Sterigenics®
A Sotera Health company

September 27, 2018

Mr. Alec Messina
Director
Illinois Environmental Protection Agency (IL-EPA)
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

Re: Sterigenics U.S., LLC Permit # 95120085

Dear Mr. Messina:

As requested in your September 25, 2018 letter, Sterigenics is providing the final results from the recent stack tests at our Willowbrook facilities to the Illinois EPA. Stack testing was conducted at the Sterigenics Willowbrook 1 and Willowbrook 2 facilities on September 20 and 21, 2018 to test the recent equipment upgrades that control the backvent process emissions. The two-day testing was conducted by a third-party, independent tester and witnessed by representatives from the IL-EPA, U.S. Environmental Protection Agency (EPA), Tri-State Fire Department and the Village of Willowbrook.

The final test results for the Willowbrook 1 and 2 facilities are summarized in the attached two tables. The test results show that all test measurements taken in the outlets of the two emissions control systems were below the detection limit of the stack testing measurement equipment. These tests were taken while the sterilization chamber back vents were exhausting to the emission controls. Using the determined quantification limit of the measurement equipment, control efficiencies were calculated to be 99.6061 and 99.5606 for the Willowbrook 1 and 2 facilities, respectively.

The final reports for these stack tests are underway and should be complete soon.

If you have any questions, please feel free to contact me.

Regards,

KA Hoffman

Kathleen Hoffman
SVP, Global EH&S and Technical Services

2015 Spring Road Ste 650 Oak Brook, IL 60523
630.928.1700 | sterigenics.com

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY – BACKVENT OF AN ETHYLENE OXIDE EMISSION CONTROL DEVICE OPERATED BY STERIGENICS, INC. IN WILLOWBROOK, ILLINOIS (PLANT 1) ON SEPTEMBER 21, 2018

RUN NUMBER	INJECTION TIME	INLET ETO CONC. (PPM)[1]	OUTLET ETO CONC. (PPM)[2]	ETO CONTROL EFFICIENCY
1[3]	914	11.5	<0.10 (ND[4])	99.1304
1	915	542	<.0.10 (ND)	99.9815
1	916	38.9	<0.10 (ND)	99.7429
1	917	34.5	<0.10 (ND)	99.7101
1	918	27.6	<0.10 (ND)	99.6377
1	919	26.8	<0.10 (ND)	99.6269
1	920	27.0	<0.10 (ND)	99.6296
1	921	23.1	<0.10 (ND)	99.5671
1	923	25.4	<0.10 (ND)	99.6063
1	924	24.0	<0.10 (ND)	99.5833
1	925	23.7	<0.10 (ND)	99.5781
1	926	23.5	<0.10 (ND)	99.5745
1	927	23.2	<0.10 (ND)	99.5690
2[5]	931	24.0	<0.10 (ND)	99.5833
2	932	22.5	<0.10 (ND)	99.5556
2	933	42.3	<0.10 (ND)	99.7636
2	934	31.3	<0.10 (ND)	99.6805
2	935	28.8	<0.10 (ND)	99.6528
2	936	28.7	<0.10 (ND)	99.6516
2	937	28.5	<0.10 (ND)	99.6491
2	939	26.7	<0.10 (ND)	99.6255
2	940	26.8	<0.10 (ND)	99.6269
2	941	26.4	<0.10 (ND)	99.6212
2	942	26.9	<0.10 (ND)	99.6283
2	943	25.0	<0.10 (ND)	99.6000
2	944	25.2	<0.10 (ND)	99.6032
3[6]	953	23.1	<0.10 (ND)	99.5671
3	954	22.8	<0.10 (ND)	99.5614
3	955	27.8	<0.10 (ND)	99.6403
3	956	26.0	<0.10 (ND)	99.6154
3	957	23.8	<0.10 (ND)	99.5798
3	958	23.0	<0.10 (ND)	99.5652
3	1000	22.3	<0.10 (ND)	99.5516
3	1001	22.8	<0.10 (ND)	99.5614
3	1002	22.8	<0.10 (ND)	99.5614
3	1003	23.4	<0.10 (ND)	99.5726
3	1004	21.7	<0.10 (ND)	99.5392
3	1006	21.7	<0.10 (ND)	99.5392
TIME-WEIGHTED AVERAGE:		**39.36**	**0.1000**	**99.6061**
		REQUIRED CONTROL EFFICIENCY:		**99%**

[1] PPM = parts per million by volume
[2] 0.10 ppm is the quantification limit for the detector used at the outlet
[3] Backvent Phase Test Run #1 started at 9:13, ended at 9:28.
[4] ND = Below Detection Limit
[5] Backvent Phase Test Run #2 started at 9:30, ended at 9:45.
[6] Backvent Phase Test Run #3 started at 9:52, ended at 10:07.

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY – BACKVENT OF AN ETHYLENE OXIDE EMISSION CONTROL DEVICE OPERATED BY STERIGENICS, INC. IN WILLOWBROOK, ILLINOIS (PLANT 2) ON SEPTEMBER 20, 2018

RUN NUMBER	INJECTION TIME	INLET ETO CONC. (PPM)[1]	OUTLET ETO CONC. (PPM)[2]	ETO CONTROL EFFICIENCY
1[3]	1539	7.94	<0.10 (ND[4])	98.7406
1	1540	8.41	<.0.10 (ND)	98.8109
1	1541	213	<0.10 (ND)	99.9531
1	1542	30.4	<0.10 (ND)	99.6711
1	1544	22.3	<0.10 (ND)	99.5516
1	1545	22.2	<0.10 (ND)	99.5495
1	1546	21.8	<0.10 (ND)	99.5413
1	1547	19.7	<0.10 (ND)	99.4924
1	1548	18.8	<0.10 (ND)	99.4681
1	1549	20.3	<0.10 (ND)	99.5074
1	1550	19.3	<0.10 (ND)	99.4819
1	1552	19.8	<0.10 (ND)	99.4949
2[5]	1617	13.0	<0.10 (ND)	99.2308
2	1618	545	<0.10 (ND)	99.9817
2	1619	50.0	<0.10 (ND)	99.8000
2	1620	22.0	<0.10 (ND)	99.5455
2	1621	22.8	<0.10 (ND)	99.5614
2	1622	19.7	<0.10 (ND)	99.4924
2	1623	20.0	<0.10 (ND)	99.5000
2	1625	20.5	<0.10 (ND)	99.5122
2	1626	19.8	<0.10 (ND)	99.4949
2	1627	19.5	<0.10 (ND)	99.4872
2	1628	21.3	<0.10 (ND)	99.5305
2	1629	19.4	<0.10 (ND)	99.4845
2	1630	19.7	<0.10 (ND)	99.4924
3[6]	1651	20.6	<0.10 (ND)	99.5146
3	1652	246	<0.10 (ND)	99.9593
3	1653	40.1	<0.10 (ND)	99.7506
3	1654	34.2	<0.10 (ND)	99.7076
3	1655	30.8	<0.10 (ND)	99.6753
3	1657	31.6	<0.10 (ND)	99.6835
3	1658	33.1	<0.10 (ND)	99.6979
3	1659	31.5	<0.10 (ND)	99.6825
3	1700	31.8	<0.10 (ND)	99.6855
3	1701	29.4	<0.10 (ND)	99.6599
3	1703	31.5	<0.10 (ND)	99.6825
3	1704	30.1	<0.10 (ND)	99.6678
TIME-WEIGHTED AVERAGE:		**49.39**	**0.1000**	**99.5606**
		REQUIRED CONTROL EFFICIENCY:		**99%**

[1] PPM = parts per million by volume
[2] 0.10 ppm is the quantification limit for the detector used at the outlet.
[3] Backvent Phase Test Run #1 started at 15:38, ended at 15:53.
[4] ND = Below Detection Limit
[5] Backvent Phase Test Run #2 started at 16:16, ended at 16:31.
[6] Backvent Phase Test Run #3 started at 16:50, ended at 17:05.