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April 20, 2015

Illinois Environmental Protection Agency  
Bureau of Air  
Air Quality Planning Section (#39)  
P.O. Box 19276  
Springfield, IL 62794-9276

Attn: Annual Emission Report

**Re: Annual Emissions Report, Reporting Year 2014  
Shell Oil Products US  
Roxana Site, I.D. No. 119090AAO**

To whom it may concern:

AECOM, formerly URS Corporation, 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 me at (314) 429-0100 or via email at [nicholas.eldred@aecom.com](mailto:nicholas.eldred@aecom.com) with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "N. Eldred", with a long, sweeping underline.

Nicholas Eldred  
Environmental Group Manager  
URS Corporation

Enclosures: Annual Emissions Report, Reporting Year 2014

cc: Mr. Kevin E. Dyer, Shell Oil Products US

1001 Highland Plaza Drive West, Suite 300  
St. Louis, MO 63110  
Phone: 314.429.0100  
Fax: 314.429.0462

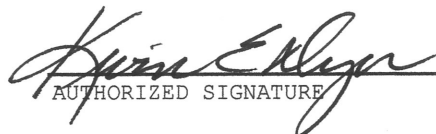
119090AAO - Shell Oil Products US

- SOURCE DATA -

SOURCE IDS AND LOCATION	AIRS:	17-119-00440	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 ADDRESS	Shell Oil Products US			CONTACT: Kevin E. Dyer			
	Chaffer St. and 8th St. Roxana, IL 62084			PHONE: (618) 288-7237 EXT:			
ANNUAL EMISSION REPORT MAILING ADDRESS	Shell Oil Products US			CONTACT: Kevin E. Dyer			
	17 Junction Dr. PMB 399			PHONE: (618) 288-7237			
	Glen Carbon, IL 62034-43000			FAX:			
				E-Mail:			

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

Kevin E. Dyer, Sr. Principal Program Manager

TYPED OR PRINTED NAME AND TITLE



DATE

(618) 288-7237

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	ALLOWABLE*		EMISSIONS	IEPA 2014
	EMISSIONS FOR 2014 (TONS/YEAR)	EMISSIONS (TONS/YEAR)		REPORTED FOR 2013 (TONS/YEAR)	ESTIMATED EMISSIONS (TONS/YEAR)
CO	0.884165	<del>0.511056</del>	2.665283	0.630000	0.421949
CO <sub>2</sub>	1263.092926	<del>681.408000</del>		903.540000	602.784000
Methane	0.024209	<del>0.013060</del>		0.020000	0.011553
N <sub>2</sub> O	0.023157	<del>0.012492</del>		0.020000	0.011051
NH <sub>3</sub>	0.033682	<del>0.018171</del>		0.020000	0.016074
NO <sub>x</sub>	1.052577	<del>0.620256</del>	3.172956	0.750000	0.502320
Part	0.079996	<del>0.048048</del>	0.241145	0.060000	0.038176
PM <sub>10</sub>	0.079996	<del>0.043156</del>	0.241145	0.060000	0.038176
PM <sub>2.5</sub>	0.079996	<del>0.043156</del>	0.241145	0.060000	0.038176
SO <sub>2</sub>	0.006315	<del>3.699696</del>	0.019038	0.000000	0.003014
VOM	0.950800	<del>24.928831</del>	24.900000	4.670000	11.503708

\* The Allowable Emissions have been corrected to reflect all permitted emission units authorized in permit 11060036. This permit does not contain limits for CO<sub>2</sub>, CO<sub>2</sub>E, N<sub>2</sub>O or NH<sub>3</sub>.

119090AAO - Shell Oil Products US

## - PERMIT LISTING -

PERMIT NUMBER	TYPE OF PERMIT	OPERATION NAME	STATUS	STATUS DATE	EXPIRES
10120040	CONSTRUCTION	Soil Vapor Extraction Treatment System	GRANTED	03-01-2011	04-01-2012
11050032	CONSTRUCTION	Soil Vapor Extraction Treatment System w/Dual ICE	GRANTED	05-31-2011	05-31-2012
11060036	LIFETIME	SVE Treatment System	GRANTED	07-14-2011	07-14-2012
12040025 *	TITLE V	Treatment of Contaminated Soil Vapor			

\* A renewal application was submitted to IEPA in April 2012.

119090AAO - Shell Oil Products US

## - FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer

PERMIT: 11060036

BEGAN OPERATION: 01/2012 \_\_\_\_\_

CEASED OPERATION: / \_\_\_\_\_

SCC: 40290013

MODE 01 - Natural gas combustion

DESCRIPTION CORRECTION:

PERCENT THROUGHPUTS: DEC - FEB: ~~23.40 %~~ 34.70 % MAR - MAY: ~~25.39 %~~ 27.95 %  
 BEGAN OPERATION: ~~06/2011~~ 01/2012 JUN - AUG: ~~25.45 %~~ 23.93 % SEP - NOV: ~~25.76 %~~ 13.42 %  
 CEASED OPERATION: 00/0000 \_\_\_\_\_

FUEL TYPE: 1 NATURAL GAS \_\_\_\_\_ HEAT CONTENT: Natural Gas 1,000 Btu/ft3  
 INPUT (MMBTU/HR): 1.4 \_\_\_\_\_ 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	<u>24.0</u>	HOURS/DAY:	24.0	<u>24.0</u>
DAYS/WEEK:	7.0	<u>7.0</u>	DAYS/WEEK:	7.0	<u>7.0</u>
WEEKS/YEAR:	<del>50</del>	<u>47</u>	WEEKS/YEAR:	13	<u>13</u>
HOURS/YEAR:	<del>8,333</del>	<u>7,852</u>	HOURS/YEAR:	<del>2,121</del>	<u>2,255</u>
START TIME:			00:00		
END TIME:			23:59		
RATE/HR:	<del>0.0000</del>	<u>0.16</u>	RATE/HR:	<del>0.0000</del>	<u>0.14</u>

## 119090AAO - Shell Oil Products US

## - FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer

PERMIT: 11060036

BEGAN OPERATION: 01/2012 \_\_\_\_\_

CEASED OPERATION: / \_\_\_\_\_

SCC: 40290013

MODE 01 - Natural Gas Combustion

POLLUTANT CODE	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
CO	3	3	84	84 lbs/10 <sup>6</sup> scf	<del>0.1092</del>	0.0134
CO <sub>2</sub>	3	3	120,000	120000 lbs/10 <sup>6</sup> scf	<del>156</del>	19.1484
Methane	3	3	2.3	2.3 lbs/10 <sup>6</sup> scf	<del>0.00299</del>	0.0004
N <sub>2</sub> O	3	3	2.2	2.2 lbs/10 <sup>6</sup> scf	<del>0.00286</del>	0.0004
NH <sub>3</sub>	3	3	3.2	3.2 lbs/10 <sup>6</sup> scf	<del>0.00416</del>	0.0005
NO <sub>x</sub>	3	3	100	100 lbs/10 <sup>6</sup> scf	<del>0.13</del>	0.0160
PM	3	3	7.6	7.6 lbs/10 <sup>6</sup> scf	<del>0.00988</del>	0.0012
PM <sub>10</sub>	3	3	7.6	7.6 lbs/10 <sup>6</sup> scf	<del>0.00988</del>	0.0012
PM <sub>2.5</sub>	3	3	7.6	7.6 lbs/10 <sup>6</sup> scf	<del>0.00988</del>	0.0012
SO <sub>2</sub>	3	3	0.6	0.6 lb/10 <sup>6</sup> scf	<del>0.00078</del>	0.0001
VOM*	<del>3</del>	NA	<del>5.5</del>	NA lbs/10 <sup>6</sup> scf	<del>0.00715</del>	NA

OZONE SEASON						
POLLUTANT CODE	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
NO <sub>x</sub>	3	3		100 lbs/10 <sup>6</sup> scf	<del>0.18</del>	0.0133
VOM*	<del>3</del>	NA		NA lbs/10 <sup>6</sup> scf	<del>0</del>	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 7.

119090AAO - Shell Oil Products US

## - OTHER SOURCE DATA -

POINT 001 - Soil vapor extraction system

PERMIT: 11060036

BEGAN OPERATION: ~~12/2010~~ 05/2011

CEASED OPERATION: /

SCC: 50410310

MODE: 01 -

DESCRIPTION CORRECTION:

	PERCENT THROUGHPUTS:	DEC - FEB:	<del>23.40 %</del>	<u>24.12 %</u>	MAR - MAY:	<del>25.39 %</del>	<u>21.68 %</u>	
BEGAN OPERATION:	<del>12/2010</del>	05/2011	JUN - AUG:	<del>25.45 %</del>	<u>28.72 %</u>	SEP - NOV:	<del>25.76 %</del>	<u>25.48 %</u>
CEASED OPERATION:	/							

UNITS: ~~TONS PROCESSED~~ HOURS OPERATEDUNITS: ~~TONS PROCESSED~~ HOURS OPERATED

ANNUAL OPERATION			PEAK OZONE SEASON OPERATION		
HOURS/DAY:	24.0	<u>24.0</u>	HOURS/DAY:	24.0	<u>24.0</u>
DAYS/WEEK:	7.0	<u>7.0</u>	DAYS/WEEK:	7.0	<u>7.0</u>
WEEKS/YEAR:	<del>50</del>	<u>47</u>	WEEKS/YEAR:	13	<u>13</u>
HOURS/YEAR:	<del>8,333</del>	<u>7,852</u>	HOURS/YEAR:	<del>2,121</del>	<u>2,255</u>
			START TIME:		<u>00:00</u>
			END TIME:		<u>23:59</u>
RATE/HR:	<del>0.0000</del>	<u>NA*</u>	RATE/HR:	<del>0.0000</del>	<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

PERMIT: 11060036

BEGAN OPERATION: ~~12/2010~~ 05/2011CEASED OPERATION: 00/0000           

SCC: 50410310

MODE: 01 -

POLLUTANT	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
CODE	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
VOM	2	1		NA*	<del>2.97</del>	0.24

POLLUTANT	METHOD		EMISSION FACTOR		OZONE SEASON EMISSION RATE (LB/HR)	
CODE	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
VOM	1	1		NA*	<del>0.08</del>	0.19

## 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

## - FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer

PERMIT: 11060036

BEGAN OPERATION: / 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

DESCRIPTION CORRECTION:

PERCENT THROUGHPUTS: DEC - FEB:

24.05 % MAR - MAY:

21.77 %

BEGAN OPERATION: / 01/2012

JUN - AUG:

26.20 % SEP - NOV:

27.97 %

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:	47	WEEKS/YEAR:	13
HOURS/YEAR:	7,852	HOURS/YEAR:	2,255
		START TIME:	00:00
		END TIME:	23:59
RATE/HR:	2.57	RATE/HR:	2.35

## 119090AAO - Shell Oil Products US

## - FUEL COMBUSTION DATA -

POINT 0003 - Regenerative Thermal Oxidizer

PERMIT: 11060036

BEGAN OPERATION: / 01/2012

CEASED OPERATION: /

SCC: 40290013

MODE 02 - Soil Vapor Combustion

POLLUTANT CODE	METHOD		EMISSION FACTOR		EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
CO		3		84 lbs/10 <sup>6</sup> scf		0.21
CO <sub>2</sub>		3		120,000 lbs/10 <sup>6</sup> scf		302.58
Methane		3		2.3 lbs/10 <sup>6</sup> scf		0.01
N <sub>2</sub> O		3		2.2 lbs/10 <sup>6</sup> scf		0.01
NH <sub>3</sub>		3		3.2 lbs/10 <sup>6</sup> scf		0.01
NO <sub>x</sub>		3		100 lbs/10 <sup>6</sup> scf		0.25
PM		3		7.6 lbs/10 <sup>6</sup> scf		0.02
PM <sub>10</sub>		3		7.6 lbs/10 <sup>6</sup> scf		0.02
PM <sub>2.5</sub>		3		7.6 lbs/10 <sup>6</sup> scf		0.02
SO <sub>2</sub>		3		0.6 lb/10 <sup>6</sup> scf		0.00
VOM*		NA		NA lbs/10 <sup>6</sup> scf		NA

POLLUTANT CODE	METHOD		EMISSION FACTOR		OZONE SEASON EMISSION RATE (LB/HR)	
	IEPA	REP	IEPA	REPORTED	IEPA	REPORTED
NO <sub>x</sub>		3		100 lbs/10 <sup>6</sup> scf		0.23

CAPTURING CONTROLS:

CAPTURING STACKS:

STACK 0003 CAPTURE EFFICIENCY: 100.00 %

\*VOM emissions from combustion are accounted for in the SVE emissions on page 7.

119090AAO - Shell Oil Products US

## - CONTROL DEVICE DATA -

CONTROL 0001 - Regenerative Thermal Oxidizer

PERMIT: 11060036

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

CEASED OPERATION: /

CONTROL CODE: 319 319

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		99.30 %		1

## CAPTURING CONTROLS:

## CAPTURING STACKS:

STACK ~~0001~~ 0003 CAPTURE EFFICIENCY: 100.00 % 100.00 %

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

119090AAO - Shell Oil Products US

## - STACK DATA -

STACK	DIAMETER (FT)		HEIGHT (FT)		FLOW RATE (ACFM)		TEMPERATURE (°F)	
	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED	IEPA	REPORTED
0001	<del>Soil vapor extraction system*</del>							
	<del>0.74</del>	<u>NA</u>	<del>18</del>	<u>NA</u>	<del>1,020</del>	<u>NA</u>	<del>104</del>	<u>NA</u>
0003	Regenerative Thermal Oxidizer							
	<del>1.83</del>	<u>2.5</u>	<del>30</del>	<u>18.5</u>	<u>10,000</u>	<u>10,000</u>	<u>200</u>	<u>200</u>

\*The soil vapor extraction system (POINT 001) exhausts through STACK 0003.