Message

From: Nwia, Jacqueline [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D299B56BD7EF46709FB7465FD1E15466-JNWIA]
Sent: 7/25/2018 7:05:06 PM
To: Cohen, Eric [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=545800040a904d3e9ccfa22400b0f5fa-Eocohen]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Subject: Review of Poster Presentation for National Air Monitoring Conference
Attachments: EtO2018_Poster_Nwia.pptx; Poster text elements Draft v1.pptx

Good afternoon,

Attached are 2 Powerpoint files for your review. Both contain the same information, Poster text elements Draft v1 is easier to read than EtO2018_Poster_Nwia. I am planning to display these at the national air monitoring conference the week of August 13th. The poster needs to be printed for display no later than August 8.

Please let me know if you'd like to discuss.

Thank you.

Jackie Nwia

Jacqueline Nwia
Environmental Scientist
Air Monitoring and Analysis Section
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd. (AR-18)
Chicago, IL 60604
ph. (312) 886-6081
nwia.jacqueline@epa.gov

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 8/23/2018 6:37:08 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]

Subject: Accepted: Sterigenics - Willowbrook
Location: RTP-OAQPS-E141B/RTP-OAQPS-BLDG-E

Start: 9/4/2018 6:30:00 PM
End: 9/4/2018 7:30:00 PM
Show Time As: Busy

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/23/2018 3:53:24 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Sterigenics Mini-page
Attachments: Sterigenics Mini-page.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/22/2018 7:31:34 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Hulting, Melissa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a4a0d625eb444f08cbe265691641d71-MHulting]; King, Suzanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8718f08e0b5343ec809b1c0f014cc2fa-SKing]; Newman, Erin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=571c431b5a924f4796d8c453dcb226e6-Ewnewman]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Trine, Rae [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=73027b9254884e9daf3be4b0208d1173-RTrine]
CC: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Coughlin, Justin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0d5e6e54dc1a4c62a892a97810249bef-JCoughlin]; Hamilton, Scott [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fc13937a4dca4048a621ec1bb378d894-Smhamilt]
Subject: RE: Sterigenics and NATA web sites now live

As I was sending this, I learned that someone in HQ insisted that this be taken down. I'll let you know when and if it's back up.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Wednesday, August 22, 2018 2:13 PM
To: Bollweg, George <bollweg.george@epa.gov>; Hulting, Melissa <hulting.melissa@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Newman, Erin <newman.erin@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Trine, Rae <trine.rae@epa.gov>
Cc: Compher, Michael <compher.michael@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Coughlin, Justin <coughlin.justin@epa.gov>; Hamilton, Scott <hamilton.scott@epa.gov>
Subject: Sterigenics and NATA web sites now live

The Sterigenics web site is now live! https://www.epa.gov/il/sterigenics-willowbrook-facility

Many thanks to Margaret for coordinating and leading our efforts to characterize and address the risk coming from the facility. This was a big team effort, so thanks as well to Phuong for modeling the facility emissions, to George for helping understand the risk, and to Suzanne for pitching in with some last-minute research tasks. Monitoring was a big part of this too, so thanks to Jackie, Justin, and Scott for their efforts as well.

Also, FYI—2014 NATA is out to the public
https://www.epa.gov/national-air-toxics-assessment

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/21/2018 5:44:52 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]

Subject: FW: Rollout of Sterigenics Data - Willowbrook
Attachments: Willowbrook Air Monitoring Data; ATSDR Sterigenics EtO Consult Letter-final.pdf; ETO Sampling results.docx
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 8/21/2018 7:00:00 PM
End: 8/21/2018 8:00:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Nam, Ed
Sent: Monday, August 20, 2018 5:55 PM
To: Nam, Ed; Glover, John; Durno, Mark; Newton, Cheryl; Siegel, Kathryn; Cain, Alexis; Furey, Eileen; Payne, James; Kelley, Jeff; Johnson, Mark; Colledge, Michelle; Borries, Samuel; Padovani, Steven; Short, Thomas
Cc: Thiede, Kurt
Subject: Rollout of Sterigenics Data - Willowbrook
When: Tuesday, August 21, 2018 2:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Hello,

This email and attachments are close hold:
I'm rescheduling this meeting from last week. I wanted to discuss the communications plan with the Willowbrook employees.

Conference Line / Ex. 6

In prep for the meeting tomorrow, I wanted to send around three documents, all background material:

- The first document is Jim Payne's email of June 22 to the employees at Willowbrook.

Deliberative Process / Ex. 5

- The third document is the one page briefing paper from John Glover for Cathy Stepp summarizing the indoor air monitoring that was conducted in July.

Thanks,
-Ed

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 8/21/2018 12:24:38 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]

Subject: Accepted: Rollout of Sterigenics Data - Willowbrook
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 8/21/2018 7:00:00 PM
End: 8/21/2018 8:00:00 PM
Show Time As: Busy

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/17/2018 8:05:34 PM
To: Armitage, Julie [Julie.Armitage@Illinois.gov]
CC: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Region 5 Sterigenics Web Page

Hello Julie—we expect to post a Region 5 website on Sterigenics and EtO in the middle of next week. We'd like to include an Illinois EPA contact and phone number on the page. Is that okay with you? If so, who should be the contact? Thanks, and have a great weekend.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/10/2018 8:39:35 PM
To: Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]
CC: Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
Subject: FW: Sterigenics call follow-up
Attachments: 2018May10-EtOSamplingPlan_For Sterigenics.pdf; Willowbrook_MetData_0515-0519_For Sterigenics.pdf; 20180703_Sterigenics Monitoring Report_For Sterigenics.pdf; calrpt.pdf; 0182_001.pdf

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 07, 2018 1:21 PM
To: 'Hoffman, Kathy' <KHoffman@sterigenics.com>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; 'bftaylor@sidley.com' <bftaylor@sidley.com>
Subject: FW: Sterigenics call follow-up

Kathy-- Here are our monitoring sampling plan, met data, lab reports, and calibration curves. Please let me know if there is additional information about the monitoring that you would like to see.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Thursday, August 09, 2018 1:14 PM
To: 'Hoffman, Kathy' <KHoffman@sterigenics.com>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; 'Jeffrey Sprague' <Jeff.Sprague@Illinois.gov>; 'King, Steven' <Steven.King@Illinois.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>; Ogulei, David <Ogulei.David@epa.gov>; 'Armitage, Julie' <Julie.Armitage@Illinois.gov>; Wayland, Richard <Wayland.Richard@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Subject: RE: Sterigenics call follow-up

Hi Kathy—

Attached are the sampling plan, met data, lab reports, and calibration curves. There are a few redactions, related to pre-decisional EPA materials. We still owe you some information about method 320, which should be coming soon.

We received the information you sent about the stack parameters and building dimensions. Thank you.

I hope we can schedule a time to follow-up next week.
Thanks
Alexis

From: Nam, Ed
Sent: Friday, August 03, 2018 4:52 PM
To: Hoffman, Kathy <KHoffman@sterigenics.com>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenics call follow-up

Hi Kathy—

Thanks to you and your team for another very productive conference call. I'm pleased that we were able to get through these technical issues, with just a few follow-ups needs. Here is our understanding of what those follow-ups are:

EPA will provide to Sterigenics:

- Information about method 320, including a list of companies able to perform the test and an explanation of why we are recommending this method.
- EPA's sampling plan used during the cannister sampling in Willowbrook, the lab reports and calibration curves (if possible), and the met data.

Sterigenics will:

- Provide requested stack parameters and building dimensions for modeling.
- Provide a link to information about long-term EtO monitoring in New England.
- Review information about potential use of an IR camera for leak detection.

We will have a follow-up call the week after next. I suggest 9:00 or 10:00am on either Thursday, August 16 or Friday, August 17.

Thanks again.
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/10/2018 8:36:06 PM
To: Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]
Subject: RE: Sterigenics call follow-up

I resent the message below on Friday, since they claimed not to have gotten it before, and I sent them a more limited set of monitoring information earlier. I'll forward all of that in a minute.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nwia, Jacqueline
Sent: Monday, September 10, 2018 2:31 PM
To: Rountree, Jillian <Rountree.Jillian@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Sterigenics call follow-up

Jill,

This is the record of sampling and analysis materials Alexis shared with Sterigenics. I've copied Alexis so he could advise on whether he shared additional monitoring related materials with them.

Jackie

From: Cain, Alexis
Sent: Thursday, August 9, 2018 1:14 PM
To: Hoffman, Kathy <KHoffman@sterigenics.com>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Sprague, Jeff <Jeff.Sprague@Illinois.gov>; King, Steven <Steven.King@Illinois.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>; Ogulei, David <Ogulei.David@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>; Wayland, Richard <Wayland.Richard@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Subject: RE: Sterigenics call follow-up

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Thanks
Alexis

From: Nam, Ed
Sent: Friday, August 03, 2018 4:52 PM
To: Hoffman, Kathy <KHoffman@sterigenics.com>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenics call follow-up

Hi Kathy—

Thanks to you and your team for another very productive conference call. I'm pleased that we were able to get through these technical issues, with just a few follow-ups needs. Here is our understanding of what those follow-ups are:

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Sterigenics will:

- Provide requested stack parameters and building dimensions for modeling.
- Provide a link to information about long-term EtO monitoring in New England.
- Review information about potential use of an IR camera for leak detection.

We will have a follow-up call the week after next. I suggest 9:00 or 10:00am on either Thursday, August 16 or Friday, August 17.

Thanks again.
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/20/2018 9:19:32 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Bassler, Rachel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6dfb9f45b1e3443e95fe97296e7a8467-Bassler, Rachel]; Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: RE: Draft Sterigenics desk statement

I think it's good.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Monday, August 20, 2018 1:38 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Bassler, Rachel <Bassler.Rachel@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>
Subject: Draft Sterigenics desk statement

This draft desk statement is based on our draft news release … thoughts?

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/20/2018 9:16:17 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: FW: Draft Sterigenics desk statement
Attachments: Draft Desk Statement for Sterigenics 8.20.18 clean jk.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Monday, August 20, 2018 1:38 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Bassler, Rachel <Bassler.Rachel@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>
Subject: Draft Sterigenics desk statement

This draft desk statement is based on our draft news release … thoughts?

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/17/2018 7:58:37 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: FW: Sterigenics web copy
Attachments: steregenics-web-outline-draft 8 17 18.docx

FYI—the portions of the talking points that we plan to put on the web.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Friday, August 17, 2018 2:07 PM
To: Singer, Joshua <Singer.Joshua@epa.gov>; Pina, Yvette <pina.yvette@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: Sterigenics web copy

Josh and Yvette,

Please find web copy attached. Reach out with any questions. Thank you!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/17/2018 2:58:10 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: Web page
Attachments: steregenics-web-outline-draft 8 17 18.docx

Here's my effort to migrate language from the talking points to the web page. I'm really wishing that we had just worked directly on the web page! The topline message needs to be added. I'm circulated the file because of my problems with Sharepoint.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/21/2018 3:36:52 PM
To: Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]
Subject: RE: Sterigenics

Building 1 is 7775 Quincy Street and in Building II is 830 Midway.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Deamer, Eileen
Sent: Friday, September 21, 2018 10:25 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics

Can you give me address of the facility again?

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

From: Cain, Alexis
Sent: Friday, September 21, 2018 10:00 AM
To: Deamer, Eileen <deamer.eileen@epa.gov>
Cc: Ogulei, David <Ogulei.David@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Sterigenics

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/21/2018 3:28:19 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Lipinsky's office: Sterigenics

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Friday, September 21, 2018 9:53 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Lipinsky's office: Sterigenics

Deliberative Process / Ex. 5

From: Cain, Alexis
Sent: Friday, September 21, 2018 9:43 AM
To: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Lipinsky's office: Sterigenics

Had a long conversation this morning with staffer from Lipinsky's office about Sterigenics. He was well-informed and asked good questions.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 21, 2018 9:42 AM
To: Deamer, Eileen <deamer.eileen@epa.gov>
Cc: Ogulei, David <Ogulei.David@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Sterigenics

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/16/2018 4:20:02 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics Talking points draft 8 14 18.Comments To R5 from OAQPS.docx
Attachments: Sterigenics Talking points draft 8 14 18.Comments To R5 from OAQPS.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Davis, Alison
Sent: Thursday, August 16, 2018 11:18 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Bremer, Kristen <Bremer.Kristen@epa.gov>
Subject: Sterigenics Talking points draft 8 14 18.Comments To R5 from OAQPS.docx

Alexis,

Here are comments from OAQPS. Please note that we also are working on materials, and those are not yet final. When they are, we will share them, so we can make our documents consistent, especially as it relates to health.

Thanks.
Alison

Alison Davis
Senior Advisor for Public Affairs
US EPA, Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711
Desk: 919-541-7587
Mobile: 919-624-0872

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/16/2018 3:34:32 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Cain, Alexis has shared 'Sterigenics Talking points draft 8 14 18'
Attachments: Sterigenics Talking points draft 8 14 18.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/16/2018 1:09:02 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Sen. Duckworth inquiry re: company doing Sterigenics' stack testing

Ed—here is a draft reply to the inquiry from Senator Duckworth's office, to share with IEPA.

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Monday, October 15, 2018 11:12 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Sen. Duckworth inquiry re: company doing Sterigenics' stack testing

Talk to Ed about this. Maybe our library can help with this.

From: Fortin, Denise
Sent: Monday, October 15, 2018 11:04 AM
To: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Sen. Duckworth inquiry re: company doing Sterigenics' stack testing

Please see Sen. Duckworth's inquiry below asking about the company doing the stack testing on the back vent.

What do we know about this company, or do you need to check with IEPA?

Thanks,
Denise

Denise Fortin
Congressional/Intergovernmental Liaison
Office of External Communications
U.S. Environmental Protection Agency

312-886-9859

From: Adhar, Radha (Duckworth) [mailto:Radha_Adhar@duckworth.senate.gov]
Sent: Monday, October 15, 2018 9:34 AM
To: Fortin, Denise <Fortin.Denise@epa.gov>
Cc: Applegate, David (Duckworth) <David_Applegate@duckworth.senate.gov>
Subject: RE: Letter to Acting Administrator Andy Wheeler

You bet, and thanks for all your help on this issue Denise.

I wanted to flag a concern the community has re: the stack testing that is being conducted at the Sterigenic's back-vent. They are concerned that the third party conducting the testing is partly owned by Sterigenics—or there is some financial connection between the companies.

Do you mind sharing whether that is the case, or some information that will rebut this claim and put the community's concerns at ease?

Thank you in advance,
Radha

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/21/2018 3:07:11 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics

David gave me some bad information, reflected in this message. He called back quickly with the right information, reflected in the 10:01 message.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 21, 2018 9:42 AM
To: Deamer, Eileen <deamer.eileen@epa.gov>
Cc: Ogulei, David <Ogulei.David@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Sterigenics

Hi Eileen—following up from our conversation with Joel at Rep Lipinsky's office. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/16/2018 3:32:31 PM
To: Trine, Rae [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=73027b9254884e9daf3be4b0208d1173-RTrine]

https://usepa.sharepoint.com/:w:/r/sites/R5/ARD/ATAB/_layouts/15/Doc.aspx?sourcedoc=%7B807F9CDF-E9B0-49C4-AD8E-7235E33274F0%7D&file=Sterigenics%20Talking%20points%20draft%208%2014%2018.docx&action=default&mobileredirect=true

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/16/2018 2:01:22 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sterigenics website talking points

Sure—that's fine. Thanks.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Davis, Alison
Sent: Thursday, August 16, 2018 8:48 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics website talking points

We are close. We have a couple of comments to resolve. May I send them to you in a separate file? That would be particularly helpful, so I don't have to add all the comments into the Sharepoint file.
And yes, you are correct – we are working on our own materials.

From: Cain, Alexis
Sent: Thursday, August 16, 2018 9:46 AM
To: Davis, Alison <Davis.Alison@epa.gov>
Subject: RE: Sterigenics website talking points

Hi Alison—I know you all are probably overwhelmed with NATA release and today's state webinar. Just checking about this.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Tuesday, August 14, 2018 3:35 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Subject: Sterigenics website talking points

Hi Alison—it would be much appreciated if we could get review of this document by COB tomorrow. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

https://usepa.sharepoint.com/:w:/r/sites/R5/ARD/ATAB/_layouts/15/Doc.aspx?sourcedoc=%7B807F9CDF-E9B0-49C4-AD8E-

7235E33274F0%7D&file=Sterigenics%20Talking%20points%20draft%208%2014%2018.docx&action=default&mobileredirect=true

The press release review is happening separately from the Sharepoint site—you should be getting the most recent version from the R5 public affairs office.

Thanks.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/20/2018 1:20:27 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Pina, Yvette [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9798b66f4ff443cd817b050f17d17215-YPina]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: web page
Attachments: Web Page Edits.docx

Here are suggested edits to the "Why is EPA involved?" page and the "Air Monitoring Plan" page. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Monday, September 17, 2018 1:54 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>
Subject: RE: web page

Hi Alexis,

(adding Jeff since they are reviewing in parallel)
Thanks for making the revisions and format changes.
It looks good. I have a few comments:

Deliberative Process / Ex. 5

Thanks,
-Ed

From: Nam, Ed
Sent: Monday, September 17, 2018 7:47 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Re: web page

I'm ok with our internal press office. I wanted to see it before it went to oaqps. Sorry for any misunderstanding on my part.

Ed

Sent from my iPhone

On Sep 17, 2018, at 7:40 AM, Cain, Alexis <cain.alexis@epa.gov> wrote:

> No. Katie indicated that you wanted to see it before it went to OPA.
>
> Alexis Cain
> USEPA-Region 5
> (312) 886-7018
> cain.alexis@epa.gov
>
> **From:** Nam, Ed
> **Sent:** Friday, September 14, 2018 5:41 PM
> **To:** Cain, Alexis <cain.alexis@epa.gov>
> **Cc:** Siegel, Kathryn <siegel.kathryn@epa.gov>
> **Subject:** RE: web page
>
> Have you shared (worked on this) with Jeff's folks?
>
> **From:** Cain, Alexis
> **Sent:** Friday, September 14, 2018 8:54 AM
> **To:** Nam, Ed <nam.ed@epa.gov>
> **Cc:** Siegel, Kathryn <siegel.kathryn@epa.gov>
> **Subject:** FW: web page
>
> Hi Ed—attached is our attempt to recraft the Sterigenics webpage to more closely match the Region 6 model.
>
> Alexis Cain
> USEPA-Region 5
> (312) 886-7018
> cain.alexis@epa.gov
>
> **From:** Siegel, Kathryn
> **Sent:** Thursday, September 13, 2018 1:07 PM
> **To:** Cain, Alexis <cain.alexis@epa.gov>
> **Subject:** RE: web page
>
> Thanks, Alexis. Looks good!

I printed out the Region 6 pages and scanned them in the attached PDF. I took what you did and added page breaks, to ease for comparison to the Region 6 pages. The only substantive change I made was to the "Health information" section. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Let me know what you think before I pass along to Ed. Thank you!

From: Cain, Alexis
Sent: Thursday, September 13, 2018 7:52 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: web page

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 9/10/2018 3:40:39 PM
To: Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]

Subject: Declined: Update on Sterigenics/Willowbrook with Senators and Representative's staff
Location: RA's small conference room

Start: 9/11/2018 3:30:00 PM
End: 9/11/2018 4:30:00 PM
Show Time As: Busy

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/7/2018 8:18:48 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics call follow-up

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 07, 2018 3:18 PM
To: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Fuoco, Marta <fuoco.marta@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: FW: Sterigenics call follow-up

Request for additional info from Sterigenics. Please advise on a response.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Friday, September 07, 2018 2:53 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; bftaylor@sidley.com; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: RE: Sterigenics call follow-up

Alexis:

Thank you very much for this prompt response. This is indeed the information that we reviewed. For a more in-depth evaluation, we would like to request the following:

1. Please address whether any field blanks or other field QC samples were collected and please provide the field notes or records showing canister pressure/regulator readings before, during and at the end of sample collection periods, with any observations noted in the field during sample collection.

2. Please provide all reports and "raw data" documentation from the laboratory ERG related to validation of the detection limits used and analysis of the field samples and related QC samples, including:
    a. Chromatograms and instrument printouts from the GC/MS for all samples, blanks and QC samples
    b. Copies of chains of custody records related to the samples
    c. Laboratory records of spike sample results, daily calibration and other QC steps taken during the analysis of the samples

d. Regarding the previously provided document headed "calrpt.txt," please provide a narrative description explaining when these apparent internal standards/spikes were run and the actual spike concentrations.
e. Any reports, SOPs or similar documents maintained by the laboratory regarding modifications and alterations of EPA Method TO-15 to operate SIM mode with low-level detection limits for ethylene oxide.
f. All validation information and reports related to establishing and verifying the detection limits and reporting limits achieved, including records or reports regarding peak heights (response factors) and signal-to-noise comparisons.
g. Regarding the previously provided document headed "Data Review Report," please provide a narrative description of whether this represents the full extent of calibration samples run and whether there were additional calibration curves prepared or run during the course of analyzing the samples.
h. All records and reports regarding the pre-cleaning of the canisters shipped for this study, including cleaning methods and analyses used to verify and certify canisters free of potentially interfering substances.

Thank you again for your assistance.

Kathy

From: Cain, Alexis [mailto:cain.alexis@epa.gov]
Sent: Friday, September 07, 2018 1:21 PM
To: Hoffman, Kathy
Cc: Nam, Ed; Siegel, Kathryn; Sieffert, Margaret; bftaylor@sidley.com
Subject: FW: Sterigenics call follow-up

Kathy-- Here are our monitoring sampling plan, met data, lab reports, and calibration curves. Please let me know if there is additional information about the monitoring that you would like to see.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Thursday, August 09, 2018 1:14 PM
To: 'Hoffman, Kathy' <KHoffman@sterigenics.com>
Cc: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; 'Jeffrey Sprague' <Jeff.Sprague@Illinois.gov>; 'King, Steven' <Steven.King@Illinois.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Marcus, Danny <marcus.danny@epa.gov>; Ogulei, David <Ogulei.David@epa.gov>; 'Armitage, Julie' <Julie.Armitage@Illinois.gov>; Wayland, Richard <Wayland.Richard@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Subject: RE: Sterigenics call follow-up

Hi Kathy—

Attached are the sampling plan, met data, lab reports, and calibration curves. There are a few redactions, related to pre-decisional EPA materials. We still owe you some information about method 320, which should be coming soon.

We received the information you sent about the stack parameters and building dimensions. Thank you.

I hope we can schedule a time to follow-up next week.

Thanks
Alexis

From: Nam, Ed
Sent: Friday, August 03, 2018 4:52 PM
To: Hoffman, Kathy <KHoffman@sterigenics.com>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenics call follow-up

Hi Kathy—

Thanks to you and your team for another very productive conference call. I'm pleased that we were able to get through these technical issues, with just a few follow-ups needs. Here is our understanding of what those follow-ups are:

EPA will provide to Sterigenics:

- Information about method 320, including a list of companies able to perform the test and an explanation of why we are recommending this method.
- EPA's sampling plan used during the cannister sampling in Willowbrook, the lab reports and calibration curves (if possible), and the met data.

Sterigenics will:

- Provide requested stack parameters and building dimensions for modeling.
- Provide a link to information about long-term EtO monitoring in New England.
- Review information about potential use of an IR camera for leak detection.

We will have a follow-up call the week after next. I suggest 9:00 or 10:00am on either Thursday, August 16 or Friday, August 17.

Thanks again.
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/26/2018 1:44:01 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: Modeling Questions

Hi Phuong and Margaret—could you put together a list of questions this morning about modeling that we have for Sterigenics (or dust off an old list of questions), and add any questions that we would want to ask about the emissions impact of planned control projects.
Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/27/2018 6:34:19 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Suggested message to Sterigenics

Right—here's it is, with Deliberative Process / Ex. 5
Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

My staff will be in contact about scheduling a next meeting and tour.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Wednesday, June 27, 2018 1:30 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Suggested message to Sterigenics

Looks great! The only thing I'd consider adding is Deliberative Process / Ex. 5

Do you know how long it will take the get the attachments? If they are big files, might be better to send under a separate cover anyway. Thank you!

From: Cain, Alexis
Sent: Wednesday, June 27, 2018 1:16 PM

To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Suggested message to Sterigenics

Hi Katie—Here's my suggested message. I don't have the attachments yet. We could either wait for them or change the (attached) to (forthcoming).

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

My staff will be in contact about scheduling a next meeting and tour.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/25/2018 9:04:19 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: EtO Mass Balance
Attachments: Preliminary Sterigenics EtO Mass Balance.xlsx

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/25/2018 7:48:26 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sterigenics stack tests

I passed the word on to G and D. No need for you to contact Jeff. If nothing gets put into the permit today, we'll take it up on Wednesday.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, June 25, 2018 2:10 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Sterigenics stack tests

Not sure if Genevieve (or Danny) will do this or if I need to call Jeff Sprague to get additional tests. Let me know.

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 8/9/2018 8:49:54 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]

Subject: Accepted: Sterigenics next steps
Location: **Conference Line/Code / Ex. 6**

Start: 8/10/2018 2:00:00 PM
End: 8/10/2018 3:00:00 PM
Show Time As: Busy

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 8/2/2018 9:15:44 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Marcus, Danny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a34c75d25a6243e68733a8ee7e2ddf82-DMarcus]; Ogulei, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3e66fb31cd74edb89554389d19d6977-DOgulei]
BCC: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userd9a8a38a]

Subject: Room for Sterigenics call
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 8/3/2018 4:00:00 PM
End: 8/3/2018 5:00:00 PM
Show Time As: Tentative

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/22/2018 2:18:10 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]
Subject: Talking points for Sterigenics Call
Attachments: STERIGENICS talking points.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/22/2018 1:41:01 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sieffert, Margaret has shared 'Sterigenics'

Thanks Margaret—could you give access to Mark Johnson and Michelle College? Thanks.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, June 22, 2018 8:33 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>
Subject: RE: Sieffert, Margaret has shared 'Sterigenics'

I see that people are still editing the talking points document from my onedrive. I don't want there to be two versions as I saved a version from my one drive to the folder. Could people please save their edits and then I will move the most recent version to the folder linked below.

Thanks, Margaret

From: Sieffert, Margaret [mailto:no-reply@sharepointonline.com]
Sent: Friday, June 22, 2018 8:13 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Payne, James <payne.james@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Sieffert, Margaret has shared 'Sterigenics'

Here is a folder to put all documents people are reviewing regarding Sterigenics. Katie and/or I will start to copy documents into this folder after it is created. Others can also add documents. Please let Katie or I know if others need to be added.

-Margaret

Go to Sterigenics

Get the SharePoint mobile app!

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 2/26/2018 9:32:20 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: ATSDR review of EtO

Angeline confirmed—no mail for you.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, February 26, 2018 12:48 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: ATSDR review of EtO

Our original deadline was Feb 23 (last Friday). Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 I will send an email to Sterigenics and back it up with a call to see if they will be responding.

Otherwise, then I agree we should just work with what we have and pull the spreadsheet together for ATSDR.

-Margaret

From: Cain, Alexis
Sent: Monday, February 26, 2018 12:44 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: ATSDR review of EtO

I don't see any mail on your desk. When Angeline is back from lunch, I'll check with her.

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, February 26, 2018 12:22 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: ATSDR review of EtO

Michelle and I were emailing back and forth this morning. She is going to start on a memo similar to the ones they provided in the attached documents. She asked if Phuong could provide a spreadsheet like she did with the facilities above for Sterigenics and Ele. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Side note, while I was out on Friday, I did not receive anything from Sterigenics in email. I won't be in the office this week so not sure if anything would have come by mail but if either of you could check my desk I would appreciate it. I will email Kevin at Sterigenics this afternoon asking about the modeling. We should also hear back from Ele's attorney this week on if they plan to respond back. If we don't get anything I am inclined to have ATSDR go with our original modeling results.

-Margaret

From: Colledge, Michelle
Sent: Monday, February 26, 2018 11:21 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Revised Ethylene Oxide HE Notebook File

Also, in the past, Phuong provided a spreadsheet (and modeling summary) with the modeled concentrations and modeled risk for Radiac and HI International. Any chance she could do that here? Deliberative Process / Ex. 5 I have attached how we evaluated those sites. The kind of information described in the documents would be helpful, and we could use these letters as a template to expedite review.

Michelle A. Colledge MPH, PhD
CAPT, U.S. Public Health Service
Agency for Toxic Substances and Disease Registry/NCEH/CDC, Region 5
77 W. Jackson Blvd., Room 413
Mailstop ATSD-4J
Chicago, Illinois 60604
Tel: 312-886-1462
Fax: 312-886-6066

please consider the environment before printing this email

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/18/2017 4:14:46 PM
To: Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Twickler, Donna [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f9c7067ad89f4a7ba93163f8aa179bc8-DTwickle]
Subject: **Deliberative Process / Ex. 5 / Attorney Client / Ex. 5**
Attachments:

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, December 15, 2017 4:00 PM
To: Olson, Erik <olson.erik@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Twickler, Donna <twickler.donna@epa.gov>

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Thanks much for your help, Erik!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Olson, Erik
Sent: Friday, December 15, 2017 3:42 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Twickler, Donna <twickler.donna@epa.gov>

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Hi Alexis,

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

- Erik

Erik H. Olson
Associate Regional Counsel
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard, Mailcode C-14J
Chicago, Illinois 60604
(312)886-6829
olson.erik@epa.gov

From: Cain, Alexis
Sent: Friday, December 15, 2017 10:26 AM
To: Sieffert, Margaret; Nguyen, Phuong; Bollweg, George; Siegel, Kathryn
Cc: Twickler, Donna; Olson, Erik

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Erik—I'd appreciate it if you could take a quick look at this. Please give me a call if you'd like some background explanation about it.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/15/2017 4:26:15 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Twickler, Donna [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f9c7067ad89f4a7ba93163f8aa179bc8-DTwickle]; Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]
Subject: **Deliberative Process / Ex. 5 / Attorney Client / Ex. 5**
Attachments:

Deliberative Process / Ex. 5 / Attorney Client / Ex. 5

Erik—I'd appreciate it if you could take a quick look at this. Please give me a call if you'd like some background explanation about it.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/19/2018 1:47:48 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]

Subject: FW: Sterigenics Briefing
Location: RA's Small Conf. Rm.

Start: 7/23/2018 7:00:00 PM
End: 7/23/2018 7:30:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Stepp, Cathy
Sent: Thursday, July 12, 2018 3:46 PM
To: Stepp, Cathy; Nam, Ed; Cain, Alexis; Sieffert, Margaret; Thiede, Kurt; Payne, James
Subject: Sterigenics Briefing
When: Monday, July 23, 2018 2:00 PM-2:30 PM (UTC-06:00) Central Time (US & Canada).
Where: RA's Small Conf. Rm.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 7:51:47 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Sterigenics call follow-up

Thanks Phuong. We can ask for facility boundaries. For emissions rates, we will need to wait for stack tests.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Friday, August 10, 2018 2:51 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Sterigenics call follow-up

Hi Katie – We need additional following information from Sterigenics :

-Facility boundaries for WB # 1 and WB #2
-For WB #1 , we need Emission Rates in (Lbs/hr) for Deoxx, AAT Scrubber, and Backvents
-For WB # 2, we need Emission Rates in (Lbs/hr) for Scrubber Exhaust, 4 chamber Backvents, and Exhaust for Chamber room
- Are There any Fugitive emissions we should be included in the modeling ?

Thanks,

Phuong

From: Siegel, Kathryn
Sent: Thursday, August 09, 2018 11:45 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Steven.King@Illinois.gov; Mattison, Kevin <Kevin.Mattison@Illinois.gov>
Cc: Nam, Ed <nam.ed@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: Sterigenics call follow-up

Phuong, Steven and Kevin,

I am forwarding information from Sterigenics about their stack parameters and building dimensions.

We are hoping to set up our next technical call with them on 8/16 or 8/17. Please let me know if you have any questions that you would like to add to that agenda. I will let you know once the call is confirmed. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, August 08, 2018 5:00 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Sterigenics call follow-up

Thank you Ed for the call summary.

Attached is the information on the stack parameters and building dimensions that was requested. They also labeled each of the penetrations that were visible on the Google Image. I hope this information is helpful for your computer modelling.

Regards,
Kathy

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Friday, August 03, 2018 4:52 PM
To: Hoffman, Kathy
Cc: Siegel, Kathryn; Sieffert, Margaret; Cain, Alexis
Subject: Sterigenics call follow-up

Hi Kathy—

Thanks to you and your team for another very productive conference call. I'm pleased that we were able to get through these technical issues, with just a few follow-ups needs. Here is our understanding of what those follow-ups are:

EPA will provide to Sterigenics:

- Information about method 320, including a list of companies able to perform the test and an explanation of why we are recommending this method.
- EPA's sampling plan used during the cannister sampling in Willowbrook, the lab reports and calibration curves (if possible), and the met data.

Sterigenics will:

- Provide requested stack parameters and building dimensions for modeling.
- Provide a link to information about long-term EtO monitoring in New England.
- Review information about potential use of an IR camera for leak detection.

We will have a follow-up call the week after next. I suggest 9:00 or 10:00am on either Thursday, August 16 or Friday, August 17.

Thanks again.
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/20/2018 11:44:58 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Draft Sterigenics news release

I think it would be fun to read this draft out loud to Sterigenics tomorrow morning.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Wednesday, June 20, 2018 6:21 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>
Subject: Draft Sterigenics news release

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

###

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/20/2018 11:11:00 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
Subject: RE: Draft internal talking points

Katie and I are working on a revision that incorporates Jackie and George's comments and our own.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, June 20, 2018 6:09 PM
To: Bollweg, George <bollweg.george@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Draft internal talking points

I agree with a combination of both Jackie and George's redline/comment/strikeouts. Need to keep the monitoring and the modeling values clear as they were mixed up in the original.

From: Bollweg, George
Sent: Wednesday, June 20, 2018 4:58 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Draft internal talking points

One attempt at a revision (below in redline-strikeout)

From: Kelley, Jeff
Sent: Wednesday, June 20, 2018 3:48 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Fwd: Draft internal talking points

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Begin forwarded message:

From: "Sanders, Amy" <Sanders.Amy@epa.gov>
Date: June 20, 2018 at 3:39:40 PM CDT
To: "Kelley, Jeff" <kelley.jeff@epa.gov>
Cc: "Newton, Cheryl" <Newton.Cheryl@epa.gov>, "Short, Thomas" <short.thomas@epa.gov>, "Payne, James" <payne.james@epa.gov>, "Thiede, Kurt" <thiede.kurt@epa.gov>
Subject: Draft internal talking points

Jeff—Here is the draft Cheryl and I worked on (main credit to Cheryl—her ARD background was handy ☺). It's ready for you to edit to ensure consistency. In speaking to Tom, there is some concern that many employees may (or may not) be on site Thursday/Friday of this week, which may result in this meeting needing to be telephonic too.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks,

Amy Sanders
Human Capital Officer
U.S. EPA, Region 5
Resources Management Division
77 W Jackson Blvd
Chicago, IL 60604
Email: sanders.amy@epa.gov
Office: (312) 353-9196

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 5:42:52 PM
To: Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
Subject: RE: Questions for Sterigenics

Hi Josh—I've posted a new version of the web outline draft to sharepoint--
https://usepa.sharepoint.com/:w:/r/sites/R5/ARD/ATAB/_layouts/15/Doc.aspx?sourcedoc=%7B807F9CDF-E9B0-49C4-AD8E-7235E33274F0%7D&file=Sterigenics%20Talking%20points%20draft%208%2010%2018.docx&action=default&mobileredirect=true
It includes draft answers to your first two questions. For the 3rd and 4th question, I have asked for OAQPS input. My guess is that they might prefer not to address question 3 until NATA is released and they may not want to address question 4 because we don't have any good answers. If they say something different, I'll let you know.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Singer, Joshua
Sent: Thursday, August 09, 2018 4:13 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Questions for Sterigenics

Katie,

What are the next steps?

How large of an area around the Willow Brook facility has been impacted with elevated levels of EtO?

Are there other facilities that emit EtO? Where are they? What is EPA doing about them? (We should have the Region 5 list ready, but may HQ may want to handle the nationwide list.)

What can I do to reduce my exposure to EtO? (ATSDR input?)

Again, feel free to call if it's easier to talk some of these through. Thanks.

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069

singer.joshua@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/10/2018 1:38:21 PM
To: Shaffer, Loretta [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8b2c6bbd3d1e407aac279d330822aefd-LShaffer]
Subject: Briefing for Cathy

Ed wants to brief Cathy about our discussions with Sterigenics regarding ethylene oxide emissions. Margaret S. should be there too. Ed suggested that we should brief Cathy two days after our next meeting with Sterigenics; that meeting is on July 18. July 20 is a Friday, so probably Thursday 7/19 or Monday 7/23.
Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/20/2018 10:50:25 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]
Subject: RE: DRAFT Desk Statement

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, June 20, 2018 5:45 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Olson, Erik <olson.erik@epa.gov>
Subject: RE: DRAFT Desk Statement

Deliberative Process / Ex. 5

From: Cain, Alexis
Sent: Wednesday, June 20, 2018 5:23 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Olson, Erik <olson.erik@epa.gov>
Subject: RE: DRAFT Desk Statement

Our suggestion for a risk statement (in bold). A change to the last sentence as well.

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Wednesday, June 20, 2018 4:41 PM
To: Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Olson, Erik <olson.erik@epa.gov>
Subject: RE: DRAFT Desk Statement

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Also, sounds like we'll definitely be issuing a news release, possibly jointly with IEPA.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Singer, Joshua
Sent: Wednesday, June 20, 2018 4:29 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Olson, Erik <olson.erik@epa.gov>
Subject: DRAFT Desk Statement

Attached and below is a draft desk statement. In the interest of sending it to you all quickly, I may have left out some info or made errors so please review carefully. If you have significant edits, please use track changes in the attachment. Thank you.

Deliberative Process / Ex. 5

From: Kelley, Jeff [mailto:no-reply@sharepointonline.com]
Sent: Wednesday, June 20, 2018 4:14 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Kelley, Jeff has shared '20180620-Sterigenics_comstrat-v1'

Here's my first crack at a communication strategy and tick-tock ...

Open 20180620-Sterigenics_comstrat-v1.docx

See more related to Kelley, Jeff in Delve.

Get the SharePoint mobile app!

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 4:07:44 PM
To: Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
Subject: RE: DRAFT Sterigenics News Release
Attachments: 20180809-sterigenic_news_release-jk_kt_jrr-ac.docx

Some comments on the comments.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Rountree, Jillian
Sent: Friday, August 10, 2018 10:07 AM
To: Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: RE: DRAFT Sterigenics News Release

Deliberative Process / Ex. 5 / Attorney-Client / Ex. 5

ATTORNEY CLIENT PRIVILEGED; DELIBERATIVE

Jillian Rountree
Air and Radiation Division Detail Attorney
U.S. EPA Region 5
77 W. Jackson Blvd. (C-14J), Cube 18010
Chicago, Illinois 60604
312-353-3849

rountree.jillian@epa.gov

Some of my email messages and attachments contain information that is privileged, confidential, or prohibited from disclosure under applicable law. If you believe you may have received this message in error, please inform the sender immediately. Further, do not read, print, or distribute any messages or attachments received in error. Immediately delete and otherwise destroy any such messages and attachments. Thank you.

From: Nam, Ed
Sent: Friday, August 10, 2018 8:08 AM
To: Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Re: DRAFT Sterigenics News Release

There is a newer version with Cathy and Kuts additions. We will send around soon after cleaning it up a bit
Ed

Sent from my iPhone

On Aug 9, 2018, at 5:08 PM, Singer, Joshua <Singer.Joshua@epa.gov> wrote:

> Ed and Eileen and Jill,
>
> Please review the draft press release attached and below. Please let me know if this looks OK or if any changes are needed. Thank you.

Deliberative Process / Ex. 5 / Attorney-Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney-Client / Ex. 5

Deliberative Process / Ex. 5 / Attorney-Client / Ex. 5

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 3:08:33 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: IGNORE-- RE: Questions for Sterigenics

Ignore previous message. I didn't notice the questions that weren't bolded. I'll work on those and then send around a revision.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, August 10, 2018 9:51 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: Questions for Sterigenics

Here is a web outline draft further revised to include these questions, mostly taken from what was already in the talking points (also slightly revised).

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Singer, Joshua
Sent: Thursday, August 09, 2018 4:13 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Questions for Sterigenics

Katie,

What are the next steps?

How large of an area around the Willow Brook facility has been impacted with elevated levels of EtO?

Are there other facilities that emit EtO? Where are they? What is EPA doing about them? (We should have the Region 5 list ready, but may HQ may want to handle the nationwide list.)

What can I do to reduce my exposure to EtO? (ATSDR input?)

Again, feel free to call if it's easier to talk some of these through. Thanks.

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069
singer.joshua@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 4/6/2018 7:11:26 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Deliberative Process / Ex. 5 / Attorney-Client Privilege / Ex. 5

Hi Margaret—Jackie talked to Erik Olsen about Deliberative Process / Ex. 5 / Attorney-Client Privilege / Ex. 5

Deliberative Process / Ex. 5 / Attorney-Client Privilege / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 8/10/2018 2:24:16 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]

Subject: Accepted: Sterigenics next steps
Location: Conference Line/Code / Ex. 6

Start: 8/10/2018 2:30:00 PM
End: 8/10/2018 3:00:00 PM
Show Time As: Busy

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/10/2018 12:36:12 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: EtO
Attachments: 320 vs. Method 18.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Shappley, Ned
Sent: Thursday, August 09, 2018 11:00 PM
To: Nash, Dave <Nash.Dave@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: EtO

All,

Sorry for my delayed response, somehow my work computer is no longer recognizing my domain, so I had to rewrite this thing when I got home tonight. (Bad excuse I know)

Dave, as we discussed earlier could you please give this write-up for your quick review and edit in the morning when you get in. I tried really hard not to get in the weeds.

Alexis and Margaret,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Sorry for the soap box rant, but with the current cloud hanging over this facility, the next performance test needs to be defensible and the reporting complete.

Have a great weekend and I will talk to y'all next week.

Ned

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/26/2018 2:11:37 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Shaffer, Loretta [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8b2c6bbd3d1e407aac279d330822aefd-LShaffer]
Subject: RE: Scheduling a Sterigenics update with Cathy Stepp

If we do stick with 8/2, 10 or 10:30 would be best for us.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Wednesday, July 25, 2018 4:56 PM
To: Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Scheduling a Sterigenics update with Cathy Stepp

Let's take it for now, but I have a feeling that once Ed sends them the ATSDR letter, they would like to meet sooner. Thank you, Loretta!

From: Shaffer, Loretta
Sent: Wednesday, July 25, 2018 4:01 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Scheduling a Sterigenics update with Cathy Stepp

The next available for the RA is Aug 2, is this okay? Ed's available on the 2nd from 9-11am and 2-3

From: Williams, Felicia
Sent: Wednesday, July 25, 2018 3:32 PM
To: Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Subject: RE: Scheduling a Sterigenics update with Cathy Stepp

Hi Loretta - the next available time for Cathy is August 2 – let me know if this will work for Ed.

Thanks!
Felicia

From: Shaffer, Loretta
Sent: Wednesday, July 25, 2018 3:12 PM
To: Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Subject: Scheduling a Sterigenics update with Cathy Stepp

Hi Felicia/Isidra,

Ed would like to setup a 30 minute meeting to update the RA on (Sterigenics). Best time would be next Monday, 7/30 or Tuesday, 7/31. thanks

Title: Sterigenics Update
Duration: 30 minutes
Location: RA's Conference Room
Participants: Ed Nam, Kathryn Siegel, Alexis Cain, Margaret Sieffert, Mark Johnson of ATSDR, Loretta Shaffer and (Eileen Furey, as optional)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE: 7/3/2018

SUBJECT: Deviations from Sterigenics QAPP

FROM: Jacqueline Nwia, Project Lead
Air Monitoring and Analysis Section

TO: Bilal Qazzaz, QA Coordinator
Air Monitoring and Analysis Section

This memorandum describes deviations from the Quality Assurance Project Plan for Sterigenics, Willowbrook Illinois Ethylene Oxide Air Monitoring Study, Sterigenics_QAPP_1.0.

1. The QAPP specifies that Bilal Qazzaz, QA Manager, will conduct the data validation review. However, due to reassignment of work, Marta Fuoco, of the Air Monitoring and Analysis Section, conducted the data validation review which was completed on June 14, 2018.

2. Eastern Research Group recalculated the Method Detection Limit (MDL) for ethylene oxide and used the updated value for the Sterigenics ethylene oxide data set. The updated MDL is 0.082 ug/m^3.

3. The QAPP erroneously identified 75% of data completeness for 12-hour composite samples as 16 and grab samples as 12. The correct, 75% of total samples, is as follows:

    a. 12- hour composite samples: 19 total samples*75% = 14
    b. Grab samples: 22*75% = 17

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/12/2018 7:29:48 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
Subject: RE: RA briefing document
Attachments: 2018 June 20 RA EtO Briefing .docx

I think it looks good. I've made a few edits in redline in the attached; Deliberative Process / Ex. 5 Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Tuesday, June 12, 2018 2:17 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Subject: RA briefing document

I have drafted this briefing document, but before we share with management, please review. I used parts from documents we already created and left it short. Hopefully this captures what Ed wants.

Thanks, Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/19/2018 8:20:02 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: EtO update

Thanks Margaret—here's a suggested revision. Deliberative Process / Ex. 5
Deliberative Process / Ex. 5

Kevin,

Deliberative Process / Ex. 5

Thanks,
Margaret

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, January 19, 2018 2:00 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: EtO update

After we spoke I left a message and an email for Charmagne but haven't heard back from her yet so no update with regard to permitting at this time.

Deliberative Process / Ex. 5

As for a follow-up letter, how about this:

Kevin,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks,
Margaret

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/27/2018 1:12:40 PM
BCC: R5Metcalfe-ConfRm-R1811/R5-Metcalfe---18th-Floor [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user7593056e]

Subject: Canceled: EPA/Sterigenics all on Ethylene Oxide Emissions
Location: R5Metcalfe-ConfRm-R1815B/R5-Metcalfe---18th-Floor

Start: 6/27/2018 4:00:00 PM
End: 6/27/2018 5:30:00 PM
Show Time As: Free

Importance: High

Call-in number **Conference Line/Code / Ex. 6**

-Introductions
-Questions from Sterigenics for EPA about modeling and monitoring
-Timeline for construction project
-Estimated emissions after construction project
-Potential future monitoring/stack rests
-EPA questions for Sterigenics (modeling parameters-- description and location of emissions points, exit velocities and potential fugitive emissions sources-- we will try to get you some questions tomorrow)
-Future meetings

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/19/2018 3:12:02 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Sterigenics

Yes, I think so. Is the email address you have corporate or facility? Either way, if they haven't responded yet we should try any other contacts we have.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, January 19, 2018 9:09 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenics

I haven't heard back from Sterigenics yet? Should I send an email to the address I have with a copy of the letter and a message saying I will reach out again early next week.

-Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/4/2018 5:24:26 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Dunning, Angeline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d8a0b23d55264c3ba495ecd2fb35c28c-ADunning]; Hulting, Melissa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6a4a0d625eb444f08cbe265691641d71-MHulting]; Kierys, Dawid [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=DKierys]; King, Suzanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8718f08e0b5343ec809b1c0f014cc2fa-SKing]; Newman, Erin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=571c431b5a924f4796d8c453dcb226e6-Ewnewman]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Trine, Rae [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=73027b9254884e9daf3be4b0208d1173-RTrine]
Subject: FW: ARD Weekly Report to the RA - 1-5-18
Attachments: ARD Weekly Report to the RA - 1-5-18 text.docx; ARD Weekly Report to the RA - 1-5-18 chart.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Thursday, January 04, 2018 11:22 AM
To: Rowan, Anne <rowan.anne@epa.gov>; Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>; Marshall, Marjorie <marshall.marjorie@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>; Peterson, John <peterson.john@epa.gov>; Walts, Alan <walts.alan@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Mooney, John <Mooney.John@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; King-Hackney, Ashadee <King-Hackney.Ashadee@epa.gov>; Frank, Nathan <frank.nathan@epa.gov>; Marshall, Sarah <marshall.sarah@epa.gov>; Dickens, Brian <dickens.brian@epa.gov>; Damico, Genevieve <damico.genevieve@epa.gov>; Aburano, Douglas <aburano.douglas@epa.gov>; Blakley, Pamela <blakley.pamela@epa.gov>; Nelson, Diane <nelson.diane@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Jencius, Michele <jencius.michele@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: ARD Weekly Report to the RA - 1-5-18

Attached are ARD's Weekly Report to the RA chart and text documents for the week ending January 5.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/3/2018 3:47:30 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Jeffrey Sprague [Jeff.Sprague@Illinois.gov]; King, Steven [Steven.King@Illinois.gov]; Mattison, Kevin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userff092538]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Marcus, Danny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a34c75d25a6243e68733a8ee7e2ddf82-DMarcus]; Ogulei, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3e66fb31cd74edb89554389d19d6977-DOgulei]; Armitage, Julie [Julie.Armitage@Illinois.gov]
Subject: FW: Technical Conference
Attachments: 20180131 Sterigenics Modeling Parameters email.pdf

For your convenience, a list of the questions that we posed to Sterigenics back in June. We'll be focusing on the modeling and monitoring (stack testing) questions today.

From: Cain, Alexis
Sent: Tuesday, June 26, 2018 4:03 PM
To: 'Hoffman, Kathy' <KHoffman@sterigenics.com>
Subject: RE: Technical Conference

Thanks! We will try to answer some of these questions tomorrow. Others may take some time or be better answered by email. The same might be true of our questions to you:

General Questions:

1. Would Sterigenics be willing to give EPA staff a tour of the Willowbrook facility?
2. Please provide a description of normal operations with cycle times.
3. Please describe the construction project, the timeline and projected emissions impacts.
4. Are there any emissions sources at the facility besides the Sterilization Chamber stacks, the Aeration Room stacks, and the back vent?
5. Are there potential fugitive emissions sources? How is EtO stored in tanks? Can EtO escape the aeration room (except through the stack)?

Modeling Questions:

As requested in the attached email from January 31, we would like Sterigenics to review the modeling parameters, input and output files. Can you confirm if the parameters used are correct or provide corrections to those that are wrong? Specifically:

1. Are the lat longs correct for the building dimensions at both buildings?
2. Are the stack parameters correct?
3. What are the projected emission reductions after the back vents are captured and controlled?

Monitoring Questions:

1. Please comment on the draft stack testing plan suggested by EPA's Office or Air Quality Planning and Standards in Table 1 and 2 below, to be conducted along with parametric monitoring tied to product throughput and the performance characteristics of the control device. This monitoring would differ somewhat from compliance monitoring, because it's objective would be to accurately assess emissions, rather than to assess control device performance.
2. Is there a safety monitoring program for operation staff? Could data from that program be of use in tracking potential fugitive sources or leaks? (we will need to better understand potential fugitive emissions sources to determine what other monitoring might be advisable).

Table 1: Summary of Outlet Emissions Measurement Methods and Alternative Methods

Pollutant	Required Method	Possible Alternative Method	Target Reported Units of Measure
Ethylene Oxide/Propylene Oxide[b]	U.S. EPA Method 320 with a minimum sample time of 4 [?] hours per run and a nominal detection level of less than 0.5 ppm. All compounds quantified by Method 320 must be validated according to Section 13.0 of Method 320.	U.S. EPA Method 18[a]. All compounds quantified by Method 18 meet the recovery study specified in Section 8.4 of Method 18.	Lbs/hr and ppmvd
O_2/CO_2	U.S. EPA Method 3A. Simultaneous with each pollutant test run.	U.S. EPA Method 3B	% volume, dry
Moisture	U.S. EPA Method 4. Simultaneous with each pollutant test run.	U.S. EPA Method 320	% volume
Flowrate	U.S. EPA Method 2. Simultaneous with each pollutant test run.	U.S. EPA Method 2A, 2B, 2C, or 2D	ascfm and dscfm

[a] Minimum Detection Limits for this method must be empirically derived and developed according to the procedures found in Section 15 of U.S. EPA Method 301.

[b] Depending on the source type, additional compounds can be considered.

Table 2: 30-Day THC Monitoring[c]

Pollutant	Recommended Method	Alternative Method	Target Reported Units of Measure
THC	U.S. EPA Method 25A continuously for 30 days. Calibrate the measuring instrument with ethylene oxide. The low level and high level calibration gases (see sections 7.1.3 and 7.1.5 of Method 25A) must bracket the measured concentrations or a maximum high level calibration gas (see section 7.1.5 of Method 25A) of 10 ppm ethylene oxide must be used.	U.S. EPA Method 320 although in lieu of a total hydrocarbon, ethylene oxide will be measured continuously.	ppmvw

[c] To potentially reduce the cost, the 30-day monitoring could be performed on the point source with the highest expected mass emissions as determined from the stack test results.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Tuesday, June 26, 2018 2:50 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Technical Conference

Alexis:

Attached are some questions I received from Ramboll, our third-party consultant, that is assisting us in the review of your modelling and sampling data:

1. Please provide a description of the sampling methods used including:
    a. Types of collection devices
    b. Method of calibration
    c. QC samples included
    d. Verification or certification steps that equipment had been purged and cleaned
    e. Materials used in sampling train
    f. Any SOPs or other descriptions of the field methods employed
    g. Chain of custody procedures employed
    h. Sample security/integrity controls for samples collected over extended periods
    i. Traffic counts during sampling periods for locations near high-use roads, particularly differences between vehicle usage between day and night sampling periods for locations samples for extended periods.

2. Please describe the study design and sampling station location selection criteria with inclusion/exclusion factors.

3. Please provide information from background monitoring stations including locations and proximity to roadways, railways and industrial combustion sources.

4. Please provide monitoring results from background locations included in the study design or results from ambient air monitoring stations in the general area used to establish background conditions.

5. Please identify the laboratory and specific analytical methods employed for analyses including:
    a. Method number or citation and description of custom method if used
    b. Method detection limits
    c. Limits of quantification
    d. Results for laboratory and field QC samples
    e. Any modifications or deviations from SOPs or established methods.

6. Please provide meteorological information for each date and time of sampling including:
    a. Wind speed and direction for the general area at 10 m above ground level and any available upper level wind information
    b. Wind speed and direction near ground level (breathing zone) at each sampling station
    c. Relative humidity
    d. Temperature
    e. Amount and type of precipitation during sample collection.

7. Please provide meteorological information used as input for the modeling.

8. Please provide plot files or similar graphical output from the modeling showing concentration gradients, isopleths, or similar information.

We look forward to our discussion tomorrow.

Regards,
Kathy

From: Cain, Alexis [mailto:cain.alexis@epa.gov]
Sent: Monday, June 25, 2018 11:11 AM
To: Hoffman, Kathy
Subject: RE: Technical Conference

Hi Kathy—I hope you had a good weekend. We'd like to schedule the conference call for 11-12:30 on Wednesday. I'll send an appointment with conference call information. Please let me know who you will be including from Sterigenics, and in particular whether you will include counsel. You are welcome to do so of course; I will not invite our counsel unless yours will be participating.

Here's a draft agenda for the meeting; I welcome your input. If you have questions that you'd like us to answer on the call, it would be great if you could provide them in advance. We'll try to provide some specific questions for you tomorrow.

-Introductions
-Questions from Sterigenics for EPA about modeling and monitoring, if any
-Timeline for construction project
-Estimated emissions after construction project
-Potential future monitoring/stack rests
-EPA questions for Sterigenics (modeling parameters-- description and location of emissions points, exit velocities and potential fugitive emissions sources-- we will try to get you some questions tomorrow)
-Future meetings

Thanks!

Alexis Cain
USEPA-Region 5

(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Friday, June 22, 2018 4:58 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: Technical Conference

Per our discussion this afternoon, following are some time periods next Wednesday and Thursday for an hour call to discuss technical details of this project:

- Wednesday: Anytime from 11am to 2pm
- Thursday: Anytime from 11 to 2:30pm

I am also working with Ramboll to review your EO monitoring and modelling studies. They may have some technical questions on these studies. I have suggested that they provide me a list of any questions and that I can bring this list to our technical conference call too.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/4/2018 3:01:24 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: There are no reports for the ARD Weekly Report to the RA - 1-5-18

FYI—per Ed's request.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Thursday, January 04, 2018 9:00 AM
To: Nam, Ed <nam.ed@epa.gov>; Jones, Kathy A <jones.kathya@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

Please let us know if you have any feedback. Thanks!

Deliberative Process / Ex. 5

From: Nam, Ed
Sent: Wednesday, January 03, 2018 4:54 PM
To: Jones, Kathy A <jones.kathya@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>;

Mooney, John <Mooney.John@epa.gov>
Subject: RE: There are no reports for the ARD Weekly Report to the RA - 1-5-18

I've asked Katie to write one up. Will submit tomorrow by noon.

Thanks
-Ed

From: Jones, Kathy A
Sent: Wednesday, January 03, 2018 4:27 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Schwebke, Peggy <schwebke.peggy@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: There are no reports for the ARD Weekly Report to the RA - 1-5-18

* * * * *
To:
Rowan, Anne; Williams, Felicia; Martinez, Isidra; Marshall, Marjorie

Cc:
Singer, Joshua; Peterson, John; Walts, Alan; Nam, Ed; Furey, Eileen; Breneman, Sara; Mooney, John; Siegel, Kathryn; King-Hackney, Ashadee; Frank, Nathan; Marshall, Sarah; Dickens, Brian; Damico, Genevieve; Aburano, Douglas; Blakley, Pamela; Nelson, Diane; Compher, Michael; Cain, Alexis; Jencius, Michele; Schwebke, Peggy; Shaffer, Loretta

* * * * *

Attached are ARD's Weekly Report to the RA chart and text documents for the week ending January 5.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/4/2018 2:54:11 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: EtO Weekly Issue

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/22/2018 10:01:49 PM
To: Coughlin, Justin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0d5e6e54dc1a4c62a892a97810249bef-JCoughlin]
CC: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]
Subject: RE: Sterigenics TRI Facility Report Release.xlsx

I really appreciate this Justin. Michael—Justin did a great job creating this graph for us on short notice.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Coughlin, Justin
Sent: Friday, June 22, 2018 4:59 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: Sterigenics TRI Facility Report Release.xlsx

Figure attached, best I could get done late on a Friday afternoon. Have a good weekend.

From: Siegel, Kathryn
Sent: Friday, June 22, 2018 3:10 PM
To: Coughlin, Justin <coughlin.justin@epa.gov>
Subject: Sterigenics TRI Facility Report Release.xlsx

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/22/2017 5:02:26 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: EtO Letters
Attachments: Ele EtO letter (004).doc; Sterigenics EtO letter (004).doc

Here are changes based on comments from Peggy and Ed. I did the Ele revisions in redline-strikeout, and the Sterigenics changes I did clean.

The formatting/punctuation changes are from Peggy. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

After your review, I will finalize changes and send on to Angeline for another printing.

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/12/2018 4:32:31 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: draft potential health risk EtO letter
Attachments: 2018june11-DraftMemoReEtO.docx

Thanks Margaret—I think that's the right idea. I made a few edits and comments in the attached. Go ahead and share the next draft more broadly.

Alexis Cain
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From: Sieffert, Margaret
Sent: Monday, June 11, 2018 3:29 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: draft potential health risk EtO letter

Here is a first draft of the potential health risk. Let me know your thoughts.

-Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/12/2017 8:23:51 PM
To: Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]
CC: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: Risk from Ethylene Oxide Sources
Attachments: RA General EtO Briefing v3.docx

Hi Mark—this is a heads-up that we in ARD have been looking at potentially-risky ethylene oxide sources, and that at some point we may request that ATSDR provide an independent review of the risks. We have already done some modeling of two sources—a chemical company in Lyons, IL (Ele), and a commercial medical sterilizer in Willowbrook (Sterigenics)— Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

The RA has suggested to us that we need to develop a strategy to talk to the public about our findings. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thanks. Let me know if you have questions.

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/12/2017 6:05:03 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: EtO Risk Sources Outreach Strategy
Attachments: Strategy for Outreach on Ethylene Oxide Possible Risk Cases ms comments.docx

Thanks Margaret. I've made revisions in redline-strikeout in response to your comments. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Alexis Cain
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(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Tuesday, December 12, 2017 11:05 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: EtO Risk Sources Outreach Strategy

I have a few questions/comments.

-Margaret

From: Cain, Alexis
Sent: Monday, December 11, 2017 1:49 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: EtO Risk Sources Outreach Strategy

The RA and DD have both asked us to prepare a "strategy" for informing stakeholders about possible risk from EtO sources in Illinois. I'm not sure how elaborate this strategy needs to be, but in any case, I've taken a first crack at in in the attached. Please let me know what you think.

Alexis Cain
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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/12/2018 1:27:42 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: RE: willowbrook draft EtO note?

Thanks George—I think it might be too technical. Let me know what you think of this version, I'll share it more broadly after I get your feedback.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
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From: Bollweg, George
Sent: Monday, June 11, 2018 3:46 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: willowbrook draft EtO note?

Not sure if this is headed in the right direction. Or consistent with Margaret's draft?

June 11, 2018

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

* Uses of Health Effects Information in Evaluating Sample Results (2009). https://www3.epa.gov/air/sat/pdfs/UsesOfHealthEffectsInfoinEvalSampleResults.pdf

Sterigenics.

ETR
12-13-16
IDI

ST1
043110AAC

February 13, 2017

Illinois EPA, Bureau of Air
Compliance and Enforcement Section (MC 40)
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794-9276

A
no review
send
KM
2-15-17

RECEIVED
STATE OF ILLINOIS
FEB 14 2017
ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

RE: Notification of Compliance Status
Sterigenics' Willowbrook, IL Facility, I.D. No.: 043110AAC
Permit No.: 95120085

Dear Sir:

This Notification of Compliance Status is being sent pursuant to 40 CFR 63.9(h) for Sterigenics' Willowbrook, IL facility. The facility is subject to the NESHAP emission standards at 40 CFR 63.362. On December 12-13, 2016 annual performance testing of the facility's Deoxx Scrubber at Willowbrook I (WB1) facility and the AAT Scrubber/Drybed at Willowbrook II (WB2) was conducted per the work practices requirement stated at 40 CFR 63.363(b)(2)(ii).

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

FEB 28 2017

REVIEWER: RDH

Facility Name:
Sterigenics U.S., LLC - Willowbrook Facility
7775 Quincy Street
Willowbrook, IL 60527

Method(s) Used to Determine Compliance - *Section 63.9(h)(A)*
Performance testing of the Willowbrook I facility's Deoxx Scrubber system was conducted on December 12, 2016 in accordance with the test methods in 40 CFR 63.365 for Ethylene Oxide Sterilization Facilities. The WB I facility's AAT scrubber/drybed system previously was tested on January 23, 2003 following test methods stated in 40 CFR 63.365.

Performance testing of the Willowbrook II facility's AAT Scrubber/Drybed system was conducted on December 13, 2016 in accordance with the test methods in 40 CFR 63.365 for Ethylene Oxide Sterilization Facilities.

Performance Test Results - *Section 63.9(h)(B)*
The December 12th testing of the WB1 Deoxx Scrubber system demonstrated an average control efficiency of 99.9996 % for treating process emissions from the facility's sterilization chamber vacuum pumps. The testing demonstrates the facility conforms to the 99.0% minimum efficiency standard specified in 40 CFR 63.362(d) and the performance standard stated in the facility's air permit. The tested operating efficiency of the WB1 AAT Scrubber/Drybed system on January 23, 2003 was 99.9 %. This performance level conforms to the 99% minimum efficiency standard in 40 CFR 63.362(c) and the 99% or < 1 ppmv control requirement in the facility's air permit.

The December 13th testing of the WB2 AAT Scrubber/Drybed system demonstrated an average control efficiency of 99.94 % for treating process emissions from the facility's sterilization chamber vacuum pumps. The tested operating efficiency of the WB2 aeration emissions through the AAT Scrubber/Drybed system demonstrated an average control efficiency of 99.96% The testing demonstrates the facility conforms to the 99.0% minimum efficiency standard specified in 40 CFR 63.362(d) and the performance standard stated in the facility's air permit.

Sterigenics International, US, LLC.
2015 Spring Road, Suite 650 • Oakbrook, IL 60523
Tel 800.472.4508 • Fax 630.928.1701 • www.sterigenics.com

ED_002192_00005421-00001

Sterigenics.

Methods to be Used for Determining Continued Compliance *Section 63.9(h)(C)*
The facility assures continuing compliance with the Section 63.362 standards by measuring and recording the Deoxx and AAT scrubber systems liquor pH and tank level on a weekly basis. The AAT Drybed systems are also tested weekly to ensure outlet emissions are below 1ppmv.

Type and Quantity of Hazardous Air Pollutants Emitted During Reporting Period - *Section 63.9(h)(D)*
The Willowbrook I facility used approximately 264,951 pounds of ethylene oxide during the 12 month period ending December 31, 2016. Approximately 95% of that amount (251, 703 pounds) is emitted through sterilization chamber vents (via vacuum pumps) to the Deoxx wet scrubber system. Using the 99.9996% control efficiency obtained from the December 12th test, the resulting emissions are calculated to be approximately 1 pound per year. Approximately 4% of the ethylene oxide used by the facility (10,598 pounds) represents process emissions from the facility's aeration room which is treated by the AAT Scrubber/Drybed system. Using the 99.9% control efficiency demonstrated during the January 23, 2003 test, the resulting annual emissions from the aeration room total approximately 11 pounds. Backvent process emissions, representing approximately 1% of total ethylene oxide used (2,650 pounds) are not treated and exhaust to atmosphere resulting in 2,650 pounds. In total, the facility had an estimated 2,662 pounds (1.33 tons) of ethylene oxide point source emissions during the 12 month period ending December 31, 2016.

The Willowbrook II facility used approximately 127,543 pounds of ethylene oxide during the 12 month period ending December 31, 2016. Approximately 95% of that amount (121,166 pounds) is emitted through sterilization chamber vents (via vacuum pumps) to the AAT Scrubber/Drybed system. Using the 99.94% control efficiency obtained from the December 13th test, the resulting emissions are calculated to be approximately 73 pounds per year. Approximately 4% of the ethylene oxide used by the facility (5,102 pounds) represents process emissions from the facility's aeration room which is also treated by the AAT Scrubber/Drybed system. Using the 99.96% control efficiency demonstrated during the December 13th test, the resulting annual emissions from the aeration room total approximately 2 pounds. Backvent process emissions, representing approximately 1% of total ethylene oxide used (1,275 pounds) are not treated and exhaust to atmosphere resulting in 1,275 pounds. In total, the facility had an estimated 1,350 pounds (0.68 tons) of ethylene oxide point source emissions during the 12 month period ending December 31, 2016.

Analysis Demonstrating Whether Source is a Major Source - *Section 63.9(h)(E)*
Based on the above emissions, the facility emits less than 10 tons/year of ethylene oxide and is an area source.

Description of Air Pollution Control Device & Control Efficiency for Facility's Emission Points – *Section 63.9(h)(F)*
For Willowbrook I, a Deoxx Acid Wet Scrubber system demonstrated to have a control efficiency of 99.9996% treats emissions from the facility's sterilization chamber vents (i.e., vacuum pump emissions). Process emissions from the facility's aeration rooms are controlled using an AAT Acid Wet Scrubber/Drybed system. The control efficiency of this device during annual testing on January 23, 2003 was 99.9%.

For Willowbrook II, an AAT Acid Wet Scrubber system demonstrated to have a control efficiency of 99.94% treats emissions from the facility's sterilization chamber vents (i.e., vacuum pump emissions). Process emissions from the facility's aeration rooms are also controlled using the AAT Acid Wet Scrubber/Drybed system. The control efficiency of this device during annual testing was 99.96%.

Statement by Owner as to Whether the Facility Has Complied with the Relevant Standard – *Section 63.9(h)(G)*
To the best of our knowledge, our Willowbrook, IL facility has operated in compliance with the applicable standards in 40 CFR Part 63, Subpart O.

Sterigenics.

Certification Statement:
To the best of the undersigned's knowledge, information and belief formed after reasonable inquiry, the information submitted in this notification of compliance status for Sterigenics' Willowbrook, IL facility is true, accurate, and complete.

KAHoffman	13-Feb-2017	Kathleen Hoffman
Signature	*Date*	*Printed Name*

If you should need further information, please contact me at (630) 928-1771 or kwagner@sterigenics.com

Sincerely,

Kevin Wagner
Director, EH&S

cc: USEPA Region 5, Air Branch
USEPA (AR-17J)
Air & Radiation Division
77 West Jackson Blvd.
Chicago, Illinois 60604

Kathy Hoffman, Sterigenics– Sr. Vice-President EH&S and Technical Services
Juan Segovia, Sterigenics–Vice-President Operations
Shawn Pollino, Sterigenics–Willowbrook General Manager

REPORT OF
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS, INC.
IN WILLOWBROOK, ILLINOIS
ON DECEMBER 12, 2016

Submitted to:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue East
Springfield, Illinois 62794

Submitted by:

STERIGENICS US, LLC.
2015 Spring Road
Oak Brook, Illinois 60523

I.D. Number 043110AAC

Prepared by:

ECSI, INC.
PO Box 848
San Clemente, California 92674-0848

January 20, 2017

ECSi

CONTACT SUMMARY

CLIENT

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FACILITY

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Phone: (630)654-5151
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email: jsegovia@sterigenics.com

TEST DATE

Monday, December 12, 2016

REGULATORY AGENCY

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Bureau of Air – Air Permits Section
Illinois Environmental Protection Agency
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1.0 INTRODUCTION

On Monday, December 12, 2016, ECSi, Inc. performed air pollution source testing of an ethylene oxide (EtO) emission-control device operated by Sterigenics, Inc. at their Willowbrook I facility, located at 7775 S. Quincy Street. The device tested was the Chemrox DEOXX packed tower scrubber emission-control system, which is used to control emissions from fourteen sterilizer vacuum pumps. The purpose of the testing program was to demonstrate continued compliance with the conditions established in the Air Quality Permit granted to Sterigenics by the Illinois Environmental Protection Agency (IEPA).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of fourteen commercial sterilizers, which are discharged through liquid-ring vacuum pumps to a Chemrox DEOXX packed tower scrubber emission-control system. The gas-sterilization and emission-control equipment tested consists of the following:

- Fourteen Gas Sterilizers, each comprised of a steam-heated sterilization chamber, a recirculating vacuum pump chamber evacuation system, a backvent valve, and a fugitive emissions exhaust hood;

Sterilizer vacuum pump emissions are be controlled by:

- One Chemrox DEOXX packed tower chemical scrubber, equipped with a packed reaction/interface column, a scrubber fluid recirculation system, and a scrubber fluid reaction/storage tank.

3.0 TESTING

EtO source testing was conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring was conducted simultaneously at the inlet and outlet of the packed tower scrubber during the first chamber evacuation of the sterilizer exhaust phase of one of the fourteen sterilizers. A total of three exhaust-phase test runs were performed.

During the first chamber evacuation of the exhaust phase, EtO emissions to the inlet of the packed tower scrubber were determined using the Ideal Gas Law and the chamber conditions at the beginning and at the end of the first chamber evacuation. During the first chamber evacuation of the exhaust phase, EtO emissions from the outlet of the packed tower scrubber were determined using direct source sample injection into the GC.

All exhaust phase testing was conducted during normal process load conditions, but with an empty sterilization chamber to facilitate inlet mass calculation and the performance of multiple test runs. The testing program was conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The EtO gas-sterilization system at Sterigenics was tested to demonstrate compliance with EPA requirements, as specified in the IEPA Air Quality Permit. The following requirements must be met:

- The sterilizer exhaust phase (post exposure vacuum pulses) emissions must be vented to control equipment with an EtO emission-reduction efficiency of at least 99 % by weight.

Testing is required to demonstrate compliance with these requirements. Source testing of the packed tower scrubber emission-control device is required initially, and may be required periodically thereafter.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

EtO source testing was conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring was conducted simultaneously at the inlet and outlet of the packed tower scrubber during the first chamber evacuation of the sterilizer exhaust phase of one of the fourteen sterilizers. A total of three exhaust-phase test runs were performed.

Exhaust phase testing with one sterilizer discharging to the scrubber at a time represents worst-case conditions for demonstration of control efficiency compliance. At this lower inlet loading, the scrubber must perform at its maximum efficiency to achieve outlet EtO concentrations low enough to demonstrate compliance. One of the larger sterilizers was tested for each of the test runs to provide a realistic operational scenario.

During the first chamber evacuation of the exhaust phase, EtO emissions to the inlet of the packed tower scrubber were determined using the Ideal Gas Law and the chamber conditions at the beginning and at the end of the first chamber evacuation. During the first chamber evacuation of the exhaust phase, EtO emissions from the outlet of the packed tower scrubber were determined using direct source sample injection into the GC.

All exhaust phase testing was conducted during normal process load conditions, but with an empty sterilization chamber to facilitate inlet mass calculation and the performance of multiple test runs. The testing program was conducted in accordance with the procedures outlined in the following sections.

Operation and documentation of process conditions was performed by personnel from Sterigenics, Inc. using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with the procedures established in USEPA CFR40, Part 63, Subpart O, scrubber liquor level was recorded.

5.2 VOLUMETRIC FLOW MEASUREMENT

Exhaust gas flow at the outlet of the scrubber was determined by 40 CFR 60, Appendix A, Method 2, using an s-type pitot tube and an inclined-oil manometer. Sampling ports were located in accordance with 40

CFR 60, Appendix A, Method 1. The test ports were located far enough from any flow disturbances to permit accurate flow measurement.

Temperature measurements were obtained from a type K thermocouple and thermometer attached to the sampling probe. Exhaust gas composition was assumed to be air and small amounts of water vapor. Water vapor was negligible and, based on previous test data, a value of 2 percent was used for flow calculations.

5.3 CONTROL EFFICIENCY AND MASS EMISSIONS MEASUREMENT

During the first chamber evacuation of the sterilizer exhaust phase, the mass emissions of EtO vented to the inlet of the scrubber were determined using the procedures outlined in CFR40, Part 63.365. This method allows the determination of the mass of EtO vented to the inlet of the scrubber through calculations based on the Ideal Gas Law and using the conditions (pressure, temperature, volume) of the sterilization chamber immediately after it has been charged with sterilant gas, and upon conclusion of the first chamber evacuation of the exhaust phase.

The mass of EtO vented to the inlet of the scrubber during the first chamber evacuation of the exhaust phase was determined by calculating the mass of EtO present in the chamber after the first chamber evacuation and subtracting it from the mass of EtO present in the chamber after it had been charged with sterilant gas. The mass of EtO present in the chamber was calculated using Equation 1, shown below in Section 5.9.

During the first chamber evacuation of the sterilizer exhaust phase, EtO emissions from the outlet were determined using direct source sample injection into the GC. The mass of EtO emitted from the outlet was determined using Equation 2, shown below in Section 5.9. Mass-mass control-efficiency of EtO during the sterilizer exhaust phase was calculated by comparing the mass of EtO vented to the system inlet to the mass of EtO vented from the system outlet.

During the sterilization chamber exhaust phase, vented gas was analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A photoionization detector (PID) was used to quantify low-level EtO emissions at the packed tower scrubber outlet.

5.4 SAMPLE TRANSPORT

Source gas was pumped to the GC at approximately 500-1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the outlet of the scrubber the sampling ports were located in the exhaust stack.

5.5 GC INJECTION

Source-gas samples were then injected into the GC which was equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections occurred at approximately one-minute intervals during the sterilization chamber exhaust phase. Helium was the carrier gas for the PID.

5.6 GC CONDITIONS

The packed columns for the GC were both operated at 90 degrees C. The columns were stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

Any unused sample gas was vented from the GC system back to the inlet of the scrubber.

5.7 CALIBRATION STANDARDS

The PID was calibrated for low-range ppmv level analyses using gas proportions similar to the following:

1) 100 ppmv EtO, balance nitrogen
2) 50 ppmv EtO, balance nitrogen (audit gas)
3) 10 ppmv EtO, balance nitrogen
4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards was in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates are attached as Appendix F.

5.8 SAMPLING DURATION

Exhaust phase EtO measurements were taken for the entire duration of the first chamber evacuation, which was approximately 10-20 minutes. This encompassed a total sampling duration of approximately 10-20 minutes for each exhaust phase test run.

5.9 CONTROL-EFFICIENCY/MASS-EMISSIONS CALCULATIONS

The following equation was used to calculate mass of EtO discharged to the inlet of the emission-control system during the first chamber evacuation of the sterilizer exhaust phase:

EQUATION 1:

$W_c = W_{ci} - W_{cf}$

Where:

W_c = Weight of EtO discharged from the sterilization chamber to the emission-control system during the first chamber evacuation, pounds

W_{ci} = $(mw)(p)(P)(V)/(R)(T)$

(and W_{cf})

Where:

W_{ci} = Weight of EtO present in the sterilization chamber before the first chamber evacuation, pounds

W_{cf} = Weight of EtO present in the sterilization chamber after the first chamber evacuation, pounds

MW = Molecular weight of EtO, 44.05 lb/mol

p = Percent of EtO in chamber

= W_s/W_i

Where:

W_s = Scale-measured weight of EtO charged into sterilization chamber

W_i = Calculated weight of EtO charged into sterilization chamber (@ 100%)

P = Sterilization chamber pressure (after charging/at the end of the 1st evac), psia

V = Sterilization chamber volume, ft^3

R = Gas constant, 10.73 $psia \cdot ft^3/mol \cdot {}^oR$

T = Sterilization chamber temperature (after charging/at the end of the 1st evac), ^oR

ECSi

Note: Standard conditions are 68°F and 1 atm.

Mass emissions of EtO during the exhaust phase were calculated using the following equation:

EQUATION 2:

MassRate = (VolFlow)(MolWt)(ppmv EtO/10^6)/(MolVol)

Where:

MassRate	=	EtO mass flow rate, pounds per minute
VolFlow	=	Corrected volumetric flow rate, standard cubic feet per minute at 68 degrees F
MolWt	=	44.05 pounds EtO per pound mole
ppmv EtO	=	EtO concentration, parts per million by volume
10^6	=	Conversion factor, ppmv per "cubic foot per cubic foot"
MolVol	=	385.32 cubic feet per pound mole at one atmosphere and 68 degrees F

Results of the control-efficiency testing are presented in Section 8.0 and in Table 1.

6.0 TEST SCENARIO

During exhaust phase testing, each sterilizer was tested during normal process load conditions, but with an empty sterilization chamber to facilitate the performance of multiple test runs. A total of three exhaust-phase test runs were performed to verify the performance of the emission-control device. Testing was conducted with an effort to offer minimal disruption to the Sterigenics production schedule. The testing schedule was as follows:

1) Testing equipment was set up and calibrated.
2) An empty-chamber cycle was started in one of the larger sterilizers. This sterilizer was isolated for test use and designated as a test chamber.
3) Exhaust Phase Test Run #1 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the Chemrox scrubber.
4) An empty-chamber cycle was started in another of the larger sterilizers. This sterilizer was isolated for test use and designated as a test chamber.
5) Exhaust Phase Test Run #2 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the Chemrox scrubber.
6) An empty-chamber cycle was started in another of the larger sterilizers. This sterilizer was isolated for test use and designated as a test chamber.
7) Exhaust Phase Test Run #3 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the Chemrox scrubber.
8) Post calibration check was performed, testing equipment was packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system was leak checked at a vacuum of 15 inches of mercury. The sampling system was considered leak free when the flow indicated by the rotameters fell to zero.

At the beginning of the test, a system blank was analyzed to ensure that the sampling system was free of EtO. Ambient air was introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also provided a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, is included with the calibration data in Appendix A.

7.2 CALIBRATION PROCEDURES

The GC system was calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve was constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, was used to verify calibration gas composition and GC performance.

All calibration gases and support gases used were of the highest purity and quality available. A copy of the laboratory certification for each calibration gas is attached as Appendix F.

8.0 TEST RESULTS

The Ceilcote scrubber demonstrated an EtO control efficiency of 99.9996 percent. In accordance with EPA requirements, as specified in the IEPA Air Quality Permit, this control equipment must have an EtO control efficiency of 99 percent or more during the sterilizer exhaust phase (vacuum pump emissions). The emission-control device met this requirement.

The test results are summarized in Table 1. These tables include results for EtO control efficiency of the emission-control device. Chromatograms and chromatographic supporting data are attached as Appendices A through D. Copies of field data and calculation worksheets are attached as Appendix E.

TABLES

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY
OF A CHEMROX DEOXX PACKED TOWER SCRUBBER EMISSION CONTROL DEVICE
OPERATED BY STERIGENICS, INC.
IN WILLOWBROOK, ILLINOIS (PLANT 1)
DECEMBER 12, 2016

Run #	Stack Flow (dscfm) (2)	Average Outlet Conc. (ppm) (1)	Outlet EtO Mass Flow (lbs/min) (3)	Minutes/ Cycle	Outlet EtO Mass Emissions (lbs)	Inlet EtO Mass Emissions (lbs)	EtO Control Efficiency (%)
#1	63.8	0.3021	0.0000022	19	0.0000419	47.4	99.9999
#2	65.4	1.325	0.0000099	17	0.0001683	50.8	99.9997
#3	140	0.010	0.0000002	11	0.0000019	39.3	100.0000
						Average EtO Control Efficiency:	**99.9999**
						Required EtO Control Efficiency:	**99**

Notes: (1) - PPM = parts per million by volume
(2) - DSCFM = dry standard cubic feet per minute
(3) - LBS/MIN = EtO emissions, pounds per minute
(4) - Testing was performed with the scrubber liquor level at 181 inches.

ECSi

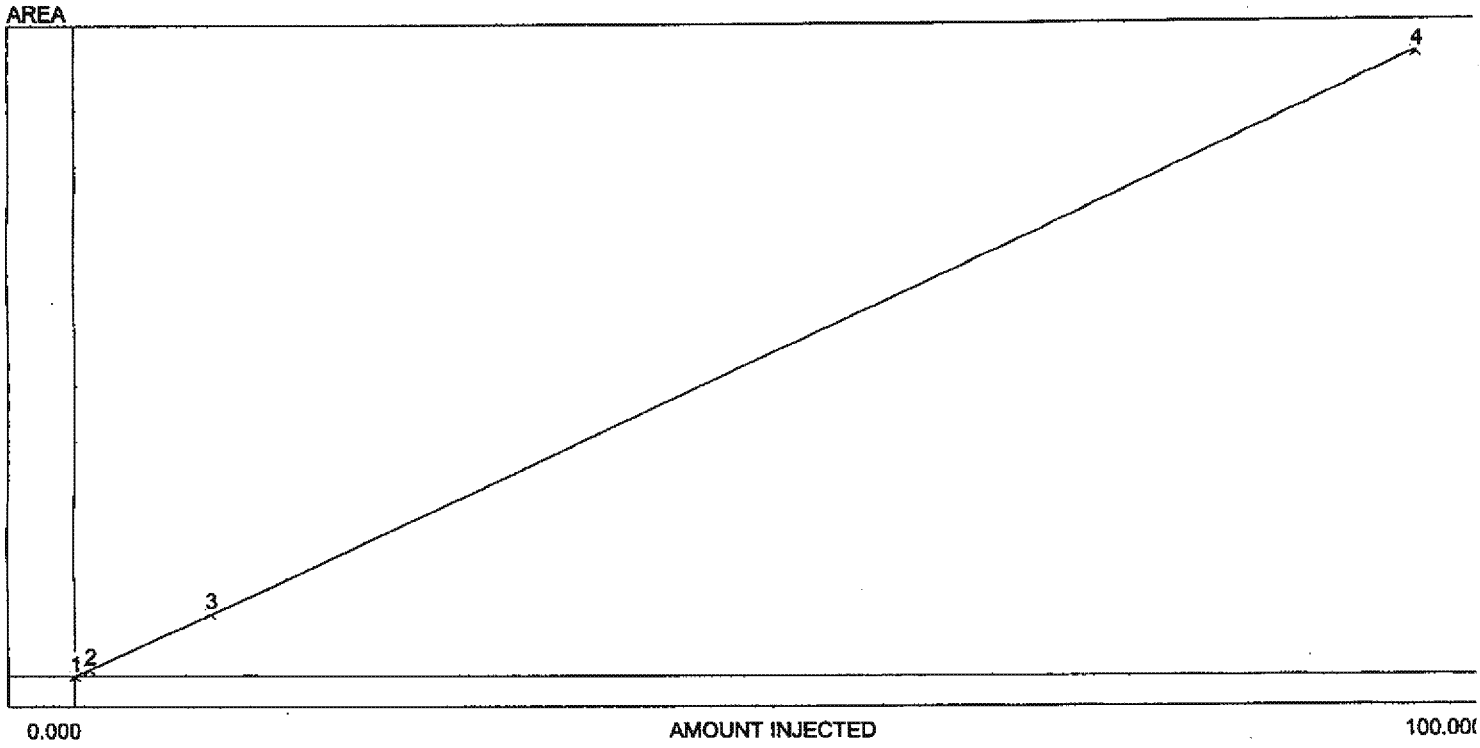
APPENDICES

APPENDIX A

Calibration Data

ak	Name	Start	End	Calibration	Int.Std	Units
	Dead Vol / Air	0.000	0.350		0.000	
	Ambient H2O	0.350	0.500		0.000	
	Ethylene Oxide	0.500	0.600	C:\peak359\1Ster	0.000	16.ppm
	Acetaldehyde	0.600	0.800		0.000	
	CO2	0.800	1.000		0.000	

libration file: C:\peak359\1SterWB2016.cal

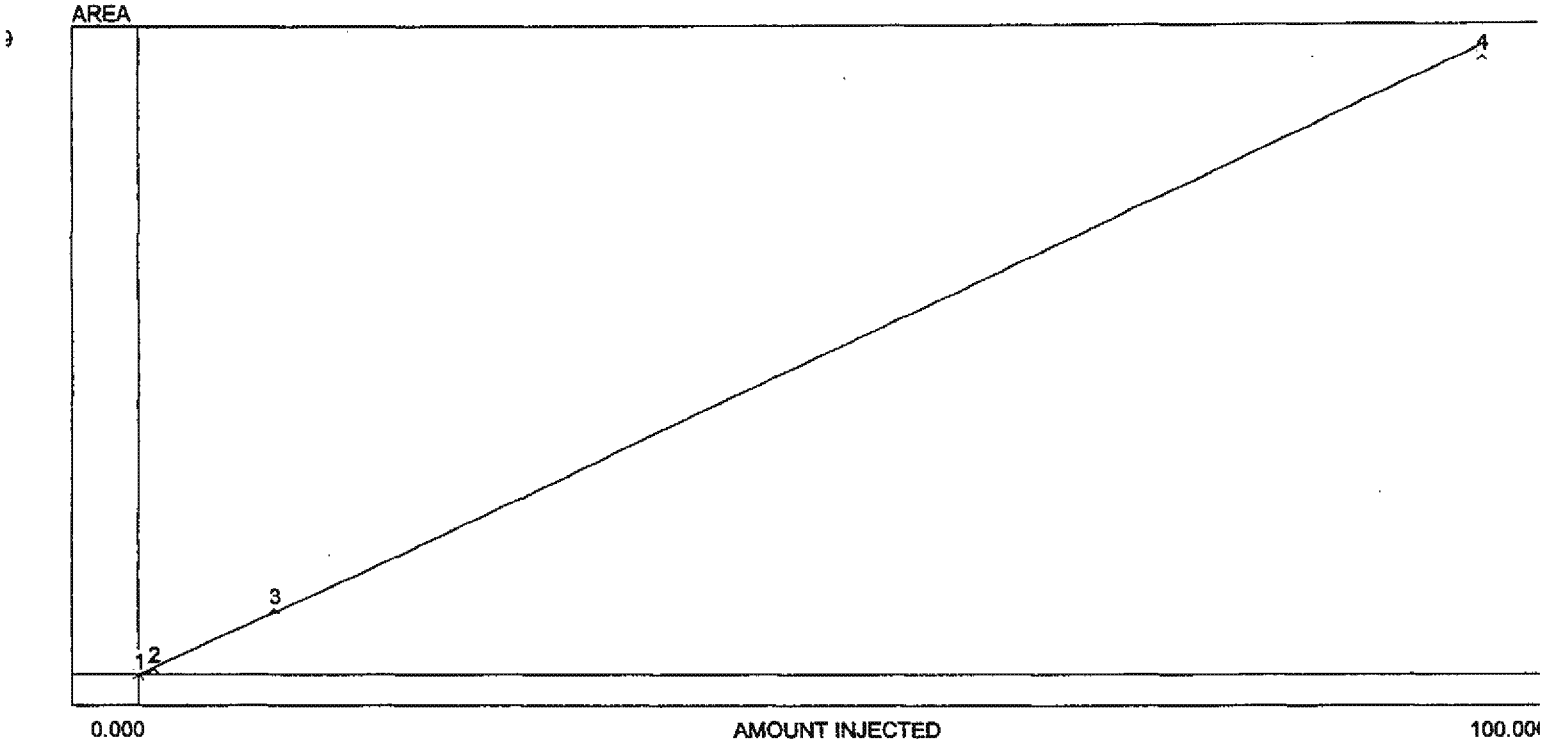


ı slope of curve: 0.43
xis intercept: 0.00
earity: 1.00
nber of levels: 4
'rel SD of CF's: 0.2/66.7
).4316X
1.0000
:t calibrated: Fri Dec 02 08:01:11 2016

Area/ht.	Amount	CF	Current	Previous #1	Previous #2
0.000	0.000	0.000	0.000	N/A	N/A
0.470	1.100	0.427	0.470	N/A	N/A
4.420	10.100	0.438	4.420	N/A	N/A
43.000	100.000	0.430	43.000	N/A	N/A

ak	Name	Start	End	Calibration	Int.Std	Units
	Dead Vol / Air	0.000	0.350		0.000	
	Ambient H2O	0.350	0.500		0.000	
	Ethylene Oxide	0.500	0.600	C:\peak359\2Ster	0.000	16.ppm
	Acetaldehyde	0.600	0.800		0.000	
	CO2	0.800	1.000		0.000	

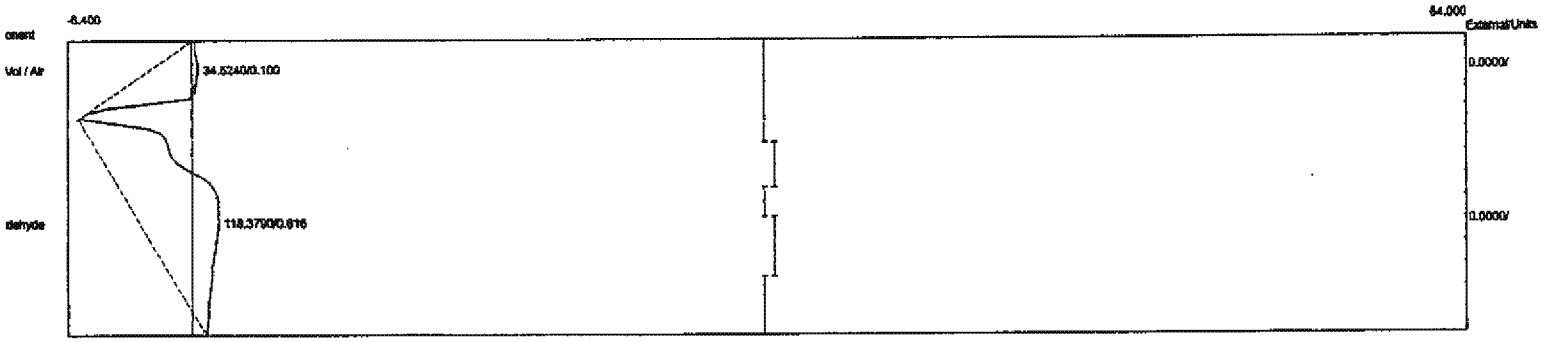
libration file: C:\peak359\2SterWB2016.cal



ı slope of curve: 1.82
uxis intercept: 0.00
earity: 1.00
nber of levels: 4
/rel SD of CF's: 0.9/67.0
1.8223X
0.9999
it calibrated: Fri Dec 02 08:00:23 2016

Area/ht.	Amount	CF	Current	Previous #1	Previous #2
0.000	0.000	0.000	0.000	N/A	N/A
1.910	1.100	1.736	1.910	N/A	N/A
19.600	10.100	1.941	19.600	N/A	N/A
179.000	100.000	1.790	179.000	N/A	N/A

Client: Sterigenics - Willowbrook 1
Client ID: PreCal
ıalysis date: 12/12/2016 14:15:28
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E.CHR (c:\peak359)
Sample: Ambient Background
Operator: D. Kremer

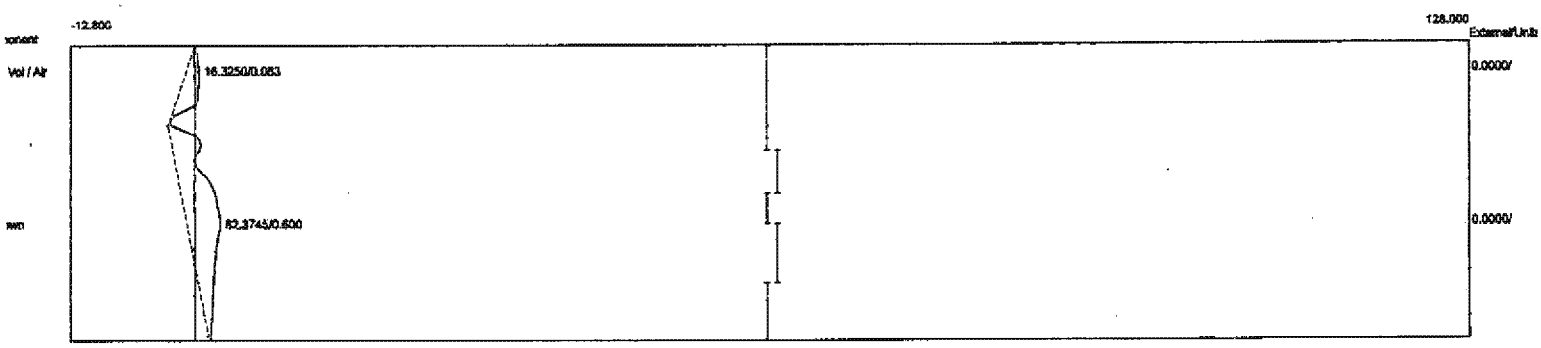


Component	Retention	Area	External	Units
ad Vol / Air	0.100	34.5240	0.0000	
etaldehyde	0.616	118.3790	0.0000	
		152.9030	0.0000	

APPENDIX B

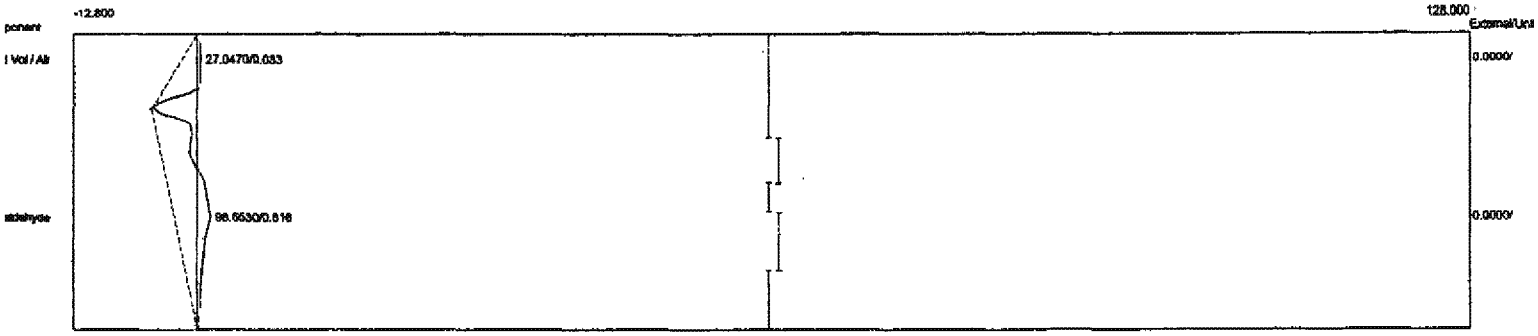
Run#1 Chromatograms

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
ıalysis date: 12/12/2016 14:32:37
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E01.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



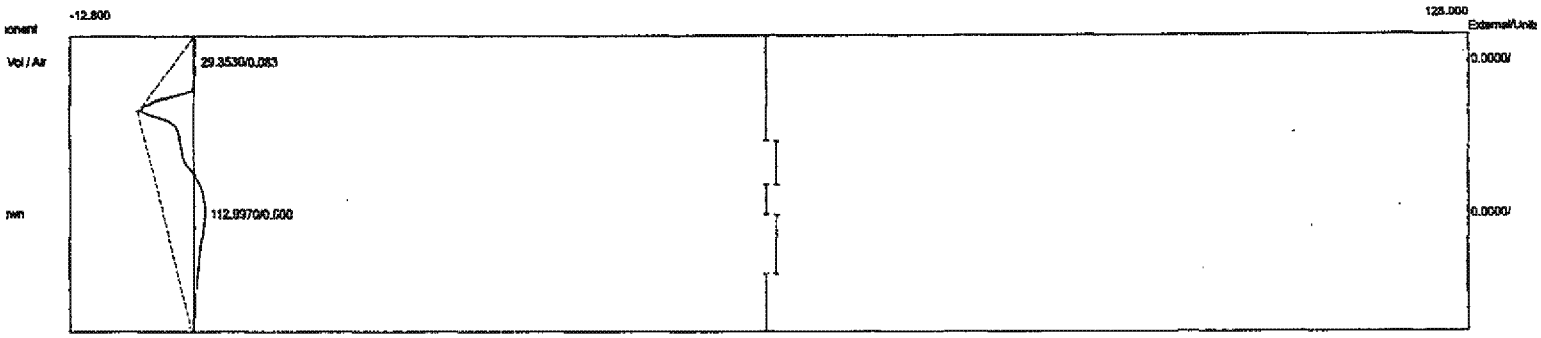
Component	Retention	Area	External	Units
ad Vol / Air	0.083	16.3250	0.0000	
		16.3250	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:34:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster1WB2016-1E02.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



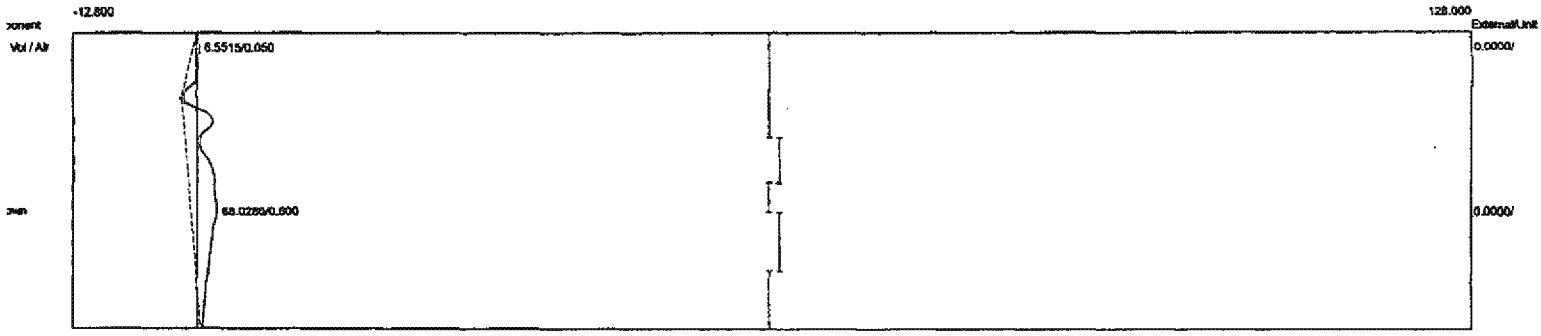
Component	Retention	Area	External	Units
ad Vol / Air	0.083	27.0470	0.0000	
etaldehyde	0.616	98.6530	0.0000	
		125.7000	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
ıalysis date: 12/12/2016 14:35:21
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E03.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



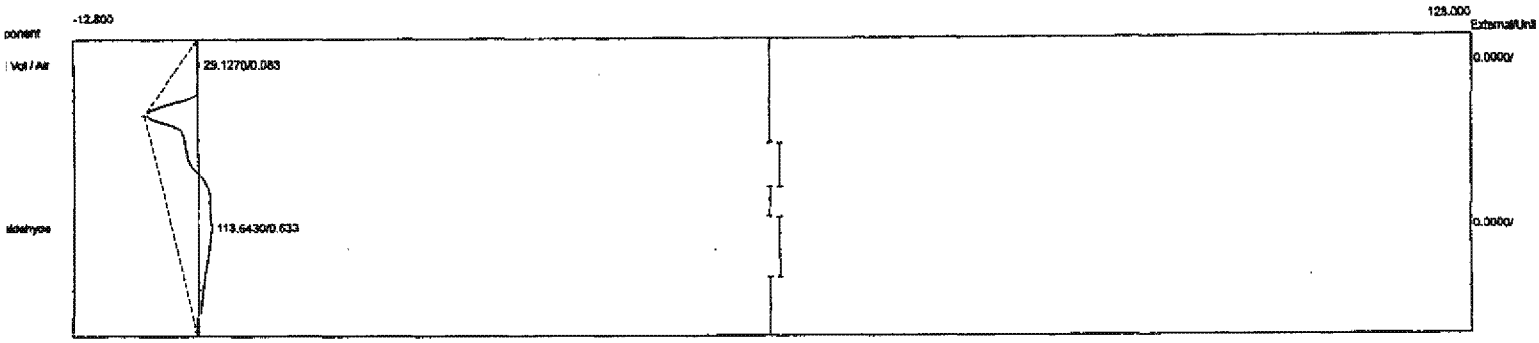
Component	Retention	Area	External	Units
ad Vol / Air	0.083	29.3530	0.0000	
		29.3530	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:36:33
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E04.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



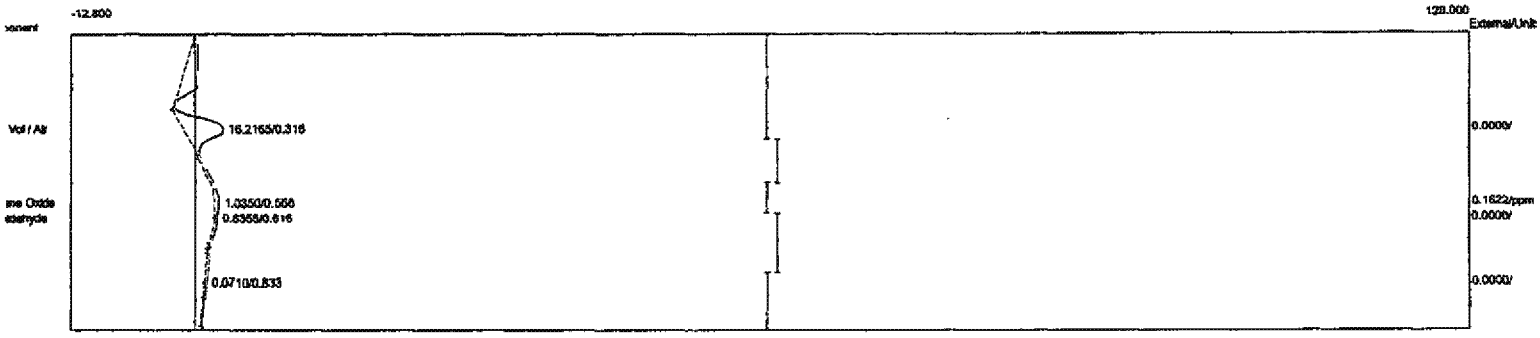
Component	Retention	Area	External	Units
ad Vol / Air	0.050	6.5515	0.0000	
		6.5515	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:37:45
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E05.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



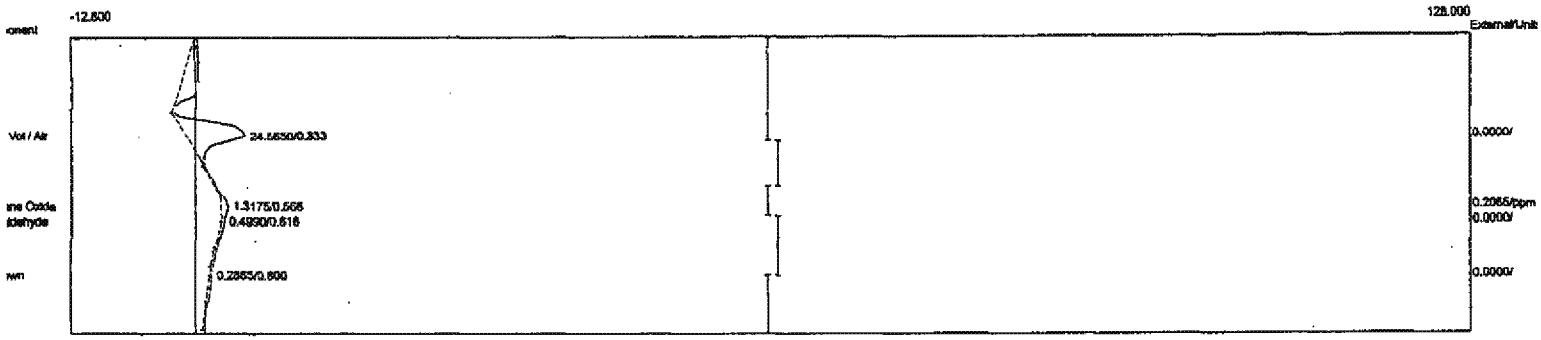
Component	Retention	Area	External	Units
ad Vol / Air	0.083	29.1270	0.0000	
etaldehyde	0.633	113.6430	0.0000	
		142.7700	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:39:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E06.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



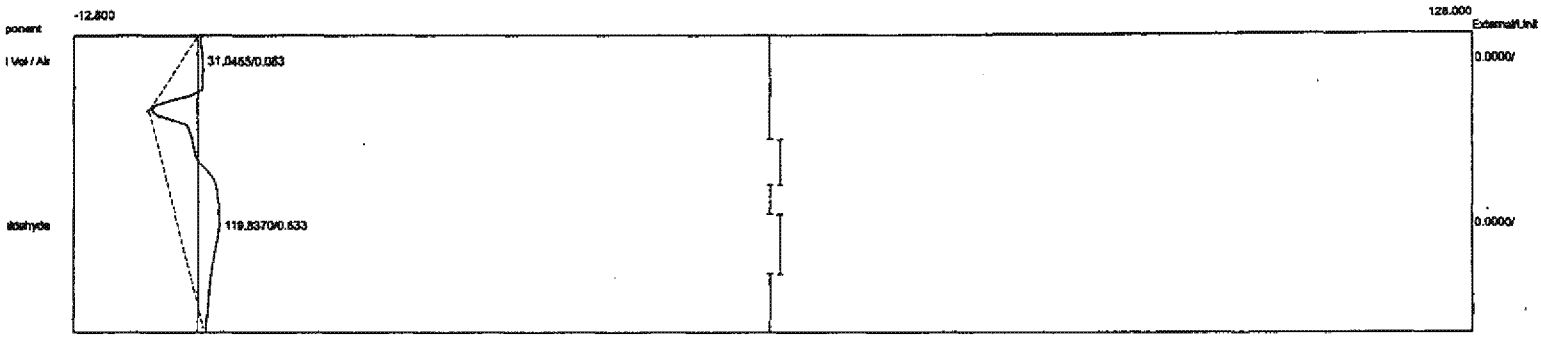
Component	Retention	Area	External	Units
ad Vol / Air	0.316	16.2165	0.0000	
ylene Oxide	0.566	1.0350	0.1622	ppm
etaldehyde	0.616	0.6355	0.0000	
2	0.833	0.0710	0.0000	
		17.9580	0.1622	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
ıalysis date: 12/12/2016 14:40:18
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E07.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



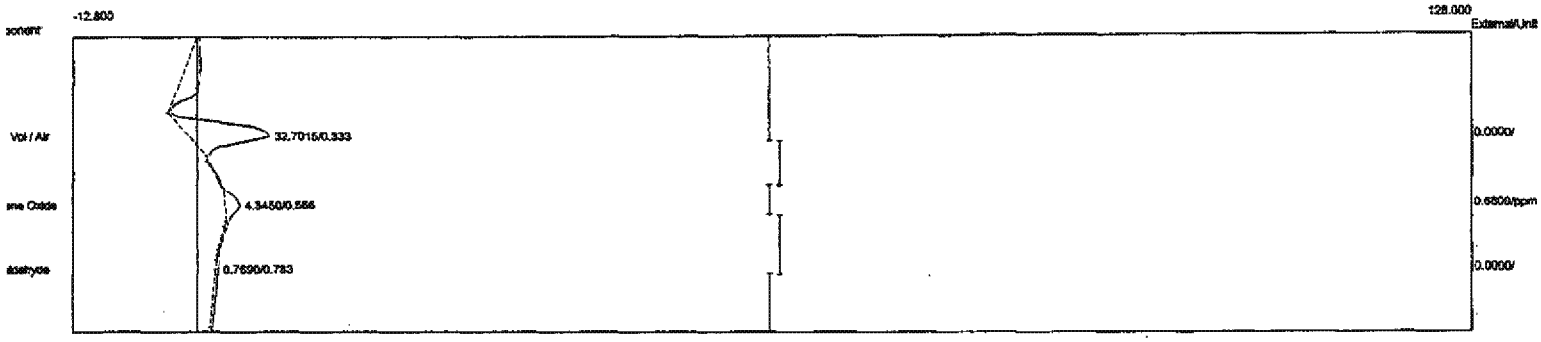
Component	Retention	Area	External	Units
ad Vol / Air	0.333	24.6650	0.0000	
ıylene Oxide	0.566	1.3175	0.2065	ppm
ɜtaldehyde	0.616	0.4990	0.0000	
		26.4815	0.2065	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:41:35
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E08.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



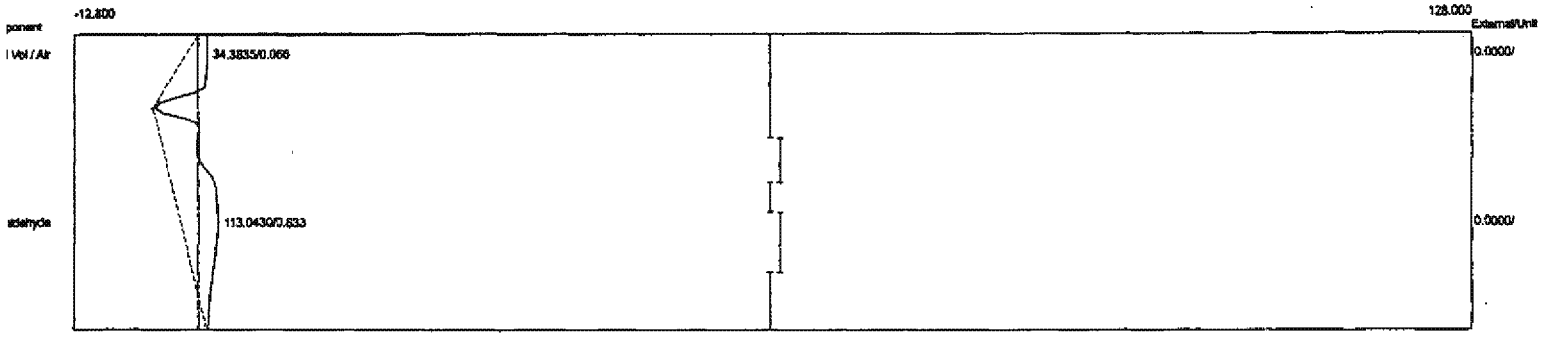
Component	Retention	Area	External	Units
ad Vol / Air	0.083	31.0455	0.0000	
etaldehyde	0.633	119.8370	0.0000	
		150.8825	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:42:48
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E09.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



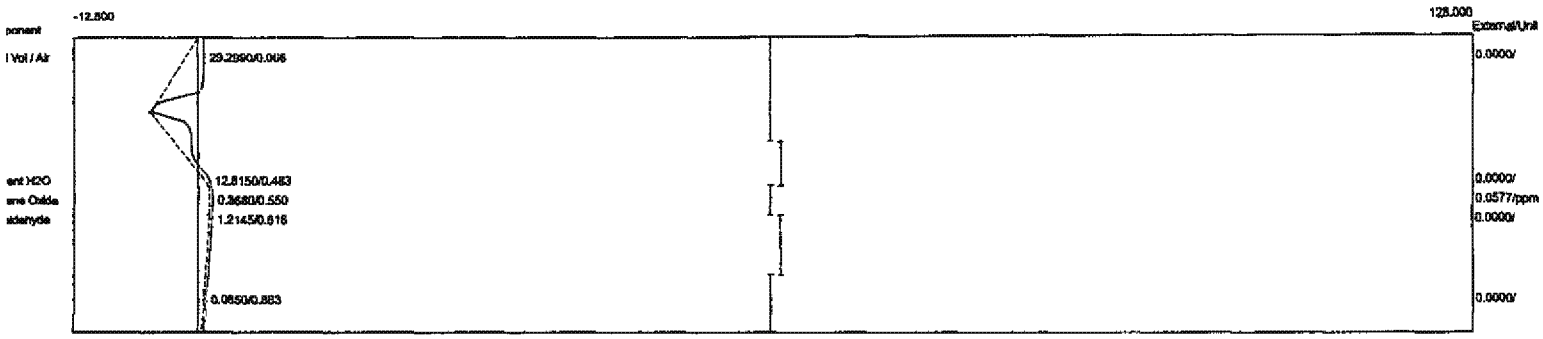
Component	Retention	Area	External	Units
ad Vol / Air	0.333	32.7015	0.0000	
ıylene Oxide	0.566	4.3450	0.6809	ppm
etaldehyde	0.783	0.7690	0.0000	
		37.8155	0.6809	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:44:00
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E10.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



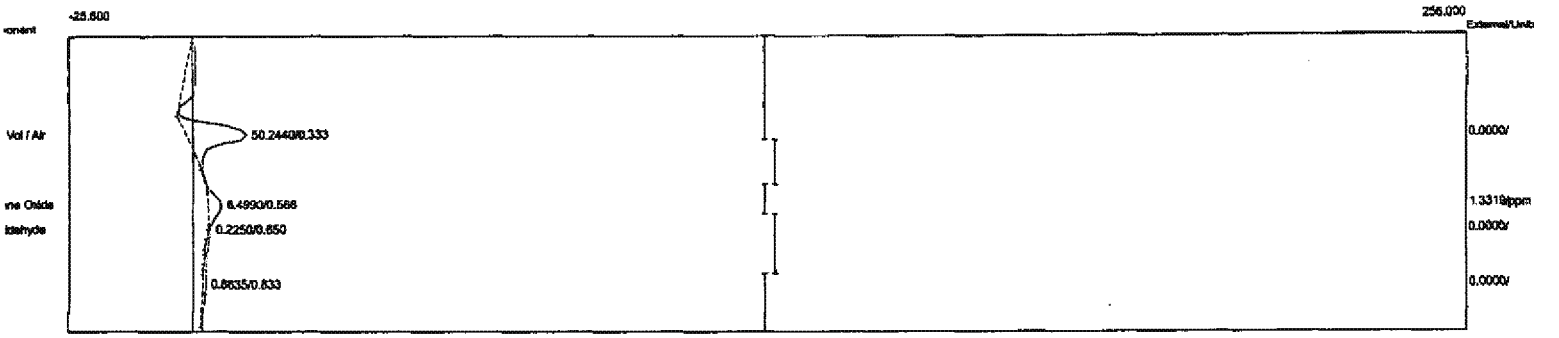
Component	Retention	Area	External	Units
ad Vol / Air	0.066	34.3835	0.0000	
etaldehyde	0.633	113.0430	0.0000	
		147.4265	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:45:13
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E11.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



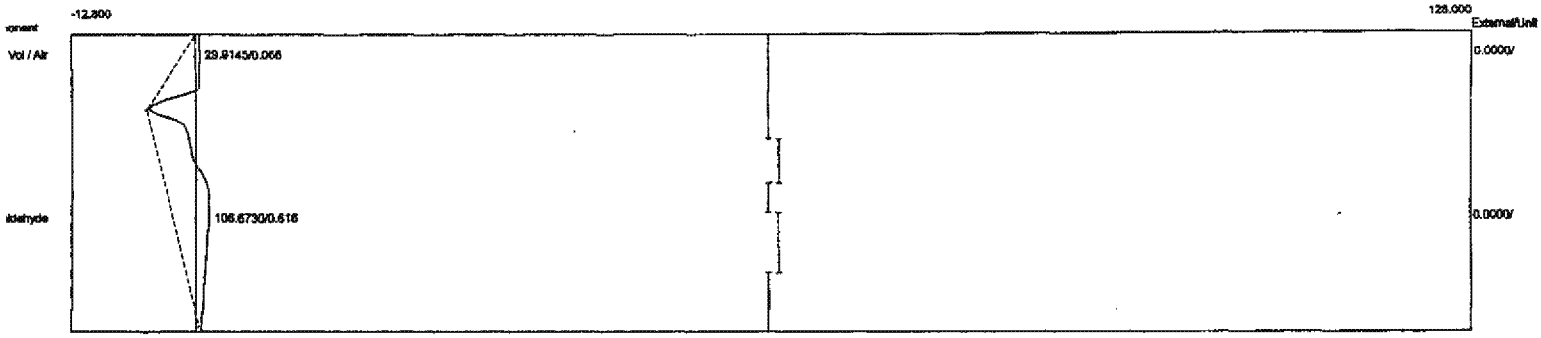
Component	Retention	Area	External	Units
ad Vol / Air	0.066	29.2990	0.0000	
ıbient H2O	0.483	12.8150	0.0000	
ıylene Oxide	0.550	0.3680	0.0577	ppm
etaldehyde	0.616	1.2145	0.0000	
)2	0.883	0.0850	0.0000	
		43.7815	0.0577	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
ıalysis date: 12/12/2016 14:46:44
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E12.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



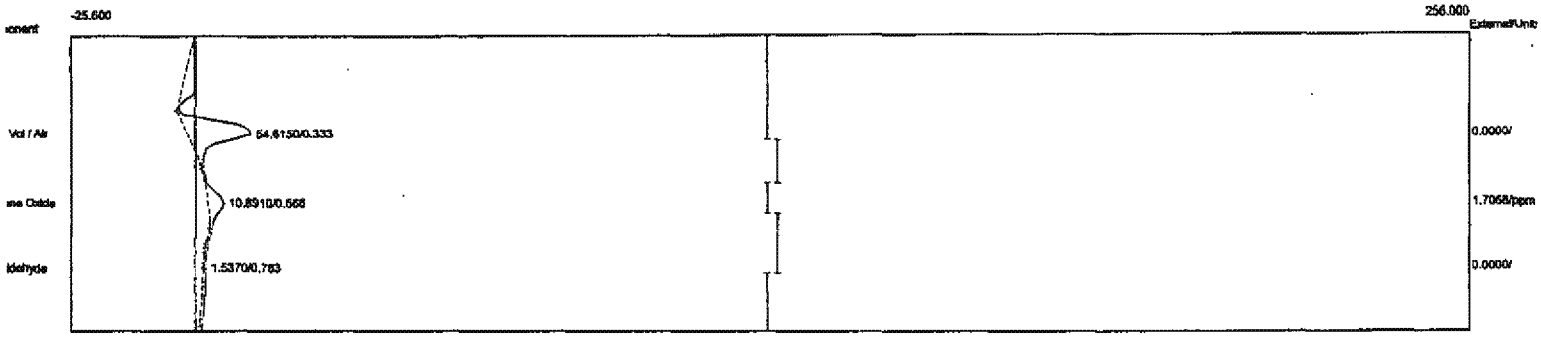
Component	Retention	Area	External	Units
ad Vol / Air	0.333	50.2440	0.0000	
ıylene Oxide	0.566	8.4990	1.3319	ppm
etaldehyde	0.650	0.2250	0.0000	
ı2	0.833	0.8635	0.0000	
		59.8315	1.3319	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
nalysis date: 12/12/2016 14:48:15
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E13.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.066	29.9145	0.0000	
etaldehyde	0.616	106.6730	0.0000	
		136.5875	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#1Exh
ıalysis date: 12/12/2016 14:49:35
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-1E14.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer

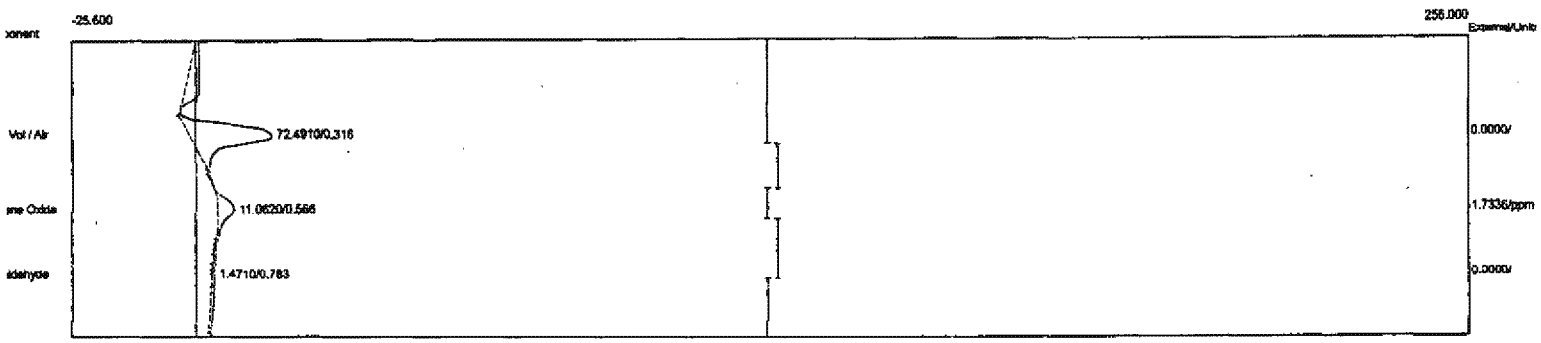


Component	Retention	Area	External	Units
ad Vol / Air	0.333	54.6150	0.0000	
ıylene Oxide	0.566	10.8910	1.7068	ppm
etaldehyde	0.783	1.5370	0.0000	
		67.0430	1.7068	

APPENDIX C

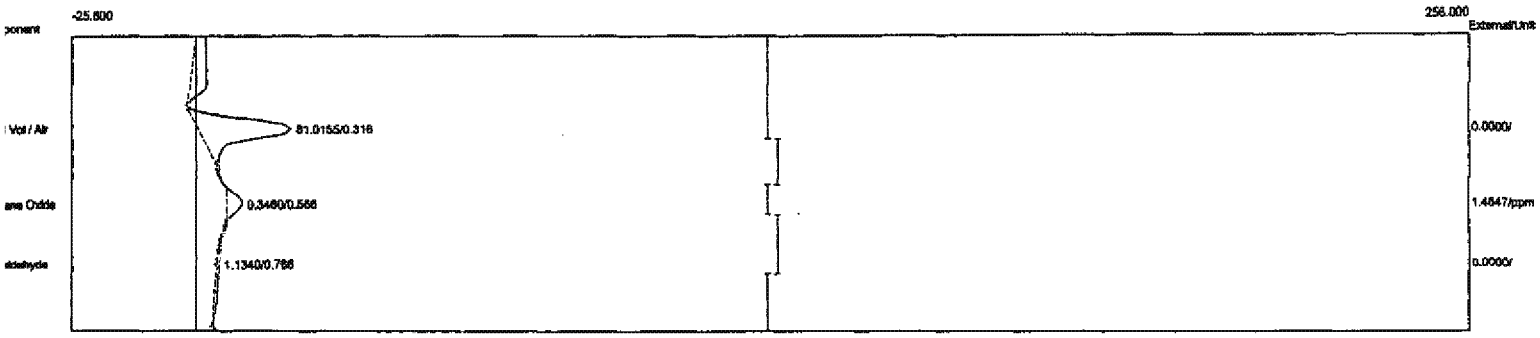
Run#2 Chromatograms

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
ıalysis date: 12/12/2016 15:01:53
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E01.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



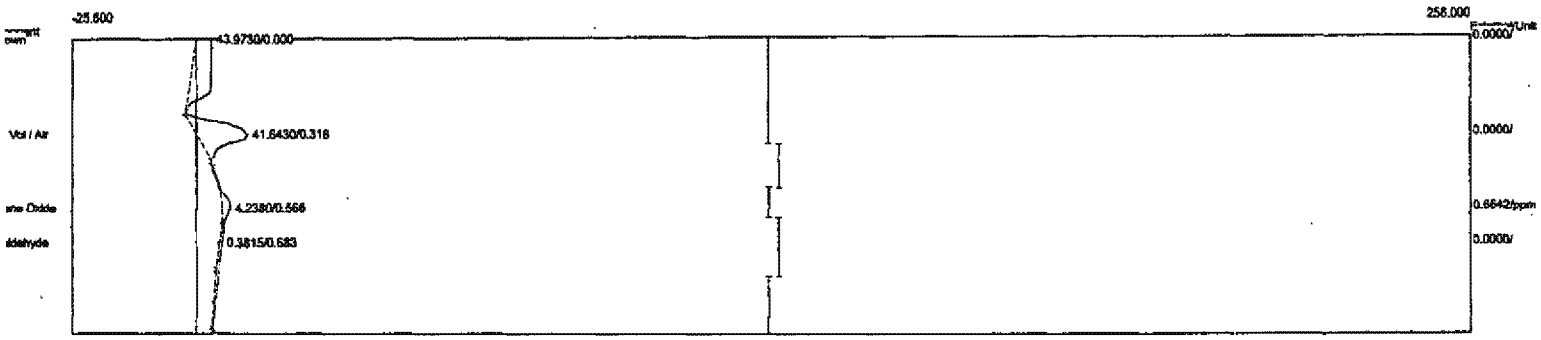
Component	Retention	Area	External	Units
ad Vol / Air	0.316	72.4910	0.0000	
ıylene Oxide	0.566	11.0620	1.7336	ppm
etaldehyde	0.783	1.4710	0.0000	
		85.0240	1.7336	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:03:31
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E02.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



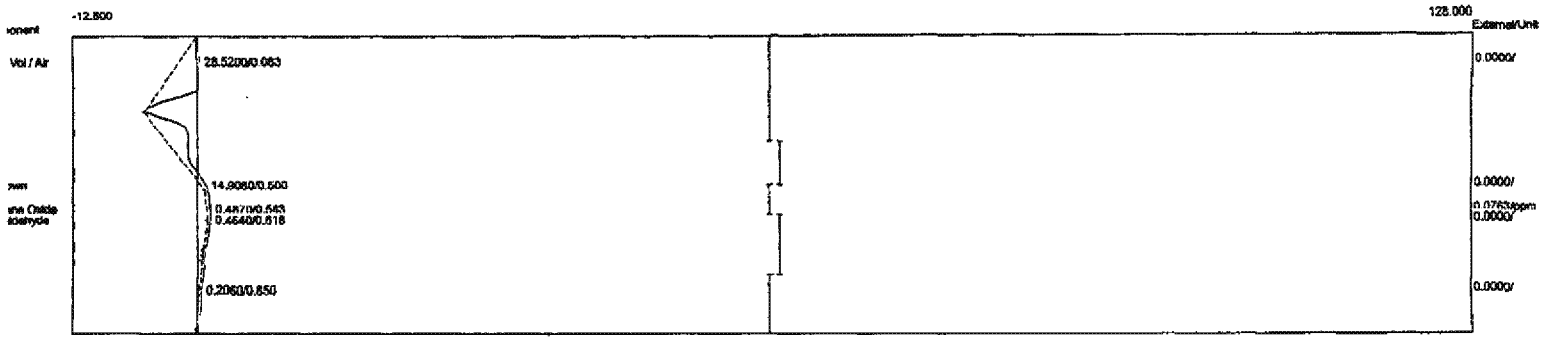
Component	Retention	Area	External	Units
ad Vol / Air	0.316	81.0155	0.0000	
ylene Oxide	0.566	9.3460	1.4647	ppm
etaldehyde	0.766	1.1340	0.0000	
		91.4955	1.4647	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:04:46
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E03.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



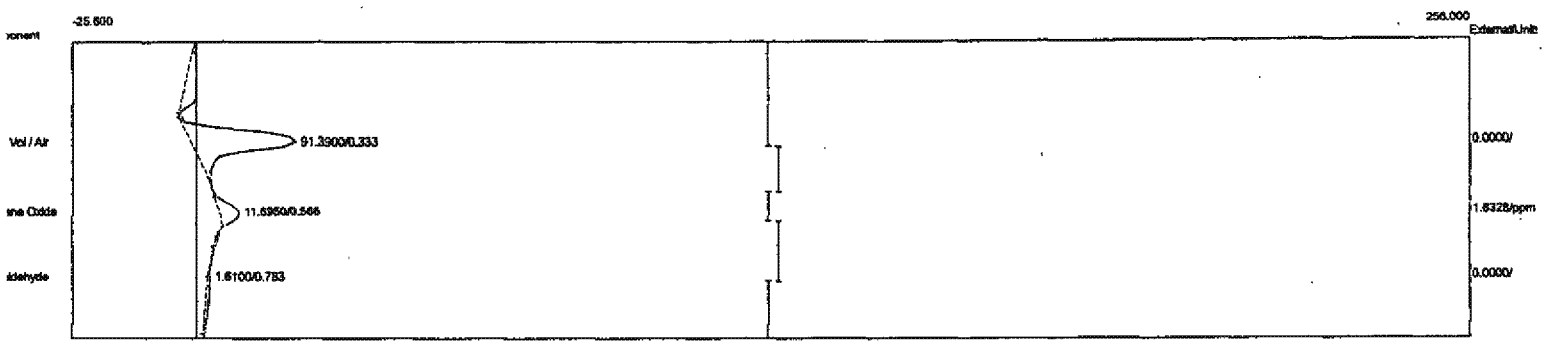
Component	Retention	Area	External	Units
ad Vol / Air	0.316	41.6430	0.0000	
ıylene Oxide	0.566	4.2380	0.6642	ppm
etaldehyde	0.683	0.3815	0.0000	
		46.2625	0.6642	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:06:08
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E04.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



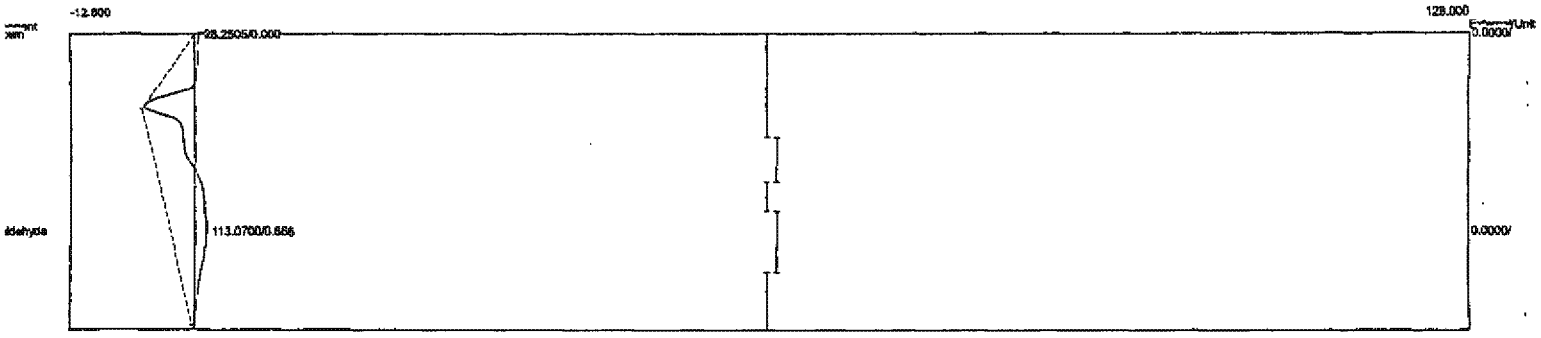
Component	Retention	Area	External	Units
ad Vol / Air	0.083	28.5200	0.0000	
ylene Oxide	0.583	0.4870	0.0763	ppm
etaldehyde	0.616	0.4640	0.0000	
)2	0.850	0.2060	0.0000	
		29.6770	0.0763	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:07:25
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E05.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



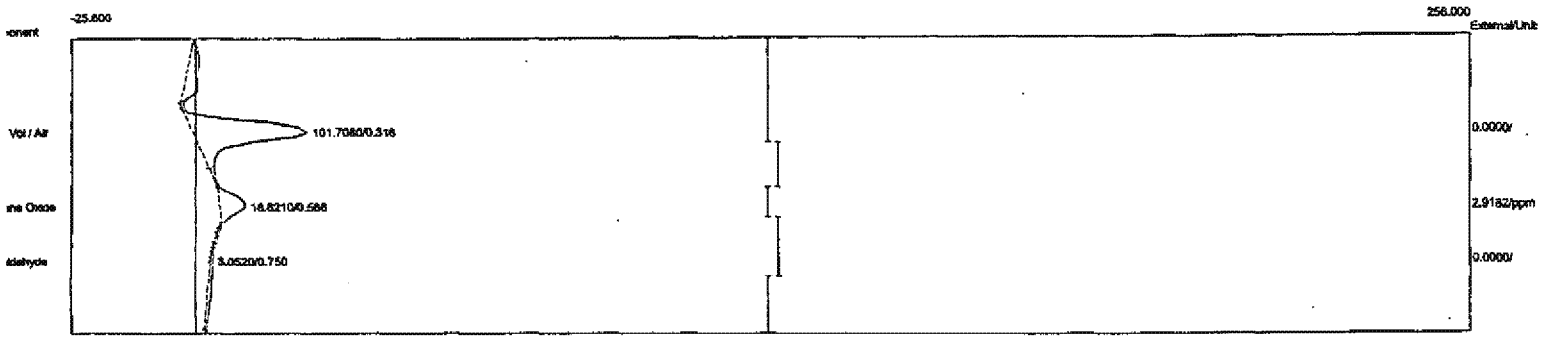
Component	Retention	Area	External	Units
ad Vol / Air	0.333	91.3900	0.0000	
ylene Oxide	0.566	11.6950	1.8328	ppm
staldehyde	0.783	1.6100	0.0000	
		104.6950	1.8328	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:08:38
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E06.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



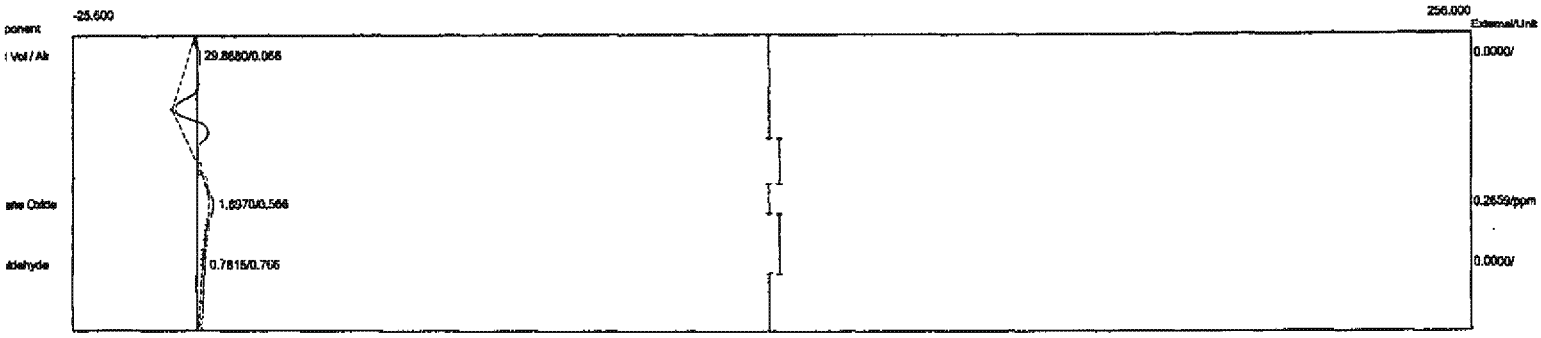
Component	Retention	Area	External	Units
etaldehyde	0.666	113.0700	0.0000	
		113.0700	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
ıalysis date: 12/12/2016 15:09:46
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E07.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



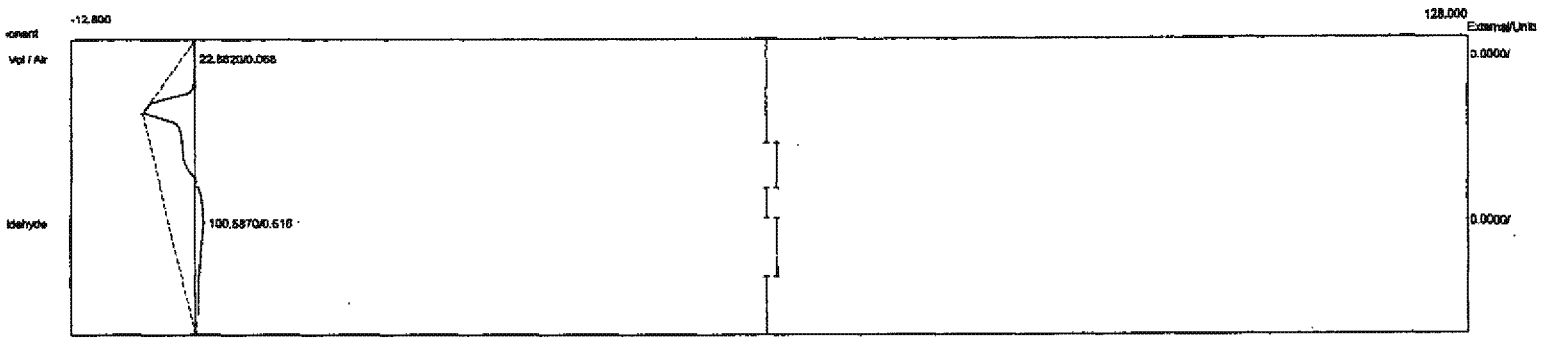
Component	Retention	Area	External	Units
ad Vol / Air	0.316	101.7080	0.0000	
ıylene Oxide	0.566	18.6210	2.9182	ppm
etaldehyde	0.750	3.0520	0.0000	
		123.3810	2.9182	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:11:10
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E08.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



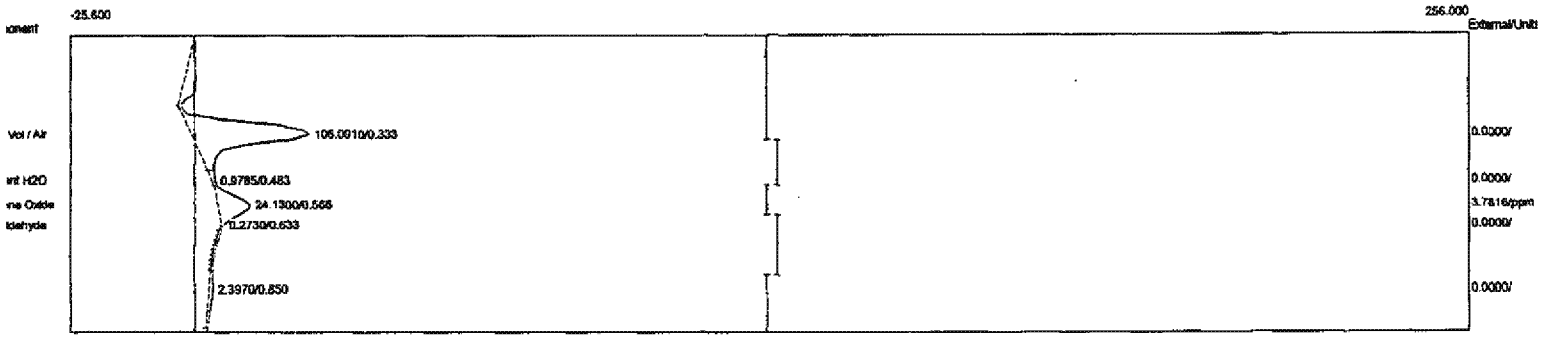
Component	Retention	Area	External	Units
ad Vol / Air	0.066	29.8680	0.0000	
ıylene Oxide	0.566	1.6970	0.2659	ppm
etaldehyde	0.766	0.7815	0.0000	
		32.3465	0.2659	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
nalysis date: 12/12/2016 15:12:28
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E09.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



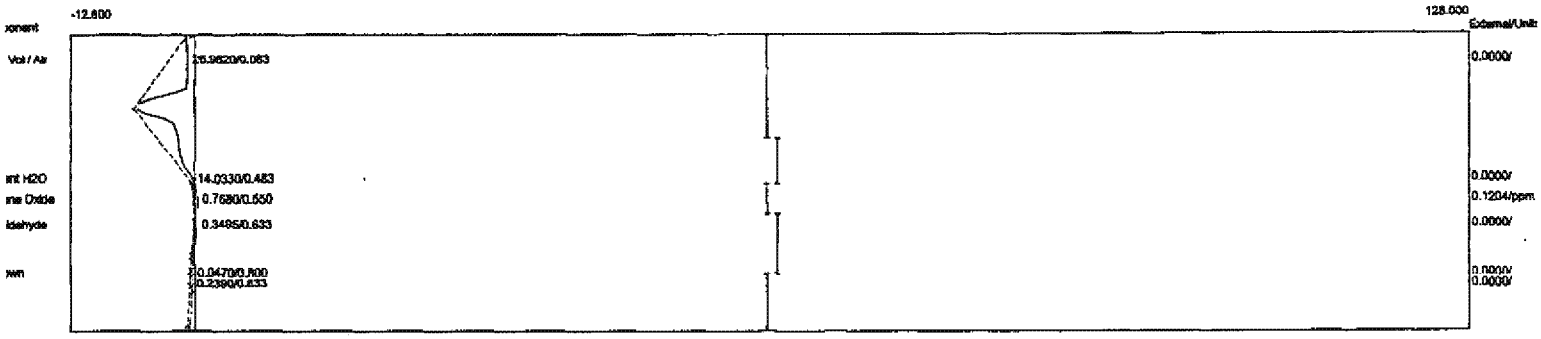
Component	Retention	Area	External	Units
ad Vol / Air	0.066	22.8820	0.0000	
etaldehyde	0.616	100.5870	0.0000	
		123.4690	0.0000	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
ıalysis date: 12/12/2016 15:13:41
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E10.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



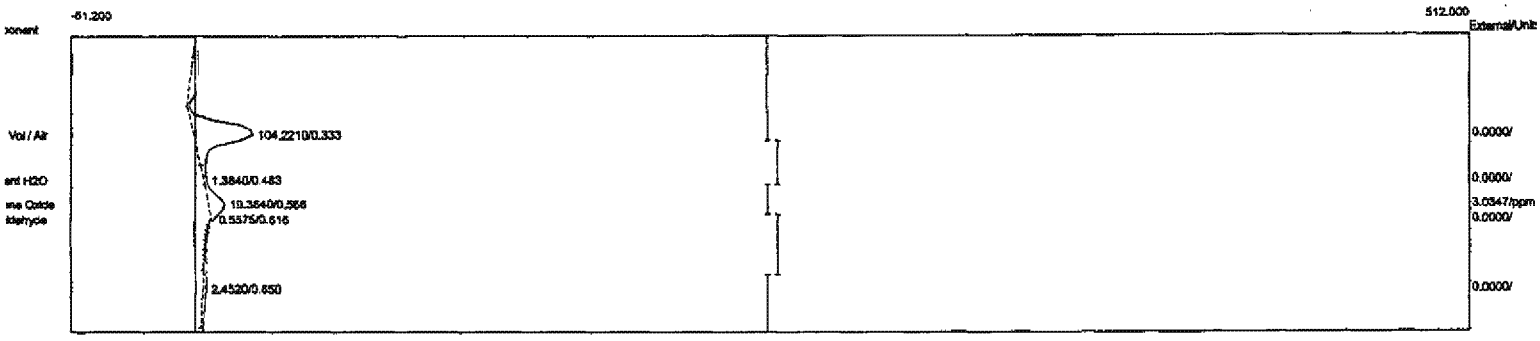
Component	Retention	Area	External	Units
ad Vol / Air	0.333	106.0910	0.0000	
ıbient H2O	0.483	0.9785	0.0000	
ıylene Oxide	0.566	24.1300	3.7816	ppm
ɜtaldehyde	0.633	0.2730	0.0000	
ı2	0.850	2.3970	0.0000	
		133.8695	3.7816	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
ıalysis date: 12/12/2016 15:15:13
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E11.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.083	26.9820	0.0000	
ıbient H2O	0.483	14.0330	0.0000	
ıylene Oxide	0.550	0.7680	0.1204	ppm
etaldehyde	0.633	0.3495	0.0000	
ı2	0.833	0.2390	0.0000	
		42.3715	0.1204	

Client: Sterigenics - Willowbrook 1
Client ID: Run#2Exh
ıalysis date: 12/12/2016 15:16:33
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-2E12.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer

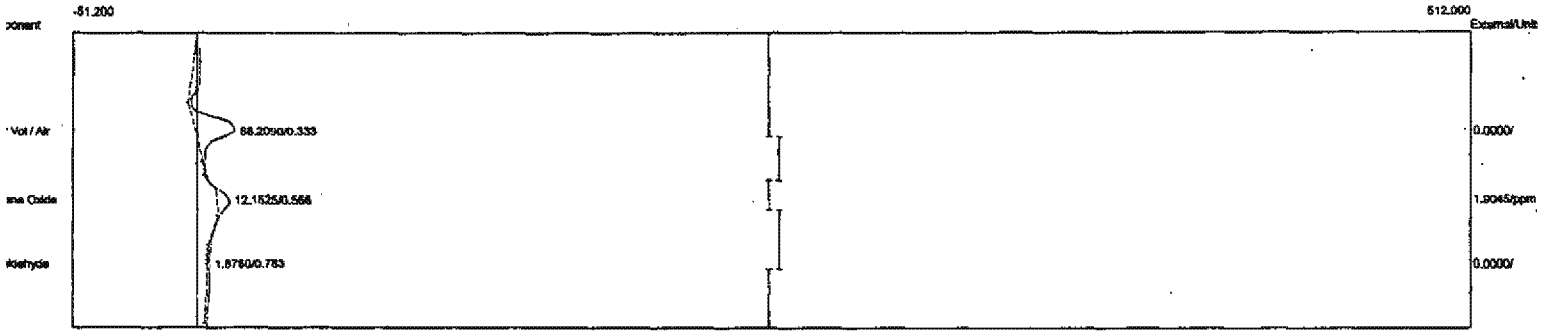


Component	Retention	Area	External	Units
ad Vol / Air	0.333	104.2210	0.0000	
ıbient H2O	0.483	1.3840	0.0000	
ıylene Oxide	0.566	19.3640	3.0347	ppm
etaldehyde	0.616	0.5575	0.0000	
ı2	0.850	2.4520	0.0000	
		127.9785	3.0347	

APPENDIX D

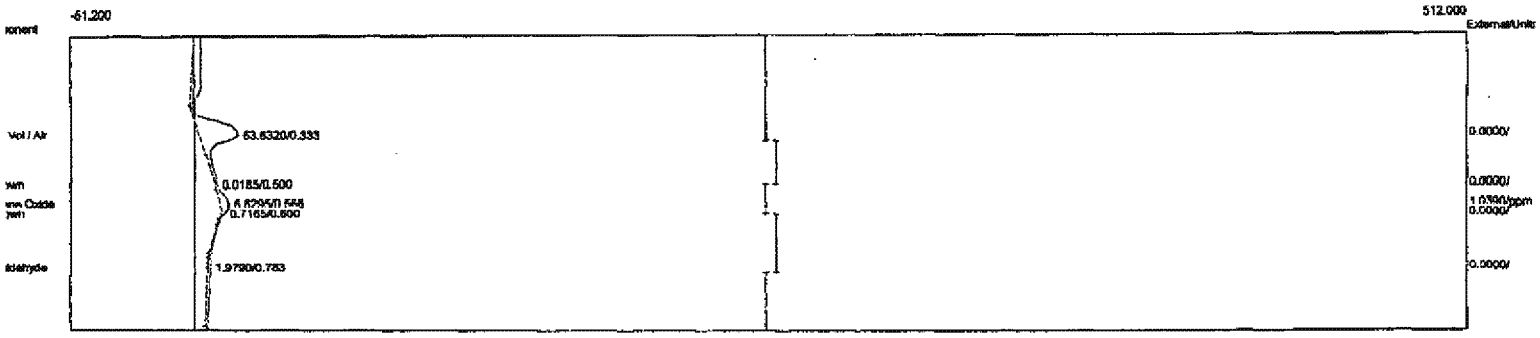
Run#3 Chromatograms

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
nalysis date: 12/12/2016 15:41:52
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E01.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



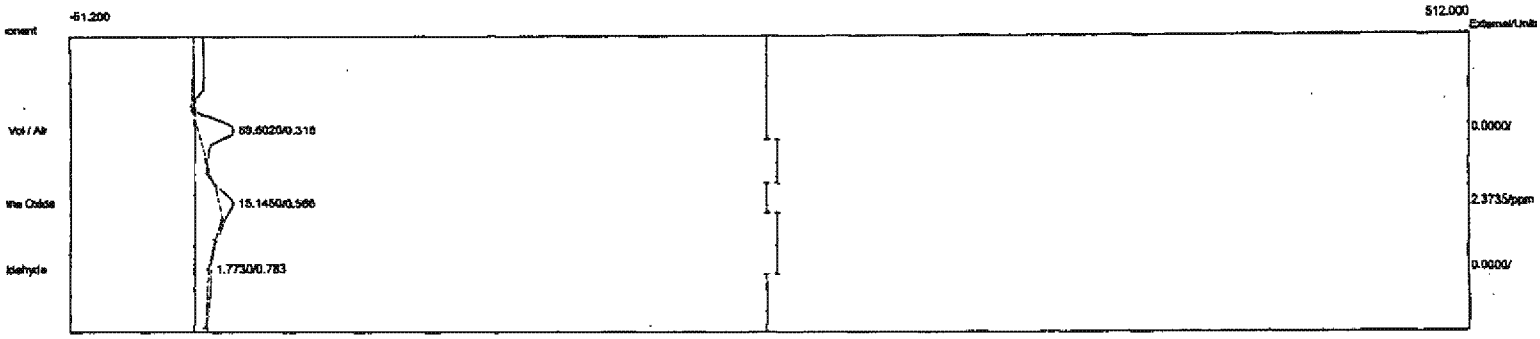
Component	Retention	Area	External	Units
ad Vol / Air	0.333	68.2090	0.0000	
ylene Oxide	0.566	12.1525	1.9045	ppm
etaldehyde	0.783	1.8760	0.0000	
		82.2375	1.9045	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
ıalysis date: 12/12/2016 15:43:18
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E02.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



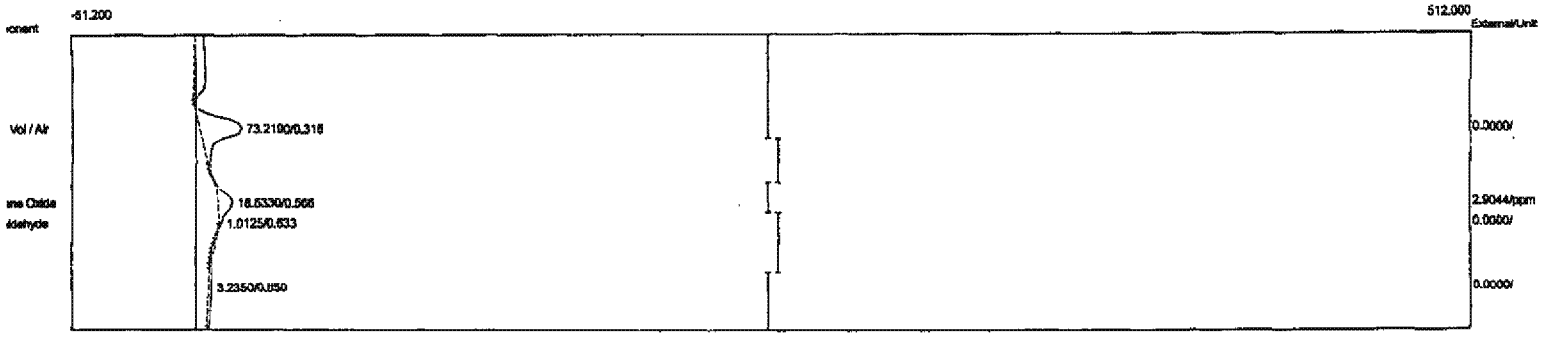
Component	Retention	Area	External	Units
ad Vol / Air	0.333	63.8320	0.0000	
ıylene Oxide	0.566	6.6295	1.0390	ppm
ɜtaldehyde	0.783	1.9790	0.0000	
		72.4405	1.0390	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
ıalysis date: 12/12/2016 15:44:38
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E03.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



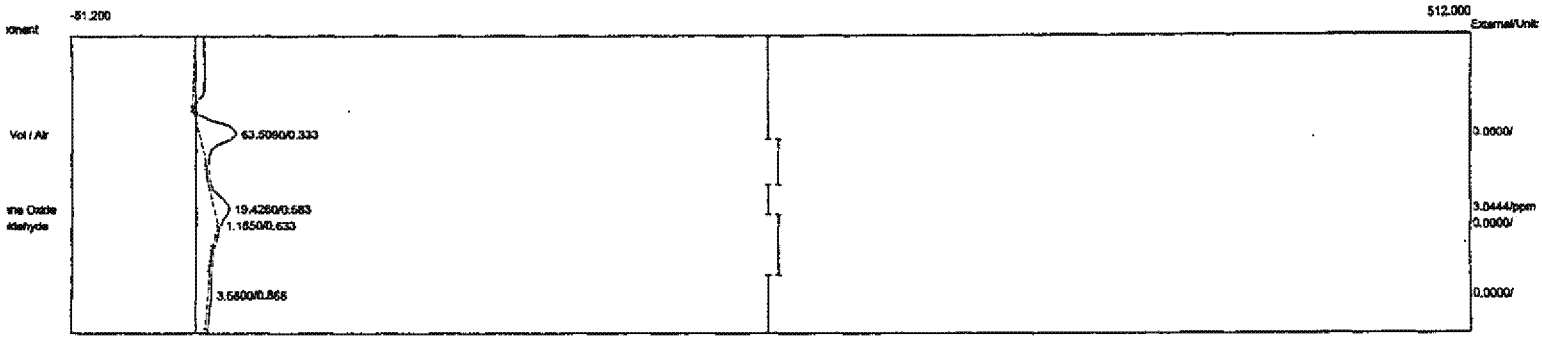
Component	Retention	Area	External	Units
ad Vol / Air	0.316	59.6020	0.0000	
ıylene Oxide	0.566	15.1450	2.3735	ppm
ɜtaldehyde	0.783	1.7730	0.0000	
		76.5200	2.3735	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
nalysis date: 12/12/2016 15:45:59
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E04.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



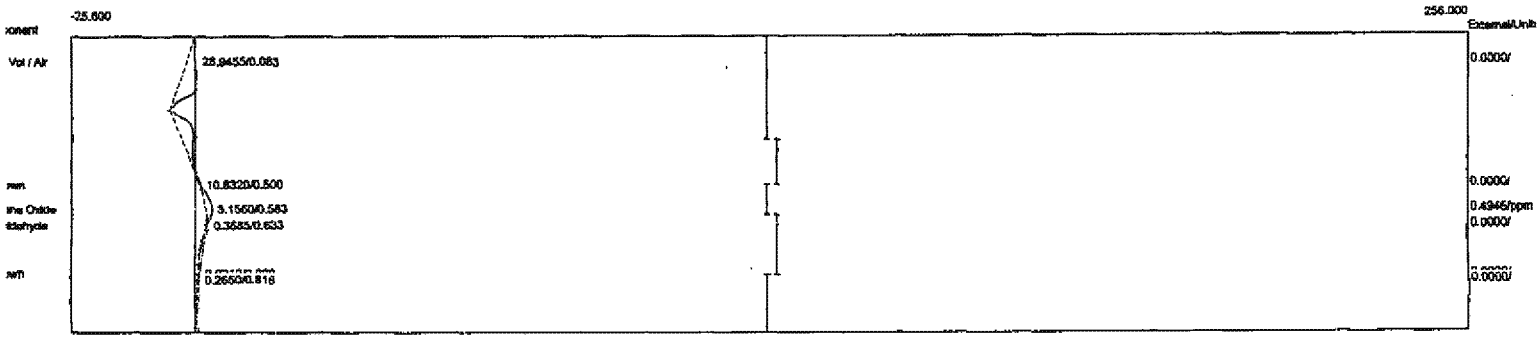
Component	Retention	Area	External	Units
ad Vol / Air	0.316	73.2190	0.0000	
ylene Oxide	0.566	18.5330	2.9044	ppm
etaldehyde	0.633	1.0125	0.0000	
2	0.850	3.2350	0.0000	
		95.9995	2.9044	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
nalysis date: 12/12/2016 15:47:19
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E05.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



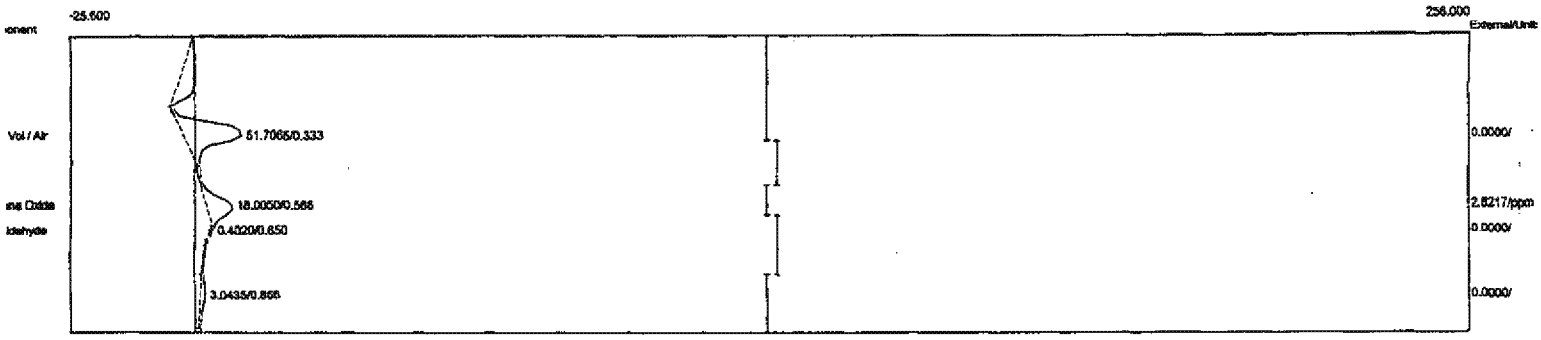
Component	Retention	Area	External	Units
ad Vol / Air	0.333	63.5090	0.0000	
ylene Oxide	0.583	19.4260	3.0444	ppm
etaldehyde	0.633	1.1650	0.0000	
2	0.866	3.6800	0.0000	
		87.7800	3.0444	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
nalysis date: 12/12/2016 15:48:41
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E06.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.083	28.9455	0.0000	
ylene Oxide	0.583	3.1560	0.4946	ppm
etaldehyde	0.633	0.3685	0.0000	
2	0.816	0.2650	0.0000	
		32.7350	0.4946	

Client: Sterigenics - Willowbrook 1
Client ID: Run#3Exh
nalysis date: 12/12/2016 15:50:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: C:\peak359\eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster1WB2016-3E07.CHR (c:\peak359)
Sample: DEOXX Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.333	51.7065	0.0000	
ylene Oxide	0.566	18.0050	2.8217	ppm
etaldehyde	0.650	0.4020	0.0000	
2	0.866	3.0435	0.0000	
		73.1570	2.8217	

APPENDIX E

Field Data and Calculation Worksheets

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #1 - Chamber 2 (DEOXX Scrubber Outlet)
Sterigenics, Inc. - Willowbrook 1
December 12, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.01	0.1000	42.5	0.01
0.015	0.1225	39.7	0.01
0.015	0.1225	37.5	0.01
0.01	0.1000	41.2	0.01
0.0075	0.0866	35.9	0.01
0.0075	0.0866	37.1	0.16
0.005	0.0707	33.3	0.21
0.005	0.0707	36.4	0.01
0.005	0.0707	34.7	0.68
0.005	0.0707	35.3	0.01
0.0025	0.0500	36.6	0.06
0.0025	0.0500	34.4	1.33
0.0025	0.0500	35.7	0.01
0.0025	0.0500	33.1	1.71
Average =			
0.0068	0.0824	36.7	**0.3021**
	=	497	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	6	in.
stack area =	0.196	sq. in.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	5.4	ft/sec
Flow =	**63.8**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000022**	**lbs/min**
evac start =	1431	
evac stop =	1450	
min/cycle =	19	
EtO Emissions =	**0.0000419**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	1350	ft3		V =	1350	ft3
	P =	14.6	in Hg Abs		P =	3.0	in Hg Abs
	T =	125	degF		T =	125	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	67.80	lbs		lbs EtO @ 100% =	13.93	lbs

Initial EtO = Scale Wt. =	59.6	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	87.9	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	12.2	lbs
INLET ETO = Initial EtO - Final EtO =	**47.4**	**lbs**
CONTROL EFFICIENCY =	**99.999912**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #2 - Chamber 8 (DEOXX Scrubber Outlet)
Sterigenics, Inc. - Willowbrook 1
December 12, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.01	0.1000	36.1	1.73
0.015	0.1225	37.3	1.46
0.01	0.1000	36.1	0.66
0.01	0.1000	35.2	0.08
0.0075	0.0866	35.9	1.83
0.0075	0.0866	32.9	0.01
0.005	0.0707	34.5	2.92
0.005	0.0707	33.4	0.27
0.005	0.0707	31.7	0.01
0.005	0.0707	34.5	3.78
0.0025	0.0500	31.0	0.12
0.0025	0.0500	32.2	3.03
Average =			
0.0071	0.0842	34.2	**1.325**
	=	494	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	6	in.
stack area =	0.196	sq. in.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	5.5	ft/sec
Flow =	**65.4**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000099**	**lbs/min**
evac start =	1500	
evac stop =	1517	
min/cycle =	17	
EtO Emissions =	**0.0001683**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	1456	ft3		V =	1456	ft3
	P =	14.4	in Hg Abs		P =	3.0	in Hg Abs
	T =	125	degF		T =	125	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	72.12	lbs		lbs EtO @ 100% =	15.03	lbs

Initial EtO = Scale Wt. =	64.2	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	89.0	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	13.4	lbs
INLET ETO = Initial EtO - Final EtO =	**50.8**	**lbs**
CONTROL EFFICIENCY =	**99.999669**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #3 - Chamber 3 (DEOXX Scrubber Outlet)
Sterigenics, Inc. - Willowbrook 1
December 12, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.01	0.1000	47.7	1.90
0.015	0.1225	47.3	1.04
0.01	0.1000	46.6	2.37
0.0075	0.0866	47.3	2.90
0.005	0.0707	48.0	3.04
0.005	0.0707	46.8	0.49
0.0025	0.0500	49.2	2.82
Average =			
0.0079	0.0886	47.6	**2.080**
	=	508	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	6	in.
stack area =	0.196	sq. in.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	5.9	ft/sec
Flow =	**67.9**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000162**	**lbs/min**
evac start =	1540	
evac stop =	1551	
min/cycle =	11	
EtO Emissions =	**0.0001777**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	663	ft3		V =	663	ft3
	P =	14.1	in Hg Abs		P =	3.0	in Hg Abs
	T =	125	degF		T =	125	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	32.16	lbs		lbs EtO @ 100% =	6.84	lbs

Initial EtO = Scale Wt. =	30.1	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	93.6	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	6.4	lbs
INLET ETO = Initial EtO - Final EtO =	**23.7**	**lbs**
CONTROL EFFICIENCY =	**99.999250**	**%**

APPENDIX F

Gas Certifications

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

600 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-001
Item No.: 02020001310TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CAL4448
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	1.10	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: MT DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	1.	PPM	1.10	PPM	10.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1300 PSIG
Expiration Date: 18Apr2018

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases
00 CAJON BLVD., SAN BERNARDINO, CA 92411
Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-003
Item No.: 02020001320TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM003232
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	10.1	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: MT
MT

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	10.	PPM	10.1	PPM	1.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1400 PSIG
Expiration Date: 18Apr2018

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

500 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-004
Item No.: 02020001330TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM011385
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	100.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully BLM

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	100.	PPM	100.	PPM	.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1400 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

300 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-005
Item No.: 02020001340TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM002810
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	1,000.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully BLM

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	1,000.	PPM	1,000.	PPM	.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1300 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

00 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-006
Item No.: 02020001340TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM005787
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	10,080.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully
BLM

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	10,000.	PPM	10,080.	PPM	.8	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 800 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFICATE OF ANALYSIS

Customer Name:	ECSi, Inc.	**Cylinder Number:**	SA25925
Stock or Analyzer Tag Number:	N/A	**Product Class:**	Certified Standard
Customer Reference:	Verbal- Dan	**Cylinder - Contents[1]:**	28 CF @ 2000 PSI
MESA Reference:	104448	**Cylinder-CGA:**	A006-HP-BR/350
Date of Certification:	4/20/2016	**Analysis Method:**	GC-TCD/FID
Recommended Shelf Life:	2 Years	**Preparation Method:**	Gravimetric

Component	Requested Concentration[2]	Reported Concentration[2,3]
Ethylene Oxide	50 ppm	48.8 ppm
Nitrogen	Balance	Balance

Authorized Signature:

1. The fill pressure shown on the COA is as originally quoted. The fill pressure measured by the customer may differ from the fill pressure originally quoted due to temperature effects, compressibility of the individual components when blended together in the cylinder, gauge accuracy or reduction in content volume before shipping as a result of samples withdrawn for laboratory QC necessary to ensure product quality.
2. Unless otherwise stated, concentrations are given in molar units.
3. Vapor pressure mixes are blended at a sufficiently low pressure so as to eliminate phase separation under most low temperature conditions encountered during transport or storage. However, it is generally recommended that cylinders containing vapor pressure restricted mixes be placed on the floor in a horizontal position and rolled back and forth to improve homogeneity of the gas phase mixture before being put into service.

Analytical Gas Standards are prepared and analyzed using combinations of NIST traceable weights, SRM's provided by NIST, or internal gas standards that have been verified for accuracy using procedures published by the US-EPA. Pure gases are analyzed and certified for purity using minor component Analytical Gas Standards prepared according to the methods specified above. Balances are calibrated to NIST test weights covered by NIST test number 822/256175/96. Reference Certification #'s: 163/W, 830/N and 3280. Calibration methods are in conformance with MIL-STD 45662A.

MESA Specialty Gases & Equipment
division of MESA International Technologies, Inc.
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On-line Catalog at www.mesagas.com

APPENDIX G

Process/Parametric Monitoring Data

)I ANTARES KORSCP V3Q-4 12/12/16 Mon 18:34 CYCLE 751 CHECK VALUE 22130
RUN NUMBER 1860427

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ETO MG/L	H2O MG/L	ALARMS & MESSAGES	ACTION TAKEN
8:34	14.4	126		120	672	16.6		
MAX:	14.4	126		120	672	16.6	PHASE 0:12	PHASE ELAPSED 0:12
MIN:	2.0	125		76	0	2.2		CYCLE 2:20

STERILANT USED THIS PHASE: 59.6, CYCLE TOTAL: 59.6

GAS DWELL (ED) PHASE

8:35	14.4	126		120	686	16.9		
8:35	14.4	126		120	690	17.1		OPERATOR CYCLE STOP
8:35	OPERATOR SENSOR CHECK --			PR	48.8,	RH	117, JWT 130, VLT 82, VGX 120	
	CT1	127,	CT2	124,	CT3	126,	P01 124, P02 82, P03 82, P04 82	
	P05	82,	P06	82,	P07	82,	P08 82, P09 82, P10 82, P11 82	
	P12	82,	P13	82,	P14	82,	P15 82, P16 82, P17 82, P18 82	
	P19	82,	P20	82,	ETO	704,	H2O 17.2, WT 295.1	
8:35	"RC 12DEC2016							
8:36	14.4	126		119	706	17.2		
8:37	14.4	126		118	709	17.2		
8:38	14.4	126		117	711	17.2		
8:39	14.4	126		116	711	17.7		
8:40	14.4	126		116	711	17.5		
8:41	14.4	126		115	712	17.7		
8:42	14.4	126		115	712	17.7		
8:43	14.4	126		114	711	17.7		
8:44	14.4	126		114	711	17.7		
8:45	14.4	125		114	711	18.0		
8:46	14.4	125		113	711	18.1		
8:47	14.4	125		113	711	18.1		
8:48	14.4	125		113	711	18.1		
8:49	14.4	125		112	711	18.3		
8:50	14.4	125		112	711	18.6		
8:50	14.4	125		112	711	18.6	CYCLE STILL STOPPED	
8:51	14.4	125		112	711	18.6		
8:52	14.4	125		112	711	19.1		
8:53	14.4	125		112	711	19.1		
8:54	14.4	125		111	711	19.1		
8:55	14.4	125		111	711	19.1		
8:56	14.4	125		111	711	19.1		
8:57	14.4	125		111	711	19.5		
8:58	14.4	125		111	711	19.7		
8:59	14.4	125		111	711	19.5		
9:00	14.4	125		110	711	19.9		
9:01	14.4	125		110	711	19.9		
9:02	14.4	125		110	711	19.9		
9:03	14.4	125		110	711	19.9		
9:04	14.4	125		110	711	19.9		
9:05	14.4	125		110	711	19.9		
9:05	14.4	125		110	712	19.9	CYCLE STILL STOPPED	
9:06	14.4	125		110	712	20.1		
9:07	14.4	125		110	713	20.4		

)I ANTARES KORSCP V3Q-4 12/12/16 Mon 20:27 CYCLE 751 CHECK VALUE 22130
RUN NUMBER 1860427

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ETO MG/L	H2O MG/L	ALARMS & MESSAGES	ACTION TAKEN
0:27	14.6	125		107	713	25.9		
0:28	14.6	125		107	713	25.9		
0:29	14.6	125		107	713	25.9		
0:30	14.6	125		107	713	25.9		
0:31	14.6	125		107	713	25.9		
0:32	14.6	125		107	713	25.9		
0:33	14.6	125		107	713	25.9		
0:33	14.6	125		107	713	26.0		OPERATOR CYCLE ABORT
0:33	14.6	125		107	713	26.0	SHORT EXPOSURE	
0:33	14.6	125		107	713	26.0		
MAX:	14.6	126		120	716	26.0	PHASE 0:00	PHASE ELAPSED 1:58
MIN:	14.4	125		107	686	16.9		CYCLE 4:18

AFTER VACUUM PHASE

0:33	14.6	125		107	713	26.2		
0:34	13.6	125		94	699	25.9		
0:35	12.5	125		94	638	24.4		
0:35	12.4	125		94	638	24.4	SLOW EVACUATION	
0:35	OPERATOR SENSOR CHECK --			PR	41.6,	RH	121, JWT 130, VLT 81, VGX 95	
	CT1 126,	CT2 123,		CT3	125,	P01	124, P02 81, P03 81, P04 81	
	P05 81,	P06 81,		P07	81,	P08	81, P09 81, P10 81, P11 81	
	P12 81,	P13 81,		P14	81,	P15	81, P16 81, P17 81, P18 81	
	P19 81,	P20 81,		ETO	627,	H2O	24.1, WT 295.2	
0:36	11.5	125		95	589	23.5		
0:37	10.5	125		96	541	22.3		
0:38	9.7	125		96	498	20.7		
0:39	9.0	125		97	458	19.8		
0:40	8.3	125		97	422	18.8		
0:41	7.6	125		98	389	17.7		
0:42	7.1	125		98	358	16.8		
0:43	6.5	125		99	331	15.9		
0:44	6.0	125		100	307	15.0		
0:45	5.6	125		100	283	14.3		
0:46	5.1	125		100	262	13.1		
0:47	4.8	125		101	244	12.7		
0:48	4.4	125		101	226	11.8		
0:49	4.1	125		102	210	11.6		
0:50	3.8	125		102	195	10.9		
0:51	3.5	125		102	179	10.4		
0:52	3.2	125		103	166	9.6		
0:53	3.0	125		103	156	9.3	EVACUATION PRESSURE	
0:53	3.0	125		103	156	9.3		
MAX:	14.6	125		107	713	26.2	PHASE 0:19	PHASE ELAPSED 0:19
MIN:	3.0	125		94	156	9.3		CYCLE 4:38

STERIGENICS
7775 S QUINCY STREET
WILLOWBROOK, IL 60527
1-630-654-5151
CHAMBER NO. 8

Jc 12DEC16

DATE 12/12/16 Mon
PROG VERSION KORSCP V3Q-4
IN NUMBER 1852745

CYCLE 751

12DEC16

STERILANT EO
CHECK VALUE 22130
OPERATOR R CASTELLANO

ISTOMER MAINTENANCE
IT NO. ENG #2 30NOV2016
IANTITY NA
ODUCT NA

IRRENT TANK: LOT # E002374UTLX902993L16, TARE 283.0 LB
ALE WEIGHT 433.4 LB, STERILANT LEFT 145.4 LB

PROCESS PARAMETERS

CHAMBER TEMP 125 F, COOL AT 135 F, BLOWER IS USED, ALARM REPETITION 15:00 MM:SS
VACUUM A 2.0 INHGA, 2.01 INHG/MIN, REQD 3.0 INHGA
LEAK TEST 0:05 HH:MM, TOLERANCE 0.2 INHG
NITROGEN DILUTION 2 CYCLES; NITROGEN: 24.0 INHGA, 1.51 INHG/MIN
EVAC: 2.0 INHGA, 2.01 INHG/MIN
GAS A 1 CYCLES; INJ: 14.4 INHGA, 1.00 INHG/MIN, EO
GAS DWELL 14.4 INHGA, -0.2 INHG, DWELL 1:00 HH:MM
AFTER VACUUM 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN, REQD 3.5 INHGA
GAS WASH A 3 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, NITR
VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN
REQD 3.5 INHGA
GAS WASH B 1 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, AIR
VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN
REQD 3.5 INHGA
RELEASE 28.0 INHGA, 1.51 INHG/MIN

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP ETO GAS MG/L	H2O MG/L	ALARMS & MESSAGES	ACTION TAKEN
7:13	OPERATOR SENSOR CHECK -- PR 100.1, RH 0, JWT 128, VLT 85, VGX 108						
	CT1 125, CT2 127, CT3 124, P01 127, P02 85, P03 85, P04 85						
	P05 85, P06 85, P07 85, P08 85, P09 85, P10 85, P11 85						
	P12 85, P13 85, P14 85, P15 85, P16 85, P17 85, P18 85						
	P19 85, P20 85, ETO 0, H2O 7.0, WT 433.3						
	VACUUM A PHASE						
7:15	29.4	125		107	0	5.7	
7:15	OPERATOR SENSOR CHECK -- PR 99.4, RH 0, JWT 127, VLT 85, VGX 107						
	CT1 124, CT2 127, CT3 123, P01 127, P02 85, P03 85, P04 85						
	P05 85, P06 85, P07 85, P08 85, P09 85, P10 85, P11 85						
	P12 85, P13 85, P14 85, P15 85, P16 85, P17 85, P18 85						
	P19 85, P20 85, ETO 0, H2O 5.6, WT 433.4						
7:16	27.3	125		107	0	5.4	
7:17	25.3	125		107	0	5.1	
7:18	23.2	124		107	0	4.7	
7:19	21.2	124		107	0	4.2	

)I ANTARES KORSCP V3Q-4 12/12/16 Mon 19:02 CYCLE 751 CHECK VALUE 22130
JN NUMBER 1852745

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ETO MG/L	H2O MG/L	ALARMS & MESSAGES	ACTION TAKEN
19:02	3.2	129		89	3	0.1		
19:03	4.2	129		75	69	0.1		
19:04	5.2	129		80	140	2.1		
19:05	6.2	129		90	206	3.3		
19:06	7.2	129		99	260	4.2		
19:07	OPERATOR SENSOR CHECK --			PR	27.1,	RH	0, JWT 139, VLT 85, VGX 96	
	CT1 129, CT2 130, CT3 129, P01 130, P02 85, P03 85, P04 85							
	P05 85, P06 85, P07 85, P08 85, P09 85, P10 85, P11 85							
	P12 85, P13 85, P14 85, P15 85, P16 85, P17 85, P18 85							
	P19 85, P20 85, ETO 294, H2O 4.8, WT 401.9							
19:07	8.2	129		104	320	5.3		
19:08	9.2	129		110	381	6.6		
19:09	10.2	129		113	440	7.6		
19:10	11.2	129		116	495	8.3		
19:11	12.2	129		117	557	9.2		
19:12	13.2	129		118	618	10.1		
19:13	14.2	129		118	673	10.6		
19:13	14.4	129		118	698	10.7		
MAX:	14.4	129		118	698	10.7	PHASE 0:12	PHASE ELAPSED 0:12
MIN:	2.0	128		75	0	0.1		CYCLE 1:58

STERILANT USED THIS PHASE: 64.2, CYCLE TOTAL: 64.2

GAS DWELL (EO) PHASE

19:13	14.5	129		118	706	10.9		
19:14	14.5	129		117	727	11.1		
19:15	14.5	129		117	729	11.1		OPERATOR CYCLE STOP
19:15	OPERATOR SENSOR CHECK --			PR	49.0,	RH	0, JWT 137, VLT 85, VGX 117	
	CT1 128, CT2 130, CT3 129, P01 130, P02 85, P03 85, P04 85							
	P05 85, P06 85, P07 85, P08 85, P09 85, P10 85, P11 85							
	P12 85, P13 85, P14 85, P15 85, P16 85, P17 85, P18 85							
	P19 85, P20 85, ETO 729, H2O 11.1, WT 369.0							
19:15	"RC 12DEC2016							
19:15	14.5	129		117	729	11.5		
19:16	14.5	129		116	732	11.5		
19:17	14.4	129		116	734	11.5		
19:18	14.4	129		115	734	11.5		
19:19	14.4	129		115	734	11.5		
19:20	14.4	129		114	734	11.5		
19:21	14.4	129		114	734	11.3		
19:22	14.4	129		113	734	11.5		
19:23	14.4	129		113	734	11.5		
19:24	14.4	129		113	734	11.5		
19:25	14.4	129		112	734	11.5		
19:26	14.4	128		112	734	11.5		
19:27	14.4	128		112	734	11.5		
19:28	14.4	128		111	734	11.5		
19:29	14.4	128		111	734	11.5		
19:30	14.4	128		111	734	11.5	CYCLE STILL STOPPED	

)I ANTARES KORSCP V3Q-4 12/12/16 Mon 20:49 CYCLE 751 CHECK VALUE 22130
JN NUMBER 1852745

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ETO MG/L	H2O MG/L	ALARMS & MESSAGES	ACTION TAKEN
20:49	14.4	125		104	729	12.0		
20:50	14.4	125		104	729	12.0		
20:51	14.4	125		104	731	12.4		
20:52	14.4	125		104	729	12.4		
20:53	14.4	125		104	731	12.0		
20:54	14.4	125		104	732	12.0		
20:55	14.4	125		104	732	12.1		
20:56	14.4	125		104	732	12.3		
20:57	14.4	125		104	732	12.4		
20:58	14.4	125		104	732	12.4		
20:59	14.4	125		104	732	12.0		
21:00	14.4	125		104	732	12.0	CYCLE STILL STOPPED	
21:00	14.4	125		104	732	12.3		
21:01	14.4	125		104	732	12.3		OPERATOR CYCLE ABORT
21:01	14.4	125		104	732	12.3	SHORT EXPOSURE	
21:01	14.4	125		104	732	12.3		
MAX:	14.5	129		118	734	12.4	PHASE 0:01	PHASE ELAPSED 1:47
MIN:	14.4	125		104	706	10.9		CYCLE 3:46

AFTER VACUUM PHASE

21:01	14.4	125		104	732	12.3		
21:02	13.2	125		98	713	12.0		
21:03	12.0	125		98	643	10.8		
21:03	11.8	125		98	637	10.6	SLOW EVACUATION	
21:04	10.8	125		98	584	10.3		
21:05	9.8	125		98	528	9.7		
21:06	8.9	125		98	484	9.2		
21:07	8.1	125		98	439	8.3		
21:08	7.4	125		98	399	7.9		
21:09	6.7	125		98	362	6.8		
21:10	6.1	125		98	328	6.0		
21:11	5.5	125		98	300	5.6		
21:12	5.0	125		98	273	5.4		
21:13	4.5	125		99	250	4.2		
21:14	4.1	125		99	229	4.2		
21:15	3.8	125		99	210	3.8		
21:16	3.5	125		99	193	3.5		
21:17	3.2	125		100	176	3.2		
21:18	3.0	125		100	167	3.2	EVACUATION PRESSURE	
21:18	3.0	125		100	167	3.2		
MAX:	14.4	125		104	732	12.3	PHASE 0:16	PHASE ELAPSED 0:16
MIN:	3.0	125		98	167	3.2		CYCLE 4:02

GAS WASH A PHASE

21:18	3.0	125		100	167	3.2	========= RELEASE 1 ==========	
21:19	4.6	125		90	195	3.3		

STERIGENICS
7775 QUINCY STREET
WILLOWBROOK, IL 60527
1-630-654-5151
CHAMBER NO. 3

JO 12 DEC16

X 12DEC16

DATE 12/12/16 Mon
PROG VERSION KORSCP V30-4
RUN NUMBER 1860454

CYCLE 751

STERILANT EO
CHECK VALUE 22130
OPERATOR R CASTELLANO

CUSTOMER MAINTENANCE
LOT NO. ENG #7-12DEC2017
QUANTITY NA
PRODUCT NA

RRENT TANK: LOT # E002916UTLX902993L16, TARE 278.0 LB
ALE WEIGHT 525.2 LB, STERILANT LEFT 242.2 LB

P R O C E S S P A R A M E T E R S

CHAMBER TEMP 125 F, COOL AT 135 F, BLOWER IS USED, ALARM REPETITION 15:00 MM:SS
VACUUM A 2.0 INHGA, 2.01 INHG/MIN, REQD 3.0 INHGA
LEAK TEST 0:05 HH:MM, TOLERANCE 0.2 INHG
NITROGEN DILUTION 2 CYCLES; NITROGEN: 24.0 INHGA, 1.51 INHG/MIN
EVAC: 2.0 INHGA, 2.01 INHG/MIN
GAS A 1 CYCLES; INJ: 14.4 INHGA, 1.00 INHG/MIN, EO
GAS DWELL 14.4 INHGA, -0.2 INHG, DWELL 1:00 HH:MM
AFTER VACUUM 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN, REQD 3.5 INHGA
GAS WASH A 3 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, NITR
VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN
REQD 3.5 INHGA
GAS WASH B 1 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, AIR
VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN
REQD 3.5 INHGA
RELEASE 28.0 INHGA, 1.51 INHG/MIN

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ALARMS & MESSAGES	ACTION TAKEN
9:04	OPERATOR SENSOR CHECK --			PR 99.6,	RH 0,	JWT 128, VLT 80, VGX 116
	CT1 125,	CT2 128,		CT3 125,	P01 128,	P02 80, P03 80, P04 80
	P05 80,	P06 80,		P07 80,	P08 80,	P09 80, P10 80, P11 80
	P12 80,	P13 80,		P14 80,	P15 80,	P16 80, P17 80, P18 80
	P19 80,	P20 80,		ETO 0,	H2O 0.1,	WT 525.2
				VACUUM A PHASE		
9:05	29.4	126		116		
9:05	OPERATOR SENSOR CHECK --			PR 99.5,	RH 0,	JWT 132, VLT 80, VGX 116
	CT1 125,	CT2 128,		CT3 125,	P01 127,	P02 80, P03 80, P04 80
	P05 80,	P06 80,		P07 80,	P08 80,	P09 80, P10 80, P11 80
	P12 80,	P13 80,		P14 80,	P15 80,	P16 80, P17 80, P18 80
	P19 80,	P20 80,		ETO 0,	H2O 0.1,	WT 525.2
9:06	27.3	126		116		
9:07	25.4	126		115		
9:08	23.4	126		114		
9:09	21.4	125		114		

I ANTARES KORSOP V3Q-4 12/12/16 Mon 20:39 CYCLE 751 CHECK VALUE 22130
RUN NUMBER 1660454

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ALARMS & MESSAGES	ACTION TAKEN
0:39	OPERATOR SENSOR CHECK --			PR 24.0,	RH 0, JWT 132, VLT 79, VGX 51	
	CT1 123, CT2 129, CT3 123, P01 129, P02 79, P03 79, P04 79					
	P05 79, P06 79, P07 79, P08 79, P09 79, P10 79, P11 79					
	P12 79, P13 79, P14 79, P15 79, P16 79, P17 79, P18 79					
	P19 79, P20 79, ETO 0, H2O 0.1, WT 512.6					
0:40	7.1	125		51		
0:40	OPERATOR SENSOR CHECK --			PR 24.0,	RH 0, JWT 131, VLT 79, VGX 53	
	CT1 123, CT2 129, CT3 123, P01 129, P02 79, P03 79, P04 79					
	P05 79, P06 79, P07 79, P08 79, P09 79, P10 79, P11 79					
	P12 79, P13 79, P14 79, P15 79, P16 79, P17 79, P18 79					
	P19 79, P20 79, ETO 0, H2O 0.1, WT 512.6					
0:41	7.1	125		55		
0:41	OPERATOR SENSOR CHECK --			PR 23.9,	RH 0, JWT 131, VLT 79, VGX 56	
	CT1 123, CT2 129, CT3 123, P01 129, P02 79, P03 79, P04 79					
	P05 79, P06 79, P07 79, P08 79, P09 79, P10 79, P11 79					
	P12 79, P13 79, P14 79, P15 79, P16 79, P17 79, P18 79					
	P19 79, P20 79, ETO 0, H2O 0.1, WT 512.6					
0:42	7.1	125		56		
0:42	OPERATOR SENSOR CHECK --			PR 23.9,	RH 0, JWT 131, VLT 79, VGX 58	
	CT1 123, CT2 129, CT3 123, P01 129, P02 79, P03 79, P04 79					
	P05 79, P06 79, P07 79, P08 79, P09 79, P10 79, P11 79					
	P12 79, P13 79, P14 79, P15 79, P16 79, P17 79, P18 79					
	P19 79, P20 79, ETO 0, H2O 0.1, WT 512.6					
0:43	7.1	125		62		
0:43	OPERATOR SENSOR CHECK --			PR 23.9,	RH 0, JWT 132, VLT 79, VGX 63	
	CT1 123, CT2 129, CT3 123, P01 129, P02 79, P03 79, P04 79					
	P05 79, P06 79, P07 79, P08 79, P09 79, P10 79, P11 79					
	P12 79, P13 79, P14 79, P15 79, P16 79, P17 79, P18 79					
	P19 79, P20 79, ETO 0, H2O 0.1, WT 512.6					
0:43	7.1	125		63		CYCLE CONTINUED
0:44	8.2	125		71		
0:45	9.2	125		72		
0:46	10.2	125		78		
0:47	11.2	125		82		
0:48	12.2	125		87		
0:49	13.2	125		92		
0:50	14.2	125		96		
0:50	14.4	125		98		
MAX:	14.4	125		109	PHASE 0:11	PHASE ELAPSED 0:18
MIN:	2.0	125		50		CYCLE 1:45

STERILANT USED THIS PHASE: 30.1, CYCLE TOTAL: 30.1

GAS DWELL (EO) PHASE

0:50	14.5	125	98	
0:50	14.5	125	99	OPERATOR CYCLE STOP
0:51	14.5	125	99	
0:52	14.4	125	100	
0:53	14.4	125	101	

I ANTARES KORSCP V3Q-4 12/12/16 Mon 21:42 CYCLE 751 CHECK VALUE 22130
RUN NUMBER 1860454

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP GAS	ALARMS & MESSAGES	ACTION TAKEN
1:42	14.1	125		112		
MAX:	14.5	126		112	PHASE 0:00	PHASE ELAPSED 0:51
MIN:	14.1	125		98		CYCLE 2:37

AFTER VACUUM PHASE

1:42	14.1	125		112	
1:43	12.2	125		103	
1:44	10.4	125		103	
1:44	10.3	125		103	SLOW EVACUATION
1:45	8.9	125		104	
1:46	7.6	125		105	
1:47	6.5	125		105	
1:48	5.6	125		106	
1:49	4.8	125		106	
1:50	4.3	125		107	
1:51	3.6	125		107	
1:52	3.3	125		107	
1:53	3.0	125		107	EVACUATION PRESSURE
1:53	3.0	125		107	
MAX:	14.1	125		112	PHASE 0:10 PHASE ELAPSED 0:10
MIN:	3.0	125		103	CYCLE 2:47

GAS WASH A PHASE

1:53	3.0	125		107	========== RELEASE 1 ==========
1:54	4.6	125		89	
1:55	6.1	125		85	
1:56	7.6	125		83	
1:57	9.1	125		82	
1:58	10.6	125		83	
1:59	12.1	125		84	
2:00	13.6	125		85	
2:01	15.1	125		85	
2:02	16.6	125		86	
2:03	18.1	125		87	
2:04	19.6	125		87	
2:05	21.1	125		88	
2:06	22.6	125		88	
2:06	23.0	125		89	========== EVACUATION 1 ==========
2:07	20.9	125		90	
2:08	19.0	125		93	
2:08	OPERATOR SENSOR CHECK --		PR	50.3,	RH 0, JWT 129, VLT 79, VGX 94
	CT1 124,	CT2 128,	CT3	123,	P01 126, P02 79, P03 79, P04 79
	P05 79,	P06 79,	P07	79,	P08 79, P09 79, P10 79, P11 79
	P12 79,	P13 79,	P14	79,	P15 79, P16 79, P17 79, P18 79
	P19 79,	P20 79,	ETO	0,	H2O 0.1, WT 494.7
2:09	16.9	125		95	

REPORT OF
AIR POLLUTION SOURCE TESTING
OF AN ETHYLENE OXIDE EMISSION-CONTROL SYSTEM
OPERATED BY STERIGENICS, INC.
IN WILLOWBROOK, ILLINOIS
ON DECEMBER 13, 2016

Submitted to:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 North Grand Avenue East
Springfield, Illinois 62794

Submitted by:

STERIGENICS US, LLC.
2015 Spring Road
Oak Brook, Illinois 60523

I.D. Number 043110AAC

Prepared by:

ECSI, INC.
PO Box 848
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January 20, 2017

ECSi

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TEST DATE

Tuesday, December 13, 2016

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1.0 INTRODUCTION

On Tuesday, December 13, 2016, ECSi, Inc. performed air pollution source testing of an ethylene oxide (EtO) emission-control device operated by Sterigenics, Inc. in Willowbrook, Illinois. The control device tested was a two-stage Advanced Air Technologies (AAT) Safe Cell emission-control system, comprised of a packed-tower chemical scrubber (SC1) and a dry-bed reactor (SC2), used to control emissions from two aeration rooms and from four sterilizer vacuum pumps. The purpose of the testing program was to demonstrate continued compliance with the conditions established in the Air Quality Permit granted to Sterigenics by the Illinois Environmental Protection Agency (IEPA).

2.0 EQUIPMENT

The EtO gas-sterilization system is comprised of four commercial sterilizers, which are discharged through liquid-ring vacuum pumps to a two-stage Advanced Air Technologies (AAT) Safe Cell emission-control system. The gas-sterilization and emission-control equipment consist of the following:

- Four Gas Sterilizers, each comprised of a steam-heated sterilization chamber, a recirculating vacuum pump chamber evacuation system, a backvent valve, and a fugitive emissions exhaust hood;

- Two aeration rooms, each comprised of a heated aeration chamber and a chamber exhaust system.

Exhaust and aeration emissions are be controlled by:

- One two-stage Advanced Air Technologies Safe Cell emission-control system, comprised of a packed-tower chemical scrubber (SC1), equipped with a packed reaction/interface column, a scrubber fluid recirculation system, and a scrubber fluid reaction/storage tank, and a dry bed reactor/scrubber (SC2), comprised of a bank of solid-bed reaction vessels, connected in parallel, installed downstream of SC1 and upstream of a dedicated blower exhaust system.

3.0 TESTING

EtO source testing was conducted in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring was conducted simultaneously at the inlet and outlet of the AAT System during the first chamber evacuation of the sterilizer exhaust phase of one of the three sterilizers, and during a one-hour time interval of the aeration process. A total of three exhaust-phase test runs, and three aeration test runs were performed.

Exhaust phase testing with one sterilizer discharging to the scrubber at a time represents worst-case conditions for demonstration of control efficiency compliance. At this lower inlet loading, the scrubber must perform at its maximum efficiency to achieve outlet EtO concentrations low enough to demonstrate compliance.

During the first chamber evacuation of the exhaust phase, EtO emissions to the inlet of the AAT System were determined using the Ideal Gas Law and the chamber conditions at the beginning and at the end of the first chamber evacuation. During the first chamber evacuation of the exhaust phase, EtO emissions from the outlet of the AAT System were determined using direct source sample injection into the GC. During aeration testing, EtO emissions at the inlet and the outlet of the Safe Cell System were determined using direct source sample injection into a GC.

All exhaust phase testing was conducted during normal process load conditions, but with an empty sterilization chamber to facilitate the performance of multiple test runs. All aeration testing was performed during normal process load conditions, after freshly sterilized product had been transferred into an aeration chamber/room. The testing program was conducted in accordance with the procedures outlined in the following sections.

4.0 RULE/COMPLIANCE REQUIREMENTS

The EtO gas-sterilization system at the Willowbrook II facility was tested to demonstrate compliance with EPA requirements, as specified in the IEPA Air Quality Permit. The following requirements must be met:

- The sterilizer exhaust phase (post exposure vacuum pulses) emissions must be vented to control equipment with an EtO emission-reduction efficiency of at least 99 % by weight.

- The emissions from the aeration process must be discharged to control equipment with an EtO emission-reduction efficiency of at least 99.0% by weight or by a maximum concentration of 1 ppmv, whichever is less stringent..

Testing is required to demonstrate compliance with these requirements. Source testing of the AAT Safe Cell System is required initially, and may be required periodically thereafter.

5.0 TEST METHOD REFERENCE

5.1 INTRODUCTION

EtO source testing was performed in accordance with the procedures outlined in USEPA CFR40, Part 63.365. EtO emissions monitoring was conducted simultaneously at the inlet and outlet of the AAT System during the first chamber evacuation of the sterilizer exhaust phase of one of the three sterilizers. A total of three exhaust-phase test runs were performed.

Exhaust phase testing with one sterilizer discharging to the scrubber at a time represents worst-case conditions for demonstration of control efficiency compliance. At this lower inlet loading, the scrubber must perform at its maximum efficiency to achieve outlet EtO concentrations low enough to demonstrate compliance.

During the first chamber evacuation of the exhaust phase, EtO emissions to the inlet of the AAT System were determined using the Ideal Gas Law and the chamber conditions at the beginning and at the end of the first chamber evacuation. During the first chamber evacuation of the exhaust phase, EtO emissions from the outlet of the AAT System were determined using direct source sample injection into the GC. During aeration testing, EtO emissions at the inlet and the outlet of the Safe Cell System were determined using direct source sample injection into a GC.

All exhaust phase testing was conducted during normal process load conditions, but with an empty sterilization chamber to facilitate the performance of multiple test runs. All aeration testing was performed during normal process load conditions, after freshly sterilized product had been transferred into an aeration chamber/room. The testing program was conducted in accordance with the procedures outlined in the following sections.

Operation and documentation of process conditions was performed by personnel from Sterigenics, Inc. using existing monitoring instruments installed by the manufacturer on the equipment to be tested. In accordance with the procedures established in USEPA CFR40, Part 63, Subpart O, scrubber liquor level was recorded.

5.2 VOLUMETRIC FLOW MEASUREMENT

Exhaust gas flow at the outlet of the scrubber was determined by 40 CFR 60, Appendix A, Method 2, using an s-type pitot tube and an inclined-oil manometer. Sampling ports were located in accordance with 40 CFR 60, Appendix A, Method 1. The test ports were located far enough from any flow disturbances to permit accurate flow measurement.

Temperature measurements were obtained from a type K thermocouple and thermometer attached to the sampling probe. Exhaust gas composition was assumed to be air and small amounts of water vapor. Water vapor was negligible and, based on previous test data, a value of 2 percent was used for flow calculations.

5.3 CONTROL EFFICIENCY AND MASS EMISSIONS MEASUREMENT

During the first chamber evacuation of the sterilizer exhaust phase, the mass emissions of EtO vented to the inlet of the scrubber were determined using the procedures outlined in CFR40, Part 63.365. This method allows the determination of the mass of EtO vented to the inlet of the scrubber through calculations based on the Ideal Gas Law and using the conditions (pressure, temperature, volume) of the sterilization chamber immediately after it has been charged with sterilant gas, and upon conclusion of the first chamber evacuation of the exhaust phase.

The mass of EtO vented to the inlet of the scrubber during the first chamber evacuation of the exhaust phase was determined by calculating the mass of EtO present in the chamber after the first chamber evacuation and subtracting it from the mass of EtO present in the chamber after it has been charged with sterilant gas. The mass of EtO present in the chamber was calculated using Equation 1, shown below in Section 5.9.

During the first chamber evacuation of the sterilizer exhaust phase, EtO emissions from the outlet were determined using direct source sample injection into the GC. During the first chamber evacuation of the sterilizer exhaust phase, EtO emissions from the outlet were determined using direct source sample injection into the GC. During aeration, EtO emissions to the inlet and from the outlet were determined using direct source sample injection into the GC. The mass of EtO emitted from the outlet was determined using Equation 2, shown below in Section 5.9. Mass-mass control-efficiency of EtO during the sterilizer exhaust phase and aeration was calculated by comparing the mass of EtO vented to the system inlet to the mass of EtO vented from the system outlet.

During the sterilization chamber exhaust phase and aeration testing, vented gas was analyzed by an SRI, Model 8610, portable gas chromatograph (GC), equipped with the following: dual, heated sample loops and injectors; dual columns; and dual detectors. A flame ionization detector (FID) was used to quantify emissions at the AAT System inlet, and a photoionization detector (PID) was used to quantify low-level EtO emissions at the AAT System outlet.

5.4 SAMPLE TRANSPORT

Source gas was pumped to the GC at approximately 500-1000 cubic centimeters per minute (cc/min) from the sampling ports through two lengths of Teflon® sample line, each with a nominal volume of approximately 75 cubic centimeters (cc) and an outer diameter of 0.25 inch. At the inlet of the Safe Cell System, the sampling port was located in the plenum immediately upstream packed tower scrubber. At the outlet of the Safe Cell System, sampling ports were located in the exhaust stack downstream of the dry bed reactors.

5.5 GC INJECTION

Source-gas samples were then injected into the GC which was equipped with two heated sampling loops, each containing a volume of approximately 2cc and maintained at 100 degrees Celsius (C). Injections occurred at approximately one-minute intervals during the sterilization chamber exhaust phase, and at approximately five-minute intervals during aeration testing. Helium was the carrier gas for both the FID and the PID.

5.6 GC CONDITIONS

The packed columns for the GC were both operated at 90 degrees C. The columns were stainless steel, 6 feet long, 0.125 inch outer diameter, packed with 1 percent SP-1000 on 60/80 mesh Carbopack B.

During the analysis, the FID was operated at 250 degrees C. The support gases for the FID were hydrogen (99.995% pure) and air (99.9999% pure). Any unused sample gas was vented from the GC system back to the inlet of the control device being tested.

5.7 CALIBRATION STANDARDS

The FID was calibrated for mid-range part-per-million-by-volume (ppmv) level analysis using gas proportions similar to the following:

1) 100 ppmv EtO, balance nitrogen
2) 50 ppmv EtO, balance nitrogen (audit gas)
3) 10 ppmv EtO, balance nitrogen
4) 1 ppmv EtO, balance nitrogen

The PID was calibrated for low-range ppmv level analyses using gas proportions similar to the following:

1) 100 ppmv EtO, balance nitrogen
2) 50 ppmv EtO, balance nitrogen (audit gas)
3) 10 ppmv EtO, balance nitrogen
4) 1 ppmv EtO, balance nitrogen

Each of these calibration standards was in a separate, certified manufacturer's cylinder. Copies of the calibration gas laboratory certificates are attached as Appendix I.

5.8 SAMPLING DURATION

Exhaust phase EtO measurements will be taken for the entire duration of the first chamber evacuation, which will be approximately 15-30 minutes. This will encompass a total sampling duration of approximately 15-30 minutes for each exhaust phase test run.

Since aeration is a 24-hour process at this facility, with constant discharge flow from the aeration chambers to the emission-control system, aeration testing will consist of a total of three 1-hour test runs. Each test run will be performed after freshly sterilized product has been transferred into an aeration room.

5.9 CONTROL-EFFICIENCY/MASS-EMISSIONS CALCULATIONS

The following equation was used to calculate mass of EtO discharged to the inlet of the emission-control system during the first chamber evacuation of the sterilizer exhaust phase:

EQUATION 1:

$W_c = W_{ci} - W_{cf}$

Where:

W_c = Weight of EtO discharged from the sterilization chamber to the emission-control system during the first chamber evacuation, pounds

W_{ci} = (mw)(p)(P)(V)/(R)(T)

(and W_{cf})

Where:

W_{ci} = Weight of EtO present in the sterilization chamber before the first chamber evacuation, pounds

W_{cf} = Weight of EtO present in the sterilization chamber after the first chamber evacuation, pounds

MW = Molecular weight of EtO, 44.05 lb/mol

p = Percent of EtO in chamber

= W_s/W_i

Where:

W_s = Scale-measured weight of EtO charged into sterilization chamber

W_i = Calculated weight of EtO charged into sterilization chamber (@ 100%)

P = Sterilization chamber pressure (after charging/at the end of the 1st evac), psia

V = Sterilization chamber volume, ft^3

R = Gas constant, 10.73 $psia \cdot ft^3/mol \cdot {}^oR$

T = Sterilization chamber temperature (after charging/at the end of the 1st evac), ^oR

Note: Standard conditions are 68°F and 1 atm.

Mass emissions of EtO during exhaust and aeration will be calculated using the following equation:

EQUATION 2:

MassRate = (VolFlow)(MolWt)(ppmv EtO/10^6)/(MolVol)

Where:

MassRate = EtO mass flow rate, pounds per minute

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VolFlow	=	Corrected volumetric flow rate, standard cubic feet per minute at 68 degrees F
MolWt	=	44.05 pounds EtO per pound mole
ppmv EtO	=	EtO concentration, parts per million by volume
10^6	=	Conversion factor, ppmv per "cubic foot per cubic foot"
MolVol	=	385.32 cubic feet per pound mole at one atmosphere and 68 degrees F

Results of the control-efficiency testing are presented in Section 8.0 and in Tables 1 and 2.

6.0 TEST SCENARIO

During exhaust phase testing, each sterilizer was tested during normal process load conditions, but with an empty sterilization chamber to facilitate the performance of multiple test runs. All aeration testing was performed during normal process load conditions, after freshly sterilized product had been transferred into an aeration chamber/room. A total of three exhaust-phase and three aeration test runs were performed to verify the performance of the emission-control device. Testing was conducted with an effort to offer minimal disruption to the Sterigenics production schedule. The testing schedule was as follows:

1) Testing equipment was set up and calibrated.
2) Aeration Test Run #1 was performed with freshly sterilized product transferred into aeration. Sampling was performed at the inlet and outlet of the AAT System.
3) Aeration Test Run #2 was performed with freshly sterilized product transferred into aeration. Sampling was performed at the inlet and outlet of the AAT System.
4) Aeration Test Run #3 was performed with freshly sterilized product transferred into aeration. Sampling was performed at the inlet and outlet of the AAT System.
5) An empty-chamber cycle was started in one of the sterilizers.
6) Exhaust Phase Test Run #1 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the AAT System.
7) An empty-chamber cycle was started in one of the sterilizers.
8) Exhaust Phase Test Run #2 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the AAT System.
9) An empty-chamber cycle was started in one of the sterilizers.
10) Exhaust Phase Test Run #3 was conducted. Sampling was performed at outlet of the scrubber during the first chamber evacuation of the test chamber. During the performance of the test, only the sterilizer used for the test was allowed to discharge to the AAT System.
11) Post calibration check was performed, testing equipment was packed.

7.0 QA/QC

7.1 FIELD TESTING QUALITY ASSURANCE

At the beginning of the test, the sampling system was leak checked at a vacuum of 15 inches of mercury. The sampling system was considered leak free when the flow indicated by the rotameters fell to zero.

At the beginning of the test, a system blank was analyzed to ensure that the sampling system was free of EtO. Ambient air was introduced at the end of the heated sampling line and drawn through the sampling system line to the GC for analysis. The resulting chromatogram also provided a background level for non-EtO components (i.e. ambient air, carbon dioxide, water vapor) which are present in the source gas stream due to the ambient dilution air which is drawn into the emission-control device, and due to the destruction of EtO by the emission-control device which produces carbon dioxide and water vapor. This chromatogram, designated AMB, is included with the calibration data in Appendix A.

7.2 CALIBRATION PROCEDURES

The GC system was calibrated at the beginning and conclusion of each day's testing. Using the Peaksimple II analytical software, a point-to-point calibration curve was constructed for each detector. A gas cylinder of similar composition as the calibration gases, but certified by a separate supplier, was used to verify calibration gas composition and GC performance.

All calibration gases and support gases used were of the highest purity and quality available. A copy of the laboratory certification for each calibration gas is attached as Appendix I.

8.0 TEST RESULTS

The AAT Safe Cell System demonstrated an EtO control efficiency of 99.96 percent for aeration, and 99.94 percent for exhaust. In accordance with EPA requirements, as specified in the IEPA Air Quality Permit, this control equipment must have an EtO control efficiency of 99 percent or more in control of emissions from exhaust and from aeration. The AAT Safe Cell System met this requirement.

The test results are summarized in Table 1 and 2. This table includes results for EtO control efficiency of the emission-control device. Chromatograms and chromatographic supporting data are attached as Appendices A through G. Copies of field data and calculation worksheets are attached as Appendix H.

TABLES

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY - AERATION OF AN AAT SAFE CELL EMISSION CONTROL DEVICE OPERATED BY STERIGENICS, INC. IN WILLOWBROOK, ILLINOIS (PLANT 2) ON DECEMBER 13, 2016

RUN NUMBER	INJECTION TIME	INLET ETO CONC. (PPM)(1)	OUTLET ETO CONC. (PPM)(2)	ETO CONTROL EFFICIENCY
1(3)	1000	25.7	0.01	99.9611
1	1005	25.5	0.01	99.9608
1	1010	25.9	0.01	99.9614
1	1015	23.5	0.01	99.9574
1	1020	25.8	0.01	99.9612
1	1025	25.7	0.01	99.9611
1	1030	25.7	0.01	99.9611
1	1035	25.5	0.01	99.9608
1	1040	25.5	0.01	99.9608
1	1045	25.5	0.01	99.9608
1	1050	25.2	0.01	99.9603
1	1055	25.0	0.01	99.9600
2(4)	1100	25.0	0.01	99.9600
2	1105	25.4	0.01	99.9606
2	1110	25.8	0.01	99.9612
2	1115	25.8	0.01	99.9612
2	1120	25.8	0.01	99.9612
2	1125	25.4	0.01	99.9606
2	1130	25.4	0.01	99.9606
2	1135	25.4	0.01	99.9606
2	1140	24.8	0.01	99.9597
2	1145	25.5	0.01	99.9608
2	1150	25.1	0.01	99.9602
2	1155	24.9	0.01	99.9598
3(5)	1534	22.3	0.01	99.9552
3	1539	22.7	0.01	99.9559
3	1544	23.1	0.01	99.9567
3	1549	23.2	0.01	99.9569
3	1554	23.5	0.01	99.9574
3	1559	23.4	0.01	99.9573
3	1604	23.6	0.01	99.9576
3	1609	23.8	0.01	99.9580
3	1614	23.8	0.01	99.9580
3	1619	23.8	0.01	99.9580
3	1624	23.8	0.01	99.9580
3	1629	24.1	0.01	99.9585
TIME-WEIGHTED AVERAGE:		**24.72**	**0.0100**	**99.9595**
		NYDEQ REQUIRED CONTROL EFFICIENCY:		**99%**

Notes:
(1) - PPM = parts per million by volume
(2) - 0.01 ppm is the quantification limit for the detector used at the outlet.
(3) - Aeration Phase Test Run #1 started at 09:57, ended at 10:57.
(4) - Aeration Phase Test Run #2 started at 10:57, ended at 11:57.
(5) - Aeration Phase Test Run #3 started at 15:32, ended at 16:32.

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TABLE 2
ETHYLENE OXIDE CONTROL EFFICIENCY - EXHAUST OF AN AAT SAFE CELL EMISSION CONTROL DEVICE OPERATED BY STERIGENICS, INC. IN WILLOWBROOK, ILLINOIS (PLANT 2) DECEMBER 13, 2016

Run #	Stack Flow (dscfm) (2)	Average Outlet Conc. (ppm) (1)	Outlet EtO Mass Flow (lbs/min) (3)	Minutes/ Cycle	Outlet EtO Mass Emissions (lbs)	Inlet EtO Mass Emissions (lbs)	EtO Control Efficiency (%)
#1	10400	1.547	0.0018416	12	0.000221	49.8	99.96
#2	10400	1.956	0.0023275	11	0.0002560	49.8	99.95
#3	10400	3.536	0.0042081	9	0.0003787	48.9	99.92
						Average EtO Control Efficiency:	**99.94**
						Required EtO Control Efficiency:	**99**

Notes: (1) - PPM = parts per million by volume
(2) - DSCFM = dry standard cubic feet per minute
(3) - LBS/MIN = EtO emissions, pounds per minute

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APPENDICES

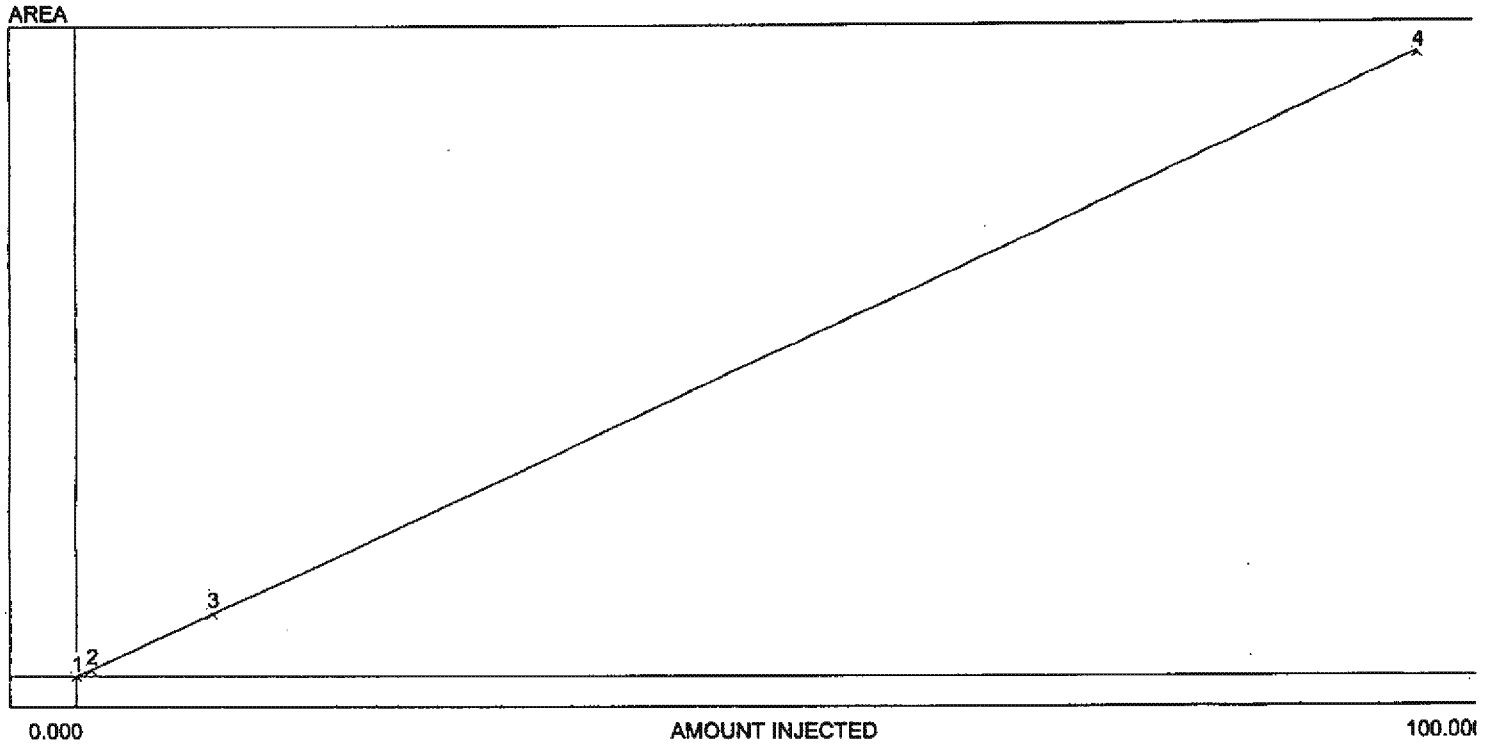
APPENDIX A

Calibration Data

ECSi

ak	Name	Start	End	Calibration	Int.Std	Units
	Dead Vol / Air	0.000	0.350		0.000	
	Ambient H2O	0.350	0.500		0.000	
	Ethylene Oxide	0.500	0.600	C:\peak359\1Ster	0.00016	ppm
	Acetaldehyde	0.600	0.800		0.000	
	CO2	0.800	1.000		0.000	

libration file: C:\peak359\1SterWB2016.cal

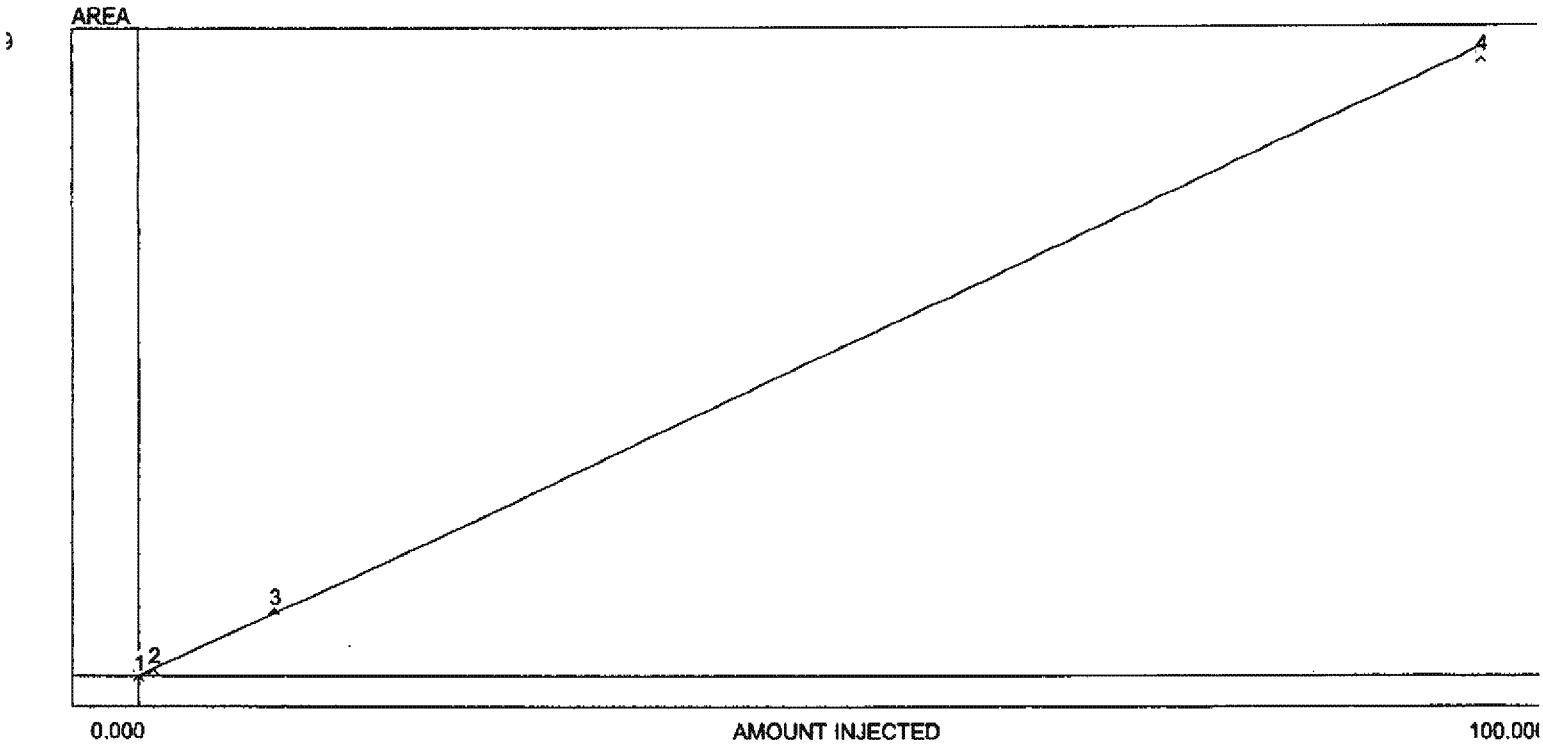


ı slope of curve: 0.43
ıxis intercept: 0.00
earity: 1.00
nber of levels: 4
/rel SD of CF's: 0.2/66.7
).4316X
1.0000
ıt calibrated: Fri Dec 02 08:01:11 2016

.Area/ht.	Amount	CF	Current	Previous #1	Previous #2
0.000	0.000	0.000	0.000	N/A	N/A
0.470	1.100	0.427	0.470	N/A	N/A
4.420	10.100	0.438	4.420	N/A	N/A
43.000	100.000	0.430	43.000	N/A	N/A

ak	Name	Start	End	Calibration	Int.Std	Units
	Dead Vol / Air	0.000	0.350		0.000	
	Ambient H2O	0.350	0.500		0.000	
	Ethylene Oxide	0.500	0.600	C:\peak359\2Ster	0.00016	ppm
	Acetaldehyde	0.600	0.800		0.000	
	CO2	0.800	1.000		0.000	

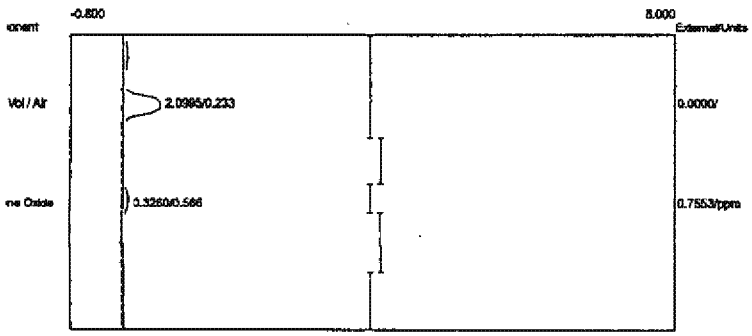
libration file: C:\peak359\2SterWB2016.cal



ɟ slope of curve: 1.82
ıxis intercept: 0.00
earity: 1.00
ɪnber of levels: 4
/rel SD of CF's: 0.9/67.0
1.8223X
0.9999
ɪt calibrated: Fri Dec 02 08:00:23 2016

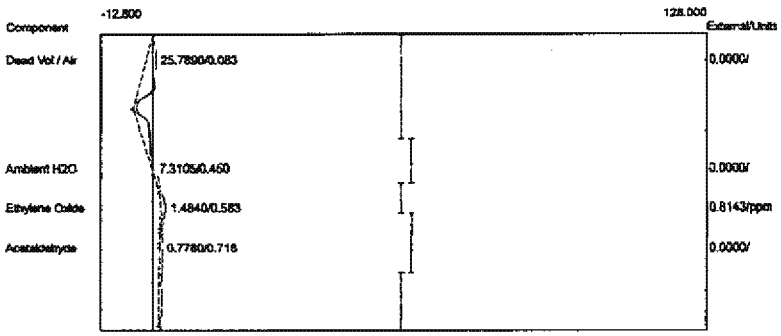
.Area/ht.	Amount	CF	Current	Previous #1	Previous #2
0.000	0.000	0.000	0.000	N/A	N/A
1.910	1.100	1.736	1.910	N/A	N/A
19.600	10.100	1.941	19.600	N/A	N/A
179.000	100.000	1.790	179.000	N/A	N/A

Client: Sterigenics - Willowbrook 2
Client ID: PreCal
ıalysis date: 12/13/2016 11:35:08
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-Amb.CHR (c:\peak359)
Sample: Ambient Background
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.233	2.0995	0.0000	
ylene Oxide	0.566	0.3260	0.7553	ppm
		2.4255	0.7553	

Client: Sterigenics - Willowbrook 2
Client ID: PreCal
Analysis date: 12/13/2016 11:35:08
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-Amb.CHR (c:\peak359)
Sample: Ambient Background
Operator: D. Kremer

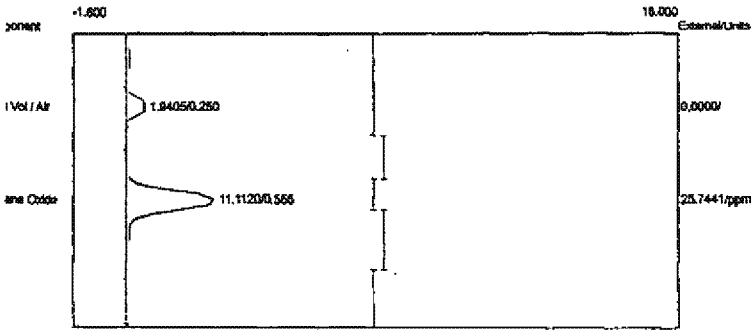


Component	Retention	Area	External	Units
Dead Vol / Air	0.083	25.7890	0.0000	
Ambient H2O	0.450	7.3105	0.0000	
Ethylene Oxide	0.583	1.4840	0.8143	ppm
Acetaldehyde	0.716	0.7780	0.0000	
		35.3615	0.8143	

APPENDIX B

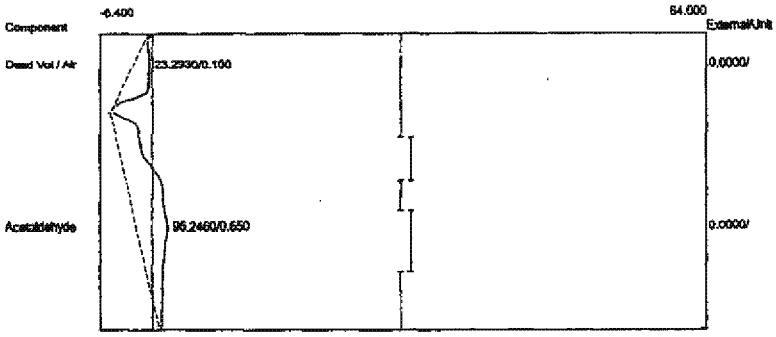
Run#1 Chromatograms - Aeration

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:00:05
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A01.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



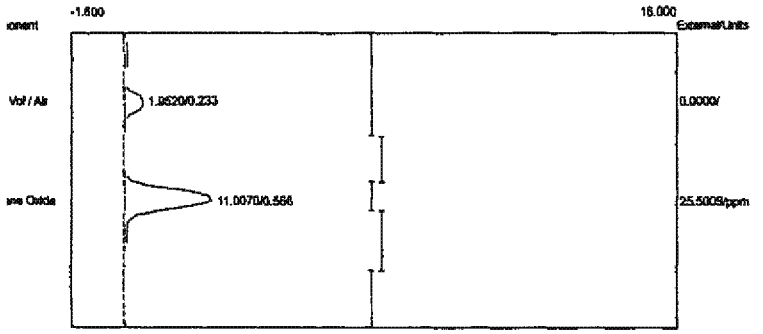
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9405	0.0000	
ıylene Oxide	0.566	11.1120	25.7441	ppm
		13.0525	25.7441	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:00:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



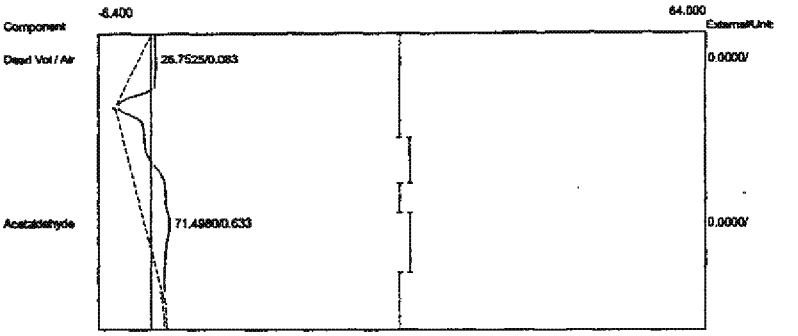
Component	Retention	Area	External	Units
Dead Vol / Air	0.100	23.2930	0.0000	
Acetaldehyde	0.650	96.2460	0.0000	
		119.5390	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
ıalysis date: 12/13/2016 10:05:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A02.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



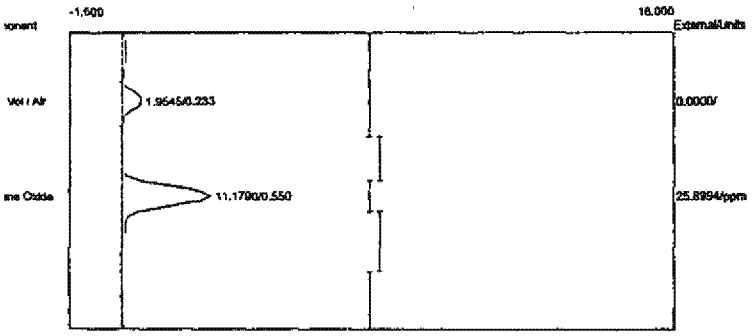
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9520	0.0000	
ıylene Oxide	0.566	11.0070	25.5009	ppm
		12.9590	25.5009	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:05:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



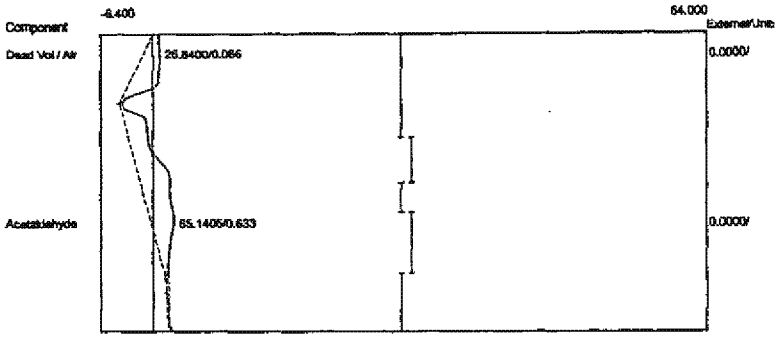
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	26.7525	0.0000	
Acetaldehyde	0.633	71.4980	0.0000	
		98.2505	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:10:08
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A03.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



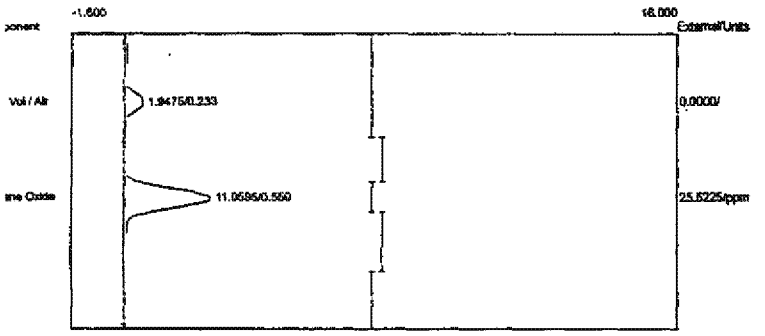
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9545	0.0000	
ylene Oxide	0.550	11.1790	25.8994	ppm
		13.1335	25.8994	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:10:08
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



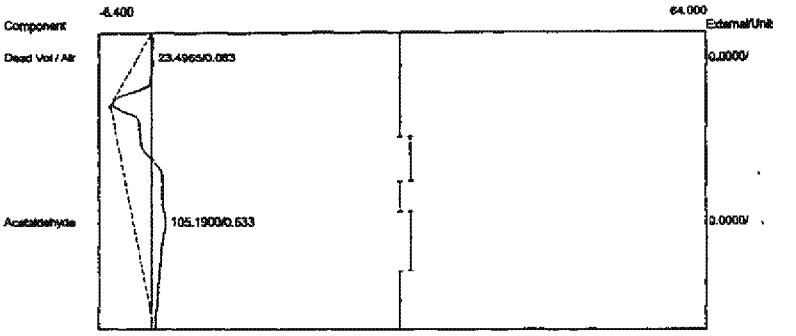
Component	Retention	Area	External	Units
Dead Vol / Air	0.066	26.8400	0.0000	
Acetaldehyde	0.633	65.1405	0.0000	
		91.9805	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:15:21
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A04.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



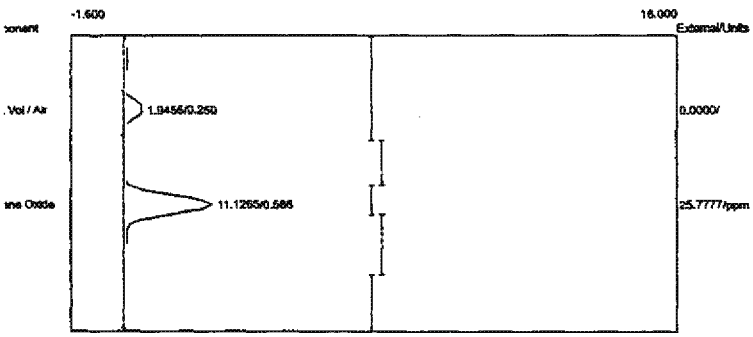
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9475	0.0000	
ylene Oxide	0.550	11.0595	25.6225	ppm
		13.0070	25.6225	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:15:21
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



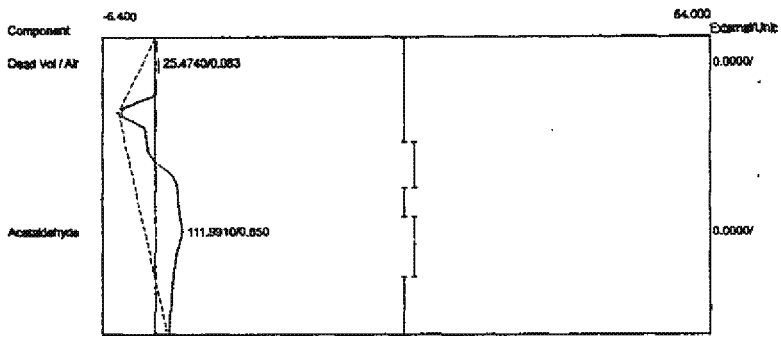
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	23.4965	0.0000	
Acetaldehyde	0.633	105.1900	0.0000	
		128.6865	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:20:42
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A05.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



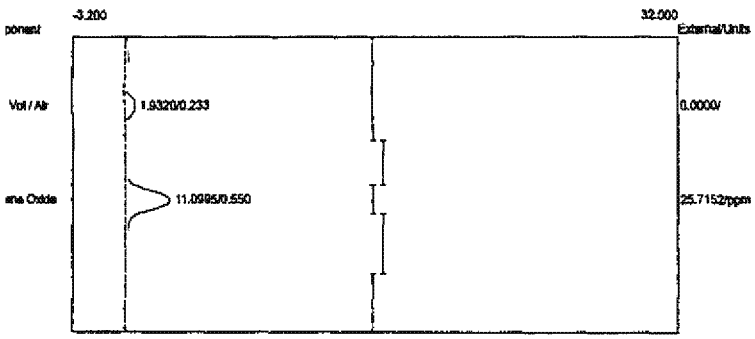
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9455	0.0000	
ylene Oxide	0.566	11.1265	25.7777	ppm
		13.0720	25.7777	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:20:42
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



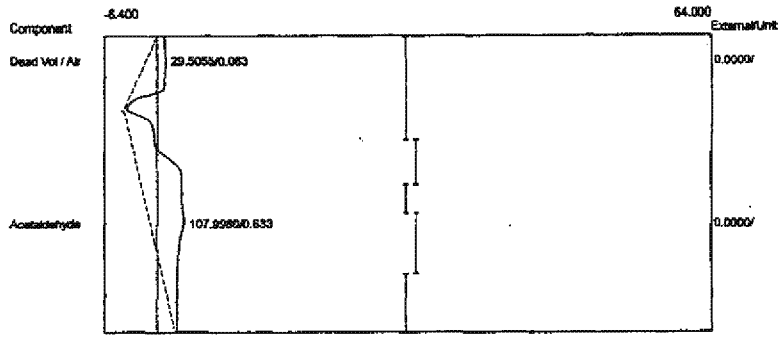
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	25.4740	0.0000	
Acetaldehyde	0.650	111.9910	0.0000	
		137.4650	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:25:04
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A06.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



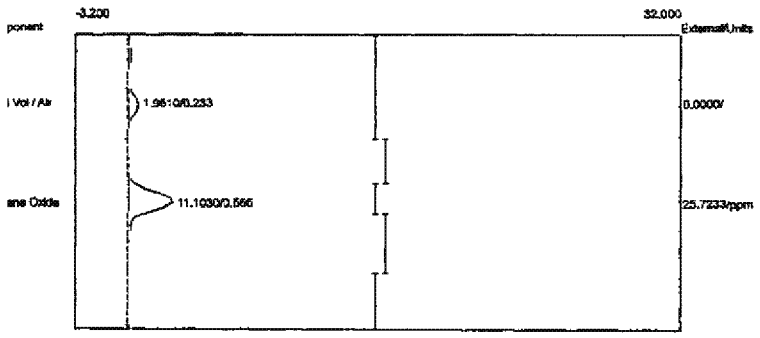
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9320	0.0000	
ylene Oxide	0.550	11.0995	25.7152	ppm
		13.0315	25.7152	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:25:04
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



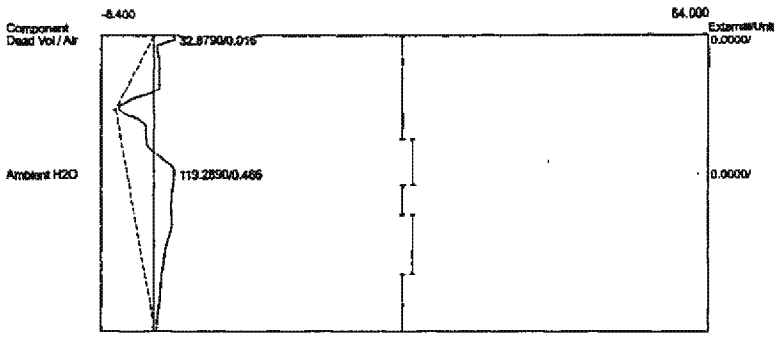
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	29.5055	0.0000	
Acetaldehyde	0.633	107.9980	0.0000	
		137.5035	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:30:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A07.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



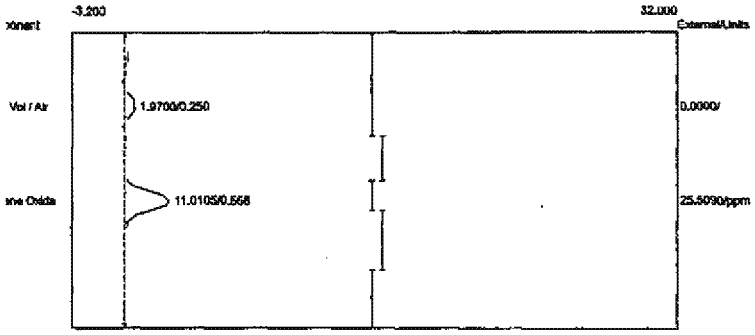
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9610	0.0000	
ıylene Oxide	0.566	11.1030	25.7233	ppm
		13.0640	25.7233	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:30:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



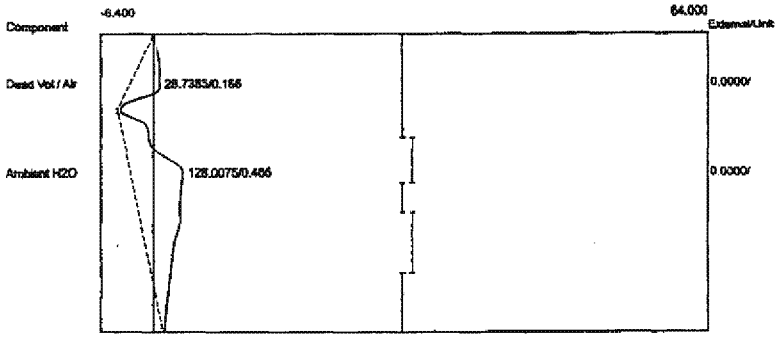
Component	Retention	Area	External	Units
Dead Vol / Air	0.016	32.8790	0.0000	
Ambient H2O	0.466	119.2890	0.0000	
		152.1680	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
nalysis date: 12/13/2016 10:35:17
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
'omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A08.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



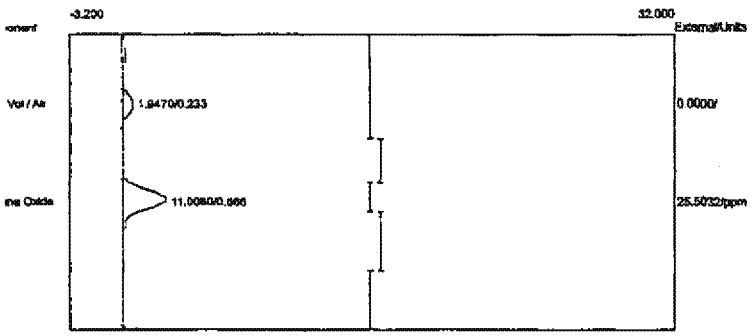
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9700	0.0000	
ylene Oxide	0.566	11.0105	25.5090	ppm
		12.9805	25.5090	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:35:17
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A08.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



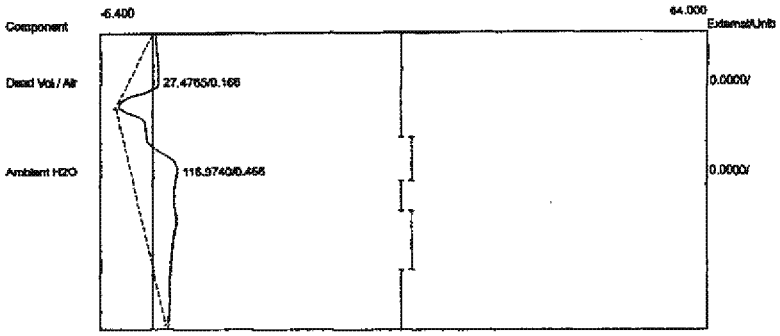
Component	Retention	Area	External	Units
Dead Vol / Air	0.166	28.7385	0.0000	
Ambient H2O	0.466	128.0075	0.0000	
		156.7460	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
ıalysis date: 12/13/2016 10:40:15
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A09.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



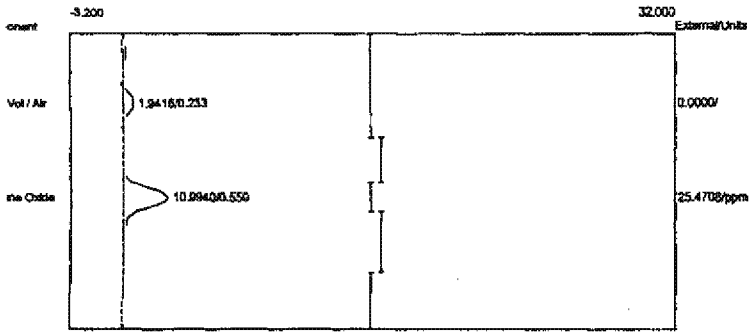
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9470	0.0000	
ıylene Oxide	0.566	11.0080	25.5032	ppm
		12.9550	25.5032	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:40:15
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A09.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



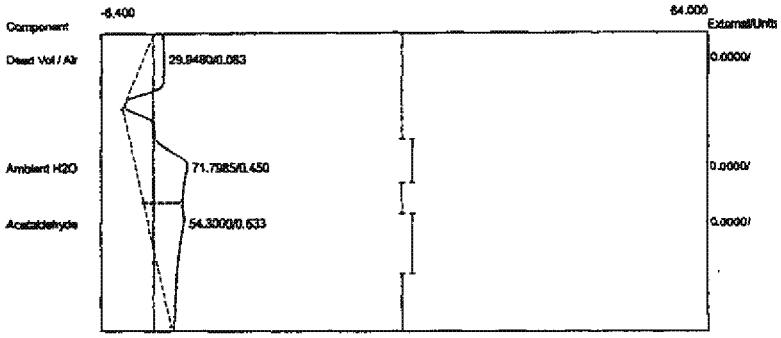
Component	Retention	Area	External	Units
Dead Vol / Air	0.166	27.4765	0.0000	
Ambient H2O	0.466	116.9740	0.0000	
		144.4505	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
ıalysis date: 12/13/2016 10:45:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A10.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



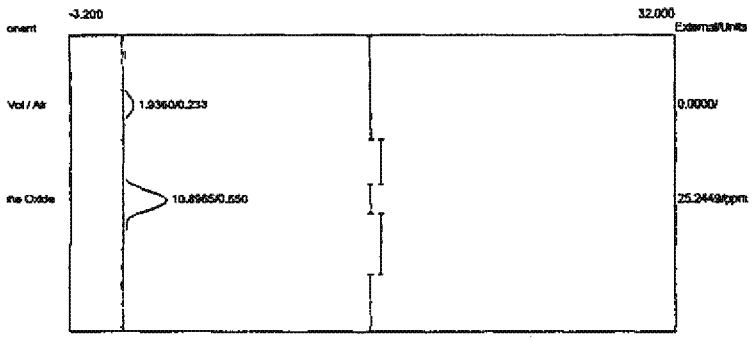
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9415	0.0000	
ıylene Oxide	0.550	10.9940	25.4708	ppm
		12.9355	25.4708	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:45:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A10.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



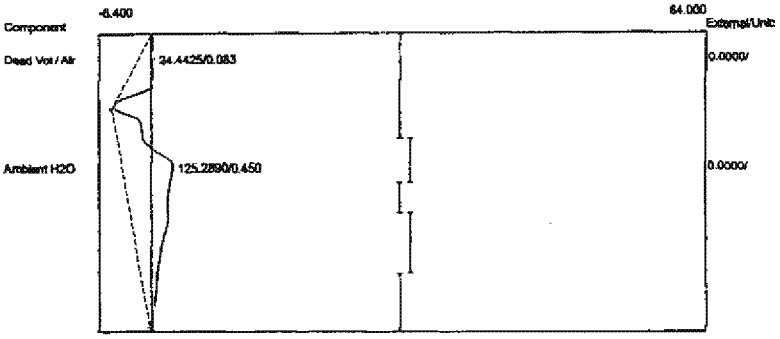
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	29.9480	0.0000	
Ambient H2O	0.450	71.7985	0.0000	
Acetaldehyde	0.633	54.3000	0.0000	
		156.0465	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
ıalysis date: 12/13/2016 10:50:16
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A11.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



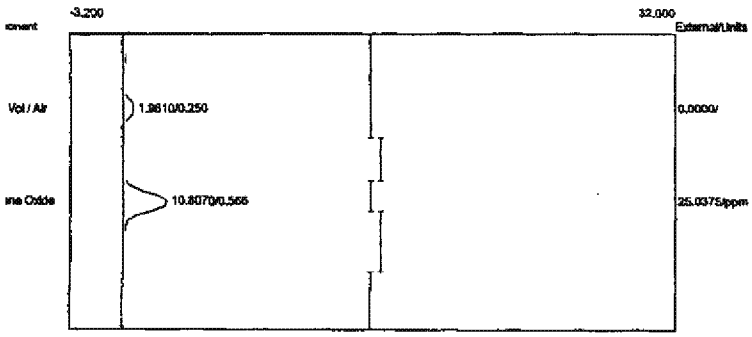
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9360	0.0000	
ıylene Oxide	0.550	10.8965	25.2449	ppm
		12.8325	25.2449	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:50:16
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A11.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



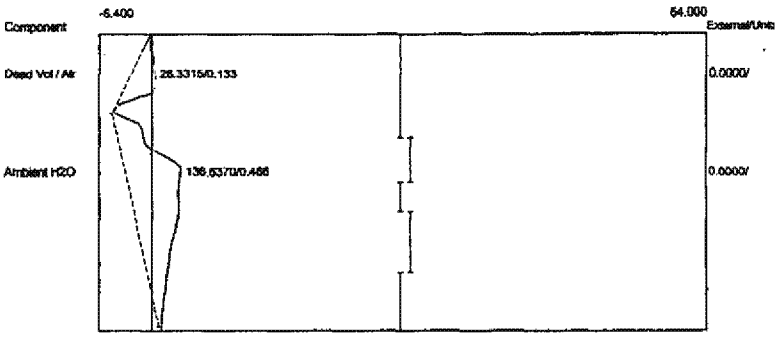
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	24.4425	0.0000	
Ambient H2O	0.450	125.2890	0.0000	
		149.7315	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
ıalysis date: 12/13/2016 10:55:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-1A12.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9610	0.0000	
ıylene Oxide	0.566	10.8070	25.0375	ppm
		12.7680	25.0375	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Aer
Analysis date: 12/13/2016 10:55:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1A12.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer

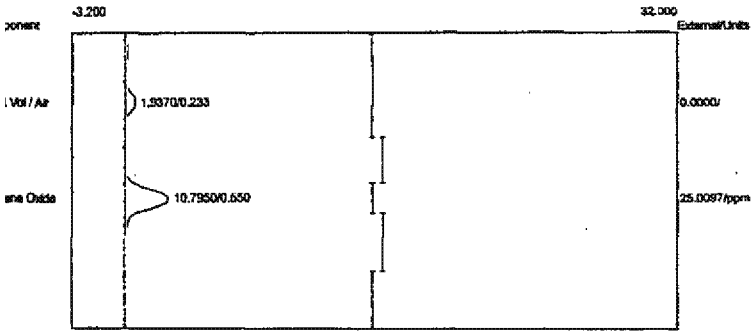


Component	Retention	Area	External	Units
Dead Vol / Air	0.133	26.3315	0.0000	
Ambient H2O	0.466	136.6370	0.0000	
		162.9685	0.0000	

APPENDIX C

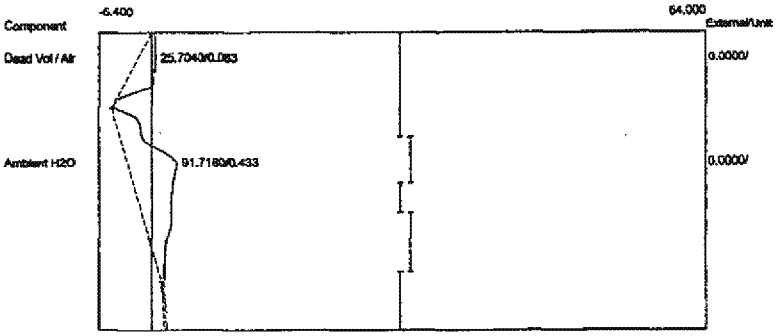
Run#2 Chromatograms - Aeration

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:00:05
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A01.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



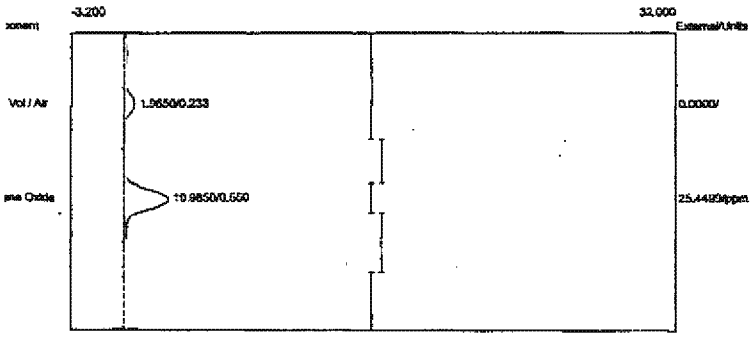
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9370	0.0000	
ylene Oxide	0.550	10.7950	25.0097	ppm
		12.7320	25.0097	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:00:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



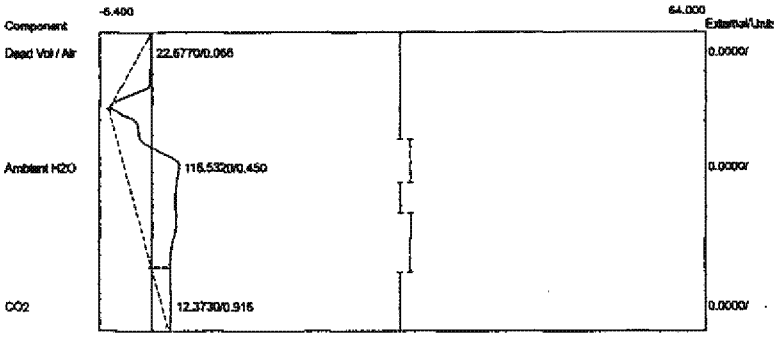
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	25.7040	0.0000	
Ambient H2O	0.433	91.7180	0.0000	
		117.4220	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:05:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A02.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



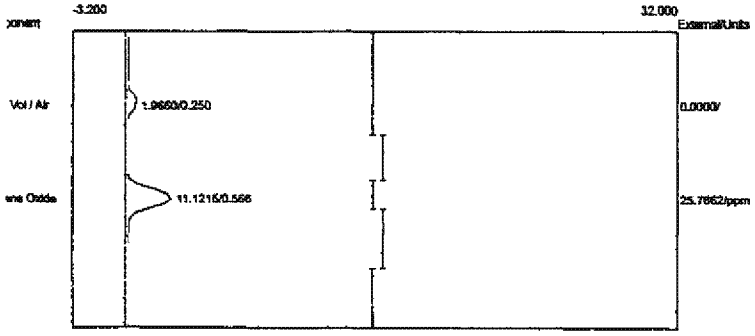
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9650	0.0000	
ylene Oxide	0.550	10.9850	25.4499	ppm
		12.9500	25.4499	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:05:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



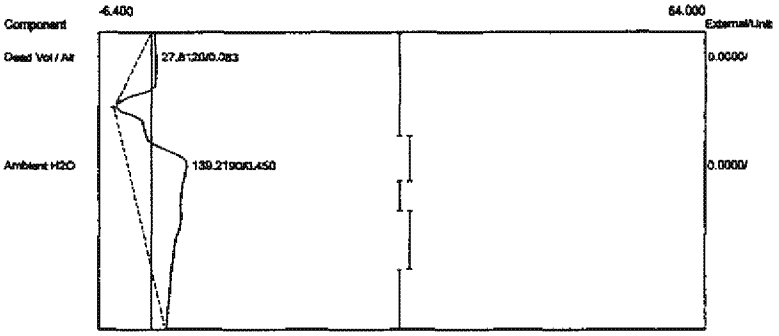
Component	Retention	Area	External	Units
Dead Vol / Air	0.066	22.6770	0.0000	
Ambient H2O	0.450	116.5320	0.0000	
CO2	0.916	12.3730	0.0000	
		151.5820	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:10:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A03.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



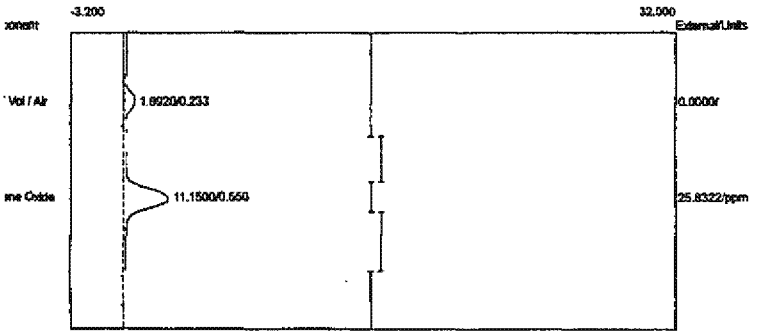
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9660	0.0000	
ıylene Oxide	0.566	11.1215	25.7662	ppm
		13.0875	25.7662	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:10:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



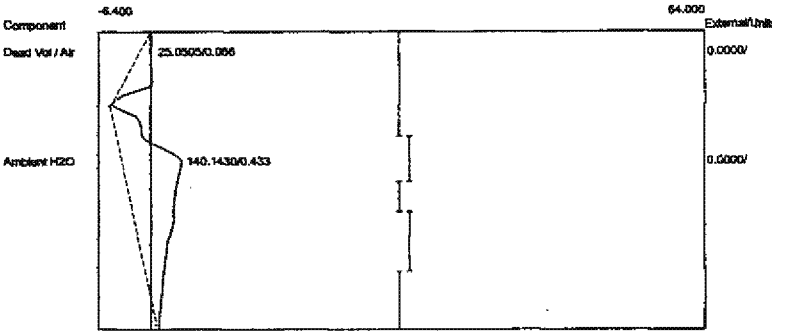
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	27.8120	0.0000	
Ambient H2O	0.450	139.2190	0.0000	
		167.0310	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:15:17
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
'omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A04.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



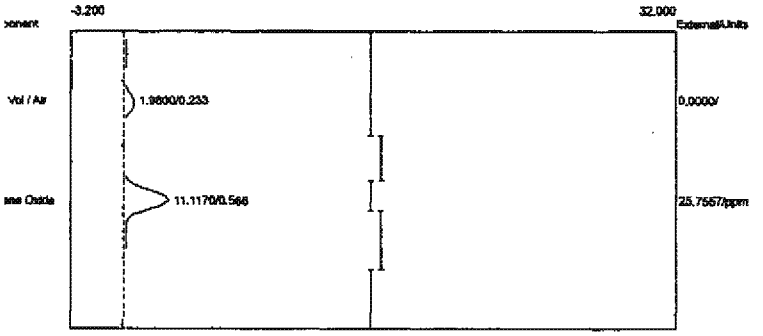
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9920	0.0000	
ıylene Oxide	0.550	11.1500	25.8322	ppm
		13.1420	25.8322	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:15:17
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



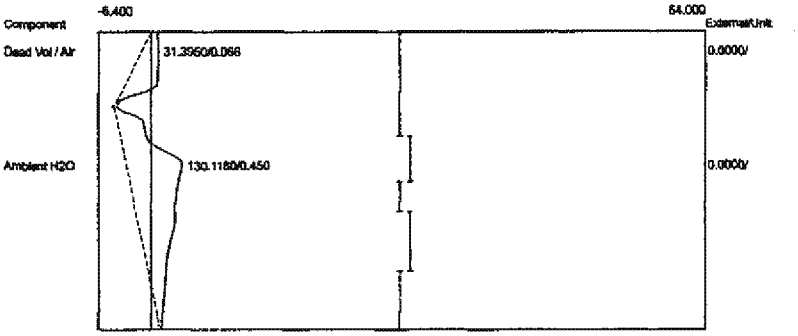
Component	Retention	Area	External	Units
Dead Vol / Air	0.066	25.0505	0.0000	
Ambient H2O	0.433	140.1430	0.0000	
		165.1935	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:20:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A05.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



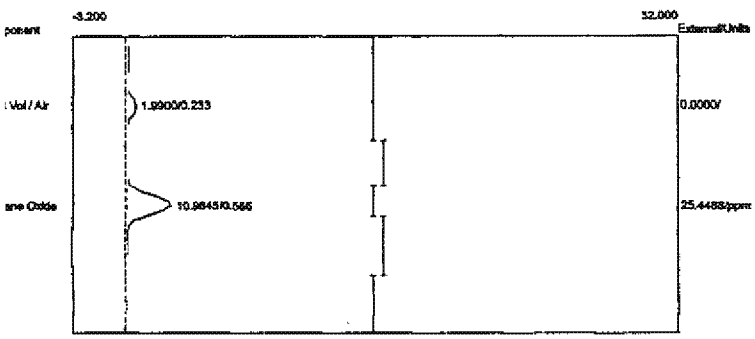
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9800	0.0000	
ıylene Oxide	0.566	11.1170	25.7557	ppm
		13.0970	25.7557	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:20:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



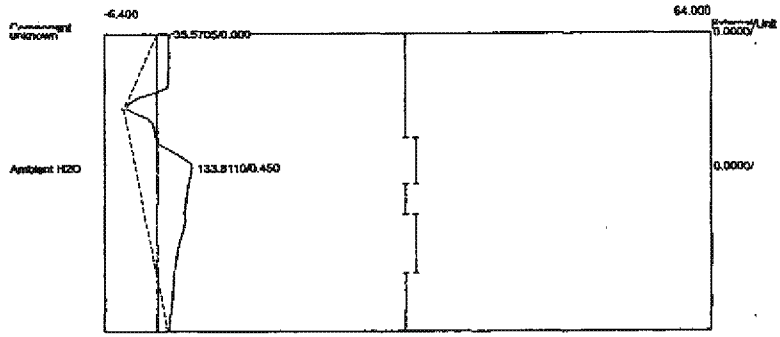
Component	Retention	Area	External	Units
Dead Vol / Air	0.066	31.3950	0.0000	
Ambient H2O	0.450	130.1180	0.0000	
		161.5130	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:25:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A06.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



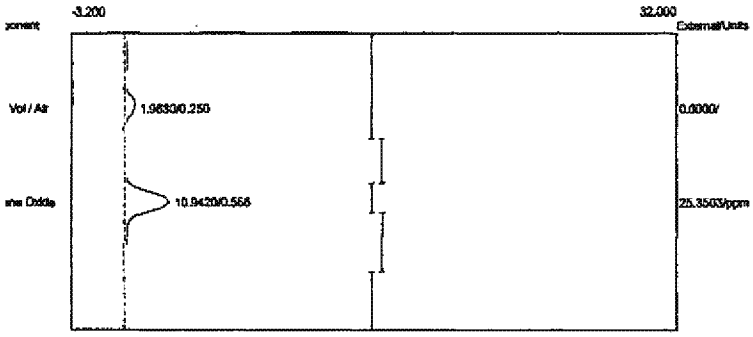
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9900	0.0000	
ylene Oxide	0.566	10.9845	25.4488	ppm
		12.9745	25.4488	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:25:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



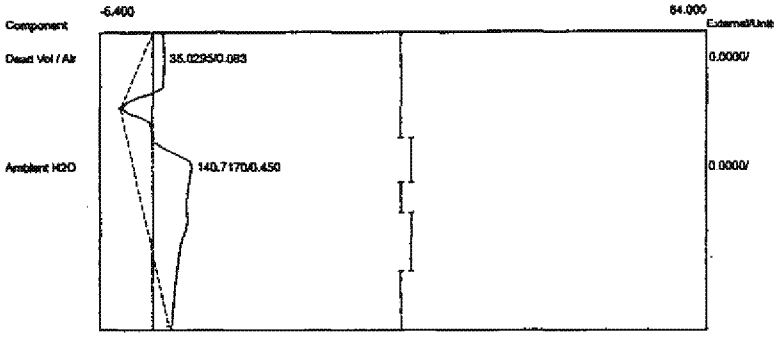
Component	Retention	Area	External	Units
Ambient H2O	0.450	133.8110	0.0000	
		133.8110	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:30:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A07.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



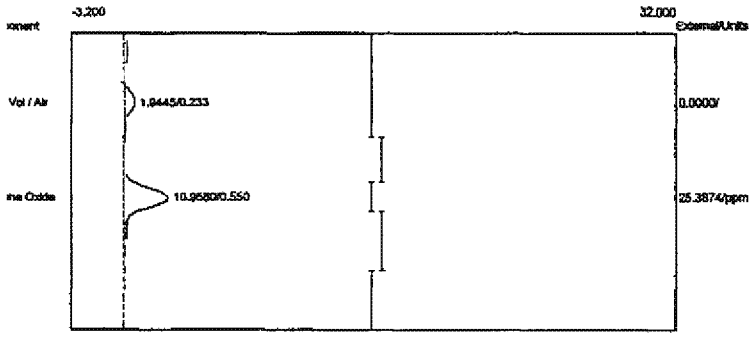
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9630	0.0000	
ylene Oxide	0.566	10.9420	25.3503	ppm
		12.9050	25.3503	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:30:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



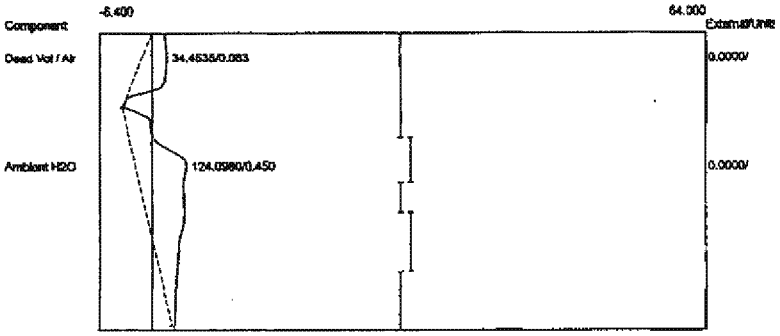
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	35.0295	0.0000	
Ambient H2O	0.450	140.7170	0.0000	
		175.7465	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
ıalysis date: 12/13/2016 11:35:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A08.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



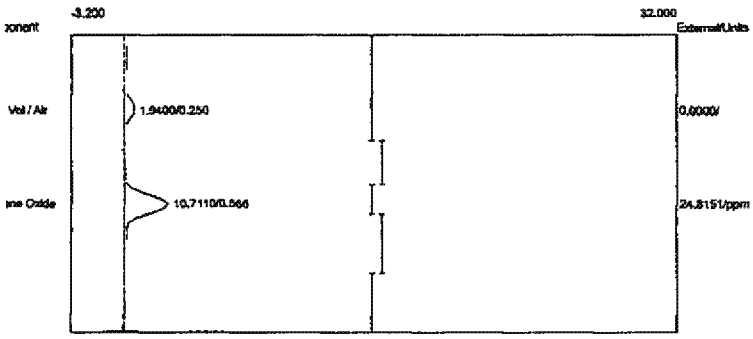
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9445	0.0000	
ıylene Oxide	0.550	10.9580	25.3874	ppm
		12.9025	25.3874	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:35:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A08.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



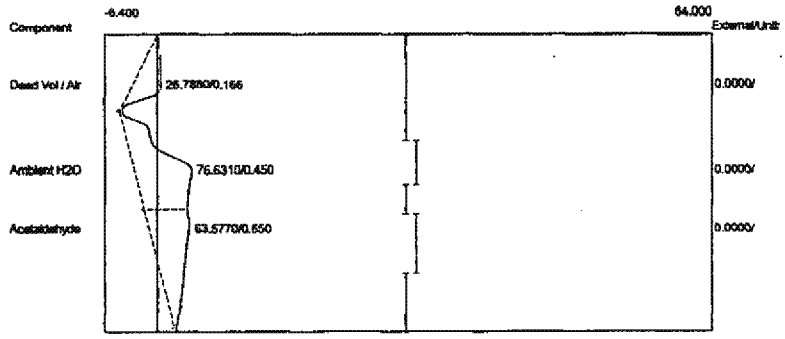
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	34.4535	0.0000	
Ambient H2O	0.450	124.0980	0.0000	
		158.5515	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:40:26
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto1-100.cpt
Data file: 1Ster2WB2016-2A09.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



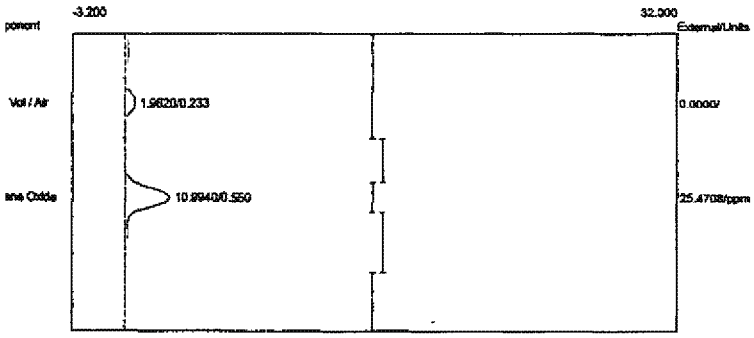
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9400	0.0000	
ylene Oxide	0.566	10.7110	24.8151	ppm
		12.6510	24.8151	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:40:26
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A09.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



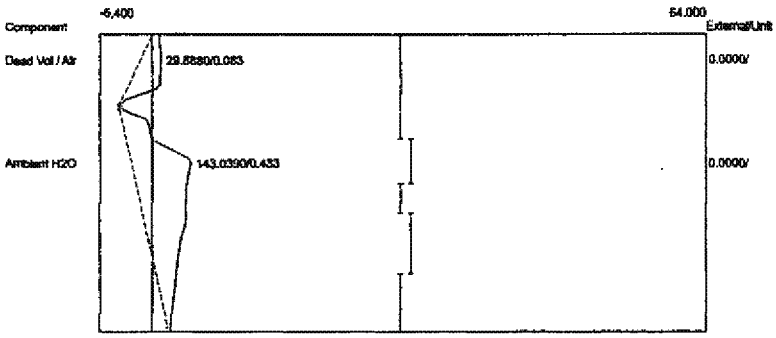
Component	Retention	Area	External	Units
Dead Vol / Air	0.166	26.7880	0.0000	
Ambient H2O	0.450	76.6310	0.0000	
Acetaldehyde	0.650	63.5770	0.0000	
		166.9960	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:45:15
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A10.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



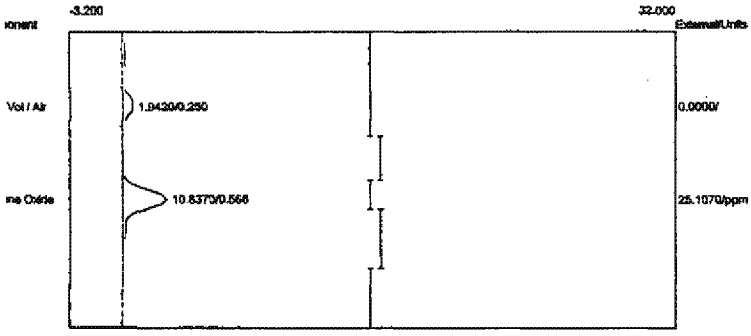
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9620	0.0000	
ylene Oxide	0.550	10.9940	25.4708	ppm
		12.9560	25.4708	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:45:15
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A10.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



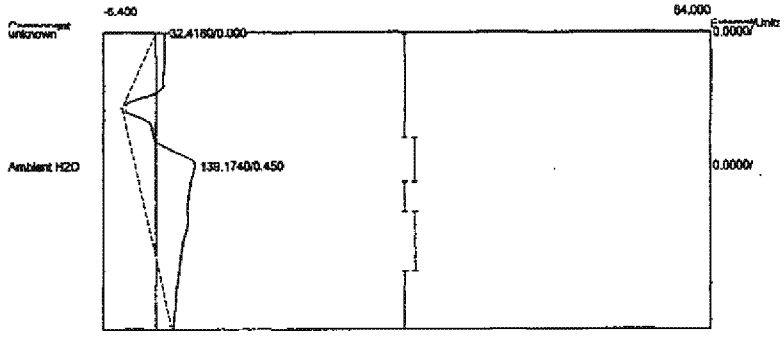
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	29.8880	0.0000	
Ambient H2O	0.433	143.0390	0.0000	
		172.9270	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
ıalysis date: 12/13/2016 11:50:13
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A11.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



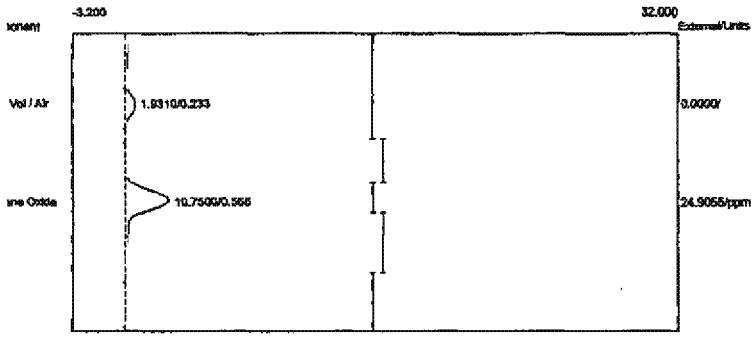
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9420	0.0000	
ıytene Oxide	0.566	10.8370	25.1070	ppm
		12.7790	25.1070	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:50:13
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A11.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



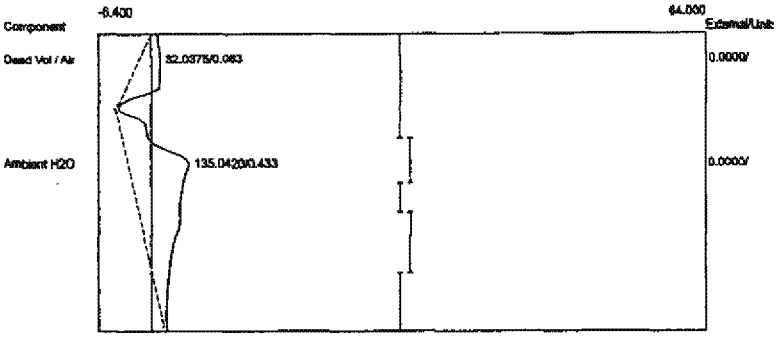
Component	Retention	Area	External	Units
Ambient H2O	0.450	139.1740	0.0000	
		139.1740	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
nalysis date: 12/13/2016 11:55:04
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-2A12.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9310	0.0000	
ylene Oxide	0.566	10.7500	24.9055	ppm
		12.6810	24.9055	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Aer
Analysis date: 12/13/2016 11:55:04
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2A12.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



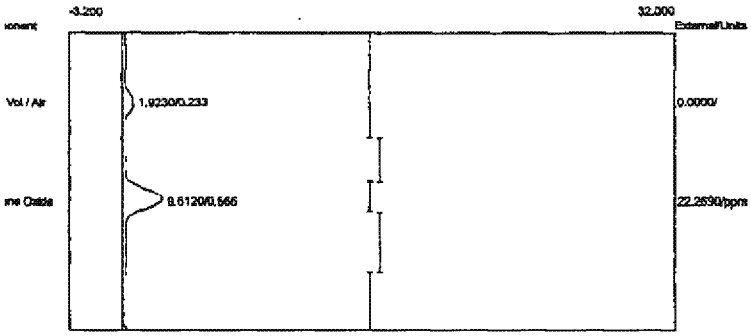
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	32.0375	0.0000	
Ambient H2O	0.433	135.0420	0.0000	
		167.0795	0.0000	

APPENDIX D

Run#3 Chromatograms - Aeration

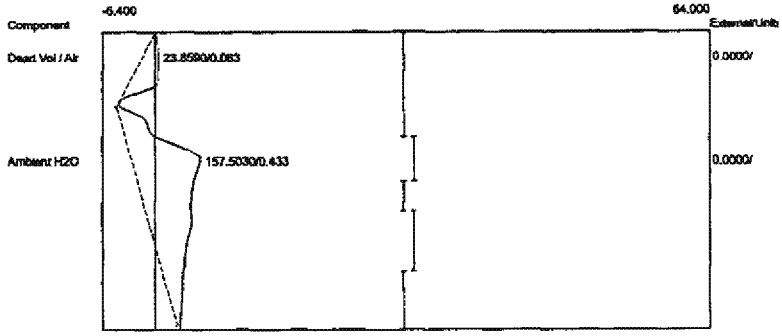
ECSi

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
ıalysis date: 12/13/2016 15:34:55
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A01.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



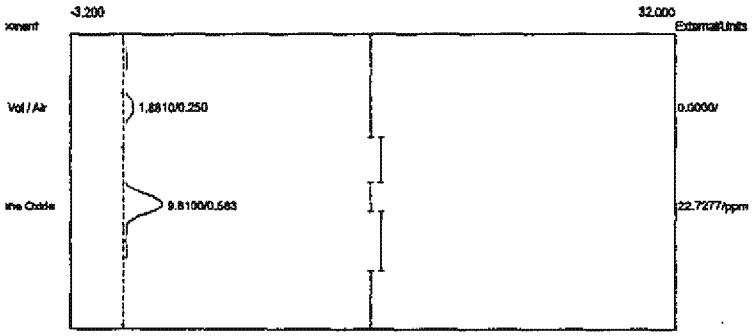
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9230	0.0000	
ıylene Oxide	0.566	9.6120	22.2690	ppm
		11.5350	22.2690	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:34:55
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



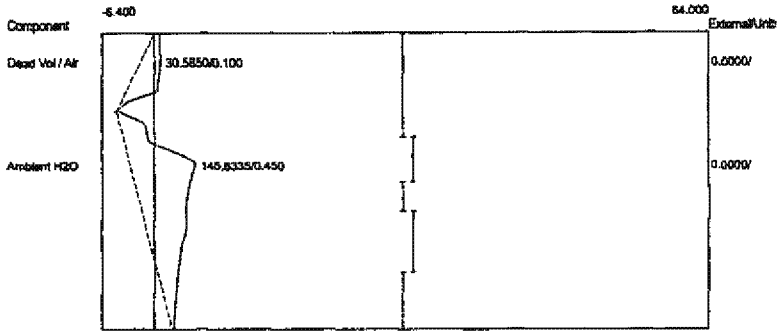
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	23.8590	0.0000	
Ambient H2O	0.433	157.5030	0.0000	
		181.3620	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
ıalysis date: 12/13/2016 15:39:40
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A02.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



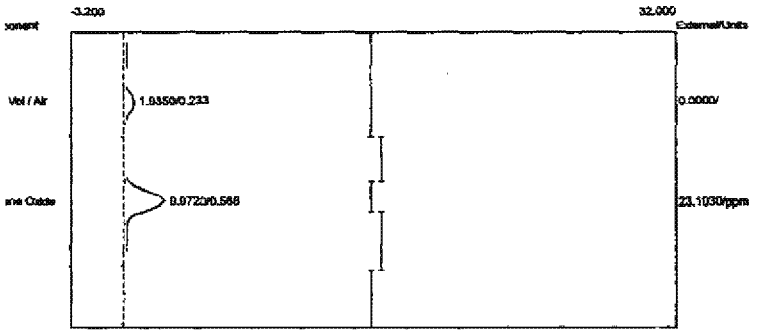
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.8810	0.0000	
ıylene Oxide	0.583	9.8100	22.7277	ppm
		11.6910	22.7277	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:39:40
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



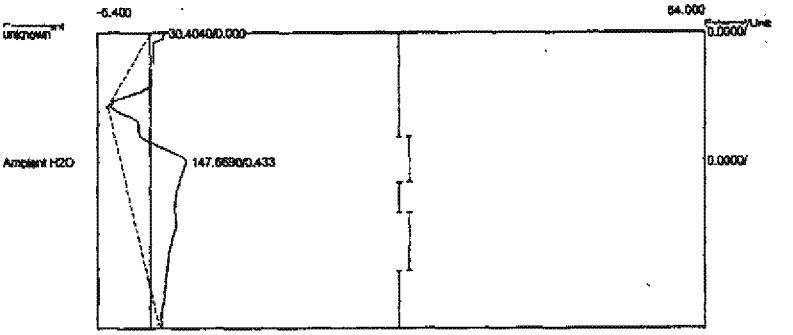
Component	Retention	Area	External	Units
Dead Vol / Air	0.100	30.5850	0.0000	
Ambient H2O	0.450	145.8335	0.0000	
		176.4185	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 15:44:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A03.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



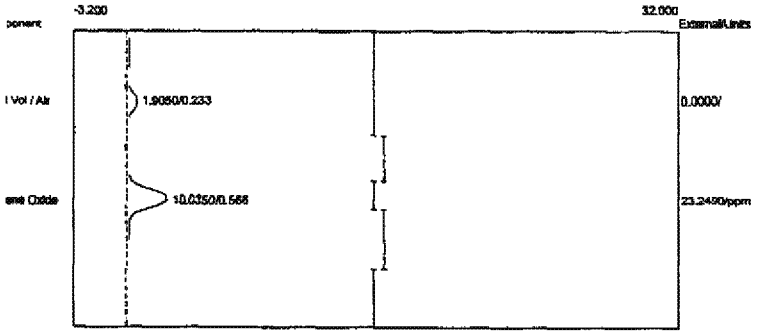
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9350	0.0000	
ylene Oxide	0.566	9.9720	23.1030	ppm
		11.9070	23.1030	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:44:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



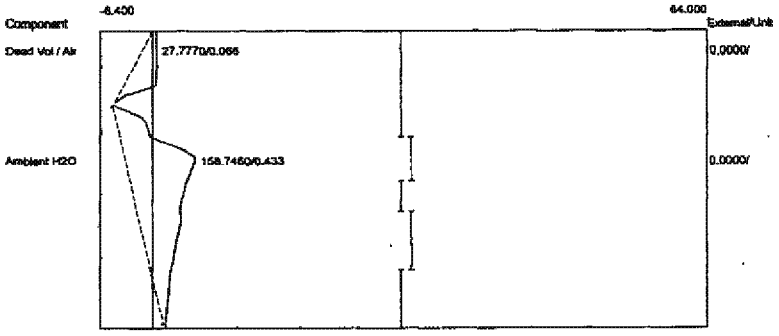
Component	Retention	Area	External	Units
Ambient H2O	0.433	147.6690	0.0000	
		147.6690	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 15:49:15
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A04.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



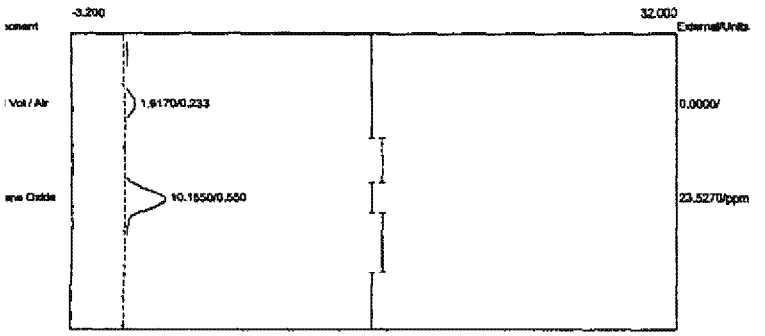
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9050	0.0000	
ıylene Oxide	0.566	10.0350	23.2490	ppm
		11.9400	23.2490	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:49:15
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



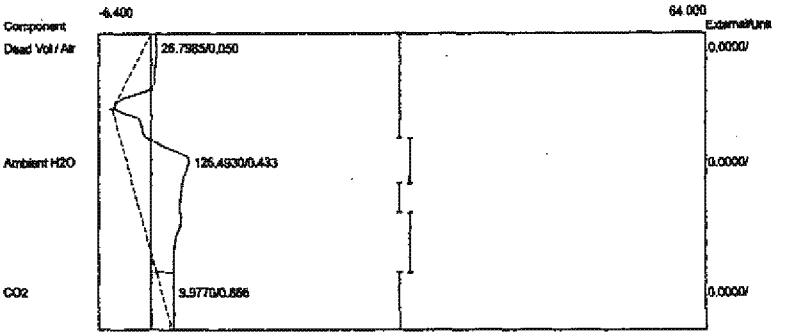
Component	Retention	Area	External	Units
Dead Vol / Air	0.066	27.7770	0.0000	
Ambient H2O	0.433	158.7460	0.0000	
		186.5230	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 15:54:20
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A05.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



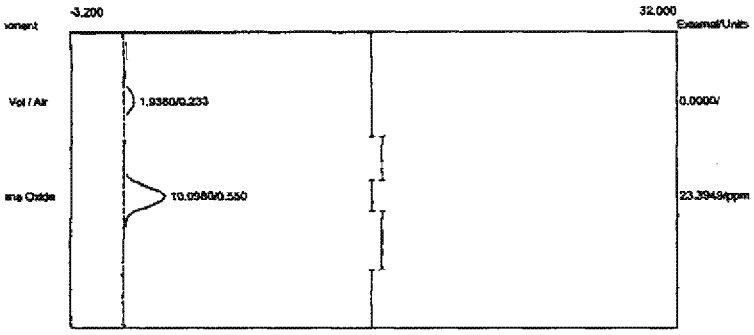
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9170	0.0000	
ylene Oxide	0.550	10.1550	23.5270	ppm
		12.0720	23.5270	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:54:20
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



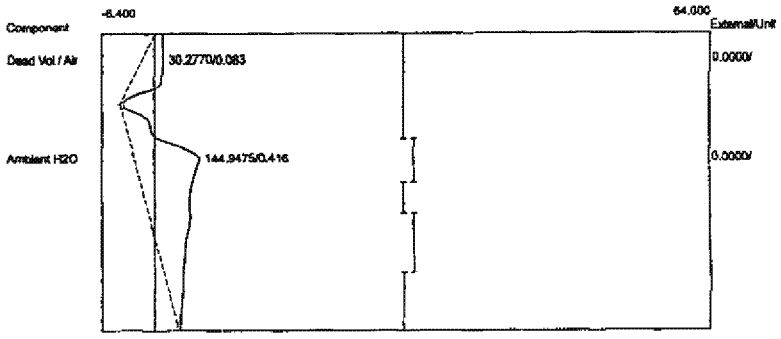
Component	Retention	Area	External	Units
Dead Vol / Air	0.050	26.7985	0.0000	
Ambient H2O	0.433	126.4930	0.0000	
CO2	0.866	9.9770	0.0000	
		163.2685	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 15:59:16
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A06.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



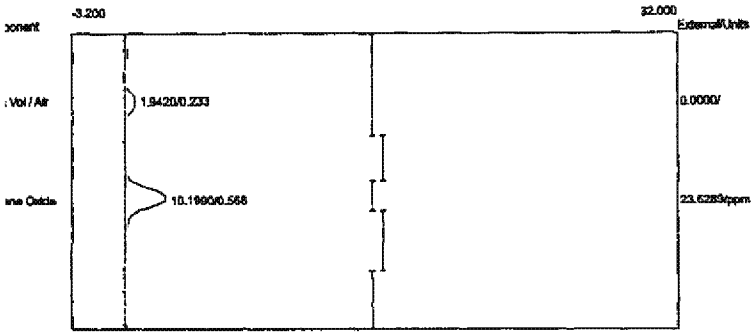
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9360	0.0000	
ylene Oxide	0.550	10.0980	23.3949	ppm
		12.0340	23.3949	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 15:59:16
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



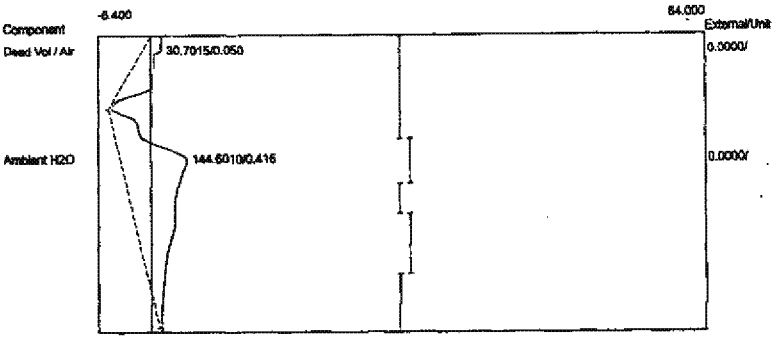
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	30.2770	0.0000	
Ambient H2O	0.416	144.9475	0.0000	
		175.2245	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 16:04:06
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A07.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



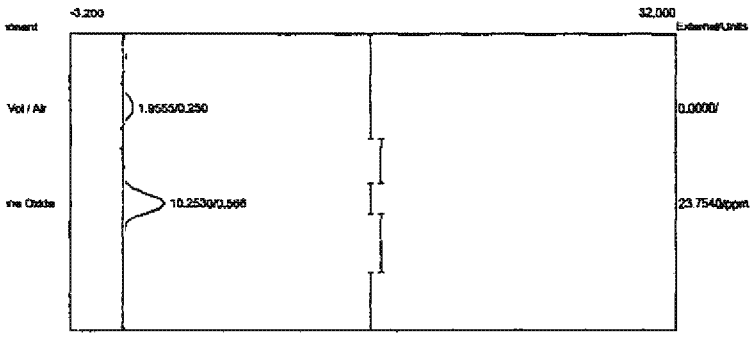
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9420	0.0000	
ıylene Oxide	0.566	10.1990	23.6289	ppm
		12.1410	23.6289	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:04:06
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



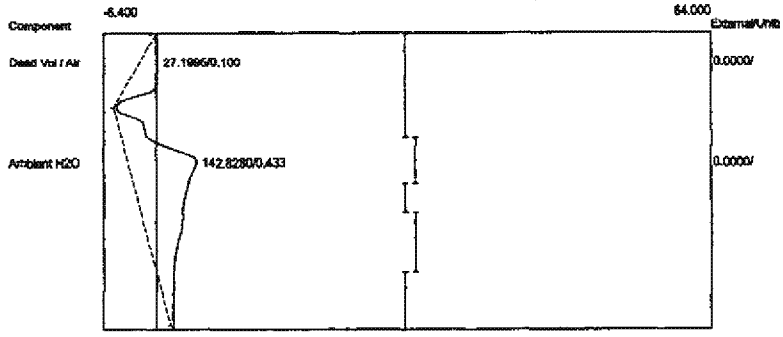
Component	Retention	Area	External	Units
Dead Vol / Air	0.050	30.7015	0.0000	
Ambient H2O	0.416	144.6010	0.0000	
		175.3025	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
ıalysis date: 12/13/2016 16:09:04
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A08.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



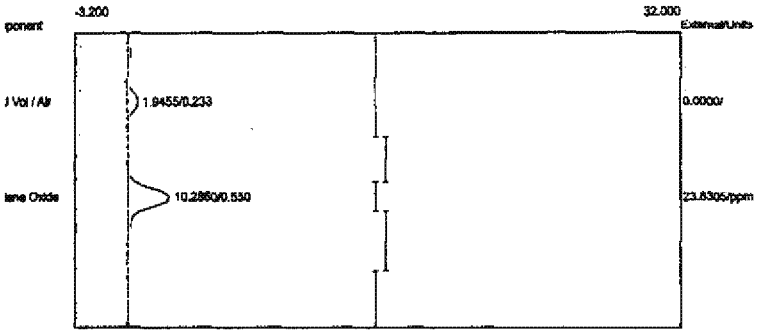
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9555	0.0000	
ıylene Oxide	0.566	10.2530	23.7540	ppm
		12.2085	23.7540	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:09:04
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A08.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



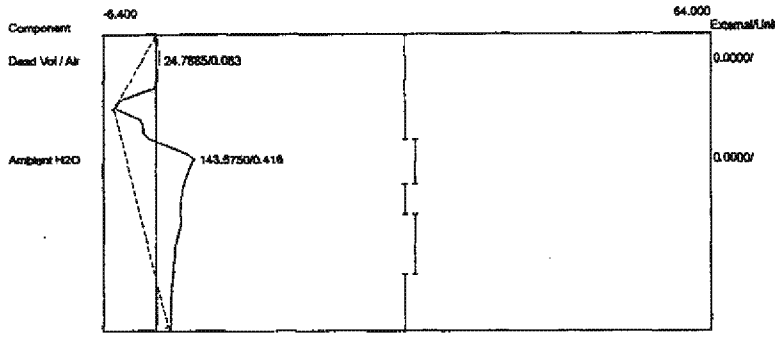
Component	Retention	Area	External	Units
Dead Vol / Air	0.100	27.1995	0.0000	
Ambient H2O	0.433	142.8280	0.0000	
		170.0275	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 16:14:14
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto1-100.cpt
Data file: 1Ster2WB2016-3A09.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



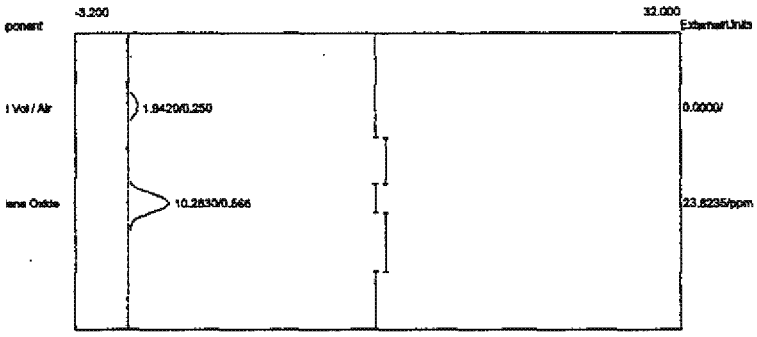
Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9455	0.0000	
ylene Oxide	0.550	10.2860	23.8305	ppm
		12.2315	23.8305	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:14:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A09.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



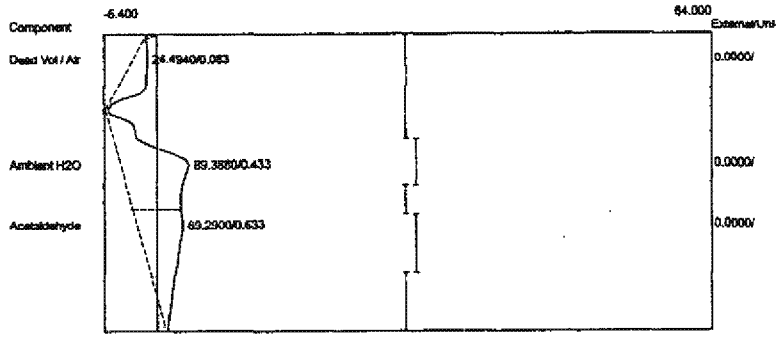
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	24.7885	0.0000	
Ambient H2O	0.416	143.6750	0.0000	
		168.4635	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 16:19:30
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto1-100.cpt
Data file: 1Ster2WB2016-3A10.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



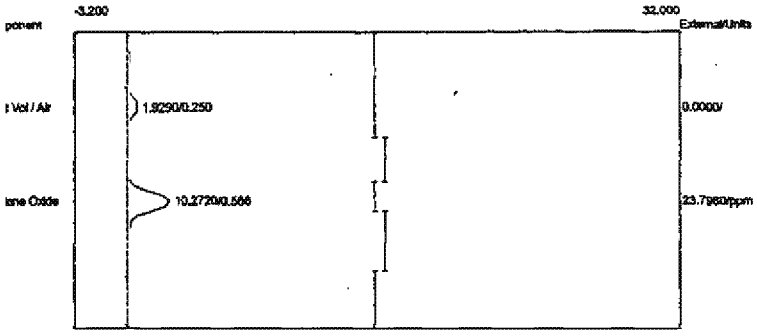
Component	Retention	Area	External	Units
ad Vol / Air	0.250	1.9420	0.0000	
ylene Oxide	0.566	10.2830	23.8235	ppm
		12.2250	23.8235	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:19:30
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A10.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



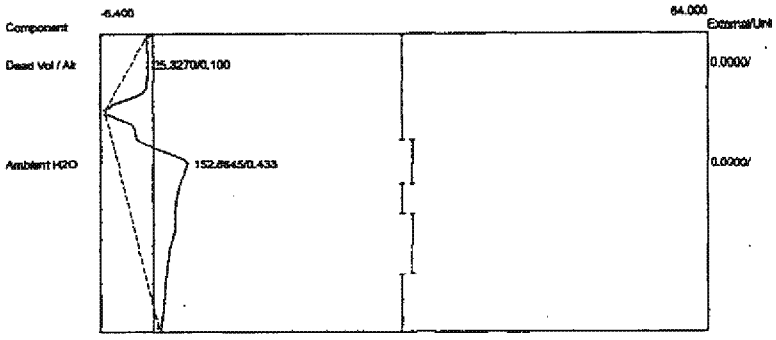
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	24.4940	0.0000	
Ambient H2O	0.433	89.3880	0.0000	
Acetaldehyde	0.633	69.2900	0.0000	
		183.1720	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 16:24:05
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto1-100.cpt
Data file: 1Ster2WB2016-3A11.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



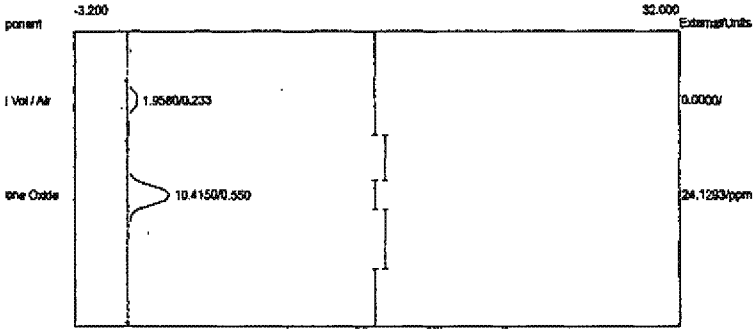
Component	Retention	Area	External	Units
ead Vol / Air	0.250	1.9290	0.0000	
ylene Oxide	0.566	10.2720	23.7980	ppm
		12.2010	23.7980	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:24:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A11.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



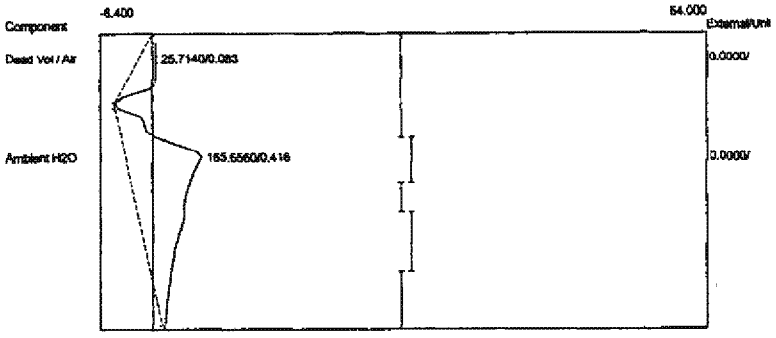
Component	Retention	Area	External	Units
Dead Vol / Air	0.100	25.3270	0.0000	
Ambient H2O	0.433	152.8645	0.0000	
		178.1915	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
nalysis date: 12/13/2016 16:29:17
Method: Direct Injection
Description: CHANNEL 1 - FID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto1-100.cpt
Data file: 1Ster2WB2016-3A12.CHR (c:\peak359)
Sample: AAT Safe Cell Inlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.233	1.9580	0.0000	
ylene Oxide	0.550	10.4150	24.1293	ppm
		12.3730	24.1293	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Aer
Analysis date: 12/13/2016 16:29:17
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-3A12.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



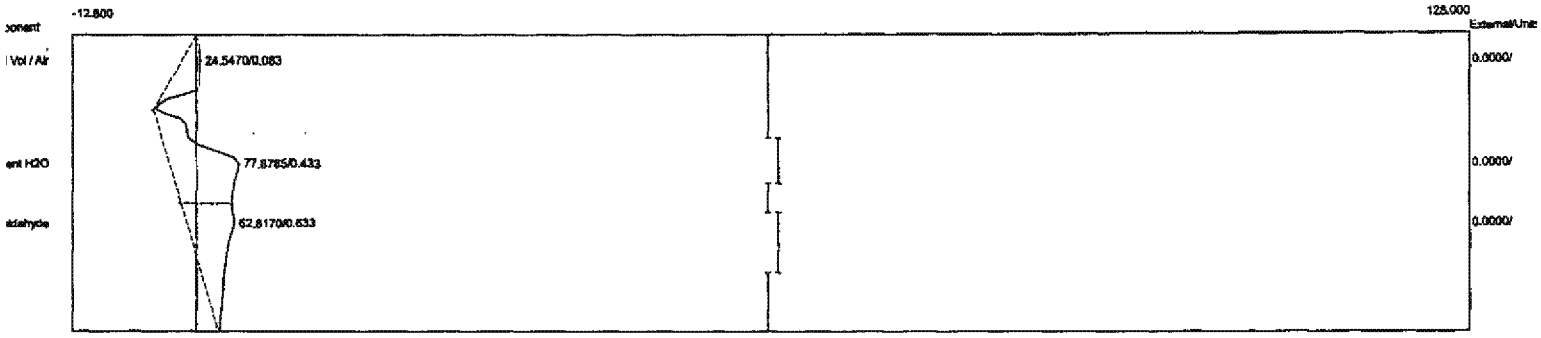
Component	Retention	Area	External	Units
Dead Vol / Air	0.083	25.7140	0.0000	
Ambient H2O	0.416	165.6560	0.0000	
		191.3700	0.0000	

APPENDIX E

Run#1 Chromatograms - Exhaust

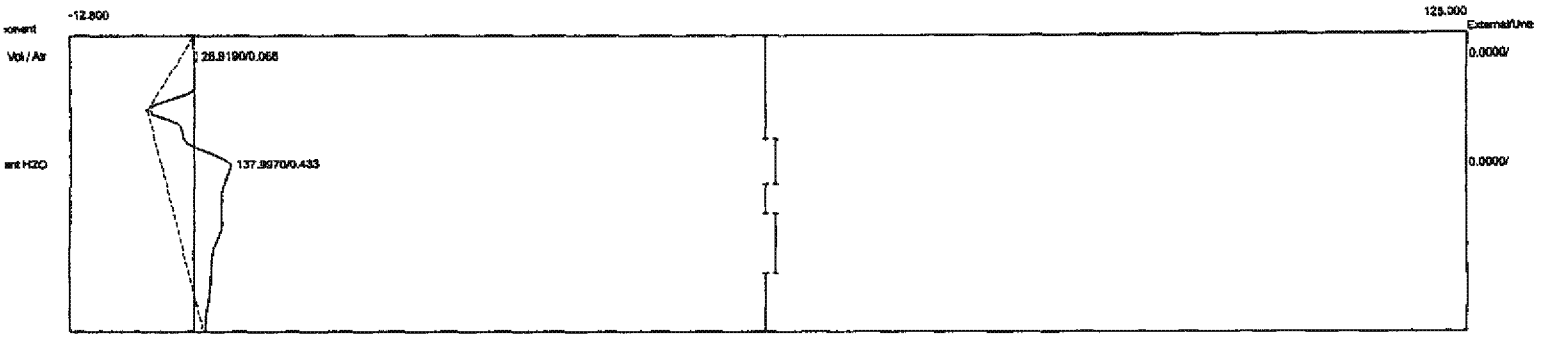
ECSi

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:50:57
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



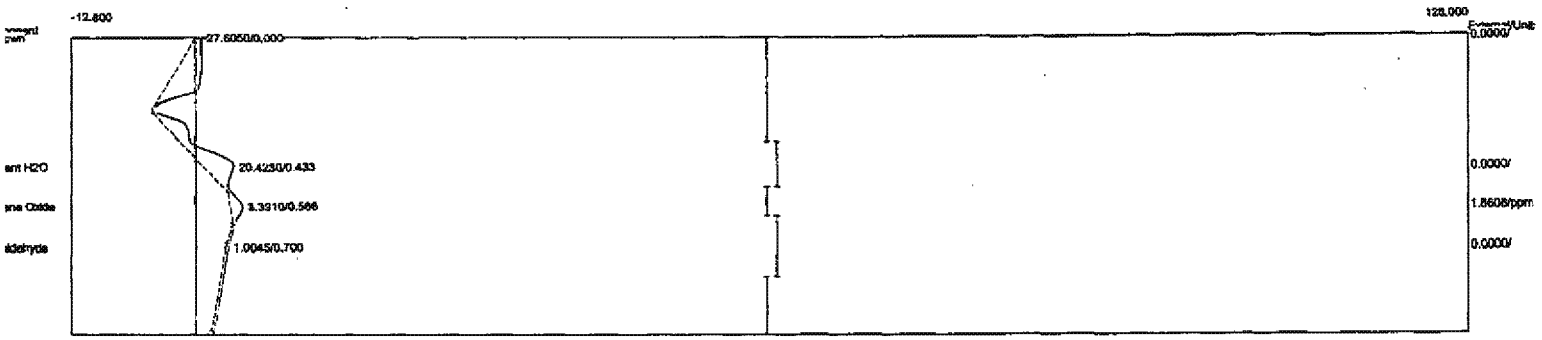
Component	Retention	Area	External	Units
ad Vol / Air	0.083	24.5470	0.0000	
ıbient H2O	0.433	77.8785	0.0000	
etaldehyde	0.633	62.8170	0.0000	
		165.2425	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:52:07
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



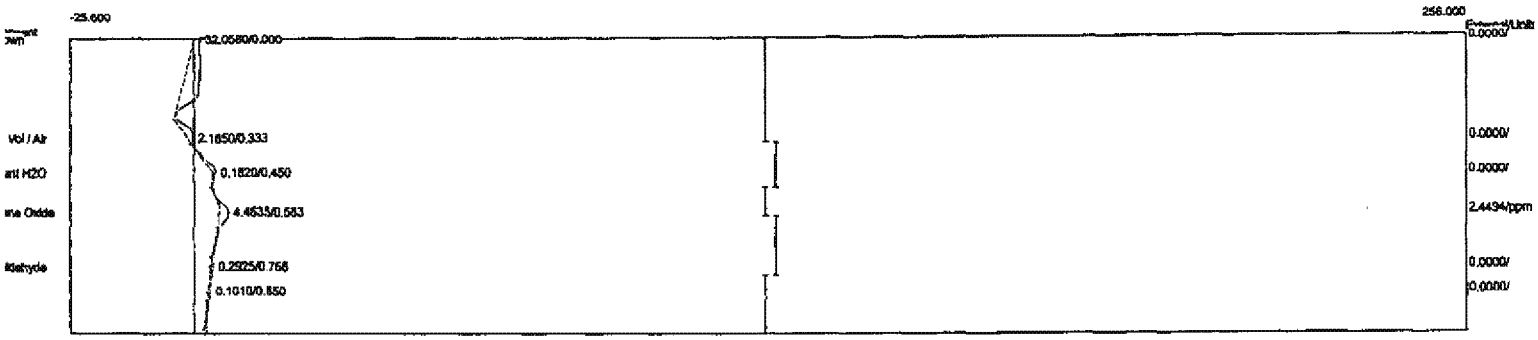
Component	Retention	Area	External	Units
ad Vol / Air	0.066	26.9190	0.0000	
ibient H2O	0.433	137.9970	0.0000	
		164.9160	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:53:14
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1E03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



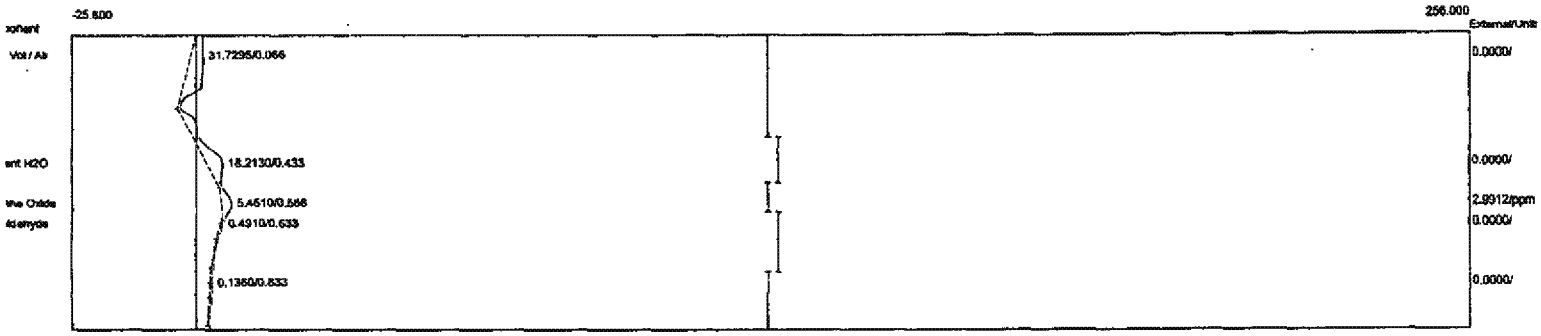
Component	Retention	Area	External	Units
ıbient H2O	0.433	20.4230	0.0000	
ıylene Oxide	0.566	3.3910	1.8608	ppm
etaldehyde	0.700	1.0045	0.0000	
		24.8185	1.8608	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:54:27
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



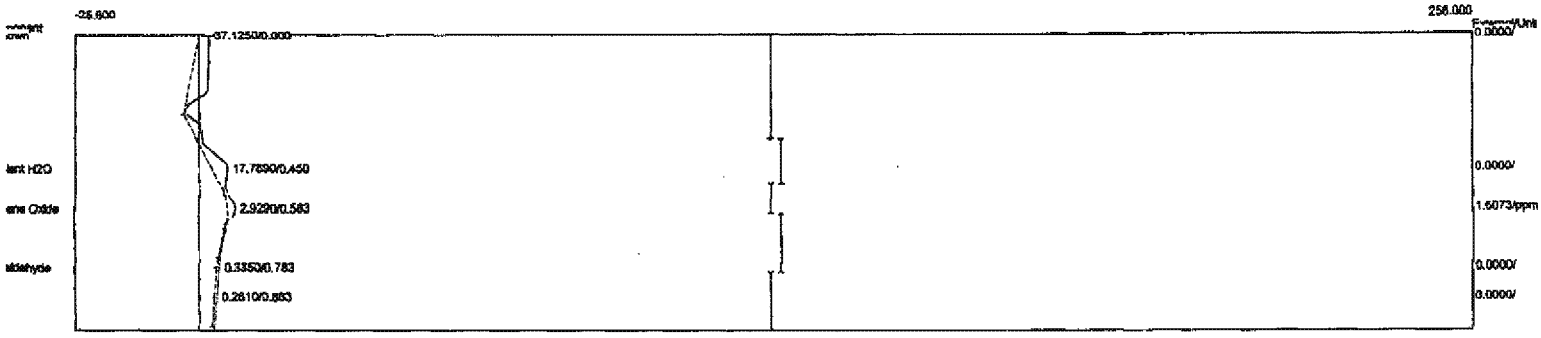
Component	Retention	Area	External	Units
ad Vol / Air	0.333	2.1650	0.0000	
ıbient H2O	0.450	0.1820	0.0000	
ıylene Oxide	0.583	4.4635	2.4494	ppm
etaldehyde	0.766	0.2925	0.0000	
)2	0.850	0.1010	0.0000	
		7.2040	2.4494	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:55:46
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



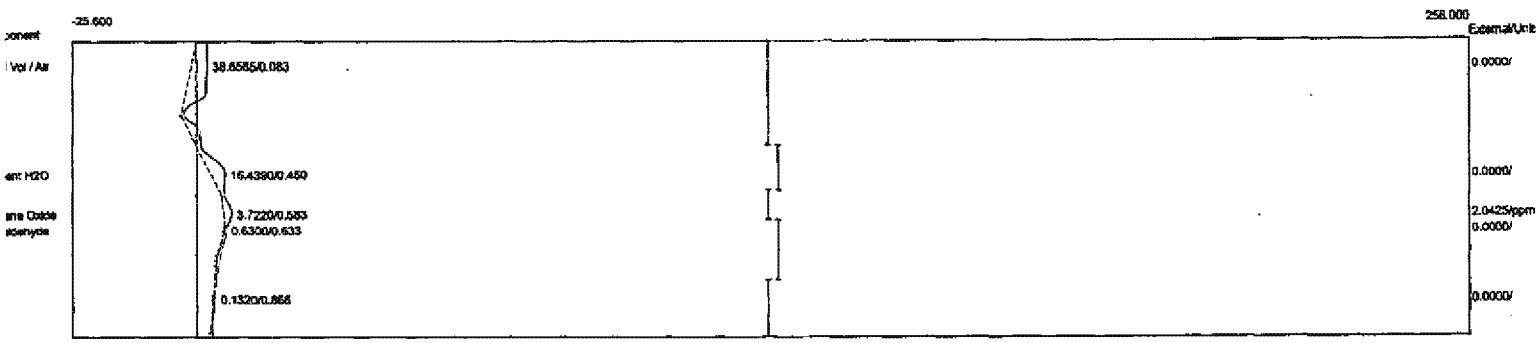
Component	Retention	Area	External	Units
ad Vol / Air	0.066	31.7295	0.0000	
ıbient H2O	0.433	18.2130	0.0000	
ıylene Oxide	0.566	5.4510	2.9912	ppm
etaldehyde	0.633	0.4910	0.0000	
›2	0.833	0.1360	0.0000	
		56.0205	2.9912	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:56:59
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1E06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



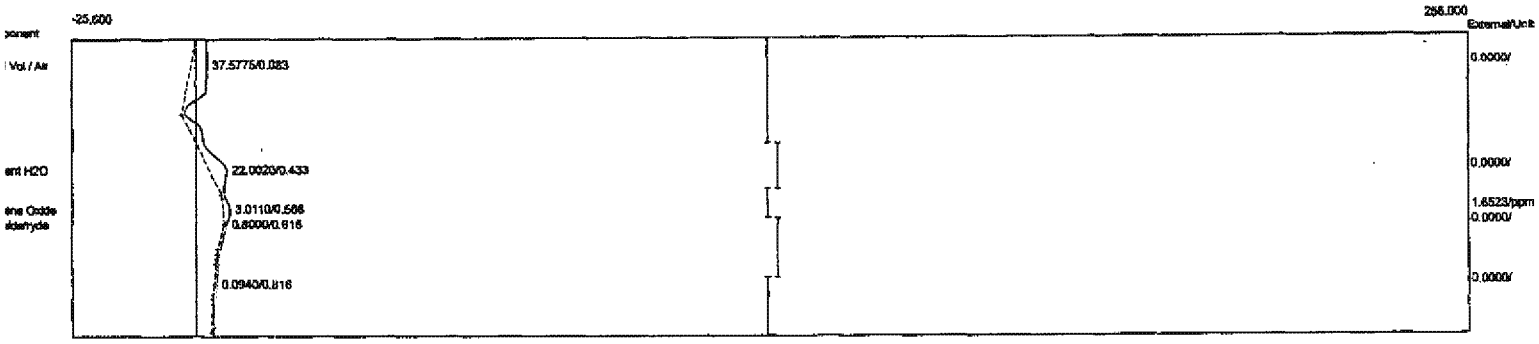
Component	Retention	Area	External	Units
ıbient H2O	0.450	17.7890	0.0000	
ıylene Oxide	0.583	2.9290	1.6073	ppm
etaldehyde	0.783	0.3350	0.0000	
)2	0.883	0.2610	0.0000	
		21.3140	1.6073	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:58:16
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



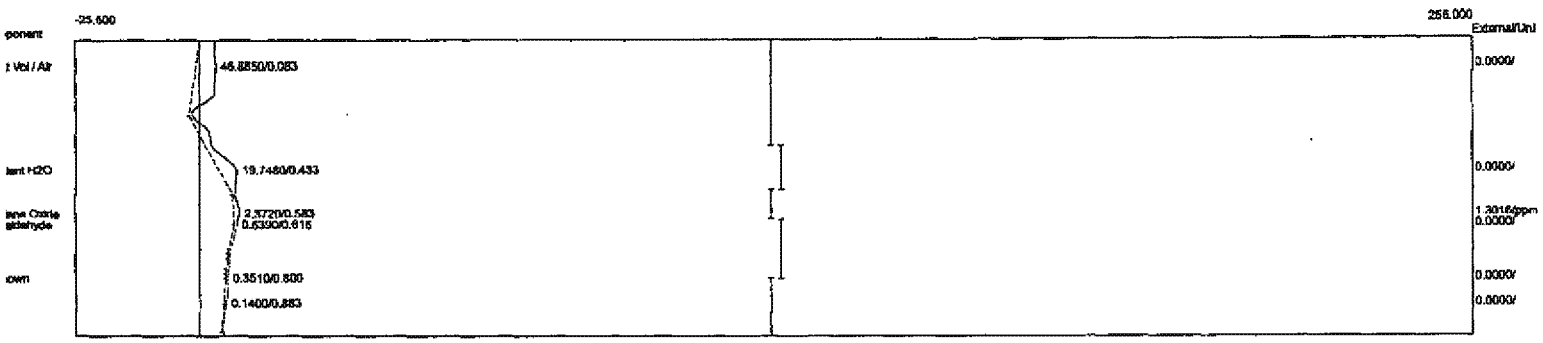
Component	Retention	Area	External	Units
ad Vol / Air	0.083	38.6585	0.0000	
ıbient H2O	0.450	16.4390	0.0000	
ıylene Oxide	0.583	3.7220	2.0425	ppm
etaldehyde	0.633	0.6300	0.0000	
)2	0.866	0.1320	0.0000	
		59.5815	2.0425	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 12:59:38
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-1E08.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.083	37.5775	0.0000	
ıbient H2O	0.433	22.0020	0.0000	
ıylene Oxide	0.566	3.0110	1.6523	ppm
etaldehyde	0.616	0.8000	0.0000	
)2	0.816	0.0940	0.0000	
		63.4845	1.6523	

Client: Sterigenics - Willowbrook 2
Client ID: Run#1Exh
nalysis date: 12/13/2016 13:00:50
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-1E09.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer

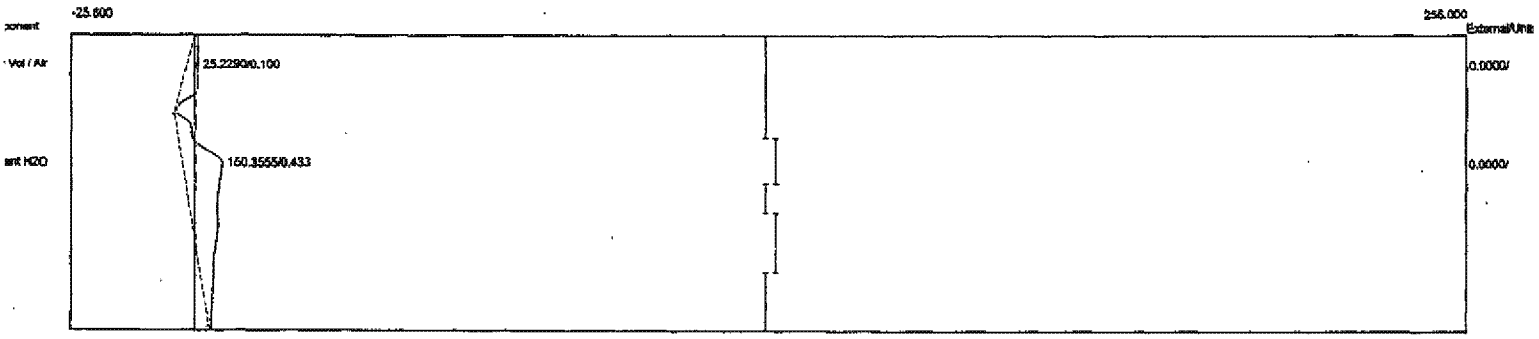


Component	Retention	Area	External	Units
ead Vol / Air	0.083	46.8850	0.0000	
nbient H2O	0.433	19.7480	0.0000	
ylene Oxide	0.583	2.3720	1.3016	ppm
etaldehyde	0.616	0.6390	0.0000	
)2	0.883	0.1400	0.0000	
		69.7840	1.3016	

APPENDIX F

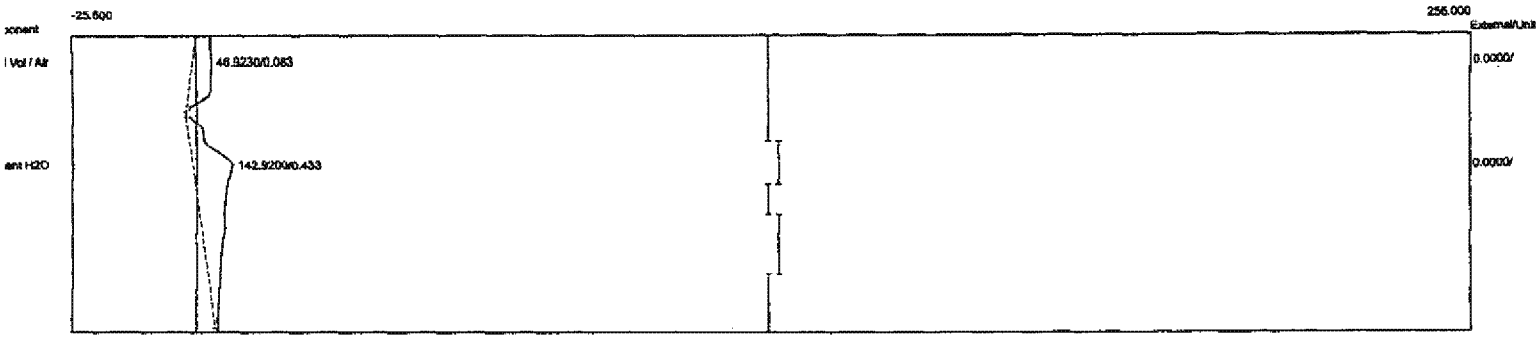
Run#2 Chromatograms - Exhaust

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:07:23
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



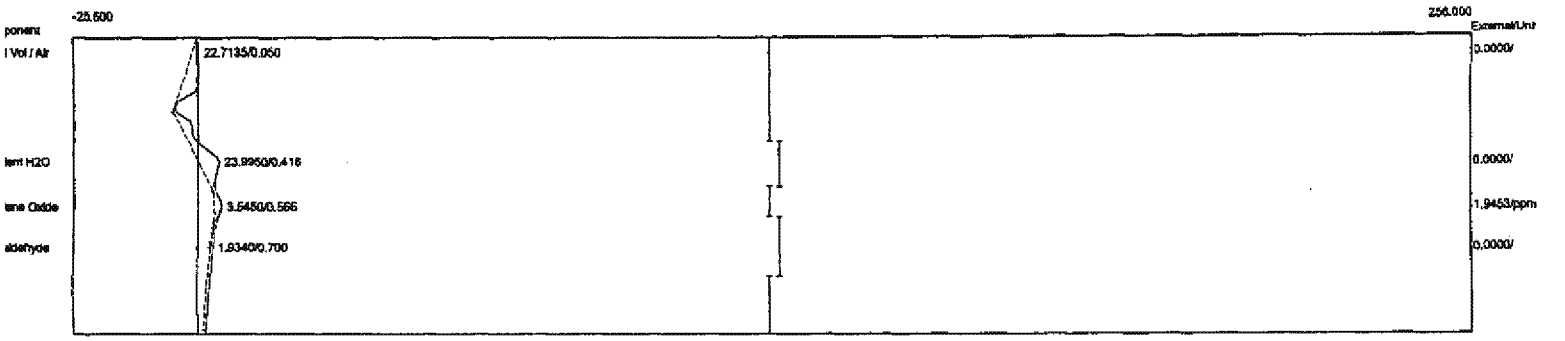
Component	Retention	Area	External	Units
ad Vol / Air	0.100	25.2290	0.0000	
ıbient H2O	0.433	150.3555	0.0000	
		175.5845	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:08:31
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100:tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



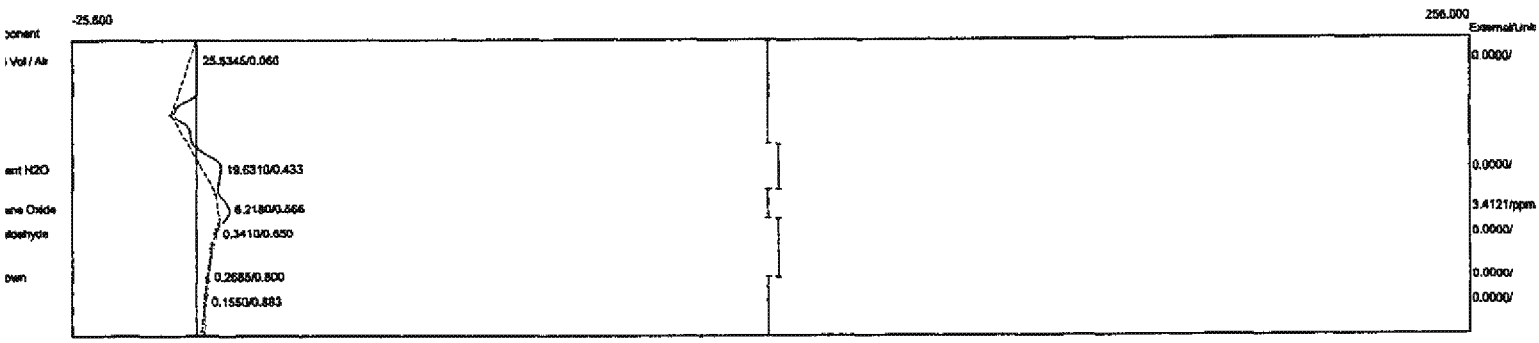
Component	Retention	Area	External	Units
ad Vol / Air	0.083	46.9230	0.0000	
ıbient H2O	0.433	142.9200	0.0000	
		189.8430	0.0000	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:09:39
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2E03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



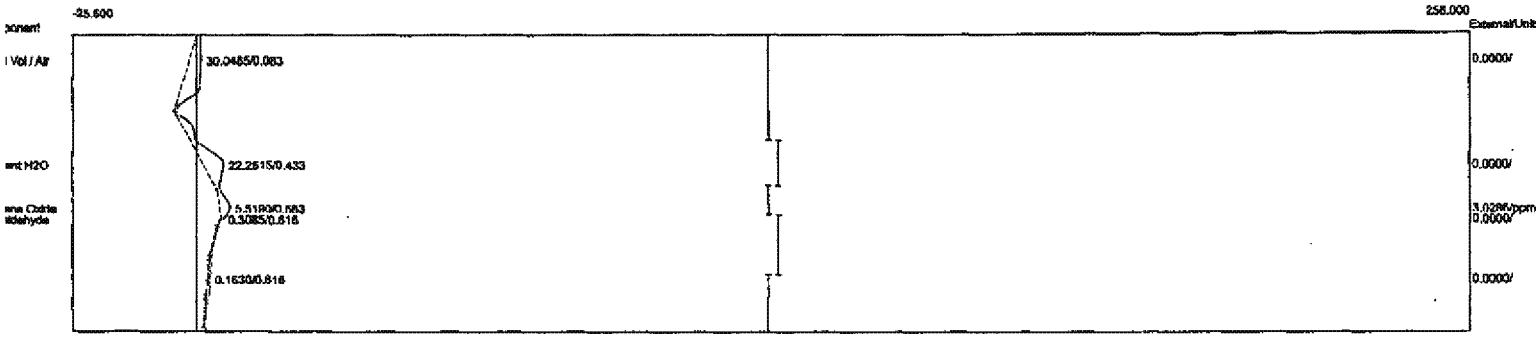
Component	Retention	Area	External	Units
ad Vol / Air	0.050	22.7135	0.0000	
bient H2O	0.416	23.9950	0.0000	
ylene Oxide	0.566	3.5450	1.9453	ppm
etaldehyde	0.700	1.9340	0.0000	
		52.1875	1.9453	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:11:02
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



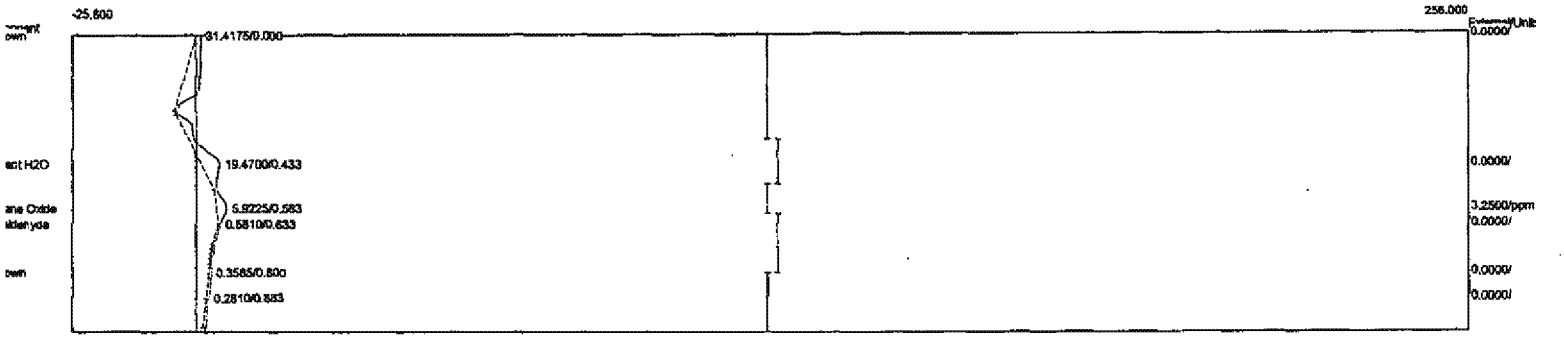
Component	Retention	Area	External	Units
ad Vol / Air	0.066	25.5345	0.0000	
ıbient H2O	0.433	19.6310	0.0000	
ıylene Oxide	0.566	6.2180	3.4121	ppm
etaldehyde	0.650	0.3410	0.0000	
)2	0.883	0.1550	0.0000	
		51.8795	3.4121	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:12:13
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



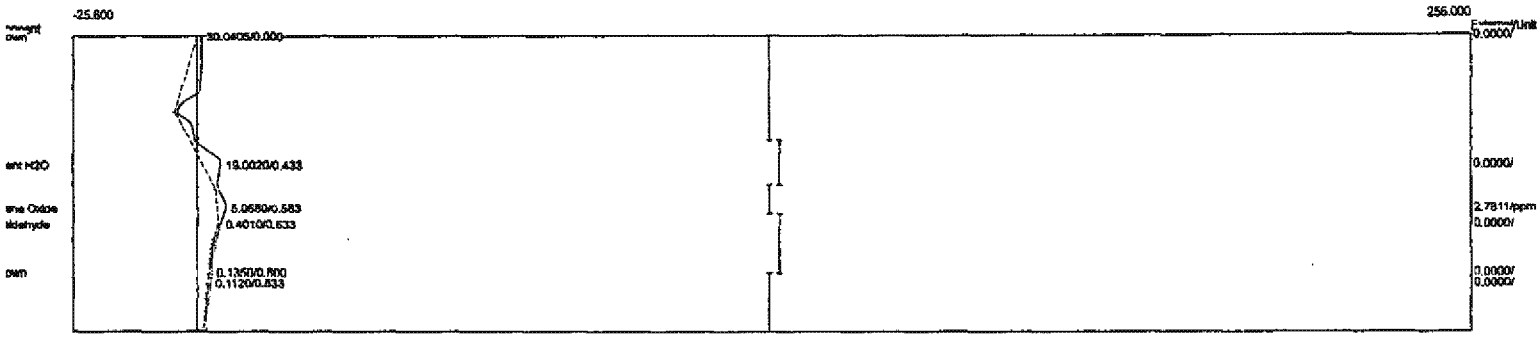
Component	Retention	Area	External	Units
ad Vol / Air	0.083	30.0485	0.0000	
ıbient H2O	0.433	22.2615	0.0000	
ıylene Oxide	0.583	5.5190	3.0286	ppm
etaldehyde	0.616	0.3085	0.0000	
)2	0.816	0.1630	0.0000	
		58.3005	3.0286	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
ıalysis date: 12/13/2016 17:13:23
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
'omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



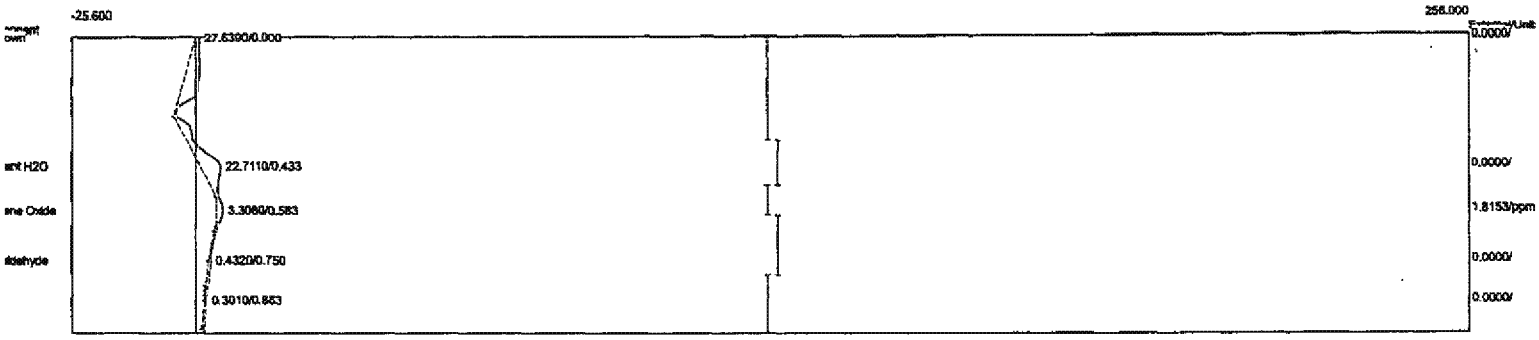
Component	Retention	Area	External	Units
ıbient H2O	0.433	19.4700	0.0000	
ıylene Oxide	0.583	5.9225	3.2500	ppm
etaldehyde	0.633	0.5810	0.0000	
)2	0.883	0.2810	0.0000	
		26.2545	3.2500	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:14:37
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
'omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



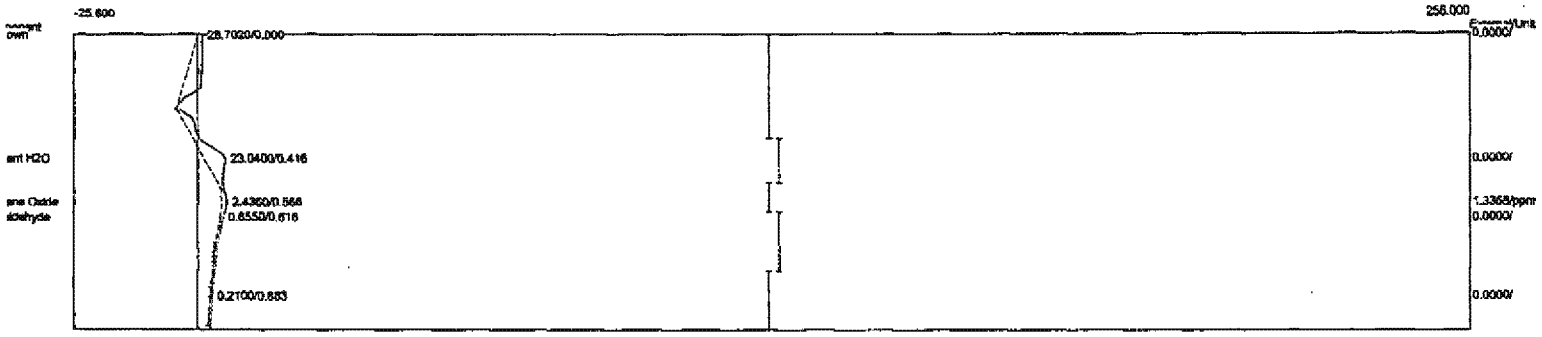
Component	Retention	Area	External	Units
ıbient H2O	0.433	19.0020	0.0000	
ıylene Oxide	0.583	5.0680	2.7811	ppm
etaldehyde	0.633	0.4010	0.0000	
)2	0.833	0.1120	0.0000	
		24.5830	2.7811	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:15:52
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-2E08.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ıbient H2O	0.433	22.7110	0.0000	
ıylene Oxide	0.583	3.3080	1.8153	ppm
etaldehyde	0.750	0.4320	0.0000	
)2	0.883	0.3010	0.0000	
		26.7520	1.8153	

Client: Sterigenics - Willowbrook 2
Client ID: Run#2Exh
nalysis date: 12/13/2016 17:17:05
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
Components: eto2-100.cpt
Data file: 2Ster2WB2016-2E09.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



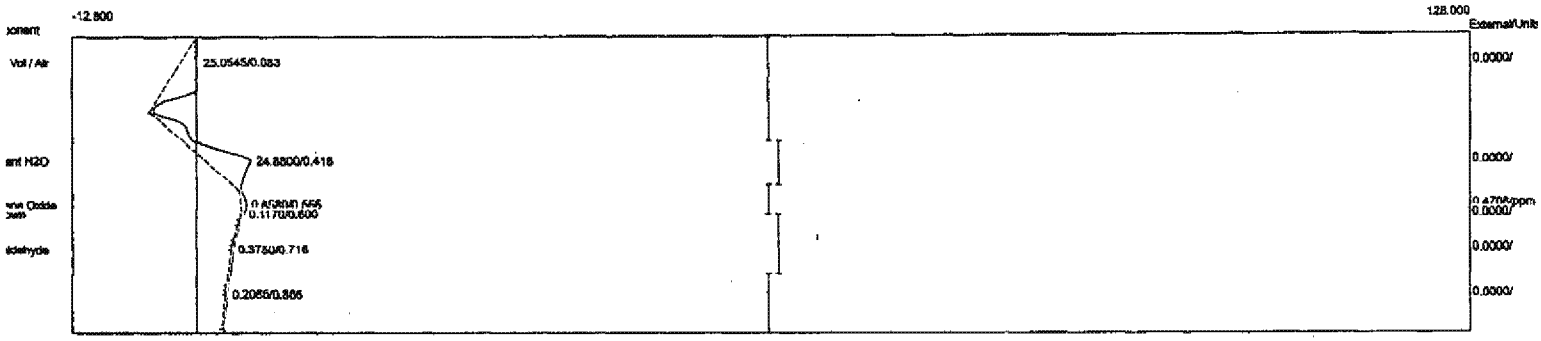
Component	Retention	Area	External	Units
ıbient H2O	0.416	23.0400	0.0000	
ıylene Oxide	0.566	2.4360	1.3368	ppm
etaldehyde	0.616	0.6550	0.0000	
)2	0.883	0.2100	0.0000	
		26.3410	1.3368	

APPENDIX G

Run#3 Chromatograms - Exhaust

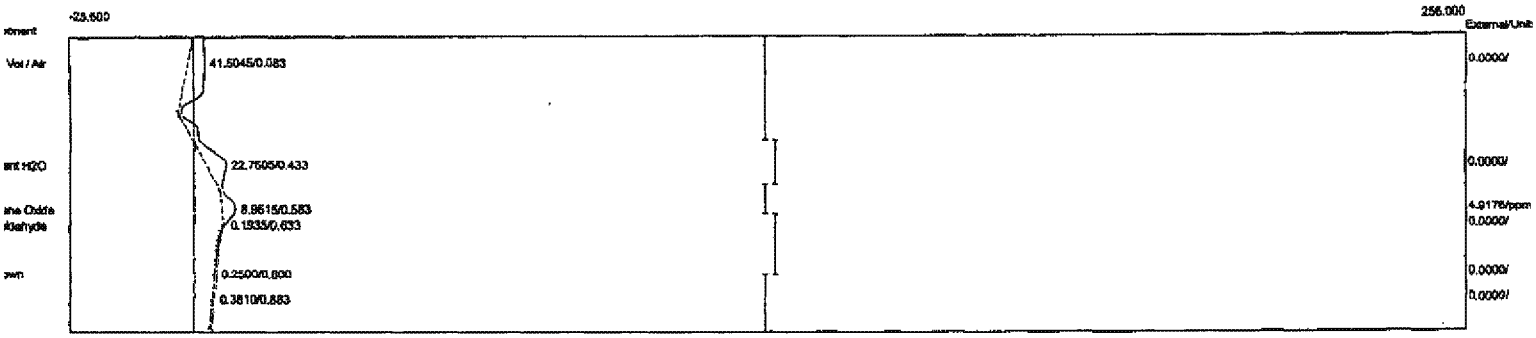
ECSi

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
nalysis date: 12/13/2016 17:23:03
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E01.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



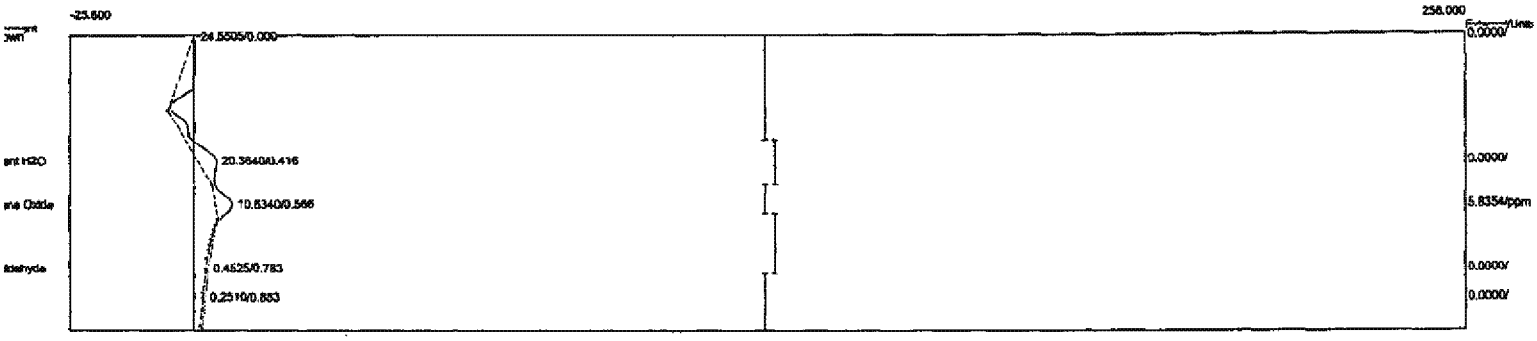
Component	Retention	Area	External	Units
ad Vol / Air	0.083	25.0545	0.0000	
ıbient H2O	0.416	24.8800	0.0000	
ıylene Oxide	0.566	0.8580	0.4708	ppm
etaldehyde	0.716	0.3750	0.0000	
)2	0.866	0.2085	0.0000	
		51.3760	0.4708	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
nalysis date: 12/13/2016 17:24:17
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E02.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



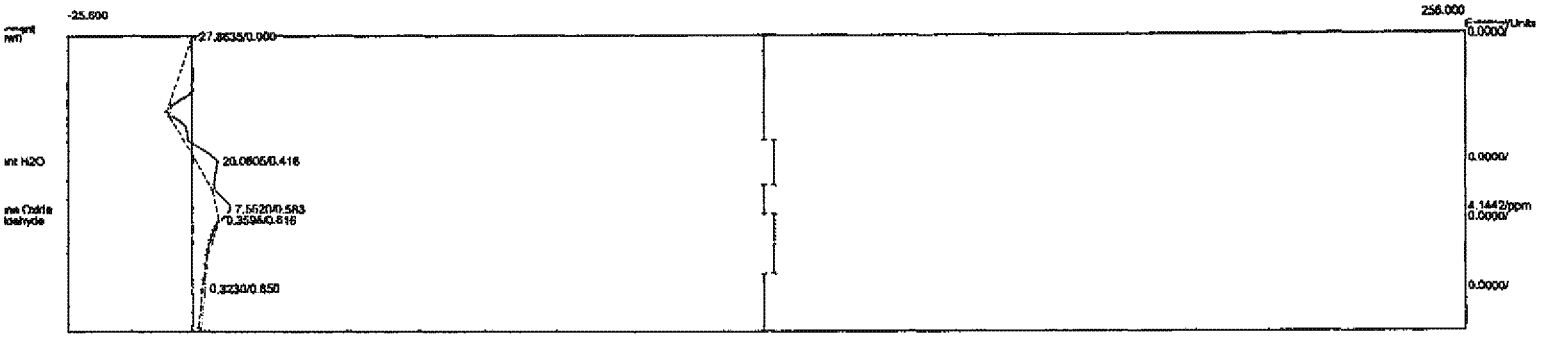
Component	Retention	Area	External	Units
ad Vol / Air	0.083	41.5045	0.0000	
ıbient H2O	0.433	22.7605	0.0000	
ıylene Oxide	0.583	8.9615	4.9176	ppm
etaldehyde	0.633	0.1935	0.0000	
)2	0.883	0.3810	0.0000	
		73.8010	4.9176	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
nalysis date: 12/13/2016 17:25:30
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
:omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E03.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



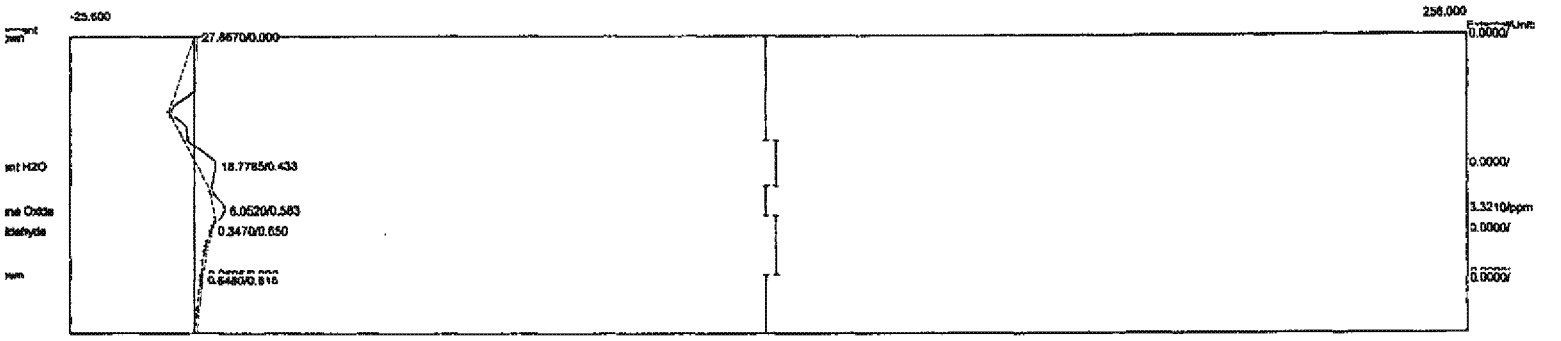
Component	Retention	Area	External	Units
ıbient H2O	0.416	20.3640	0.0000	
ıylene Oxide	0.566	10.6340	5.8354	ppm
ɜtaldehyde	0.783	0.4525	0.0000	
›2	0.883	0.2510	0.0000	
		31.7015	5.8354	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
ıalysis date: 12/13/2016 17:26:47
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E04.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



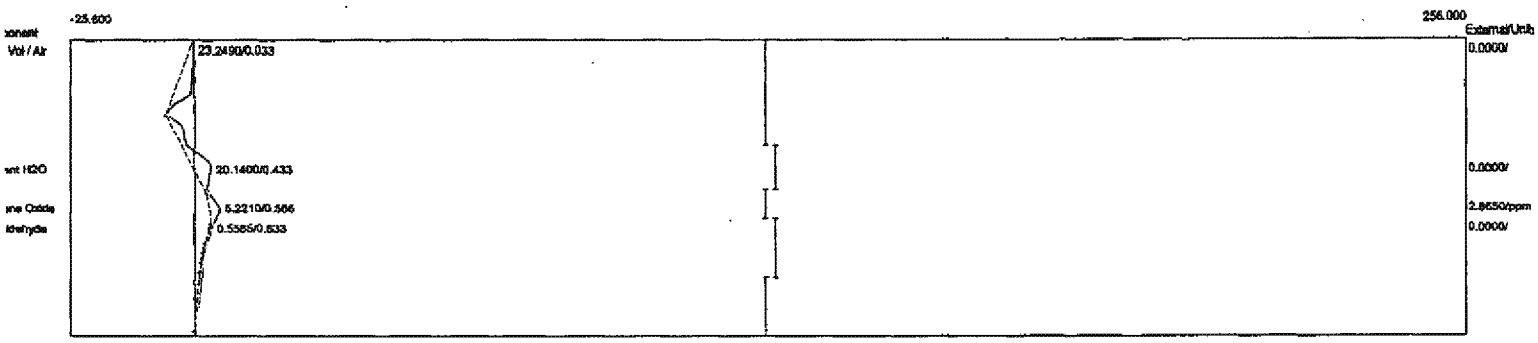
Component	Retention	Area	External	Units
bient H2O	0.416	20.0605	0.0000	
ylene Oxide	0.583	7.5520	4.1442	ppm
ɜtaldehyde	0.616	0.3595	0.0000	
2	0.850	0.3230	0.0000	
		28.2950	4.1442	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
nalysis date: 12/13/2016 17:28:00
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E05.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



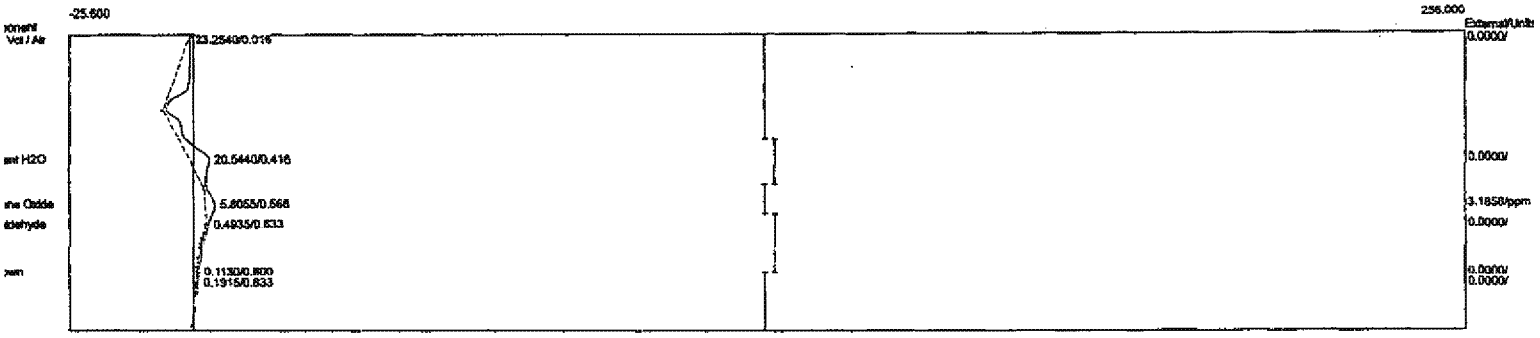
Component	Retention	Area	External	Units
ıbient H2O	0.433	18.7785	0.0000	
ıylene Oxide	0.583	6.0520	3.3210	ppm
ɜtaldehyde	0.650	0.3470	0.0000	
)2	0.816	0.6480	0.0000	
		25.8255	3.3210	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
nalysis date: 12/13/2016 17:29:10
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E06.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.033	23.2490	0.0000	
ıbient H2O	0.433	20.1400	0.0000	
ıylene Oxide	0.566	5.2210	2.8650	ppm
etaldehyde	0.633	0.5585	0.0000	
		49.1685	2.8650	

Client: Sterigenics - Willowbrook 2
Client ID: Run#3Exh
ıalysis date: 12/13/2016 17:30:24
Method: Direct Injection
Description: CHANNEL 2 - PID
Column: 1% SP-1000, Carbopack B
Carrier: HELIUM
Temp. prog: eto-100.tem
omponents: eto2-100.cpt
Data file: 2Ster2WB2016-3E07.CHR (c:\peak359)
Sample: AAT Safe Cell Outlet
Operator: D. Kremer



Component	Retention	Area	External	Units
ad Vol / Air	0.016	23.2540	0.0000	
ıbient H2O	0.416	20.5440	0.0000	
ıylene Oxide	0.566	5.8055	3.1858	ppm
etaldehyde	0.633	0.4935	0.0000	
ı2	0.833	0.1915	0.0000	
		50.2885	3.1858	

APPENDIX H

Field Data and Calculation Worksheets

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Sterigenics, Inc. - Willowbrook, IL (Plant 2)
12/13/16 - Aeration Runs 1-3

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
	Run #1		
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
	Run #2		
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
	Run #3		
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	76	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
Average =			
0.15	0.3873	75.0	**0.0100**
	=	535	degR

mw =	28.51	
stack ID =	36	in.
stack area =	7.069	sq. ft.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	26.3	ft/sec
Flow =	**10412**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.000012**	**lbs/min**
EtO Mass Flow =	**0.000714**	**lbs/hr**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #1 - Exhaust Phase - Chamber K
AAT Safe Cell System - Dry Bed Outlet
Sterigenics EO, Inc. - Willowbrook, IL (Plant 2)
December 13, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.15	0.3873	74	0.01
0.15	0.3873	74	0.01
0.15	0.3873	74	1.86
0.15	0.3873	75	2.45
0.15	0.3873	75	2.99
0.15	0.3873	75	1.61
0.15	0.3873	75	2.04
0.15	0.3873	75	1.65
0.15	0.3873	75	1.30
Average = 0.1500	0.3873	75	**1.547**
	=	535	degR

stack ID =	36	in.
stack area =	7.069	sq. ft.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	26.27	ft/sec
Flow =	**10415**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0018416**	**lbs/min**
evac start =	1249	
evac stop =	1301	
min/cycle =	12	
Outlet EtO Emissions =	**0.02210**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	1332	ft3		V =	1332	ft3
	P =	14.5	in Hg Abs		P =	3.0	in Hg Abs
	T =	125	degF		T =	125	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	66.44	lbs		lbs EtO @ 100% =	13.75	lbs

Initial EtO = Scale Wt. =	60	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	90.3	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	12.41	lbs
INLET ETO = Initial EtO - Final EtO =	**47.6**	**lbs**
Inlet EtO (from Aeration) =	2.215	lbs
TOTAL INLET ETO =	**49.801**	**lbs**
CONTROL EFFICIENCY =	**99.9556**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #2 - Exhaust Phase - Chamber K
AAT Safe Cell System - Dry Bed Outlet
Sterigenics, Inc. - Willowbrook, IL (Plant 2)
December 13, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.15	0.3873	75	0.01
0.15	0.3873	75	0.01
0.15	0.3873	75	1.95
0.15	0.3873	75	3.41
0.15	0.3873	75	3.03
0.15	0.3873	75	3.25
0.15	0.3873	76	2.78
0.15	0.3873	75	1.82
0.15	0.3873	75	1.34
Average =			
0.1500	0.3873	75	**1.956**
	=	535	degR

stack ID =	36	in.
stack area =	7.069	sq. ft.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	26.28	ft/sec
Flow =	**10411**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0023275**	**lbs/min**
evac start =	1707	
evac stop =	1718	
min/cycle =	11	
Outlet EtO Emissions =	**0.02560**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	1332	ft3		V =	1332	ft3
	P =	14.5	in Hg Abs		P =	3.0	in Hg Abs
	T =	126	degF		T =	124	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	66.33	lbs		lbs EtO @ 100% =	13.77	lbs

Initial EtO = Scale Wt. =	60	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	90.5	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	12.46	lbs
INLET ETO = Initial EtO - Final EtO =	**47.5**	**lbs**
Inlet EtO (from Aeration) =	2.215	lbs
TOTAL INLET ETO =	**49.759**	**lbs**
CONTROL EFFICIENCY =	**99.9485**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #3 - Exhaust Phase - Chamber G
AAT Safe Cell System - Dry Bed Outlet
Sterigenics, Inc. - Willowbrook, IL (Plant 2)
December 13, 2016

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.15	0.3873	75	0.47
0.15	0.3873	75	4.92
0.15	0.3873	75	5.84
0.15	0.3873	75	4.14
0.15	0.3873	75	3.32
0.15	0.3873	75	2.87
0.15	0.3873	76	3.19
Average =			
0.1500	0.3873	75	**3.536**
	=	535	degR

stack ID =	36	in.
stack area =	7.069	sq. ft.
press =	29.20	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	26.28	ft/sec
Flow =	**10411**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0042081**	**lbs/min**
evac start =	1722	
evac stop =	1731	
min/cycle =	9	
Outlet EtO Emissions =	**0.03787**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:				Post-Evac:			
	V =	1332	ft3		V =	1332	ft3
	P =	14.4	in Hg Abs		P =	3.0	in Hg Abs
	T =	125	degF		T =	125	degF
	R =	10.73			R =	10.73	
	mw =	44.05			mw =	44.05	
	lbs EtO @ 100% =	65.98	lbs		lbs EtO @ 100% =	13.75	lbs

Initial EtO = Scale Wt. =	59	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	89.4	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	12.29	lbs
INLET ETO = Initial EtO - Final EtO =	**46.7**	**lbs**
Inlet EtO (from Aeration) =	2.215	lbs
TOTAL INLET ETO =	**48.923**	**lbs**
CONTROL EFFICIENCY =	**99.9226**	**%**

APPENDIX I

Gas Certifications

ECSi

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

300 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-001
Item No.: 02020001310TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CAL4448
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	1.10	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: MT

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	1.	PPM	1.10	PPM	10.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1300 PSIG
Expiration Date: 18Apr2018

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

00 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-003
Item No.: 02020001320TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM003232
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	10.1	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: MT
MT

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	10.	PPM	10.1	PPM	1.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1400 PSIG
Expiration Date: 18Apr2018

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

500 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-004
Item No.: 02020001330TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM011385
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	100.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully BLM DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	100.	PPM	100.	PPM	.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1400 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

500 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-005
Item No.: 02020001340TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM002810
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	1,000.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully
BLM

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	1,000.	PPM	1,000.	PPM	.0	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 1300 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFIED WORKING CLASS

Single-Certified Calibration Standard

Scott Specialty Gases

500 CAJON BLVD., SAN BERNARDINO, CA 92411 Phone: 909-887-2571 Fax: 909-887-0549

CERTIFICATE OF ACCURACY: Certified Working Class Calibration Standard

Product Information
Project No.: 02-57164-006
Item No.: 02020001340TCL
P.O. No.: VBL – D. KREMER

Cylinder Number: CLM005787
Cylinder Size: CL
Certification Date: 18Apr2016

Customer

ECSI, INC
PO BOX 848
SAN CLEMENTE, CA 92672

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHYLENE OXIDE	10,080.	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: B. McCully
BLM

DATE: 4-18-16

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
ETHYLENE OXIDE	10,000.	PPM	10,080.	PPM	.8	5.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: CL

Pressure: 800 PSIG
Expiration Date: 18Apr2018

Valve Connection: CGA 350

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

COMMENTS

CERTIFICATE OF ANALYSIS

Customer Name:	ECSi, Inc.	**Cylinder Number:**	SA25925
Stock or Analyzer Tag Number:	N/A	**Product Class:**	Certified Standard
Customer Reference:	Verbal- Dan	**Cylinder - Contents[1]:**	28 CF @ 2000 PSI
MESA Reference:	104448	**Cylinder-CGA:**	A006-HP-BR/350
Date of Certification:	4/20/2016	**Analysis Method:**	GC-TCD/FID
Recommended Shelf Life:	2 Years	**Preparation Method:**	Gravimetric

Component	Requested Concentration[2]	Reported Concentration[2,3]
Ethylene Oxide	50 ppm	48.8 ppm
Nitrogen	Balance	Balance

Authorized Signature:

1. The fill pressure shown on the COA is as originally quoted. The fill pressure measured by the customer may differ from the fill pressure originally quoted due to temperature effects, compressibility of the individual components when blended together in the cylinder, gauge accuracy or reduction in content volume before shipping as a result of samples withdrawn for laboratory QC necessary to ensure product quality.
2. Unless otherwise stated, concentrations are given in molar units.
3. Vapor pressure mixes are blended at a sufficiently low pressure so as to eliminate phase separation under most low temperature conditions encountered during transport or storage. However, it is generally recommended that cylinders containing vapor pressure restricted mixes be placed on the floor in a horizontal position and rolled back and forth to improve homogeneity of the gas phase mixture before being put into service.

Analytical Gas Standards are prepared and analyzed using combinations of NIST traceable weights, SRM's provided by NIST, or internal gas standards that have been verified for accuracy using procedures published by the US-EPA. Pure gases are analyzed and certified for purity using minor component Analytical Gas Standards prepared according to the methods specified above. Balances are calibrated to NIST test weights covered by NIST test number 822/256175/96. Reference Certification #'s: 163/W, 830/N and 3280. Calibration methods are in conformance with MIL-STD 45662A.

MESA Specialty Gases & Equipment
division of MESA International Technologies, Inc.
3619 Pendleton Avenue, Suite C ♦ Santa Ana, California 92704 ♦ USA
TEL: 714-434-7102 ♦ FAX: 714-434-8006 ♦ E-mail: mail@mesagas.com
On-line Catalog at www.mesagas.com

APPENDIX J

Process Data

Process Run Record

Sterigenics International, Inc.
7775 S. Quincy Street
Willowbrook, IL 60527
Tel: +1 (630) 654-5151

Run ID:	**304145**	Pallet Count:	**0**	Equipment:	**Chamber G**
Customer:	**Sterigenics International**			Workorder Num:	**1860461**
Specification:	**17.1**	Checksum:	**-24959**	Cycle:	**Antares Cycle 751/CV 22130**
Description:	**ENG #9-12DEC2016**				
Date Started:	**13-Dec-16 21:38:07**			Date Completed:	
Date Aborted:	**13-Dec-16 23:22:04**	**Aborted!**		Aborted By:	**Ray Cruz**
Additional Info:	**TEST**				

1. Phase » General Configuration

(Phase No.0)

Date / Time	
13-Dec-16	
21:38:07	
SYS	Run ID 304145 has started

2. Phase » Start-up Phase

(Phase No.1)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
21:38:08	122.5	29.4
21:39:28	123.0	29.3
21:39:33	123.1	29.3

3. Phase » Vacuum

(Phase No.2)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
21:39:33	123.1	29.3
21:40:34	123.4	26.6
21:41:34	123.8	24.6
21:42:34	124.1	22.6
21:43:34	124.3	20.4
21:44:34	124.5	18.2
21:45:34	124.7	16.3
21:46:34	124.9	14.5
21:47:34	125.1	12.7
21:48:34	125.3	11.0
21:49:34	125.4	9.3
21:50:34	125.5	7.5
21:51:34	125.6	6.0

...

9. Phase » EO Inject by Pressure

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used
13-Dec-16				
23:05:25	125.0	7.3	277.6	25
23:06:25	125.1	8.4	342.1	30
23:07:25	125.1	9.4	409.3	35
23:08:25	125.2	10.4	471.2	40
23:09:25	125.3	11.4	533.3	45
23:10:25	125.3	12.4	596.5	49
23:11:25	125.4	13.4	660.1	54
23:12:25	125.5	14.4	724.0	59
23:12:25	125.5	14.4	724.7	59
23:12:30	125.5	14.5	732.8	59

Step Gas Usage

ID	Gas	Drum S/N	Lot Number	Usage Value
513	EO	E000230	UTLX902730L16	59lbs

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:12:06		00:06:27 - 00:25:48
Elapsed Phase Time	Final	00:12:06		n/a - N/A
TempAve	Min	124.7	°F	120.0 - 130.0 °F
TempAve	Max	125.5	°F	120.0 - 130.0 °F
PCurr	Final	14.5	inHg	13.9 - 15.9 inHg
PCurr	Final	14.5	inHg	n/a - 14.9 inHg
AT-EO	Final	732.8	mg/l	N/A - N/A mg/l
EO Weight Used	Final	59	lbs	N/A - N/A lbs

10. Phase » EO Dwell

(Phase No.7)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used	[mg/l] AT-AH	[%] RH Sensor
13-Dec-16						
23:12:30	125.5	14.5	733.2	0	15.1	N/A
23:13:31	125.5	14.4	768.6	0	15.6	N/A
23:14:31	125.5	14.4	770.8	0	15.1	N/A
23:15:31	125.5	14.4	772.9	0	16.0	N/A
23:16:31	125.5	14.4	773.2	0	15.6	N/A
23:17:31	125.5	14.4	773.1	0	16.0	N/A
23:18:31	125.5	14.4	773.2	0	16.5	N/A
23:19:31	125.5	14.4	773.1	0	16.5	N/A
23:20:31	125.4	14.4	773.1	0	16.3	N/A
23:21:31	125.3	14.4	773.1	0	16.9	N/A
23:22:04	125.3	14.4	775.4	0	16.5	N/A
OPR Operator has requested abort						
23:22:04	125.3	14.4	775.4	0	16.5	N/A
DVN Current Phase Time has a measurement value of 00:09:34. The min specified value is 00:59:00						

...

10. Phase » EO Dwell

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:09:34		00:59:00 - 05:00:00
Elapsed Phase Time	Final	00:09:34		n/a - N/A
TempAve	Min	125.3	°F	120.0 - 130.0 °F
TempAve	Max	125.5	°F	120.0 - 130.0 °F
PCurr	Min	14.4	inHg	14.0 - 16.0 inHg
PCurr	Min	14.4	inHg	n/a - 14.9 inHg
PCurr	Max	14.5	inHg	14.0 - 16.0 inHg
PCurr	Max	14.5	inHg	n/a - 14.9 inHg
RH from AH Calc	Min	N/A	%	N/A - N/A %
RH from AH Calc	Max	N/A	%	N/A - N/A %
AT-AH	Min	15.1	mg/l	N/A - N/A mg/l
AT-AH	Max	16.9	mg/l	N/A - N/A mg/l
AT-EO	Min	733.2	mg/l	N/A - N/A mg/l
AT-EO	Max	775.4	mg/l	N/A - N/A mg/l
EO Weight Used	Final	0	lbs	N/A - N/A lbs

DVN Current Phase Time has a measurement value of 00:09:34. The min specified value is 00:59:00

11. Phase » Vacuum

(Phase No.8)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
23:22:04	125.3	14.4
SYS Cycle has entered EO-Abort sequence while running Run ID 304145 at phase no. 8 - 0		
23:23:05	125.3	12.3
23:24:05	125.2	10.7
23:25:05	125.2	8.9
23:26:05	125.0	7.4
23:27:05	125.0	6.1
23:28:05	124.8	5.1
23:29:05	124.8	4.3
23:30:05	124.8	3.6
23:31:05	124.8	3.1
23:31:12	124.7	3.0
23:31:14	124.7	3.0

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:09:10		00:02:51 - 00:20:00
Elapsed Phase Time	Final	00:09:10		n/a - N/A
TempAve	Min	124.7	°F	120.0 - 130.0 °F
TempAve	Max	125.3	°F	120.0 - 130.0 °F
PCurr	Final	3.0	inHg	2.5 - 3.5 inHg
PCurr	Final	3.0	inHg	n/a - N/A inHg

12. Phase » Nitrogen Inject

(Phase No.9 - 1)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO

...

9. Phase » EO Inject by Pressure

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used
13-Dec-16				
22:54:25	125.3	3.5	30.1	8
22:55:25	125.4	4.3	58.2	11
22:56:25	125.4	5.3	110.3	16
22:57:25	125.4	6.3	167.8	21
22:58:25	125.4	7.2	223.4	25
22:59:25	125.5	8.3	286.5	30
23:00:25	125.5	9.3	347.5	35
23:01:25	125.5	10.3	404.4	40
23:02:25	125.5	11.3	457.8	45
23:03:25	125.5	12.3	519.3	50
23:04:25	125.5	13.3	579.4	54
23:05:25	125.5	14.3	639.9	59
23:05:29	125.6	14.4	646.1	60
23:05:34	125.6	14.5	655.8	60

Step Gas Usage

ID	Gas	Drum S/N	Lot Number	Usage Value
511	EO	E001214	UTLX902730L16	60lbs

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:12:10		00:06:27 - 00:25:48
Elapsed Phase Time	Final	00:12:10		n/a - N/A
TempAve	Min	125.3	°F	120.0 - 130.0 °F
TempAve	Max	125.6	°F	120.0 - 130.0 °F
PCurr	Final	14.5	inHg	13.9 - 15.9 inHg
PCurr	Final	14.5	inHg	n/a - 14.9 inHg
AT-EO	Final	655.8	mg/l	N/A - N/A mg/l
EO Weight Used	Final	60	lbs	N/A - N/A lbs

10. Phase » EO Dwell

(Phase No.7)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used	[mg/l] AT-AH	[%] RH Sensor
13-Dec-16						
23:05:34	125.6	14.6	656.3	0	N/A	N/A
23:06:35	125.6	14.5	672.9	0	N/A	N/A
23:06:50	125.5	14.5	672.9	0	N/A	N/A
OPR Operator has requested abort						
23:06:50	125.5	14.5	672.9	0	N/A	N/A
DVN Current Phase.Time has a measurement value of 00:01:16. The min specified value is 00:59:00						

Process Run Record

Sterigenics International, Inc.
7775 S. Quincy Street
Willowbrook, IL 60527
Tel: +1 (630) 654-5151

Run ID:	**304146**	Pallet Count:	**0**	Equipment:	**Chamber K**
Customer:	**Sterigenics International**			Workorder Num:	**1860463**
Specification:	**17.1**	Checksum:	**-24959**	Cycle:	**Antares Cycle 751/CV 22130**
Description:	**ENG #10 12DEC16**				
Date Started:	**13-Dec-16 21:25:41**			Date Completed:	
Date Aborted:	**13-Dec-16 23:06:50**	**Aborted!**		Aborted By:	**Ray Cruz**

1. Phase » General Configuration

(Phase No.0)

Date / Time	
13-Dec-16	
21:25:41	
SYSMI	Run ID 304146 has started

2. Phase » Start-up Phase

(Phase No.1)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
21:25:41	123.7	29.9
21:25:42	123.7	29.9
21:25:46	123.7	29.9

3. Phase » Vacuum

(Phase No.2)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
21:25:46	123.7	29.9
21:26:47	123.6	27.0
21:27:47	123.5	24.8
21:28:47	123.4	23.1
21:29:47	123.4	21.4
21:30:47	123.4	19.6
21:31:47	123.3	17.6
21:32:47	123.3	15.7
21:33:47	123.3	13.8
21:34:47	123.2	11.8
21:35:47	123.2	10.1
21:36:47	123.2	8.4
21:37:47	123.2	7.0
21:38:47	123.2	5.9
21:39:47	123.2	5.0

...

10. Phase » EO Dwell

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:01:16		00:59:00 - 05:00:00
Elapsed Phase Time	Final	00:01:17		n/a - N/A
TempAve	Min	125.5	°F	120.0 - 130.0 °F
TempAve	Max	125.6	°F	120.0 - 130.0 °F
PCurr	Min	14.5	inHg	14.0 - 16.0 inHg
PCurr	Min	14.5	inHg	n/a - 14.9 inHg
PCurr	Max	14.6	inHg	14.0 - 16.0 inHg
PCurr	Max	14.6	inHg	n/a - 14.9 inHg
RH from AH Calc	Min	N/A	%	N/A - N/A %
RH from AH Calc	Max	N/A	%	N/A - N/A %
AT-AH	Min	N/A	mg/l	N/A - N/A mg/l
AT-AH	Max	N/A	mg/l	N/A - N/A mg/l
AT-EO	Min	656.3	mg/l	N/A - N/A mg/l
AT-EO	Max	672.9	mg/l	N/A - N/A mg/l
EO Weight Used	Final	0	lbs	N/A - N/A lbs

DVN Current Phase Time has a measurement value of 00:01:16. The min specified value is 00:59:00

11. Phase » Vacuum

(Phase No.8)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
23:06:50	125.5	14.5
SYS Cycle has entered EO-Abort sequence while running Run ID 304146 at phase no. 8 - 0		
23:07:51	125.4	12.7
23:08:51	125.3	11.0
23:09:51	125.2	9.4
23:10:51	125.0	8.1
23:11:51	124.9	7.0
23:12:51	124.8	6.0
23:13:51	124.7	5.2
23:14:51	124.6	4.5
23:15:51	124.5	3.9
23:16:51	124.5	3.4
23:17:50	124.4	3.0
23:17:51	124.4	3.0
23:17:52	124.4	3.0

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:11:02		00:02:51 - 00:20:00
Elapsed Phase Time	Final	00:11:02		n/a - N/A
TempAve	Min	124.4	°F	120.0 - 130.0 °F
TempAve	Max	125.5	°F	120.0 - 130.0 °F
PCurr	Final	3.0	inHg	2.5 - 3.5 inHg
PCurr	Final	3.0	inHg	n/a - N/A inHg

12. Phase » Nitrogen Inject

(Phase No.9 - 1)

Process Run Record

Sterigenics International, Inc.
7775 S. Quincy Street
Willowbrook, IL 60527
Tel: +1 (630) 654-5151

Run ID:	**304143**	Pallet Count:	**0**	Equipment:	**Chamber K**
Customer:	**Sterigenics International**			Workorder Num:	**1860458**
Specification:	**17.1**	Checksum:	**-24959**	Cycle:	**Antares Cycle 751/CV 22130**
Description:	**ENG #8-12DEC2016**				
Date Started:	**13-Dec-16 12:43:04**			Date Completed:	
Date Aborted:	**13-Dec-16 18:49:43**	**Aborted!**		Aborted By:	**Ray Cruz**
Additional Info:	**EPA TEST**				

1. Phase » General Configuration

(Phase No.0)

Date / Time
13-Dec-16
12:43:04

2. Phase » Start-up Phase

(Phase No.1)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
12:43:05	124.9	29.9
12:43:09	124.9	29.9

3. Phase » Vacuum

(Phase No.2)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
12:43:09	124.9	29.9
12:44:10	124.8	27.0
12:45:10	124.6	24.8
12:46:10	124.5	23.2
12:47:10	124.4	21.5
12:48:10	124.4	19.6
12:49:10	124.3	17.7
12:50:10	124.2	15.7
12:51:10	124.1	13.8
12:52:10	124.0	11.8
12:53:10	124.0	10.0
12:54:10	123.9	8.4
12:55:10	123.9	7.0
12:56:10	123.9	5.9
12:57:10	123.9	5.0

ED_002192_00005421-00210

...

9. Phase » EO Inject by Pressure

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used
13-Dec-16				
14:11:42	126.1	3.5	27.1	8
14:12:42	126.1	4.3	56.4	12
14:13:42	126.1	5.3	110.0	17
14:14:42	126.2	6.3	164.4	21
14:15:42	126.1	7.3	231.6	26
14:16:42	126.1	8.3	288.4	31
14:17:42	126.1	9.3	350.4	36
14:18:42	126.2	10.3	404.4	40
14:19:42	126.2	11.3	463.3	45
14:20:42	126.2	12.3	522.3	49
14:21:42	126.2	13.3	584.0	54
14:22:42	126.2	14.3	645.1	59
14:22:46	126.2	14.4	650.1	59
14:22:51	126.2	14.6	661.5	60

Step Gas Usage

ID	Gas	Drum S/N	Lot Number	Usage Value
511	EO	E001214	UTLX902730L16	60lbs

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:12:10		00:06:27 - 00:25:48
Elapsed Phase Time	Final	00:12:10		n/a - N/A
TempAve	Min	126.1	°F	120.0 - 130.0 °F
TempAve	Max	126.2	°F	120.0 - 130.0 °F
PCurr	Final	14.6	inHg	13.9 - 15.9 inHg
PCurr	Final	14.6	inHg	n/a - 14.9 inHg
AT-EO	Final	661.5	mg/l	N/A - N/A mg/l
EO Weight Used	Final	60	lbs	N/A - N/A lbs

10. Phase » EO Dwell

(Phase No.7)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO	[lbs] EO Weight Used	[mg/l] AT-AH	[%] RH Sensor
13-Dec-16						
14:22:51	126.2	14.6	661.6	0	N/A	N/A
14:23:16	126.2	14.5	672.9	0	N/A	N/A
SYS Chamber was placed in hold mode while running Run ID 304143 at phase no. 7 - 0						
OPR Operator has requested hold mode						
14:23:52	126.1	14.5	676.9	0	N/A	N/A
14:24:52	126.1	14.5	672.9	0	N/A	N/A
14:25:52	126.0	14.4	673.0	0	N/A	N/A
14:26:52	126.0	14.4	672.9	0	N/A	N/A
14:27:52	125.9	14.4	673.9	0	N/A	N/A
14:28:52	125.9	14.4	684.4	0	N/A	N/A
14:29:52	125.8	14.4	672.9	0	N/A	N/A
14:30:52	125.7	14.4	673.0	0	N/A	N/A

...

10. Phase » EO Dwell

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	04:26:52		00:59:00 - 05:00:00
Elapsed Phase Time	Final	04:26:53		n/a - N/A
TempAve	Min	124.1	°F	120.0 - 130.0 °F
TempAve	Max	126.2	°F	120.0 - 130.0 °F
PCurr	Min	14.4	inHg	14.0 - 16.0 inHg
PCurr	Min	14.4	inHg	n/a - 14.9 inHg
PCurr	Max	14.6	inHg	14.0 - 16.0 inHg
PCurr	Max	14.6	inHg	n/a - 14.9 inHg
RH from AH Calc	Min	N/A	%	N/A - N/A %
RH from AH Calc	Max	N/A	%	N/A - N/A %
AT-AH	Min	N/A	mg/l	N/A - N/A mg/l
AT-AH	Max	N/A	mg/l	N/A - N/A mg/l
AT-EO	Min	661.6	mg/l	N/A - N/A mg/l
AT-EO	Max	684.5	mg/l	N/A - N/A mg/l
EO Weight Used	Final	0	lbs	N/A - N/A lbs

11. Phase » Vacuum

(Phase No.8)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure
13-Dec-16		
18:49:43	124.5	14.5
SYS Cycle has entered EO-Abort sequence while running Run ID 304143 at phase no. 8 - 0		
18:50:44	124.5	12.7
18:51:44	124.5	11.0
18:52:44	124.5	9.4
18:53:44	124.4	8.1
18:54:44	124.3	6.9
18:55:44	124.3	6.0
18:56:44	124.4	5.2
18:57:44	124.4	4.5
18:58:44	124.4	3.9
18:59:44	124.5	3.4
19:00:41	124.5	3.0
19:00:42	124.5	3.0

Device	Summary	Summary Value		Specified Range
Current Phase Time	Final	00:10:59		00:02:51 - 00:20:00
Elapsed Phase Time	Final	00:10:59		n/a - N/A
TempAve	Min	124.3	°F	120.0 - 130.0 °F
TempAve	Max	124.5	°F	120.0 - 130.0 °F
PCurr	Final	3.0	inHg	2.5 - 3.5 inHg
PCurr	Final	3.0	inHg	n/a - N/A inHg

12. Phase » Nitrogen Inject

(Phase No.9 - 1)

Date / Time	[°F] Avg. Chamber Gas Temp	[inHg] Current Pressure	[mg/l] AT-EO

Report Summary

Total number of steps: 13

Gas Usage Summary

Gas	Usage Value
EO	60 lbs

Deviations

Total Number of deviations: 0

All dates are expressed in the timezone: (UTC) Coordinated Universal Time

STERIGENICS
7775 S QUINCY ST
WILLOWBROOK, IL 60527
1-630-654-5151
CHAMBER NO.2

JC 12 DEC 16

DATE	12/12/16 Mon	CYCLE 751		STERILANT	EO
PROG VERSION	KORSCP V3Q-4			CHECK VALUE	22130
RUN NUMBER	1860427			OPERATOR	R CASTELLANO

12D3014

CUSTOMER	MAINTENANCE
LOT NO.	ENG #1-12DEC2016
QUANTITY	NA
PRODUCT	NA

IRRENT TANK: LOT # E001579UTLX902730L16, TARE 266.0 LB
:ALE WEIGHT 355.0 LB, STERILANT LEFT 84.0 LB

PROCESS PARAMETERS

CHAMBER TEMP	125 F, COOL AT 135 F, BLOWER IS USED, ALARM REPETITION 15:00 MM:SS
VACUUM A	2.0 INHGA, 2.01 INHG/MIN, REQD 3.0 INHGA
LEAK TEST	0:05 HH:MM, TOLERANCE 0.2 INHG
NITROGEN DILUTION	2 CYCLES; NITROGEN: 24.0 INHGA, 1.51 INHG/MIN EVAC: 2.0 INHGA, 2.01 INHG/MIN
GAS A	1 CYCLES; INJ: 14.4 INHGA, 1.00 INHG/MIN, EO
GAS DWELL	14.4 INHGA, -0.2 INHG, DWELL 1:00 HH:MM
AFTER VACUUM	3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN, REQD 3.5 INHGA
GAS WASH A	3 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, NITR VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN REQD 3.5 INHGA
GAS WASH B	1 CYCLES RLS: 23.0 INHGA, 1.51 INHG/MIN, AIR VAC: 3.0 INHGA OR 0:45 HH:MM, 2.01 INHG/MIN REQD 3.5 INHGA
RELEASE	28.0 INHGA, 1.51 INHG/MIN

TIME	PRESS INHGA	TEMP (DEG F) AVG	RH %	VAP ETO GAS MG/L	H2O MG/L	ALARMS & MESSAGES				ACTION TAKEN			
5:31	OPERATOR SENSOR CHECK --			PR	99.8,	RH	121,	JWT	128,	VLT	81,	VGX	107
	CT1	124,	CT2	122,	CT3	124,	P01	122,	P02	80,	P03	80,	P04 80
	P05	80,	P06	80,	P07	80,	P08	80,	P09	80,	P10	80,	P11 80
	P12	80,	P13	80,	P14	80,	P15	80,	P16	80,	P17	80,	P18 80
	P19	80,	P20	80,	ETO	0,	H2O	14.0,	WT	355.0			
5:45	OPERATOR SENSOR CHECK --			PR	99.8,	RH	121,	JWT	131,	VLT	81,	VGX	107
	CT1	124,	CT2	121,	CT3	123,	P01	122,	P02	81,	P03	81,	P04 81
	P05	81,	P06	81,	P07	81,	P08	81,	P09	81,	P10	81,	P11 81
	P12	81,	P13	81,	P14	81,	P15	81,	P16	81,	P17	81,	P18 81
	P19	81,	P20	81,	ETO	0,	H2O	15.7,	WT	355.0			
6:14	OPERATOR SENSOR CHECK --			PR	99.8,	RH	121,	JWT	132,	VLT	81,	VGX	109
	CT1	127,	CT2	123,	CT3	126,	P01	124,	P02	81,	P03	81,	P04 81
	P05	81,	P06	81,	P07	81,	P08	81,	P09	81,	P10	81,	P11 81
	P12	81,	P13	81,	P14	81,	P15	81,	P16	81,	P17	81,	P18 81
	P19	81,	P20	81,	ETO	0,	H2O	19.9,	WT	354.9			

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/18/2018 6:50:35 PM
To: Ogulei, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3e66fb31cd74edb89554389d19d6977-DOgulei]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]
Subject: FW: EtO Sterigenics

Many thanks, David.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Ogulei, David
Sent: Monday, June 18, 2018 1:41 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: EtO Sterigenics

Alexis,

Deliberative Process / Ex. 5

Permit No.	*Date Issued*	Subject
05120010	02/09/2006	Control Device Removal from Backvent
09020021	02/09/2009	Alternative Mode of Emission Control for the Aeration Rooms
11050010	08/04/2011	Sterilization Chambers
12090024	11/28/2012	New Process Boiler

From: Cain, Alexis
Sent: Monday, June 18, 2018 1:07 PM

To: Ogulei, David <Ogulei.David@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: EtO Sterigenics

David—please note the question Deliberative Process / Ex. 5
Deliberative Process / Ex. 5
Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, June 18, 2018 12:41 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: EtO Sterigenics

Some responses to the questions below before I leave for the day.

From: Cain, Alexis
Sent: Monday, June 18, 2018 11:57 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: FW: EtO Sterigenics

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Monday, June 18, 2018 11:56 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: EtO Sterigenics

FYI. Questions to prepare for Wed.
-Ed

From: Payne, James
Sent: Monday, June 18, 2018 11:03 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>
Subject: RE: EtO Sterigenics

Thanks Ed. Very helpful. And would welcome input below. Jim

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Nam, Ed
Sent: Monday, June 18, 2018 8:32 AM
To: Thiede, Kurt <thiede.kurt@epa.gov>; Payne, James <payne.james@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Compher, Michael <compher.michael@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Williams, Felicia <Williams.Felicia@epa.gov>; Martinez, Isidra <Martinez.Isidra@epa.gov>
Cc: Mooney, John <Mooney.John@epa.gov>; Breneman, Sara <breneman.sara@epa.gov>; Cohen, Eric <cohen.eric@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Subject: RE: EtO Sterigenics

Felicia, Isidra,

Attached is the briefing for the RA on Ethylene Oxide and Sterigenics.
This briefing is consistent with the elevation policy. We will present this in lieu of general, so we can cancel the general in the following hour.

Thanks
-Ed

-----Original Appointment-----
From: Thiede, Kurt
Sent: Tuesday, June 12, 2018 1:15 PM
To: Thiede, Kurt; Payne, James; Nam, Ed; Furey, Eileen; Cain, Alexis; Siegel, Kathryn; Bollweg, George; Compher, Michael; Olson, Erik; Shaffer, Loretta; Nwia, Jacqueline; Sieffert, Margaret
Subject: EtO Sterigenics
When: Wednesday, June 20, 2018 10:00 AM-10:45 AM (UTC-06:00) Central Time (US & Canada).
Where: RA's Large Conf. Rm.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/11/2017 7:49:24 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: EtO Risk Sources Outreach Strategy
Attachments: Strategy for Outreach on Ethylene Oxide Possible Risk Cases.docx

The RA and DD have both asked us to prepare a "strategy" for informing stakeholders about possible risk from EtO sources in Illinois. I'm not sure how elaborate this strategy needs to be, but in any case, I've taken a first crack at in in the attached. Please let me know what you think.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/21/2018 3:54:43 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FAQ
Attachments: FAQ.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/26/2018 3:18:50 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Technical Conference

The agenda I proposed to Sterigenics was:

-Introductions
-Questions from Sterigenics for EPA about modeling and monitoring, if any
-Timeline for construction project
-Estimated emissions after construction project
-Potential future monitoring/stack rests
-EPA questions for Sterigenics (modeling parameters-- description and location of emissions points, exit velocities and potential fugitive emissions sources-- we will try to get you some questions tomorrow)
-Future meetings

Kathleen doesn't seem to be requesting any changes.

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Monday, June 25, 2018 6:06 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Technical Conference

Thank you for the note and proposed agenda. Sorry for not responding sooner but I have been in meetings most of the day.

I can make this technical conference time period and look forward to the discussions. It will just be Kevin Wagner and myself attending this call although I hope to have some questions from our consultants on the modelling and samplings. I do not intend to bring any counsel to this meeting.

Regards,
Kathy

From: Cain, Alexis [mailto:cain.alexis@epa.gov]
Sent: Monday, June 25, 2018 11:11 AM
To: Hoffman, Kathy
Subject: RE: Technical Conference

Hi Kathy—I hope you had a good weekend. We'd like to schedule the conference call for 11-12:30 on Wednesday. I'll send an appointment with conference call information. Please let me know who you will be including from Sterigenics, and in particular whether you will include counsel. You are welcome to do so of course; I will not invite our counsel unless yours will be participating.

Here's a draft agenda for the meeting; I welcome your input. If you have questions that you'd like us to answer on the call, it would be great if you could provide them in advance. We'll try to provide some specific questions for you tomorrow.

-Introductions
-Questions from Sterigenics for EPA about modeling and monitoring, if any
-Timeline for construction project
-Estimated emissions after construction project
-Potential future monitoring/stack rests
-EPA questions for Sterigenics (modeling parameters-- description and location of emissions points, exit velocities and potential fugitive emissions sources-- we will try to get you some questions tomorrow)
-Future meetings

Thanks!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Friday, June 22, 2018 4:58 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: Technical Conference

Per our discussion this afternoon, following are some time periods next Wednesday and Thursday for an hour call to discuss technical details of this project:

- Wednesday: Anytime from 11am to 2pm
- Thursday: Anytime from 11 to 2:30pm

I am also working with Ramboll to review your EO monitoring and modelling studies. They may have some technical questions on these studies. I have suggested that they provide me a list of any questions and that I can bring this list to our technical conference call too.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/28/2018 6:22:55 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: RE: Sterigenic modeling -Round # 2 - Support permit -

Very interesting, Phuong. Thanks!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Thursday, June 28, 2018 9:32 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: Sterigenic modeling -Round # 2 - Support permit -

Alexis- Below is a summary of the modeling requested by Genevieve last week. Please let me know if you have any questions before I forward it to her. Thanks.
****

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Phuong

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/21/2018 3:46:38 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Damico, Genevieve [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d289d99160143fdafee7039dc99807a-GDamico]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]

Subject: Sterigenics Permit
Location: Katie's Office

Start: 6/21/2018 7:00:00 PM
End: 6/21/2018 7:30:00 PM
Show Time As: Tentative

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 7/17/2018 2:51:47 PM
To: Patel, Shilpa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c0b02a557a1459689e1b7c5e1603631-Shpatel]

Subject: Canceled: Sterigenics Meeting
Location: Meet in Lobby no later than 9:10

Start: 7/18/2018 2:10:00 PM
End: 7/18/2018 6:10:00 PM
Show Time As: Free

Importance: High

Since GSA vehicles aren't available, I will drive a rental minivan to the Clark Street entrance at 9:10, so that we can make it to Willowbrook by 10:00. Please let me know if you don't plan to go, or if you plan to get there on your own.

Sterigenics will provide safety equipment, but they recommend that we bring our own steel toed shoes.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/28/2018 5:30:06 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: FW: June 27 EPA/IEPA/Sterigenics meeting
Attachments: ATT00001.txt; WB Backvent Project - Emission Summary - June 2018.xlsx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, June 28, 2018 11:58 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Wagner, Kevin <KWagner@sterigenics.com>
Subject: RE: June 27 EPA/IEPA/Sterigenics meeting

Ed:

Thank you for coordinating the call and the follow-up notes.

Attached is a summary of the Willowbrook emissions before and after the backvent connection project that we discussed. The top part of the spreadsheet estimates the maximum potential to emit, using permitted usage amounts and required control efficiencies. The bottom part of the spreadsheet estimates the actual emissions, using current 2017 usage amounts and the control efficiencies from the last compliance test. Both portions of the spreadsheet include our process emissions as well as an estimate of the fugitive emissions.

In addition, I wanted to reiterate our projected timeline for the backvent connection construction project. As indicated during the call yesterday, we estimate that this project will take from 4 to 6 weeks from yesterday. I will provide weekly updates to you on this project.

We are working on the other commitments we agreed to during the meeting.

Let me know if you have any questions on the information provided.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650

Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, June 28, 2018 10:09 AM
To: Hoffman, Kathy
Cc: Cain, Alexis; Siegel, Kathryn; Armitage, Julie; Rountree, Jillian
Subject: June 27 EPA/IEPA/Sterigenics meeting

Kathy,

Thank you again for your participation in a first, very productive conference call. We look forward to future meetings, including a presentation and a tour of the Willowbrook facility.

Here is our understanding of the commitments that we made on the call to provide information to you:

- The met data collected during our monitoring efforts in May 2018
- The met data used in the modeling
- The modeling plot files

Alexis Cain provided these in a separate email. Please let me know if there are remaining questions we can address.

Here is our understanding of the commitments that you made to provide information to us:

- Emissions calculations, including fugitive emissions (before and after construction)
- A review of the modeling parameters we used
- A review of the proposed OAQPS monitoring plan
- A description of operations, process flow, cycle times, facility map
- A timeline for the construction project, when available.

My staff will be in contact about scheduling a next meeting and tour.

Thank you,
-Ed

-Edward Nam, PhD
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/21/2017 2:08:19 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Dunning, Angeline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d8a0b23d55264c3ba495ecd2fb35c28c-ADunning]
Subject: FW: EtO Letters
Attachments: Ele EtO letter.doc; Sterigenics EtO letter .doc

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, December 21, 2017 7:48 AM
To: Dunning, Angeline <dunning.angeline@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>
Subject: EtO Letters

Per Katie's recent email, here are 2 letters that need to be mailed by tomorrow. Please review for correct style. I will stop by and sign a concurrence sheet so the letters once ready can be sent through the signature chain.

Thanks, Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/21/2018 3:14:56 PM
To: Colvin, Charles [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c545c36562d04373add64046e1c419a7-CColvin]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; Glover, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3e2fa892e38e45a9a65ce871242e8c62-JGlover]
Subject: RE: Meeting Time / Location: FW: Draft internal talking points

See you there.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Colvin, Charles
Sent: Thursday, June 21, 2018 10:07 AM
To: Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Glover, John <Glover.John@epa.gov>
Subject: Meeting Time / Location: FW: Draft internal talking points

How about we meet in ESB's conference room, 13th floor, about 11 AM? It's in the same space as the fleet commander kiosk, south end of building. From the elevators, the keycard reader is on the left side and the entry door on the right. I'll have my laptop plugged into the monitor so we can look at things.

Marc

Charles Marcom "Marc" Colvin, Chief
Employee Services Branch
U.S. EPA Region 5
77 West Jackson Blvd., MSF-13J
Chicago, IL 60604
312-886-0138

From: Glover, John
Sent: Thursday, June 21, 2018 9:03 AM
To: Colvin, Charles <Colvin.Charles@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sanders, Amy <Sanders.Amy@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: Re: Draft internal talking points

Between 11 and 12 will work for me.

John Glover
Regional Safety Manager
U. S. EPA Region 5
312-886-5301
312-617-4163 mobile

On Jun 21, 2018, at 8:53 AM, Colvin, Charles <Colvin.Charles@epa.gov> wrote:

That's good. I'll reach out later and we can pick a room and time after I check with JG on his avail.

From: Cain, Alexis
Sent: Thursday, June 21, 2018 8:51 AM
To: Colvin, Charles <Colvin.Charles@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sanders, Amy <Sanders.Amy@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Glover, John <Glover.John@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: RE: Draft internal talking points

Yes. Some time between 10 and 12 would be best for me, and I'd like to include George Bollweg.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Colvin, Charles
Sent: Thursday, June 21, 2018 8:27 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sanders, Amy <Sanders.Amy@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Glover, John <Glover.John@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: RE: Draft internal talking points

Hi Alexis,

Do you have a few minutes to meet up this morning to discuss the standards with John G. and myself? There are a variety of occupational health standards not mentioned in the summary and perhaps we should look them all over together and decide whether to include?

From: Cain, Alexis
Sent: Thursday, June 21, 2018 8:01 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Sanders, Amy <Sanders.Amy@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Colvin, Charles <Colvin.Charles@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Glover, John <Glover.John@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: RE: Draft internal talking points

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Wednesday, June 20, 2018 7:01 PM
To: Sanders, Amy <Sanders.Amy@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Colvin, Charles <Colvin.Charles@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Glover, John <Glover.John@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: RE: Draft internal talking points

Please find ARD's comments on the talking points attached. Let us know if you have any questions. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

From: Sanders, Amy
Sent: Wednesday, June 20, 2018 4:59 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Newton, Cheryl <Newton.Cheryl@epa.gov>; Colvin, Charles <Colvin.Charles@epa.gov>; Sharon, Scott <sharon.scott@epa.gov>; Glover, John <Glover.John@epa.gov>; Short, Thomas <short.thomas@epa.gov>; Zamora-Ceballos, Maria <Zamora-Ceballos.Maria@epa.gov>
Subject: FW: Draft internal talking points

Alexis/Katy—we appreciate any edits you make so that you are comfortable with this, while avoiding being overly alarmist. Please cc the whole group.

Marc/John—expect some edits from Katy/Alexis—they will use red font/lineout to show changes. If you disagree with any edits, please call Katy/Alexis to discuss and get everyone comfortable with messaging.

Jeff—I'm about to leave for the weekend. Scott is happy to make the call to make a call to the union (at any time that you'd like on the communication schedule.. AKA Tick Tock).

Scott—the message to Mike Mikulka should be Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 cc'ing Maria as she's the acting LER Supervisor.

Internal talking points:

- Region 5 takes safety concerns seriously.

Deliberative Process / Ex. 5

- There are two primary worker exposure limits we can compare this ambient level to – one is OSHA's permissible exposure limit (PEL) and the other is the National Institute of Occupational Safety and Health (NIOSH) recommended exposure limit (REL).
- For ethylene oxide, the OSHA PEL is 1800 ug/m^3. The NIOSH REL is 180 ug/m^3.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/17/2018 2:16:59 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: Flir Camera
Attachments: ATT00001.txt

I guess that's that, at least for this visit, right?

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Monday, July 16, 2018 10:10 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>
Subject: Flir Camera

I reviewed the Flir camera in a little more detail on the internet and with our Engineering Department. This seems to be a thermal imaging camera. We are familiar with such cameras and use them periodically to test for hot spots in our electrical equipment at the EO facilities. At this point in time, we do not think they will be beneficial to us for measuring potential EO sources. Let's proceed with our visit and tour this week and we can revisit the topic if you feel differently.

I am looking forward to seeing you on Wednesday at 10am.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Data Review Report

Printed: 05/21/2018 12:39 pm

Analysis	Analyte	CalResult	True Value	% D	% Rec
Lab ID: 1805055-CAL1 Cal Standard					
TO-15 2018 Ethylene Oxide	Ethylene oxide	0.24	0.250	-3.00	97.00
Lab ID: 1805055-CAL2 Cal Standard					
TO-15 2018 Ethylene Oxide	Ethylene oxide	0.43	0.500	-14.41	85.59
Lab ID: 1805055-CAL3 Cal Standard					
TO-15 2018 Ethylene Oxide	Ethylene oxide	0.88	1.00	-11.61	88.39
Lab ID: 1805055-CAL4 Cal Standard					
TO-15 2018 Ethylene Oxide	Ethylene oxide	2.68	2.50	7.26	107.26
Lab ID: 1805055-CAL5 Cal Standard					
TO-15 2018 Ethylene Oxide	Ethylene oxide	5.23	5.00	4.60	104.60

5-11-18

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/3/2018 3:13:56 PM
To: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]
Subject: Cain, Alexis shared "QuestionsfromVillageofWillowbrook_received9.18.18" with you.

Here's the document that Cain, Alexis shared with you.

This link only works for the direct recipients of this message.

QuestionsfromVillageofWillowbrook_received9.18.18

Open

Microsoft OneDrive

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/8/2018 7:44:09 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
CC: Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]

Hi Margaret and Jackie—I know that you're working on putting together a report to AECAB on the evidence of cancer risk caused by Sterigenics. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Have a good weekend!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/15/2018 9:11:27 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: FW: EtO briefing for 6/20 meeting
Attachments: 2018 June 20 RA EtO Briefing_EN.DOCX

The final version (I hope). Ed also wants us to bring handouts of a full-page map to the briefing, to show monitoring locations and levels, demonstrating proximity of neighborhood to facility.

Thanks!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, June 15, 2018 4:09 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: EtO briefing for 6/20 meeting

Here ya go.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Friday, June 15, 2018 3:28 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: RE: EtO briefing for 6/20 meeting

Thanks looks good. I've made some comments and suggestions.

Thanks
-Ed

From: Siegel, Kathryn
Sent: Friday, June 15, 2018 2:59 PM
To: Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Shaffer, Loretta <Shaffer.Loretta@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; King, Suzanne <king.suzanne@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Compher, Michael <compher.michael@epa.gov>
Subject: EtO briefing for 6/20 meeting

Ed, Eileen and Loretta,

Please find the EtO briefing for our 6/20 meeting with Kurt and Jim attached. Let us know if you have any questions. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/1/2018 12:43:45 PM
To: Deborah Stone1 (Environment and Sustainability) [Deborah.Stone@cookcountyil.gov]
CC: Kevin Schnoes1 (Environment and Sustainability) [Kevin.Schnoes@cookcountyil.gov]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: sterigenics -

Hi Deb-- I'd be happy to talk with you about this, but today might not be possible, because I'm busy with the "Affordable Clean Energy Energy" hearings. Tomorrow at 11:00 would work for me.

Facility enforcement histories are available through https://echo.epa.gov/ Unfortunately, the site seems to be down right now.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Deborah Stone1 (Environment and Sustainability) [mailto:Deborah.Stone@cookcountyil.gov]
Sent: Friday, September 28, 2018 5:28 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Kevin Schnoes1 (Environment and Sustainability) <Kevin.Schnoes@cookcountyil.gov>
Subject: FW: sterigenics -

Hi Alexis,
Thank you so much for the helpful information this week.
Here is the list I mentioned of sites within Cook County we noticed that have/may have EtO.

1. Does the USEPA know of other sites within Cook County?
2. Can you tell us if you have cited any violations in any of these facilities or have ongoing actions or anything else we should be aware of?

That would be most helpful.

Also, I am hoping we can set up a call with you (and others if that's appropriate) and a few folks here, basically to understand the numbers. For a non-expert like me, I'm trying to understand scale. We don't have visibility into numbers outside Cook, so I can't compare the data on the attached spreadsheet to Sterigenics.
Also you mentioned limitations in the measuring devices – it would be helpful to have some way to understand the scale of

a) The sites in Cook County and Sterigenics (then and now, or the data used for the modeled cancer risk vs. what we should see shortly from IEPA)
b) The now-understood cancer risk, and
c) The limitations of the measuring devices

And where they all fall relative to each other.

I can shoot you some potential dates Monday but feel free to suggest.
Thank you again,
Deborah Stone
Director
Cook County Department of Environment and Sustainability

312-603-8204

From: Kevin Schnoes1 (Environment and Sustainability)
Attached is a list of facilities that reported having ETO on their facility during 2016 or 2017. Three facilities reported for 2016 or 2017. I also included in the list facilities that may have a mixture of ETO at their facility in 2016 or 2017. I say "may" because they used a chemical synonym (Oxirane) instead of ETO, and also reported it as a mixture.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/28/2018 2:58:45 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]
CC: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Olson, Erik [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b05e7846315e4bf4b9d0df0afdb3eb43-EOlson02]; Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]; Biggs, Christopher [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2a627bf68c7f4b9188524bcb13979737-Biggs, Chri]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: RE: Follow-up message for Sterigenics

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 Here's my suggestion for a revised message:

Deliberative Process / Ex. 5

My staff will be in contact about scheduling a next meeting and tour.

Alexis Cain

USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Thursday, June 28, 2018 9:48 AM
To: Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Biggs, Christopher <biggs.christopher@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Follow-up message for Sterigenics

Thanks for drafting this. It looks good. I checked my notes and added a few things in red. Let me know if you concur with changes.

Thanks
-Ed

From: Cain, Alexis
Sent: Wednesday, June 27, 2018 1:59 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Olson, Erik <olson.erik@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>; Biggs, Christopher <biggs.christopher@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: Follow-up message for Sterigenics

Ed—here is our proposed follow-up message for you to send to Sterigenics. Let me know if you'd prefer it to come from me.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/2/2018 6:25:32 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Rountree, Jillian [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d304e5e55a54908b24b17e57ecdbf3c-JRountre]
Subject: RE: ETO R5 latest draft.edits.docx

Right. I see that now. I was looking for it in the wrong place.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Tuesday, October 02, 2018 1:24 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

Deliberative Process / Ex. 5

-Ed

From: Cain, Alexis
Sent: Tuesday, October 02, 2018 1:14 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018

cain.alexis@epa.gov

From: Cain, Alexis
Sent: Tuesday, October 02, 2018 11:51 AM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Rountree, Jillian <Rountree.Jillian@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

Here's the link.

https://www.epa.gov/il/sterigenics-willowbrook-facility

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Tuesday, October 02, 2018 10:18 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Fwd: ETO R5 latest draft.edits.docx

FYI. Site is now live.

Thanks for all of you for Helping put it together.

Ed

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 2, 2018 at 10:15:18 AM CDT
> **To:** "Nam, Ed" <nam.ed@epa.gov>
> **Cc:** "Deamer, Eileen" <deamer.eileen@epa.gov>
> **Subject: RE: ETO R5 latest draft.edits.docx**
>
> Eileen is preparing to notify everyone who attended the meeting on Friday.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
>
> ---
>
> **From:** Nam, Ed
> **Sent:** Tuesday, October 02, 2018 10:13 AM
> **To:** Kelley, Jeff <kelley.jeff@epa.gov>
> **Subject:** Re: ETO R5 latest draft.edits.docx

Great! How are we notifying the stakeholders and how can we help?

Thanks
Ed

Sent from my iPhone

On Oct 2, 2018, at 9:39 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> The site is live, but Kristen and Yvette are making some revisions … they can go through these edits together.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
>
> ---
>
> **From:** Nam, Ed
> **Sent:** Tuesday, October 02, 2018 9:37 AM
> **To:** Kelley, Jeff <kelley.jeff@epa.gov>
> **Subject:** Fwd: ETO R5 latest draft.edits.docx
>
> Jeff
>
> Eileen had a few more edits if there is Still time. Any estimate on when website will go live?
>
> Thanks
> Ed
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Furey, Eileen" <furey.eileen@epa.gov>
>> **Date:** October 1, 2018 at 5:59:38 PM CDT
>> **To:** "Sieffert, Margaret" <Sieffert.Margaret@epa.gov>, "Nam, Ed" <nam.ed@epa.gov>, "Siegel, Kathryn" <siegel.kathryn@epa.gov>, "Cain, Alexis" <cain.alexis@epa.gov>
>> **Subject: RE: ETO R5 latest draft.edits.docx**
>>
>> And I made a very few punctuation and grammar changes, and a very few language tweaks. I also tried to make the capitalization scheme for the headings consistent, although I'm not sure I totally succeeded at that.
>>
>> Eileen
>>
>> Eileen L. Furey
>> Deputy Director
>> Air and Radiation Division

U.S. EPA Region 5
(312) 886-7950

From: Sieffert, Margaret
Sent: Monday, October 01, 2018 4:05 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

Attached I added my comments to yours.

-Margaret

From: Nam, Ed
Sent: Monday, October 01, 2018 3:47 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

I accepted changes and made a few minor edits to typos and formatting issues.

From: Nam, Ed
Sent: Monday, October 01, 2018 3:37 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Kathryn Siegel (siegel.kathryn@epa.gov) <siegel.kathryn@epa.gov>; Alexis Cain (cain.alexis@epa.gov) <cain.alexis@epa.gov>
Cc: Eileen Furey (furey.eileen@epa.gov) <furey.eileen@epa.gov>
Subject: FW: ETO R5 latest draft.edits.docx

Please review asap (we have minutes). HQ wants the website live today.

From: Kelley, Jeff
Sent: Monday, October 01, 2018 3:33 PM
To: Pina, Yvette <pina.yvette@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>
Subject: FW: ETO R5 latest draft.edits.docx

Yvette, could you make these revisions to the Sterigenics page as soon as possible. Ed, please flag anything you see that is problematic. After revisions get made, we'll need to run this past HQ public affairs.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Davis, Alison
Sent: Monday, October 01, 2018 3:28 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Bremer, Kristen <Bremer.Kristen@epa.gov>
Subject: ETO R5 latest draft.edits.docx

Jeff, per our discussion. Edits for consistency with national page, updates to some info, reflect recent letters, reflect Friday meeting.
-AD

Alison Davis
Acting Director
Policy Analysis & Communications Staff
US EPA, Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711
Desk: 919-541-7587
Mobile: 919-624-0872

<ETO R5 latest draft.edits_EN MS ELF.docx>

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/2/2018 8:23:51 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Other EtO sources in R5
Attachments: 2018July02-Draft-OtherEtOSources-RABriefing_ks.docx

I hate to add to the list, but could you also add a Sterigenics page?
Thanks

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Monday, July 02, 2018 3:01 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Bollweg, George <bollweg.george@epa.gov>
Subject: RE: Other EtO sources in R5

Thanks, Margaret and George…looks good!

I made comments in tracked changes in the Word document. I tried to make the NATA timeline and explanation of the High Risk Facility list a little clearer. Let me know what you think.

These are my notes on the PowerPoint deck:

Deliberative Process / Ex. 5

Let me know if it's easier to have a quick touchbase to talk through. Thanks!

From: Sieffert, Margaret
Sent: Monday, July 02, 2018 9:35 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Bollweg, George <bollweg.george@epa.gov>
Subject: Other EtO sources in R5

Alexis, I edited the documents based on George's and your comments. Please share with others.

-Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 1/30/2018 8:43:40 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Sterigenics

Sorry. Missed that!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Tuesday, January 30, 2018 2:34 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics

Thanks, I did have a line similar to yours (I highlighted it below) but it mentions a conference call but I think making it more simple likes yours is better and I will put it at the end of the email.

-Margaret

From: Cain, Alexis
Sent: Tuesday, January 30, 2018 2:31 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics

Looks good to me. Maybe add a "don't hesitate to contact me if you have any questions" line.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Tuesday, January 30, 2018 2:30 PM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>
Subject: FW: Sterigenics

Here is the email I drafted to send to Sterigenics to review the modeling information. Please let me know if I captured everything you requested Phuong and Alexis let me know if it makes sense as Kevin is not a modeler so I was trying to make it as simple as possible.

-Margaret

Kevin,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Thank you again for your assistance in reviewing the modeling parameters,
Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/20/2017 7:32:39 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: RE: Ele and Sterigenics letters
Attachments: Ele EtO letter AC comments.doc

I think that this looks good Margaret. Some minor edits attached on the Ele letter—I would have the equivalent edits on the Sterigenics letter. I don't think Peggy is usually in the review chain for letters like this (not controls). Of course, I don't object if she wants to review. Angeline should review for format, and she can print once we have concurrence through Katie.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, December 20, 2017 1:07 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: Ele and Sterigenics letters

Here are my draft letters. Before I print them I wanted to send them for review first and maybe we should send to Peggy? Let me know.

Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/25/2018 5:38:57 PM
To: Dunning, Angeline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d8a0b23d55264c3ba495ecd2fb35c28c-ADunning]
Subject: darien letter
Attachments: Darien Letter JH JK edit.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/30/2018 1:13:48 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: FW: Sterigenics Presentation
Attachments: ATT00001.txt; 18.07.18 - USEPA Process Overview Presentation - V2.pptx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Saturday, July 28, 2018 3:31 PM
To: Nam, Ed <nam.ed@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Sterigenics Presentation

Per our discussion yesterday, attached are the revised slides for my presentation.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/20/2018 9:01:32 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: Back of the envelope fugitives calculation
Attachments: Sterigenics Fugitives.xlsx

Hi Margaret—today I decided to estimate how much emissions might be caused by off-gassing of EtO as product is moved from chamber to aeration room. I had to make a lot of assumptions, so I'm not sure that this is worth anything, but here it is. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/2/2018 4:55:59 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
Subject: FW: ETO R5 latest draft.edits.docx

FYI—link is https://www.epa.gov/il/sterigenics-willowbrook-facility

There's also a page called "Regional Information on Ethylene Oxide." https://www.epa.gov/il/sterigenics-willowbrook-facility The only link is supposedly to a Sterigenics page, but the link doesn't work. https://www.epa.gov/il/sterigenics-willowbrook-facility-v1

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Tuesday, October 02, 2018 10:18 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Fwd: ETO R5 latest draft.edits.docx

FYI. Site is now live.

Thanks for all of you for Helping put it together.

Ed

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 2, 2018 at 10:15:18 AM CDT
> **To:** "Nam, Ed" <nam.ed@epa.gov>
> **Cc:** "Deamer, Eileen" <deamer.eileen@epa.gov>
> **Subject: RE: ETO R5 latest draft.edits.docx**
>
> Eileen is preparing to notify everyone who attended the meeting on Friday.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*

From: Nam, Ed
Sent: Tuesday, October 02, 2018 10:13 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Re: ETO R5 latest draft.edits.docx

Great! How are we notifying the stakeholders and how can we help?

Thanks
Ed

Sent from my iPhone

On Oct 2, 2018, at 9:39 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> The site is live, but Kristen and Yvette are making some revisions … they can go through these edits together.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
>
> **From:** Nam, Ed
> **Sent:** Tuesday, October 02, 2018 9:37 AM
> **To:** Kelley, Jeff <kelley.jeff@epa.gov>
> **Subject:** Fwd: ETO R5 latest draft.edits.docx
>
> Jeff
>
> Eileen had a few more edits if there is Still time. Any estimate on when website will go live?
>
> Thanks
> Ed
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Furey, Eileen" <furey.eileen@epa.gov>
>> **Date:** October 1, 2018 at 5:59:38 PM CDT
>> **To:** "Sieffert, Margaret" <Sieffert.Margaret@epa.gov>, "Nam, Ed" <nam.ed@epa.gov>, "Siegel, Kathryn" <siegel.kathryn@epa.gov>, "Cain, Alexis" <cain.alexis@epa.gov>
>> **Subject: RE: ETO R5 latest draft.edits.docx**
>>
>> And I made a very few punctuation and grammar changes, and a very few language tweaks. I also tried to make the capitalization scheme for the headings consistent, although I'm not sure I totally succeeded at that.

Eileen

Eileen L. Furey
Deputy Director
Air and Radiation Division
U.S. EPA Region 5
(312) 886-7950

From: Sieffert, Margaret
Sent: Monday, October 01, 2018 4:05 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

Attached I added my comments to yours.

-Margaret

From: Nam, Ed
Sent: Monday, October 01, 2018 3:47 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Furey, Eileen <furey.eileen@epa.gov>
Subject: RE: ETO R5 latest draft.edits.docx

I accepted changes and made a few minor edits to typos and formatting issues.

From: Nam, Ed
Sent: Monday, October 01, 2018 3:37 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Kathryn Siegel (siegel.kathryn@epa.gov) <siegel.kathryn@epa.gov>; Alexis Cain (cain.alexis@epa.gov) <cain.alexis@epa.gov>
Cc: Eileen Furey (furey.eileen@epa.gov) <furey.eileen@epa.gov>
Subject: FW: ETO R5 latest draft.edits.docx

Please review asap (we have minutes). HQ wants the website live today.

From: Kelley, Jeff
Sent: Monday, October 01, 2018 3:33 PM
To: Pina, Yvette <pina.yvette@epa.gov>
Cc: Nam, Ed <nam.ed@epa.gov>
Subject: FW: ETO R5 latest draft.edits.docx

Yvette, could you make these revisions to the Sterigenics page as soon as possible. Ed, please flag anything you see that is problematic. After revisions get made, we'll need to run this past HQ public affairs.

Jeff Kelley

Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Davis, Alison
Sent: Monday, October 01, 2018 3:28 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Bremer, Kristen <Bremer.Kristen@epa.gov>
Subject: ETO R5 latest draft.edits.docx

Jeff, per our discussion. Edits for consistency with national page, updates to some info, reflect recent letters, reflect Friday meeting.
-AD

Alison Davis
Acting Director
Policy Analysis & Communications Staff
US EPA, Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711
Desk: 919-541-7587
Mobile: 919-624-0872

<ETO R5 latest draft.edits_EN MS ELF.docx>

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/9/2018 4:43:17 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: EtO docs
Attachments: steregenics-web-outline-draft 8 9 18.docx; Sterigenics Talking points draft 8 9 18.docx

Here's a revision, adding a Q on ATSDR, changing the "topline message" and one other small edit.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Monday, August 06, 2018 3:38 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: EtO docs

I updated the talking points and web page but wasn't sure how to add the ATSDR part. Attached are both documents. You can review previous version with the comments on the sharepoint site.

-Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/25/2018 5:29:30 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: City of Darien - Sterigenics Willowbrook IL

Looks good to me.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Tuesday, September 25, 2018 11:57 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: City of Darien - Sterigenics Willowbrook IL

How about this?

Deliberative Process / Ex. 5

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Cain, Alexis
Sent: Tuesday, September 25, 2018 10:50 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: City of Darien - Sterigenics Willowbrook IL

Hi Jeff— Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Tuesday, September 25, 2018 9:12 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: City of Darien - Sterigenics Willowbrook IL

Here are the talking points that were developed on Friday:

Deliberative Process / Ex. 5

I notice a couple discrepancies from the draft letter ... for one thing, Deliberative Process / Ex. 5 Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Tuesday, September 25, 2018 9:03 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: City of Darien - Sterigenics Willowbrook IL

Thanks, I'll take a quick look

Jeff Kelley
Director, Office of External Communications

U.S. EPA Region 5
ph: 312-353-1159

From: Cain, Alexis
Sent: Tuesday, September 25, 2018 8:50 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: City of Darien - Sterigenics Willowbrook IL

Hi Jeff, Josh—would you like to weigh in on this letter to the Mayor of Darien before we send it? I've attached Darien's letter to us, FYI.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/21/2018 1:48:24 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Draft Sterigenics news release

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Thursday, June 21, 2018 8:34 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Draft Sterigenics news release

I'm not sure if this is completely clear, but how about:

Deliberative Process / Ex. 5

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Cain, Alexis
Sent: Thursday, June 21, 2018 8:11 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: RE: Draft Sterigenics news release

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Thursday, June 21, 2018 8:02 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>
Subject: RE: Draft Sterigenics news release

I got some feedback from Kurt last night … this version tries to combine your comments with his. Thoughts?

Deliberative Process / Ex. 5

###

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Cain, Alexis
Sent: Wednesday, June 20, 2018 6:56 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>
Subject: RE: Draft Sterigenics news release

This looks great. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Is sharing this with IEPA part of the tick tock?

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Kelley, Jeff
Sent: Wednesday, June 20, 2018 6:21 PM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Cc: Singer, Joshua <Singer.Joshua@epa.gov>
Subject: Draft Sterigenics news release

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

###

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/27/2018 3:45:19 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Sterigenics

Thanks. I'll be leaving at noon, on the road and unable to call. Look forward to hearing how it went on Monday.

Have a great weekend!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nam, Ed
Sent: Friday, July 27, 2018 10:44 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Sterigenics

Yah, we will mention it on the call with Mike Koerber and Kelly Rimer (OAQPS) this afternoon. They wanted to chat with us. I didn't invite you since I didn't think you could make it, but if that changes I can send a call in number.

-Ed

From: Cain, Alexis
Sent: Friday, July 27, 2018 10:27 AM
To: Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Sterigenics

Good call—the EOSA seems like a good organization to work with—i.e. to promote universal control of back vents at commercial EtO sterilizers. I would have been inclined to ask Kathy to make introductions, but maybe this is something to forward to HQ as an idea?

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/6/2017 8:55:33 PM
To: Kierys, Dawid [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=DKierys]
Subject: ETO sources
Attachments: ETO Sources 2014 NEI final v1.xlsx

FWIW, all of the ETO sources in the 2014 NEI above 10 pounds.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/28/2018 8:23:56 PM
To: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: FW: Shout out
Attachments: EPA rooftop canister samples with sterigenics in background.jpg; upwind canister sampling location 3.jpg

Revision w/ Margaret's edits below, and a couple of photos attached.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, September 28, 2018 1:14 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Shout out

Thanks for letting me edit. My comments are below.

From: Cain, Alexis
Sent: Friday, September 28, 2018 12:32 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: FW: Shout out

Hi Margaret—could you give this a once-over for accuracy, and to make sure it doesn't leave out anyone's significant contributions. I feel like maybe George was more involved in some ways than I'm portraying, but maybe not. Thanks!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Friday, September 28, 2018 12:00 PM
To: Furey, Eileen <furey.eileen@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: Shout out

Hi Eileen—here's a rough draft of a shout-out. If you think this is in the right direction, I'd like to share with Margaret to review for accuracy and who might be left out/slighted. I tried to be inclusive of staff who have helped (leaving out managers), and to bring in some of the non-Sterigenics EtO work—not sure if you'd prefer to limit it to Sterigenics.

Deliberative Process / Ex. 5

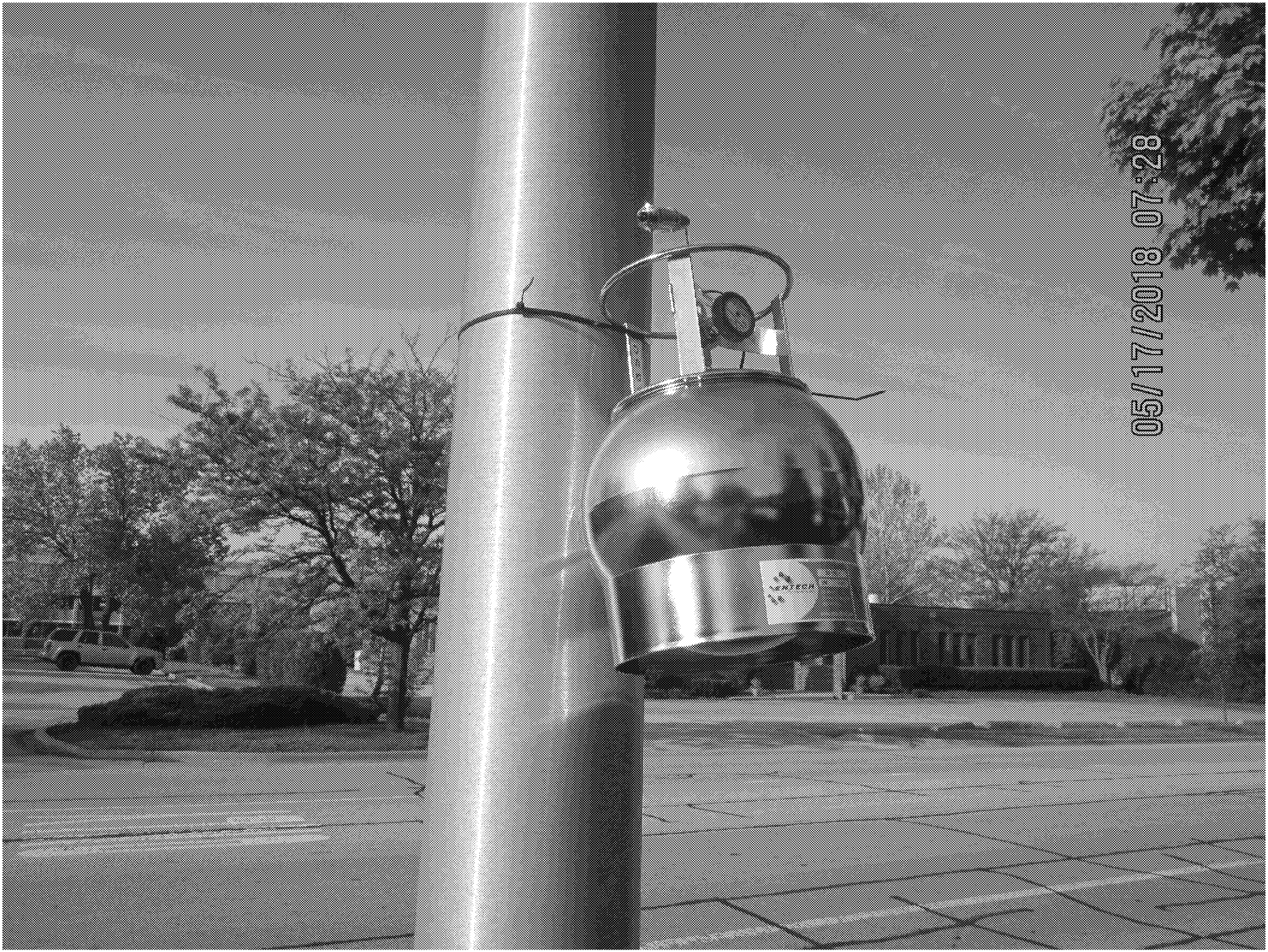
Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alexis Cain

USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

05/16/2018 06:57


05/17/2018 07:28

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/15/2018 7:42:26 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: RA briefing paper
Attachments: 2018 June 20 RA EtO Briefing v5_ks.docx

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Friday, June 15, 2018 2:32 PM
To: Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: RA briefing paper

Hi Alexis,

Look good. Deliberative Process / Ex. 5 Sending it to you first. Let me know if it's too simplistic now.

From: Cain, Alexis
Sent: Friday, June 15, 2018 2:04 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>; King, Suzanne <king.suzanne@epa.gov>
Subject: RE: RA briefing paper

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, June 14, 2018 12:04 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

I am ok with your suggested language changes.

From: Cain, Alexis
Sent: Thursday, June 14, 2018 11:55 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Hi Margaret—This all looks great to me, with two exceptions:

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Wednesday, June 13, 2018 3:47 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Sorry that wasn't the final version 4 as I changed a word after consulting with George.

From: Sieffert, Margaret
Sent: Wednesday, June 13, 2018 3:42 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

I edited based on your comments and added a short paragraph related **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

I am off at 12:30 tomorrow and all of Friday.

-Margaret

From: Siegel, Kathryn
Sent: Wednesday, June 13, 2018 12:21 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Great summary of this complex issue. Please find my edits and suggestions attached. Thanks!

From: Sieffert, Margaret
Sent: Wednesday, June 13, 2018 8:09 AM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RA briefing paper

Here is a draft paper.

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/6/2018 4:22:23 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]

Subject: Accepted: EtO Sterigenics
Location: Ed's Office

Start: 6/12/2018 2:00:00 PM
End: 6/12/2018 3:00:00 PM
Show Time As: Busy

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 6/15/2018 7:04:18 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Nwia, Jacqueline [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d299b56bd7ef46709fb7465fd1e15466-JNwia]; Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]; King, Suzanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8718f08e0b5343ec809b1c0f014cc2fa-SKing]
Subject: RE: RA briefing paper
Attachments: 2018 June 20 RA EtO Briefing v5.docx

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, June 14, 2018 12:04 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

I am ok with your suggested language changes.

From: Cain, Alexis
Sent: Thursday, June 14, 2018 11:55 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Cc: Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Hi Margaret—This all looks great to me, with two exceptions:

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5

(312) 886-7018
cain.alexis@epa.gov

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Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Sorry that wasn't the final version 4 as I changed a word after consulting with George.

From: Sieffert, Margaret
Sent: Wednesday, June 13, 2018 3:42 PM
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Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

I edited based on your comments and added a short paragraph related to the permit. Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

I am off at 12:30 tomorrow and all of Friday.

-Margaret

From: Siegel, Kathryn
Sent: Wednesday, June 13, 2018 12:21 PM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RE: RA briefing paper

Great summary of this complex issue. Please find my edits and suggestions attached. Thanks!

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Cc: Cain, Alexis <cain.alexis@epa.gov>; Nwia, Jacqueline <nwia.jacqueline@epa.gov>; Bollweg, George <bollweg.george@epa.gov>
Subject: RA briefing paper

Here is a draft paper.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/19/2017 5:01:23 PM
To: Furey, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
Subject: FW: Very rough draft EtO letter
Attachments: EtO letter v2.doc

Meant to cc you.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Cain, Alexis
Sent: Tuesday, December 19, 2017 11:00 AM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: Very rough draft EtO letter

Ed—here is a draft of the letter that we will send to Ele and Sterigenics.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/27/2018 3:31:18 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: Call with Sterigenics

Hi Margaret—we talked with Kathy Hoffman this morning. They have finished connecting the back vent and conducting tests of air flow. Project complete!
She wants to schedule 1 call to talk about her monitoring questions, stack testing methods, and modeling. We might want to see if the HQ stack testing people want to join us on the call.
She will inquire on Monday with her engineering staff about their interest in the IR camera.
She is very involved in the EOSA—the industry association. She was president for a long time. She suggested that there might be opportunities to address EtO issues on an industry-wide basis through them.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

Appointment

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 8/14/2018 12:35:34 PM
To: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]

Subject: FW: Rollout of Sterigenics data - Willowbrook
Location: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Start: 8/15/2018 7:00:00 PM
End: 8/15/2018 8:00:00 PM
Show Time As: Tentative

Any chance you could reschedule the Luverne call?

-----Original Appointment-----
From: Nam, Ed
Sent: Monday, August 13, 2018 4:46 PM
To: Nam, Ed; Glover, John; Durno, Mark; Newton, Cheryl; Short, Thomas; Siegel, Kathryn; Cain, Alexis; Furey, Eileen; Payne, James; Kelley, Jeff; Thiede, Kurt; Singer, Joshua; Johnson, Mark; Colledge, Michelle; Ballotti, Doug
Subject: Rollout of Sterigenics data - Willowbrook
When: Wednesday, August 15, 2018 2:00 PM-3:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1813A/R5-Metcalfe---18th-Floor

Hello,

I apologize for the short notice. We need to meet to discuss communication strategy with Willowbrook employees with the Sterigenics/Ethylene Oxide data release imminent.
We also need to discuss the communication of the results recently concluded by John Glover.
Not all of you are required at this meeting. You can delegate if you like.

Thanks,
-Ed

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/20/2018 3:17:57 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; King, Steven [Steven.King@Illinois.gov]; Mattison, Kevin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=userff092538]; Ogulei, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3e66fb31cd74edb89554389d19d6977-DOgulei]
Subject: RE: Today's Presentation
Attachments: CBI.DOCX; EtO Spectrum.gif

Ed—a suggested response to Kathy (thanks Margaret):

Deliberative Process / Ex. 5

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, July 18, 2018 6:42 PM
To: Cain, Alexis <cain.alexis@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Nguyen, Phuong <Nguyen.Phuong@epa.gov>; King, Steven <Steven.King@Illinois.gov>; Mattison, Kevin <Kevin.Mattison@Illinois.gov>; Ogulei, David <Ogulei.David@epa.gov>
Subject: Today's Presentation

It was nice meeting with all of you today at our Willowbrook facility. As promised during today's meeting, attached is my presentation. I hope this discussion and tour was helpful in better understanding our EO sterilization process and emissions. I look forward to continuing to work with you on this issue.

Let me know if you have any further questions.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 7/16/2018 4:38:02 PM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Ogulei, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3e66fb31cd74edb89554389d19d6977-DOgulei]; Patel, Shilpa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c0b02a557a1459689e1b7c5e1603631-Shpatel]

Subject: Sterigenics Meeting
Location: Meet in Lobby no later than 9:10

Start: 7/18/2018 2:10:00 PM
End: 7/18/2018 6:10:00 PM
Show Time As: Tentative

Since GSA vehicles aren't available, I will drive a rental minivan to the Clark Street entrance at 9:10, so that we can make it to Willowbrook by 10:00. Please let me know if you don't plan to go, or if you plan to get there on your own.

Sterigenics will provide safety equipment, but they recommend that we bring our own steel toed shoes.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 12/19/2017 3:22:10 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
CC: Bollweg, George [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1592106e02634bb2bda8cc788b125f2c-GBollweg]
Subject: RE: Modeling results for EtO emissions at Sterigenics

Thanks Phuong. **Deliberative Process / Ex. 5**

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Nguyen, Phuong
Sent: Tuesday, December 19, 2017 9:17 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Bollweg, George <bollweg.george@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: Modeling results for EtO emissions at Sterigenics

Hi Margaret,
Sorry for taking so long to get this done but hope this will help with the briefing tomorrow. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Let me know if you have any questions.

Phuong

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/2/2018 2:02:13 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Deamer, Eileen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f2d19c60656344f5b14361c0acc826d2-EDeamer]; Singer, Joshua [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f29c3a13f65447ae887edd3bdc89d77a-JSinge02]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: Willowbrook call

Me too

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Tuesday, October 02, 2018 8:55 AM
To: Deamer, Eileen <deamer.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Willowbrook call

I am fine with the response.

From: Deamer, Eileen
Sent: Tuesday, October 02, 2018 8:45 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Willowbrook call

Proposed Answer:

Deliberative Process / Ex. 5

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

From: Cain, Alexis
Sent: Monday, October 01, 2018 5:25 PM
To: Singer, Joshua <Singer.Joshua@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Sieffert, Margaret

<Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Willowbrook call

Sterigenics has 60 days from the completion of the stack tests to provide the stack test reports to Illinois EPA. They certainly can do them earlier than that. Illinois EPA can provide them to the public and us when they have them. Sterigenics has provided some preliminary, incomplete, information all ready.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Singer, Joshua
Sent: Monday, October 01, 2018 4:59 PM
To: Deamer, Eileen <deamer.eileen@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: RE: Willowbrook call

Eileen—A lot of ARD folks have been working on the ACE public hearing today.

Katie or Margaret or Alexis—Please help out Eileen with info when possible.

Thanks.

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069
singer.joshua@epa.gov

From: Deamer, Eileen
Sent: Monday, October 01, 2018 4:53 PM
To: Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Willowbrook call

Guys – I can't give her a call if I don't know what to tell her. What are we saying about when we might be able to share stack test results?

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

From: Deamer, Eileen
Sent: Monday, October 01, 2018 2:45 PM
To: Singer, Joshua <Singer.Joshua@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: RE: Willowbrook call

Do we know when the stack tests will be available yet?

Eileen Deamer
U.S. EPA Region 5
Congressional and Intergovernmental
(312) 886-1728

From: Singer, Joshua
Sent: Monday, October 01, 2018 8:38 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>
Subject: RE: Willowbrook call

Thanks, Margaret. I am looping in Eileen Deamer, the congressional liaison, regarding this inquiry from the LaGrange Village Manager. Eileen may ask ARD for assistance in responding. Thanks again.

Josh Singer
U.S. EPA, Region 5
phone: 312-353-5069
singer.joshua@epa.gov

From: Sieffert, Margaret
Sent: Monday, October 01, 2018 7:51 AM
To: Singer, Joshua <Singer.Joshua@epa.gov>
Subject: Willowbrook call

Hi Josh,

I have a voicemail message from the village manager of LaGrange, Andrea Peterson. I didn't keep the message to forward but she would like to know when the stack test will be available and if the map will be revised as a results for new modeling. Her number is Personal Phone / Ex. 6 Since she is an elected official, I am forwarding to you to handle.

-Margaret

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 7/27/2018 11:30:14 AM
To: Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]

Subject: Accepted: EPA Sterigenics update call
Location: Conference Line/Code / Ex. 6

Start: 7/27/2018 3:00:00 PM
End: 7/27/2018 3:30:00 PM
Show Time As: Busy

Appointment

From: Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]
Sent: 7/16/2018 4:37:59 PM
To: Patel, Shilpa [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c0b02a557a1459689e1b7c5e1603631-Shpatel]

Subject: FW: Sterigenics Meeting
Location: Meet in Lobby no later than 9:10

Start: 7/18/2018 2:10:00 PM
End: 7/18/2018 6:10:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Cain, Alexis
Sent: Friday, July 13, 2018 3:01 PM
To: Cain, Alexis; Nam, Ed; Siegel, Kathryn; Sieffert, Margaret; Nguyen, Phuong; Ogulei, David
Subject: Sterigenics Meeting
When: Wednesday, July 18, 2018 9:10 AM-1:10 PM (UTC-06:00) Central Time (US & Canada).
Where: Meet in Lobby no later than 9:10

Since GSA vehicles aren't available, I will drive a rental minivan to the Clark Street entrance at 9:10, so that we can make it to Willowbrook by 10:00. Please let me know if you don't plan to go, or if you plan to get there on your own.

Sterigenics will provide safety equipment, but they recommend that we bring our own steel toed shoes.

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 10/5/2018 12:53:58 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]
Subject: RE: connection to Dr. Orris

Works for me!

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Siegel, Kathryn
Sent: Thursday, October 04, 2018 2:51 PM
To: Johnson, Mark <johnson.mark@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>
Subject: FW: connection to Dr. Orris

I did a quick calendar scan. Do these times work for me to propose to Dr. Orris for a call? Thanks!

- 10/11: 1-3pm
- 10/17: 11am-12pm or 2-3pm

From: Orris, Peter [mailto:porris@uic.edu]
Sent: Sunday, September 30, 2018 11:42 PM
To: Johnson, Mark <johnson.mark@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>
Subject: RE: connection to Dr. Orris

Mark
Thank you for the introduction
As you note that I will be in Iceland for a meeting from Monday 6 PM to Friday 4 PM

What I have found out with respect to the statement from Sterigenics at the community meeting that "the FDA requires using ETO for sterilizing certain products"

Called around at FDA till I found those in charge of the area –

Actually the FDA sets standards for what sterilizing means (how sterile is required) but does not mandate any sterilant. The health industry relies on the AAMI consensus standards –
we bought the technical document. Unfortunately it is structured to tell you what sterilant can be used with which materials – not vice versa – so we had to take the charts and check
if any material required ETO and all other modalities either could not be used or was markedly inferior.
The good news is it supported what I had heard – there is no material that can not be sterilized by other methods or materials such as H202.

I suggest involving Jim Boiano at NIOSH who wrote a paper on comparison with H202 a few years ago. (CDC/NIOSH/DSHEFS) jmb4@cdc.gov

And final proof of the pudding – when I checked here at UIC Hospital – we are sterilizing nothing with ETO nor do we contract anyone else to do so for us.

p

Peter Orris, MD, MPH
Professor and Chief
Occupational and Environmental Medicine
University of Illinois Hospital and Health Sciences System
835 S. Wolcott, MC 684
Chicago, IL 60612
Of Ph 312-413-0369
Direct 312-413-0105
Fx 312-413-8485

From: Johnson, Mark <johnson.mark@epa.gov>
Sent: Friday, September 28, 2018 4:15 PM
To: Orris, Peter <porris@uic.edu>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna <twickler.donna@epa.gov>; Colledge, Michelle <Colledge.Michelle@epa.gov>
Subject: FW: connection to Dr. Orris

Peter

EPA has developed an EtO strategy that includes the evaluation of alternative technologies. Katie Siegel, Branch Chief with the Air and Radiation Division at EPA-Region 5, is leading a group of EPA that is reaching out to organizations and experts in this area. Given your interest in the consideration of EtO in the medical field, they wanted to contact you to see if you would be willing to discuss this issue further. Attached are some fact sheets that provide some additional background.

I know that you are heading out of the country next week, but maybe you could let us know your availability the following week and we can set up a call. Have a good trip. Thanks.

Mark

Mark D. Johnson, PhD, DABT
Regional Director/Toxicologist
Agency for Toxic Substances and Disease Registry (ATSDR)
77 W. Jackson Blvd. Rm. 433
Chicago, IL 60604
Email: mdjohnson@cdc.gov
Office: 312-353-3436
Cell: 312-307-7415

From: Siegel, Kathryn
Sent: Monday, September 10, 2018 3:35 PM
To: Colledge, Michelle <Colledge.Michelle@epa.gov>; Johnson, Mark <johnson.mark@epa.gov>
Cc: Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Twickler, Donna

<twickler.donna@epa.gov>
Subject: connection to Dr. Orris

Hi Mark and Michelle,

As part of our EtO strategy, we have been doing outreach to NGOS, like Practice GreenHealth, and developing case studies and fact sheets (see attached).

From press articles, I understand that Dr. Peter Orris has been also trying to advance alternatives. Would you please introduce us over email? We'd like to see if he'd be interested in a meeting or call to see how we can amplify each other's efforts. Thanks!

Katie Siegel, Chief
Air Toxics and Assessment Branch
Air and Radiation Division
U.S. EPA Region 5
siegel.kathryn@epa.gov
(312) 886-3006

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 7/26/2018 8:42:34 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: another question for Sterigenics

Good one. Thanks.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Thursday, July 26, 2018 3:39 PM
To: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>
Subject: another question for Sterigenics

Ask if they have an answer to the Confidential on their presentation slides. Hopefully they won't be claiming them CBI. If they are then we will have to start that process.

-Margaret

Message

From: Cain, Alexis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0249D52AFE7A491EA6859BF276E694E9-ACAIN]
Sent: 9/28/2018 1:15:13 PM
To: Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]
Subject: RE: Stack Testing and Model Parameters

Will do. He's not in yet.

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Sieffert, Margaret
Sent: Friday, September 28, 2018 8:14 AM
To: Cain, Alexis <cain.alexis@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>
Subject: FW: Stack Testing and Model Parameters

Not sure what Ed wants to discuss. But FYI. Personal Matters / Ex. 6
Personal Matters / Ex. 6 Let me know if I am needed before those times to talk.

-Margaret

From: Nam, Ed
Sent: Friday, September 28, 2018 8:07 AM
To: Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Subject: Re: Stack Testing and Model Parameters

Let's discuss this morning.
Thanks
Ed

Sent from my iPhone

On Sep 28, 2018, at 7:37 AM, Sieffert, Margaret <Sieffert.Margaret@epa.gov> wrote:

Deliberative Process / Ex. 5

-Margaret

From: Nam, Ed
Sent: Thursday, September 27, 2018 9:16 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: Stack Testing and Model Parameters

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

-Ed

From: Shappley, Ned
Sent: Thursday, September 27, 2018 5:33 PM
To: Nam, Ed <nam.ed@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: RE: Stack Testing and Model Parameters

Thanks Ed,

Deliberative Process / Ex. 5

Best Regards,

Ned

From: Nam, Ed
Sent: Thursday, 27 September, 2018 17:12
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: FW: Stack Testing and Model Parameters

Ned, Margaret

Stack test summaries just arrived. This is just 3 pages.

-Ed

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, September 27, 2018 3:50 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: RE: Stack Testing and Model Parameters

Ed:

Attached is a letter with the stack test results that I just sent to Alec Messina at IL EPA.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services

Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, September 27, 2018 11:45 AM
To: Hoffman, Kathy
Cc: Siegel, Kathryn; Cain, Alexis; Armitage, Julie
Subject: Stack Testing and Model Parameters

Hello Kathy,

I was glad to hear that your stack test was completed last week, and we look forward to seeing the results. We would like to make sure that as soon as the results are available, we are able to describe the results to the public. This will mean modeling risk based on a new emissions estimate; therefore, I would like to reiterate that it is imperative that you provide the modeling parameters that we requested, mostly recently in the September 7, 2018 email to you from Alexis Cain.

Even prior to us being able to release modeling information, we will need to describe what the stack tests show about how much emissions have decreased as a result of the back vent controls. Therefore, please provide us, along with the draft stack test results, as soon as they are available, with an estimate of annual stack and fugitive emissions, along with an estimate of the reductions achieved as a result of the back vent project. I also ask that you provide all of your calculations and a description of your estimation method. This will help us both being able to describe to the public the emissions impact of the back vent project and with being able to model revised emissions as soon as possible.

Thank you, and please let me know if you would like to discuss this request.

-Ed

-Edward Nam
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 1/25/2018 11:15:01 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: hybrid ratios for EtO from v1
Attachments: ETOX_v1_v2_highrisk_comparison.xlsx

Hi James

Deliberative Process / Ex. 5

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Thurman, James
Sent: Thursday, January 25, 2018 4:03 PM
To: Palma, Ted <Palma.Ted@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: RE: hybrid ratios for EtO from v1

I don't have tract averages for V1 and it would take some effort to do so. We can talk more on Monday.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Palma, Ted
Sent: Thursday, January 25, 2018 3:36 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: RE: hybrid ratios for EtO from v1

I don't have but we could easily add those in to tract risks if James provides them by tract for EO
We were just going to footnote the table to say it is not in but if that data is handy it can be added so the final tract value is closer!
Ted

Ted Palma
USEPA
OAQPS/HEID/ATAG
MD C539-02
RTP, NC 27711

919-541-5470 (work)
palma.ted@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 3:29 PM
To: Thurman, James <Thurman.James@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: hybrid ratios for EtO from v1

Hi James and Ted

Deliberative Process / Ex. 5

I think we should look at the ratios from v1 – do you have these? Or Ted- do you already know the impact of hybrid on the tract risks?

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 1/5/2018 9:11:38 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]
Subject: RE: How is the ethylene oxide run going?
Attachments: v1concs2.zip

I figured it out. The field name "a" has the final concentration.

From: Strum, Madeleine
Sent: Friday, January 5, 2018 1:39 PM
To: Thurman, James <Thurman.James@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5

Some polls have no health benchmarks so you wouldn't be able to compute a concentration for them.

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

From: Thurman, James
Sent: Friday, January 5, 2018 9:56 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Oh, if you can do it in an hour, that would be great. That would save me some time.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 04, 2018 2:50 PM

To: Thurman, James <Thurman.James@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Ok, let me know if you change your mind. I could do it in about an hour.

From: Thurman, James
Sent: Thursday, January 4, 2018 2:48 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I should be able to do the conversions.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 04, 2018 12:49 PM
To: Thurman, James <Thurman.James@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

James

1st file has v1 max facility risk (cancer, resp and neuro) by facility and pollutant.
2nd file has the benchmarks to convert risk to concentration.

I think you already have a program to do that but if you want me to merge the benchmarks and compute the concentrations and put it in the first file I can do it. Let me know.

Deliberative Process / Ex. 5

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

From: Thurman, James
Sent: Thursday, January 4, 2018 11:01 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I can do that.

James A. Thurman, Ph.D.

U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 04, 2018 10:59 AM
To: Thurman, James <Thurman.James@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Ok. I can send you it by pollutant/facility – it is very large. Would it be possible for you to include the source id of the max risk? That will help us focus on which source to look at if we wanted to explore the release parameters (for situations in which total emissions haven't changed but risks did).

From: Thurman, James
Sent: Thursday, January 4, 2018 10:54 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Madeleine,
If you can send me that spreadsheet of max risk by facility and we back out the concentrations for all pollutants, or at least the risk drivers, I should be able to do it.

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Wednesday, January 03, 2018 5:13 PM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5

So we can do a comparison for all facilities but do you think we should be taking time to look at them before sending to HEID and if not, maybe we just wait for the risk results and compare those?

James are you set up to do a comparison like the one you did for EtO (max receptor concentration)?

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Eyth, Alison
Sent: Wednesday, January 3, 2018 4:34 PM
To: Thurman, James <Thurman.James@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Hi,

We ran out of time today. I was wondering if it makes sense to do a comparison of the rest of the point sources particularly to be made aware of those that have increased since v1?

Alison

From: Thurman, James
Sent: Tuesday, January 02, 2018 9:16 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Here's the newest spreadsheet, comp_etox_new.xlsx. Facilities are sorted by descending percent differences between V1 and V2 concentrations. The Sasol facility didn't change much from the previous V2 run. I'll look into it more. I've attached the older comparison as well.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:57 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I think a quick look. As long as the values (other than the 2 Iowa) are close to what we had before we are good to go.

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:16 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>

Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

It includes the corrected IA facilities. We can do a quick look at the spreadsheet before sending to HEID. Maybe send to them later today or tomorrow?

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:09 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

That's great Deliberative Process / Ex. 5 Should we send to HEID directly or do that comparison to v1 and look at it?

Deliberative Process / Ex. 5

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:03 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Should have a spreadsheet to you this morning.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:01 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: How is the ethylene oxide run going?

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 2/5/2018 3:58:57 PM
To: Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]; Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Phillips, Sharon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=771cdf9eb00d48b1bd6a40f42c4c496a-SPHILLIP]
Subject: RE: gridded emissions and info for Marc&Tyler
Attachments: v2emis_summaries.pptx

I included 2 slides with the percent differences.

From: Eyth, Alison
Sent: Monday, February 5, 2018 8:33 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>
Subject: RE: gridded emissions and info for Marc&Tyler

I think we should not share this yet. I'm looking at the emissions differences now.
I think percent differences would be more helpful than the absolute because if the legend is set narrow it make it look like huge differences that may not be much at all.

Alison

From: Strum, Madeleine
Sent: Sunday, February 04, 2018 11:32 PM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>
Subject: gridded emissions and info for Marc&Tyler

I will be in close to 10am due to Dr. appointment. Should we share attached power point or review it ourselves first?

1. Status

Deliberative Process / Ex. 5

2. Ethylene oxide

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

3. V1 model evaluation shared with team
    a. Madeleine needs to look at annual average concentrations for HAPs
4. Funding
    a. Deliberative Process / Ex. 5
5. Technical issues
    a. what should be pollutant resolution of emissions/concentrations, given PAHs modeled in groups and rolled up as PAHPOM at the risk level. Should we provide concentrations / emissions for polls we modeled (which for some polls are grouped from the inventory)

Message

From: Nguyen, Phuong [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F07188263D014E06A28762CCF129CE20-PNGUYEN]
Sent: 8/29/2018 1:14:17 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: Sterigenics EtO Chicago Tribune Tuesday 8/28/2018

Here is another interesting story..

Front page, Chicago Tribune –

http://www.chicagotribune.com/news/ct-met-dupage-cancer-pollution-rauner-20180827-story.html

Message

From: Nguyen, Phuong [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F07188263D014E06A28762CCF129CE20-PNGUYEN]
Sent: 9/5/2018 6:07:06 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: Volume sources

That would be great.
Talk to you soon.

Phuong

From: Thurman, James
Sent: Wednesday, September 05, 2018 9:34 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Volume sources

Phuong,

Deliberative Process / Ex. 5

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Wednesday, September 05, 2018 9:12 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: Volume sources

James- Could you elaborate a little more on how the volume sources can also be modeled as horizontal stacks given potential influence of building downwash in AERMOD?
Can you give an example of when the volume sources would be applied in AERMOD because I rarely see a situation without building downwash ?

Thanks,
Phuong

From: Thurman, James
Sent: Wednesday, September 05, 2018 7:46 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

I'll set up a call this afternoon, 30 minutes or so. I'll send a separate invitation. On the horizontal stacks vs. volume, the consensus among the other modelers was that horizontal stacks was reasonable, given potential influence of downwash.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Tuesday, September 04, 2018 3:50 PM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

James- That would be fine. I have another meeting on Sterigenics at 10:00 CDT, feel free to call me before that, if you are available.

On another topic, Did you hear any feedback from other modelers about "modeling Horizontal stacks vs. Volume sources" ? It was another enforcement case that we need to resolve ASAP so Please let us know ASAP !!

Thanks,

Phuong

From: Nguyen, Phuong
Sent: Tuesday, September 04, 2018 1:23 PM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

HI James,
Sorry I was on another call this morning. I am available this afternoon if you want to talk.

Thanks,
Phuong

From: Thurman, James
Sent: Tuesday, September 04, 2018 7:54 AM

To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Phuong,
Can I give you a call around 11:30 AM your time today to talk about Sterigenics?

Thanks,
James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Wednesday, August 29, 2018 11:06 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

James, When you have a chance , give me a call so we can chat more about this work.

Phuong

From: Thurman, James
Sent: Wednesday, August 29, 2018 8:37 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Phuong,
Thanks, I would be interested in seeing your AERMOD input file if you can share it to see if you resolved the source better than we did in NATA.

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Wednesday, August 29, 2018 9:11 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Hi James,
I did the modeling for this facility and worked with ATSDR on that report.
Phuong

From: Thurman, James
Sent: Wednesday, August 29, 2018 8:04 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: Sterigenics ethylene oxide AERMOD modeling

Phuong,
I saw a story about the Sterigenics ethylene oxide facility in DuPage County. There was a link to an ATSDR report that referenced EPA modeling of the facility, specifically by Region 5. I know you do work on toxics and was wondering if you did the modeling or may know who did. I was curious about it since we modeled it in NATA and was interested in comparing our model runs.

Thanks,
James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 12/8/2017 6:27:46 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Beidler, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8b1123f11d334183b466328c4b43f439-Beidler, James]; Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]
Subject: RE: velocities/diameters/lat lons
Attachments: Copy of pointv2_aermod_inven_locations_gt5.xlsx

Deliberative Process / Ex. 5

JB – James won't rerun today but we should work on the helper file so if we decide to rerun it will be ready Monday am.

JT – also would be useful to understand why risks changed where emissions didn't for the 2 I couldn't figure out.

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Thurman, James
Sent: Friday, December 8, 2017 12:58 PM
To: Beidler, James <Beidler.James@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: velocities/diameters/lat lons

Deliberative Process / Ex. 5

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Beidler, James
Sent: Friday, December 08, 2017 12:45 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: RE: velocities/diameters/lat lons

The attached spreadsheet, pointv2_aermod_inven_locations_gt5, shows the sources with a UTM location difference > 5 m between the helper file location and the location calculated directly from the inventory lat/lon. This is just a subset of the complete spreadsheet, which is too large to include.

The other spreadsheet, pointv2_aermod_point_params, shows the stack parameters in the AERMOD helper files (aer) vs the inventory values (inv) in inventory units (ft, ft/s, etc.). There is some precision difference from calculating the AERMOD helper files back to the inventory units.
In cases where helper file velocity is zero the inventory velocity is < 0.016 ft/s. In general we only see large % diff in small values.

=====

James Beidler
CSC Government Solutions LLC, a CSRA company
4401 Building, 79 T.W. Alexander Drive, Research Triangle Park, NC 27709
Science, Engineering, and Technology Solutions | office **(919) 200-7415**
beidler.james@epa.gov

From: Strum, Madeleine
Sent: Friday, December 08, 2017 12:31 PM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Beidler, James <Beidler.James@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: velocities/diameters/lat lons

Deliberative Process / Ex. 5

JT: can you check on whether AERMOD will change a 0 velocity to some minimum number? Same for 0 diameter?
JT will also see if he can determine why v1 and v2 conc are different for the ones I couldn't figure out.

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 9/4/2018 12:38:02 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

Here you go. Thanks!

EIS Facility ID	Agency Identifier	Program System Code	State	County	State and County Code	Tribal Name	Facility Name	Company Name	NAICS Code	Facility Source Type	Ope Stat
3219211	043110AAC	ILEPA	IL	DuPage	17043		Sterigenics US LLC	Na	561910		OP

From: Thurman, James
Sent: Tuesday, September 4, 2018 8:33 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

Do you know the facility ID for this one? I was going to look at the AERMOD inputs. Thanks.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Monday, September 03, 2018 11:34 AM
To: Hemby, James <Hemby.James@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Shelow, David <Shelow.David@epa.gov>
Cc: Thurman, James <Thurman.James@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>
Subject: RE: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

I was aware of this modeling (it came up during the Regional EO calls that Carol led) but we didn't review it. I found a March 2018 email from me asking Dave to send it to James as an air toxics meeting follow up item.

I believe **Deliberative Process / Ex. 5**

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Hemby, James
Sent: Monday, September 3, 2018 10:55 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Shelow, David <Shelow.David@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Thurman, James <Thurman.James@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>
Subject: Fw: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

FYI

Thurman will share what he finds out.

James Hemby
Air Quality Assessment Division
Office of Air Quality Planning and Standards/OAR
U.S. EPA
Mail code: C304-02
109 T.W. Alexander Drive
Research Triangle Park, NC 27711

919.541.5459 (voice)
919.699.8040(cell)
919.685.3184 (fax)
hemby.james@epa.gov

From: Fox, Tyler
Sent: Tuesday, August 28, 2018 09:33 PM
To: Wayland, Richard; Hemby, James
Subject: FW: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

FYI—James T is going to follow up with R5 modeler(s) to see if we can find out more about the AERMOD modeling that they did for this 'study'.

Tyler

From: Thurman, James
Sent: Tuesday, August 28, 2018 4:13 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>
Cc: Phillips, Sharon <Phillips.Sharon@epa.gov>
Subject: FW: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

FYI – ethylene oxide facility in Region 5, note sentence "Local officials have been reeling since the EPA privately shared the Sterigenics study with them last week. The agency posted it online without notice late Friday."

The "Sterigenics study" link links to a document that describes AERMOD modeling done by EPA (page 4). **Deliberative Process / Ex. 5**

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Smith, Darcie
Sent: Tuesday, August 28, 2018 3:52 PM
To: Palma, Ted <Palma.Ted@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>; Woody, Matthew <Woody.Matthew@epa.gov>; Truesdell, Raymond <truesdell.raymond@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Cook, Rich <Cook.Rich@epa.gov>; Vukovich, Jeffrey <Vukovich.Jeffrey@epa.gov>; Chow, Alice <chow.alice@epa.gov>; jeff.myers@wisconsin.gov
Subject: FW: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

Are you guys interested in seeing press about NATA results, for example like the one below? If so, let me know and I'll keep sending them around.

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

Subject: High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm - Chicago Tribune

http://www.chicagotribune.com/news/ct-met-dupage-cancer-pollution-rauner-20180827-story.html

High cancer risk in southeast DuPage County linked to company co-owned by Rauner's former firm

Michael Hawthorne

Two low-slung industrial buildings, tucked behind a Target store in west suburban Willowbrook, are about as nondescript as they come. For years, they have been home to

Sterigenics International, a company that has quietly gone about its business of fumigating medical instruments, pharmaceutical drugs and food to kill bacteria and pests.

But a new federal study is putting a bright spotlight on the company, finding that people living nearby face some the nation's highest cancer risks from toxic air pollution.

A gas used by the company, ethylene oxide, is far more dangerous than previously thought, according to the U.S. Environmental Protection Agency. In one census tract near the plant, the EPA estimates the risk of cancer is more than nine times the national average.

Another federal agency concluded the cancer risks could be significantly higher.

Federal officials began investigating Sterigenics last year after surrounding communities popped out on a national map of health hazards from breathing toxic chemicals.

The company also stands out because since 2011 it has been owned by a private equity firm co-founded by Illinois Gov. Bruce Rauner, who left the firm a year later to begin campaigning for public office.

About 19,000 people in southeast DuPage County live within a mile of the Willowbrook facility. Four schools and a day care center also are close by, including Hinsdale South High School in Darien and Gower Middle School in Burr Ridge.

Local officials have been reeling since the EPA privately shared the Sterigenics study with them last week. The agency posted it online without notice late Friday.

READ MORE: Emissions from Willowbrook company could be harmful to residents, federal report says »

"For the past several days I have been working non-stop with village trustees and administrators — reaching out to local, state and federal officials and assembling a task force to help us interpret the report," Willowbrook Mayor Frank Trilla said Monday in a statement on the village's website.

Ethylene oxide, a key ingredient in the manufacturing of other chemicals, also has been used for decades as fumigant to sterilize heat-sensitive medical equipment and other goods. The volatile, easily absorbed chemical has been on the federal list of carcinogens since 1985, and in December 2016 the EPA released a long-delayed reassessment linking it more conclusively to breast and blood cancer.

Shortly after that, the agency began updating its semi-regular National Air Toxics Assessment, a screening tool used to identify areas where more investigation is needed.

Based largely on the updated dangers of exposure to ethylene oxide, the EPA concluded that seven census tracts around the Sterigenics plant in Willowbrook have cancer risks high enough to trigger the agency's concern.

The Willowbrook tracts are among 109 nationwide with cancer risk scores greater than 100, meaning if 1 million people were exposed to the same level of pollution throughout their lives (24 hours a day, for 70 years), 100 of them would likely develop cancer.

Most of the other tracts are in "Cancer Alley," an infamous stretch of chemical plants along the Mississippi River in Louisiana.

After the EPA looked more closely at Sterigenics and measured ethylene oxide levels in nearby residential areas, a related federal health agency determined the cancer risks in southeast DuPage could be orders of magnitude higher than initially estimated: up to 6,400 per million, or more than 6 cases of cancer for every 1,000 people.

"This is just staggering," said Peter Orris, a veteran occupational and environmental medicine researcher at the University of Illinois at Chicago, who for years has been pushing hospitals to stop using ethylene oxide. "They shouldn't be using this chemical as a sterilizer because it can't be controlled."

A spokeswoman for Sterigenics' parent company said executives are still reviewing the newly released study. The company called the use of ethylene oxide "a critical step … to protect patients who use these products from harmful bacteria that could cause infection or death."

At the EPA's behest, the company installed new equipment in July intended to reduce the Willowbrook plant's pollution. Federal officials, along with the Illinois EPA, haven't determined yet if the controls are effective.

For now the company is working voluntarily with the agencies. The last enforcement action against the Willowbrook plant was in 2013, when the Illinois EPA discovered an ethylene oxide leak while investigating a chemical spill near the facility. Sterigenics later paid a $50,000 fine.

It appears the Willowbrook facility's air pollution does not pose the type of immediate health threats seen in some work settings, the U.S. EPA said in a statement. The federal agency also said it is reviewing ethylene oxide emissions at other facilities across the

country and is considering an overhaul of national air quality regulations to address heightened concerns about the chemical.

"EPA is working closely with Willowbrook to address any community concerns," said Cathy Stepp, the regional EPA administrator.

The Willowbrook facility is one of nine ethylene oxide sterilizers operated nationally by Sterigenics, which has grown rapidly since it was bought out in 2011 by GTCR, the private equity firm formed by Rauner and a colleague during the late 1990s after dissolving another firm with the same name.

Rauner retired as chairman of GTCR in 2012 as he began laying the groundwork for his successful 2014 bid for governor; he has said his current investments have been delegated to a power of attorney.

Sterigenics is now owned by Sotera, a Cleveland-based venture between GTCR and Warburg Pincus, another private equity firm that acquired a majority stake in 2015.

The company's website says its name was inspired by Soteria, the Greek goddess of safety, "and reflects the Company's unwavering commitment to global health."

Neither the Rauner campaign nor the governor's office answered detailed questions from the Tribune.

The area is represented in Springfield by House Minority Leader Jim Durkin, a Darien Republican who said he is working with state and federal officials "to ascertain the facts and formulate next steps to ensure the safety of Willowbrook residents and the residents of surrounding communities."

Reevaluating hazards posed by toxic chemicals often leads to conclusions that widely used substances are more dangerous than once thought. Yet the federal government can take years to publish risk assessments based on the latest science, largely because of industry opposition and bureaucratic inertia.

When a federal judge ordered the EPA to update its ethylene oxide regulations during the mid-2000s, the agency said it needed to wait for a new assessment of the dangers — the one finally published in 2016.

Regulations on toxic substances are even more difficult to enact. For instance, the government still hasn't banned asbestos, a well-documented carcinogen that has killed thousands of people who suffered devastating lung diseases.

President Donald Trump's first budget would have gutted the EPA program that produced the new ethylene oxide assessment, and the administration has moved to roll back or delay several environment, health and safety regulations. The Republican-controlled Congress also has moved several times to eliminate funding for the chemical assessment program, though for now it continues to operate.

mhawthorne@chicagotribune.com

Twitter @scribeguy

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—
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 5/17/2017 8:05:49 PM
To: Phillips, Sharon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=771cdf9eb00d48b1bd6a40f42c4c496a-SPHILLIP]; Shelow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3859abc25e634d418478f3d3ca569c79-Shelow, David]; Scheffe, Rich [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8f09a59eff514e75b171ed5a77038020-RSCHEFFE]; Mannshardt, Elizabeth [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7bd36fe12f96416d9007ef3f9a71b504-Mannshardt,]; Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Merrill, Raymond [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=03da8eee10dc47f1898bfacc2307e8ee-Merrill, Raymond]; Drukenbrod, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=29ad915814724d1c842ba94df99fdfd3-JDRUKEN]; RTP-OAQPS-919-541-4248-AQAD/Phone-Line/RTP-OAQPS-BLDG-C [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=user70c96343]
Subject: RE: AQAD Air Toxics Team - follow up items
Attachments: E-trends-toxics-NOAAlink-test_17May2017.docx; Copy of Priorty Facility List 17May17 V3.xlsx; AQADHEIDBrainstormToxicsDetailMay172017.docx

Follow up – Action items from today's meeting

Deliberative Process / Ex. 5

Let me know if I missed anything

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 7/20/2018 3:13:52 AM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: EtO meeting tommorrow at 11am
Attachments: MASTER_ETOX_v1_v2_highrisk_comparison.xlsx

I see you are on the invite. Please let me know what happened since I can't go.

As background, we've been maintaining/updating a spreadsheet of EtO-emitting facilities with emissions (v1 and v2) and all sorts of other stuff . Today (by Darcie's request) I added controls to that sheet-1st TAB (actually CSRA mined the data from the FF10 and I just added it in). CSRA also provided me process level controls but the sheet is by facility so I just have them in case more detail is required.
NEI has control info (if reported by states). A lot more facilities had controls than I thought!

In case this file is discussed here is what Darcie requested.

Deliberative Process / Ex. 5

File is here. Please remember that Excel is quirky in sharepoint so please check that you're the only one in there before you do a lot of work and are unable to save!

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 11/22/2017 1:27:18 AM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
CC: Beidler, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8b1123f11d334183b466328c4b43f439-Beidler, James]
Subject: FW: ethylene oxide pollutant code for requested facility list
Attachments: 2014fd_etox_summary.xlsx

Hi James

The list is of EtO sources and facilities is attached. I did and independent check in EIS and it is correct.

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Beidler, James
Sent: Tuesday, November 21, 2017 12:14 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: ethylene oxide pollutant code for requested facility list

Madeleine,

The summary for ETOX by both source and facility ID is attached.

=====

James Beidler
CSC Government Solutions LLC, a CSRA company
4401 Building, 79 T.W. Alexander Drive, Research Triangle Park, NC 27709
Science, Engineering, and Technology Solutions | office **(919) 200-7415**
beidler.james@epa.gov

From: Strum, Madeleine
Sent: Monday, November 13, 2017 6:53 PM
To: Beidler, James <Beidler.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: ethylene oxide pollutant code for requested facility list

Hi James
I requested a list of facilities (EIS ID) covered by the helper files (after you are done with the helper files) that emit ethylene oxide.
Pollutant code is below

75218	Ethylene Oxide

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 10/2/2018 8:22:00 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: IEPA Press Release issued today: Illinois EPA Refers Sterigenics to Attorney General for Enforcement

---

From: Smith, Darcie
Sent: Tuesday, October 2, 2018 3:10 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Cc: Shappley, Ned <Shappley.Ned@epa.gov>; Davis, Alison <Davis.Alison@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Jones, Rhea <Jones.Rhea@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Lessard, Patrick <Lessard.Patrick@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>; Bremer, Kristen <Bremer.Kristen@epa.gov>; Mckelvey, Laura <Mckelvey.Laura@epa.gov>
Subject: FW: IEPA Press Release issued today: Illinois EPA Refers Sterigenics to Attorney General for Enforcement

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Cain, Alexis
Sent: Tuesday, October 02, 2018 2:59 PM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Cc: Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>
Subject: FW: IEPA Press Release issued today: Illinois EPA Refers Sterigenics to Attorney General for Enforcement

Seems like big news. Illinois is saying that Sterigenics should shut down "until a complete review of additional modeling and risk assessment is completed by U.S. EPA or until U.S. EPA otherwise assures the community that resumed operations would not present an elevated health risk."

Alexis Cain
USEPA-Region 5
(312) 886-7018
cain.alexis@epa.gov

From: Singer, Joshua
Sent: Tuesday, October 02, 2018 1:55 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Nam, Ed <nam.ed@epa.gov>; Siegel, Kathryn <siegel.kathryn@epa.gov>; Furey, Eileen <furey.eileen@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>

Cc: Deamer, Eileen <deamer.eileen@epa.gov>
Subject: IEPA Press Release issued today: Illinois EPA Refers Sterigenics to Attorney General for Enforcement

http://www.willowbrookil.org/DocumentCenter/View/1450

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 9/27/2018 11:35:27 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: Stack Testing and Model Parameters

From: Shappley, Ned
Sent: Thursday, September 27, 2018 6:22 PM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: Stack Testing and Model Parameters

Thanks Mike!

I can make anytime work as well. If you speak to her again, would you ask for her to provide us with the following information prior to the Tuesday call, if not we can discuss this information on Tuesday.

1) The EtO usage for each of the Willowbrook facilities for the years 2015, 2016, and 2017.
2) The stack height for the Scrubber Stack at the Willowbrook 2, and the stack heights of the Scrubber 1 and Scrubber 2 Stacks at the Willowbrook 1.

Ned

From: Rimer, Kelly
Sent: Thursday, 27 September, 2018 17:39
To: Koerber, Mike <Koerber.Mike@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: Stack Testing and Model Parameters

I can make any time work. Thanks
Kelly

From: Koerber, Mike
Sent: Thursday, September 27, 2018 5:26 PM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: FW: Stack Testing and Model Parameters

I talked with Kathy H. and she suggested a modeling call on Tuesday next week. Let me know if there is good time for you that day. In the meantime, she may send some modeling/data files. I told her to make sure to copy Kelly on anything she might send me.

Mike

From: Nam, Ed
Sent: Thursday, September 27, 2018 5:12 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: FW: Stack Testing and Model Parameters

Ned, Margaret

Stack test summaries just arrived. This is just 3 pages.

-Ed

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, September 27, 2018 3:50 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: RE: Stack Testing and Model Parameters

Ed:

Attached is a letter with the stack test results that I just sent to Alec Messina at IL EPA.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, September 27, 2018 11:45 AM
To: Hoffman, Kathy
Cc: Siegel, Kathryn; Cain, Alexis; Armitage, Julie
Subject: Stack Testing and Model Parameters

Hello Kathy,

I was glad to hear that your stack test was completed last week, and we look forward to seeing the results. We would like to make sure that as soon as the results are available, we are able to describe the results to the public. This will mean modeling risk based on a new emissions estimate; therefore, I would like to reiterate that it is imperative that you provide the modeling parameters that we requested, mostly recently in the September 7, 2018 email to you from Alexis Cain.

Even prior to us being able to release modeling information, we will need to describe what the stack tests show about how much emissions have decreased as a result of the back vent controls. Therefore, please provide us, along with the draft stack test results, as soon as they are available, with an estimate of annual stack and fugitive emissions, along with an estimate of the reductions achieved as a result of the back vent project. I also ask that you provide all of your calculations and a description of your estimation method. This will help us both being able to describe to the public the emissions impact of the back vent project and with being able to model revised emissions as soon as possible.

Thank you, and please let me know if you would like to discuss this request.

-Ed

-Edward Nam
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 9/27/2018 11:35:08 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: Stack Testing and Model Parameters
Attachments: IL EPA Letter - Stack Test Results - 27 Sept 2018.pdf

---

From: Koerber, Mike
Sent: Thursday, September 27, 2018 5:26 PM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: FW: Stack Testing and Model Parameters

I talked with Kathy H. and she suggested a modeling call on Tuesday next week. Let me know if there is good time for you that day. In the meantime, she may send some modeling/data files. I told her to make sure to copy Kelly on anything she might send me.

Mike

From: Nam, Ed
Sent: Thursday, September 27, 2018 5:12 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>
Subject: FW: Stack Testing and Model Parameters

Ned, Margaret

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From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, September 27, 2018 3:50 PM
To: Nam, Ed <nam.ed@epa.gov>
Cc: Siegel, Kathryn <siegel.kathryn@epa.gov>; Cain, Alexis <cain.alexis@epa.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>
Subject: RE: Stack Testing and Model Parameters

Ed:

Attached is a letter with the stack test results that I just sent to Alec Messina at IL EPA.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

From: Nam, Ed [mailto:nam.ed@epa.gov]
Sent: Thursday, September 27, 2018 11:45 AM
To: Hoffman, Kathy
Cc: Siegel, Kathryn; Cain, Alexis; Armitage, Julie
Subject: Stack Testing and Model Parameters

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Thank you, and please let me know if you would like to discuss this request.

-Ed

-Edward Nam
Director, Air and Radiation Division
US EPA, Region 5, Mail code A-18J
77 W. Jackson Blvd.
Chicago, IL 60604-3590
Phone 312-353-2192 nam.ed@epa.gov

This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 9/27/2018 2:05:07 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: Call tomorrow

I assume whomever is setting this up is including you.

-----Original Message-----
From: Smith, Darcie
Sent: Thursday, September 27, 2018 8:42 AM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: RE: Call tomorrow

Ned, Madeleine, Kelly -

Just spoke with Mike and we'll have this meeting next week.

Thanks,
Darcie

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

-----Original Message-----
From: Koerber, Mike
Sent: Thursday, September 27, 2018 7:10 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: FW: Call tomorrow

I'm happy to participate, but this may be something more for you guys. Let me know your availability. I'd prefer 11 am CDT, but this may depend more on your schedules.

Mike

-----Original Message-----
From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, September 26, 2018 6:51 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: Call tomorrow

Are you available at 8:30 or 11:00am Central tomorrow to discuss modeling?

If so, we can set up a call.

Thanks,
Kathy

Sent from my iPhone
This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 9/27/2018 11:56:09 AM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: Call tomorrow

I'll let you know then.

-----Original Message-----
From: Thurman, James
Sent: Thursday, September 27, 2018 7:56 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: Call tomorrow

I can be.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

-----Original Message-----
From: Strum, Madeleine
Sent: Thursday, September 27, 2018 7:16 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: FW: Call tomorrow

Are you free today at noon for this? It's the Chicago Sterigenics.

-----Original Message-----
From: Koerber, Mike
Sent: Thursday, September 27, 2018 7:10 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: FW: Call tomorrow

I'm happy to participate, but this may be something more for you guys. Let me know your availability. I'd prefer 11 am CDT, but this may depend more on your schedules.

Mike

-----Original Message-----
From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, September 26, 2018 6:51 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: Call tomorrow

Are you available at 8:30 or 11:00am Central tomorrow to discuss modeling?

If so, we can set up a call.

Thanks,
Kathy

Sent from my iPhone
This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 10/17/2018 4:31:22 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: Hawthorne needs update on Lake County (IL) ethylene oxide issues

---

From: Wayland, Richard
Sent: Wednesday, October 17, 2018 12:05 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Houyoux, Marc <Houyoux.Marc@epa.gov>
Subject: RE: Hawthorne needs update on Lake County (IL) ethylene oxide issues

OK… old news… you guys already know this one. Question is can we look and see where we have other differences nationally between TRI and NEI?

Chet

Richard A. "Chet" Wayland | Director | Air Quality Assessment Division - Mail Code C304-02 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Desk: 919-541-4603 | Cell: 919-606-0548 |

From: Wayland, Richard
Sent: Wednesday, October 17, 2018 12:03 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; houyoux.marc@epa.gov
Subject: FW: Hawthorne needs update on Lake County (IL) ethylene oxide issues

See below…. This is the facility apparently in question.

Richard A. "Chet" Wayland | Director | Air Quality Assessment Division - Mail Code C304-02 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Desk: 919-541-4603 | Cell: 919-606-0548 |

From: Koerber, Mike
Sent: Wednesday, October 17, 2018 12:01 PM
To: Wayland, Richard <Wayland.Richard@epa.gov>
Subject: FW: Hawthorne needs update on Lake County (IL) ethylene oxide issues

Chet – I'll call to explain:

Looking for an update on some of my previous questions. Deadline is noon Thursday.

Vantage Specialty Chemicals reported emitting 2,607 pounds of ethylene oxide to the Toxics Release Inventory in 2014, but when Illinois EPA gave U.S. EPA data for the 2014 National Emissions Inventory, Illinois EPA listed ZERO pounds of ethylene oxide from Vantage . As a result, the modeled cancer risks in Lake County were significantly lower than what the risk level would be if the Vantage emissions had been included. Why/how did this happen? What does U.S. EPA plan to tell concerned citizens near Vantage in light of the intense public interest and outcry involving Sterigenics in Willowbrook?

Will EPA model dispersion of EtO emissions from Vantage, similar to what it plans to do with Sterigenics? If not, why? This is an important question given the fact that Vantage reported emitting 11,541 lbs of EtO to TRI in 2016, compared

to 4,205 pounds of EtO repoted to TRI by Sterigenics. As in Willowbrook, several thousand people live in close proximity to Vantage.

What specifically is U.S. EPA doing to follow up on the elevated cancer risks in Lake County census tracts near Medline Industries in Waukegan? According to data provided by Illinois EPA for the National Emissions Inventory, Medline emitted about 3,000 pounds of ethylene oxide in 2014, second only to Sterigenics in Willowbrook.

Is U.S. EPA planning to request an ATSDR consultation in Lake County, similar to the one conducted in the Willowbrook area? If not, why?

Michael

Michael Hawthorne
Environment and Public Health Reporter
Chicago Tribune
Desk: (312) 222-3315
Mobile: (312) 731-3639
mhawthorne@chicagotribune.com
@scribeguy

Message

From: Fox, Tyler [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=021C57F288DA44738D9DEA325AADAD85-TFOX]
Sent: 10/16/2018 8:16:20 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: RE: 1-pager for Sterigenics modeling and monitoring
Attachments: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook - Draft_jtV2.docx

-----Original Message-----
From: Thurman, James
Sent: Tuesday, October 16, 2018 3:51 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: RE: 1-pager for Sterigenics modeling and monitoring

Deliberative Process / Ex. 5

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

-----Original Message-----
From: Fox, Tyler
Sent: Tuesday, October 16, 2018 3:19 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: FW: 1-pager for Sterigenics modeling and monitoring

James/Ned

Please see the draft one pager that Lew is pulling together and assume you both can work together in filling in the relevant modeling information here per Chet's request?

Thanks,

Tyler

-----Original Message-----
From: Weinstock, Lewis
Sent: Tuesday, October 16, 2018 3:10 PM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Fox, Tyler <Fox.Tyler@epa.gov>
Subject: RE: 1-pager for Sterigenics modeling and monitoring

Hi James:

Here is a first cut of the sampling plan - simplified per Chet's instructions. Feel free to add whatever modeling information you think is appropriate.

Lewis Weinstock | Group Leader | Ambient Air Monitoring Group | Air Quality Assessment Division - Mail Code C304-06 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Phone: 919-541-3661|

-----Original Message-----
From: Wayland, Richard
Sent: Tuesday, October 16, 2018 1:48 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>
Subject: 1-pager for Sterigenics modeling and monitoring

Talked to Clint just now who talked with the Illinois director about his attorney calling us on the modeling and monitoring around Sterigenics. After apologizing, he asked (and Clint agreed) if EPA could draft up a short 1-pager at a high level about the modeling and monitoring we are proposing to do.

Deliberative Process / Ex. 5

Chet

Richard A. "Chet" Wayland
Sent from my iPhone

Message

From: Fox, Tyler [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=021C57F288DA44738D9DEA325AADAD85-TFOX]
Sent: 10/16/2018 8:06:56 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: 1-pager for Sterigenics modeling and monitoring

James

Deliberative Process / Ex. 5

Thanks,

Tyler

-----Original Message-----
From: Wayland, Richard
Sent: Tuesday, October 16, 2018 1:48 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>
Subject: 1-pager for Sterigenics modeling and monitoring

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Deliberative Process / Ex. 5

Chet

Richard A. "Chet" Wayland
Sent from my iPhone

Message

From: Weinstock, Lewis [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DF30E068EFB24A24B35D63BE0596AD9B-LWEINS02]
Sent: 10/16/2018 7:09:37 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
CC: Fox, Tyler [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=021c57f288da44738d9dea325aadad85-TFOX]
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Attachments: Sampling and Modeling Plan - EtO - Sterigenics Willowbrook - Draft.docx

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Lewis Weinstock | Group Leader | Ambient Air Monitoring Group | Air Quality Assessment Division - Mail Code C304-06 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Phone: 919-541-3661|

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From: Wayland, Richard
Sent: Tuesday, October 16, 2018 1:48 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>
Subject: 1-pager for Sterigenics modeling and monitoring

Talked to Clint just now who talked with the Illinois director about his attorney calling us on the modeling and monitoring around Sterigenics. After apologizing, he asked (and Clint agreed) if EPA could draft up a short 1-pager at a high level about the modeling and monitoring we are proposing to do.

(b) (5) [redacted]

Chet

Richard A. "Chet" Wayland
Sent from my iPhone

Message

From: Fox, Tyler [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=021C57F288DA44738D9DEA325AADAD85-TFOX]
Sent: 10/16/2018 6:38:10 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: FW: 1-pager for Sterigenics modeling and monitoring

Importance: High

FYI--please note the connections now in this monitoring plan that Lew had drafted and the ongoing modeling so follow up with Ned and I will follow up with Lew.

Thanks,

Tyler

-----Original Message-----
From: Wayland, Richard
Sent: Tuesday, October 16, 2018 1:48 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>
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Deliberative Process / Ex. 5

Chet

Richard A. "Chet" Wayland
Sent from my iPhone

Appointment

From: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Sent: 10/22/2018 12:05:25 PM
To: Weinstock, Lewis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=df30e068efb24a24b35d63be0596ad9b-LWEINS02]

Subject: Accepted: Refine EtO sampling locations for Sterigenics/Willowbrook
Location: RTP-OAQPS-C351K/RTP-OAQPS-BLDG-C

Start: 10/22/2018 12:30:00 PM
End: 10/22/2018 1:30:00 PM
Show Time As: Busy

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 2/1/2018 2:39:03 PM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]; Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]; Phillips, Sharon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=771cdf9eb00d48b1bd6a40f42c4c496a-SPHILLIP]
Subject: RE: GL meeting for Monday and note from Rich Cook (belowemail)

Are we supposed to provide airports to HEID?

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, February 01, 2018 9:33 AM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>
Subject: GL meeting for Monday and note from Rich Cook (belowemail)

Please review/fill in missing / highlighted

1. Current progress

Deliberative Process / Ex. 5

2. Ethylene oxide

Deliberative Process / Ex. 5

3. Deliberative Process / Ex. 5
4.
5. Funding

Deliberative Process / Ex. 5

From: Cook, Rich
Sent: Thursday, February 1, 2018 8:58 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>
Subject: FW: Modeling Commercial Marine Vessels in NATA Version 2

FYI folks here like the plan for commercial marine.

Rich Cook
Health Effects, Benefits, and Air Toxics Center
Assessment and Standards Division
Office of Transportation and Air Quality
U. S. Environmental Protection Agency
(734)214-4827

From: Patulski, Meg
Sent: Thursday, February 01, 2018 8:23 AM
To: Zawacki, Margaret <zawacki.margaret@epa.gov>; Cook, Rich <Cook.Rich@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Davidson, Ken <Davidson.Ken@epa.gov>
Subject: RE: Modeling Commercial Marine Vessels in NATA Version 2

I agree this sounds good. I also asked Daniel, Deliberative Process / Ex. 5 Deliberative Process / Ex. 5 hanks for sharing.

From: Zawacki, Margaret
Sent: Wednesday, January 31, 2018 2:56 PM
To: Cook, Rich <Cook.Rich@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Davidson, Ken <Davidson.Ken@epa.gov>
Cc: Patulski, Meg <patulski.meg@epa.gov>
Subject: RE: Modeling Commercial Marine Vessels in NATA Version 2

Sounds like a reasonable plan to me! Thanks Rich.

From: Cook, Rich
Sent: Monday, January 29, 2018 3:50 PM
To: Hoyer, Marion <hoyer.marion@epa.gov>; Zawacki, Margaret <zawacki.margaret@epa.gov>; Davidson, Ken <Davidson.Ken@epa.gov>
Cc: Patulski, Meg <patulski.meg@epa.gov>
Subject: Modeling Commercial Marine Vessels in NATA Version 2

OAQPS is getting run CMAQ and AERMOD for NATA v2 (should be done by April). For dispersion modeling, we are going to bin commercial marine as follows:

C1/C2 port
C3 port
Underway (C1/2 and C3 combined)

Deliberative Process / Ex. 5

Let me know if there are any issues/concerns.

Rich Cook
Health Effects, Benefits, and Air Toxics Center
Assessment and Standards Division
Office of Transportation and Air Quality
U. S. Environmental Protection Agency
(734)214-4827

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 1/29/2018 9:08:59 PM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]
Subject: RE: hybrid ratios for EtO from v1
Attachments: ETOX_v1_v2_highrisk_comparison_cmaq_aermod_ratios.xlsx

Deliberative Process / Ex. 5

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 6:15 PM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: hybrid ratios for EtO from v1

Hi James

Deliberative Process / Ex. 5

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

From: Thurman, James
Sent: Thursday, January 25, 2018 4:03 PM
To: Palma, Ted <Palma.Ted@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: RE: hybrid ratios for EtO from v1

I don't have tract averages for V1 and it would take some effort to do so. We can talk more on Monday.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703

Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Palma, Ted
Sent: Thursday, January 25, 2018 3:36 PM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: RE: hybrid ratios for EtO from v1

I don't have but we could easily add those in to tract risks if James provides them by tract for EO

Deliberative Process / Ex. 5

Ted

Ted Palma
USEPA
OAQPS/HEID/ATAG
MD C539-02
RTP, NC 27711

919-541-5470 (work)
palma.ted@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 3:29 PM
To: Thurman, James <Thurman.James@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: hybrid ratios for EtO from v1

Hi James and Ted

Deliberative Process / Ex. 5

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 1/2/2018 2:15:40 PM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]
CC: Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]
Subject: RE: How is the ethylene oxide run going?
Attachments: comp_etox_new.xlsx; comp_etox.xlsx

Here's the newest spreadsheet, comp_etox_new.xlsx. Facilities are sorted by descending percent differences between V1 and V2 concentrations. **Deliberative Process / Ex. 5** I'll look into it more. I've attached the older comparison as well.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:57 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I think a quick look. As long as the values **Deliberative Process / Ex. 5** are close to what we had before we are good to go.

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:16 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

It includes the **Deliberative Process / Ex. 5** We can do a quick look at the spreadsheet before sending to HEID. Maybe send to them later today or tomorrow?

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:09 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:03 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Should have a spreadsheet to you this morning.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:01 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: How is the ethylene oxide run going?

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 10/17/2018 1:00:59 PM
To: Fox, Tyler [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=021c57f288da44738d9dea325aadad85-TFOX]
Subject: FW: 1-pager for Sterigenics modeling and monitoring

Can't win for losing

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Weinstock, Lewis
Sent: Wednesday, October 17, 2018 8:31 AM
To: Fox, Tyler <Fox.Tyler@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>; Hemby, James <Hemby.James@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: 1-pager for Sterigenics modeling and monitoring

Deliberative Process / Ex. 5

Lewis Weinstock | Group Leader | Ambient Air Monitoring Group | Air Quality Assessment Division - Mail Code C304-06 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Phone: 919-541-3661|

From: Shappley, Ned
Sent: Tuesday, October 16, 2018 9:25 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Thurman, James <Thurman.James@epa.gov>; Johnson, Steffan <johnson.steffan@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: Re: 1-pager for Sterigenics modeling and monitoring

All,

Look great, I have a couple of suggested revisions and a comment or two.

Thanks,

Ned

From: Fox, Tyler
Sent: Tuesday, October 16, 2018 5:54 PM
To: Weinstock, Lewis; Shappley, Ned
Cc: Thurman, James; Johnson, Steffan; Hemby, James
Subject: FW: 1-pager for Sterigenics modeling and monitoring

Lew/Ned

You both good with this version and want to share with Chet? Any additional comments, edits, questions?

Thanks,

Tyler

-----Original Message-----
From: Thurman, James
Sent: Tuesday, October 16, 2018 4:18 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: RE: 1-pager for Sterigenics modeling and monitoring

All,
Attached is an updated version of my edits.

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

-----Original Message-----
From: Fox, Tyler

Sent: Tuesday, October 16, 2018 3:19 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Hemby, James <Hemby.James@epa.gov>
Subject: FW: 1-pager for Sterigenics modeling and monitoring

James/Ned

Please see the draft one pager that Lew is pulling together and assume you both can work together in filling in the relevant modeling information here per Chet's request?

Thanks,

Tyler

-----Original Message-----
From: Weinstock, Lewis
Sent: Tuesday, October 16, 2018 3:10 PM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Fox, Tyler <Fox.Tyler@epa.gov>
Subject: RE: 1-pager for Sterigenics modeling and monitoring

Hi James:

Here is a first cut of the sampling plan - simplified per Chet's instructions. Feel free to add whatever modeling information you think is appropriate.

Lewis Weinstock | Group Leader | Ambient Air Monitoring Group | Air Quality Assessment Division - Mail Code C304-06 | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | Research Triangle Park, NC 27711 | Phone: 919-541-3661|

-----Original Message-----
From: Wayland, Richard
Sent: Tuesday, October 16, 2018 1:48 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Fox, Tyler <Fox.Tyler@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Cc: Hemby, James <Hemby.James@epa.gov>
Subject: 1-pager for Sterigenics modeling and monitoring

Talked to Clint just now who talked with the Illinois director about his attorney calling us on the modeling and monitoring around Sterigenics. After apologizing, he asked (and Clint agreed) if EPA could draft up a short 1-pager at a high level about the modeling and monitoring we are proposing to do.

Deliberative Process / Ex. 5

Chet

Richard A. "Chet" Wayland
Sent from my iPhone

Appointment

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 9/5/2018 3:32:05 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]

Subject: Sterigenics modeling
Attachments: sterigenics_concs.jpg; sterigenics_concs_zoom.jpg; sterigenics_domain.jpg
Location: James will call Phuong

Start: 9/5/2018 7:00:00 PM
End: 9/5/2018 7:30:00 PM
Show Time As: Tentative

Details about OAQPS modeling for NATA:

Deliberative Process / Ex. 5

For more on the NATA modeling see the TSD at: https://www.epa.gov/national-air-toxics-assessment/2014-nata-technical-support-document

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 9/5/2018 12:48:19 PM
To: Phillips, Sharon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=771cdf9eb00d48b1bd6a40f42c4c496a-SPHILLIP]; Fox, Tyler [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=021c57f288da44738d9dea325aadad85-TFOX]
Subject: RE: News Clips – September 4, 2018

Deliberative Process / Ex. 5

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Phillips, Sharon
Sent: Tuesday, September 04, 2018 3:30 PM
To: Fox, Tyler <Fox.Tyler@epa.gov>
Cc: Thurman, James <Thurman.James@epa.gov>
Subject: FW: News Clips – September 4, 2018

From: Smith, Darcie
Sent: Tuesday, September 04, 2018 3:27 PM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>; Woody, Matthew <Woody.Matthew@epa.gov>; Truesdell, Raymond <truesdell.raymond@epa.gov>; Cook, Rich <Cook.Rich@epa.gov>; Chow, Alice <chow.alice@epa.gov>; jeff.myers@wisconsin.gov; Thurman, James <Thurman.James@epa.gov>; Phillips, Sharon <Phillips.Sharon@epa.gov>
Cc: Riha, Kristin <Riha.Kristin@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>
Subject: FW: News Clips – September 4, 2018

ETHYLENE OXIDE

- Residents and politicians take action to stop emissions from plant in Willowbrook that EPA says are harmful *(Chicago Tribune)*
- Willowbrook Families Retain Law Firm After Report Of Cancer Risk *(Burr Ridge Patch)*

Residents and politicians take action to stop emissions from plant in Willowbrook that EPA says are harmful

The Chicago Tribune

By: Kimberly Fornek
Published: September 1, 2018

A light drizzle started to fall on the protesters standing outside the Sterigenics facility in Willowbrook Friday evening.

"Mommy, will the rain take the toxic air away?" asked 5-year-old Jordan Owens.

Jordan was standing with his mother, Rae Waters, who had joined a group of about 40 other people holding signs and chanting.

Some of the protesters were wearing gas and surgical masks.

They were protesting the continued operation of Sterigenics near residential neighborhoods because of the company's use of ethylene oxide, a chemical the EPA has determined causes cancer.

When asked why she brought her son to stand in front of a building she feared was a health threat, Waters said they live close enough to the facilities that they probably are breathing dangerous emissions all the time.

Annette Garcia, who has lived within 1.5 miles of the facilities for 25 years, said "We want Sterigenics out of our neighborhood. Go somewhere else."

Sterigenics International provides sterilization services for the health care, pharmaceutical and food industries. The company uses sterilization chambers where products are sprayed with ethylene oxide in two buildings that are clustered among other companies east of Route 83 and north of the Stevenson Expressway.

Sterigenics officials say they have met the emission limits for ethylene oxide set by the Illinois EPA when it issued the company's permit to operate.

In December 2016, however, the EPA changed its description of the gas ethylene oxide from "probably carcinogenic to humans" to "carcinogenic to humans." The EPA also determined the cancer potency risk for adult-based inhalation of ethylene oxide was 30 times higher.

Rae Waters of Willowbrook holds a sign protesting Sterigenics' use of the chemical ethylene oxide, which the EPA deterimined is a carcinogenic. (Kimberly Fornek/Pioneer Press)

That determination warrants a re-examination of the company's permit, which the Illinois EPA most recently issued in May 2015 and comes up for review in 2020, said state Sen. John Curran, R-41st, who joined the protesters.

"I'm filing legislation Tuesday to reopen the current permit for a new public hearing process," Curran said. "What is the acceptable risk of a carcinogen? That is an unfair question to pose to residents."

He is one of eight local elected officials who sent a letter Friday to Sterigenics officials asking them to halt operations at the Willowbrook facilities until proper safeguards are put in place and air quality testing with those safeguards installed is completed.

"It is imperative that the community be assured that you are acting as a good corporate citizen and are taking all steps necessary to protect those who are potentially impacted by the emissions," reads the letter, signed by Willowbrook Mayor Frank Trilla, Darien Mayor Kathleen Weaver, Illinois House Republican leader Jim Durkin and DuPage County Board members Greg Hart, Gary Grasso, Brian Krajewski and Chairman Dan Cronin.

They are asking for a good faith gesture, said Trilla, who started contacting the EPA and other government officials as soon as he received a report Aug. 22 from the U.S. Department of Health & Human Services' Agency for Toxic Substances and Disease Registry.

The officials also are conferring with the Illinois Attorney General about the situation.

Sterigenics did not respond to requests for comment.

The report warned that long-term exposure to the levels of ethylene oxide measured in some of the air samples taken between May 16-18 around Sterigenics posed a public health hazard. The report stated that additional long-term sampling is warranted to better understand residential exposure to the chemical.

A firestorm of public outrage erupted after Trilla posted news of the report to the Willowbrook village website. The village also sent text messages to community members.

Sterigenics built the sterilization chambers at 7775 Quincy St. in 1984 and at 830 Midway Drive in 1999, according to the report.

Many residents think local officials let them down by allowing a company that stores and uses ethylene oxide within a mile of four schools and residential neighborhoods.

"You live in a town based on the assumption that this is a safe place to live," said Paula Wallrich of Darien. "Now we found out this has been going on since before our kids were born."

Melissa Alvarado, who also attended the Friday protest, thinks residents should have been notified of an ethylene oxide leak at the Willowbrook facility in 2013 that resulted in a $50,000 fine.

"That was kept very quiet," Alvarado said. "We didn't even know what this company did. We don't even know what any of these companies do," she said, gesturing to other businesses in the same industrial area as Sterigenics.

"I guess I assumed the mayors and elected officials were making sure we were safe and nothing harmful was here," Alvarado said.
Local officials say they are now investigating ways to quickly address the problem.

Trilla said Sterigenics is located in an area zoned for light industrial use. The village's legal staff is investigating whether that zoning classification allows Sterigenics to use the chemicals in question and operate as it currently does.

Durkin also introduced legislation Friday that would amend the Environmental Protection Act effective immediately, so that a facility emitting ethylene oxide at a level higher than the standards set in the federal Clean Air Act or by the Illinois EPA would have to immediately stop operations until it could reduce the levels below both federal and state standards.

That would not satisfy Alvarado. She wants Sterigenics to stop using ethylene oxide permanently.

"I don't want them to be shut down just until the media attention dies down and then quietly start back up," Alvarado said.

Unlike some residents, Adham Sahloul of Burr Ridge is not urging Sterigenics to move its ethylene oxide sterilization plant somewhere else, such as a remote setting away from populated areas.

"This is not a 'not in my backyard' situation," Sahloul said.

He thinks using ethylene oxide is too dangerous for any environment. Other safer ways to sterilize medical products exist, said Sahloul.

A Sterigenics official at a public forum Wednesday said some of the medical testing products they sterilize cannot withstand other methods of sterilization, such as steam.

But Sahloul said the EPA and Health and Human Services Department need to study further the short-term and long-term effects of ethylene oxide exposure.
"There's no margin for error," he said.

DuPage County Board member Hart, who represents the district in which Sterigenics is located, attended the demonstration.

“The best tool people have is getting mobilized and making their views known,” Hart said. “That moves the needle more than any politicians talking.”

Attorneys from the firms Romanucci & Blandin and Hart McLaughlin & Eldridge held a joint press conference outside Sterigenics Saturday afternoon to say they had been retained by more than 12 people and are launching an investigation of not only the current levels of emissions from Sterigenics, but emissions over the past 34 years.

Residents who are part of the Facebook group, Stop Sterigenics, said another law firm held an information session for people who live near Sterigenics at the Indian Prairie Public Library Saturday morning.

“Legal pressure put on Sterigenics from any place can help,” Alvarado said.

Residents of the Willowbrook area talk to lawyers who held a press conference Sept. 1 to say they are investigating Sterigenics' use of the chemical ethylene oxide. (Kimberly Fornek/Pioneer Press)

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Willowbrook Families Retain Law Firm After Report Of Cancer Risk

Burr Ridge Patch
By: Andrea Earnest
Published: September 3, 2018

WILLOWBROOK, IL — Several Willowbrook families have retained a Chicago law firm to investigate ethylene oxide emissions released from Sterigenics International, Inc., which has facilities located in Willowbrook at 830 Midway Drive and 7775 Quincy St. A recent report from the Agency for Toxic Substances and Disease Registry, which is a division of the CDC, stated, "If measured and modeled data represent typical EtO ambient concentrations in ambient air, an elevated cancer risk exists for residents and off-site workers in the Willowbrook community surrounding the Sterigenics facility. These evaluated risks present a public health hazard to these populations."

A public meeting was held last week to discuss the report and many residents were concerned and upset. Now, according to a release, attorneys from Romanucci & Blandin, LLC and Hart McLaughlin & Eldridge, are representing multiple affected area families.

Sterigenics International Inc. uses ethylene oxide to sterilize medical equipment and other products. The sterilization process emits ethylene oxide, and a report from the U.S. National Cancer Institute notes, "Exposure to (ethylene oxide) is highly irritating to the eyes, skin and respiratory tract, induces nausea and vomiting and causes central nervous system depression. Ethylene oxide is mutagenic in humans and chronic exposure is associated with an increased risk of leukemia, stomach cancer, pancreatic cancer and non-Hodgkin lymphoma."

Local leaders sent a letter to the company on Friday, and called for a cease in operations until further study could be done.

"The potential ramifications of this revelation are catastrophic – the EPA has reported that human exposure to ethylene oxide causes cancer, and numerous other serious health risks, such as DNA mutations and birth defects," Gina A. DeBoni, Managing Attorney at Romanucci & Blandin, LLC, said in a release. "Residents of the community, including several with cancer or with relatives that have died of cancer, have reached out to our law firms to investigate the harmful effects of this toxic exposure. Our goal here is a lawsuit if our investigation does in fact reveal negligence or knowledge on anyone's part that resulted in the needless and unnecessary poisoning of men, women, and children."

New legislation has also been introduced and House Bill 5952 would amend the Illinois Environmental Protection Act to require facilities emitting ethylene oxide emissions higher than the standards set forth by either state or federal EPA regulations to cease operations until sufficient changes can be made to reduce the level of emissions below those standards, according to the release.

"There has been a lot of discussion regarding what the current ethylene oxide emissions are. However, this investigation is not about just current emission levels. It is about 34 years of exposure to a toxic substance that the residents of this community had no control of, or even knew about," said attorney Martin D. Gould, Romanucci & Blandin, LLC. "There simply is no acceptable level of risk here, and this community should not be breathing in one more day of poison until the investigations are completed."

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Appointment

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 9/5/2018 12:45:43 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]

Subject: Sterigenics modeling
Location: James will call Phuong

Start: 9/5/2018 7:00:00 PM
End: 9/5/2018 7:30:00 PM
Show Time As: Tentative

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 9/4/2018 6:29:51 PM
To: Nguyen, Phuong [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f07188263d014e06a28762ccf129ce20-PNguyen]
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

I have to leave but will try to catch up with you tomorrow.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Tuesday, September 04, 2018 2:23 PM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

HI James,
Sorry I was on another call this morning. I am available this afternoon if you want to talk.

Thanks,
Phuong

From: Thurman, James
Sent: Tuesday, September 04, 2018 7:54 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Phuong,
Can I give you a call around 11:30 AM your time today to talk about Sterigenics?

Thanks,
James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Wednesday, August 29, 2018 11:06 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

James, When you have a chance , give me a call so we can chat more about this work.

Phuong

From: Thurman, James
Sent: Wednesday, August 29, 2018 8:37 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Phuong,
Thanks, I would be interested in seeing your AERMOD input file if you can share it to see if you resolved the source better than we did in NATA.

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Nguyen, Phuong
Sent: Wednesday, August 29, 2018 9:11 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Sterigenics ethylene oxide AERMOD modeling

Hi James,
I did the modeling for this facility and worked with ATSDR on that report.
Phuong

From: Thurman, James
Sent: Wednesday, August 29, 2018 8:04 AM
To: Nguyen, Phuong <Nguyen.Phuong@epa.gov>
Subject: Sterigenics ethylene oxide AERMOD modeling

Phuong,
I saw a story about the Sterigenics ethylene oxide facility in DuPage County. There was a link to an ATSDR report that referenced EPA modeling of the facility, specifically by Region 5. I know you do work on toxics and was wondering if you did the modeling or may know who did. I was curious about it since we modeled it in NATA and was interested in comparing our model runs.

Thanks,
James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 10/12/2018 12:36:55 PM
To: Fox, Tyler [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=021c57f288da44738d9dea325aadad85-TFOX]
Subject: FW: Next Steps
Attachments: ATT00001.txt

FYI - Sterigenics

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Rimer, Kelly
Sent: Thursday, October 11, 2018 5:38 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Morris, Mark <Morris.Mark@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: FW: Next Steps

Ned, Mark and James,

See below. Is there any additional information Mike Koerber should know about the call yesterday?

Is there anything else we need from Sterigenics?

Thanks,
Kelly

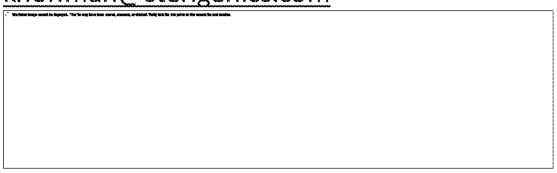
From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Thursday, October 11, 2018 5:32 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Cc: bftaylor@Sidley.com
Subject: Next Steps

Mike / Kelly:

Thank you again for getting your staff to immediately review our model information and start the risk assessment. It sounds like the initial model runs match our results. We owe them some further detailed information (tomorrow) and the final stack test reports (next week) so they can finalize the model. I was wondering if we can schedule a call to discuss next steps and possible timing.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com



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Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 12/7/2017 8:30:27 PM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]
Subject: etox results
Attachments: comp_etox.xlsx

Deliberative Process / Ex. 5

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

Message

From: Thurman, James [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=AFBCBF8AC44B43329A71AAD61EB535D5-JTHURMAN]
Sent: 9/27/2018 11:58:00 AM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]
Subject: RE: Call tomorrow

It looks like it will be a few of us from the party. I can go.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

-----Original Message-----
From: Strum, Madeleine
Sent: Thursday, September 27, 2018 7:57 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: RE: Call tomorrow

Oh it is our party. I'll let you know what they decide.

-----Original Message-----
From: Thurman, James
Sent: Thursday, September 27, 2018 7:56 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: Call tomorrow

I can be.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

-----Original Message-----
From: Strum, Madeleine
Sent: Thursday, September 27, 2018 7:16 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: FW: Call tomorrow

Are you free today at noon for this? It's the Chicago Sterigenics.

-----Original Message-----
From: Koerber, Mike
Sent: Thursday, September 27, 2018 7:10 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: FW: Call tomorrow

I'm happy to participate, but this may be something more for you guys. Let me know your availability. I'd prefer 11 am CDT, but this may depend more on your schedules.

Mike

-----Original Message-----
From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Wednesday, September 26, 2018 6:51 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>
Subject: Call tomorrow

Are you available at 8:30 or 11:00am Central tomorrow to discuss modeling?

If so, we can set up a call.

Thanks,
Kathy

Sent from my iPhone
This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 1/4/2018 5:48:56 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Eyth, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2b0565e87a0041d4a4a090399740fd86-Eyth, Alison]
Subject: RE: How is the ethylene oxide run going?
Attachments: allV1_View2_Table.zip; benchmarks_basedon_v17pollinfosheet.xlsx

James

Deliberative Process / Ex. 5

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Thurman, James
Sent: Thursday, January 4, 2018 11:01 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I can do that.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Thursday, January 04, 2018 10:59 AM
To: Thurman, James <Thurman.James@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5

From: Thurman, James
Sent: Thursday, January 4, 2018 10:54 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>; Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Madeleine,

Deliberative Process / Ex. 5

James

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Wednesday, January 03, 2018 5:13 PM
To: Eyth, Alison <Eyth.Alison@epa.gov>; Thurman, James <Thurman.James@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

From: Eyth, Alison
Sent: Wednesday, January 3, 2018 4:34 PM
To: Thurman, James <Thurman.James@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Hi,

We ran out of time today. I was wondering if it Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Alison

From: Thurman, James
Sent: Tuesday, January 02, 2018 9:16 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Here's the newest spreadsheet, comp_etox_new.xlsx. Facilities are sorted by descending percent differences between V1 and V2 concentrations. Deliberative Process / Ex. 5 I've attached the older comparison as well.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:57 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

I think a quick look. As long as the values Deliberative Process / Ex. 5 are close to what we had before we are good to go.

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:16 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Deliberative Process / Ex. 5 We can do a quick look at the spreadsheet before sending to HEID. Maybe send to them later today or tomorrow?

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:09 AM
To: Thurman, James <Thurman.James@epa.gov>
Cc: Eyth, Alison <Eyth.Alison@epa.gov>
Subject: RE: How is the ethylene oxide run going?

That's great. Deliberative Process / Ex. 5 Should we send to HEID directly or do that comparison to v1 and look at it?

Deliberative Process / Ex. 5

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Thurman, James
Sent: Tuesday, January 2, 2018 8:03 AM
To: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: How is the ethylene oxide run going?

Should have a spreadsheet to you this morning.

James A. Thurman, Ph.D.
U.S. EPA/OAQPS/AQAD
Air Quality Modeling Group (C439-01)
109 T.W. Alexander Drive
Research Triangle Park, NC 27711
Phone: (919) 541-2703
Fax: (919) 541-0044
Email: thurman.james@epa.gov

From: Strum, Madeleine
Sent: Tuesday, January 02, 2018 8:01 AM
To: Thurman, James <Thurman.James@epa.gov>
Subject: How is the ethylene oxide run going?

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 12/6/2017 6:55:23 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]
Subject: concentrations for spot check - yellow rows (2) and yellow column is ug/m3
Attachments: eto conc v1 for v2 compare.xlsx

Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

Sent: 10/17/2018 2:10:49 PM
Subject: California Sterigenics Facilities

Ned and Darcie,

I finished review of the California Sterigenics documents. Unfortunately, there does not appear to be any data on fugitive emissions monitoring, but I think there are a few points worth noting:

Deliberative Process / Ex. 5

Jonathan

Jonathan W. Witt, EI
Environmental Engineer
Office of Air Quality Planning and Standards
EPA|OAR|OAQPS|SPPD|FIG
109 T.W. Alexander Dr. | Mail Drop: E143-05 | Durham, NC 27703
+1.919.541.5645 (work) | +1.919.541.7885 (fax)

Appointment

From: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]
Sent: 10/3/2018 5:19:00 PM
To: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]; Shappley, Ned [Shappley.Ned@epa.gov]; Morris, Mark [Morris.Mark@epa.gov]; Woody, Matthew [Woody.Matthew@epa.gov]; Smith, Darcie [Smith.Darcie@epa.gov]
CC: Strum, Madeleine [Strum.Madeleine@epa.gov]; Thurman, James [Thurman.James@epa.gov]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]

Subject: FW: Modeling Plan for Sterigenics - Fugitives
Location: RTP-C300A-Max40/RTP-Bldg-C

Start: 10/4/2018 6:00:00 PM
End: 10/4/2018 7:00:00 PM
Show Time As: Busy

-----Original Appointment-----
From: Rimer, Kelly
Sent: Wednesday, October 03, 2018 12:07 PM
To: Rimer, Kelly; Shappley, Ned; Morris, Mark; Woody, Matthew; Smith, Darcie
Cc: Strum, Madeleine; Thurman, James
Subject: Modeling Plan for Sterigenics - Fugitives
When: Thursday, October 04, 2018 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-C300A-Max40/RTP-Bldg-C

Appointment

From: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Sent: 9/18/2018 11:48:11 AM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]

Subject: Call Kathy @ Sterigenics

Start: 9/18/2018 4:00:00 PM
End: 9/18/2018 4:30:00 PM
Show Time As: Free

Message

Sent: 9/5/2018 8:30:51 PM
To: Mia, Marcia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=6590c44762d64ce28ab3d7a7fbb14673-MMia]
Subject: RE: Ethylene Oxide at Sterigenics

Hi Marcia,

Just FYI, I'm the contact for EtOx sterilizers, and Jennifer is the EtOx contact for the chemicals sector.

Thanks,
Jonathan

From: Mia, Marcia
Sent: Wednesday, September 05, 2018 1:54 PM
To: Bouchard, Andrew <Bouchard.Andrew@epa.gov>
Subject: FW: Ethylene Oxide at Sterigenics

Are you EtOx contact? FYI or pls forward as an FYI.

Marcia B Mia
Air Branch
Office of Compliance
2227A WJCS
U.S. Environmental Protection Agency
202-564-7042

This message may contain deliberative, attorney-client or otherwise privileged material. Do not release this message without the appropriate review. If you are not the intended recipient, kindly advise and delete this message/attachments.

From: Klaus, Dan
Sent: Wednesday, September 05, 2018 1:29 PM
To: Mia, Marcia <Mia.Marcia@epa.gov>
Cc: Lischinsky, Robert <Lischinsky.Robert@epa.gov>
Subject: Ethylene Oxide at Sterigenics

Hi Marcia,
As I mentioned, these articles popped up in my news feed last week, and I was just wondering if OC was involved at all. It appears that ASTDR/EPA did some monitoring in May, and a report came out in July.

http://www.chicagotribune.com/suburbs/burr-ridge/news/ct-dbr-willowbrook-sterigenics-public-reaction-tl-0906-story.html
http://www.chicagotribune.com/suburbs/burr-ridge/news/ct-dbr-sterigenics-protest-tl-0906-story.html

Here's a region 5 page on the facility.
https://www.epa.gov/il/sterigenics-willowbrook-facility-documents
The ASTDR analysis link didn't work for me, but here's a link to an archived version
https://webcache.googleusercontent.com/search?q=cache:kNkmeHQPBlsJ:https://www.atsdr.cdc.gov/HAC/pha/sterigenic/Sterigenics_International_Inc-508.pdf+&cd=1&hl=en&ct=clnk&gl=us

ECHO Reports

https://echo.epa.gov/air-pollutant-report?fid=110000433594 (Air Pollutant Report)
https://echo.epa.gov/detailed-facility-report?fid=110000433594 (Detailed Facility Report)
It's interesting because it's a synthetic minor.

Deliberative Process / Ex. 5

Anyway, I wanted to put this on your radar in case anything came of this like the art glass or chloroprene issues in the past.

Regards,
Daniel Klaus
Office of Compliance
US Environmental Protection Agency
phone: (202) 564-7757

Message

Sent: 9/5/2018 8:29:28 PM
Subject: RE: Ethylene Oxide at Sterigenics

Hi Marcia,

I'm the EtOx contact for st

From: Mia, Marcia
Sent: Wednesday, September 05, 2018 1:54 PM
To: Bouchard, Andrew <Bouchard.Andrew@epa.gov>
Subject: FW: Ethylene Oxide at Sterigenics

Are you EtOx contact? FYI or pls forward as an FYI.

Marcia B Mia
Air Branch
Office of Compliance
2227A WJCS
U.S. Environmental Protection Agency
202-564-7042

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From: Klaus, Dan
Sent: Wednesday, September 05, 2018 1:29 PM
To: Mia, Marcia <Mia.Marcia@epa.gov>
Cc: Lischinsky, Robert <Lischinsky.Robert@epa.gov>
Subject: Ethylene Oxide at Sterigenics

Hi Marcia,
As I mentioned, these articles popped up in my news feed last week, and I was just wondering if OC was involved at all. It appears that ASTDR/EPA did some monitoring in May, and a report came out in July.

http://www.chicagotribune.com/suburbs/burr-ridge/news/ct-dbr-willowbrook-sterigenics-public-reaction-tl-0906-story.html
http://www.chicagotribune.com/suburbs/burr-ridge/news/ct-dbr-sterigenics-protest-tl-0906-story.html

Here's a region 5 page on the facility.
https://www.epa.gov/il/sterigenics-willowbrook-facility-documents
The ASTDR analysis link didn't work for me, but here's a link to an archived version
https://webcache.googleusercontent.com/search?q=cache:kNkmeHQPBlsJ:https://www.atsdr.cdc.gov/HAC/pha/sterigenic/Sterigenics_International_Inc-508.pdf+&cd=1&hl=en&ct=clnk&gl=us

ECHO Reports
https://echo.epa.gov/air-pollutant-report?fid=110000433594 (Air Pollutant Report)
https://echo.epa.gov/detailed-facility-report?fid=110000433594 (Detailed Facility Report)
It's interesting because it's a synthetic minor.

Deliberative Process / Ex. 5

Regards,
Daniel Klaus
Office of Compliance
US Environmental Protection Agency
phone: (202) 564-7757

Message

Sent: 10/17/2018 10:04:12 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]
Subject: RE: Sterigenics Model - Additional Info

Thanks Darci
Jonathan

From: Smith, Darcie
Sent: Wednesday, October 17, 2018 6:02 PM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: FW: Sterigenics Model - Additional Info

Hi Jonathan –

You may already have this, but just in case, I thought you might like this additional Sterigenics data.

Darcie

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Hoffman, Kathy [mailto:KHoffman@sterigenics.com]
Sent: Sunday, October 14, 2018 2:04 PM
To: Morris, Mark <Morris.Mark@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Thurman, James <Thurman.James@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Robert DeMott <RDemott@ramboll.com>; Wagner, Kevin <KWagner@sterigenics.com>; Taylor, Byron F. <bftaylor@sidley.com>; Courtney Adcock <cadcock@ramboll.com>; Heyde, John M. <jheyde@sidley.com>
Subject: Sterigenics Model - Additional Info

As follow up to our call on Wednesday, we promised the following data:

- Volumetric Flow Rates (raw data) – See attached files named "WB1 Field Data.pdf" and "WB2 Field Data.pdf"
- Process Information - Amount of EO Used from each chamber – See attached Excel File named "Test Production Data For Stack Test.xlsx"
- Amount of EO Used for last 5 years - See attached Excel File named "EO Used Last 5 Years.xlsx"
- Reduction in fugitives estimate based on some that are routed to emission controls:
    - About 3.5% (or 3 #/yr) of the emissions from the work aisle fan are sent to emission controls instead of out the exhaust fan
    - About 26% (or 7 #/yr) of the emissions from the Processed Storage Fan are routed to controls instead of out the exhaust fan

I was wondering if you have received the raw data from the EPA Region 5 monitoring data from the laboratory as we discussed. We are anxious to see and review this data.

Let us know if you have any questions or need any further data. We are in the process of reviewing the draft stack testing reports. We hope to have these completed and distributed shortly.

Regards,
Kathy

Kathleen Hoffman
Senior Vice President - Global Environmental, Health & Safety and Technical Services
Sterigenics, A Sotera Health Company
2015 Spring Road, Suite 650
Oak Brook, IL 60523
Office: 630.928.1758
khoffman@sterigenics.com

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Appointment

From: Shappley, Ned [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5FC7FDE372054AB5AC38F24B9072B73D-SHAPPLEY, N]
Sent: 9/26/2018 9:01:42 PM
To: Thurman, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=afbcbf8ac44b43329a71aad61eb535d5-JTHURMAN]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Johnson, Steffan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eba5c0dfc5fc4593afa62ce7c3dd6f02-Johnson, Steffan]; Fruh, Steve [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f47a02a00d3642aea6de691e3015b188-SFRUH]; Chen, Xi [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cb29e8e6f2064817a3a722f52e000f2b-Chen, Xi]; Merrill, Raymond [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=03da8eee10dc47f1898bfacc2307e8ee-Merrill, Raymond]

Subject: Sterigenics De-brief to Region 5
Location: E201

Start: 9/27/2018 7:00:00 PM
End: 9/27/2018 8:00:00 PM
Show Time As: Tentative

Adobe Connect Room to follow

Appointment

From: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Sent: 10/9/2018 1:58:19 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]

Subject: Call Ken re: Sterigenics

Start: 10/10/2018 5:00:00 PM
End: 10/10/2018 5:30:00 PM
Show Time As: Free

Appointment

From: Smith, Darcie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3AE3C2377EFB42879B943DB8796DDC05-SMITH, DARCIE]
Sent: 9/28/2018 10:18:15 PM
To: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Rimer, Kelly [Rimer.Kelly@epa.gov]; Thurman, James [Thurman.James@epa.gov]; Strum, Madeleine [Strum.Madeleine@epa.gov]; Morris, Mark [Morris.Mark@epa.gov]; Shappley, Ned [Shappley.Ned@epa.gov]; Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Koerber, Mike [Koerber.Mike@epa.gov]

Subject: Convo with Sterigenics re modeling
Location: RTP-C430-Max20/OAQPS-Bldg-C; RTP-OAQPS-[redacted]QAD/Phone-Line/RTP-OAQPS-BLDG-C

Start: 10/2/2018 1:30:00 PM
End: 10/2/2018 2:30:00 PM
Show Time As: Tentative

Message

Sent: 8/29/2018 12:40:48 PM
To: Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]; Dewees, Jason [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38cc35d204824b6bb3fb95693f7316ea-Dewees, Jason]
Subject: RE: EO Sterilizers Regional Call

I don't see anything wrong with reaching out to them, but

From: Shappley, Ned
Sent: Wednesday, August 29, 2018 7:33 AM
To: Witt, Jon <Witt.Jon@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>
Subject: RE: EO Sterilizers Regional Call

Sorry for the delayed response,

Deliberative Process / Ex. 5

I am good for a day trip to Charlotte whenever.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Witt, Jon
Sent: Tuesday, 28 August, 2018 17:01
To: Dewees, Jason <Dewees.Jason@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: EO Sterilizers Regional Call

Sounds great. I can go ahead and touch base with them tomorrow if y'all are OK with that.

I also got in touch with Kathy Hoffman at Sterigenics, and she said that she could set up a site visit for us at the facility in Charlotte within the next few weeks. Do either of you have an travel conflicts during that time, or is this something that we could swing?

Jonathan

From: Dewees, Jason
Sent: Tuesday, August 28, 2018 4:37 PM
To: Witt, Jon <Witt.Jon@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Subject: RE: EO Sterilizers Regional Call

Yeah, I think that would be a great place to start.

Deliberative Process / Ex. 5

From: Witt, Jon
Sent: Monday, August 27, 2018 4:47 PM
To: Shappley, Ned <Shappley.Ned@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>
Subject: EO Sterilizers Regional Call

Ned and Jason,

While we get formal workgroup set up on EO sterilizers, I'm trying to set up a regular call with the Regions. After talking with Steve, it looks like formal workgroup will be mainly be with HQ offices, but I wanted to have a separate, regular call with the Regions in order to solicit information from them that we'll need and to keep them updated on the progress we're making. I remember a while ago, we were talking about the items that we would like from the Regions:

Deliberative Process / Ex. 5

Is this list still accurate? If so, I can go ahead and get the call set up and let them know the information we need. If not, let me know what else we'll need to add to this list.

Thanks so much,
Jonathan

Jonathan W. Witt, EI
Environmental Engineer
Office of Air Quality Planning and Standards
EPA|OAR|OAQPS|SPPD|FIG
109 T.W. Alexander Dr. | Mail Drop: E143-05 | Durham, NC 27703
+1.919.541.5645 (work) | +1.919.541.7885 (fax)

Task

Subject: Kathy H. follow-up
Start Date: 9/18/2018
Due Date: 9/18/2018

Status: Not Started
Percent Complete: 0

Total Work: 0
Actual Work: 0

Owner: Witt, Jon

Meeting w/ Bill W. and Clint Woods re: progress w/ Sterigenics

Message

Sent: 8/6/2018 6:09:29 PM
Subject: RE: Sterigenics

Hey Darcie,

I talked to Steve Fruh, and he was going to mention to David Cozzie that we would like to conduct a site visit with a sterilizer facility. In the meantime, he told me it was probably OK to go ahead and at least call Kathy Hoffman to let her know that we would be interested in touring the Charlotte facility.

From: Witt, Jon
Sent: Monday, August 06, 2018 10:59 AM
To: Smith, Darcie <Smith.Darcie@epa.gov>
Subject: RE: Sterigenics

Will do

From: Smith, Darcie
Sent: Monday, August 06, 2018 10:58 AM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: Sterigenics

Hi Jonathan –

While I think that is a great idea, I think you should wait to reach out to her until after checking with David Cozzie. Not to slow you down, but to be sure that the ask is coordinated with other efforts.

Thanks,
Darcie

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Witt, Jon
Sent: Monday, August 06, 2018 10:55 AM
To: Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>; Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>
Subject: RE: Sterigenics

Thanks for the update! I think I'll go ahead and get in touch with Kathy Hoffman about a potential site visit in Charlotte if folks are OK with that.
Jonathan

From: Shappley, Ned
Sent: Monday, August 06, 2018 10:22 AM

To: Witt, Jon <Witt.Jon@epa.gov>
Cc: Smith, Darcie <Smith.Darcie@epa.gov>; Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>; Dewees, Jason <Dewees.Jason@epa.gov>
Subject: Sterigenics

John,

The call with Sterigenics on Friday was somewhat productive. As far as the source measurement goes, they are pushing back on the sampling methodology but not necessarily the test design (as of yet). Also, I did find out that the entire industry uses a single tester for their compliance testing. Deliberative Process / Ex. 5 Deliberative Process / Ex. 5

There was also push by Region 5 for the facility to start being more proactive on their LDAR program and was suggesting they use OGI. Deliberative Process / Ex. 5 Deliberative Process / Ex. 5

https://www.tceq.texas.gov/assets/public/permitting/air/Forms/PermitsByRule/Checklists/10135.pdf

Finally, Kathy Hoffman was on the line for Sterigenics and seems extremely willing to work with EPA. She was the person who was head of the trade group until recently, if you haven't reached out to her yet, she may be a good contact to reach out to push for a meeting with the trade group or for site visit to the Sterigenics in Charlotte.

Thanks,

Ned Shappley | USEPA|OAQPS|AQAD|Measurement Technology Group
109 TW Alexander Drive (E143-02) | Research Triangle Park, NC 27711
email: shappley.ned@epa.gov | Phone (919)541-7903

Message

From: Eck, Janet [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F044E2781E1647468EE16FBFAB8D55B2-JECK]
Sent: 10/1/2018 12:44:28 AM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: FW: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

FYI. Thanks.

From: Rush, Alan
Sent: Friday, September 28, 2018 4:58 PM
To: Eck, Janet <Eck.Janet@epa.gov>
Subject: FW: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Janet,

How's this? Enough info?

Alan

From: Atkinson, Emily
Sent: Friday, September 28, 2018 4:56 PM
To: Rush, Alan <Rush.Alan@epa.gov>
Cc: Culligan, Kevin <Culligan.Kevin@epa.gov>; Iglesias, Amber <Iglesias.Amber@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

EPA invitees were Bill Wehrum, David Harlow, Clint Woods.

The stakeholder meeting request says "the purpose of the meeting is to discuss the results of the stack testing at the Willowbrook facility and subsequent monitoring based on those tests."

Let me know if you need anything else.

Emily Atkinson
Special Assistant
Management Analyst
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406E, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

From: Rush, Alan
Sent: Friday, September 28, 2018 4:50 PM
To: Atkinson, Emily <Atkinson.Emily@epa.gov>
Cc: Culligan, Kevin <Culligan.Kevin@epa.gov>; Iglesias, Amber <Iglesias.Amber@epa.gov>
Subject: FW: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Emily,

The Workgroup chair of the Ethylene Oxide Sterilizers Rule would like alittle more information on the meeting, See below. Can you provide any additional information? We only know that it is associated with the Ethylene Oxide Sterilizers rule (SAN 7055).

Thanks,
Alan

From: Witt, Jon
Sent: Friday, September 28, 2018 4:39 PM
To: Eck, Janet <Eck.Janet@epa.gov>
Subject: RE: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Hi Janet,

Do we have any information on who from EPA was in this meeting and what was discussed?

Thanks,
Jonathan

From: Eck, Janet
Sent: Thursday, September 27, 2018 11:04 AM
To: Bouchard, Andrew <Bouchard.Andrew@epa.gov>; Witt, Jon <Witt.Jon@epa.gov>; Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>
Subject: FW: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Not sure w/Ethylene rule Alan is referring to. Do any of you recognize this company (Sterigenics) association w/your rule? For your docket. Thanks.

From: Rush, Alan
Sent: Thursday, September 27, 2018 10:54 AM
To: Eck, Janet <Eck.Janet@epa.gov>
Cc: Iglesias, Amber <Iglesias.Amber@epa.gov>; Henigin, Mary <Henigin.Mary@epa.gov>
Subject: Fw: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Janet,

Attached is a sign in sheet for a meeting with Sterigenics. This should probably go with the Ethylene rule.

Alan

I also have one for a meeting with Mike McKenna, do you have any idea what rulemaking that would accompany? He met with David Harlow.

Alan

From: Atkinson, Emily
Sent: Thursday, September 27, 2018 10:45 AM
To: Rush, Alan; Iglesias, Amber; Culligan, Kevin
Subject: Stakeholder Sign in Sheet: 9/26/2018 Meeting with Sterigenics

Emily Atkinson
Special Assistant
Management Analyst
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406E, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-1850
Email: atkinson.emily@epa.gov

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 10/18/2018 6:52:37 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
CC: Drukenbrod, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=29ad915814724d1c842ba94df99fdfd3-JDRUKEN]
Subject: FW: EtO Sterilizers Update
Attachments: 2017_TRI_EtO_sterilizers.xls; APPENDIX D.docx; APPENDIX E.docx

Jon
The 2 TABS "Matched_with_Master_List" and "Not_Matched_with_Master_List" in the file that Josh sent you contains all the TRI EtO emissions from my 2017 TRI file I was telling you about, and it has all the fields I was telling you about- Basis of Estimate code is in column W for fugitives and Column Z for stack emissions.
The waste treatment codes are in column AH.

Crosswalks showing what the basis of estimate and waste treatment codes represent are attached – I pulled these out of a larger report – you just need the tables in these documents. Appendix D is the basis of estimate code and Appendix E contains TRI waste treatment codes.

A few other fields that may be of interest.

1) TRI data can have multiple Air waste streams each with multiple treatment methods. **I think** the WASTE_TREATMENT_METHOD_SEQUNCE (column AG) tells you which controls are in series (1&2 means one waste stream but 2 controls in series), whereas the WASTE_STREAM_SEQUENCE (column AF) tells you which are in parallel. (1&2 means 2 parallel waste streams). We might need to go back to the TRI folks to confirm my interpretation.

The waste treatment efficiency codes are

Waste Treatment Efficiency Range Codes:

E1 =	greater than 99.9999%
E2 =	greater than 99.99%, but less than or equal to 99.9999%
E3 =	greater than 99%, but less than or equal to 99.99%
E4 =	greater than 95%, but less than or equal to 99%
E5 =	greater than 50%, but less than or equal to 95%
E6 =	equal to or greater than 0%, but less than or equal to 50%

Madeleine Strum | U.S. Environmental Protection Agency | 109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards | Air Quality Assessment Division | Emission Inventory and Analysis Group | 919 541 2383

From: Drukenbrod, Josh
Sent: Thursday, October 11, 2018 11:26 AM
To: Witt, Jon <Witt.Jon@epa.gov>
Cc: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: EtO Sterilizers Update

Hi Jon,

I apologize this took a little longer than I expected. The only merge field I had to work with was facility name and it appears most were different between the two files. I went the route of manually checking each facility in the master list against Madeleine's 2017 TRI ethylene oxide sterilizers list. I've attached the results of that effort. In the file I've taken the master list and added the TRI ID & EIS ID where I was able to find matches against Madeleine's file. The other two sheets are the "matched" and "not matched" facilities from the 2017 TRI. The "not matched" I believe would be the list of facilities that Madeleine identified as potential additions to the master list.

Thanks,
-Josh

From: Witt, Jon
Sent: Tuesday, October 9, 2018 10:28 AM
To: Drukenbrod, Josh <Drukenbrod.Josh@epa.gov>
Subject: RE: EtO Sterilizers Update

Sounds great. Thanks again!

From: Drukenbrod, Josh
Sent: Tuesday, October 09, 2018 10:23 AM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: EtO Sterilizers Update

I have the data from Madeleine and I'm working to put it together now. It takes a little time since there aren't any facility IDs but I'll send over what I have once I've merged the files.

From: Witt, Jon
Sent: Tuesday, October 9, 2018 9:57 AM
To: Drukenbrod, Josh <Drukenbrod.Josh@epa.gov>
Subject: RE: EtO Sterilizers Update

Hi Josh,

We haven't done any checks against the 2017 TRI, but I doing that and adding relevant data would be very helpful. Is this something you would be doing, or would I be taking care of that? Happy to help wherever I can.

Thanks,
Jonathan

From: Drukenbrod, Josh
Sent: Friday, October 05, 2018 9:13 AM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: EtO Sterilizers Update

Hi Jon,

Has the master spreadsheet been cross-checked against the 2017 TRI? I was talking with Madeleine Strum earlier this week about this and she suggested doing some checks against the TRI though we weren't sure if this was already performed (would hate to duplicate the effort). There are some data that we could add through some files we have on-hand if it would be of interest to the team:

Deliberative Process / Ex. 5

Thanks,
-Josh

From: Witt, Jon
Sent: Thursday, October 4, 2018 5:12 PM
To: Dewees, Jason <Dewees.Jason@epa.gov>; Drukenbrod, Josh <Drukenbrod.Josh@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Lancey, Susan <lancey.susan@epa.gov>; Bellizzi, Carol <Bellizzi.Carol@epa.gov>; Dholakia, Umesh <Dholakia.Umesh@epa.gov>; Bertram, Emily <Bertram.Emily@epa.gov>; Fry, Jessica <fry.jessica@epa.gov>; Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>; Hall, Kristen <hall.kristen@epa.gov>; Dubose, Dick <DuBose.Dick@epa.gov>; Rinck, Todd <Rinck.Todd@epa.gov>; Russo, Todd <Russo.Todd@epa.gov>; Taylor, Kevin <Taylor.Kevin@epa.gov>; Sieffert, Margaret <Sieffert.Margaret@epa.gov>; Cox, Kyndall <Cox.Kyndall@epa.gov>; Stone, William <stone.william@epa.gov>; Doolan, Stephanie <Doolan.Stephanie@epa.gov>; Olson, Kyle <Olson.Kyle@epa.gov>; Davidson, Ken <Davidson.Ken@epa.gov>; Glass, Geoffrey <GLASS.GEOFFREY@EPA.GOV>
Subject: EtO Sterilizers Update

Hi everyone,

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Please let me know if you have any further questions.

Thanks so much,
Jonathan

Jonathan W. Witt, EI
Environmental Engineer
Office of Air Quality Planning and Standards
EPA|OAR|OAQPS|SPPD|FIG

109 T.W. Alexander Dr. | Mail Drop: E143-05 | Durham, NC 27703
+1.919.541.5645 (work) | +1.919.541.7885 (fax)

Message

From: Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]
Sent: 10/5/2018 7:14:37 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Davidson, Ken [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d2e266ba15be4fa3b51faa9c7ad27d02-KDAVID04]
Subject: RE: EtO Sterilizers Update

Hi Jonathan and Ken -

If there's any information you have about the Sterigenics facility in California, could you please send it ahead of the 4 week requested deadline? We're wondering how their fugitive emissions were estimated with their full enclosure system.

Thanks,
Darcie

Darcie Smith
U.S. EPA/OAQPS/ATAG
919.541.2076
smith.darcie@epa.gov

From: Witt, Jon
Sent: Thursday, October 04, 2018 5:12 PM
To: Dewees, Jason ; Drukenbrod, Josh ; Shappley, Ned ; Smith, Darcie ; Lancey, Susan ; Bellizzi, Carol ; Dholakia, Umesh ; Bertram, Emily ; Fry, Jessica ; Gross-Davis, CarolAnn ; Hall, Kristen ; Dubose, Dick ; Rinck, Todd ; Russo, Todd ; Taylor, Kevin ; Sieffert, Margaret ; Cox, Kyndall ; Stone, William ; Doolan, Stephanie ; Olson, Kyle ; Davidson, Ken ; Glass, Geoffrey
Subject: EtO Sterilizers Update

Hi everyone,

A few updates have been made to the master spreadsheet on the SharePoint site per our meeting on Tuesday. A complete list of commercial and hospital sterilizers that we are aware of has been added. These facilities were gathered from various sources, including ECHO, previous rulemakings, and NATA. Additional columns have been added to better describe the data, including the applicable NESHAP subpart, the NAICS code, whether a facility was on the NATA priority list, whether a facility still uses EO, and whether a facility has control technologies and place. If a facility should or shouldn't be on this list or if it's a duplicate of another facility, please feel free to edit the spreadsheet as needed or let me know. In addition, state regulations have been moved to a different worksheet for ease of filling out that information.

Deliberative Process / Ex. 5

Please let me know if you have any further questions.

Thanks so much,
Jonathan

Jonathan W. Witt, EI
Environmental Engineer
Office of Air Quality Planning and Standards
EPA|OAR|OAQPS|SPPD|FIG
109 T.W. Alexander Dr. | Mail Drop: E143-05 | Durham, NC 27703
+1.919.541.5645 (work) | +1.919.541.7885 (fax)

Message

From: Mills, Kathy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=CBAE58F0F867443C9AF196ED34787357-MILLS, KATHY]
Sent: 8/15/2018 1:23:33 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: FW: ACTION: Review of R5 Comms Strategy. Deadline COB Wednesday

<!--[if lte mso 15 || CheckWebRef]-->

Mills, Kathy has shared a OneDrive for Business file with you. To view it, click the link below.

Sterigenics Talking points draft 8 14 18.OAQPS.docx

<!--[endif]-->

Jonathan,
Please review and provide edits to me. I'll incorporate along with any from Penny.
Thanks.

Kathy "KB Mills ~ SPPD ~ U. S. EPA, OAQPS ~ 919-541-1599

From: Davis, Alison
Sent: Tuesday, August 14, 2018 6:05 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Riha, Kristin <Riha.Kristin@epa.gov>; Mills, Kathy <Mills.Kathy@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>
Cc: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: ACTION: Review of R5 Comms Strategy. Deadline COB Wednesday

All: Here is the Region 5 comms strategy as it currently stands. Please edit as needed (I have pulled this out of their SharePoint site for now; the file is in the ETO folder that Kristen sent you). We will send them one set of OAQPS comments.

Please add your comments by 6 p.m. tomorrow. I will fold our comments in to the R5 SharePoint tomorrow evening or first thing Thursday a.m.

Kristin and KB – please get to the appropriate folks in your divisions. Kristin – Erika is aware of this and said she does not plan to comment (she's out tomorrow).

Thanks.
Alison

Alison Davis
Acting Director
Policy Analysis & Communications Staff
US EPA, Office of Air Quality Planning & Standards
Research Triangle Park, NC 27711
Desk: 919-541-7587

Mobile: 919-624-0872

PERMIT
Under the Environmental Conservation Law (ECL)

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 5-5344-00029/00011
Mod 0 Effective Date: 04/05/2000 Expiration Date: 02/03/2023

Mod 2 Effective Date: 12/12/2000 Expiration Date: 02/03/2023

Mod 3 Effective Date: 05/20/2004 Expiration Date: No expiration date.

Mod 4 Effective Date: 02/04/2013 Expiration Date: 02/03/2023

Permit Issued To: STERIGENICS US LLC
SUITE 650
2015 SPRING RD
OAK BROOK, IL 60523

Contact: KATHLEEN A HOFFMAN
2015 SPRING RD
SUITE 650
OAK BROOK, IL 60523
(630) 928-1758

Facility: STERIGENICS US LLC
84 PARK RD
QUEENSBURY, NY 12804

Description:
This facility is a sterilization facility. Medical instruments, cosmetics and pharmaceuticals are placed in chambers which are filled with ethylene oxide gas or propylene oxide gas. After sterilization, the gases are exhausted through control devices and the products are removed to aeration rooms which are also vented through control devices.

ED_002192_00055663-00001

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: MARC S MIGLIORE
NYSDEC
232 GOLF COURSE RD
WARRENSBURG, NY 12885

Authorized Signature: _____ Date: ___ / ___ / _____

ED_002192_00055663-00002

Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

LIST OF CONDITIONS

DEC GENERAL CONDITIONS
General Provisions
Facility Inspection by the Department
Relationship of this Permit to Other Department Orders and Determinations
Applications for permit renewals, modifications and transfers
Permit modifications, suspensions or revocations by the Department
Applications for Permit Renewals and Modifications
Permit Modifications, Suspensions, and Revocations by the Department
Facility Level
Submission of Applications for Permit Modification or Renewal -REGION 5 SUBOFFICE
Submission of application for permit modification or renewal-REGION 5 SUBOFFICE - WARRENSBURG

DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:
The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:
The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:
A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:
Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 4-1: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 4-1.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 4-1.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Item 4-1.3:
Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4-2.1:
The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

a) materially false or inaccurate statements in the permit application or supporting papers;
b) failure by the permittee to comply with any terms or conditions of the permit;
c) exceeding the scope of the project as described in the permit application;
d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

Condition 3: Applications for Permit Renewals and Modifications
Applicable State Requirement: 6 NYCRR 621.13 (a)

Item 3.1:
The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:
The permittee must submit a renewal application at least 180 days before expiration of permits for Title V Facility Permits, or at least 30 days before expiration of permits for State Facility Permits.

Condition 4: Permit Modifications, Suspensions, and Revocations by the Department
Applicable State Requirement: 6 NYCRR 621.14

Item 4.1:
The Department reserves the right to modify, suspend, or revoke this permit. The grounds for modification, suspension or revocation include:

a) the scope of the permitted activity is exceeded or a violation of any condition of the permit or provisions of the ECL and pertinent regulations is found;
b) the permit was obtained by misrepresentation or failure to disclose relevant facts;
c) new material information is discovered; or
d) environmental conditions, relevant technology, or applicable law or regulation have materially changed since the permit was issued.

****** Facility Level ******

Condition 5: Submission of Applications for Permit Modification or Renewal -REGION 5 SUBOFFICE

Applicable State Requirement: 6 NYCRR 621.5 (a)

Item 5.1:
Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 5 Sub-office
Division of Environmental Permits
232 Hudson St, PO Box 220
Warrensburg, NY 12885-0220
(518) 623-1281

Condition 4-3: Submission of application for permit modification or renewal-REGION 5
SUBOFFICE - WARRENSBURG
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 4-3.1:
Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 5 Sub-office
Division of Environmental Permits
232 Golf Course Road
Warrensburg, NY 12885-1172
(518) 623-1281

Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

IDENTIFICATION INFORMATION

Permit Issued To: STERIGENICS US LLC
SUITE 650
2015 SPRING RD
OAK BROOK, IL 60523

Facility: STERIGENICS US LLC
84 PARK RD
QUEENSBURY, NY 12804

Authorized Activity By Standard Industrial Classification Code:
7389 - BUSINESS SERVICES, NEC

Mod 0 Permit Effective Date: 04/05/2000 Permit Expiration Date: 02/03/2023

Mod 2 Permit Effective Date: 12/12/2000 Permit Expiration Date: 02/03/2023

Mod 4 Permit Effective Date: 02/04/2013 Permit Expiration Date: 02/03/2023

LIST OF CONDITIONS

FEDERALLY ENFORCEABLE CONDITIONS

Facility Level

4-1 6 NYCRR 200.6: Acceptable Ambient Air Quality
4-2 6 NYCRR 215.2: Open Fires - Prohibitions
4-3 6 NYCRR 200.7: Maintenance of Equipment
4-4 6 NYCRR 201-3.2 (a): Exempt Sources - Proof of Eligibility
4-5 6 NYCRR 201-3.3 (a): Trivial Sources - Proof of Eligibility
9 6 NYCRR 201-1.10 (a): Public Access to Recordkeeping
4-6 6 NYCRR 211.1: Air pollution prohibited

Emission Unit Level

EU=1-11111

15 6 NYCRR 200.6: Compliance Demonstration
16 6 NYCRR 200.6: Compliance Demonstration
18 40CFR 63.364(b)(2), Subpart O: Compliance Demonstration
4-7 40CFR 63.364(c), Subpart O: Compliance Demonstration
20 40CFR 63.366(a)(3), Subpart O: Compliance Demonstration

EU=1-11111,Proc=S01

4-8 6 NYCRR 212.4 (a): Compliance Demonstration

EU=1-11111,Proc=S02

4-9 6 NYCRR 212.4 (a): Compliance Demonstration

EU=1-11111,Proc=S03

4-10 6 NYCRR 212.4 (a): Compliance Demonstration
4-11 40CFR 63.362(d), Subpart O: Compliance Demonstration

STATE ONLY ENFORCEABLE CONDITIONS

Facility Level

4-12 ECL 19-0301: Contaminant List
4-13 6 NYCRR 201-1.4: Unavoidable noncompliance and violations
28 6 NYCRR Subpart 201-5: General Provisions
29 6 NYCRR Subpart 201-5: Emission Unit Definition
4-14 6 NYCRR 211.2: Visible Emissions Limited

Emission Unit Level

32 6 NYCRR Subpart 201-5: Emission Point Definition By Emission Unit
33 6 NYCRR Subpart 201-5: Process Definition By Emission Unit

FEDERALLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **Sealing - 6 NYCRR 200.5**

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: **Acceptable Ambient Air Quality - 6 NYCRR 200.6**

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: **Maintenance of Equipment - 6 NYCRR 200.7**

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications,

required to operate such device effectively.

Item D: **Unpermitted Emission Sources - 6 NYCRR 201-1.2**

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

Item E: **Emergency Defense - 6 NYCRR 201-1.5**

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;

(2) The equipment at the permitted facility causing the emergency was at the time being properly operated;

(3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item F: **Recycling and Salvage - 6 NYCRR 201-1.7**

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item G: **Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8**

No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item H: **Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)**

The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item I: **Proof of Eligibility for Sources Defined as Trivial Activities - 6 NYCRR 201-3.3 (a)**

The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to 6 NYCRR Subpart 201-3, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

Item J: **Required Emission Tests - 6 NYCRR 202-1.1**

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item K: **Open Fires Prohibitions - 6 NYCRR 215.2**
Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allowor permit the burning of any materials in an open fire.

Item L: **Permit Exclusion - ECL 19-0305**
The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: **Federally Enforceable Requirements - 40 CFR 70.6 (b)**
All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

FEDERAL APPLICABLE REQUIREMENTS
The following conditions are federally enforceable.

Condition 4-1: **Acceptable Ambient Air Quality**

Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 200.6

Item 4-1.1:
Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Condition 4-2: Open Fires - Prohibitions
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 215.2

Item 4-2.1:
Except as allowed by Title 6 NYCRR Section 215.3, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

Item 4-2.2
Per Section 215.3, burning in an open fire, provided it is not contrary to other law or regulation, will be allowed as follows:
(a) On-site burning in any town with a total population less than 20,000 of downed limbs and branches (including branches with attached leaves or needles) less than six inches in diameter and eight feet in length between May 15th and the following March 15th. For the purposes of this subdivision, the total population of a town shall include the population of any village or portion thereof located within the town. However, this subdivision shall not be construed to allow burning within any village.
(b) Barbecue grills, maple sugar arches and similar outdoor cooking devices when actually used for cooking or processing food.
(c) Small fires used for cooking and camp fires provided that only charcoal or untreated wood is used as fuel and the fire is not left unattended until extinguished.
(d) On-site burning of agricultural wastes as part of a valid agricultural operation on contiguous agricultural lands larger than five acres actively devoted to agricultural or horticultural use, provided such waste is actually grown or generated on those lands and such waste is capable of being fully burned within a 24-hour period.
(e) The use of liquid petroleum fueled smudge pots to prevent frost damage to crops.
(f) Ceremonial or celebratory bonfires where not otherwise prohibited by law, provided that only untreated wood or other agricultural products are used as fuel and the fire is not left unattended until extinguished.
(g) Small fires that are used to dispose of a flag or religious item, and small fires or other smoke producing process where not otherwise prohibited by law that are used in connection with a religious ceremony.
(h) Burning on an emergency basis of explosive or other dangerous or contraband materials by police or other public safety organization.
(i) Prescribed burns performed according to Part 194 of this Title.
(j) Fire training, including firefighting, fire rescue, and fire/arson investigation training, performed under applicable rules and guidelines of the New York State Department of State's Office of Fire Prevention and Control. For fire training performed on acquired structures, the structures must be emptied and stripped of any material that is toxic, hazardous or likely to emit

toxic smoke (such as asbestos, asphalt shingles and vinyl siding or other vinyl products) prior to burning and must be at least 300 feet from other occupied structures. No more than one structure per lot or within a 300 foot radius (whichever is bigger) may be burned in a training exercise.
(k) Individual open fires as approved by the Director of the Division of Air Resources as may be required in response to an outbreak of a plant or animal disease upon request by the commissioner of the Department of Agriculture and Markets, or for the destruction of invasive plant and insect species.
(l) Individual open fires that are otherwise authorized under the environmental conservation law, or by rule or regulation of the Department.

Condition 4-3: Maintenance of Equipment
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 200.7

Item 4-3.1:
Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications, required to operate such device effectively.

Condition 4-4: Exempt Sources - Proof of Eligibility
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 201-3.2 (a)

Item 4-4.1:
The owner and/or operator of an emission source or unit that is eligible to be exempt may be required to certify that it operates within the specific criteria described in this Subpart. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other State and Federal air pollution control requirements, regulations, or law.

Condition 4-5: Trivial Sources - Proof of Eligibility
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 201-3.3 (a)

Item 4-5.1:
The owner and/or operator of an emission source or unit that is listed as being trivial in this Part may be required to certify that it operates within the specific criteria described in this Subpart. The owner or operator of any such emission source must maintain all required records on-site for a period of five years and make them available to representatives of the department upon request. Department representatives must be granted access to any facility which contains emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other State and Federal air pollution control requirements, regulations, or law.

Condition 9: **Public Access to Recordkeeping**
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 201-1.10 (a)

Item 9.1:
Where emission source owners and/or operators keep records pursuant to compliance with the operational flexibility requirements of 6 NYCRR Subpart 201-5.4(b)(1) , and/or the emission capping requirements of 6 NYCRR Subparts 201-7.2(d), 201-7.3(f), 201-7.3(g), 201-7.3(h)(5), 201-7.3(i) and 201-7.3(j), the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Emission source owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department of receipt of the request.

Condition 4-6: **Air pollution prohibited**
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 211.1

Item 4-6.1:
No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

****** Emission Unit Level ******

Condition 15: **Compliance Demonstration**
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 200.6

Item 15.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111

Regulated Contaminant(s):
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 15.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The rolling annual usage of ethylene oxide shall not exceed 550,000 pounds per year.

Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL MAXIMUM ROLLED MONTHLY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 16: Compliance Demonstration
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 200.6

Item 16.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111

Regulated Contaminant(s):
CAS No: 000075-56-9 PROPANE, 1,2-EPOXY-

Item 16.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The rolling annual usage of propylene oxide shall not exceed 6000 pounds per year.

Monitoring Frequency: MONTHLY
Averaging Method: ANNUAL MAXIMUM ROLLED MONTHLY
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 18: Compliance Demonstration
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable Federal Requirement:40CFR 63.364(b)(2), Subpart O

Item 18.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111

Regulated Contaminant(s):
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 18.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
Measure and record once per week the level of the scrubber liquor in the recirculation tank. The owner or operator shall install, maintain and use a liquor level indicator to measure the scrubber liquor tank level. The

maximum liquor tank level will be established during the initial testing.

Monitoring Frequency: WEEKLY
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2000.
Subsequent reports are due every 6 calendar month(s).

Condition 4-7: Compliance Demonstration
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:40CFR 63.364(c), Subpart O

Item 4-7.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111

Regulated Contaminant(s):
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 4-7.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The owner or operator shall continuously monitor and record the oxidation temperature at the outlet of the catalyst bed. The baseline oxidation temperature will be established during the most recent stack test. The current minimum operating temperature is 285 degrees F.

Parameter Monitored: TEMPERATURE
Lower Permit Limit: 285 degrees Fahrenheit
Monitoring Frequency: CONTINUOUS
Averaging Method: MINIMUM - NOT TO FALL BELOW STATED VALUE - SEE MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2013.
Subsequent reports are due every 6 calendar month(s).

Condition 20: Compliance Demonstration
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable Federal Requirement:40CFR 63.366(a)(3), Subpart O

Item 20.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111

Regulated Contaminant(s):
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 20.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:
The owner or operator shall submit a semiannual monitoring system performance report. Reports of exceedences of control system parameters shall include information required in 40 CFR 63.10(c).

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
Reporting Requirements: SEMI-ANNUALLY (CALENDAR)
Reports due 30 days after the reporting period.
The initial report is due 7/30/2000.
Subsequent reports are due every 6 calendar month(s).

Condition 4-8: Compliance Demonstration
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 4-8.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111
Process: S01

Regulated Contaminant(s):
CAS No: 000075-56-9 PROPANE, 1,2-EPOXY-
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 4-8.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The exhaust from the evacuation of the sterilization chambers shall be directed through a control device that achieves 99.9% control of ethylene oxide emissions. Testing frequency will be once during the term of the permit unless changed by the permitting authority.

Parameter Monitored: DESTRUCTION EFFICIENCY
Lower Permit Limit: 99.9 percent
Reference Test Method: EPA Method 18

Monitoring Frequency: CONTINUOUS
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 4-9: Compliance Demonstration
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 4-9.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111
Process: S02

Regulated Contaminant(s):
CAS No: 000075-56-9 PROPANE, 1,2-EPOXY-
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 4-9.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The exhaust from backventing sterilization chambers shall be directed through a control device which achieves at least 99% control of ethylene oxide emissions

Parameter Monitored: DESTRUCTION EFFICIENCY
Lower Permit Limit: 99 percent
Reference Test Method: Method 19
Monitoring Frequency: CONTINUOUS
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 4-10: Compliance Demonstration
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:6 NYCRR 212.4 (a)

Item 4-10.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111
Process: S03

Regulated Contaminant(s):
CAS No: 000075-56-9 PROPANE, 1,2-EPOXY-

Item 4-10.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE
Monitoring Description:
The exhaust from the aeration rooms shall be directed through a control device which achieves at least 99% control of ethylene oxide emissions.

Parameter Monitored: DESTRUCTION EFFICIENCY
Lower Permit Limit: 99 percent
Reference Test Method: method 18
Monitoring Frequency: CONTINUOUS
Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 4-11: Compliance Demonstration
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable Federal Requirement:40CFR 63.362(d), Subpart O

Item 4-11.1:
The Compliance Demonstration activity will be performed for:

Emission Unit: 1-11111
Process: S03

Regulated Contaminant(s):
CAS No: 000075-21-8 ETHYLENE OXIDE

Item 4-11.2:
Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING
Monitoring Description:
The exhaust from the aeration rooms shall be directed through a catalytic oxidizer which shall achieve 99% control or reduce the concentration to a maximum of 1 ppmv (whichever is less stringent). Testing frequency will be annually unless changed by the permitting authority. If the percent efficiency is less than 99%, the catalyst must be replaced as soon as practicable but no later than 180 days after conducting the performance test.
Alternately, the facility may comply with subparagraphs 364(b)(4)(ii) or (iii).

Lower Permit Limit: 99 percent reduction by weight
Reference Test Method: EPA Method 18
Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: AVERAGING METHOD AS PER REFERENCE TEST METHOD INDICATED
Reporting Requirements: ONCE / BATCH OR MONITORING OCCURRENCE

STATE ONLY ENFORCEABLE CONDITIONS
****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS
This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: **Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)**
Where emission source owners and/or operators keep records pursuant to compliance with the operational flexibility requirements of 6 NYCRR Subpart 201-5.4(b)(1) , and/or the emission capping requirements of 6 NYCRR Subparts 201-7.2(d), 201-7.3(f), 201-7.3(g), 201-7.3(h)(5), 201-7.3(i) and 201-7.3(j), the Department will make such records available to the public upon request in accordance with 6 NYCRR Part 616 - Public Access to Records. Emission source owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department of receipt of the request.

Item B: **General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5**
Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

STATE ONLY APPLICABLE REQUIREMENTS
The following conditions are state only enforceable.

Condition 4-12: Contaminant List
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable State Requirement: ECL 19-0301

Item 4-12.1:
Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 000075-21-8
Name: ETHYLENE OXIDE

CAS No: 000075-56-9
Name: PROPANE, 1,2-EPOXY-

Condition 4-13: Unavoidable noncompliance and violations
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable State Requirement: 6 NYCRR 201-1.4

Item 4-13.1:
At the discretion of the commissioner a violation of any applicable emission standard for necessary scheduled equipment maintenance, start-up/shutdown conditions and malfunctions or upsets may be excused if such violations are unavoidable. The following actions and recordkeeping and reporting requirements must be adhered to in such circumstances.

(a) The facility owner and/or operator shall compile and maintain records of all equipment maintenance or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the commissioner's representative when requested to do so in writing or when so required by a condition of a permit issued for the corresponding air contamination source except where conditions elsewhere in this permit which contain more stringent reporting and notification provisions for an applicable requirement, in which case they supercede those stated here. Such reports shall describe why the violation was unavoidable and shall include the time, frequency and duration of the maintenance and/or start-up/shutdown activities and the identification of air contaminants, and the estimated emission rates. If a facility owner and/or operator is subject to continuous stack monitoring and quarterly reporting requirements, he need not submit reports for equipment maintenance or start-up/shutdown for the facility to the commissioner's representative.

(b) In the event that emissions of air contaminants in excess of any emission standard in 6 NYCRR Chapter III Subchapter A occur due to a malfunction, the facility owner and/or operator shall report such malfunction by telephone to the commissioner's representative as soon as possible during normal working hours, but in any event not later than two working days after becoming aware that the malfunction occurred. Within 30 days thereafter, when requested in writing by the commissioner's representative, the facility owner and/or operator shall submit a written report to the commissioner's representative describing the malfunction, the corrective action taken, identification of air contaminants, and an estimate of the emission rates. These reporting requirements are superceded by conditions elsewhere in this permit which contain reporting and notification provisions for applicable requirements more stringent than those

above.

(c) The Department may also require the owner and/or operator to include in reports described under (a) and (b) above an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions depending on the deviation of the malfunction and the air contaminants emitted.

(d) In the event of maintenance, start-up/shutdown or malfunction conditions which result in emissions exceeding any applicable emission standard, the facility owner and/or operator shall take appropriate action to prevent emissions which will result in contravention of any applicable ambient air quality standard. Reasonably available control technology, as determined by the commissioner, shall be applied during any maintenance, start-up/shutdown or malfunction condition subject to this paragraph.

(e) In order to have a violation of a federal regulation (such as a new source performance standard or national emissions standard for hazardous air pollutants) excused, the specific federal regulation must provide for an affirmative defense during start-up, shutdowns, malfunctions or upsets.

Condition 28: General Provisions
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 28.1:
This section contains terms and conditions that are not federally enforceable and are not required under the Act or under any of its applicable requirements. Terms and conditions so designated are not subject to the requirements of Section 201-6.4 of Part 201.

Item 28.2:
Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

Item 28.3:
The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Condition 29: Emission Unit Definition
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 29.1(From Mod 4):
The facility is authorized to perform regulated processes under this permit for:
Emission Unit: 1-11111

Emission Unit Description:
This emission unit consists of 11 sterilization chambers and 6 aeration rooms which are exhausted through one of two control devices and out a combined stack.

Building(s): PLANT

Condition 4-14: Visible Emissions Limited
Effective between the dates of 02/04/2013 and 02/03/2023

Applicable State Requirement:6 NYCRR 211.2

Item 4-14.1:
Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

****** Emission Unit Level ******

Condition 32: Emission Point Definition By Emission Unit
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 32.1(From Mod 4):
The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: 1-11111

Emission Point: 11111
Height (ft.): 78 Diameter (in.): 12
NYTMN (km.): 4800.14 NYTME (km.): 613.455 Building: PLANT

Condition 33: Process Definition By Emission Unit
Effective between the dates of 04/05/2000 and 02/03/2023

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 33.1(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-11111
Process: S01 Source Classification Code: 3-15-020-01
Process Description:
Evacuation of sterilization chambers. There are 11 sterilization chambers which are charged with ethylene oxide or propylene oxide gas to sterilize medical equipment, pharmaceuticals, cosmetics, etc. At the end of the sterilization period, the gas is pumped out through

a wet acid scrubber.

Emission Source/Control: SCRUB - Control
Control Type: WET SCRUBBER

Emission Source/Control: S0001 - Process
Design Capacity: 1,155 cubic feet

Emission Source/Control: S0002 - Process
Design Capacity: 1,155 cubic feet

Emission Source/Control: S0003 - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S0004 - Process
Design Capacity: 1,200 cubic feet

Emission Source/Control: S0006 - Process
Design Capacity: 347 cubic feet

Emission Source/Control: S0008 - Process
Design Capacity: 347 cubic feet

Emission Source/Control: S0009 - Process
Design Capacity: 1,200 cubic feet

Emission Source/Control: S000B - Process
Design Capacity: 2,996 cubic feet

Emission Source/Control: S000C - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S000D - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S000E - Process
Design Capacity: 1,333 cubic feet

Item 33.2(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-11111
Process: S02 Source Classification Code: 3-15-020-01
Process Description:
Exhausting sterilization chambers. There are 11 sterilization chambers which are charged with ethylene oxide or propylene oxide gas to sterilize medical equipment, pharmaceuticals, cosmetics, etc. After of the sterilization period and evacuation cycles of process S01 are completed, the chamber vacuum is broken and the chamber is vented through a catalytic oxidizer.

Emission Source/Control: CATOX - Control
Control Type: CATALYTIC AFTERBURNER

Emission Source/Control: S0001 - Process
Design Capacity: 1,155 cubic feet

Emission Source/Control: S0002 - Process
Design Capacity: 1,155 cubic feet

Emission Source/Control: S0003 - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S0004 - Process
Design Capacity: 1,200 cubic feet

Emission Source/Control: S0006 - Process
Design Capacity: 347 cubic feet

Emission Source/Control: S0008 - Process
Design Capacity: 347 cubic feet

Emission Source/Control: S0009 - Process
Design Capacity: 1,200 cubic feet

Emission Source/Control: S000B - Process
Design Capacity: 2,996 cubic feet

Emission Source/Control: S000C - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S000D - Process
Design Capacity: 1,333 cubic feet

Emission Source/Control: S000E - Process
Design Capacity: 1,333 cubic feet

Item 33.3(From Mod 4):
This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: 1-11111
Process: S03 Source Classification Code: 3-15-020-01
Process Description:
Aeration room venting. There are six aeration rooms where production materials are staged after sterilization. The materials offgas for an appropriate time as the rooms are exhausted through a catalytic oxidizer.

Emission Source/Control: CATOX - Control
Control Type: CATALYTIC AFTERBURNER

Emission Source/Control: A0001 - Process
Design Capacity: 125,963 cubic feet

Emission Source/Control: A0004 - Process
Design Capacity: 11,718 cubic feet

Emission Source/Control: A0005 - Process
Design Capacity: 11,340 cubic feet

Emission Source/Control: A0006 - Process
Design Capacity: 11,340 cubic feet

Emission Source/Control: A0007 - Process
Design Capacity: 3,764 cubic feet

Emission Source/Control: A0008 - Process
Design Capacity: 78,000 cubic feet

ED_002192_00055663-00030

Message

From: Lisa M. Campbell [LCAMPBELL@lawbc.com]
Sent: 2/5/2018 5:11:50 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
Subject: RE: Review of EtO Sterilizer Facility Data

Thank you very much.

From: Witt, Jon [mailto:Witt.Jon@epa.gov]
Sent: Monday, February 5, 2018 12:11 PM
To: Lisa M. Campbell <LCAMPBELL@lawbc.com>
Subject: RE: Review of EtO Sterilizer Facility Data

Sorry, one addendum: EPA already talked to Sterigenics in Illinois (Facility ID 3219211), so they do not need to be included on this list.
Jonathan

From: Lisa M. Campbell [mailto:LCAMPBELL@lawbc.com]
Sent: Monday, February 05, 2018 12:06 PM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: Review of EtO Sterilizer Facility Data

Thank you very much, Jon.

From: Witt, Jon [mailto:Witt.Jon@epa.gov]
Sent: Monday, February 5, 2018 12:00 PM
To: Lisa M. Campbell <LCAMPBELL@lawbc.com>
Subject: RE: Review of EtO Sterilizer Facility Data

Hi Lisa,

Attached is the updated list of EO facilities. Please let me know if you have any questions.

Thanks,
Jonathan

From: Lisa M. Campbell [mailto:LCAMPBELL@lawbc.com]
Sent: Tuesday, January 30, 2018 4:34 PM
To: Witt, Jon <Witt.Jon@epa.gov>
Subject: RE: Review of EtO Sterilizer Facility Data

Hello Jonathan –

Thank you for your email. I will circle back as soon as possible.

From: Witt, Jon [mailto:Witt.Jon@epa.gov]
Sent: Tuesday, January 30, 2018 4:09 PM
To: Lisa M. Campbell <LCAMPBELL@lawbc.com>
Subject: RE: Review of EtO Sterilizer Facility Data

Hi Ms. Campbell,

Just wanted to check in to see if we could work with EOSA on reviewing the facilities I sent you a few weeks ago. Please let me know if you have any questions or if this is something we can do.

Thanks,
Jonathan

From: Witt, Jon
Sent: Monday, January 08, 2018 4:18 PM
To: 'Lcampbell@lawbc.com' <Lcampbell@lawbc.com>
Subject: Review of EtO Sterilizer Facility Data

Hi Ms. Campbell,

I am an environmental engineer at EPA, and we are working on reviewing EtO emissions and release parameter data for a select number of sterilizer facilities (11). I had contacted EOSA in November but did not receive a response. I received your contact information from Jessica Bailey in EPA's Office of Chemical Safety and Pollution Prevention. We wanted to reach out to EOSA to see if there was any possibility of working with the association and its member companies to make sure that the facility data we have is correct. A list of facilities that we are reviewing is attached.

Please let me know if you have any questions and if this is something we can do.

Thanks so much,
Jonathan

Jonathan W. Witt, EI
Environmental Engineer
Office of Air Quality Planning and Standards
EPA|OAR|OAQPS|SPPD|FIG
109 T.W. Alexander Dr. | Mail Drop: E143-05 | RTP, NC 27711
+1.919.541.5645 (work) | +1.919.541.7885 (fax)

Message

From: Lassiter, Penny [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C3F6BF2E31D4492B9658B7C5C1583C09-PLASSITE]
Sent: 9/21/2018 7:16:34 PM
To: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]
CC: Fruh, Steve [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f47a02a00d3642aea6de691e3015b188-SFRUH]
Subject: FW: News stories today - Willowbrook

From: Davis, Alison
Sent: Friday, September 21, 2018 2:14 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>; Lassiter, Penny <Lassiter.Penny@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Bremer, Kristen <Bremer.Kristen@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>; Shappley, Ned <Shappley.Ned@epa.gov>; Caparoso, Jennifer <Caparoso.Jennifer@epa.gov>; Jones, Rhea <Jones.Rhea@epa.gov>; Riha, Kristin <Riha.Kristin@epa.gov>; Truesdell, Raymond <truesdell.raymond@epa.gov>; Strum, Madeleine <Strum.Madeleine@epa.gov>; Mckelvey, Laura <Mckelvey.Laura@epa.gov>; Mills, Kathy <Mills.Kathy@epa.gov>
Cc: Cortelyou-Lee, Jan <Cortelyou-Lee.Jan@epa.gov>; Ashley, Jackie <Ashley.Jackie@epa.gov>; Terry, Sara <Terry.Sara@epa.gov>
Subject: News stories today - Willowbrook

https://patch.com/illinois/burrridge/chicago-firm-files-law-suit-against-sterigenics

Cancer Patient Sues Sterigenics Amid Nearly Decade-Long Battle

A law firm is representing plaintiff Ryan Feeney, a 26-year-old who was diagnosed with Non-Hodgkin's lymphoma.

By Andrea Earnest, Patch Staff | Sep 20, 2018 2:44 pm ET | Updated Sep 20, 2018 4:59 pm ET

WILLOWBROOK, IL — A Chicago law firm announced Thursday it has filed a lawsuit against Sterigenics International Inc., for civil battery, negligence and public nuisance for knowingly emitting ethylene oxide.

Sterigenics uses ethylene oxide to sterilize medical equipment and other products. The sterilization process emits ethylene oxide, and a report from the U.S. National Cancer Institute notes, "Exposure to (ethylene oxide) is highly irritating to the eyes, skin and respiratory tract, induces nausea and vomiting and causes central nervous system depression. Ethylene oxide is mutagenic in humans and chronic exposure is associated with an increased risk of leukemia, stomach cancer, pancreatic cancer and non-Hodgkin lymphoma."

The Chicago based firm, Romanucci & Blandin, LLC and Hart McLaughlin & Eldridge are representing plaintiff Ryan Feeney, a 26-year-old who was diagnosed with Non-Hodgkin's lymphoma.

Willowbrook families retained the law firm after a report came out last month, detailing the risks of the ethylene oxide emissions to the community. A report from the Agency for Toxic Substances and Disease Registry, which is a division of the CDC, stated, "If measured and modeled data represent typical EtO ambient concentrations in ambient air, an elevated cancer risk exists for residents and off-site workers in the Willowbrook community surrounding the Sterigenics facility. These evaluated risks present a public health hazard to these populations."

"Neither the extent of Sterigenics' ethylene oxide emissions nor the impact of those emissions on the health of those who live and work in the Willowbrook community was known by the general public until the ATSDR

released their report on Aug. 21, and the Aug. 22, 2018 release of the EPA's 2014 National Air Toxics Assessment," Antonio Romanucci, principal and partner at Romanucci & Blandin, LLC, said in a release.

The law firm said that according to data from air samples taken by the EPA in 2018, the Willowbrook census tract posts a cancer risk that is 64 times higher than the EPA's acceptable limits and is in the 99.9th percentile in terms of cancer risk in the country.

The complaint, which has been filed in the Circuit Court of DuPage County, states that Feeney has lived in close proximity of Sterigenics for 22 years and also attended Hinsdale South High School, which is within a one-mile radius of the facility, according to a release from the law firm. Feeney was diagnosed with Non-Hodgkin's Lymphoma in 2010.

The law firm said in a release Feeney was not aware he was at risk of cancer or that his cancer diagnosis was a result of Sterigenics' emissions of ethylene oxide until after a confirming report was released from the U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry.

"The potential ramifications of this revelation are catastrophic – the EPA has reported that human exposure to ethylene oxide causes cancer, and numerous other serious health risks, such as DNA mutations and birth defects," Romanucci said in a release. "Ryan Feeney and others who live, work, or have children attending school in and around Willowbrook, including several with cancer or with relatives who have died of cancer, have retained our law firms to investigate the harmful effects of this toxic exposure. Our goal in filing this lawsuit is to hold Sterigenics accountable for their reckless negligence that resulted in the needless and continuous poisoning of men, women and children."

Image via Google Streetview.

Press release on lawsuit

https://www.biospace.com/article/releases/willowbrook-families-file-lawsuit-against-sterigenics-for-their-ethylene-oxide-emissions/

Willowbrook Families File Lawsuit Against Sterigenics for Their Ethylene Oxide Emissions

Published: Sep 21, 2018

Power Rogers & Smith attorneys Todd A. Smith and Brian LaCien are representing Willowbrook families who filed a class action lawsuit against Sterigenics International LLC and GTCR LLC

CHICAGO, Sept. 20, 2018 /PRNewswire/ -- Willowbrook families filed a class action lawsuit against **Sterigenics International LLC** and **GTCR LLC** on September 20 for their decades-old emissions of a highly carcinogenic chemical compound called ethylene oxide.

Sterigenics has been operating a facility in Willowbrook, Illinois since 1984 and uses ethylene oxide to sterilize food/spice products, pharmaceuticals, and medical equipment. The United States Department of Health and Human Services released an August 2018 consultation letter regarding the health impacts from ethylene oxide emissions and concluded that Willowbrook residents and workers alike are at an increased risk of cancer and other health problems, such as neurological effects, respiratory and gastrointestinal effects.

Todd A. Smith and Brian LaCien, attorneys from the law firm of Power Rogers & Smith of Chicago, and Stephen Tillery and John Libra, attorneys from the law firm of Korein Tillery, made the filing today at the Cook County Courthouse in Chicago, Illinois.

"These families and many others in the area now have to go about their daily lives knowing they're living and breathing a harmful, carcinogenic chemical that shouldn't have been used in the first place," Smith said, referencing Sterigenics' ethylene oxide emissions.

The lawsuit filed contains 5 counts, including claims for negligence and strict liability from the severe injuries suffered as a result of ethylene oxide inhalation, claims for nuisance and trespass for the contamination on property, and near their property, and a claim for fraudulent concealment for Sterigenics' decades-long cover up of ethylene oxide's highly carcinogenic nature. The suit contends that for 34 years, Sterigenics has knowingly emitted ethylene oxide into the air, allowing Willowbrook and the surrounding area to be contaminated by a highly carcinogenic chemical.

"This chemical, ethylene oxide, has been a known human carcinogen in the United States and international world since the mid-20th century," said LaCien. "Sterigenics needs to be held responsible for the injuries they've caused and the damage they've done to families and their homes."

View original content:http://www.prnewswire.com/news-releases/willowbrook-families-file-lawsuit-against-sterigenics-for-their-ethylene-oxide-emissions-300716588.html

SOURCE Power Rogers & Smith

Message

From: Parker, Cindy [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B2A4068E15E442B5BC310BA08ACFB492-PARKER, CINDY]
Sent: 1/26/2018 2:03:22 PM
To: Strum, Madeleine [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274e5760466644c98978742b76173c3d-Strum, Madeline]
CC: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Palma, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7bef4a695c944f089bf3e14f199f8aa-Palma, Ted]
Subject: RE: Sterigenics Santa Teresa - who did the review

Thank you Madeleine. I have forwarded your email to Fran and Darrin Larson. Darrin is our Enforcement Air Permits section chief. We are working closely with our Enforcement program these days.

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 4:45 PM
To: Parker, Cindy <parker.cindy@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Subject: Sterigenics Santa Teresa - who did the review

Hi Cindy

I went to the Priority Facility List excel file which is at https://usepa.sharepoint.com/:x:/r/sites/oar_Work/NATAREVIEW/2014%20NATA-%20Tract%20Risk%20Review/_layouts/15/WopiFrame.aspx?sourcedoc=%7BF75D0016-720B-45DE-AC34-508675F6F362%7D&file=Priorty%20Facility%20List%20-based%20on%20tract%20risk.xlsx&action=default and it says that the state (Roslyn) reviewed the data (not Velu). Hmm. I hope she didn't misunderstand the change sheet since she was new to inventories when the review occurred I only asked Velu to help with TRI facilities that the State was unwilling to review. So he didn't call them.

Consistent with the information from Region V at today's call about Sterigenics implementing emission reduction strategies, TRI does show (their TRI id is 88008GRFFT2400A) huge decreases in their emissions from 2014. Per the table below, ethylene oxide decreased from a total (stack plus fugitive) of 5761 lbs to 967 lbs in 2016 (83% reduction). I will add that to the updated-from-2014 list that I am keeping to track changes in emissions after 2014.

Not sure if you want to do anything here but I wanted to share with you this information.

Chemical Name	Media	Unit Of Measure	2016	2015	2014	2013
ETHYLENE GLYCOL (TRI Chemical ID: 000107211)	AIR FUG	Pounds	0	0	0	0
ETHYLENE GLYCOL (TRI Chemical ID: 000107211)	AIR STACK	Pounds	0	0	0	0
ETHYLENE OXIDE (TRI Chemical ID: 000075218)	AIR FUG	Pounds	508	537	505	517
ETHYLENE OXIDE (TRI Chemical ID: 000075218)	AIR STACK	Pounds	459	466	5256	9565

Madeleine
Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Message

From: Strum, Madeleine [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274E5760466644C98978742B76173C3D-STRUM, MADELINE]
Sent: 1/25/2018 10:53:52 PM
To: Parker, Cindy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b2a4068e15e442b5bc310ba08acfb492-Parker, Cindy]
CC: Witt, Jon [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ea00bc6f645b438682026a77a8d4267c-Witt, Jonat]; Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Palma, Ted [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f7bef4a695c944f089bf3e14f199f8aa-Palma, Ted]
Subject: RE: Sterigenics Santa Teresa - who did the review

TRI also has P2 information (which includes control devices – all reduction activities)

Here is what it has for EO! https://www3.epa.gov/enviro/facts/tri/ef-facilities/#/Pollution/88008GRFFT2400A

Chemical Name	Industry	Year	Prior Year Release *	Current Year Release *	Percent Change	Pollution Prevention Information (Activity Code/Text)
Ethylene Oxide	551910 Packaging and Labeling Services	2015	5,761.00	970.00	-83.18%	Waste Treatment: Started routing one source of emissions from the process to a control device to achieve 99%+ reduction efficiency. All other EO emissions are controlled.

From: Strum, Madeleine
Sent: Thursday, January 25, 2018 5:45 PM
To: Parker, Cindy <parker.cindy@epa.gov>
Cc: Witt, Jon <Witt.Jon@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>; Palma, Ted <Palma.Ted@epa.gov>
Subject: Sterigenics Santa Teresa - who did the review

Hi Cindy

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Consistent with the information from Region V at today's call about Sterigenics implementing emission reduction strategies, TRI does show (their TRI id is 88008GRFFT2400A) huge decreases in their emissions from 2014. Per the table below, ethylene oxide decreased from a total (stack plus fugitive) of 5761 lbs to 967 lbs in 2016 (83% reduction). I will add that to the updated-from-2014 list that I am keeping to track changes in emissions after 2014.

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ETHYLENE OXIDE (TRI Chemical ID: 000075218)	AIR STACK	Pounds	459	466	5256	9565

Madeleine
Madeleine Strum|U.S. Environmental Protection Agency|109 TW Alexander Drive, RTP, NC 27711
Office of Air Quality Planning and Standards|Air Quality Assessment Division|Emission Inventory and Analysis Group|919 541 2383

Appointment

From: Microsoft Outlook [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=MICROSOFTEXCHANGE329E71EC88AE4615BBC36AB6CE41109EF7088051]
Sent: 9/5/2018 1:20:41 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]

Subject: Meeting Forward Notification: Sterigenics Monitoring Briefing
Location: RA Large Conf. Room

Start: 9/5/2018 7:00:00 PM
End: 9/5/2018 7:30:00 PM

Recurrence: (none)

Your meeting was forwarded

Cain, Alexis has forwarded your meeting request to additional recipients.

Meeting

Sterigenics Monitoring Briefing

Meeting Time

Wednesday, September 5, 2018 2:00 PM-2:30 PM.

Recipients

Sieffert, Margaret

All times listed are in the following time zone: (UTC-06:00) Central Time (US & Canada)

Sent by Microsoft Exchange Server

Appointment

From: Martinez, Isidra [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f8b8fe5bb9774e1daaaf8d45c628a535-IMartine]
Sent: 8/31/2018 8:31:31 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]; Payne, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=61b3204a683041079512b122c580a569-Payne, Jame]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Thiede, Kurt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3cc09fac5acc4ce1ba689fb2ce70d459-Thiede, Kur]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]; Eileen Furey (furey.eileen@epa.gov) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5aaa3a0ee58047d983897c53c1eb283e-EFurey]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Compher, Michael [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e258cb856e3d4ae6bacca7fa48ca827a-MCompher]; Johnson, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fa0bb816084b41598201f9335c5155fb-Mojohnso]; Delisio, Edward [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9319e61692214d5897de4181b1d61d67-EDelisio]

Subject: Sterigenics Monitoring Briefing
Location: RA Large Conf. Room

Start: 9/5/2018 7:00:00 PM
End: 9/5/2018 7:30:00 PM
Show Time As: Busy

Appointment

From: Williams, Felicia [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=6527F339DDB0443C8FA6188E5038057D-FWILLI02]
Sent: 7/12/2018 8:45:43 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Cain, Alexis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0249d52afe7a491ea6859bf276e694e9-ACain]; Sieffert, Margaret [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dbb22fa4a9b14c1e8c634b2e0791cefa-MSieffer]; Thiede, Kurt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3cc09fac5acc4ce1ba689fb2ce70d459-Thiede, Kur]; Payne, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=61b3204a683041079512b122c580a569-Payne, Jame]
CC: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]

Subject: Sterigenics Briefing
Attachments: R5 EtO Sources RA Briefing.pptx; Sterigenics briefing 072318.docx; 2018July23-R5 EtO Sources-RA Briefing.docx
Location: RA's Small Conf. Rm.

Start: 7/23/2018 7:00:00 PM
End: 7/23/2018 7:30:00 PM
Show Time As: Busy

Appointment

From: Martinez, Isidra [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F8B8FE5BB9774E1DAAAF8D45C628A535-IMARTINE]
Sent: 6/21/2018 9:32:04 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]; Thiede, Kurt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3cc09fac5acc4ce1ba689fb2ce70d459-Thiede, Kur]; Payne, James [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=61b3204a683041079512b122c580a569-Payne, Jame]; Nam, Ed [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a2653f1ddd59470688ba557dd84d9690-Nam, Ed]; Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]

Subject: Sterigenics
Location: Please call Conf. Code / Ex. 6

Start: 6/22/2018 7:00:00 PM
End: 6/22/2018 8:00:00 PM
Show Time As: Busy

IPhone friendly call-in number: Conf. Code / Ex. 6

Contact

Full Name: Byron Taylor
Last Name: Taylor
First Name: Byron
Company: Sterigenics Lobbyist

Mobile Phone: Personal Phone / Ex. 6

VILLAGE OF WILLOWBROOK
EST. 1960

Willowbrook

835 Midway Drive
Willowbrook, IL 60527-5549

Phone: (630) 323-8215 Fax: (630) 323-0787 www.willowbrookil.org

Mayor

Frank A. Trilla

Village Clerk

Leroy R. Hansen

Village Trustees

Sue Berglund

Umberto Davi

Terrence Kelly

Michael Mistele

Gayle Neal

Paul Oggerino

Village Administrator

Tim Halik

Chief of Police

Robert Schaller

Director of Finance

Carrie Dittman

Proud Member of the Illinois Route 66 Scenic Byway

October 2, 2018

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

Subject: **Sterigenics Willowbrook Emissions Test Results**

Dear Director Messina:

As you may be aware, the Village of Willowbrook has formed a Task Force to study and address the emissions of ethylene oxide (EtO) associated with the operation of the Sterigenics sterilization facilities located in our Village. This Task Force is composed of experts in the field of environmental regulation, air pollution control technologies, ambient and source gas monitoring, and toxicology.

The Task Force is in possession of the letter sent to you (Attachment 1) by Sterigenics, dated September 27, 2018, regarding the results of the emissions testing at the Sterigenics Willowbrook 1 and Willowbrook 2 facilities performed on September 20th and 19th, respectively. The letter and the company's announcement have been reviewed by the Task Force.

The Task Force also reviewed the application submitted to the IEPA by Sterigenics for modifications to their Back Vent emissions dated June 5, 2018 (Excerpt forms Attachment 2) as well as the results of 2016 emissions tests of the Sterigenics Willowbrook facilities. On behalf of the Village and based on the review performed by the Task Force we present several questions to the Illinois EPA which we ask be answered no later than October 12, 2018.

1) The results from 2016 emissions tests show gas flow rates (although the reported gas flow rate from Plant 1 [the larger plant] is about 2 orders of magnitude smaller than the reported flowrate from Plant 2) but there is no information reported for the 2018 test results. In order to determine the mass emissions of EtO from the Sterigenics facilities it is necessary to have the gas flow measurements. This is especially critical as the modifications requested by Sterigenics involve ducting the back vent emissions, previously discharged untreated, to the existing control equipment (acid scrubbers with dry bed reactors). Accordingly, the Task Force would expect to see an increase in the gas flow rate to these scrubbers as well as a change in the inlet EtO concentration. As these gas flow measurements were taken by the testing company at the time of the emissions tests, the Task Force requests all volumetric flow rate data from the tests.

2) The application submitted by Sterigenics for the modifications to their Back Vent emissions has block diagrams of their existing and planned gas flow and emissions control systems. Based on the title of the emissions data released to you by Sterigenics ONLY the Back Vent emissions seems to have been measured and not the emissions from the Aeration Rooms. It is stated, by Sterigenics that, "*Once the sterilization process is complete, the products are removed from the Sterilization chamber and placed in the Aeration rooms to further off gas low levels of EtO. The Aeration rooms exhaust emissions to existing scrubbers with dry bed reactors.*" It would appear that the emissions test results may not reflect the actual total emissions of EtO from the plant and only the back vent emissions. Please confirm that the Aeration room emissions were also included in the emissions tests.

3) The efficiency of a wet scrubber, as well as a dry reactor, is a function of the gas flow through that equipment. The changes described by Sterigenics would increase the gas flow through their existing control equipment and yet, the removal efficiency of the equipment did not appear to decrease from 2016 to 2018, despite the increase in gas flow. The Task Force is requesting an explanation of this phenomena.

4) There are 14 Sterilization chambers and 3 Aeration chambers in Sterigenics Willowbrook 1 and 4 Sterilization chambers and an unknown number of Aeration chambers in Sterigenics Willowbrook 2 (Attachment 2). During the testing only one chamber at each plant was "charged" with EtO and used for measuring the emissions. The Task Force believes that during normal business operations more than one Sterilization chamber, and more than one Aeration room/chamber, will be in operation at the same time. The use of only one sterilization chamber and no aeration chambers/rooms for testing is not, by any realistic view, representative of actual operation and would actually underestimate emissions from the plant. The Task Force asks the Agency to explain how Illinois EPA and U.S. EPA defined "normal business operations" during the stack testing performed at the two facilities and how the agencies ensured such operations occurred during the performance of the tests.

Please know that we appreciate all of the Agency's efforts, but to have an announcement from Sterigenics that provides ***"final results"*** without all relevant information and without the publicly shared interpretation by IEPA or U.S. EPA is hugely detrimental to the community and our efforts to understand the impact of operations on our residents. We again renew our insistence that Sterigenics be required to submit its final stack test report immediately, and that the report be reviewed and interpreted by the regulatory agencies immediately thereafter. Indeed, two weeks has already passed since the stack test was performed and we should not have to ask that this matter be given top priority.

Thank you for your assistance in this matter. If you have any questions, please feel free to contact Willowbrook Village Administrator Tim Halik directly at 630-920-2261 or thalik@willowbrook.il.us.

Sincerely,

WILLOWBROOK ENVIRONMENTAL TASK FORCE

cc: Administrator Cathy Stepp, United Stated Environmental Protection Agency, Region 5

Message

From: Thiede, Kurt [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3CC09FAC5ACC4CE1BA689FB2CE70D459-THIEDE, KUR]
Sent: 9/27/2018 3:17:02 PM
To: Jackson, Ryan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38bc8e18791a47d88a279db2fec8bd60-Jackson, Ry]
CC: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]
Subject: Fwd: Sterigenics website
Attachments: Sterigenics_8.22 web copy.pdf; ATT00001.htm

Deliberative Process / Ex. 5

Kurt

Sent from my iPad

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** September 27, 2018 at 11:11:33 AM EDT
> **To:** "Thiede, Kurt" <thiede.kurt@epa.gov>
> **Subject: Sterigenics website**
>
> Here's the website that was posted on August 22.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*

Message

From: Citizen Name / Ex. 6
Sent: 9/25/2018 6:52:12 PM
To: Stepp, Cathy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=befdafc0fa1a425eae232f60ad9bda1d-Stepp, Cath]
Subject: Ambient Air Monitoring

Hi Cathy,

I live in Western Springs which is a few miles from the Sterigenics plant in Willowbrook with two young kids, ages three and six months. I am very concerned about the air quality in the communities in proximity to the plant, especially for young, developing little ones. I understand Sterigenics installed new equipment in July which is supposed to reduce EtO emissions by 90% and stack tests are being done to determine if the new equipment is effective. I believe it is equally important to test the quality of the air as well. Are there plans in place to test the air quality in the areas with elevated cancer risk?

Also, I think this new equipment is a short-term solution. Sterigenics is located in the middle of an elementary school, middle school, day care, high school and other public community uses. This is no location for a company to be emitting toxic, cancer causing chemicals - no matter the amount. It needs to move!

Thanks,
Citizen Name / Ex. 6
Personal Phone / Ex. 6

Message

From: Chicago Tribune [chicagotribune@nsl.chicagotribune.com]
Sent: 3/9/2019 1:48:01 AM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: Highest levels of cancer-causing gas found in communities near Sterigenics since U.S. EPA began testing

Chicago Tribune

MAR 8, 2019

BREAKING NEWS

Highest levels of cancer-causing gas found in communities near Sterigenics since U.S. EPA began testing

FRIDAY, MARCH 8, 2019, 7:46 PM CT

During the month before Gov. J.B. Pritzker's administration shuttered Sterigenics in Willowbrook, air monitors recorded the highest levels of ethylene oxide in nearby residential neighborhoods since federal inspectors began testing for the cancer-causing gas, according to documents released Thursday.

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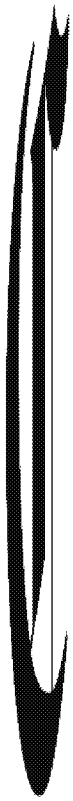
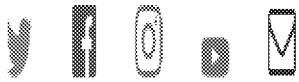
BREAKING NEWS PRESENTED BY





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Message

From: Davis.Alison@epa.gov [Davis.Alison@epa.gov]
Sent: 5/29/2019 7:24:05 PM
To: kcelico@gmail.com; doug@forumfg.com [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f5233b3f940440c3a5445c0b9b7d3cd7-doug@forumf]
Subject: Kelly's presentation
Attachments: Risk Assessment Results for Sterigenics - Willowbrook V8 FINAL.pptx; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

> **From:** "Rimer, Kelly" <Rimer.Kelly@epa.gov>
> **To:** "Davis, Alison" <Davis.Alison@epa.gov>
> **Cc:** "Rimer, Kelly" <Rimer.Kelly@epa.gov>, "Smith, Darcie" <Smith.Darcie@epa.gov>
> **Subject: Risk Assessment Results for Sterigenics - Willowbrook V8 FINAL.pptx**

Message

From: SEJ-BEAT [sej@sej.ccsend.com]
on behalf of SEJ-BEAT [sej@sej.org]
Sent: 1/23/2019 3:02:57 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: Environmental News for 23 January 2019

EJ Today
Top news and leads from the Society of Environmental Journalists

Society of Environmental Journalists
Daily News Digest

WEDNESDAY
JANUARY 23
2019

Today's Top Stories

- "Global Warming Concerns Rise Among Americans in New Poll"
- Company's Racketeering Claims Against Environmental Activists Tossed
- EIA Forecast: Wind, Solar Fastest Growing Power Sources Through 2021
- "'A-List' Climate Change Firms Outperform On Stock Market - Survey"
- "EPA Asked To Investigate Improper Inspection Allegations"
- "Environmental Groups Appeal PolyMet Mine Permits"
- "Backers Plan Green New Deal House Resolution, Ocasio-Cortez Says"
- "EPA Model for Measuring Rule Benefits May Inspire Other Agencies"
- "On the Water-Starved Colorado River, Drought Is the New Normal"
- "3 Newborn Endangered Right Whales Seen After Year With No Births"

"Global Warming Concerns Rise Among Americans in New Poll"

"A record number of Americans understand that climate change is real, according to a new survey, and they are increasingly worried about its effects in their lives today." John Schwartz reports for the New York Times January 22, 2019.

Company's Racketeering Claims Against Environmental Activists Tossed

"A U.S. judge on Tuesday dismissed the most serious claims in a lawsuit brought by a Canadian logging company that accused Greenpeace and another advocacy group of running a criminal enterprise to damage the company." Nicholas Kusnetz reports for InsideClimate News January 22, 2019.

EIA Forecast: Wind, Solar Fastest Growing Power Sources Through 2021

"Wind and solar energy projects will be the fastest growing source of new generation on the U.S. power grid for the next two years, the U.S. Energy Information Administration is forecasting in a new report." James Osborne reports for the Houston Chronicle January 22, 2019.

"'A-List' Climate Change Firms Outperform On Stock Market - Survey"

"OSLO - Apple, L'Oreal, and Mitsubishi Electric are among more than 120 global firms which scored top marks in a ranking of corporate efforts to slow climate change." Alister Doyle reports for Reuters January 21, 2019.

"EPA Asked To Investigate Improper Inspection Allegations"

"Three Democratic U.S. senators are asking the Environmental Protection Agency to investigate allegations it isn't properly inspecting facilities that emit the cancer-causing gas ethylene oxide." The Associated Press had the story January 18, 2019.

SEE ALSO

"New EPA Tests Near Sterigenics Show Ethylene Oxide Cancer Risks Haven't Disappeared" (Chicago Tribune)

"New Documents Reveal How Sterigenics, Other Companies Were Allowed To Vent Cancer-Causing Gas Into Communities" (Chicago Tribune)

"Officials Knew Ethylene Oxide Was Linked To Cancer For Decades. Here's Why It's Still Being Emitted In Willowbrook And Waukegan." (Chicago Tribune)

"Environmental Groups Appeal PolyMet Mine Permits"

"Environmental groups are appealing air and water permits approved for the proposed PolyMet copper-nickel mine in northeastern Minnesota." The Associated Press had the story January 22, 2019.

"Backers Plan Green New Deal House Resolution, Ocasio-Cortez Says"

"The Green New Deal's most prominent backer said Jan. 22 that she and other supporters are drafting a resolution to set out exactly what climate and clean energy policies they would support to combat climate change." Dean Scott reports for Bloomberg Environment January 22, 2019.

SEE ALSO

"Climate: Carbon Tax Backers Grapple With 'Green New Deal'" (E&E Daily)

"The Green New Deal Hits Its First Major Snag" (Atlantic)

"New Proposal Aims To Make Legacy FDR Works Project The Flagship Of A Green New Deal" (HuffPost)

"The Trouble With the 'Green New Deal'" (Politico)

"EPA Model for Measuring Rule Benefits May Inspire Other Agencies"

"The EPA's bid to shift the way it calculates regulatory costs and benefits could spread to other agencies, and any such efforts would help the Trump administration fulfill its agenda to roll back rules, analysts say." Stephen Lee reports for Bloomberg Environment January 22, 2019.

"On the Water-Starved Colorado River, Drought Is the New Normal"

"With the Southwest locked in a 19-year drought and climate change making the region increasingly drier, water managers and users along the Colorado River are

facing a troubling question: Are we in a new, more arid era when there will never be enough water?" Jim Robbins reports for Yale Environment 360 with photography by Ted Wood January 22, 2019.

SEE ALSO

"Arizona Under Pressure To Pass Colorado River Drought Plan As Deadline Nears" (Arizona Republic)

"3 Newborn Endangered Right Whales Seen After Year With No Births"

"In a rare bit of good news for North Atlantic right whales, a third newborn calf was spotted last Thursday, and the breeding season isn't half over." Karen Weintraub reports for the New York Times January 22, 2019.

Compiled by Joseph A. Davis jdavis@sej.org . Copyright 2019 Society of Environmental Journalists. Follow the latest environmental news through the day on Twitter. *SEJ-BEAT is a daily digest of new postings to Environmental Journalism Today, a service of the Society of Environmental Journalists. If you are not already receiving these daily messages by e-mail, you can subscribe here.*

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Sent: 12/30/2018 2:06:10 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: Thank you for being a loyal reader. Please enjoy this month's Selects.

Chicago Tribune

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Chicago Tribune

Top stories of 2018

From Publisher & Editor-in-Chief Bruce Dold

At the Chicago Tribune, we approach the end of the year with the pride we have in our good work and with gratitude to you, our readers, for helping to make it possible.

The support of subscribers has never been more important to the ability of journalists to do their work.

It was a momentous year, and we brought it alive for our readers when it was triumphant and when it was troubling. From a worst-to-first run by the Bears to an exposé of Chicago Public Schools, the Tribune produced world-class journalism about our local communities.

Here are some examples of work that made a difference, and that you made possible:

Students Betrayed

Nobody was keeping track of how often sexual abuse was reported in Chicago Public Schools (CPS) — not even the school system itself. In the "Betrayed" investigation, the Tribune undertook an unprecedented census of abuse of children in the schools, revealed shortcomings in the way CPS

handled complaints by students, and prompted broad reforms aimed at protecting children.

Danger in the air

The Tribune revealed the extent to which a medical services facility called Sterigenics was releasing known carcinogens into the air around suburban schools and homes.

75 shot, 3 charged

Our reporters are exploring the challenges that face Chicago police through a close examination of a single weekend in which 75 were shot, but only three people have been charged in those shootings.

Incredible Transformation?

Just steps from the Magnificent Mile, a 60-acre riverfront development provided the opportunity to create vibrant and interconnected public spaces as well as great architecture. In a sweeping report, Tribune architecture critic Blair Kamin revealed why and how developers and city planners let that promise slip away at Cityfront Center.

#MeToo and a megachurch

Leaders of Willow Creek Community Church initially rejected allegations of inappropriate conduct by its founding pastor, Bill Hybels. But after a Tribune investigation, Hybels resigned from the megachurch and leaders conducted a deep re-examination of their own response.

A season of promise

The Tribune sports department has provided the best coverage in town of a first-year coach, a young quarterback, a throwback defense and an immensely entertaining Chicago Bears team.

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Bruce Dold

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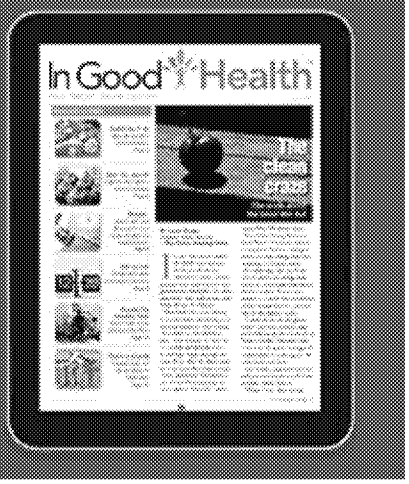

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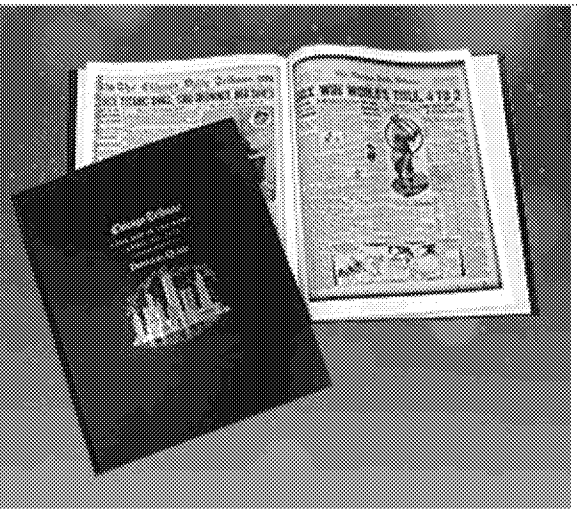

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Message

Sent: 5/30/2019 3:55:35 PM
To: Kelley, Jeff [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e154fa5a5f744c70aa3da58e3f87aabe-JKelley]
Subject: Links for Hannah Goering

Hey Jeff – yesterday got a little nuts. Here are the links for Hannah
We are at the airport. I will check email when we land but won't be in the office until

Quality Assurance Project Plan - https://www.epa.gov/il/sterigenics-willowbrook-facility-agency-response

FAQS on the monitoring plan - https://www.epa.gov/il/outdoor-air-monitoring-willowbrook-community

Maps and data - https://www.epa.gov/il/outdoor-air-monitoring-willowbrook-community#where

Webinars: The easiest way to get these is to go here: https://www.epa.gov/il/sterigenics-willowbrook-facility-updates and then search for "webinar." They aren't on their own page.

Message

From: Davis.Alison@epa.gov [Davis.Alison@epa.gov]
Sent: 5/29/2019 1:44:00 PM
To: Cortelyou-Lee, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=75b1eec7b16e46d5b9114935fc6a771e-JCORTELY]; Gmyr, Joanna [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d5382ea435cd4e8fa7a0ee9cb801e7bf-Gmyr, Joann]
Subject: Fwd: Discussion with the question panel and speakers 866-299-3188 passcode 919-541-5497
Attachments: Copy of Binned Panel Qs 5.29.19 Meeting +Risk Qs.xlsx; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

From: "Davis, Alison" <Davis.Alison@epa.gov>
Date: May 24, 2019 at 10:00:08 AM CDT
To: "Mckelvey, Laura" <Mckelvey.Laura@epa.gov>, Margaret Donnell <Margaret.Donnell@HISCOX.com>, "Richard Morton (pc)" <rick@rgmorton.com>, "greg.hart@dupageco.org" <greg.hart@dupageco.org>, Urszula Tanouye <urszula.tanouye@gmail.com>, "sbucha3@uic.edu" <sbucha3@uic.edu>, Srikant Rao <mslrao71@gmail.com>, neringa valkiunas <neringavalkiunas@yahoo.com>, "Renehan, Julie" <Julie.Renehan@dupageco.org>, "Koerber, Mike" <Koerber.Mike@epa.gov>, "Rimer, Kelly" <Rimer.Kelly@epa.gov>, "mkj5@cdc.gov" <mkj5@cdc.gov>, "mna9@cdc.gov" <mna9@cdc.gov>, "Shen, Tiefu" <Tiefu.Shen@Illinois.gov>, "Garner, Kyle" <Kyle.Garner@Illinois.gov>, Kristi Celico <kcelico@gmail.com>, "Wilson, Holly" <Wilson.Holly@epa.gov>, "Bremer, Kristen" <Bremer.Kristen@epa.gov>, "Frost, Brad" <Brad.Frost@Illinois.gov>, "doug@forumfg.com" <doug@forumfg.com>
Cc: "Cutrona, Jennifer L" <jennifer.cutrona@gdit.com>
Subject: RE: Discussion with the question panel and speakers 866-299-3188 passcode 919-541-5497

Sending these for Laura – she is having a computer issue

-----Original Appointment-----
From: Mckelvey, Laura
Sent: Tuesday, May 21, 2019 11:28 AM
To: Mckelvey, Laura; Margaret Donnell; Richard Morton (pc); greg.hart@dupageco.org; Urszula Tanouye; sbucha3@uic.edu; Srikant Rao; neringa valkiunas; Renehan, Julie; Koerber, Mike; Rimer, Kelly; mkj5@cdc.gov; mna9@cdc.gov; Shen, Tiefu; Garner, Kyle; Kristi Celico; Wilson, Holly; Davis, Alison; Bremer, Kristen; Frost, Brad; doug forumfg.com
Cc: Cutrona, Jennifer L
Subject: Discussion with the question panel and speakers 866-299-3188 passcode 919-541-5497
When: Friday, May 24, 2019 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: RTP-C400A-Max40/RTP-Bldg-C

Hi folks,

We want to get folks together to talk about the questions for the panel and make sure everyone is on the same page. Sorry about this being the Friday before a holiday weekend but we wanted have this conversation before the meeting next week.

Thanks
Laura

Message

From: Davis.Alison@epa.gov [Davis.Alison@epa.gov]
Sent: 5/28/2019 8:56:40 PM
To: Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]; Shappley, Ned [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5fc7fde372054ab5ac38f24b9072b73d-Shappley, N]; Smith, Darcie [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=3ae3c2377efb42879b943db8796ddc05-Smith, Darcie]; Bremer, Kristen [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b7ad6f4a11064ef08cb03aec9dc8e892-KBREMER]; Mckelvey, Laura [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f3a2c5f041a442ea931ddb3d039236ff-LMCKELVE]; Wilson, Holly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=208c5fea61f24fefbfd9bb7299f830c1-HWILSON]; Terry, Sara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a5f08a9bf1324b05bc02a7dd2ea695e4-STERRY]; Cortelyou-Lee, Jan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=75b1eec7b16e46d5b9114935fc6a771e-JCORTELY]; Gmyr, Joanna [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d5382ea435cd4e8fa7a0ee9cb801e7bf-Gmyr, Joann]
Subject: Fwd: NATTS talkers

Sent from my iPhone

Begin forwarded message:

From: "Davis, Alison" <Davis.Alison@epa.gov>
Date: May 28, 2019 at 3:46:32 PM CDT
To: "Weinstock, Lewis" <Weinstock.Lewis@epa.gov>
Cc: "Koerber, Mike" <Koerber.Mike@epa.gov>
Subject: NATTS talkers

Deliberative Process / Ex. 5

Removes a stray word in the original

Message

From: Davis.Alison@epa.gov [Davis.Alison@epa.gov]
Sent: 5/29/2019 4:27:10 PM
To: Weinstock, Lewis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=df30e068efb24a24b35d63be0596ad9b-LWEINS02]
Subject: Fwd: Risk Assessment Results for Sterigenics - Willowbrook V7 FINAL.pptx
Attachments: Risk Assessment Results for Sterigenics - Willowbrook V7 FINAL.pptx; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

> **From:** "Rimer, Kelly" <Rimer.Kelly@epa.gov>
> **To:** "Newton, Cheryl" <Newton.Cheryl@epa.gov>, "Nam, Ed" <nam.ed@epa.gov>, "Sieffert, Margaret" <Sieffert.Margaret@epa.gov>, "Compher, Michael" <compher.michael@epa.gov>, "Nwia, Jacqueline" <nwia.jacqueline@epa.gov>, "Cain, Alexis" <cain.alexis@epa.gov>, "Siegel, Kathryn" <siegel.kathryn@epa.gov>
> **Cc:** "Koerber, Mike" <Koerber.Mike@epa.gov>, "Davis, Alison" <Davis.Alison@epa.gov>, "Shappley, Ned" <Shappley.Ned@epa.gov>, "Bremer, Kristen" <Bremer.Kristen@epa.gov>
> **Subject: Risk Assessment Results for Sterigenics - Willowbrook V7 FINAL.pptx**

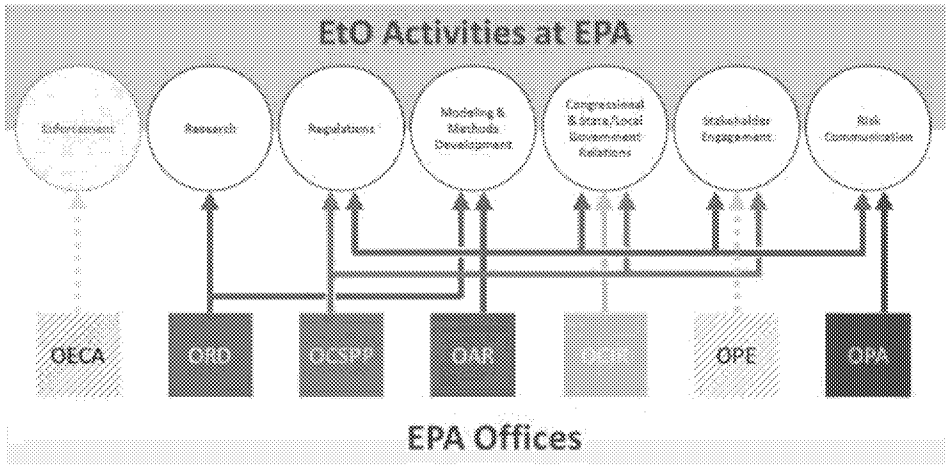
Appointment

From: Noonan, Jenny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=19d41ff0e3054aafa47d3c33308e5b30-JNOONAN]
Sent: 5/3/2019 4:34:40 PM
To: Noonan, Jenny [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=19d41ff0e3054aafa47d3c33308e5b30-JNOONAN]; Koerber, Mike [Koerber.Mike@epa.gov]; Wood, Anna [Wood.Anna@epa.gov]; Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]; Edwards, Chebryll [Edwards.Chebryll@epa.gov]

Subject: ETO overview
Attachments: Internal. Briefing for OCIR staff 4.17.19.pptx
Location: MKO

Start: 5/6/2019 5:00:00 PM
End: 5/6/2019 5:30:00 PM
Show Time As: Busy

Overview of ETO project and where it is headed.



Appointment

From: Siegel, Kathryn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F57A52EFEAD9497CB582B11B8C85F09F-KSIEGE02]
Sent: 3/14/2019 10:45:32 PM
To: Siegel, Kathryn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f57a52efead9497cb582b11b8c85f09f-KSiege02]; Nam, Ed [nam.ed@epa.gov]; Newton, Cheryl [Newton.Cheryl@epa.gov]; Furey, Eileen [furey.eileen@epa.gov]; Cain, Alexis [cain.alexis@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]
CC: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]; Rimer, Kelly [Rimer.Kelly@epa.gov]; Shappley, Ned [Shappley.Ned@epa.gov]; Weinstock, Lewis [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=df30e068efb24a24b35d63be0596ad9b-LWEINS02]

Subject: Fwd: EtO prep -- FDA call and 3/20 Sterigenics meeting
Location: (202) 991-0477; 921-1778

Start: 3/15/2019 1:30:00 PM
End: 3/15/2019 2:00:00 PM
Show Time As: Tentative

Sent from my iPhone

Begin forwarded message:

> **From:** "Siegel, Kathryn" <siegel.kathryn@epa.gov>
> **To:** "Koerber, Mike" <Koerber.Mike@epa.gov>
> **Subject: EtO prep -- FDA call and 3/20 Sterigenics meeting**

Message

From: Chicago Tribune [chicagotribune@nsl.chicagotribune.com]
Sent: 5/30/2019 6:34:03 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: Sterigenics created cancer risk 10 times higher than federal EPA standards in Willowbrook, new report says

Chicago Tribune

THURSDAY, MAY 30, 2019, 1:31 PM CT

BREAKING NEWS

Sterigenics created cancer risk 10 times higher than federal EPA standards in Willowbrook, new report says

Toxins emitted by Sterigenics continued to pose high cancer risks after the company installed new pollution-control equipment last summer, according to a new federal study.

Top officials at the U.S. Environmental Protection Agency confirmed in a new report that pollution from the company's Willowbrook sterilization plant was responsible for long-term cancer risks up to 10 times higher than what the EPA considers acceptable.

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Message

Sent: 11/30/2018 4:55:26 PM

NBC Chicago
Video at https://www.nbcchicago.com/news/local/Still-More-Questions-Than-Answers-on-Sterigenics--501600791.html

Still More Questions Than Answers on Sterigenics Plant, Some Willowbrook Residents Say

The panel discussions are expected to get underway following the open house at 7 p.m.

By Trina Orlando

Published Nov 29, 2018 at 9:15 PM | Updated at 10:37 PM CST on Nov 29, 2018

A community meeting and forum will be hosted in Willowbrook by the U.S. Environmental Protection Agency to field questions about the cancer-causing air emissions from the Sterigenics plant.

It's an opportunity for concerned residents to speak face-to-face with EPA officials.

“I’m hoping to learn what is going to be done to get this ethylene oxide out of the community,” Mallory Clark said.

In August the U.S. Department of Health and Human Services notified the village that the toxic gas being emitted from Steregenics was a health hazard that posed an elevated risk to at least 19,000 residents living nearby. That revelation led to 11 lawsuits being filed against the company--including nine in federal court.

“Sterigenics has never accepted responsibility for what they’ve done," attorney Jeff Kroll said.

Thursday morning attorneys for plaintiffs who live in the area and have been affected by a slew of health affects fought to keep the cases from being handled by a single judge.

Antonio Romanucci is another attorney for some of the plaintiffs.

“These are individualized cases and Sterigenics claim that they can lump these into one basket and have one one judge decide all cases is flawed and it’s wrong," he said.

Last week the EPA said a flawed measurement may have inflated the actual levels of ethylene oxide being emitted.

In a statement Thursday Sterigenics said: the system has failed the citizens of Willowbrook by allowing flawed data measured against an illogical standard to be accepted as fact.

The real travesty has been the needless fear and worry about safety that good people of Willowbrook have had to wrongly endure.

Environmental health experts, like Dr. Susan Buchanan, say the resulting elevated cancer risk is still a concern.

"I haven’t seen any evidence for why they think those levels might be inflated. I consider those levels that we re taken by the local level to be correct," she said.

It is that confusion over how potentially dangerous the emissions are that many are hoping to get answers to tonight. The panel discussions are expected to get underway following the open house at 7 p.m.

CBS Chicago

Video at https://chicago.cbslocal.com/2018/11/29/sterigenics-willowbrook-meeting/

Message

Sent: 12/12/2018 3:55:02 PM
To: Terry, Sara [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a5f08a9bf1324b05bc02a7dd2ea695e4-STERRY]
Subject: link to IL site

https://www2.illinois.gov/epa/topics/community-relations/sites/sterigenics/Pages/default.aspx

Message

Sent: 12/12/2018 3:50:06 PM
To: Wayland, Richard [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d69f0a870909402ebd66847003aa6437-Wayland, Chet]
Subject: Checking on somethign re. EtO

Hi – we're going to through all of the questions we've gotten to be sure we've answered what we can - our list shows you had questions from John Kim at IL EPA about the scope and parameters of modeling to be done on the recent stack tests results from Sterigenics.

Did you respond to Mr. Kim? If so, would you share that with Pam Long, so we can add the answer to our database?

Message

Sent: 5/17/2019 8:33:17 PM
Subject: so you have this

This is what Clint approved on 4/1 (granted, we wrote it without knowing any particulars). I'm thinking we probably could update it for Medline if needed

(b) (5)

Message

Sent: 2/19/2019 10:18:21 PM

http://www.chicagomag.com/Chicago-Magazine/March-2019/The-Grassroots-Fight-Against-Sterigenics/

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Air Protection Branch
4244 International Parkway
Suite 120
Atlanta, Georgia 30354
404-363-7000

MEMORANDUM

June 7, 2019

To: James Boylan
Thru: Byeong-Uk Kim
From: Henian Zhang
Subject: **Modeling Analysis for Ethylene Oxide Sterigenics, Smyrna, Cobb County, GA**

GENERAL INFORMATION

As part of a review on the EPA's 2014 National Air Toxics Assessment (NATA), air dispersion modeling of ethylene oxide was conducted by the Georgia Environmental Protection Division (GA EPD) to assess the impacts of ethylene oxide emissions from sources at Sterigenics on ambient air surrounding the facility. Although this modeling is not for issuance of a permit, GA EPD adopted procedures described in GA EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*[1].

This memo discusses modeling results including the procedures used to develop the dispersion modeling. Two emission scenarios were modeled. The facility's current emission release configuration sends fugitive emissions to wall fans. The facility's proposed emission release configuration collects the fugitive emissions and sends them to two stacks on the roof top. For both scenarios, the air toxic impacts from ethylene oxide was below its Acceptable Ambient Concentration (AAC) at the 15-min averaging period, but exceeded its annual AAC. Site-specific risk assessments were performed at the closest four residential areas and the modeled ground-level concentrations exceeded the annual AAC at all four residential areas. The results are summarized in the following sections of this memorandum.

INPUT DATA

1. **Meteorological Data** – Hourly meteorological data (2014 to 2018) used in this review were generated by GA EPD ([HYPERLINK "http://epd.georgia.gov/air/georgia-aermet-meteorological-data"]). Surface measurements were obtained from the Cartersville Airport, Cartersville, GA. Upper air observations were obtained from the Atlanta Regional Airport – Falcon Field, Peachtree City, GA. These measurements were processed using the AERSURFACE (v13016), AERMINUTE (v15272), and AERMET (v18081) with the adjusted surface friction velocity option (ADJ_U*).

2. **Source Data** – Emission release parameters and emission rates were provided by the company and reviewed by the GA EPD Stationary Source Permitting Program. Two emission scenarios were modeled. The current scenario refers to the facility's current emission release configuration that sends

1 [HYPERLINK "https://epd.georgia.gov/air/documents/toxics-impact-assessment-guideline"]

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fugitive emissions to wall fans (see Appendix A for details). In the proposed scenario, two stacks on the roof top will release the fugitive emissions after collecting them (see Appendix B for details).

3. **Receptor Locations** – Discrete receptors with 25-meter intervals were placed along the property boundary. Receptors extend outwards from the fence line at 100-meter intervals on a Cartesian grid to approximately 2 km and at 250-meter intervals from approximately 2 km to approximately 5 km. Additional receptors were placed at the four closest residential areas. This domain (10 km by 10 km) is sufficient to capture the maximum impact. All receptor locations are represented in the Universal Transverse Mercator (UTM) projections, Zone 16, North American Datum 1983.

4. **Terrain Elevation** – Topography was found to be generally flat in the site vicinity. Terrain data from the USGS 1-sec National Elevation Dataset (NED) were extracted to obtain the elevations of all sources and receptors by the AERMAP terrain processor (v18081).

5. **Building Downwash** – The potential effect for building downwash was evaluated via the "Good Engineering Practice (GEP)" stack height analysis and was based on the scaled site plan submitted by Sterigenics using the BPIPPRM program (v04274). The BPIPPRM model was used to derive building dimensions for downwash assessment and the assessment of cavity-region concentrations appropriate for the AERMOD model.

AIR TOXICS ASSESSMENT

The impacts of facility-wide ethylene oxide emissions were evaluated according to the Georgia Air Toxics Guideline available at [HYPERLINK "https://epd.georgia.gov/air/documents/toxics-impact-assessment-guideline"]. The annual and 15-minute AACs were reviewed based on U.S. EPA Integrated Risk Information System (IRIS) Risk Based Air Concentration (RBAC) and OSHA Permissible Exposure Limit (PEL) according to the Georgia Air Toxics Guideline (see Appendix C for details). The EPA NATA used a different annual AAC value (see Appendix D for details). For this assessment, GA EPD used the annual AAC derived according to the Georgia Air Toxics Guideline and took two approaches to evaluate the impacts. The first approach (described in the Georgia Air Toxics Guideline) selects the year with the highest annual modeled maximum ground-level concentrations (MGLC) from the 5-year period and uses this year in the assessment. The second approach uses the annual modeled concentrations averaged across the 5-year period. The modeled 1-hour and annual ground-level concentrations were calculated using the AERMOD dispersion model (v18081).

Analysis with the Highest 5-Year MGLCs

Table 1 summarizes the AAC levels and the MGLCs from the two modeling scenarios with the highest 5-year MGLCs. The 15-min MGLC is based on the 1-hour MGLC multiplied by a factor of 1.32. The 15-min MGLC was below its corresponding 15-min AAC. However, the annual MGLC exceeded the annual AAC. Figure 1 show the spatial distributions of ground level concentrations estimated with the current scenario and 2016 meteorological data (the year with the highest modeled MGLC). Figure 2 show the spatial distributions of MGLCs estimated with the proposed scenario and 2017 meteorological data (the year with the highest modeled MGLC). Figures 3 and 4 show close-up looks of modeling results with the current and proposed scenarios, centered at the facility with the closest four residential areas labeled. The MGLCs of the four closest residential areas are shown in Table 2. The number of households affected by 10 times of AAC (blue lines on Figures 1 to 4) was reduced from approximately 1,000 with the current

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emissions scenario to approximately 600 with the proposed emissions scenario.

Table 1. Modeled Highest 5-year MGLCs from the Current and Proposed Scenarios and the Respective AACs.

Averaging period	MGLC (µg/m³) Current Scenario*	MGLC (µg/m³) Proposed Scenario#	AAC (µg/m³)
Annual	1.5	0.16	0.00033
15-min	39	1.4	900

* The highest concentration over all averaging periods was modeled in 2016.
# The highest concentration over all averaging periods was modeled in 2017.

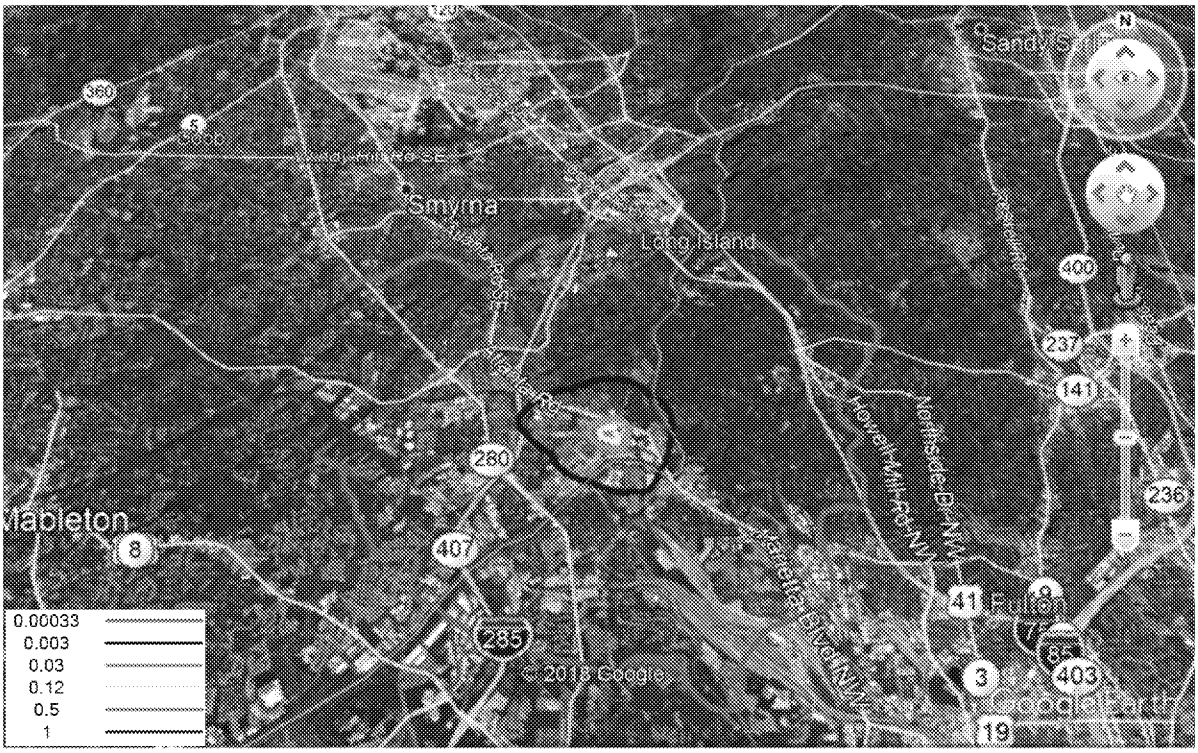

Figure 1. Contours of annual average ground-level concentrations modeled with the current emission scenario overlaid on a Google Earth map for 2016 (the year with the highest modeled MGLC).

Figure 2. Contours of annual average ground-level concentrations with the proposed emission scenario overlaid on a Google Earth map for 2017 (the year with the highest modeled MGLC).

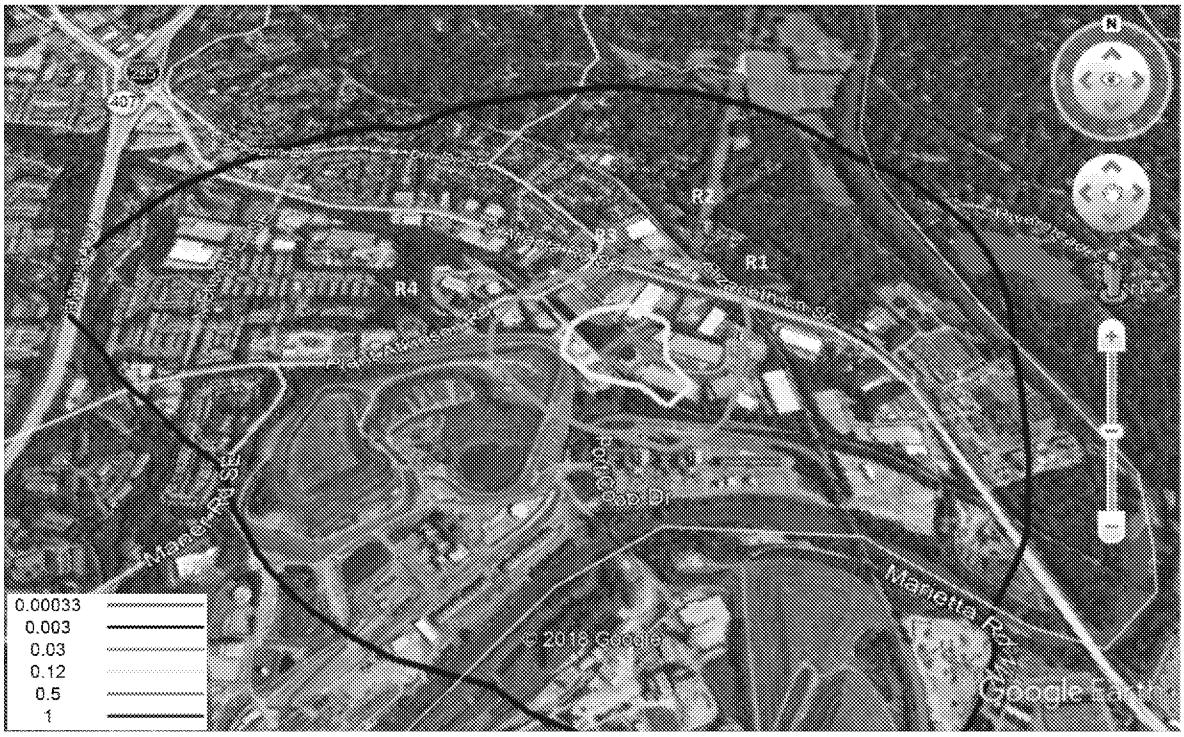

Figure 3. A close-up look of Figure 1 with the closest residential areas labeled.

Figure 4. A close-up look of Figure 2 with the closest residential areas labeled.

Table 2. Risk Analysis for Residential Areas with Modeled Highest 5-year MGLCs.

Residential Areas	Receptor UTM Zone: 16		MGLC (µg/m³)		Averaging Period	AAC (µg/m³)	Ratio of MGLC (µg/m³) to AAC (µg/m³)	
	Easting (meter)	Northing (meter)	Current Scenario*	Proposed Scenario#			Current Scenario	Proposed Scenario
R1	734,456.40	3,746,827.10	0.020	0.008	Annual	0.00033	61	24
R2	734,349.30	3,746,923.70	0.015	0.007	Annual	0.00033	45	21
R3	734,073.40	3,746,829.10	0.017	0.007	Annual	0.00033	52	21
R4	733,449.70	3,746,572.40	0.009	0.004	Annual	0.00033	27	12

* The highest concentration over all averaging periods was modeled in 2016.
# The highest concentration over all averaging periods was modeled in 2017.

Analysis with 5-Year Average Ground-level Concentrations

To further assess the impact over longer period, maximum values from the 5-year averaged ground-level concentrations from the two modeling scenarios are summarized in Table 3. Contours of modeled snnusl ground-level concentrations averaged over the 5-year period are shown in Figures 5 and 6. Figures 7 and 8 show close-up looks centered at the facility with the closest four residential areas labeled. The 5-year averaged modeled ground-level concentrations of the four closest residential areas are shown in Table 4.

Table 3. Modeled 5-year Annual Average Ground-level Concentrations from the Current and Proposed Scenarios and the Respective AAC.

Averaging period	MGLC (μg/m³) Current Scenario*	MGLC (μg/m³) Proposed Scenario*	AAC (μg/m³)
Annual	1.4	0.15	0.00033

* The maximum of ground-level concentration averaged over 5 years.

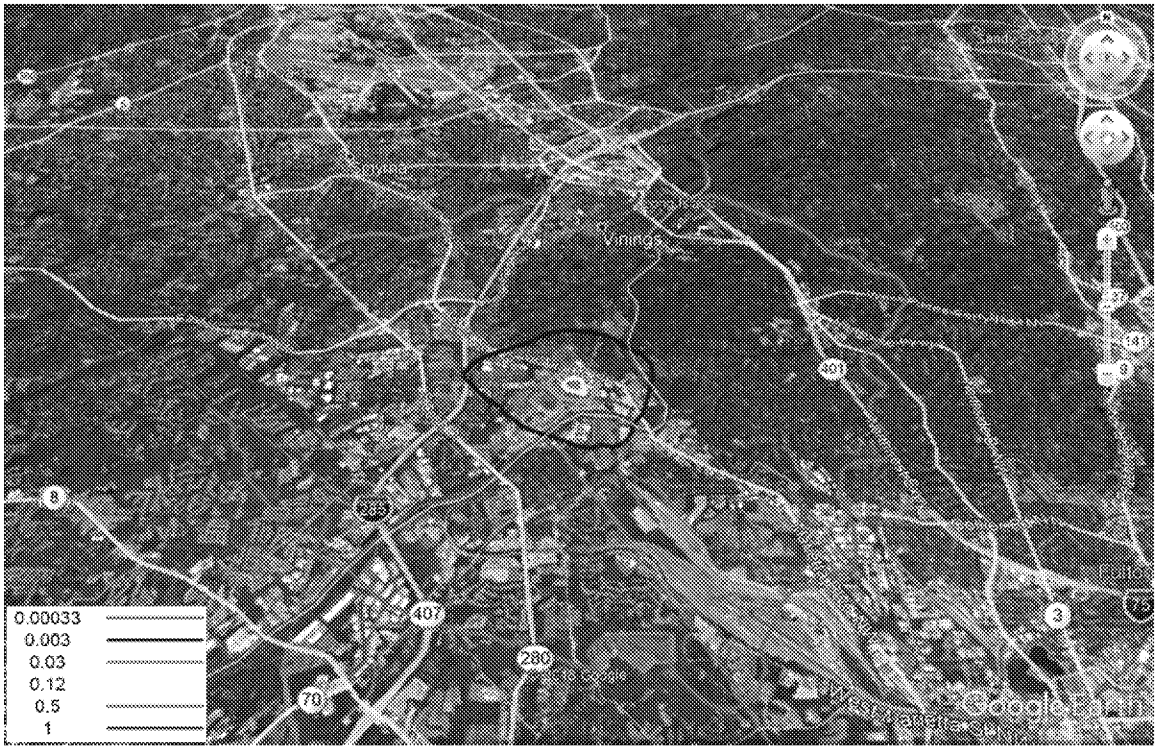

Figure 5. Contours of 5-year annual average ground-level concentrations modeled with the current emission scenario overlaid on a Google Earth map.

Figure 6. Contours of 5-year annual average ground-level concentrations modeled with the proposed emission scenario overlaid on a Google Earth map.

Figure 7. A close-up look of Figure 5 with the closest residential areas labeled.

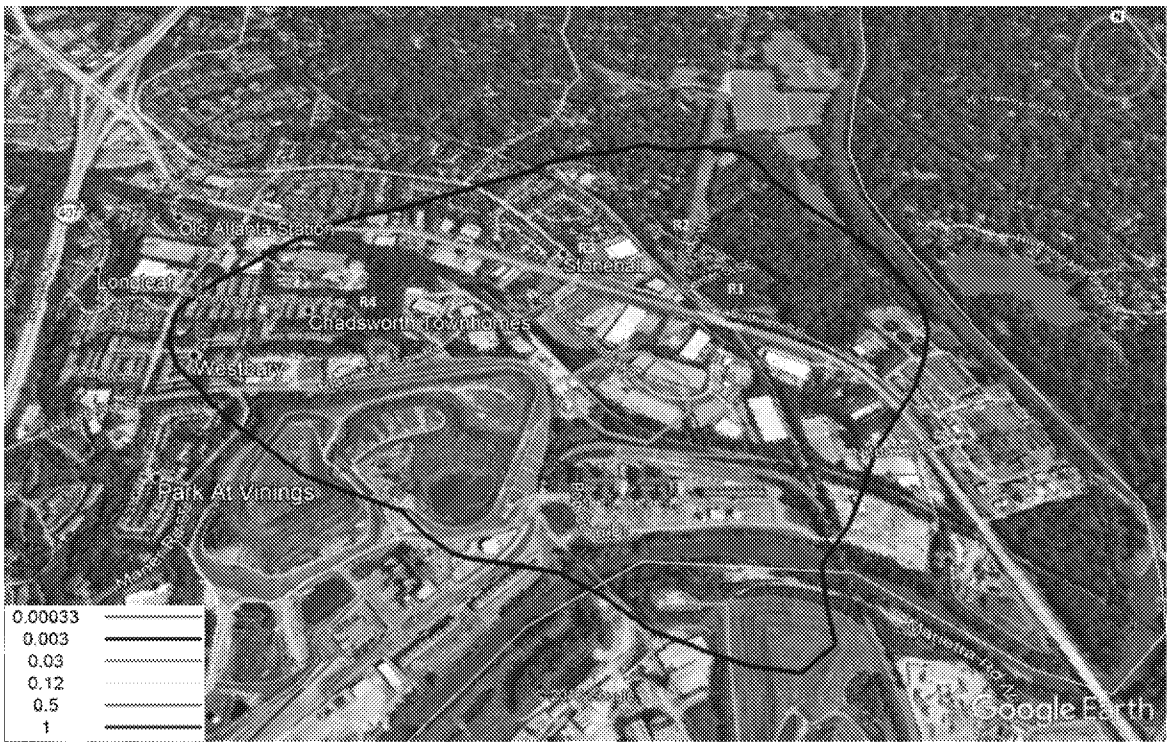

Figure 8. A close-up look of Figure 6 with the closest residential areas labeled.

Table 4. Risk Analysis for Residential Areas with 5-year Average Ground-level Concentrations.

Residential Areas	Receptor UTM Zone: 16		Ground-level Concentration (µg/m³)		Averaging Period	AAC (µg/m³)	Ratio of Ground-level Concentration (µg/m³) to AAC (µg/m³)	
	Easting (meter)	Northing (meter)	Current Scenario	Proposed Scenario			Current Scenario	Proposed Scenario
R1	734,456.40	3,746,827.10	0.020	0.007	Annual	0.00033	61	21
R2	734,349.30	3,746,923.70	0.015	0.006	Annual	0.00033	45	18
R3	734,073.40	3,746,829.10	0.017	0.006	Annual	0.00033	52	18
R4	733,449.70	3,746,572.40	0.009	0.005	Annual	0.00033	27	15

CONCLUSIONS

The dispersion modeling analysis for ethylene oxide shows exceedances at the annual AAC level with the current and proposed emission scenarios. The risk assessment with the current emission scenario indicates that residential areas are well above the AAC level (27-61 times). The risk at residential areas is reduced by approximately 50% with the proposed scenario, but the modeled impacts are still well above the AAC (12-24 times).

Appendix A

Current Emissions and Model Input Parameters

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Ethylene Oxide (EtO) Emissions

Emission Source	2017 EtO Emissions (lb/yr)
AAT Scrubber	13.72
Ceilcote Scrubber	3.98
Fugitives	188.39

Model Input Parameters for EtO Emissions Sources

Model ID	Stack Description	Source Type	UTM E[1] (m)	UTM N[1] (m)	Elevation[2] (m)	Modeled EtO Emissions[3] (g/s)	Stack Height		Stack Temperature		Exhaust Gas Flow Rate (cfm)	Exit Velocity		Stack Diameter	
							(ft)	(m)	(°F)	(K)		(ft/s)	(m/s)	(ft)	(m)
STK1	AAT Scrubber	POINT	734,253.6	3,746,381.0	251.59	1.97E-04	51.0	15.54	98	309.82	12,000	46.8	14.256	2.3	0.71
STK2	Ceilcote	POINT	734,232.1	3,746,355.7	250.08	5.72E-05	51.0	15.54	85	302.59	2,000	42.4	12.936	1.0	0.30
STK3	Roof Fan	POINT	734,267.9	3,746,355.2	251.21	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK4	Roof Fan	POINT	734,256.7	3,746,361.0	251.07	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK5	Wall Fan	POINTHOR	734,226.1	3,746,349.0	249.61	-	20.0	6.10	75	297.04	200	0.8	0.254	2.3	0.69
STK6	Wall Fan	POINTHOR	734,211.5	3,746,357.1	249.46	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK7	Wall Fan	POINTHOR	734,201.8	3,746,366.6	249.67	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK8	Wall Fan	POINTHOR	734,180.6	3,746,413.3	250.46	1.51E-04	4.8	1.47	75	297.04	5,985	21.3	6.477	2.4	0.75
STK9	Wall Fan	POINTHOR	734,189.0	3,746,420.2	250.93	1.51E-04	12.5	3.81	75	297.04	2,122	6.3	1.930	2.7	0.81
STK10	Wall Fan	POINTHOR	734,197.7	3,746,427.9	251.32	6.02E-04	13.5	4.11	75	297.04	409	20.7	6.299	0.6	0.20
STK11	Wall Fan	POINTHOR	734,201.8	3,746,431.4	251.61	6.02E-04	13.8	4.22	75	297.04	1,031	52.1	15.875	0.6	0.20
STK12	Wall Fan	POINTHOR	734,210.2	3,746,438.3	252.02	-	20.0	6.10	75	297.04	20,000	15.9	4.836	5.2	1.58

Notes:

1. Coordinates reflect UTM NAD83, Zone 16.
2. Modeled elevations were incorporated using AERMAP. Terrain elevation data was obtained using the National Elevation Data (NED) files from the USGS Multi-Resolution Land Characteristics Consortium (MRLC).
3. Smoke testing conducted at the Atlanta facility has shown there are no EtO emissions released from the wall fans associated with STK5 through STK7 and from STK12.

Appendix B

Proposed Emissions and Model Input Parameters

ED_002192D_00065257-00011

Ethylene Oxide (EtO) Emissions

Emission Source	2017 EtO Emissions (lb/yr)
AAT Scrubber	13.72
Ceilcote Scrubber	3.98
Fugitives	188.39

Model Input Parameters for EtO Emissions Sources

Model ID	Stack Description	Source Type	UTM E[1] (m)	UTM N[1] (m)	Elevation[2] (m)	Modeled EtO Emissions[3] (g/s)	Stack Height		Stack Temperature		Exhaust Gas Flow Rate (cfm)	Exit Velocity		Stack Diameter	
							(ft)	(m)	(°F)	(K)		(ft/s)	(m/s)	(ft)	(m)
STK1	AAT Scrubber	POINT	734,253.6	3,746,381.0	251.59	1.97E-04	51.0	15.54	98	309.82	12,000	46.8	14.256	2.3	0.71
STK2	Ceilcote	POINT	734,232.1	3,746,355.7	250.08	5.72E-05	51.0	15.54	85	302.59	2,000	42.4	12.936	1.0	0.30
STK3	Roof Fan	POINT	734,267.9	3,746,355.2	251.21	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK4	Roof Fan	POINT	734,256.7	3,746,361.0	251.07	6.02E-04	29.0	8.84	75	297.04	16,000	37.7	11.499	3.0	0.91
STK5	Wall Fan	POINTHOR	734,226.1	3,746,349.0	249.61	-	20.0	6.10	75	297.04	200	0.8	0.254	2.3	0.69
STK6	Wall Fan	POINTHOR	734,211.5	3,746,357.1	249.46	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK7	Wall Fan	POINTHOR	734,201.8	3,746,366.6	249.67	-	23.0	7.01	75	297.04	6,000	25.0	7.620	2.3	0.69
STK812A	Roof Stack A for Fugitive Emissions	POINT	734,206.0	3,746,414.0	251.18	7.53E-04	105.0	32.00	75	297.04	7,500	70.7	21.560	1.5	0.46
STK812B	Roof Stack B for Fugitive Emissions	POINT	734,197.0	3,746,410.0	250.80	7.53E-04	105.0	32.00	75	297.04	7,500	70.7	21.560	1.5	0.46

Notes:

1. Coordinates reflect UTM NAD83, Zone 16.
2. Modeled elevations were incorporated using AERMAP. Terrain elevation data was obtained using the National Elevation Data (NED) files from the USGS Multi-Resolution Land Characteristics Consortium (MRLC).
3. Smoke testing conducted at the Atlanta facility has shown there are no EtO emissions released from the wall fans associated with STK5 through STK7.

Appendix C

GA EPD Calculation of the Annual and 15-min AAC
for Ethylene Oxide

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GA EPD Calculation of the Annual and 15-min AAC for Ethylene Oxide

According to the GA EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*, the annual and 15-min AAC for ethylene oxide are calculated as following:

Annual AAC

In the EPA Integrated Risk Information System (IRIS)[2], the Inhalation Unit Risk (IUR) for ethylene oxide is 3×10^{-3} per $\mu g/m^3$. Since ethylene oxide is carcinogenic to humans, it belongs to Group A[3] with a cancer risk of 1/1,000,000. Therefore, the annual AAC is calculated as:

$$\text{Annual AAC} = \text{Cancer Risk / IUR} = (1/1{,}000{,}000)/(0.003/\mu g/m^3) = \mathbf{0.00033\ \mu g/m^3}$$

15-min AAC

The OSHA permissible exposure limit (PEL) for ethylene oxide is 5 ppm. To convert the PEL from ppm to mg/m^3, use the following conversion formula from the guidance:

$$(5\ \text{ppm} \times 44.05\ \text{g/mol}) / (24.45\ \text{L/mol}) = 9\ mg/m^3$$

where, 44.05 is the molecular weight for ethylene oxide and 24.45 is the molar volume at 25°C and 760 mmHg. After applying a safety factor of 10 for acute sensory irritants, the 15-min AAC is calculated as:

$$\text{15-min AAC} = 9\ mg/m^3 \times 1000\ (\text{convert mg to } \mu g) / 10\ (\text{safety factor}) = \mathbf{900\ \mu g/m^3}$$

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[2] [HYPERLINK "https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1025_summary.pdf"]

[3] [HYPERLINK "https://www.epa.gov/fera/risk-assessment-carcinogenic-effects"]

Appendix D

EPA Calculation of the Annual AAC
for Ethylene Oxide

ED_002192D_00065257-00015

EPA Calculation of the Annual AAC for Ethylene Oxide

According to EPA's IRIS, inhalation unit risk (IUR) for ethylene oxide (EtO) is $3x10^{-3}$ per $\mu g/m^3$ (as discussed in Appendix C). However, because of the elevated risk due to the mutagenic mode of action through early-life exposures, EPA multiplied the IUR by 1.6:

Modified IUR for EtO = $3x10^{-3}$ per $\mu g/m^3$ x 1.6 = $0.005/\mu g/m^3$

EPA's NATA used (100/1,000,000) individual risk for the purpose of determining "acceptable risk" (AR) in their national assessment.

AR Exposure Concentration = Cancer Risk / IUR = $(100/1{,}000{,}000)/(0.005/\mu g/m^3)$ = **0.02 $\mu g/m^3$**

However, EPA uses (1/1,000,000) individual risk to incorporate an "ample margin of safety" (AMS) for setting emission standards[4] (e.g., benzene NESHAP).

AMS Exposure Concentration = Cancer Risk / IUR = $(1/1{,}000{,}000)/(0.005/\mu g/m^3)$ = **0.0002 $\mu g/m^3$**

[4] [HYPERLINK "https://www3.epa.gov/ttn/atw/rrisk/risk_rep.pdf"]

ED_002192D_00065257-00016

Message

From: Dominguez, Alexander [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5CED433B4EF54171864ED98A36CB7A5F-DOMINGUEZ,]
Sent: 6/20/2019 6:58:36 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Attachments: OAR-9 Ethylene Oxide updated Final.docx

Do you have readily available topline information on the Ethylene Production RTR and the Sterilization technology review? The Administrator now has a meeting with Phil MacNabb tomorrow and I'm scrambling to prepare his memo. The attached memo you provided Clint is very helpful but I do not have much on the two agency actions.

Message

From: Lewis, Josh [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B22D1D3BB3F84436A524F76AB6C79D7E-JOLEWIS]
Sent: 12/19/2018 3:03:06 PM
To: Koerber, Mike [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c513901d4fd49f9ab101a6f7a7a863e-Koerber, Mike]; Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]; DeLuca, Isabel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0b021c30cbee4637a7c7ca683e5e044a-IDELUCA]
Subject: FW: Open Letter from Stop Sterigenics
Attachments: 12-19-18 Reaction to 1984 Document.pdf; 1984-07-06-letter-from-IEPA-1.pdf

From: Wehrum, Bill
Sent: Wednesday, December 19, 2018 9:50 AM
To: Lewis, Josh <Lewis.Josh@epa.gov>
Subject: FW: Open Letter from Stop Sterigenics

Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

From: Stop Sterigenics <stopsterigenics@gmail.com>
Sent: Wednesday, December 19, 2018 8:38 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Alec.Messina@illinois.gov; attorney_general@atg.state.il.us; sao@dupageco.org
Subject: Open Letter from Stop Sterigenics

Last night the Stop Sterigenics group received a newly revealed document written by the IEPA in 1984 during the permitting process for the Willowbrook facility. Please our attached letter requesting the immediate shutdown of Sterigenics, Willowbrook.

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stopsterigenics.com

stopsterigenics.com
fb.com/groups/stopsterigenics/
twitter.com/stopsterigenics
stopsterigenics@gmail.com

December 19, 2018

William Wehrum - Assistant Administrator of the Air and Radiation Department, USEPA
Alec Messina - Director, Illinois EPA
Robert Berlin - DuPage County State's Attorney
Lisa Madigan – Illinois Attorney General

Dear Mr. Wehrum, Mr. Messina, Mr. Berlin and Ms. Madigan,

In 1984 Griffith Laboratories, the original name of the Sterigenics plant, applied for a permit to the Illinois EPA. In a response to their application, the IEPA expressed serious concerns about Ethylene Oxide emissions:

1) The IEPA predicted ambient air levels of Ethylene Oxide as high as 3.120 micrograms/cubic meter and as low as .09883 micrograms/cubic meter as far as one mile away from the plant.

2) The IEPA referenced a draft of a "USEPA Health Assessment Document" which provided evidence of human cancers of the pancreas, bladder, central nervous system and stomach associated with EtO exposure. The studies showed carcinogenic, mutagenic, leukemogenic and teratogenic effects.

3) The USEPA studies indicate that the highest acceptable ground level concentration of EtO is .007 micrograms/cubic meter

4) While the IEPA indicated that their current rules had not yet been updated to reflect what they now knew about ethylene oxide, they were uncomfortable with issuing the permit. Regardless, we know that the permit was subsequently granted to build the sterilization facility in Willowbrook.

In 2018, ambient air testing by the USEPA and independent air testing by the Village of Willowbrook indicated levels much higher than those originally modeled:

1) USEPA testing revealed EtO levels as high as 6.21 micrograms/cubic meter across the street from Sterigenics and .286 micrograms/cubic meter at Willow Pond Park, .95 miles away.

2) Village of Willowbrook indoor air testing showed EtO levels of .20 micrograms/cubic meter in Gower West Elementary School, .45 micrograms/cubic meter in Hinsdale South High School and .49 micrograms/cubic meter at Gower Middle School

3) Our children our breathing in as much as 64 times the USEPA's recommended ground level concentration.

The USEPA and IEPA claim that they cannot shut down Sterigenics because they need to conduct more studies. The USEPA and IEPA have been conducting studies since 1984 and has known for nearly 35 years that the Sterigenics plant was unsafe and would emit levels exceeding their safety threshold. We know from current testing that current air levels exceed safety standards by 64 times in our schools and 887 times in our Village Hall. How many more years of testing does the USEPA need to be convinced of the danger that our community is living in? How many more people need to become ill? Perhaps the Office of the Inspector General will be able to tell us why the USEPA has been unwilling to act.
Bill Wehrum, USEPA has the authority to order an immediate shutdown through powers granted by the Clean Air Act.
Alec Messina, IEPA has the authority to seal the facility under section 34B of the Illinois Environmental Protection Act
Robert Berlin, DuPage County States Attorney and Lisa Madigan, Illinois Attorney General have the authority to file an injunction in the courts to shutdown Sterigenics via section 43 of the Illinois Environmental Protection Act

Who will do their job and protect this community?

The Stop Sterigenics Community

Illinois Environmental Protection Agency 2200 Churchill Road, Springfield, IL 62706

217/782-2113

I.D. No.: 043110AAC
Application No.: 84060002

July 6, 1984

Griffith Laboratories
12200 South Central Avenue
Alsip, Illinois 60658

Attention: John Kjellstrand

This is in response to a telephone call from Mr. Dickinson to Mr. Cobb on July 3, 1984, concerning the environmental impact of ethylene oxide emissions from the six proposed sterilizers included in the above mentioned construction permit application.

According to the information provided by your company in the application, the maximum emissions of ethylene oxide were 40 tons per year during 1983. The data you provided included a building which may cause a downwash effect, therefore, the ISCST model was used in the analysis. ISCST utilized one year of meteorology (1975 Midway), the urban dispersion mode and the building downwash option. Model results were obtained at 180 receptors located on five rings surrounding the source. Each ring contained 36 receptors spaced at 10° intervals. The rings were spaced at radial distances of 100, 400, 810, 1205, and 1609 meters from the source. According to the modeling run, the maximum annual ground level concentrations of ethylene oxide will vary from 3.120 micrograms per cubic meter at 100 meters to 0.09883 micrograms per cubic meter at one mile outside the plant boundary line. A copy of the modeled annual concentrations is attached.

The ethylene oxide (ETO) toxicity data was derived from different literature references. One such document is a USEPA draft publication -- "Health Assessment Document - Ethylene Oxide - EPA 600-8-84-009A." A copy of this document can be obtained by calling USEPA at phone number 513/684-7562.

The toxicity data provides evidence of human cancers of the pancreas, bladder, brain, central nervous system and stomach associated with ETO exposure. Various animal studies have shown carcinogenic, mutagenic, leukogenic and teratogenic effects. These studies indicate that the acceptable ground level concentrations of ETO is 0.007 micrograms per cubic meter. While the Agency does not have any established standards for ETO at this time, nor are we suggesting that the acceptable concentrations referenced above are necessarily the numbers that we are committed to using, in our opinion the emissions from the Micro Biotrol facility appear to be several magnitudes higher than desirable.

B.E.
7-6-84
Dist I

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 10 2016
ENGINEER JRM

We request a meeting as soon as possible to be able to better explain our evaluation and concerns. In our opinion, there are several methods by which emissions of ETO at this facility can be reduced. At our meeting, we wish to also discuss steps that can be taken to minimize emissions in order to reduce the ambient impacts to an acceptable level.

We are looking forward to hearing from you in the near future. In the meantime, should you have any questions, please feel free to call Jim Cobb, Harish Desai or me at 217/782-2113.

Very truly yours,

Bharat Mathur, P.E.
Manager, Permit Section
Division of Air Pollution Control

BM:JDC:sd/1392d/24-25

cc: Warren Dickinson, Griffith Laboratories
Dennis Lawler
Permit File
Region 1

Message

From: Terry, Sara [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A5F08A9BF1324B05BC02A7DD2EA695E4-STERRY]
Sent: 12/4/2018 8:58:44 PM
To: Strine, Lora [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=e7adebb3d4944d0f985aadae46031f48-LSTRINE]; Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: FW: revised version of the response to State Senator Collins re: Willowbrook (AX-19-000-0779
Attachments: Response AX-19-000-0779 Collins120418.docx

For other EtO letters that do require a response, here is a Bill-approved response that can be used as a template.

Sara

Message

From: DeLuca, Isabel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0B021C30CBEE4637A7C7CA683E5E044A-IDELUCA]
Sent: 12/6/2018 6:19:56 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: EtO monitoring language on the web
Attachments: DRAFT .FAQs for initial EtO data posting.12.6.18 OAR IO edits.docx; Draft language for posting monitoring data. update OAR IO edits.docx

Hi Alison,
After the meeting at 11 I sat with Bill, Clint, and David and we went over the language line-by-line. These docs reflect their suggested edits. Can you do a quick read to see if there are any red flags? If not I'll accept these changes and send around clean copies.

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Message

From: Rimer, Kelly [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=123A21A46D0E4E53A590798CDCC3FB47-KRIMER]
Sent: 12/18/2018 7:23:05 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
Subject: RE: I'm on the line and

We don't know

-----Original Message-----
From: Davis, Alison
Sent: Tuesday, December 18, 2018 2:17 PM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: RE: I'm on the line and

Wasn't aware. We are getting a question about whether there have been studies of workers at Sterigenics. Do you know ?

-----Original Message-----
From: Rimer, Kelly
Sent: Tuesday, December 18, 2018 2:10 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Subject: RE: I'm on the line and

Sort, I thought I mentioned it yesterday.

2:20. I thought it was going to be earlier (from the scheduler when it was sent out) Teo has an important doc appt

-----Original Message-----
From: Davis, Alison
Sent: Tuesday, December 18, 2018 2:06 PM
To: Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: RE: I'm on the line and

How long are you going to be on? We didn't know you weren't going to be here.

-----Original Message-----
From: Rimer, Kelly
Sent: Tuesday, December 18, 2018 1:49 PM
To: Davis, Alison <Davis.Alison@epa.gov>; Smith, Darcie <Smith.Darcie@epa.gov>
Subject: I'm on the line and

Adobe says its connecting

Will be on until 2:20

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 12/18/2018 6:24:53 PM
To: Davis, Alison [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1c309f42d5d44d18a52b027bd0112778-ADAVIS06]
CC: Koerber, Mike [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9c513901d4fd49f9ab101a6f7a7a863e-Koerber, Mike]; Rimer, Kelly [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=123a21a46d0e4e53a590798cdcc3fb47-KRIMER]
Subject: RE: First batch of public questions for your review
Attachments: Batch 1 Questions from Community cw.docx

A handful of small edits tracked in attached – Thanks!

From: Davis, Alison
Sent: Monday, December 17, 2018 2:47 PM
To: Woods, Clint <woods.clint@epa.gov>
Cc: Koerber, Mike <Koerber.Mike@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: First batch of public questions for your review

Hi Clint,
As promised a couple of hours ago, here is a batch of questions for your review. Mike has reviewed these. We'd like to get these posted as soon as possible. Thanks!
-Alison

Appointment

From: Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 4/15/2019 2:47:36 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Canceled: Call with Phil MacNabb re: Sterigenics
Location: WJC - 5400 + Personal Phone / Ex. 6

Start: 4/17/2019 5:30:00 PM
End: 4/17/2019 6:00:00 PM
Show Time As: Free

Importance: High

Message

From: Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Sent: 9/24/2018 8:35:36 PM
To: tcr@vnf.com [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=60634a7f78964380838648935cd3d7b1-tcr@vnf.com]; Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]
Subject: CONFIRMED RE: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Dear Tom,
You are confirmed for a 45 min meeting starting at 1pm on Wednesday, 9/26, with Bill Wehrum and Clint Woods.
Directions and procedures to 1200 Pennsylvania Avenue NW:

Metro: If you come by Metro get off at the Federal Triangle metro stop. Exit the metro station and go up two sets of escalators to the surface level and turn right. You will see a short staircase and wheelchair ramp leading to a set of glass doors with the EPA logo - that is the William Jefferson Clinton Federal Building, North Entrance.

Taxi: Direct the taxi to drop you off on 12th Street NW, between Constitution and Pennsylvania Avenues, at the elevator for the Federal Triangle metro stop - this is almost exactly half way between the two avenues on 12th Street NW. Facing the building with the EPA logo and American flags, walk toward the building and take the glass door on your right hand side with the escalators going down to the metro on your left – that is the North Lobby of the William Jefferson Clinton building.

Security Procedures: A government issued photo id is required to enter the building and it is suggested you arrive 15 minutes early in order to be cleared and arrive at the meeting room on time. Upon entering the lobby, the meeting attendees will be asked to pass through security and provide a photo ID for entrance. If you are a foreign national entering on a non-US passport, please let us know in advance, as there is a separate clearance process.

Upon arrival, let the guards know that you were instructed to call 202-564-7404 for a security escort. Please send me a list of participants in advance of the meeting and feel free to contact me should you need any additional information.

Many thanks,

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-2229
Email: rakosnik.delaney@epa.gov

From: Tom Roberts [mailto:tcr@vnf.com]
Sent: Monday, September 24, 2018 3:42 PM

To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Delaney – I believe that will work for us. Let's put it on the calendar and I will confirm that we can make it. For planning purposes, how much time are we likely to have with Clint and Bill?

Thank you very much.

Tom Roberts
(202) 365-7750 (c) | tcr@vnf.com

From: Rakosnik, Delaney [mailto:rakosnik.delaney@epa.gov]
Sent: Monday, September 24, 2018 3:40 PM
To: Tom Roberts; Lewis, Josh
Subject: RE: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Hi Tom – My apologies for the delay. Bill and Clint can accommodate this meeting on Wednesday, 9/26 at 1pm. How does that work for your schedules?

Many thanks,

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-0935
Email: rakosnik.delaney@epa.gov

From: Tom Roberts [mailto:tcr@vnf.com]
Sent: Monday, September 24, 2018 3:30 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: RE: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Delaney – I am just checking in on this request. My clients will be traveling from Chicago for this meeting and are anxious to make their arrangements. Thank you.

Tom Roberts
(202) 365-7750 (c) | tcr@vnf.com

From: Rakosnik, Delaney [mailto:rakosnik.delaney@epa.gov]
Sent: Friday, September 21, 2018 2:04 PM
To: Tom Roberts; Lewis, Josh
Subject: RE: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Hi Tom,

Thank you for your note. We will review and be back with you shortly.

Many thanks,

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-0935
Email: rakosnik.delaney@epa.gov

From: Tom Roberts [mailto:tcr@vnf.com]
Sent: Friday, September 21, 2018 1:46 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Subject: Request on Behalf of Sterigenics for Meeting with AA Wehrum / Deputy AA Woods

Delaney / Josh – I am a partner at the law firm of Van Ness Feldman, LLP here in DC and represent Sterigenics. I have been in communication with Clint over the last several weeks regarding the situation at Sterigenics' Willowbrook, Illinois facility.

Clint has asked me to work with the two of you to arrange a meeting with executives from Sterigenics for next week. The purpose of the meeting is to discuss the results of the stack testing at the Willowbrook facility and subsequent monitoring based on those tests.

We can meet any time next Wednesday, Thursday or Friday (September 26, 27, or 28). This is a high priority meeting for Sterigenics, so we will accommodate Clint and Bill's schedule.

Thank you for your time and consideration.

Tom Roberts | Partner
Van Ness Feldman LLP

1050 Thomas Jefferson Street, NW
Washington, DC 20007
(202) 298-1930 (o) | (202) 365-7750 (c) | tcr@vnf.com | vnf.com

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Appointment

From: Davis, Alison [Davis.Alison@epa.gov]
Sent: 5/30/2019 8:50:36 PM
To: Davis, Alison [Davis.Alison@epa.gov]; Schiermeyer, Corry [schiermeyer.corry@epa.gov]; Harlow, David [harlow.david@epa.gov]; Woods, Clint [woods.clint@epa.gov]; McFaul, Jessica [mcfaul.jessica@epa.gov]; Rimer, Kelly [Rimer.Kelly@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Grantham, Nancy [Grantham.Nancy@epa.gov]; Weinstock, Lewis [Weinstock.Lewis@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Millett, John [Millett.John@epa.gov]; Bremer, Kristen [Bremer.Kristen@epa.gov]
CC: Sasser, Erika [Sasser.Erika@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]

Subject: Backgrounder on ethylene oxide
Attachments: Internal. Briefing for Corry Schiermeyer 4.8.19.pptx
Location: Video with RTP; DC team please meet in WJCN 5400; RTP team please meet in RTP-C-430

Start: 4/8/2019 7:15:00 PM
End: 4/8/2019 8:00:00 PM
Show Time As: Busy

Recurrence: (none)

OAQPS and OAR will provide Corry a backgrounder on ethylene oxide, along with an overview of OAR and the regions are doing to address ethylene oxide emissions.

Copies will be available at the meeting for people in DC

Appointment

From: Rakosnik, Delaney [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274573739A9F446883072599086EDEDD-RAKOSNIK, D]
Sent: 12/4/2018 8:17:47 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Call with Phil McNabb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 12/10/2018 10:00:00 PM
End: 12/10/2018 10:30:00 PM
Show Time As: Tentative

Appointment

From: Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 4/15/2019 2:47:36 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Woods, Clint [woods.clint@epa.gov]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Call with Phil MacNabb re: Sterigenics
Location: WJC - 5400 + Personal Phone / Ex. 6

Start: 4/17/2019 8:00:00 PM
End: 4/17/2019 8:30:00 PM
Show Time As: Busy

Appointment

From: Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 3/18/2019 8:00:26 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Woods, Clint [woods.clint@epa.gov]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Call with Phil McNabb re: Sterigenics
Location: WJC - N 5400 {Personal Phone / Ex. 6}

Start: 3/18/2019 8:00:00 PM
End: 3/18/2019 8:30:00 PM
Show Time As: Busy

Recurrence: Weekly
every Monday from 4:00 PM to 4:30 PM

Appointment

From: Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 12/4/2018 8:17:50 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Woods, Clint [woods.clint@epa.gov]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Call with Phil McNabb re: Sterigenics
Location: WJC - N 5400 - Personal Phone / Ex. 6

Start: 12/10/2018 10:00:00 PM
End: 12/10/2018 10:30:00 PM
Show Time As: Busy

Appointment

From: Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 11/1/2018 9:00:42 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beadda2affa44-Harlow, Dav]; Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]

Subject: Phone call with Phil Macnabb re: Sterigenics (confirmed)
Attachments: Untitled Attachment
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 11/5/2018 9:00:00 PM
End: 11/5/2018 9:30:00 PM
Show Time As: Tentative

Recurrence: Weekly
every Monday from 4:00 PM to 4:30 PM

TO: Bill Wehrum, David Harlow, Clint Woods, Mandy Gunasekara

Note: This meeting was scheduled out of a phone call with Phil MacNabb. We called him back to confirm the phone call.

Appointment

From: Rakosnik, Delaney [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274573739A9F446883072599086EDEDD-RAKOSNIK, D]
Sent: 12/4/2018 8:17:47 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: Call with Phil McNabb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 12/10/2018 10:00:00 PM
End: 12/10/2018 10:30:00 PM
Show Time As: Tentative

Message

From: Lewis, Josh [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B22D1D3BB3F84436A524F76AB6C79D7E-JOLEWIS]
Sent: 12/27/2018 2:19:49 PM
To: Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]
Subject: Re: Bill's calendar 12/10-12/21

Ok sounds like a plan

On Dec 27, 2018, at 8:47 AM, Harlow, David <harlow.david@epa.gov> wrote:

Josh,

Thanks. I'll be around here all day. I don't know if Clint was planning to be in today, but, if so, he and I can confer and see if we can figure out what's going on as well.

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: Lewis, Josh
Sent: Thursday, December 27, 2018 8:31 AM
To: Harlow, David <harlow.david@epa.gov>
Subject: Re: Bill's calendar 12/10-12/21

David,

I won't be in the office today. **Personal Matters / Ex. 6**

I'll keep an eye on the MATS package, though I still have no idea if the plans changed on the timing.

On Dec 27, 2018, at 7:26 AM, Harlow, David <harlow.david@epa.gov> wrote:

Isabel,

For this entry

12/13/2016 12:30PM **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

Apart from that, this looks fine to me.

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: DeLuca, Isabel
Sent: Friday, December 21, 2018 2:29 PM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Harlow, David <harlow.david@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Bill's calendar 12/10-12/21

Hi all,
Below is Bill's calendar for 12/10- 12/21. If you have any questions or concerns, please let me know.

12/10/2018	9:30AM	Deliberative Process / Ex. 5
12/10/2018	4:00PM	
12/10/2018	5:00PM	Call with Sterigenics EPA Headq
12/11/2018	9:00AM	
12/11/2018	9:30PM	
12/11/2018	10:00AM	
12/11/2018	3:00PM	
12/11/2018	3:30PM	
12/12/2018	9:00AM	
12/13/2018	8:30AM	
12/13/2018	9:30AM	
12/13/2018	10:00AM	Deliberative Process / Ex. 5
12/13/2018	10:30AM	
12/13/2016	12:30PM	
12/13/2018	1:00PM	
12/14/2018	9:30AM	
12/14/2018	10:00AM	
12/14/2018	11:00AM	
12/17/2018	10:00AM	
12/17/2018	3:00PM	

12/17/2018	4:00PM	Call with with Sterigenics	EPA Headqu
12/17/2018	4:30PM		
12/18/2018	9:00AM		
12/18/2018	2:00PM		
12/18/2018	3:00PM		
12/19/2019	9:00AM		
12/19/2018	10:30AM		
12/19/2018	1:00PM		
12/20/2018	8:30AM		
12/20/2018	4:45PM		
12/21/2018	10:30AM		

Deliberative Process / Ex. 5

Many thanks,
Isabel

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Message

From: DeLuca, Isabel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0B021C30CBEE4637A7C7CA683E5E044A-IDELUCA]
Sent: 3/8/2019 6:50:08 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beadda2affa44-Harlow, Dav]
CC: Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]; Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]
Subject: RE: Bill's calendar 2/18-3/1

Deliberative Process / Ex. 5

Thanks!
Isabel

From: DeLuca, Isabel
Sent: Friday, March 08, 2019 9:25 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Harlow, David <harlow.david@epa.gov>
Cc: Lewis, Josh <Lewis.Josh@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Bill's calendar 2/18-3/1

Hi all,
Below is Bill's calendar from 2/18-3/1. Please let me know if you have any corrections or questions before I send to OPA for posting.

Deliberative Process / Ex. 5

Thanks,
Isabel

2/18/2019		**Deliberative Process / Ex. 5**	
2/19/2019	9:15AM		
2/19/2019	1:00PM	Call with Sterigenics	EPA Headquarters
2/19/2019	2:00PM	**Deliberative Process / Ex. 5**	
2/19/2019	6:00PM		
2/20/2019	9:45AM		
2/20/2019	2:00PM		
2/20/2019	2:30PM		
2/21/2019	8:30AM		
2/21/2019	11:00AM		
2/21/2019	11:30AM		
2/21/2019	1:00PM		
2/21/2019	2:00PM		
2/21/2019	3:00PM		

2/21/2019	5:30PM
2/22/2019	9:30AM
2/22/2019	10:15AM
2/22/2019	11:00AM
2/25/2019	9:30AM
2/25/2019	1:15PM
2/25/2019	2:00PM
2/25/2019	4:00PM
2/26/2019	
2/27/2019	9:15AM
2/28/2019	
3/1/2019	8:30AM
3/1/2019	11:00AM
3/1/2019	2:30PM
3/1/2019	3:30PM

Deliberative Process / Ex. 5

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Message

From: Rakosnik, Delaney [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274573739A9F446883072599086EDEDD-RAKOSNIK, D]
on behalf of Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent: 3/7/2019 6:51:19 PM
To: Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]
Subject: FW: EPA webinar: Update of EPA's Ethylene Oxide Monitoring data for Willowbrook, Illinois
Attachments: EPA webinar: Update of EPA's Ethylene Oxide Monitoring data for Willowbrook, Illinois

Appointment

From: Lewis, Josh [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B22D1D3BB3F84436A524F76AB6C79D7E-JOLEWIS]
Sent: 3/6/2019 3:31:08 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: EPA webinar: Update of EPA's Ethylene Oxide Monitoring data for Willowbrook, Illinois
Location: WJC-N 5400

Start: 3/7/2019 9:00:00 PM
End: 3/7/2019 10:00:00 PM
Show Time As: Busy

Subject: Webinar for EPA EtO data for Willowbrook for January 22 - February 11, 2019

EPA webinar: Update of EPA's Ethylene Oxide Monitoring data for Willowbrook, Illinois

The U.S. Environmental Protection Agency will hold a webinar at 3 p.m. central time, Thursday, March 7, 2019 to review air quality monitoring data for Willowbrook, Illinois, covering January 22, 2019 to February 11, 2019. For more information on this webinar, please review the details below:

Webinar:
Date: Thursday, March 7, 2019
Time: 3:00 to 4:00 p.m. (CT)
Meeting Link: Personal Email / Ex. 6

Phone line is Personal Phone / Ex. 6
Access code i

*Note: If you are at a computer, please listen through your computer speakers. We have a capacity of 500 people via computer. If you're not able to be at a computer, you'll be able to listen to the Webinar by phone. The phone line has a capacity of 125.

Materials will be posted on the website after the webinar at https://www.epa.gov/il/sterigenics-willowbrook-facility

If you have never attended an Adobe Connect meeting before, test your connection by visiting http://admin.adobeconnect.com/common/help/en/support/meeting_test.htm. *You may also get a quick overview by visiting* http://www.adobe.com/products/adobeconnect.html.

1. Click "Enter as a Guest"
2. Type in your first & last name and organization
3. Click "Enter Room"
4. You will be in the room!

Message

From: Lewis, Josh [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B22D1D3BB3F84436A524F76AB6C79D7E-JOLEWIS]
Sent: 2/8/2019 9:07:59 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
CC: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]; Shaw, Betsy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=31ca1476a7674825a131cb2c0d6c88c8-BShaw03]; Atkinson, Emily [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bb2155adef6a44aea9410741f0c01d27-Atkinson, Emily]; Rakosnik, Delaney [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274573739a9f446883072599086ededd-Rakosnik, D]
Subject: Calendar + Materials for Monday
Attachments: RFS exporter def revisions_02.11.19.pptx; OAR Social_021119.docx; ATT23017; ATT40271; ATT87623; ATT69496; ATT18309; ATT14393; ATT99146; ATT68942; ATT00964; ATT31489; ATT89854; ATT50279; ATT97770; ATT73360; ATT73201; ATT15704; ATT08182; ATT54809; ATT53977

Note a PFAS check in has been added at 3 (it'll be tacked on to Sr Staff in the Alm room). And the internal "Updated EtO-related Activities for Individual Facilities" has moved to later in the week.

Also for awareness, here's Social Media (CAAAC and E*) and for the week

OAR Social_021119.d...

February 2019

Mon, Feb 11

Before 8:00 AM	**Free**
8:00 AM – 9:30 AM	**Free**
9:30 AM – 10:00 AM	Management Roundtable
10:00 AM – 11:00 AM	Bi-weekly check-in with OGC
11:00 AM – 11:30 AM	**Free**
11:30 AM – 12:00 PM	Biweekly ORD/OAR Check-in
12:00 PM – 12:30 PM	**Free**
12:30 PM – 1:00 PM	OECA/OAR tampering
1:00 PM – 2:00 PM	Renewable Fuel Exporter Definition Update

RFS exporter def revisions_02.11....

2:00 PM – 3:00 PM	Senior Staff Meeting
3:00 PM – 3:30 PM	PFAS Check-in
3:30 PM – 4:00 PM	**Free**
4:00 PM – 4:30 PM	Call with Phil MacNabb re: Sterigenics
4:30 PM – 5:00 PM	Personal Hold
After 5:00 PM	**Free**

Message

From: Lewis, Josh [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B22D1D3BB3F84436A524F76AB6C79D7E-JOLEWIS]
Sent: 3/22/2019 8:34:21 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
CC: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Atkinson, Emily [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bb2155adef6a44aea9410741f0c01d27-Atkinson, Emily]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Rakosnik, Delaney [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274573739a9f446883072599086ededd-Rakosnik, D]
Subject: Calendar (no materials) for Monday
Attachments: ATT62638; ATT87444; ATT47981; ATT76628; ATT49858; ATT14748; ATT58094; ATT03509; ATT77179; ATT85248; ATT40246; ATT98296; ATT70387; ATT97347; ATT97012; ATT91520

March 2019

Mon, Mar 25

All Day	On Leave: Sarah Dunham, Betsy Shaw
Before 8:00 AM	**Free**
8:00 AM – 9:30 AM	**Free**
9:30 AM – 10:00 AM	Management Roundtable
10:00 AM – 10:45 AM	Meeting with Pilot Flying J and Love's Travel Stops and Country Stores re: RFS Rulemaking (CONFIRMED)
10:45 AM – 11:00 AM	**Free**
11:00 AM – 11:30 AM	General discussion with John Shoaff re: G7
11:30 AM – 2:00 PM	**Free**
2:00 PM – 3:00 PM	Senior Staff Meeting
3:00 PM – 3:30 PM	**Free**
3:30 PM – 4:15 PM	Call with Phil McNabb re: Sterigenics
4:15 PM – 5:00 PM	**Free**
After 5:00 PM	**Free**

Message

From: DeLuca, Isabel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0B021C30CBEE4637A7C7CA683E5E044A-IDELUCA]
Sent: 12/11/2018 4:42:56 PM
To: Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]; Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]
CC: Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]
Subject: RE: Bill's calendar 11/26-12/7

Thanks!

From: Harlow, David
Sent: Tuesday, December 11, 2018 11:39 AM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Millett, John <Millett.John@epa.gov>
Subject: RE: Bill's calendar 11/26-12/7

Isabel,

Looks good to me. Thank you.

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: DeLuca, Isabel
Sent: Tuesday, December 11, 2018 11:25 AM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Harlow, David <harlow.david@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>
Cc: Millett, John <Millett.John@epa.gov>
Subject: Bill's calendar 11/26-12/7

Hi all,
It's calendar week -- below is Bill's calendar 11/26-12/7. Please let me know if you have any questions or concerns.
Thanks for taking a look.
--Isabel

11/26/2018 9:30AM
11/26/2018 3:00PM

Deliberative Process / Ex. 5

11/26/2018	3:30PM	Deliberative Process / Ex. 5	
11/26/2018	4:30PM	Call with Sterigenics	EPA Headquarters
11/27/2018	10:00AM	Deliberative Process / Ex. 5	
11/27/2018	1:00PM		
11/28/2018	9:00AM		
11/28/2019	10:00AM		
11/28/2018	11:30AM		
11/28/2018	4:30PM		
11/28/2018	5:00PM		
11/28/2019	6:00PM		
11/29/2018	12:00PM	Meeting with Willowbrook, IL elected officials	Willowbrook, IL
11/29/2018	2:00PM	Sterigenics facility tour	Willowbrook, IL
11/29/2018	3:00PM	Open House on ethylene oxide	Willowbrook, IL
11/29/2018	7:00PM	Community Forum on ethylene oxide	Willowbrook, IL
11/30/2018	11:30AM	Deliberative Process / Ex. 5	
11/30/2018	12:30PM		
11/30/2018	1:30PM		
11/30/2018	3:30PM		
12/3/2018	9:30AM		
12/3/2018	5:00PM		
12/4/2018	9:00AM		
12/4/2018	11:00AM		
12/4/2018	1:00PM		
12/4/2018	2:00PM		
12/5/2018			
12/6/2018	8:30AM		
12/6/2018	4:30PM		
12/6/2018	5:00PM		
12/7/2018	9:30AM		
12/7/2018	10:00AM		
12/7/2018	11:00AM		
12/7/2018	1:00PM		
12/7/2018	2:45PM		
12/7/2018	4:00PM		

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Message

From: DeLuca, Isabel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0B021C30CBEE4637A7C7CA683E5E044A-IDELUCA]
Sent: 11/15/2018 7:02:34 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beadddа2affa44-Harlow, Dav]; Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]; Atkinson, Emily [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bb2155adef6a44aea9410741f0c01d27-Atkinson, Emily]
CC: Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]
Subject: Bill's calendar 10/29-11/9

Hi all,
It's calendar week once again. Bill's calendar for 10/29-11/9 is pasted below for review. Please let me know if you have any questions or edits.

Many thanks,
Isabel

10/29/2018	9:15AM	Deliberative Process / Ex. 5	
10/29/2018	11:30AM		
10/29/2018	12:30PM		
10/29/2018	4:00PM	Call with Sterigenics	EPA Headquarters
10/29/2018	4:45PM	Deliberative Process / Ex. 5	
10/30/2018	10:00AM		
10/30/2018	1:30PM		
10/31/2018	9:00AM		
10/31/2018	10:00AM		
10/31/2018	11:00AM		
10/31/2018	4:30PM		
11/1/2018	8:30AM		
11/1/2018	11:30AM		
11/1/2018	12:15AM		
11/2/2018	9:30AM		
11/2/2018	5:00PM		
11/5/2018	9:30AM		
11/5/2018	4:00PM	Call with Sterigenics	EPA Headquarters
11/6/2018	12:00PM	Deliberative Process / Ex. 5	NY
11/7/2018	9:30AM		
11/7/2018	3:00PM		
11/7/2018	4:00PM		
11/8/2018	9:30AM		
11/8/2018	11:00AM		
11/9/2018	9:30AM		

11/9/2018 3:00PM
11/9/2018 4:00PM

Deliberative Process / Ex. 5

Message

From: Atkinson, Emily [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BB2155ADEF6A44AEA9410741F0C01D27-ATKINSON, EMILY]
Sent: 2/15/2019 8:17:23 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
CC: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]; Atkinson, Emily [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bb2155adef6a44aea9410741f0c01d27-Atkinson, Emily]; Rakosnik, Delaney [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=274573739a9f446883072599086ededd-Rakosnik, D]; Shaw, Betsy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=31ca1476a7674825a131cb2c0d6c88c8-BShaw03]; Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]; DeLuca, Isabel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0b021c30cbee4637a7c7ca683e5e044a-IDELUCA]; Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]
Subject: Calendar for Tuesday, 2/19

Wehrum, Bill Calendar
Wehrum.Bill@epa.gov
On Tuesday, February 19, 2019
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2019

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	**19**	20	21	22	23
24	25	26	27	28		

Busy — Tentative — Free
Out of Office — Working Elsewhere — Outside of Working Hours

February 2019

Tue, Feb 19

☐	All Day	CWD: Emily Atkinson
☐	**Before 8:00 AM**	**Free**
☐	**8:00 AM – 9:00 AM**	**Free**
■	9:00 AM – 9:30 AM	Management Roundtable WJC - N 5400 + Dial Personal Phone / Ex. 6 articipant Code: Personal Phone / Ex. 6 Wehrum, Bill
■	9:30 AM – 10:30 AM	Alex Dunn Swearing- In Green Room Dunn, Alexandra
■	10:30 AM – 11:00 AM	LD GHG Meeting WJC - N 5400 + Video with AA + Personal Phone / Ex. 6 Wehrum, Bill
■	11:00 AM – 12:00 PM	SES A3 Discussion WJC - N 5400 Wehrum, Bill
☐	**12:00 PM – 1:00 PM**	**Free**
■	1:00 PM – 1:30 PM	Call with Phil MacNabb re: Sterigenics WJC - N 5400 + Personal Phone / Ex. 6
☐	**1:30 PM – 2:00 PM**	**Free**
■	2:00 PM – 3:00 PM	Senior Staff Meeting Alm Room Adm15Wheeler.Calendar
■	3:00 PM – 4:00 PM	Briefing: Steam Electric Rule Options Selection Alm Room Adm15Wheeler.Calendar
■	4:00 PM – 5:30 PM	Call with Region 8 re: Uinta Basin air quality follow up WJC - N 5400 + Personal Phone / Ex. 6 Wehrum, Bill
☐	**5:30 PM – 6:00 PM**	**Free**
☐	**After 6:00 PM**	**Free**

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/6/2019 2:15:53 PM
To: DeLuca, Isabel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0b021c30cbee4637a7c7ca683e5e044a-IDELUCA]; Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]
CC: Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]
Subject: RE: News clips

Isabel,

Thank you for this.

And, to complete the picture to the moment, here's, well, a picture – *i.e.*, a screen grab from the top of the "Stop Sterigenics" Facebook page.

+ Join Group ··· More Join this group to post and comment.

Announcements See All (21)

Stop Sterigenics
11 mins
Like Page

DEMAND ACTION NOW
Governor JB Pritzker has the executive power to declare a health crisis and shutdown Sterigenics. He promised us that he would protect us. Now we know it's worse, and he is passing the buck to the USEPA. It's time to fulfill that promise.
JB Pritzker, Governor of Illinois
Chicago Phone: 312-814-2121
Springfield Phone: 217-782-6830 or 217-782-6831
Email: https://www2.illinois.gov/.../gov/contactus/pages/default.aspx

JB Pritzker
@JBPritzker
Following

Sterigenics should be completely shut down until we determine it can operate safely. Our top priority must always be keeping communities safe.

Stop Sterigenics @StopSterigenics
Good question. @JBPritzker where do you stand on the cancer causing emissions from #Sterigenics? You've condemned @GovRauner for taking so long to act, but we have yet to hear about your plan and stance on this important #health issue. twitter.com/Susan21167672/...

GROUP BY
Stop Sterigenics
899 like this

DESCRIPTION
Please visit www.stopsterigenics.com for more information.

The ... See More

GROUP TYPE
Support

LOCATION
Willowbrook, Illinois

RECENT GROUP FILES
PressRelease.2.5.19..pdf
Updated 18 hours ago

See More

CREATE N
Groups m
Chat

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: DeLuca, Isabel
Sent: Wednesday, February 6, 2019 9:11 AM
To: Harlow, David <harlow.david@epa.gov>; Wehrum, Bill <Wehrum.Bill@epa.gov>; Woods, Clint <woods.Clint@epa.gov>
Cc: Millett, John <Millett.John@epa.gov>
Subject: News clips

Today's clips on Willowbrook (Hawthorne piece at bottom):

EPA finds high levels of cancer-causing chemicals near suburban Sterigenics plant
ChicagoLand TV (CLTV) – Online
https://wgntv.com/2019/02/05/epa-finds-high-levels-of-cancer-causing-chemicals-near-suburban-sterigenics-plant/

Lipinski calls for public forum about Sterigenics plant
Shaw Media Online
https://www.mysuburbanlife.com/2019/02/04/lipinski-calls-for-public-forum-about-sterigenics-plant/a2vnm6i/

EPA Results Show Ethylene Oxide Concentrations Around Willowbrook
Burr Ridge Patch
https://patch.com/illinois/burrridge/epa-results-show-ethylene-oxide-concentrations-around-willowbrook

Willowbrook residents call for Sterigenics shutdown after latest tests
ABC7 Chicago
https://abc7chicago.com/health/willowbrook-residents-call-for-sterigenics-shutdown-after-latest-tests-/5122909/

Sterigenics emits alarming levels of cancer-causing gas in Willowbrook, EPA says, but more evidence needed to act
Chicago Tribune Online (Hawthorne article)
https://www.chicagotribune.com/news/local/breaking/ct-met-epa-sterigenics-ethylene-oxide-testing-cancer-20190205-story.html

This one was also on the front page of the Chicago Tribune:

CHOICE DINING AWARDS

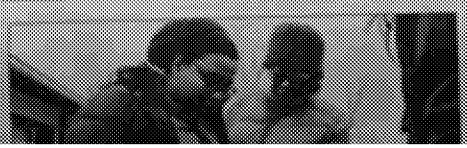
Chicago Tribune

Steriganics risks afoot, but EPA stays hand

Trump calls for end of 'political stalemate'

President announces plans to hold second nuclear summit with Kim

2 shootings on I-57 take 1 life, leave questions



Abuse within CP draws legislative

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/5/2019 12:05:59 PM
To: DeLuca, Isabel [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0b021c30cbee4637a7c7ca683e5e044a-IDELUCA]
CC: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Lewis, Josh [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b22d1d3bb3f84436a524f76ab6c79d7e-JOLEWIS]; Millett, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c067caa6c93544f78c26ab08cc567d27-Millett, John]
Subject: RE: Bill's calendar 12/24-2/1

Isabel,

Thanks. I had figured you already something like that in mind.

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: DeLuca, Isabel
Sent: Monday, February 4, 2019 7:51 PM
To: Harlow, David <harlow.david@epa.gov>
Cc: Wehrum, Bill <Wehrum.Bill@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Re: Bill's calendar 12/24-2/1

Deliberative Process / Ex. 5

On Feb 4, 2019, at 6:13 PM, Harlow, David <harlow.david@epa.gov> wrote:

Isabel,

This looks fine to me, but I suppose I would note the obvious, which is that there

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 I'm assuming we have an answer already worked out.

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: DeLuca, Isabel
Sent: Monday, February 4, 2019 3:09 PM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>
Cc: Harlow, David <harlow.david@epa.gov>; Lewis, Josh <Lewis.Josh@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: Bill's calendar 12/24-2/1

Hi all,
Below is Bill's calendar from December 24th through last Friday. Please let me know if you have any questions or concerns!

Many thanks,
Isabel

12/24/2018	
12/25/2018	
12/26/2018	
12/27/2018	
12/28/2018	
12/31/2018	
1/1/2019	
1/2/2019	
1/3/2019	
1/4/2019	2:00PM
1/4/2018	4:30PM
1/7/2019	
1/8/2019	
1/10/2019	
1/11/2019	
1/14/2019	
1/15/2019	8:30AM
1/16/2019	3:30PM
1/16/2019	4:00PM
1/17/2019	
1/18/2019	8:30AM
1/18/2019	11:15AM

Deliberative Process / Ex. 5

1/18/2019	1:00PM	
1/21/2019		
1/22/2019		
1/23/2019	2:15PM	
1/24/2019	11:00AM	Deliberative Process / Ex. 5
1/24/2019	1:30PM	
1/25/2019	2:00PM	
1/25/2019	3:00PM	
1/25/2019	4:45PM	
1/28/2019	9:30AM	
1/28/2019	4:30PM	
1/28/2019	5:30PM	Call with Sterigenics EPA Headquarters
1/29/2019	9:00AM	
1/29/2019	10:45PM	
1/29/2019	11:15AM	
1/29/2019	1:00PM	
1/29/2019	2:30PM	
1/30/2019	8:45AM	
1/31/2019	9:00AM	Deliberative Process / Ex. 5
2/1/2019	9:30AM	
2/1/2019	11:00AM	
2/1/2019	11:15AM	
2/1/2019	2:45PM	
2/1/2019	3:30PM	

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/4/2019 3:01:34 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Accepted: Phone call with Phil MacNAbb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 2/4/2019 4:30:00 PM
End: 2/4/2019 5:00:00 PM
Show Time As: Busy

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/4/2019 1:48:35 PM
To: Schwab, Justin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eed0f609c0944cc2bbdb05df3a10aadb-Schwab, Jus]
Subject: Fwd: For your review - Updated data posting schedule and draft Web language/ Qs & As

Sent from my iPhone

Begin forwarded message:

From: "Wehrum, Bill" <Wehrum.Bill@epa.gov>
Date: February 1, 2019 at 6:29:12 PM EST
To: "Woods, Clint" <woods.clint@epa.gov>
Cc: "Harlow, David" <harlow.david@epa.gov>, "Schwab, Justin" <Schwab.Justin@epa.gov>
Subject: Re: For your review - Updated data posting schedule and draft Web language/ Qs & As

Let's talk on Monday. I'm available over the weekend if needed.

_____
Bill Wehrum
Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency
(202) 564-7404

On Feb 1, 2019, at 5:36 PM, Woods, Clint <woods.clint@epa.gov> wrote:

Bill,

Below is draft internal response for Q-and-A for shutdown question for your review –
Let me know if you see red flags.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

From: Davis, Alison
Sent: Friday, February 1, 2019 4:21 PM
To: Woods, Clint <woods.Clint@epa.gov>
Cc: Koerber, Mike <Koerber.Mike@epa.gov>; Rimer, Kelly <Rimer.Kelly@epa.gov>
Subject: For your review - Updated data posting schedule and draft Web language/ Qs & As

Hi Clint,
We've updated the schedule for next week's heads up and posting (see attached). Please review and let me know if you're OK with this.

Also, I'm attaching the web language for the posting, along with the Qs & As that

Deliberative Process / Ex. 5

A specific note to you in the Qs. Will look for your comments on Monday.

Thanks!
Alison

<December data rollout schedule.DRAFT.docx>

<DELIBERATIVE - Draft Web language and Qs &As for Clint review.docx>

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 3/18/2019 8:00:40 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Accepted: Call with Phil McNabb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 3/18/2019 8:00:00 PM
End: 3/18/2019 8:30:00 PM
Show Time As: Busy

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 12/13/2018 8:21:01 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]
Subject:
Attachments:

Attorney Client / Ex. 5

Clint,

Attorney Client / Ex. 5

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 12/13/2018 8:16:11 PM
To: Schwab, Justin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=eed0f609c0944cc2bbdb05df3a10aadb-Schwab, Jus]
Subject: RE: 303

No need to come down. Clint and I were in a meeting with the Administrator and some stakeholders, in the Alm Room, a few minutes ago, and we could hear the party from there!

David S. Harlow
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Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: Schwab, Justin
Sent: Thursday, December 13, 2018 2:34 PM
To: Harlow, David <harlow.david@epa.gov>
Subject: RE: 303

Come down to Matt's office, bring the crew! They're singing songs.

From: Harlow, David
Sent: Thursday, December 13, 2018 2:34 PM
To: Schwab, Justin <schwab.justin@epa.gov>
Subject: Re: 303

No, no. I've heard what sounds like a trumpet or something on the fourth floor. The OGC holiday party? Enjoy!

I just needed the 303 stuff to educate myself going forward on Sterigenics.

Thanks!

Sent from my iPhone

On Dec 13, 2018, at 1:47 PM, Schwab, Justin <Schwab.Justin@epa.gov> wrote:

> Anything I should be helping you with today?

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 12/13/2018 5:02:52 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Accepted: Conference call with Willowbrook citizen Jennifer McConaghy re: Sterigenics facility
Location: WJC - N 5400 + conference call

Start: 12/13/2018 5:30:00 PM
End: 12/13/2018 6:00:00 PM

Recurrence: (none)

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 3/1/2019 4:38:14 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Just for your awareness

Some of the most recent posts on the Stop Sterigenics Facebook page.

Announcements See All (12)

Stop Sterigenics shared a link.
February 27 at 11:29 AM

Like Page

ACTION ALERT – 2-27-19
The USEPA is pulling a fast one again. The have a proposed rule for an UNRELATED chemical and are asking for comment on Ethylene Oxide. Another handshake for their industry friends.
Use the link below to ask the USEPA to recognize the dangers of Ethylene Oxide and to ban EtO emissions in the United States. Ask them to use real science and not industry propaganda in their decision making.
Our goal is 200 comments from our community
Contact the EPA through email, mail or fax. PLEASE SHARE WITH EVERYONE! This is for national comment. Don't tell us it's safe. Shut it down!
• Email: a-and-r-docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2018-0417 in the subject line of the message.
• Fax: (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2018-0417.
• Mail: To ship or send mail via the United States Postal Service, use the following address: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OAR-2018-0417, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.

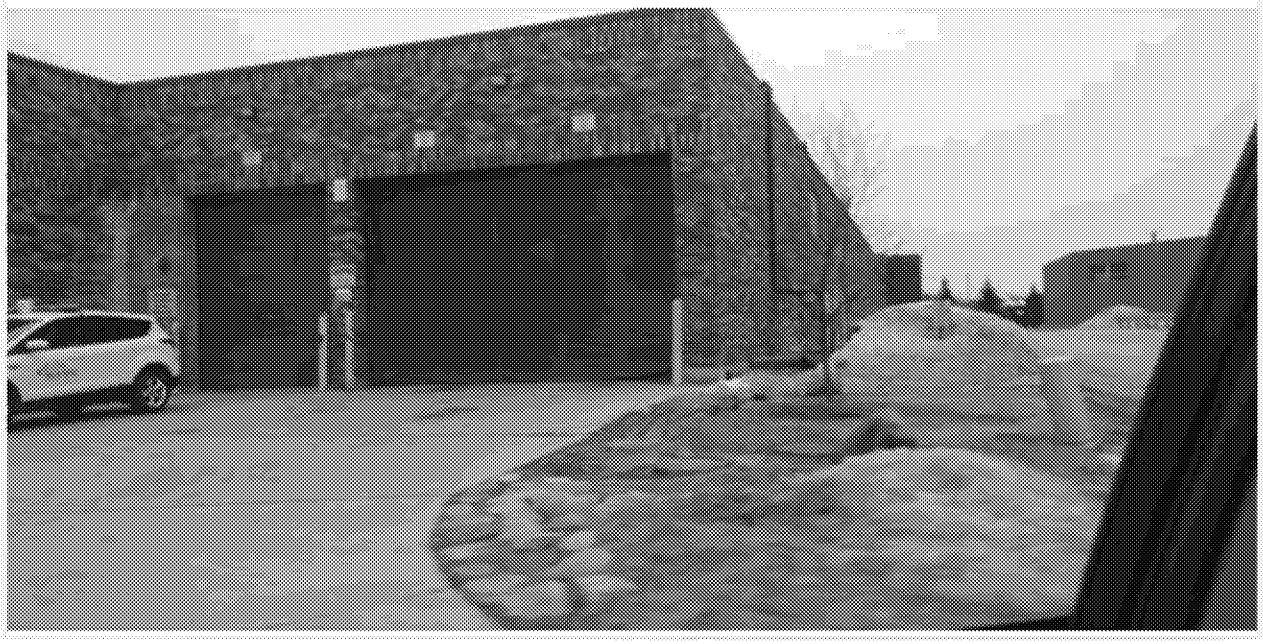
https://www.regulations.gov/searchResults…

REGULATIONS.GOV
www.regulations.gov

54 40 Comments 46 Shares

Lauren Kaeseberg shared a post.
February 27 at 8:06 AM

Let's use our collective power and document. If you drive by Sterigenics & see trucks, people, stacks venting, or anything suspicious, TAKE A PICTURE. Take note of date/time and put it in comments here, send it via PM or to Stopsterigenics@gmail.com.



View 4 more comments

Robert Thomas Senator Duckworth, let me give you props in an indirect way by re-introducing you to your diametrical opposite. He is the most nakedly obvious industry tool ever spotted in the halls of government. He is destroying lives and the legitimacy of the United States government simply to double his billing rate when he returns to the practice of 'environmental law'. Crush him.

Like · 19h

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

Message

From:	Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
on behalf of	Wehrum, Bill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=33D96AE800CF43A3911D94A7130B6C41-WEHRUM, WIL]
Sent:	2/19/2019 12:17:02 PM
To:	Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]
Subject:	FW: Call with Phil MacNabb re: Sterigenics
Attachments:	Call with Phil MacNabb re: Sterigenics

Appointment

From: Rakosnik, Delaney [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=274573739A9F446883072599086EDEDD-RAKOSNIK, D]
Sent: 2/11/2019 8:21:48 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Call with Phil MacNabb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 2/19/2019 6:00:00 PM
End: 2/19/2019 6:30:00 PM
Show Time As: Busy

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/27/2019 7:44:36 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]
CC: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
Subject: Re: Willowbrook Monitoring

Bill & Clint,

Deliberative Process / Ex. 5

Sent from my iPhone

On Feb 27, 2019, at 12:34 PM, Woods, Clint <woods.clint@epa.gov> wrote:

Bill,

Any concerns? This makes sense to me.

Begin forwarded message:

From: "Koerber, Mike" <Koerber.Mike@epa.gov>
Date: February 27, 2019 at 12:24:41 PM EST
To: "Harlow, David" <harlow.david@epa.gov>, "Woods, Clint" <woods.clint@epa.gov>
Cc: "Lewis, Josh" <Lewis.Josh@epa.gov>
Subject: Willowbrook Monitoring

Question: Is OAR okay with us continuing monitoring through at least March 15?

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5 Let me know. Thanks.

Mike

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/16/2019 4:21:21 AM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]
CC: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]
Subject: Re: IL EPA

You know, Deliberative Process / Ex. 5 **Deliberative Process / Ex. 5**

Sent from my iPhone

On Feb 15, 2019, at 10:04 PM, Harlow, David <harlow.david@epa.gov> wrote:

> Bill,
>
> I came upstairs just now to get my phone to send you and Clint a message to this effect, since I just saw a news story about this online. I'm glad you were already notified.
>
> Sent from my iPhone
>
> On Feb 15, 2019, at 7:15 PM, Wehrum, Bill <Wehrum.Bill@epa.gov> wrote:
>
>> FYI
>>
>> _____
>> Bill Wehrum
>> Assistant Administrator
>> Office of Air and Radiation
>> U.S. Environmental Protection Agency
>> (202) 564-7404
>>
>> Begin forwarded message:
>>
>>> **From:** "Macnabb, Philip" <PMacnabb@sterigenics.com>
>>> **Date:** February 15, 2019 at 7:12:16 PM EST
>>> **To:** "Wehrum.Bill@epa.gov" <Wehrum.Bill@epa.gov>
>>> **Cc:** "tcr@vnf.com" <tcr@vnf.com>
>>> **Subject: IL EPA**
>>>
>>> Bill
>>>
>>> I wanted to make you aware that tonight at 5pm we received a "seal order" from IL EPA to stop using EO due to public health crisis. We will stop processing until we can get in front of a judge.
>>>
>>> Feel free to call my cell at Personal Phone / Ex. 6 if you would like further details.

Sent from my iPhone

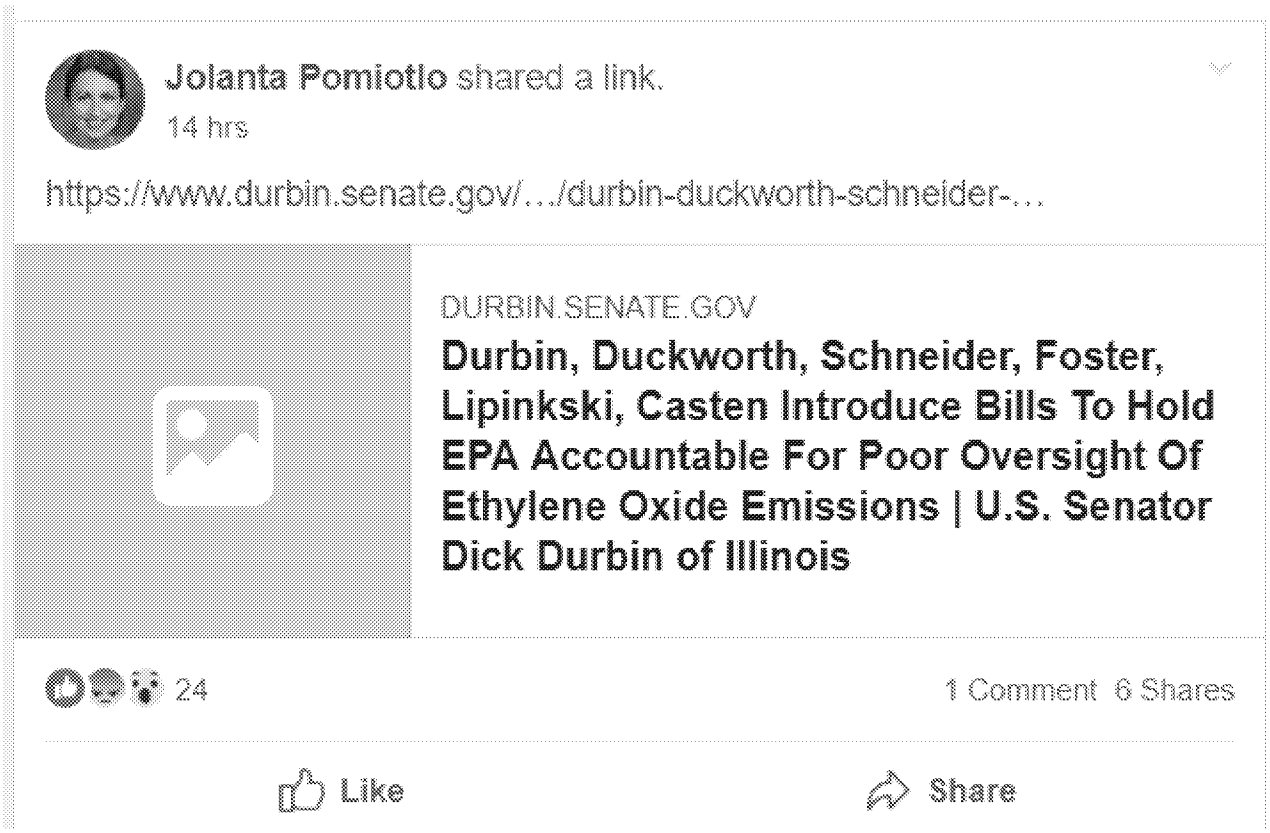
This e-mail and any files transmitted with it may contain privileged and/or confidential information. If you believe this e-mail or any of its attachments were not intended for you, you must not use, distribute, forward, print or copy this e-mail or any attached files. If you have received this e-mail in error, please notify the sender by reply e-mail and then immediately delete the email and all attachments.

Message

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 2/13/2019 7:17:52 PM
To: Woods, Clint [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=bc65010f5c2e48f4bc2aa050db50d198-Woods, Clin]; Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]; Lyons, Troy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=15e4881c95044ab49c6c35a0f5eef67e-Lyons, Troy]
Subject: RE: 19.02.13 - Wheeler Sterigenics.pdf

Alison,

Thanks. I'd seen a reference to this on the "Stop Sterigenics" Facebook page when I took a look at it this morning (as I've started to do routinely now), but I hadn't bothered to track down the letter itself.



Also, fyi (although you may already be aware), speaking of the "Stop Sterigenics" Facebook page, within the last hour, this was posted:

RECENT ACTIVITY

Stop Sterigenics
47 mins

Watch CBS Chicago tonight at 6 pm cst.

Dave Savini will be sharing more interviews of victims and exposing the truth about Sterigenics. Is Sterigenics under Criminal Investigation? Tune in tonight!

***time was changed from 5 to 6.

51 7 Comments 18 Shares

Like Share

David S. Harlow
Senior Counsel
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: Woods, Clint
Sent: Wednesday, February 13, 2019 1:27 PM
To: Wehrum, Bill <Wehrum.Bill@epa.gov>; Harlow, David <harlow.david@epa.gov>; Dominguez, Alexander <dominguez.alexander@epa.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: FW: 19.02.13 - Wheeler Sterigenics.pdf

From: Davis, Alison
Sent: Wednesday, February 13, 2019 12:37 PM
To: Woods, Clint <woods.Clint@epa.gov>
Cc: Koerber, Mike <Koerber.Mike@epa.gov>; Weinstock, Lewis <Weinstock.Lewis@epa.gov>
Subject: 19.02.13 - Wheeler Sterigenics.pdf

FYI. Making you aware of this, which we received from a citizen today.

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 11/9/2018 2:10:58 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Accepted: Canceled: Phone call with Phil Macnabb re: Sterigenics (confirmed)
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 11/12/2018 9:00:00 PM
End: 11/12/2018 9:30:00 PM
Show Time As: Busy

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 11/7/2018 7:51:02 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]

Subject: Accepted: HOLD || Meeting with Phil MacNabb re: Sterigenics
Location: WJC - N 5400 + Personal Phone / Ex. 6

Start: 11/13/2018 1:45:00 PM
End: 11/13/2018 2:15:00 PM
Show Time As: Busy

Appointment

From: Harlow, David [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B5A9A34E31FC4FE6B2BEADDDA2AFFA44-HARLOW, DAV]
Sent: 5/17/2019 1:00:21 PM
To: Harlow, David [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b5a9a34e31fc4fe6b2beaddda2affa44-Harlow, Dav]

Subject: FW: Discussion Re: EtO
Attachments: FW: EtO Transition documents - April 2019; DraftPredecisional.docx; EtO Action Plan April 1 2019.docx; Transition org options.docx; EtO Issues Chart updated.pptx
Location: Conference room 5400 Dial Personal Phone / Ex. 6

Start: 5/17/2019 7:15:00 PM
End: 5/17/2019 8:00:00 PM
Show Time As: Tentative

-----Original Appointment-----
From: Idsal, Anne
Sent: Wednesday, May 15, 2019 9:54 AM
To: Idsal, Anne; Koerber, Mike; Woods, Clint; Lewis, Josh
Cc: Jacks, Susan
Subject: Discussion Re: EtO
When: Friday, May 17, 2019 3:15 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Conference room 5400 Dial 202-991-0477 + Conference Id: 939-686

TO: Anne Idsal, Clint Woods, Josh Lewis, Mike Koerber

FW: EtO Transition documents - Apri... | DraftPredecision... | EtO Action Plan April 1 2019.docx | Transition org options.docx | EtO Issues Chart updated.pptx

As of May 15, 2019: Scheduled per JL request.-Susan

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 10/30/2018 8:05:54 PM
To: Wehrum, Bill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=33d96ae800cf43a3911d94a7130b6c41-Wehrum, Wil]; Konkus, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=555471b2baa6419e8e141696f4577062-Konkus, Joh]; Jackson, Ryan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38bc8e18791a47d88a279db2fec8bd60-Jackson, Ry]
Subject: Fwd: FYI -- FW: Lawsuit: Dangerous gas released by Sterigenics violates state laws

Begin forwarded message:

From: "Davis, Alison" <Davis.Alison@epa.gov>
Date: October 30, 2018 at 3:58:22 PM EDT
To: "Woods, Clint" <woods.clint@epa.gov>
Subject: FYI -- FW: Lawsuit: Dangerous gas released by Sterigenics violates state laws

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From: Chicago Tribune <chicagotribune@nsl.chicagotribune.com>
Sent: Tuesday, October 30, 2018 2:09 PM
To: Davis, Alison <Davis.Alison@epa.gov>
Subject: Lawsuit: Dangerous gas released by Sterigenics violates state laws

Chicago Tribune

OCT 30, 2018

BREAKING NEWS

Citing cancer risks, Lisa Madigan, DuPage prosecutor urge court to shut down Sterigenics in Willowbrook

TUESDAY, OCTOBER 30, 2018, 1:06 PM CT

The cancer-causing gas released by Sterigenics in west suburban Willowbrook is so dangerous the company is violating state laws intended to protect Illinoisans from harmful pollution, according to a bipartisan lawsuit filed Tuesday.

Read the latest

BREAKING NEWS PRESENTED BY

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