



AECOM
100 N. Broadway
20th Floor
St. Louis, MO 63102
www.aecom.com

314 429 0100 tel
314 429 0462 fax

April 9, 2025

Illinois Environmental Protection Agency
Bureau of Air
Air Quality Planning Section (#39)
2520 West Iles Avenue
Springfield, IL 62704

Attn: Annual Emission Report

**Re: Annual Emissions Report, Reporting Year 2024
Shell Oil Products US
Roxana Source, I.D. No. 119090AAO**

To Whom It May Concern:

AECOM Technical Services, Inc. (AECOM), on behalf of Shell Oil Products US, is submitting the enclosed Annual Emissions Report for activities at the Roxana Site. If you have any questions or need any additional information, please contact Wendy Pennington (314-452-8929) or via email at wendy.pennington@aecom.com.

Sincerely,
AECOM

A handwritten signature in blue ink, appearing to read "Wendy Pennington".

Wendy Pennington, PE
Project Manager

Enclosures: Annual Emission Report, Reporting Year 2024

cc: Mr. Leroy Bealer, Shell Oil Products US
Project File

119090AAO - Shell Oil Products US

- SOURCE DATA -

SOURCE IDS AND LOCATION	AIRS:	17-119-0044	IEPA USE ONLY	SIC 1:	4613	NAICS 1:	486910
	FINDS:		IEPA USE ONLY	SIC 2:		NAICS 2:	
	FEIN:	522074528		SIC 3:		NAICS 3:	
	D&B:			SIC 4:		NAICS 4:	
	LATITUDE:	38:50:42.3168		SIC 5:		NAICS 5:	
	LONGITUDE:	90:04:34.0752		SIC 6:		NAICS 6:	
SOURCE	Shell Oil Products US (SOPUS)			CONTACT: Leroy Bealer			
ADDRESS	Chaffer St. and 8th St. Roxana, IL 62084			PHONE: 484-632-7955 Fax: E-mail: leroy.bealer@shell.com			
ANNUAL EMISSION REPORT MAILING ADDRESS	AECOM 100 N. Broadway 20th Fl St. Louis, MO 63102			CONTACT: Samuel Fisher PHONE: 314-296-1969 FAX: E-Mail: samuel.fisher@aecom.com			

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44 (h))

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.



AUTHORIZED SIGNATURE

Leroy Bealer, Senior Program Manager

TYPED OR PRINTED NAME AND TITLE3/26/2025

DATE

484-632-7955

TELEPHONE NUMBER

The Illinois EPA is authorized to require, and you must disclose, the information on this form pursuant to 35 Ill. Adm. Code 201.302 (a,b) and 254. It is not necessary to use this form in providing the information. Failure to disclose the information may result in penalties as provided for in the Environmental Protection Act, 415 ILCS 5/24-45.

119090AAO - Shell Oil Products US

- ANNUAL SOURCE EMISSIONS -

POLLUTANT CODE	SOURCE REPORTED	EMISSIONS	IEPA 2024
	EMISSIONS FOR 2024	REPORTED	ESTIMATED
	(TONS/YEAR)	FOR 2023	EMISSIONS
		(TONS/YEAR)	(TONS/YEAR)
-----	-----	-----	-----
CO	0.833215	0.339320	0.421949
CO ₂	1166.967529	475.236955	602.784000
Methane	0.022367	0.009109	0.011553
N ₂ O	0.021395	0.008713	0.011051
NH ₃	0.031120	0.012673	0.016074
NO _x	0.991923	0.403952	0.502320
Part	0.075387	0.030701	0.038176
PM ₁₀	0.075387	0.030701	0.038176
PM _{2.5}	0.075387	0.030701	0.038176
SO ₂	0.005952	0.002424	0.003014
VOM	1.676245	1.202523	1.499812

119090AAO - Shell Oil Products US

- PERMIT LISTING -

PERMIT NUMBER	TYPE OF PERMIT	OPERATION NAME	STATUS	STATUS DATE	EXPIRES
12040025	FESOP	Treatment of Contaminated Soil Vapor	GRANTED	05-03-2022	10-05-2031
22020023	CONSTRUCTION	Steam Enhanced Extraction System (SEE)	EXPIRED	05-03-2022	05-03-2023

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Natural gas combustion of RTO/SVE/SEE

PERMIT: 12040025

BEGAN OPERATION: 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 01 - Natural gas-fired

DESCRIPTION CORRECTION:

PERCENT THROUGHPUTS: DEC - FEB:

4.51 % MAR - MAY:

3.85 %

BEGAN OPERATION: ~~06/2011~~ 01/2012

JUN - AUG:

38.74 % SEP - NOV:

52.90 %

CEASED OPERATION:

FUEL TYPE: 1 NATURAL GAS

HEAT CONTENT:

Natural Gas

1,000 Btu/ft3

INPUT (MMBTU/HR): ~~28.1~~ 3

SULFUR CONTENT (%):

ASH CONTENT (%):

NITROGEN CONTENT (%):

UNITS: ~~MILLION CUBIC FEET BURNED~~ MILLION BTU BURNEDUNITS: ~~MILLION CUBIC FEET BURNED~~ MILLION BTU BURNED

ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
HOURS/DAY:	24.0	HOURS/DAY:	24.0
DAYS/WEEK:	7.0	DAYS/WEEK:	7.0
WEEKS/YEAR:	51	WEEKS/YEAR:	13
HOURS/YEAR:	8,510	HOURS/YEAR:	2,142
RATE/HR:		START TIME:	00:00
		END TIME:	23:59
		RATE/HR:	2.51

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Natural gas combustion of RTO/SVE/SEE

PERMIT: 12040025

BEGAN OPERATION: 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 01 - Natural gas-fired

POLLUTANT CODE	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
CO	3	3	84	84 lbs/10 ⁶ scf	0.1092	0.1369
CO ₂	3	3	120,000	120000 lbs/10 ⁶ scf	156	191.7547
Methane	3	3	2.3	2.3 lbs/10 ⁶ scf	0.00299	0.0037
N ₂ O	3	3	2.2	2.2 lbs/10 ⁶ scf	0.00286	0.0035
NH ₃	3	3	3.2	3.2 lbs/10 ⁶ scf	0.00416	0.0051
NO _x	3	3	100	100 lbs/10 ⁶ scf	0.13	0.1630
PART	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.0124
PM ₁₀	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.0124
PM _{2.5}	3	3	7.6	7.6 lbs/10 ⁶ scf	0.00988	0.0124
SO ₂	3	3	0.6	0.6 lb/10 ⁶ scf	0.00078	0.0010
VOM*	3	NA	5.5	NA lbs/10 ⁶ scf	0.00715	NA

POLLUTANT CODE	METHOD		EMISSION FACTOR		OZONE SEASON EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
NO _x	3	3	100	100 lbs/10 ⁶ scf	0.13	0.2509
VOM*	3	NA	5.5	NA lbs/10 ⁶ scf	0.00715	NA

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK 0003

CAPTURE EFFICIENCY: 100.00 % 100.00 %

*VOM emissions from combustion are accounted for in the SVE emissions on page 9.

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Soil vapor combustion of RTO/SVE/SEE

PERMIT: 12040025

BEGAN OPERATION: / 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

DESCRIPTION CORRECTION:

PERCENT THROUGHPUTS: DEC - FEB:		25.57 %	MAR - MAY:	30.61 %	
BEGAN OPERATION:	/ 01/2012	JUN - AUG:	24.45 %	SEP - NOV:	19.38 %
CEASED OPERATION:	/				

FUEL TYPE:	9 OTHER GASEOUS FUEL-SOIL VAPORS	HEAT CONTENT:	Soil Vapors	21,070 Btu/lb
INPUT (MMBTU/HR):		SULFUR CONTENT (%):		
		ASH CONTENT (%):		
		NITROGEN CONTENT (%):		

UNITS: MILLION BTU BURNED

UNITS: MILLION BTU BURNED

ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
HOURS/DAY:	24.0	HOURS/DAY:	24.0
DAYS/WEEK:	7.0	DAYS/WEEK:	7.0
WEEKS/YEAR:	51	WEEKS/YEAR:	13
HOURS/YEAR:	8,510	HOURS/YEAR:	2,142
		START TIME:	00:00
		END TIME:	23:59
RATE/HR:	0.70	RATE/HR:	0.68

119090AAO - Shell Oil Products US

- FUEL COMBUSTION DATA -

POINT 0003 - Soil vapor combustion of RTO/SVE/SEE

PERMIT: 12040025

BEGAN OPERATION: / 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

POLLUTANT	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
CODE	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
CO		3		84 lbs/10 ⁶ scf		0.0589
CO ₂		3		120,000 lbs/10 ⁶ scf		82.4939
Methane		3		2.3 lbs/10 ⁶ scf		0.0016
N ₂ O		3		2.2 lbs/10 ⁶ scf		0.0015
NH ₃		3		3.2 lbs/10 ⁶ scf		0.0022
NO _x		3		100 lbs/10 ⁶ scf		0.0701
PM		3		7.6 lbs/10 ⁶ scf		0.0053
PM ₁₀		3		7.6 lbs/10 ⁶ scf		0.0053
PM _{2.5}		3		7.6 lbs/10 ⁶ scf		0.0053
SO ₂		3		0.6 lb/10 ⁶ scf		0.0004
VOM*		NA		NA lbs/10 ⁶ scf		NA

OZONE SEASON						
POLLUTANT	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
CODE	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
NO _x		3		100 lbs/10 ⁶ scf		0.07

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK 0003 CAPTURE EFFICIENCY: 100.00 %

*VOM emissions from combustion are accounted for in the SVE emissions on page 9.

119090AAO - Shell Oil Products US

- OTHER SOURCE DATA -

POINT 001 - Soil vapor extraction system (SVE) and steam enhanced extraction system (SEE) system with RTO control PERMIT: 12040025

BEGAN OPERATION: ~~05/2011~~ 01/2012

CEASED OPERATION: /

SCC: 50410310

MODE: 01 -

DESCRIPTION CORRECTION:

PERCENT THROUGHPUTS: DEC - FEB: 24.39 % MAR - MAY: 25.04 %
 BEGAN OPERATION: ~~12/2010~~ 01/2012 JUN - AUG: 25.17 % SEP - NOV: 25.41 %
 CEASED OPERATION: /

UNITS: ~~SCFM~~ HOURS OPERATED

UNITS: ~~SCFM~~ HOURS OPERATED

ANNUAL OPERATION		PEAK OZONE SEASON OPERATION	
HOURS/DAY:	<u>24.0</u>	HOURS/DAY:	<u>24.0</u>
DAYS/WEEK:	<u>7.0</u>	DAYS/WEEK:	<u>7.0</u>
WEEKS/YEAR:	<u>51</u>	WEEKS/YEAR:	<u>13</u>
HOURS/YEAR:	<u>8,510</u>	HOURS/YEAR:	<u>2,142</u>
		START TIME:	<u>00:00</u>
		END TIME:	<u>23:59</u>
RATE/HR:	<u>NA*</u>	RATE/HR:	<u>NA*</u>

*The rate/hr is not applicable because emissions are estimated using a measured emissions rate (lb/hr) and the system operating hours.

119090AAO - Shell Oil Products US

- OTHER SOURCE DATA -

POINT 001 - Soil vapor extraction system (SVE) and steam enhanced extraction system (SEE) system with RTO control PERMIT: 12040025

BEGAN OPERATION: ~~05/2011~~ 01/2012
CEASED OPERATION: _____

SCC: 50410310

MODE: 01 -

POLLUTANT	METHOD	EMISSION FACTOR	EMISSION RATE (LB/HR)
CODE	IEPA REP	IEPA REPORTED	IEPA REPORTED
VOM	2 1	NA*	0.380999 0.39

POLLUTANT	METHOD	EMISSION FACTOR	OZONE SEASON EMISSION RATE (LB/HR)
CODE	IEPA REP	IEPA REPORTED	IEPA REPORTED
VOM	0E 1	NA*	0.380999 0.71

CAPTURING CONTROLS:

CONTROL 0001 CAPTURE EFFICIENCY: 100.00 % 100.00 %

CAPTURING STACKS:

STACK 0003

*The rate/hr is not applicable because emissions are estimated using a measured emissions rate (lb/hr) and the system operating hours.

119090AAO - Shell Oil Products US

- CONTROL DEVICE DATA -

CONTROL 0001 - Regenerative Thermal Oxidizer (RTO)

PERMIT: 12040025

BEGAN OPERATION: ~~06/2011~~ 01/2012

CEASED OPERATION: /

CONTROL CODE: 319

DESCRIPTION CORRECTION:

REMOVAL EFFICIENCY

POLLUTANT	ANNUAL OPERATION				PEAK OZONE SEASON OPERATION			
	EFFICIENCY		METHOD		EFFICIENCY		METHOD	
	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED
VOM	97.00 %	99.3%*		1		99.3%		1

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK	0001**	(SVE)	CAPTURE EFFICIENCY:	33.34 %	100.00 %
STACK	0003	(RTO)	CAPTURE EFFICIENCY:	33.33 %	100.00 %
STACK	0004	(SEE)	CAPTURE EFFICIENCY:	33.33 %	100.00 %

*The RTO was tested for VOM destruction efficiency on June 25 and June 26, 2013.

**100% of SVE system vapor stream (Point 0001) is piped directly into RTO (Control 0001; Stack 0003).
SVE system does not have its own stack distinct from RTO stack.

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- STACK DATA -

STACK		DIAMETER (FT)	HEIGHT (FT)	FLOW RATE (ACFM)	TEMPERATURE (°F)
0001*	- Soil vapor extraction (SVE) system stack	0.74 _____	18 _____	1,020 _____	104 _____
0003	- Regenerative Thermal Oxidizer (RTO)	2.50 <u>2.5</u>	19 <u>18.5</u>	10,000 <u>10,000</u>	200 <u>200</u>
0004	- Steam Enhanced Extraction (SEE) System	2.00 <u>2.00</u>	12 <u>13</u>	7,000 <u>7,000</u>	400 <u>400</u>

*100% of SVE system vapor stream (Point 0001) is piped directly into RTO (Control 0001; Stack 0003).
SVE system does not have its own stack distinct from RTO stack.