0.73	0.00	5,810	2,380	9,860	5,810	6.09	2	26.000	<0.001	-0.00-
	Lean Amine	Controlled	Lab Tank	0	100	0.73	0.00	5,810	2,380	9,860	5,810	6.09	35	455.000	0.007	-0.00-
	Sour H2O Stripper Bottoms	Uncontrolled	OWS	0	100	1.00	0.01	0.01	0.01	0.01	0	8.34	21	273.000	<0.001	<0.001
	S Plant Lean	Controlled	Lab Tank	0	100	0.73	0.00	5,810	2,380	9,860	5,810	6.09	15	195.000	0.003	-0.00-
	S Plant Rich	Controlled	Lab Tank	0	100	0.86	0.00	116	100	116	116	7.17	2	26.000	<0.001	-0.00-
	544 Resid	Uncontrolled	OWS	0	100	0.84	0.00	65	65	65	65	7.01	84	1,092.000	<0.001	<0.001
	Water Samples	Uncontrolled	OWS	100	0	1.00	0.00	0	0	0	0	8.34	255	3,315.000	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.881	0.022

Table A.17: 2014 Dock Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Annual Dock Movements													
Product	API Gravity	Specific Gravity	Controlled/ Uncontrolled	Average Benzene (vol%)	Average Benzene (wt%)	Average Benzene (mg/l)	Number of Hose Disconnects		Annual Waste Quantity (lbs)	Annual Benzene Quantity (lbs)	Annual Benzene Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
							Receipts	Shipments				
6 Oil	17.4	0.950	Uncontrolled			25.0	0	**168**	13,317	0.3	<0.001	<0.001
CBOB	56.4	0.753	Uncontrolled			8,015	0	**18**	1,130	9.1	0.004	0.004
Crude	40.5	0.823	Uncontrolled			1,045.7	**820**	0	562611	588.31	0.267	0.267
Decant CBO	42.8	0.812	Uncontrolled			514.2	0	**78**	5,281	2.7	0.001	0.001
Dist Blendstock	35.5	0.847	Uncontrolled			116	0	0	0	0.0	-0.00-	-0.00-
Heating Oil	37.0	0.840	Uncontrolled			116.0	0	**2**	140	0.0	<0.001	<0.001
Jet A	41.4	0.818	Uncontrolled			100	0	**118**	8,054	0.8	<0.001	<0.001
LCO	22.7	0.918	Uncontrolled			40.0	0	**67**	5,128	0.2	<0.001	<0.001
Naphtha - Heavy Treated	25.6	0.920	Uncontrolled			12410.0	0	**3**	230	2.9	0.001	0.001
Naphtha - Un	82.5	0.660	Uncontrolled			12410.0	0	**13**	716	8.9	0.004	0.004
PBOB	64.9	0.720	Uncontrolled			6,000	0	**34**	2,043	12.3	0.006	0.006
Premium CBOB	56.4	0.753	Uncontrolled			8,015	0	**14**	879	7.0	0.003	0.003
RBOB	58.3	0.746	Uncontrolled			7,600	0	**41**	2,549	19.4	0.009	0.009
Reformate Heavy	65.6	0.718	Uncontrolled			2,740	0	**64**	3,832	10.5	0.005	0.005
Reformate Light	62.2	0.730	Uncontrolled			261,850	0	**35**	2,132	558.2	0.253	0.253
ULHO	37.1	0.839	Uncontrolled			70	0	**64**	4,480	0.3	<0.001	<0.001
ULSD	36.7	0.842	Uncontrolled			100	0	**169**	11,861	1.2	<0.001	<0.001
VGO	24.1	0.909	Uncontrolled			55	0	**146**	11,072	0.6	<0.001	<0.001

Assumptions:

1) 6" and 8" diameter cargo hoses are used for product movement at barge docks;
   8" diameter hose by 25' long used as basis for volume calculation.
   @ 100 gallons "waste" product/hose receipt disconnect
   @ 10 gallons "waste" product/hose shipment disconnect
2) Information on number of loads shipped and received came from Nicholas Casoli in Trainer's Accounting Dept.
3) Crude also includes Bakken, Base Feedstock, Crude Feedstock, Eagle Ford Crude, Hibernia, Niobrara, Olmeca, and Terra Nova.

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.555	0.555

Table A.18: 2014 Knock Engines
Monroe Energy, LLC
Trainer, Pennsylvania

Unit	Source	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Annual Flow (gal)	TAB Quantity (Mg)	6.0 Mg Total (Mg)
									Min	Max					
Main Lab	Engine 1	Uncontrolled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	1,576.80	<0.001	<0.001
Main Lab	Engine 2	Uncontrolled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	1,576.80	<0.001	<0.001
Blender	Engine A	Controlled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	210,240.00	0.006	-0.00-
Blender	Engine B	Controlled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	210,240.00	0.006	-0.00-
Blender	Engine C	Controlled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	210,240.00	0.006	-0.00-
Blender	Engine D	Controlled	OWS	0	100	0.73	0.081	10	13,000	41,000	10	6.09	210,240.00	0.006	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.023	<0.001

Table A.19: 2014 Flare
Monroe Energy, LLC
Trainer, Pennsylvania

Unit	Source	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Average Flow (gpm)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
62-V-1	Flare Knockout Drum	Controlled	TK 68/TK 184	98	2	0.82	47	4,680	4,680	4,680	123	8.31	0.05	0.011	-0.00-
62-V-3	Isocracker Finger Pot	Controlled	TK 68/TK 184	98	2	0.85	140	14,000	14,000	14,000	376	8.31	0.02	0.003	-0.00-
62-V-4	Platformer/Naphtha Finger Pot	Controlled	TK 68/TK 184	98	2	0.74	0.3	32	32	32	0.8	8.30	0.02	<0.001	-0.00-
62-V-5	VGO/Amine/SWS Finger Pot	Controlled	TK 68/TK 184	98	2	0.88	0.02	1.6	1.6	1.6	0.04	8.32	0.02	<0.001	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.014	-0.00-

Table A.20: 2014 Solid Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Waste Description	Controlled/ Uncontrolled	Disposition	Waste Quantity (tons)	Benzene Range (ppmw)		Benzene Concentration (mg/kg)	>10% Water (Y/N)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
				Min	Max				
Alumina		Offsite Disposal	378.99	-0.00-	-0.00-	-0.00-	Y	-0.00-	-0.00-
API Solids		Offsite Disposal	495.42	0.104	0.173	0.139	Y	<0.001	<0.001
Asbestos		Offsite Disposal	64.65	-0.00-	-0.00-	-0.00-	N	-0.00-	-0.00-
Asphalt for recycling		Offsite Disposal	685.49	-0.00-	-0.00-	-0.00-	N	-0.00-	-0.00-
Boom with Benzene		Offsite Disposal	0.20	1.170	1.950	1.56	N	-0.00-	<0.001
Bundle Sludge		Offsite Disposal	21.73	0.900	1.500	1.2	Y	<0.001	<0.001
Chromium, Iron Oxide		Offsite Disposal	13.21	<0.001	0.001	<0.001	N	-0.00-	<0.001
COD Vials		Offsite Disposal	8.71	<0.001	0.001	<0.001	Y	<0.001	<0.001
Concrete for recycling		Offsite Disposal	161.17	-0.00-	-0.00-	-0.00-	N	-0.00-	-0.00-
Cooling Tower Debris		Offsite Disposal	447.27	-0.00-	-0.00-	-0.00-	N	-0.00-	-0.00-
Dewatered Biological Sludge		Offsite Disposal	1,605.61	<0.001	<0.001	<0.001	Y	<0.001	<0.001
fcc catalyst for recycling		Offsite Disposal	1,047.33	<0.001	0.001	<0.001	Y	<0.001	<0.001
Hot Treater Catalyst		Offsite Disposal	73.45	<0.001	0.001	<0.001	Y	<0.001	<0.001
K169 Tank Bottoms		Offsite Disposal	521.19	0.195	0.325	0.260	Y	<0.001	<0.001
Kero Treater		Offsite Disposal	102.13	0.180	0.300	0.240	Y	<0.001	<0.001
Oily Debris		Offsite Disposal	424.76	0.098	0.163	0.130	Y	<0.001	<0.001
PLANT TRASH		Offsite Disposal	876.83	-0.00-	-0.00-	-0.00-	Y	-0.00-	-0.00-
Platformer Natural Gas Treater		Offsite Disposal	64.63	0.180	0.300	0.240	Y	<0.001	<0.001
refractory		Offsite Disposal	14.87	<0.001	0.001	<0.001	Y	<0.001	<0.001
Rock Salt		Offsite Disposal	24.03	-0.00-	-0.00-	-0.00-	N	-0.00-	-0.00-
Sand Blast Grit		Offsite Disposal	104.69	0.104	0.173	0.139	N	-0.00-	<0.001
Slurry & Gravel		Offsite Disposal	149.31	0.098	0.163	0.130	Y	<0.001	<0.001
SOIL		Offsite Disposal	1,556.84	<0.001	0.001	<0.001	Y	<0.001	<0.001
Spent Platformer Catalyst		Offsite Disposal	5.97	54.000	90.000	72	Y	<0.001	<0.001
Stage 1 Reactor Catalyst		Offsite Disposal	75.50	<0.001	0.001	<0.001	Y	<0.001	<0.001
Stage 2 Reactor Catalyst		Offsite Disposal	143.04	<0.001	0.001	<0.001	Y	<0.001	<0.001
Water Softener Resin		Offsite Disposal	6.88	-0.00-	-0.00-	-0.00-	Y	-0.00-	-0.00-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001

Table A.21: 2014 Spills and Miscellaneous Waste Streams
Monroe Energy, LLC
Trainer, Pennsylvania

Spill Date	Product Spilled	Controlled/ Uncontrolled	Disposition	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Benzene Range (ppmw)		Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
									Min	Max					
1/5/2014	Drain overflow to Clean Water Sewer	Uncontrolled	SCGB	0	100	0.86	18	1,830	1,370	2,288	1,830	7.17	0.25	<0.001	<0.001
1/9/2014	Lift station overflow to Clean Water Sewer	Uncontrolled	SCGB	0	100	0.81	5	514	390	1,485	514	6.77	0.25	<0.001	<0.001
1/10/2014	Split Cat Naphtha transfer pipe	Uncontrolled	Tank 168 Dike	0	100	0.81	21	2,090	1,500	3,080	2,090	6.73	6,400.00	0.041	0.041
1/27/2014	Crude Sample station to DE River	Uncontrolled	DE River	0	100	0.83	10	1,046	674	2,338	1,046	6.95	1,635.00	0.005	0.005
4/11/2014	Kero Heat Exchanger Leak to SCGB	Uncontrolled	SCGB	0	100	0.81	5	514	390	1,485	514	6.77	0.25	<0.001	<0.001
7/13/2014	Unknown	Uncontrolled	SCGB	0	100	0.81	5	514	390	1,485	514	6.77	0.25	-0.00-	-0.00-
7/22/2014	Alkylate leak from Tank 151	Uncontrolled	Tank 151 Dike	0	100	0.70	0.00	0.01	0.00	0.02	0.01	5.82	12,600.00	<0.001	<0.001
9/16/2014	544 Top Gas Oil exchanger	Uncontrolled	SCGB	0	100	0.74	58	5,810	2,380	9,860	5,810	6.17	0.13	<0.001	<0.001
12/1/2014	Observed sheen of diesel in DE River	Uncontrolled	DE River	0	100	0.84	1	116	116	116	5,810	7.00	0.25	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.046	0.046

Table A.22: 2014 Vacuum Truck Movements
Monroe Energy, LLC
Trainer, Pennsylvania

Source	Table	TAB Quantity (Mg)	6.0 Mg Total (Mg)
Vacuum Truck Waste	A.22	2.267	-0.00-

Table A.23: 2014 Pump Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Pump	Controlled/ Uncontrolled	Disposition	Number of Events	Double Count	Percent Aqueous	Percent Organic	Material	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
541 VACUUM	PL105	541V GAS OIL FEED PUMP	Uncontrolled	OWS	2		0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	30	<0.01	<0.01
542 VACUUM		BOTTOMS PUMP BABY BUTTS PUMP-PRSD	Uncontrolled	OWS	1		0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	15	<0.01	<0.01
542 VACUUM		HEAVY SLOP OIL PUMP	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
543 CRUDE	1G307A	REDUCED CRUDE PUMP PRSD	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
544 CRUDE	G403A	AGO PUMP PRSD	Uncontrolled	OWS	1		0	100	Crude Unit AGO	0.87	0.00	0.00	0.00	0.00	0.00	7.25	15	-0-	-0-
544 CRUDE	2G406A	M/LCSS PUMP COMMON SPARE	Uncontrolled	OWS	2		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	30	<0.01	<0.01
544 VACUUM	2G410	544 STINK OIL PUMP RVSD	Uncontrolled	OWS	1		0	100	Vacuum Unit Stink Oil	0.87	0.03	3.00	1.00	5.00	3.00	7.29	15	<0.01	<0.01
544 VACUUM	2G412A	544V ASPHALT PUMP RVSD	Uncontrolled	OWS	2		0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	30	<0.01	<0.01
ALKY	MH0828295-2	ACID CIRC PUMP CHSD	Uncontrolled	OWS	1		0	100	Sulfuric Acid	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
ALKY	MH0827295-2	FRESH ACID PUMP	Uncontrolled	OWS	1		0	100	Sulfuric Acid	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
ALKY	6P13	ALKY (IC4) ISOBUTANE REC PUMP	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
ALKY	P14	DEPROPANIZER CHARGE PUMP CHSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
AMINE	33P2B	AMINE STRIPPER REFLUX PUMP CHSD	Uncontrolled	OWS	1		100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
APT	P41	ISOBUTANE WASH INJECTION PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 01 Isocracker	21P7A	ISO DEBUTANIZER FEED PUMP RVSD	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 01 Naphtha Treater	11P4	NAPHTHA SPLITTER REFLUX PUMP MHSD	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 01 Naphtha Treater	11P5A	PLATFORMER CHARGE PUMP MHSD	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 01 Naphtha Treater	11P7	NAPHTHA ABSORBER BOTTOMS PUMP	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 02 Amine	33P2A	AMINE STRIPPER REFLUX PUMP MHSD	Uncontrolled	OWS	1		100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Boiler House	MH667295-2	CONDENSATE PUMP RVSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Cooling Tower		SULFURIC ACID INJECTION PUMP	Uncontrolled	OWS	1		0	100	Sulfuric Acid	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Cooling Tower		SULFURIC ACID INJECTION PUMP	Uncontrolled	OWS	1		0	100	Sulfuric Acid	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Sour Water Stripper	34P4B	SOUR WATER STRIPPER REFLUX PUMP	Uncontrolled	OWS	1		100	0	Sour Water	1.00	73.00	7300.00	9125.00	5475.00	73.00	8.34	15	<0.01	<0.01
Area 02 Water Treatment	MH59295-2	GOULDS CELLAR WATER PUMP	Uncontrolled	OWS	1	Y	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Water Treatment	MH255295-2	WATER SOFTNER CELLAR FILTER PUMP RVSD	Uncontrolled	OWS	1	Y	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 02 Water Treatment	MH256295-2	WATER PUMP #6 BOILER AREA	Uncontrolled	OWS	1	Y	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 03 541 Vacuum Unit		541V BOTTOMS PUMP BABY BUTTS PUMP-PRSD	Uncontrolled	OWS	1		0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	15	<0.01	<0.01
Area 03 541 Vacuum Unit	P101A	HOTWELL CONDENSATE PUMP MHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 03 541 Vacuum Unit	P101B	HOTWELL CONDENSATE PUMP CHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 03 541 Vacuum Unit	P102B	HOTWELL SLOP OIL PUMP CHSD	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
Area 03 542 Vacuum Unit	P2A	542V BOTTOMS PUMP BIG BUTTS PUMP-RVSD	Uncontrolled	OWS	1		0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	15	<0.01	<0.01
Area 03 543 Crude/Desalter	02P4A	543 DESALTED CRUDE BRINE INJECT PMP PRSD	Uncontrolled	OWS	1		100	0	Caustic	0.92	0.20	19.80	15.80	23.70	0.20	8.34	15	<0.01	<0.01
Area 03 544 Crude/Desalter	2G412	544V ASPHALT PUMP PRSD	Uncontrolled	OWS	1		0	100	Kero Product	0.81	5.14	514.20	390.00	1485.00	514.20	6.77	15	<0.01	<0.01
Area 03 544 Crude/Desalter	2G417A	HOTWELL SKIM OIL PUMP MHSD	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
Area 03 544 Crude/Desalter	2G417B	HOTWELL SKIM OIL PUMP CHSD	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
Area 03 544 Crude/Desalter	2G418B	544V HOTWELL PUMP CHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 04 Alky Pretreat Unit		FRESH CAUSTIC PUMP	Uncontrolled	OWS	1		100	0	Caustic	0.92	0.20	19.80	15.80	23.70	0.20	8.34	15	<0.01	<0.01
Area 04 Alky Pretreat Unit	06P301B	APT RAW FEED PUMP MH641295-2 PRSD	Uncontrolled	OWS	2		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	30	<0.01	<0.01
Area 04 Alky Unit	P16	DEPROPANIZER OHD PUMP CHSD	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 04 Alky Unit	P19	SETTLED ACID PUMP	Uncontrolled	OWS	1		0	100	HF Acid	1.00	1.00	100.00	125.00	150.00	100.00	8.34	15	<0.01	<0.01
Area 04 Alky Unit		ISO STRIPPER REFLUX PUMP	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	7P7B	FCC TOP REFLUX PUMP - MHSD	Uncontrolled	OWS	1		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	07C1P1A	MAIN AIR BLOWER MAIN LUBE OIL PUMP CHSD	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	07P103A	50% CAUSTIC PUMP MHSD	Uncontrolled	OWS	1		100	0	Caustic	0.92	0.20	19.80	15.80	23.70	0.20	8.34	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	07P103B	50% CAUSTIC PUMP CHSD	Uncontrolled	OWS	1		100	0	Caustic	0.92	0.20	19.80	15.80	23.70	0.20	8.34	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	P3	HEAVY GAS OIL PUMP	Uncontrolled	OWS	1		0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	P51	INTERSTG LIQUID HYDROCARBON PUMP PRSD	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	P26	CLARIFIED OIL PUMP CHSD	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	P10C	DEETHANIZER FEED STOCK PMP	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	P26A	CLARIFIED OIL PUMP (MH PUMP	Uncontrolled	OWS	1		0	100	FCCU Clarified Oil	1.02	0.43	43.20	32.40	54.00	43.20	8.47	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	MH727295-2	HOTWELL CONDENSATE PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 04 FCC Unit/CO Boiler	P1A	DEBUT OVERHEAD REFLUX PUMP RVSD	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 04 FCC Unit/CO Boiler	J1A	CO BOILER FEED WATER PUMP PRSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 04 FCC Unit/CO Boiler		HOTWELL PUMP - SPARE	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 04 FCC Unit/CO Boiler	07FDLO01P2	CO BOILER FAN LUBE OIL PUMP MOTOR	Uncontrolled	OWS	1		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	15	<0.01	<0.01
Area 05 North Tank Farm	83P10	PLATFORMER FEED PUMP	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
Area 05 North Tank Farm	83P54	68 TANK TEMPERED WATER PUMP PRSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
Area 05 North Tank Farm		LIGHT SLOP PUMP 184 TANK	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
Area 05 North Tank Farm		DIESEL TURBINE CHESTER SIDE OF 99 TANK	Uncontrolled	OWS	1		0	100	Diesel Product	0.84	1.16	116.00	116.00	116.00	116.00	7.00	15	<0.01	<0.01
Area 05 Waste Water Treatment	90P802A	T-11 SLUDGE TRANSFER PUMP	Uncontrolled	OWS	1	Y	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	-0-	-0-
Area 05 Waste Water Treatment	90P102D	SOUTH API SEPARATOR SLUDGE PUMP	Uncontrolled	OWS	1	Y	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	-0-	-0-
Area 05 Waste Water Treatment	90P300D	FILTER FEED PUMP RVSD	Uncontrolled	OWS	1	Y	0	100	Diesel Product	0.84	1.16	116.00	116.00	116.00	116.00	7.00	15	-0-	-0-
Area 05 Waste Water Treatment	90P603A	SLUDGE REC PUMP CLARIFIER #1 (MH	Uncontrolled	OWS	1	Y	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	-0-	-0-
Area 05 Waste Water Treatment	90P1318A	CLARIFIER SCUM / DRAIN PUMP PRSD	Uncontrolled	OWS	1	Y	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	-0-	-0-
Area 05 Waste Water Treatment	6P801B	T-8 SLUDGE BLENDING TANK PUMP	Uncontrolled	OWS	1	Y	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	-0-	-0-
Area 06 Dock/Barge Loading	83P68	BARGE DOCK PRODUCT TRANSFER PUMP A CHSD	Uncontrolled	OWS	1		0	100	Diesel Product	0.84	1.16	116.00	116.00	116.00	116.00	7.00	15	<0.01	<0.01
Area 06 Gasoline Blending	83P61B	ETF WATER DRAW-OFF SUMP PUMP	Uncontrolled	OWS	1		100	0	Crude Tank Water	1.00	0.06	5.70	3.20	9.80	0.06	8.34	15	<0.01	<0.01
Area 06 LPG Storage	81P50	ISOBUTANE FEED PUMP	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 06 LPG Storage	81P53	BUTANE 515-516 SPHERE 4X6X9 S/N 32271	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 06 LPG Storage	83P45A	PROPANE / BUTANE PIPELINE PUMP MHSD	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 06 LPG Storage	83P45B	PROPANE / BUTANE PIPELINE PUMP CHSD	Uncontrolled	OWS	2		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	30	<0.01	<0.01
Area 06 LPG Storage	83P48	PROPANE RAILCAR LOADING PUMP	Uncontrolled	OWS	1		0	100	Butane	0.80	9.30	930.00	697.50	1162.50	930.00	6.67	15	<0.01	<0.01
Area 06 Residual Fuel	86P7	HIGH SULFUR FUEL OIL PUMP (176 TANK	Uncontrolled	OWS	1		0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	15	<0.01	<0.01
Area 06 South Tank Farm	83P12	HEAVY FUELS RACK DECANTED OIL TO RAILCAR	Uncontrolled	OWS	1		0	100	Diesel Product	0.84	1.16	116.00	116.00	116.00	116.00	7.00	15	<0.01	<0.01
Area 06 South Tank Farm	MH512295-2	GASOLINE 513 TANK	Uncontrolled	OWS	1		0	100	Gasoline (Generic)	0.74	58.10	5810.00	2380.00	9860.00	5810.00	6.17	15	<0.01	<0.01
Area 06 South Tank Farm	MH511295-2	KEROSENE PUMP	Uncontrolled	OWS	1		0	100	Kero Product	0.81	5.14	514.20	390.00	1485.00	514.20	6.77	15	<0.01	<0.01
Area 06 South Tank Farm	83P1C	WTF CRUDE TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
Area 06 South Tank Farm	83P9A	ETF CRUDE TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
Area 06 South Tank Farm	83P2	WTF 182 TANK CIRC PUMP	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
Area 06 South Tank Farm	83P9C	ETF CRUDE TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
AREA 2 Sulfur Unit	34P8B	VENT GAS ABSORBER RICH DEA	Uncontrolled	OWS	1		100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-

Table A.23: 2014 Pump Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Pump	Controlled/ Uncontrolled	Disposition	Number of Events	Double Count	Percent Aqueous	Percent Organic	Material	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
AWWTP		CITY WATER BOOSTER PUMP	Uncontrolled	OWS	2		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	30	-0-	-0-
AWWTP	90P702B	TERTIARY FILTER MUDWELL PUMP CHSD	Uncontrolled	OWS	2		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	30	-0-	-0-
AWWTP	90P701B	BACKWASH PUMP CHSD	Uncontrolled	OWS	1		100	0	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	18.30	8.34	15	<0.01	<0.01
AWWTP	90P300B	FILTER FEED PUMP (MDL PRSD)	Uncontrolled	OWS	1		100	0	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	18.30	8.34	15	<0.01	<0.01
AWWTP	90P309B	IMPOUNDING SUMP DRAIN PUMP RVSD	Uncontrolled	OWS	1		100	0	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	18.30	8.34	15	<0.01	<0.01
AWWTP	90P702A	TERTIARY FILTER MUDWELL PUMP MHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
BLENDER	81P25A	GASOLINE TO CHELSEA PUMP CHSD	Uncontrolled	OWS	1		0	100	Gasoline (Generic)	0.74	58.10	5810.00	2380.00	9860.00	5810.00	6.17	15	<0.01	<0.01
BLENDER	81P14	STABILIZER ADDITIVE PUMP	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
BLENDER	81P6	LIGHT ISO BLEND PUMP (BLENDER)	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
BLENDER	81P1	ALKYLATE BLEND PUMP (BLENDER)	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
BOILER HSE		BOOSTER PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
BOILER HSE		PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
BOILER HSE	77P4HP	#4 HIGH PRESSURE BOILER FEEDWATER	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
CO BOILER	J1B	CO BOILER FEED WATER PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
CO BOILER	J2B	CO BOILER RECIRC PUMP CHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
CO BOILER	J2A	CO BOILER RECIRC PUMP MHSD	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
COOLINGTWR	72P4	COOLING TOWER SUMP PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
DIESEL	04P516B	LEAN AMINE PUMP (CHSD)	Uncontrolled	OWS	1		100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
ECC	MH66295-3	API SEPARATOR HEAVY OIL PUMP	Uncontrolled	OWS	1		0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	15	<0.01	<0.01
FCC	P2	MAIN SLURRY PUMP PRSD	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
FCC	MH231295-2	INTERMEDIATE REFLUX PUMP MHSD	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
FCC	07C1AP1B	FCC AUX BLOWER AUX LUBE	Uncontrolled	OWS	2		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	30	<0.01	<0.01
FCC	MH449295-2	LIGHT / HEAVY GAS	Uncontrolled	OWS	1		0	100	Light Fluid (LCN)	0.71	57.30	5730.00	4400.00	7390.00	5730.00	5.92	15	<0.01	<0.01
FCC	07P107A	SPRAY TOWER CIRCULATION PUMPS	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
FCC	07P107B	SPRAY TOWER CIRCULATION PUMPS	Uncontrolled	OWS	1		0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	15	<0.01	<0.01
ISOCRACKER		ISO FEED PUMP COMMON SPARE	Uncontrolled	OWS	3		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	45	<0.01	<0.01
ISOCRACKER	21P30A	ISO DEETHANIZER CHARGE PUMP RVSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
ISOCRACKER	21P30B	ISO DEETHANIZER CHARGE PUMP PRSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
ISOCRACKER	21P12A	ISO DEISOBUTANIZER REFLUX PUMP RVSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
ISOCRACKER	21P2A	ISO 2ND STAGE FEED PUMP	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
ISOCRACKER	21P5A	ISO SPLITTER BOTTOMS PUMP RVSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
KERO	MH704295-2	KERO OILY WTR SUMP PMP	Uncontrolled	OWS	1		0	100	Kero Product	0.81	5.14	514.20	390.00	1485.00	514.20	6.77	15	<0.01	<0.01
NAPHTHA	62P2	FLARE KNOCKOUT DRUM AT NAPHTHA	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
NTF	83P33A	NORTH TANK FARM CRUDE TRANSFER	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
NTF	83P51	TITANIUM SOUR WATER PUMP	Uncontrolled	OWS	1		100	0	Sour Water	1.00	73.00	7300.00	9125.00	5475.00	73.00	8.34	15	<0.01	<0.01
NTF	86P5B	PLANT FUEL PUMP (NTF-62 TANK)	Uncontrolled	OWS	1		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	15	<0.01	<0.01
NTF	83P55	68 TANK TEMPERED WATER PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
NTF	83P10B	PLATFORMER FEED PUMP	Uncontrolled	OWS	1		0	100	Light Naphtha	0.66	124.10	12410.00	1670.00	66260.00	12410.01	5.51	15	<0.01	<0.01
PLATFORMER	13P20	PLATFORMER REACTOR EDC PUMP (C)	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
PLATFORMER	13K8P2B	13K8 BOOSTER COMP LUBE OIL	Uncontrolled	OWS	1		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	15	<0.01	<0.01
PLATFORMER	13K2-3P1A	PLAT REGEN & CHLOR BLR	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
PLATFORMER	13P2A	EFFLUENT BOOSTER PUMP PRSD	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
PLATFORMER	13P7B	HEAVY REFORMATE BOOSTER PUMP PRSD	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
PROPANERCY	21P31B	ISO DEETHANIZER REFLUX PUMP RVSD	Uncontrolled	OWS	1		0	100	Alkylate	0.70	0.00	0.01	0.00	0.02	0.01	5.82	15	<0.01	<0.01
SHIP DOCK	83P95B	BARGE DOCK STORMWATER PUMP	Uncontrolled	OWS	1		0	100	Stormwater	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	<0.01	<0.01
SHIP DOCK	83P91	LOADING ARM DRAIN PUMP	Uncontrolled	OWS	1		0	100	Slop Oil	0.86	18.30	1830.00	1370.00	2287.50	1830.00	7.17	15	<0.01	<0.01
STF	86P11B	GAS OIL TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit AGO	0.87	0.00	0.00	0.00	0.00	0.00	7.25	15	-0-	-0-
STF		South Tank Farm Pump	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
STF	86P6	HIGH SULFUR FUEL OIL PUMP	Uncontrolled	OWS	1		0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	15	<0.01	<0.01
STF	86P11A	GAS OIL TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit AGO	0.87	0.00	0.00	0.00	0.00	0.00	7.25	15	-0-	-0-
STF	83P1A	WTF CRUDE TRANSFER PUMP	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
STF	83P75	LIGHT REFORMATE LINE DRAIN PUMP	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
STF		South Tank Farm Pump	Uncontrolled	OWS	1		0	100	Crude Unit Feed	0.83	10.46	1045.68	674.30	2338.29	1045.68	6.95	15	<0.01	<0.01
STF	81P32	SPARE REFORMATE BLEND PUMP	Uncontrolled	OWS	1		0	100	Reformate	0.82	478.60	47860.00	9800.00	71020.00	47860.03	6.84	15	<0.01	<0.01
SULFUR #1	41P2	ACID GAS PUMPOUT PUMP PRSD	Uncontrolled	OWS	1		0	100	Sulfuric Acid	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
SWS	34P4A	SOUR WATER STRIPPER REFLUX PUMP(RVSD	Uncontrolled	OWS	1		100	0	Sour Water	1.00	73.00	7300.00	9125.00	5475.00	73.00	8.34	15	<0.01	<0.01
VGO	32P5	HIGH PRESSURE AMINE CIRC PUMP	Uncontrolled	OWS	1		100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
VGO	32P1A	VGO MAIN CHARGE PUMP PRSD	Uncontrolled	OWS	1		0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	15	<0.01	<0.01
WSPH	MH404295-2	WSPH #4 FEEDWATER PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-
WSPH	MH254295-2	WSPH #8 FEEDWATER PUMP	Uncontrolled	OWS	1		100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	15	-0-	-0-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.017	0.017

Table A.24: 2014 Exchanger Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Exchanger	Controlled/ Uncontrolled	Disposition	Number of Events	Percent Aqueous	Percent Organic	Material	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM		541V INTERCONDEN	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM		541V AFTERCONDEN	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER -7	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER -8	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER -7	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER -6	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E101	541V TOWER INTERNAL GAS COOLER -5	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E102	541V TOWER INTERNAL GAS EXCHANGER -4	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E102	541V TOWER INTERNAL GAS	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E102	541V TOWER INTERNAL GAS EXCHANGER -2	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
541 VACUUM	E102	EXCHANGER	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	542	VACUUM STILL UNCLASSIFIED EXCHANGERS	Uncontrolled	OWS	3	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	75	<0.01	<0.01
542 VACUUM	E101	542V TOWER INTERNAL GAS	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM		STAGE VAC JET CONDENSER	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
542 VACUUM	E101	542V TOWER INTERNAL GAS COOLER	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM		STAGE VAC JET CONDENSER	Uncontrolled	OWS	1	100	0	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	0.03	8.34	25	<0.01	<0.01
542 VACUUM		AFTERCONDEN	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM		INTERCONDEN	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E101	542V TOWER INTERNAL GAS COOLER -8	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E101	542V TOWER INTERNAL GAS COOLER -6	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E101	542V TOWER INTERNAL GAS COOLER -5	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E102	542V TOWER INTERNAL GAS EXCHANGER -4	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E102	542V TOWER INTERNAL GAS EXCHANGER -3	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E102	542V TOWER INTERNAL GAS EXCHANGER -2	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
542 VACUUM	E102	542V TOWER INTERNAL GAS EXCHANGER -1	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
543 CRUDE	E301C	OVERHEAD CONDENSER(TOP) 543	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	03E304B	KEROSENE COOLER	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
543 CRUDE	E310	MCSS STEAM GENERATOR	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
543 CRUDE	E302F	TOP-CIRC-SIDE-STREAM-CRUDE-EXCH (BTM)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E3020E	TOP-CIRC-SIDE-STREAM-CRUDE-EXCH (TOP)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E308B	MCSS CRUDE EXCHANGER 543CD	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E308A	MCSS CRUDE-EXCHANGER 543	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E303B	CIRC REFLUX COOLER 543	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E303A	CIRC REFLUX COOLER 543	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E301D	OVERHEAD CONDENSER (BTM)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E301C	OVERHEAD CONDENSER (TOP)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E301B	OVERHEAD CONDENSER (BTM)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	E301A	OVERHEAD CONDENSER (TOP)	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	03E304A	KEROSENE COOLER	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
543 CRUDE	01E1A	OVERHEAD CONDENSER (TOP)	Uncontrolled	OWS	1	0	100	Light Fluid (LCN)	0.71	57.30	5,730.00	4,400.00	7,390.00	5,730.00	5.92	25	<0.01	<0.01
543 CRUDE	01E1B	OVERHEAD CONDENSER (BTM)	Uncontrolled	OWS	1	0	100	Light Fluid (LCN)	0.71	57.30	5,730.00	4,400.00	7,390.00	5,730.00	5.92	25	<0.01	<0.01
543 CRUDE	E301A	OVERHEAD CONDENSER (TOP) 543	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE	01E1A	OVERHEAD CONDENSER (TOP) 543	Uncontrolled	OWS	1	100	0	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	0.03	8.34	25	<0.01	<0.01
543 CRUDE	E316C	ASPHALT CRUDE EXCHANGER 543 CRUDE	Uncontrolled	OWS	2	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	50	<0.01	<0.01
543 CRUDE	E316C	ASPHALT CRUDE EXCHANGER 543 CRUDE	Uncontrolled	OWS	2	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	50	<0.01	<0.01
543 CRUDE	E317B	ASPHALT CRUDE EXCHANGER 543 CRUDE	Uncontrolled	OWS	2	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	50	<0.01	<0.01
543 CRUDE	E316A	ASPHALT CRUDE EXCHANGER 543 CRUDE	Uncontrolled	OWS	2	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	50	<0.01	<0.01
543 CRUDE	E305A	#1&#2-SIDE-STREAM-CRUDE-EXCHANGER 543CD	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
543 CRUDE		KERO PRODUCT TRIM COOLER 543 CRUDE	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
544 CRUDE	E410	STEAM-GENERATOR 544 CRUDE	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
544 CRUDE	E408B	CRUDE EXCHANGER 544 CRUDE	Uncontrolled	OWS	3	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	75	<0.01	<0.01
544 CRUDE	E401B	OVERHEAD CONDENSER 544 CRUDE	Uncontrolled	OWS	1	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	25	<0.01	<0.01
544 CRUDE	E414D	GAS OIL CRUDE EXCHANGER 544 CRUDE	Uncontrolled	OWS	3	0	100	Gasoline (Generic)	0.74	58.10	5,810.00	2,380.00	9,860.00	5,810.00	6.17	75	<0.01	<0.01
544 CRUDE	E414K	GAS OIL CRUDE EXCHANGER 544 CRUDE	Uncontrolled	OWS	3	0	100	Gasoline (Generic)	0.74	58.10	5,810.00	2,380.00	9,860.00	5,810.00	6.17	75	<0.01	<0.01
544 DESALT	02E6B	ASPHALT BOTTOMS STEAM GENERATOR	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
544 DESALT	02E6A	ASPHALT BOTTOMS STEAM GENERATOR	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
544 DESALT	02E6B	ASPHALT BOTTOMS STEAM GENERATOR	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
544 DESALT	02E6B	ASPHALT BOTTOMS STEAM GENERATOR	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
544 DESALT	02E6A	ASPHALT BOTTOMS STEAM GENERATOR	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID	Uncontrolled	OWS	3	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	75	<0.01	<0.01
ALKY		ACID REGENERATOR OVERHEAD CONDENSER	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		DEPROPANIZER FEED CONDENSER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	(HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		ACID REGENERATOR OVERHEAD CONDENSER	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		ACID REGENERATOR OVERHEAD CONDENSER	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY	AR1	REACT (HORIZ) HF ACID 2NDSTG	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		STRIPPER UPPER REBOILER HF ACID UNIT	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		DEPROPANIZER FEED CONDENSER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ALKY		UPPER BUTANE TRIM COOLER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ALKY		BUTANE TRIM COOLER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ALKY		DRIER REGEN CONDENSER HF ACID UNIT	Uncontrolled	OWS	1	100	0	HF Acid	1.00	1.00	100.00	125.00	150.00	1.00	8.34	25	<0.01	<0.01
ALKY		ISOBUTANE SUPER HEATER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
DIESEL	E507A	FEED PREHEATER DIESEL	Uncontrolled	OWS	1	0	100	Diesel Unit Feed	0.85	1.16	116.00	116.00	116.00	116.00	7.07	25	<0.01	<0.01
DIESEL	E507A	STRIPPER FEED PREHEATER DIESEL HTU	Uncontrolled	OWS	1	0	100	Diesel Unit Feed	0.85	1.16	116.00	116.00	116.00	116.00	7.07	25	<0.01	<0.01
FCC	E11	SLURRY FEED EXCHANGER(VERTICAL) FCC	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01

Table A.24: 2014 Exchanger Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Exchanger	Controlled/ Uncontrolled	Disposition	Number of Events	Percent Aqueous	Percent Organic	Material	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
FCC	CONDENSER	COND TOP FCC UNIT	Uncontrolled	OWS	1	0	100	Light Cycle Oil (LCO)	0.92	0.40	40.00	40.00	39.56	40.00	7.65	25	<0.01	<0.01
FCC	E3	STEAM SURFACE CONDEN FCC UNIT	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
FCC	E3A	DEBUTANIZER REBOILER FCC UN	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
FCC	E24	LEAN OIL COOLER FCC UNIT	Uncontrolled	OWS	1	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
FCC	E13A	TOP REFLUX COOLER (TOP) FCC UNIT	Uncontrolled	OWS	1	0	100	Light Cycle Oil (LCO)	0.92	0.40	40.00	40.00	39.56	40.00	7.65	25	<0.01	<0.01
FCC		COMMINGLER COND TOP FCC UNIT	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC	E9A	HEAVY GAS OIL FEED EXCHANGER (TOP)	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC	E12A	TOP REFLUX BOILER FEED EXCHANGER (TOP)	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC	E12B	REFLUX BOILER FEED EXCHANGER (BTM)	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC		COMMINGLER COND TOP FCC UNIT	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC	E3A	DEBUTANIZER REBOILER FCC UN	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
FCC	E12A	TOP REFLUX BOILER FEED EXCHANGER (TOP)	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC		OIL COOLER FCC UNIT	Uncontrolled	OWS	1	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	25	<0.01	<0.01
FCC	E14B	FRACT OVHD CONDENSER (B) FCC	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC	E21	ABSORBER INTERCOOLER FCC UN	Uncontrolled	OWS	1	0	100	Heavy Naphtha	0.73	80.00	8,000.00	2,640.00	174,860.00	8,000.01	6.05	25	<0.01	<0.01
FCC	E22	ABSORBER INTERCOOLER	Uncontrolled	OWS	1	0	100	Heavy Naphtha	0.73	80.00	8,000.00	2,640.00	174,860.00	8,000.01	6.05	25	<0.01	<0.01
FCC	E12B	TOP REFLUX BOILER FEED EXCHANGER (BTM)	Uncontrolled	OWS	1	0	100	Light Naphtha	0.66	124.10	12,410.00	1,670.00	66,260.00	12,410.01	5.51	25	<0.01	<0.01
FCC	E7B	SLURRY STEAM GENERATOR FCC UNIT	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC	E2A	DEBUT OVHD CONDEN (A) FCC	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
FCC	E9A	HEAVY GAS OIL FEED EXCHANGER (TOP) FCC	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC		FCCU FRAID COOLER	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
FCC	E9B	HEAVY GAS OIL FEED EXCHANGER (BTM)FCC	Uncontrolled	OWS	2	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	50	<0.01	<0.01
FCC	E9A	HEAVY GAS OIL FEED EXCHANGER (TOP) FCC	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC		SLURRY SETTLER COOLER FCC UNIT	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC		BOTTOMS DEETHANIZER FEED EXCHANGER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
FCC	E16	HEAVY GAS OIL COOLER FCC UNIT	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC		INTERMEDIATE REFLUX FEED EXCHANGER FCC	Uncontrolled	OWS	1	0	100	Heavy Naphtha	0.73	80.00	8,000.00	2,640.00	174,860.00	8,000.01	6.05	25	<0.01	<0.01
FCC	E10B	INTERMED REFLUX FEED EXCHANGER (BTM)	Uncontrolled	OWS	3	0	100	Heavy Naphtha	0.73	80.00	8,000.00	2,640.00	174,860.00	8,000.01	6.05	75	<0.01	<0.01
FCC	E9B	HEAVY GAS OIL FEED EXCHANGER (BTM)FCC	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC	E9A	HEAVY GAS OIL FEED EXCHANGER (TOP) FCC	Uncontrolled	OWS	1	0	100	Heavy Cycle Oil (HCO)	0.94	0.65	65.00	65.00	64.71	65.00	7.85	25	<0.01	<0.01
FCC		SLURRY SETTLER COOLER FCC UNIT	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC		CLARIFIED OIL COOLER FCC UNIT	Uncontrolled	OWS	1	0	100	FCCU Clarified Oil	1.02	0.43	43.20	32.40	54.00	43.20	8.47	25	<0.01	<0.01
FCC	E2B	DEBUT OVHD CONDEN (B) FCC	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
FCC	E11	SLURRY FEED EXCHANGER (VERTICAL) FCC	Uncontrolled	OWS	4	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	100	<0.01	<0.01
FCC	E7A	SLURRY STEAM GENERATOR FCC UNIT	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC		CLARIFIED OIL COOLER FCC UNIT	Uncontrolled	OWS	1	0	100	FCCU Clarified Oil	1.02	0.43	43.20	32.40	54.00	43.20	8.47	25	<0.01	<0.01
FCC		SLURRY FEED EXCHANGER (HORIZONTAL) FCC	Uncontrolled	OWS	2	0	100	FCCU Slurry Oil	1.00	0.55	55.00	55.00	55.00	55.00	8.34	50	<0.01	<0.01
FCC	E7B	SLURRY STEAM GENERATOR FCC UNIT	Uncontrolled	OWS	2	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	50	-0-	-0-
ISOCRACKER		UNCLASSIFIED EXCHANGERS	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
ISOCRACKER		UNCLASSIFIED EXCHANGERS	Uncontrolled	OWS	1	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	25	<0.01	<0.01
ISOCRACKER		21K2 AFTERCOOLER ISOCRACKER	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER		21K1 AFTERCOOLER ISOCRACKER	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER		RECYCLE GAS HEATER EXCHANGER	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER	21E5A	2ND STG EFFLUENT FD	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER	21K6E2	C COMP JACKET COOLANT	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
ISOCRACKER	21E14B	DEBUTANIZER FEED BOTTOMS CONDENSER (B)	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER	21E14A	DEBUTANIZER FEED BOTTOMS CONDENSER (A)	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER		HEAVY ISO COOLER ISOCRACKER	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER		DEETHANIZER REBOILER HD5 PROPANE RECOV	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER		DRIER REGEN HEATER(PROPANE RECOVERY)	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER		OFF SPEC BOX COOLER ISOCRACK	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER		DEBUTANIZER FEED HEATER EXCHANGER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER	21E2B	1ST STG HOT EFFLU FD EXCH(B)	Uncontrolled	OWS	1	0	100	Light Isocrackate	0.67	190.50	19,050.00	5,020.00	228,180.00	19,050.01	5.55	25	<0.01	<0.01
ISOCRACKER	21E57D	DRIER REGEN CONDEN (HD5 PROPANE RECOV)	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER		ISO COOLER ISOCRACKER	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER		HEAVY ISO STRIPPER REBOILER ISOCRACKER	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER	21P5ABFS01AE01	ISO SPLTR BTM SEAL OIL COOLNG SKD EXCH A	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER	21E5B	2ND STG EFFLUENT FD EXCH (B)	Uncontrolled	OWS	1	0	100	Heavy Isocrackate	0.76	39.60	3,960.00	260.00	8,100.00	3,960.00	6.35	25	<0.01	<0.01
ISOCRACKER		DEPROPANIZER REBOILER ISOCRACKER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER		DRIER REGEN HEATER(PROPANE RECOVERY)	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
ISOCRACKER		DRIER REGEN HEATER(PROPANE RECOVERY)	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
KERO	COOLER	COOLER KERO HTU	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
KERO		STRIPPER BOTTOMS OFFGAS CONDENSER	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
KERO		PRODUCT COOLER KERO HTU	Uncontrolled	OWS	1	0	100	Kero Unit Feed	0.81	5.14	514.20	390.00	1,485.00	514.20	6.77	25	<0.01	<0.01
LOWLINE	500	DISCHARGE COOLER LOWLINE UN	Uncontrolled	OWS	1	0	100	Lowline	0.82	0.00	2,066.67	330.00	4,200.00	2,066.67	6.84	25	<0.01	<0.01
LOWLINE		COMP INTERMED STG COOLR(LL)	Uncontrolled	OWS	1	0	100	Lowline	0.82	0.00	2,066.67	330.00	4,200.00	2,066.67	6.84	25	<0.01	<0.01
MVR	83E1C	MVR COMPRESSOR LUBE OIL COOLER	Uncontrolled	OWS	2	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	50	<0.01	<0.01
MVR	83E1A	MVR COMPRESSORS VAPOR AFTERCOOLER	Uncontrolled	OWS	2	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	50	<0.01	<0.01
NAPHTHA	11E6B	STABILIZER REBOILER (B) NAPTHA HDS	Uncontrolled	OWS	1	0	100	Heavy Naphtha	0.73	80.00	8,000.00	2,640.00	174,860.00	8,000.01	6.05	25	<0.01	<0.01
PLATFORMER	13E6A	DEBUTANIZER FEED/BOTTOMS EXCHANGER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
PLATFORMER	13E1D	EFFLUENT FEED EXCHANGER	Uncontrolled	OWS	1	0	100	Platformer Unit Feed	0.76	73.40	7,340.00	3,170.00	258,370.00	7,340.00	6.30	25	<0.01	<0.01
PLATFORMER	13E1C	EFFLUENT FEED EXCHANGER	Uncontrolled	OWS	1	0	100	Platformer Unit Feed	0.76	73.40	7,340.00	3,170.00	258,370.00	7,340.00	6.30	25	<0.01	<0.01
PLATFORMER	13K8E2B	BOOSTER COMP JACKET WATER COOLER	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
PLATFORMER	13K1E1A	PLAT COMPRESSOR LUBE OIL EXCHANGER (TOP)	Uncontrolled	OWS	1	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	13K1E1B	PLAT COMPRESSOR LUBE OIL EXCHANGER (BTM)	Uncontrolled	OWS	1	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	13K1E1A	PLAT COMPRESSOR LUBE OIL EXCHANGER (TOP)	Uncontrolled	OWS	1	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	13E8A	DEBUT REBOILR (A) PLATFORMER	Uncontrolled	OWS	2	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	50	<0.01	<0.01
PLATFORMER		LIGHT REFORMATE STRIPPER REBOILER	Uncontrolled	OWS	1	0	100	Light Reformate	0.74	2,618.50	261,850.00	145,990.00	401,280.00	261,850.17	6.16	25	0.02	0.02
PROPANERCY	83ERCV1	EXCHANGER RAIL RACK VAPORIZER	Uncontrolled	OWS	2	0	100	Crude Unit Feed	0.83	10.46	1,045.68	674.30	2,338.29	1,045.68	6.95	50	<0.01	<0.01
PROPANERCY	83ERCV1	HEAT EXCHANGER RAIL RACK VAPORIZER	Uncontrolled	OWS	2	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	50	<0.01	<0.01
SCOT	44E3A	LEAN AMINE COOLR (A) SCOT	Uncontrolled	OWS	1	100	0	Amine	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-
STF		ISOBUTANE CONDENSER	Uncontrolled	OWS	1	0	100	Butane	0.80	9.30	930.00	697.50	1,162.50	930.00	6.67	25	<0.01	<0.01
SULFUR #2		#3 REHEATER SULFUR 2	Uncontrolled	OWS	1	100	0	Sour Water	1.00	73.00	7,300.00	9,125.00	5,475.00	73.00	8.34	25	<0.01	<0.01
SULFUR #2		#2 REHEATER SULFUR 2	Uncontrolled	OWS	1	100	0	Sour Water	1.00	73.00	7,300.00	9,125.00	5,475.00	73.00	8.34	25	<0.01	<0.01

Table A.24: 2014 Exchanger Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Exchanger	Controlled/ Uncontrolled	Disposition	Number of Events	Percent Aqueous	Percent Organic	Material	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
SULFUR #2		#1 REHEATER SULFUR 2	Uncontrolled	OWS	1	100	0	Sour Water	1.00	73.00	7,300.00	9,125.00	5,475.00	73.00	8.34	25	<0.01	<0.01
VGO	32K1E2A	VGO RECYCLE COMP SEAL OIL EXCHANGER	Uncontrolled	OWS	2	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	50	<0.01	<0.01
VGO	32K1E1A	VGO RECYCLE COMP LUBEOIL EXCHANGER TOP	Uncontrolled	OWS	2	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	50	<0.01	<0.01
VGO	32K1E2A	VGO RECYCLE COMP SEAL OIL EXCHANGER TOP	Uncontrolled	OWS	2	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	50	<0.01	<0.01
VGO	32K1E2A	VGO RECYCLE COMP SEAL OIL EXCHANGER TOP	Uncontrolled	OWS	2	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	50	<0.01	<0.01
VGO	32K1E2B	VGO RECYCLE COMP SEAL OIL EXCH (BTM)	Uncontrolled	OWS	2	0	100	Vacuum Unit VGO	0.91	0.03	3.00	1.00	5.00	3.00	7.56	50	<0.01	<0.01
VGO	32K1E2A	VGO RECYCLE COMP SEAL OIL EXCHANGER TOP	Uncontrolled	OWS	1	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT		JOY AIR COMPRESSOR	Uncontrolled	OWS	1	100	0	Water	1.00	0.00	0.00	0.00	0.00	0.00	8.34	25	-0-	-0-

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.05	0.05

Table A.25: 2014 Compressor Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Compressor	Controlled/ Uncontrolled	Disposition	Event Number	Double Count	Percent Aqueous	Percent Organic	Waste	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
DIESEL	73K1	VGO INSTRUMENT AIR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
DIESEL	83K1A	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
DIESEL	13K7	VGO MAKEUP COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
DIESEL	07K1	FCC WET GAS COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
DIESEL	21K1-5B	ISOCRACKER "B" COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
FCC	11K1	NAPHTHA RECYCLE COMP	Uncontrolled	OWS	3	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	3K1	KERO RECYCLE GAS COMPRESSOR	Uncontrolled	OWS	3	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	83K1A	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	21K1-5A	ISOCRACKER "A" COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	21K6-7	ISO "C" (K6 DEBUTANIZER / K7 DEPROPANIZER)	Uncontrolled	OWS	3	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	73K3	JOY II AIR COMPRESSOR PRSD	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	13K8	ISO BOOSTER COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	73K4	CENTAC AIR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
ISOCRACKER	73K2	JOY I AIR COMPRESSOR RVSD	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
KERO	13K7	VGO MAKEUP COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
KERO	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
KERO	13K1	PLATFORMER RECYCLE COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
KERO	83K1A	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
LOWLINE	3K1	KERO RECYCLE GAS COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	K55	ISOBUTANE COMP AT 514 SPHERE	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	K501A	DIESEL COMPRESSOR	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	32K1	VGO RECYCLE COMPRESSOR	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	73K2	JOY I AIR COMPRESSOR RVSD	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	21K1-5A	ISOCRACKER "A" COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	13K7	VGO MAKEUP COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	13K1	PLATFORMER RECYCLE COMPRESSOR	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	11K1	NAPHTHA RECYCLE COMP	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	21K8B	ISO CHILLED WATER REFRIGERATION	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
MVR	83K1A	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
NAPHTHA	13K7	VGO MAKEUP COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
NAPHTHA	73K1	VGO INSTRUMENT AIR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
NAPHTHA	21K1-5B	ISOCRACKER "B" COMPRESSOR	Uncontrolled	OWS	3	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01

Table A.25: 2014 Compressor Maintenance Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Area	Equipment #	Compressor	Controlled/ Uncontrolled	Disposition	Event Number	Double Count	Percent Aqueous	Percent Organic	Waste	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Benzene Range (ppmw) Min	Benzene Range (ppmw) Max	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
NAPHTHA	21K8B	ISO CHILLED WATER REFRIGERATION	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
NAPHTHA	21K8A	ISO CHILLED WATER REFRIGERATION	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
NAPHTHA	73K2	JOY I AIR COMPRESSOR RVSD	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	2	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	21K1-5B	ISOCRACKER "B" COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	32K1	VGO MAKEUP COMPRESSOR	Uncontrolled	OWS	3	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
PLATFORMER	73K1	VGO INSTRUMENT AIR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
STF	21K1-5A	ISO "C" (K6 DEBUTANIZER / K7 DEPROPANIZER)	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
STF	K501A	DIESEL COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	83K1A	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	K501A	DIESEL COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	21K6-7	ISO "C" (K6 DEBUTANIZER / K7 DEPROPANIZER)	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	11K1	NAPHTHA RECYCLE COMP	Uncontrolled	OWS	4	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
VGO	07K1	FCC WET GAS COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	83K1B	BARGE DOCK MVR COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	07K1	FCC WET GAS COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	32K1	VGO RECYCLE COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	05K1	LOWLINE COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	K55	ISOBUTANE COMP AT 514 SPHERE	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01
WTR TREAT	K501A	DIESEL COMPRESSOR	Uncontrolled	OWS	1	N	0	100	Lube Oil	0.80	0.10	10.00	0.00	20.00	10.00	6.67	25	<0.01	<0.01

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001

Table A.26: 2014 Tanker Truck Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Annual Truck Movements											
Product	API Gravity	Specific Gravity	Average Benzene (vol%)	Average Benzene (wt%)	Average Benzene (mg/l)	Number of Hose Disconnects		Annual Waste Quantity (lbs)	Annual Benzene Quantity (lbs)	Annual Benzene Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
						Receipts	Shipments				
Jet A		0.810			514.00	0	4	270.22	0.139	<0.001	<0.001
Slop Oil		0.860			1830.00	0	3	215.17	0.394	<0.001	<0.001
Sulfur		1.000			0.00	0	32	2,668.80	0.000	-0.00-	-0.00-

Assumptions:
1) 6" and 8" diameter cargo hoses are used for product movement at truck terminal;
8" diameter hose by 25' long used as basis for volume calculation.
@ 100 gallons "waste" product/hose receipt disconnect
@ 10 gallons "waste" product/hose shipment disconnect
2) Information on number of loads shipped and received came from Nicholas Casoli in Trainer's Accounting Dept.

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001

Table A.27: 2014 Railcar Waste
Monroe Energy, LLC
Trainer, Pennsylvania

Annual Truck Movements											
Product	API Gravity	Specific Gravity	Average Benzene (vol%)	Average Benzene (wt%)	Average Benzene (mg/l)	Number of Hose Disconnects		Annual Waste Quantity (lbs)	Annual Benzene Quantity (lbs)	Annual Benzene Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
						Receipts	Shipments				
Butane		0.800			930	**230**	**631**	195,556.32	181.867	0.083	0.083
Isobutane		0.800			930	**1564**	**1**	1,043,567.52	970.518	0.440	0.440
Sulfur		1.000			0		**131**	10,925.40	0.000	-0.00-	-0.00-

Assumptions:

1) 6" and 8" diameter cargo hoses are used for product movement at truck terminal;
   8" diameter hose by 25' long used as basis for volume calculation.
   @ 100 gallons "waste" product/hose receipt disconnect
   @ 10 gallons "waste" product/hose shipment disconnect

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.523	0.523

Table A.28: 2014 Turnaround Waste Streams
Monroe Energy, LLC
Trainer, Pennsylvania

Source	Table	TAB Quantity (Mg)	6.0 Mg Total (Mg)
Isocracker	28.1	0.006	0.006
543/544 Crude Units	28.2	0.009	0.009
Vacuum Units	28.3	<0.001	<0.001
	Total	**0.015**	**0.015**

Table A.28.1: 2014 Turnaround Waste Streams, Isocracker
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
21-K-15A	Isocracker Compressor "A"	Uncontrolled	OWS	1	90	10	0.85	0.00	64.71	5.58	8.21	200.00	<0.001	<0.001
21-K-15B	Isocracker Compressor "B"	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
21-K-6/7	Debutanizer/Depropanizer Compressor "C"	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
21-V-18	Fuel Gas KO Drum	Uncontrolled	OWS	1	90	10	0.73	31.50	3,150.00	264.68	8.11	20.00	<0.001	<0.001
21-V-20	Deethanizer Feed Drum	Uncontrolled	OWS	1	90	10	0.57	0.14	50.00	3.10	7.98	20.00	<0.001	<0.001
62-P-3	Flare Fingerpot Knockout Drum Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
C-1	1st Stage Stripper Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
C-12	Amine Absorber Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
C-2	Recycle Splitter Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
C-3	Heavy Isocrackate Stripper	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	20.00	<0.001	<0.001
C-4	Debutanizer Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
C-5	Depropanizer Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
C-6	Deisobutanizer Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-10A	K4A Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-10B	K4B Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-11A	K5A Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-11B	K5B Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-12A	K5A Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-12B	K5B Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-13	K6 Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-14	K6 Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-15	K7 Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-16	K7 Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-3A	K1A Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-3B	K1B Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-4A	K1A Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-4B	K1B Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-5A	K2A Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-5B	K2B Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-6A	K2A Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-6B	K2B Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-7A	K3A Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-7B	K3B Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-8A	K3A Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-8B	K3B Discharge Pulse Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-9A	K4A Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
D-9B	K4B Suction Snubber	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-1	2nd Stage Feed Heater Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-2A	1st Stage Hot Effluent/Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001

Table A.28.1: 2014 Turnaround Waste Streams, Isocracker
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
E-2B	1st Stage Hot Effluent/Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-3	Stripper/Hot Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-31	Debutanizer/Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-32	1st Stage Cold Effluent Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-33	Stripper/Cold Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-34	Splitter/Cold Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-35	Recycle Gas Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-5A	2nd Stage Effluent Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-5B	2nd Stage Effluent Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-5C	2nd Stage Effluent Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
E-6	Splitter/Hot Feed Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
K15-A-P1A	Compressor "A" Lube Oil Pump#1	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
K15-A-P1B	Compressor "A" Lube Oil Pump#2	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
K15-B-P2A	Compressor "B" Lube Oil Pump#1	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
K15-B-P2B	Compressor "B" Lube Oil Pump#2	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
K6/7-P1A	Compressor "C" Main Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
K-6/7-P-1B	Compressor "C" Auxiliary Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-1	1st Stage Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-12A	Deisobutanizer Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-12B	Deisobutanizer Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-13	1st Stage Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-14	2nd Stage Power Recovery Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-14-P1	2nd Stage Power Recovery Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-15A	Depropanizer Reboiler Condensate Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-15B	Depropanizer Reboiler Condensate Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-15C	Depropanizer Reboiler Condensate Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-1A	Central Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-1B	Central Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P1-P2	1st Stage Feed Pump Auxiliary Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-26A	Depropanizer Overhead Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	5.00	<0.001	<0.001
P-26B	Depropanizer Overhead Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	5.00	<0.001	<0.001
P-2A	2nd Stage Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P2-A-22	ommon Spare Feed Pump Auxiliary Lube Oil Pum	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P2-A-P2	2nd Stage Feed Pump Auxiliary Lube Oil Pump	Uncontrolled	OWS	1	0	100	0.84	0.00	10.00	10.00	6.97	5.00	<0.001	<0.001
P-2B	Common Spare Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-30A	Deethanizer Charge Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-30B	Deethanizer Charge Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-3A	Stripper Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-3B	Stripper Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-5A	Splitter Bottoms Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	5.00	<0.001	<0.001
P-5B	Splitter Bottoms Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	5.00	<0.001	<0.001
P-6A	Splitter Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-6B	Splitter Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001

Table A.28.1: 2014 Turnaround Waste Streams, Isocracker
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
P-7A	Debutanizer Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-7B	Debutanizer Feed Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-8A	Heavy Isocrackate Product Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	5.00	<0.001	<0.001
P-8A	Heavy Isocrackate Product Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	5.00	<0.001	<0.001
P-9A	Debutanizer Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
P-9B	Debutanizer Reflux Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	5.00	<0.001	<0.001
R-1	1st Stage Reactor	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
R-2	2nd Stage Reactor	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
TP-5A	Turbine Splitter Bottoms Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	7,411.76	7,411.77	7.09	5.00	<0.001	<0.001
V-1	Feed Surge Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-10A	K1A Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-10B	K1B Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-11A	K2A Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-11B	K2B Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-12A	K3A Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-12B	K3B Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-13A	K4A Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-13B	K4B Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-14A	K5A Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-14B	K5B Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-15	K6 Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-16	K7 Suction Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-17	Gas Drier	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-2	1st Stage High Pressure Separator	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-20	Depropanizer Feed Drum	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-3	2nd Stage High Pressure Separator	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-4	Low Pressure Separator	Uncontrolled	OWS	1	0	100	0.85	0.00	64.71	64.71	7.09	20.00	<0.001	<0.001
V-5	Stripper Accumulator	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	20.00	<0.001	<0.001
V-6	Splitter Accumulator	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	20.00	<0.001	<0.001
V-7	Debutanizer Accumulator	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	20.00	<0.001	<0.001
V-8	Depropanizer Accumulator	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	20.00	<0.001	<0.001
V-9	Deisobutanizer Accumulator	Uncontrolled	OWS	1	0	100	0.85	0.00	12,000.00	12,000.01	7.09	20.00	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.006	0.006

Table A.28.2: 2014 Turnaround Waste Streams, Crude Units
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
21407	543 Salt Dryer KO Pot	Uncontrolled	OWS	1	90	10	0.84	5.00	52.00	8.95	8.21	5.00	<0.001	<0.001
21408	544 Salt Dryer KO Pot	Uncontrolled	OWS	1	90	10	0.84	5.00	52.00	8.95	8.21	5.00	<0.001	<0.001
01-V-1	543 1st Stage Desalter	Uncontrolled	OWS	1	98	2	0.84	14.00	674.30	25.08	8.31	78.45	<0.001	<0.001
02-PL1	Desalted Crude Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
02-V-1	544 1st Stage Desalter	Uncontrolled	OWS	1	98	2	0.84	0.84	1,848.80	31.99	8.31	78.45	<0.001	<0.001
21403	Tank "B" 2nd Stage - #2 Desalter	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21406	Tank "C" 2nd Stage - #2 Desalter	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21407	Process Drier Settler Tank #1 (RvSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21412	Crude Pump Turbine Condensate	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21413	Crude Pump Turbine Condensate	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21417	Surge Drum Separator	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
21420	Desalter Brine Collection Pot	Uncontrolled	OWS	1	100	0	1.00	20.00	0.00	20.00	8.34	20.00	<0.001	<0.001
21957	Kero/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
22411	Overhead Condensate	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	20.00	<0.001	<0.001
22412	Overhead Condensate	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	20.00	<0.001	<0.001
22413	Overhead Condensate	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	20.00	<0.001	<0.001
2277	MCSS Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
2281	Reduced Crude Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	25.00	25.00	7.22	5.00	<0.001	<0.001
2283	Reduced Crude Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	25.00	25.00	7.22	5.00	<0.001	<0.001
2284	Gland Oil Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.81	0.00	10.00	10.00	6.79	5.00	<0.001	<0.001
2285	Gas Oil Runback Pump	Uncontrolled	OWS	1	0	100	0.92	0.00	109.41	109.41	7.70	5.00	<0.001	<0.001
2287	Gland Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.81	0.00	10.00	10.00	6.79	5.00	<0.001	<0.001
2296	Overhead Product Pump (ChSd)	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
2298	Overhead Product Pump (MhSd)	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
2310	MCSS/LCSS Spare Common Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
2313	LCSS Pump	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
2314	Kerosene Side Stream Pump	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
2317	Kero/Diesel Spare Common Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
2318	Stink Oil Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	70.59	70.59	7.09	5.00	<0.001	<0.001
2319	Stink Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	70.59	70.59	7.09	5.00	<0.001	<0.001
2324	Diesel Side Stream Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.86	0.00	116.28	116.28	7.17	5.00	<0.001	<0.001
2325	Top Reflux Gasoline Pump (Turbine)	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
233	AGO Pump (RrSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	63.22	63.22	7.26	5.00	<0.001	<0.001
2337	Crude Charge Pump (MhSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	5.00	<0.001	<0.001
2340	543/544 Spare Cold Crude Charge Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	5.00	<0.001	<0.001
2342	AGO Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	63.22	63.22	7.26	5.00	<0.001	<0.001
2373	Desalted Crude Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	0.00	-0.00-	-0.00-
3923	Turbine Reduced Crude Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	3,960.00	3,960.00	7.22	5.00	<0.001	<0.001
3924	Turbine Gland Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.81	0.00	10.00	10.00	6.79	5.00	<0.001	<0.001
3925	Turbine Gland Oil Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.81	0.00	10.00	10.00	6.79	5.00	<0.001	<0.001
3928	Turbine Overhead Product Pump (MhSd)	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
3933	Turbine Top Reflux Gasoline Pump	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
3934	Turbine MCSS/LCSS Spare Common Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001
3938	Turbine Stink Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	70.59	70.59	7.09	5.00	<0.001	<0.001
4200	543/544 Turbine Spare Cold Crude Charge Pump	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	5.00	<0.001	<0.001
4201	Turbine Crude Charge Pump (MhSd)	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	5.00	<0.001	<0.001
4226	Turbine Kero/Diesel Spare Common Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.82	0.00	1,482.93	1,482.93	6.84	5.00	<0.001	<0.001

Table A.28.2: 2014 Turnaround Waste Streams, Crude Units
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
C-401	Crude Tower	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
C-403	Naphtha Stripper Tower	Uncontrolled	OWS	1	0	100	0.73	0.00	32,400.00	32,400.02	6.09	20.00	0.002	0.002
C-404	Water/White Distillate Stripper	Uncontrolled	OWS	1	100	0	1.00	20.00	0.00	20.00	8.34	20.00	<0.001	<0.001
C-405	Diesel Stripper	Uncontrolled	OWS	1	0	100	0.86	0.00	116.28	116.28	7.17	20.00	<0.001	<0.001
D-301	543 Crude Overhead Accumulator	Uncontrolled	OWS	1	90	10	0.73	19.46	3,170.00	255.35	8.11	40.30	<0.001	<0.001
D-401	Overhead Accumulator	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	20.00	<0.001	<0.001
D-409	Fuel Gas Knockout Drum	Uncontrolled	OWS	1	0	100	0.73	0.00	490.00	490.00	6.11	20.00	<0.001	<0.001
D-543	543 Desalter Crude Surge Drum	Uncontrolled	OWS	1	0	100	0.84	0.84	1,848.80	1,848.80	7.01	20.00	<0.001	<0.001
D-544	Surge Tank - #2 Desalter	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-402A	Circ Reflux/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-402C	Circ Reflux/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-402D	Circ Reflux/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-403B	Circ Reflux/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-405A	Diesel/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-405B	Diesel/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-406A	VGO/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-406B	VGO/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-408A	MCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-408B	MCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-409A	LCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-409B	LCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-409C	LCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-409D	LCSS/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-410	MCSS/Steam Generator	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414A	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414B	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414C	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414D	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414E	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414F	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414G	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414H	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414J	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414K	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414L	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-414M	Gas Oil/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415A	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415B	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415C	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415D	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415E	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001
E-415F	Asphalt/Crude Exchanger	Uncontrolled	OWS	1	0	100	0.87	0.00	63.22	63.22	7.26	5.00	<0.001	<0.001
G-403-A	Turbine AGO Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	533.58	533.58	7.34	0.00	-0.00-	-0.00-
P-1A	Heavy Slop Oil Pump	Uncontrolled	OWS	1	0	100	0.88	0.00	533.58	533.58	7.34	0.00	-0.00-	-0.00-
P-1B	Heavy Slop Oil Pump	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
P-2A	Top Circ Reflux Pump	Uncontrolled	OWS	1	100	0	1.00	20.00	0.00	20.00	8.34	5.00	<0.001	<0.001
P-2A	Desalted Crude Brine Water Inject. Pump													

Table A.28.2: 2014 Turnaround Waste Streams, Crude Units
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
P-2B	Top Circ Reflux Pump	Uncontrolled	OWS	1	0	100	0.65	0.00	5,429.09	5,429.09	5.43	5.00	<0.001	<0.001
P-2B	Desalted Crude Brine Water Inject. Pump	Uncontrolled	OWS	1	100	0	1.00	20.00	0.00	20.00	8.34	5.00	<0.001	<0.001
V-1	Tank "A" 1st Stage - #2 Desalter	Uncontrolled	OWS	1	0	100	0.85	0.00	1,848.80	1,848.80	7.09	20.00	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
0.009	0.009

Table A.28.3: 2014 Turnaround Waste Streams, Vacuum Units
Monroe Energy, LLC
Trainer, Pennsylvania

Equipment Number	Equipment Description	Controlled/ Uncontrolled	Disposition	Number of T/A Events	Percent Aqueous	Percent Organic	Organic Density (sp.gr.)	Aqueous Benzene (mg/L)	Organic Benzene (mg/kg)	Average Benzene (ppmw)	Average Density (lbs/gal)	Total Volume (gpy)	TAB Quantity (Mg/yr)	6.0 Mg Total (Mg/yr)
542	542 Vacuum Tower	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
C-402	Vacuum Tower (C-402)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
D-402	Stink Oil Accumulator (D-402)	Uncontrolled	OWS	1	0	100	0.85	0.00	70.59	70.59	7.09	20.00	<0.001	<0.001
D-403	Runback Accumulator (D-403)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
D-404	Gas Oil Accumulator (D-404)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	1st Stage Press Powered Pump	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Big Butts Bottoms Pump (P-2A)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Gas Oil Feed Pump	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Big Butts Bottoms Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Gas Oil Runback Accumulator	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Vacuum Intercondenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Vacuum Aftercondenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Vacuum Jet Condenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Gas Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Asphalt Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	0.19	0.19	7.22	5.00	<0.001	<0.001
NA	Asphalt Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	0.19	0.19	7.22	5.00	<0.001	<0.001
NA	Gas Oil Runback Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Gas Oil Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	5.00	<0.001	<0.001
NA	Hotwell Skim Oil Pump (MhSd)	Uncontrolled	OWS	1	0	100	0.83	0.00	3,213.50	3,213.50	6.91	5.00	<0.001	<0.001
NA	Hotwell Skim Oil Pump (PrSd)	Uncontrolled	OWS	1	0	100	0.83	0.00	3,213.50	3,213.50	6.91	5.00	<0.001	<0.001
NA	Hotwell Pump (ChSd)	Uncontrolled	OWS	1	100	0	1.00	24.82	0.00	24.82	8.34	5.00	<0.001	<0.001
NA	Hotwell Pump (MhSd)	Uncontrolled	OWS	1	100	0	1.00	24.82	0.00	24.82	8.34	5.00	<0.001	<0.001
NA	Asphalt Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.87	0.00	0.19	0.19	7.22	20.00	<0.001	<0.001
NA	Gas Oil Pump (RvSd)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Vacuum Pump Separator	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	Hotwell Vessel	Uncontrolled	OWS	1	0	100	0.88	0.02	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	After Condenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	1st Interstage Condenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
NA	2nd Interstage Condenser	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001
PV-2316	Fuel Gas KO Drum	Uncontrolled	OWS	1	90	10	0.73	4.90	490.00	41.28	8.12	20.00	<0.001	<0.001
V-101	Gas Oil Accumulator (V-101)	Uncontrolled	OWS	1	0	100	0.88	0.00	3.00	3.00	7.35	20.00	<0.001	<0.001
V-102	Feed Surge Tank (V-102)	Uncontrolled	OWS	1	0	100	0.88	0.00	1.60	1.60	7.35	20.00	<0.001	<0.001

TAB (Mg/yr)	6.0 Mg Total (Mg/yr)
<0.001	<0.001