

~~1074~~
2/14/14



February 14, 2014

CERTIFIED: 7003 3110 0001 1311 8381

Department of Environmental Quality
Single Point of Contact (SPOC)
Office of Environmental Compliance
Attn: Emergency Response
P.O. Box 4312
Baton Rouge, LA 70821-4312

AE# 1238
T1536.09
SERO
Lee Lemond
Air-ER

Re: UNAUTHORIZED DISCHARGE NOTIFICATION REPORT
Valero Refining – Meraux LLC, Agency Interest #1238
2500 E. St. Bernard Hwy, St. Bernard Parish, Meraux, LA
Title V Permit: 2500-00001-V8
SERC Incident #: 14-00615

Valero Refining-Meraux LLC (Valero) is submitting this written notification for an air upset incident reported verbally to the Department on 2/7/14, pursuant to LAC 33:III.927, Louisiana Air Emission Permit General Condition XI.A. and 40 CFR 70 General Condition R.1. The incident is described as follows:

North Flare SO₂ & #2 SRU Shutdown

2/7/14

Should you have any questions regarding this submission, please contact me at (504) 271-4141.

Regards,

VALERO REFINING – MERAUX LLC

Justin Stubbe
Environmental Manager
Meraux Refinery

cc: Mr. Mike Algero, LDEQ SE Regional Office, New Orleans, LA

RECEIVED

FEB 20 2014

DEQ
Single Point of Contact

**EMERGENCY OCCURRENCE AND/OR AIR UPSET
NOTIFICATION FORM**

COMPANY NAME: Valero Refining – Meraux LLC
PHYSICAL LOCATION: 2500 E. St. Bernard Hwy.
P. O. BOX:
CITY, STATE, ZIP: Meraux, LA 70075
TELEPHONE NO: (504) 271-4141

DATE/TIME OF CALL: 2/7/14, 09:17
DEQ OFFICIAL CONTACTED: Dennis McCory
VALERO OFFICIAL WHO MADE CALL: Daniel Patnoad

APPLICABLE PERMIT INVOLVED? 2500-00001-V8

EMISSION PT. SOURCE(S) INVOLVED?

Point Sources	EPN	EQT
No. 1 Crude Heater	12-72A	0022
Vacuum Heaters	1-76	0013
North Flare Stack	20-72	0035
SRU #2 Incinerator	1-93	0019

APPLICABLE AIR QUALITY REGULATIONS INVOLVED? LAC 33:III.927

UPSET DESCRIPTION, CAUSE, AND WHAT OFFSITE IMPACT RESULTED:

On February 7, 2014 at approximately 09:18 hrs, Valero exceeded the reporting threshold for Sulfur Dioxide (SO₂) emissions from the sources listed above. Valero calculates flare SO₂ emissions based on continuous monitoring of flow and total sulfur in the flare header. Beginning at approximately 03:30 that morning, the total sulfur concentration in the North Flare began to increase along with a small, but detectable, increase in flow. SO₂ emissions were above normal, but remained below the SO₂ Reportable Quantity of 500 lbs above baseline.

At 06:49, while Valero was searching for the source of increased sulfur in the North Flare header, the #2 SRU shutdown unexpectedly. At 07:45 the Area 2 Fuel Drum H₂S exceeded the NSPS Subpart J limit of 162 ppm on a 3 hour rolling average, generating additional excess SO₂ emissions from the No.1 Crude Heater and Vacuum Heaters. The reporting threshold was reached when the aggregate SO₂ emissions from all sources exceeded the baseline by 500 pounds.

The source of the additional flare sulfur was located and blocked in at approximately 10:00. Valero activated the refinery sulfur shedding procedure and the Area 2 Fuel Drum H₂S dropped below the NSPS limit at 11:07. Valero restarted the #2 SRU and emissions from the incinerator returned to normal at approximately 16:00. The root cause(s) of elevated sulfur in the North Flare and the unexpected shutdown of the #2 SRU are currently under investigation.

Valero provided verbal notification prior to exceeding the reporting threshold. Valero received no citizen complaints as a result of this event. Valero conducted downwind ambient air monitoring. None of the monitoring results indicated a potential impact to the public. There were no injuries as a result of this episode.

DATE/TIME RELEASE BEGAN AND TIME IT LASTED:

Excess SO₂ emissions from the sources listed above occurred from 2/7/14 03:26 to 2/7/14 16:00 for a duration of approximately 12.5 hours.

SERC Incident #14-00615

WHICH SPECIFIC POLLUTANTS WERE EMITTED AND HOW MUCH OF EACH COMPOUND WAS RELEASED?

Estimated emissions from this episode are 731 pounds of sulfur dioxide and 6 pounds of hydrogen sulfide.

WHAT OTHER AGENCIES WERE NOTIFIED? LDEQ and LEPC.

IMMEDIATE CORRECTIVE ACTION TAKEN?

Valero conducted a search for the source of sulfur in the North Flare as soon as it was detected. Valero initiated the refinery's sulfur shedding procedure and shifted sulfur loads to the #SRU after the #2 SRU shutdown.

SPECIFIC ACTIONS TAKEN/PLANNED TO PREVENT RECURRENCE?


This incident is under investigation.

WAS THE RELEASE PREVENTABLE? (if no, provide details):

This incident is under investigation.

REGULATION NOTIFICATION REQUIREMENT(S):

- LAC 33:III.927 (Upset/Emergency)
- LAC 33:I.3917 (RQ)
- LAC 33:III.5107B (Air Toxics)

SIGNATURE  DATE 2/14/14
TITLE Sr. Environmental Engineer

CALCULATION SHEET

North Flare SO₂ & #2 SRU Shutdown (2/7/14) Valero Refining – Meraux LLC

Equation for Emissions for Heaters, Boilers, Flares, and the SRU Incinerators

Pounds of SO₂ = [FR][TD][ConcH₂S][EF][1.69 x 10⁻⁷]
 Pounds of H₂S = [FR][TD][ConcH₂S][1-EF][8.96 x 10⁻⁸]

- FR = Average Flow Rate of gas combusted (SCFH)
 TD = Total Duration (hrs)
 ConcH₂S = Average Concentration of H₂S in gas (ppm)
 EF = Combustion Efficiency
 1.69 x 10⁻⁷ = [lb mole H₂S/379.5 scf H₂S][64 lbs SO₂/lb mole H₂S]/1000000
 8.96 x 10⁻⁸ = [lb mole H₂S/379.5 scf H₂S][34 lbs H₂S/lb mole H₂S]/1000000

Notes:

1. Heaters and Boilers -The flow rates were measured by fuel gas flow meters. The H₂S concentrations were estimated using a Fuel Drum H₂S Analyzer that measures H₂S concentration from 0-300 ppm. During periods where the Fuel Drum H₂S Analyzer was at maximum scale (i.e. >300 ppm) the H₂S concentration was estimated using a combination 600 ppm (2 x 300 ppm) for short durations > 300 ppm and grab samples of fuel gas analyzed on a Gas Chromatograph.
2. North and South Flares - continuously monitored for both flow and total Sulfur concentration.
3. The flow rates for the #2 and #3 Incinerators was estimated using engineering judgment based on material balance and stack test information. The SO₂ concentrations were estimated using a CEMS that measures SO₂ concentration from 0-500 ppm. During periods where the SO₂ concentration was at maximum scale (i.e. > 500 ppm), the value of 1000 ppm (2 x 500 ppm) was substituted.

Point Source(s)	Start	Stop	TD (hrs)	FR (SCFH)	ConcH ₂ S (ppm)	EF	SO ₂ (lbs)	H ₂ S (lbs)	Event Description
North Flare	2/7/14 03:26	2/7/14 10:00	6.6	84,614	5,113	0.98	483	5	Excess SO ₂
#2 SRU Incinerator	2/7/14 06:49	2/7/14 16:00	9.2	84,009	1,593	0.995	208	1	SO ₂ @ 0% O ₂ > 250 ppm
Area 2 Fuel Drum	2/7/14 07:45	2/7/14 11:06	3.4	243,283	288	0.995	40	0	H ₂ S > 162 ppm
Total							731	6	



AIW 1738
T 153609

4/7/14

SERC
Lee Lemond
Air - ER

April 7, 2014

CERTIFIED: 7001 1140 0001 6090 9313

Department of Environmental Quality
Single Point of Contact (SPOC)
Office of Environmental Compliance
Attn: Emergency Response
P.O. Box 4312
Baton Rouge, LA 70821-4312

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North Flare SO₂ & #2 SRU Shutdown 2/7/14

Should you have any questions regarding this submission, please contact me at (504) 271-4141.

I certify, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Regards,

VALERO REFINING – MERAUX LLC

Lauren K. Bird
Vice President and General Manager
Meraux Refinery

cc: Mr. Mike Algero, LDEQ SE Regional Office, New Orleans, LA

RECEIVED
APR 14 2014
DEQ
Single Point of Contact

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NOTIFICATION FORM**

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PHYSICAL LOCATION: 2500 E. St. Bernard Hwy.
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TELEPHONE NO: (504) 271-4141

DATE/TIME OF CALL: 2/7/14, 09:17
DEQ OFFICIAL CONTACTED: Dennis McCorry
VALERO OFFICIAL WHO MADE CALL: Daniel Patnod

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At 06:49, while Valero was searching for the source of increased sulfur in the North Flare header, the #2 SRU shutdown unexpectedly. At 07:45 the Area 2 Fuel Drum H₂S exceeded the NSPS Subpart J limit of 162 ppm on a 3 hour rolling average, generating additional excess SO₂ emissions from the No.1 Crude Heater and Vacuum Heaters. The reporting threshold was reached when the aggregate SO₂ emissions from all sources exceeded the baseline by 500 pounds.

The source of the additional flare sulfur was located and blocked in at approximately 10:00. Valero activated the refinery sulfur shedding procedure and the Area 2 Fuel Drum H₂S dropped below the NSPS limit at 11:07. Valero restarted the #2 SRU and emissions from the incinerator returned to normal at approximately 16:00.

Valero determined the root cause of elevated sulfur in the North Flare and the unexpected shutdown of the #2 SRU to be open block valve(s) on the Flare Knockout Blowcase. This blowcase is used to periodically drain liquids from either a nearby flare knockout pot or the sour water offgas line feeding the #2 SRU. Liquids are drained into the blowcase and are then pressurized out with natural gas to the #1 Sour Water Stripper. With one or more of the block valves out of position, H₂S passed from the sour water offgas line into the North Flare header. Later, to remove the accumulated liquids, the blowcase was pressurized with the block valve(s) still

SERC Incident #14-00615

open causing a surge in pressure and flow and possibly entraining liquids through the sour water offgas line to the #2 SRU main burner. The resulting disturbance in the flame pattern was detected by the SRU fire eyes and the unit shutdown.

Valero provided verbal notification prior to exceeding the reporting threshold. Valero received no citizen complaints as a result of this event. Valero conducted downwind ambient air monitoring. None of the monitoring results indicated a potential impact to the public. There were no injuries as a result of this episode.

DATE/TIME RELEASE BEGAN AND TIME IT LASTED:

Excess SO₂ emissions from the sources listed above occurred from 2/7/14 03:26 to 2/7/14 16:00 for a duration of approximately 12.5 hours.

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WHAT OTHER AGENCIES WERE NOTIFIED? LDEQ and LEPC.

IMMEDIATE CORRECTIVE ACTION TAKEN?

Valero conducted a search for the source of sulfur in the North Flare as soon as it was detected. Valero initiated the refinery's sulfur shedding procedure and shifted sulfur loads to the #3 SRU after the #2 SRU shutdown.

SPECIFIC ACTIONS TAKEN/PLANNED TO PREVENT RECURRENCE?


This incident is similar to an incident that occurred on 5/7/2012. Valero discovered that one corrective action from this earlier incident has not yet been completed. This action was to install check valve(s) on the lines that drain the sour water offgas line to the blowcase. These check valve(s) could have prevented the shutdown of the #2 SRU, but not the elevated H₂S in the North Flare. In addition to installing these check valves; Valero will review the procedure for operating the blowcase and conduct refresher training with the operators. Valero will also modify the current piping configuration that allows water to accumulate in the sour water offgas line, thereby eliminating the need to periodically drain this line using the blowcase. This work will occur during the next turnaround.

WAS THE RELEASE PREVENTABLE? (if no, provide details):

Yes, the blowcase block valves were left open due to operator error.

REGULATION NOTIFICATION REQUIREMENT(S):

- LAC 33:III.927 (Upset/Emergency)
- LAC 33:I.3917 (RQ)
- LAC 33:III.5107B (Air Toxics)

SIGNATURE  DATE 4/4/14
TITLE Sr. Environmental Engineer

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Equation for Emissions for Heaters, Boilers, Flares, and the SRU Incinerators

$$\text{Pounds of SO}_2 = [\text{FR}][\text{TD}][\text{ConcH}_2\text{S}][\text{EF}][1.69 \times 10^{-7}]$$

$$\text{Pounds of H}_2\text{S} = [\text{FR}][\text{TD}][\text{ConcH}_2\text{S}][1-\text{EF}][8.96 \times 10^{-8}]$$

FR	=	Average Flow Rate of gas combusted (SCFH)
TD	=	Total Duration (hrs)
ConcH ₂ S	=	Average Concentration of H ₂ S in gas (ppm)
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