1/3/2017

Mr. Randall L. Sawyer  
Hazardous Materials Programs Director  
Contra Costa Health Services  
4585 Pacheco Boulevard, Suite 100  
Martinez, CA 94553

Chevron Richmond Refinery 72 Hour Follow-Up Notification Report Form

Dear Mr. Sawyer:

This is in response to the request for a 72 Hour Follow-Up Notification Report. If you have any questions, please contact Ms. Karla Salomon at (510) 242-2508  

Sincerely,

Patricia Roberts

cc: Karla Salomon  
Walt Gill  
Leah Casey  
Don Cook  
Cho Nai Cheung
INSTRUCTIONS: A hardcopy and an electronic copy of this report is to be submitted for all Level 2 and 3 incidents or when requested by CCHS. See Attachment B-1 for suggestions regarding the type of information to be included in the report. Attach additional sheets as necessary. Forward the completed form to:

ATTENTION: Randall L. Sawyer
Hazardous Materials Programs Director
Contra Costa Health Services
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553

INCIDENT DATE: 12/27/2016
INCIDENT TIME: 23:45PM
FACILITY: Chevron Richmond Refinery
PERSON TO CONTACT FOR ADDITIONAL INFORMATION
Name Karla Salomon Phone number 510-242-3629

I. SUMMARY OF EVENT:
At approx. 23:45 PM 12/27/2016 a plant upset resulted in a high liquid level in Knock out Vessel V-1051 in the South Isomax plant, which tripped both flare gas recovery compressors K-1060 and K-1070. Without these Flare Gas Recovery compressors all relief gasses were routed to the flares at 00:23 hours.

II. AGENCIES NOTIFIED, INCLUDING TIME OF NOTIFICATION:
None

III. AGENCIES RESPONDING, INCLUDING CONTACT NAMES AND PHONE NUMBERS:
None
IV. EMERGENCY RESPONSE ACTIONS:

The Chevron Fire Department Incident Command System was not required nor initiated, and Fire Brigade members were not mobilized.

No mutual aid was required for this event.

The Chevron fire department monitored for odors.

V. IDENTITY OF MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES:

Emissions are calculated consistent with BAAQMD Regulation 12 Rule 11.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vent Gas Volume (SCF)</td>
<td>52,707</td>
</tr>
<tr>
<td>SO₂ (lbs)</td>
<td>33.9</td>
</tr>
<tr>
<td>Methane (lbs)</td>
<td>34.3</td>
</tr>
<tr>
<td>Non-Methane Hydrocarbon (lbs)</td>
<td>5.8</td>
</tr>
<tr>
<td>H₂S (lbs)</td>
<td>0.2</td>
</tr>
<tr>
<td>NOₓ (lbs)</td>
<td>1.8</td>
</tr>
</tbody>
</table>

* Flare emissions data presented herein is for flaring that occurred on 12/28/2016 from approximately 0023 – 0123 hours. Estimates herein are based on currently available data.

VI. METEOROLOGICAL CONDITIONS AT TIME OF EVENT including wind speed, direction, and temperature:

Wind Speed – 4mph
Winds from the NE
Approximately 43 DEGF

VII. DESCRIPTION OF INJURIES:

There were no injuries associated with this event.

VIII. COMMUNITY IMPACT including number of off-site complaints, air sampling data during event, etc.:

There were 2 offsite complaints logged for this incident and there were internal odors noted.
IX. INCIDENT INVESTIGATION RESULTS
Is the investigation of the incident complete at this time? ________Yes ___ X ____No
If the answer is no, submit a 30 day final or interim report.
If the answer is yes, complete the following:

X. SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:

XI. SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION:
ATTACHMENT B
72 HOUR FOLLOW-UP NOTIFICATION REPORT FORM
CONTRA COSTA HEALTH SERVICES

INSTRUCTIONS: A hardcopy and an electronic copy of this report is to be submitted for all Level 2 and 3 incidents or when requested by CCHS. See Attachment B-1 for suggestions regarding the type of information to be included in the report. Attach additional sheets as necessary. Forward the completed form to:

ATTENTION: Randall L. Sawyer
Hazardous Materials Programs Director
Contra Costa Health Services
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553

INCIDENT DATE: 12/28/2016
INCIDENT TIME: 00:45
FACILITY: Chevron Richmond Refinery
PERSON TO CONTACT FOR ADDITIONAL INFORMATION
Name Karla Salomon Phone number 510-242-3629

I. SUMMARY OF EVENT:
There were 2 Ground Level Monitor (GLM) increases that took place at approx. 00:45AM and at 22:30 PM. Available information is inconclusive regarding identification of the source of the events, including whether the source was within or from outside of the refinery.

II. AGENCIES NOTIFIED, INCLUDING TIME OF NOTIFICATION:
No initial notification was made during the 00:45 increase. The next day, phone calls were made to make a delayed notification.

00:45 AM This was not a community Warning System notification.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Person Reached</th>
<th>Phone Number</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond Fire/ Police Central Dispatch</td>
<td>#1441 Domenici</td>
<td>510-620-6933</td>
<td>13:37</td>
</tr>
<tr>
<td>Contra Costa County Health Services Department</td>
<td>Amanda Ackerman</td>
<td>925-677-6700</td>
<td>13:28</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Bryan</td>
<td>415-749-4979</td>
<td>13:30</td>
</tr>
</tbody>
</table>

22:30 A community Warning system notice was made

<table>
<thead>
<tr>
<th>Agency</th>
<th>Person Reached</th>
<th>Phone Number</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richmond Fire/ Police Central Dispatch</td>
<td>#1615 Alison</td>
<td>510-620-6933</td>
<td>23:01</td>
</tr>
<tr>
<td>Contra Costa County Health Services Department</td>
<td>Amanda Ackerman</td>
<td>925-677-6700</td>
<td>23:00</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Tracy Lee</td>
<td>415-749-4979</td>
<td>23:05</td>
</tr>
</tbody>
</table>
III. AGENCIES RESPONDING, INCLUDING CONTACT NAMES AND PHONE NUMBERS:
   CCHSD - 13:52 - Requested 72 hour report. CCHSD called back again on Thursday describing all 72 hour report information required.
   BAAQMD followed up on 12/29/2016

IV. EMERGENCY RESPONSE ACTIONS:
   - The Chevron Fire Department Incident Command System was not required nor initiated, and Fire Brigade members were not mobilized.
   - No mutual aid was required for this event.
   - The Chevron fire department monitored for odors.

V. IDENTITY OF MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES:
   GLM measured elevated concentrations of Hydrogen Sulfide from an unknown source. Available information is inconclusive regarding identification of the source of the events, including whether the source was within or from outside of the refinery.
   Concentration:
   The first increase was measured at 451 ppb (maximum 3 minute average)
   The second increase was measured > 500ppb (maximum 3 minute average)

VI. METEOROLOGICAL CONDITIONS AT TIME OF EVENT including wind speed, direction, and temperature:
   00:45 AM –
   Wind direction from the NNE
   Wind speed - 6mph
   Atmospheric Temp. - 42 DEGF

   22:30 PM-
   Wind Direction from the NNE
   Wind speed - 6mph
   Atmospheric Temp. - 46 DEGF

VII. DESCRIPTION OF INJURIES:
   There were no injuries associated with this event.

VIII. COMMUNITY IMPACT including number of off-site complaints, air sampling data during event, etc.:
   2 external odor complaints

   Richmond Community Air Monitoring Program, Fence Line Air Monitoring Summary
   At and around 12/28 01:00, hydrogen sulfide measurements remained within normal background levels at all three stations, and well within applicable health standards.
   At and around 12/28 22:30, hydrogen sulfide measurements remained within normal background levels at all three stations, and well within applicable health standards.
**Richmond Community Air Monitoring Program, Community Air Monitoring Summary**

At and around 12/28 01:00, hydrogen sulfide measurements remained within normal background levels at all three stations, and well within applicable health standards.

At and around 12/28 22:30, hydrogen sulfide measurements were slightly elevated at the N. Richmond station with wind direction from the NE to NNE. Nevertheless, these measurements and all other hydrogen sulfide measurements at all three stations remained within normal background levels, and well within applicable health standards.

**Ground Level Monitoring Data Summary – 0100 Hours Event**

<table>
<thead>
<tr>
<th></th>
<th>Castro Street</th>
<th>Office Hill</th>
<th>Gertrude Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>60 min average H₂S (ppb) Background</strong></td>
<td>3.6</td>
<td>3.6</td>
<td>1.7</td>
</tr>
<tr>
<td>@ 00:00 (Pacific Standard Time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 Min Average H₂S (ppb) Max. during 0023-0300</strong></td>
<td>4.4</td>
<td>451.4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>60 Min Average SO₂ (ppb) Background</strong></td>
<td>1.8</td>
<td>1.9</td>
<td>2.8</td>
</tr>
<tr>
<td>@ 00:00 (Pacific Standard Time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 Min Average SO₂ (ppb) Max. during 0023-0300</strong></td>
<td>1.9</td>
<td>1.9</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Note: The Cal/OSHA PEL for SO₂ is 2,000 ppb (2 ppm) averaged over an 8-hour period. The Cal/OSHA PEL for H₂S is 10,000 ppb (10 ppm) averaged over an 8-hour period.
### Ground Level Monitoring Data Summary – 2230 Hours Event

<table>
<thead>
<tr>
<th></th>
<th>Castro Street</th>
<th>Office Hill</th>
<th>Gertrude Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>60 min average</strong></td>
<td>3.2</td>
<td>2.3</td>
<td>1.6</td>
</tr>
<tr>
<td>H$_2$S (ppb) Background @ 20:30 (Pacific Standard Time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 Min Average</strong></td>
<td>3.5</td>
<td>500.1</td>
<td>2.0</td>
</tr>
<tr>
<td>H$_2$S (ppb) Max. during 2041-2400 time frame</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>60 Min Average</strong></td>
<td>1.2</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>SO$_2$ (ppb) Background @ 20:30 (Pacific Standard Time)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 Min Average</strong></td>
<td>1.6</td>
<td>2.0</td>
<td>2.9</td>
</tr>
<tr>
<td>SO$_2$ (ppb) Max. during 2041-2400 time frame</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The Cal/OSHA PEL for SO$_2$ is 2,000 ppb (2 ppm) averaged over an 8-hour period. The Cal/OSHA PEL for H$_2$S is 10,000 ppb (10 ppm) averaged over an 8-hour period.

### IX. INCIDENT INVESTIGATION RESULTS

Is the investigation of the incident complete at this time? 

- ☒ Yes
- ☐ No

If the answer is no, submit a 30 day final or interim report. If the answer is yes, complete the following:

### X. SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:

### XI. SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION:
ATTACHMENT B
72 HOUR FOLLOW-UP NOTIFICATION REPORT FORM
CONTRA COSTA HEALTH SERVICES

INSTRUCTIONS: A hardcopy and an electronic copy of this report is to be submitted for all Level 2 and 3 incidents or when requested by CCHS. See Attachment B-1 for suggestions regarding the type of information to be included in the report. Attach additional sheets as necessary. Forward the completed form to:

ATTENTION: Randall L. Sawyer
Hazardous Materials Programs Director
Contra Costa Health Services
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553

INCIDENT DATE: 12/28/2016
INCIDENT TIME: 20:45
FACILITY: Richmond Chevron Refinery
PERSON TO CONTACT FOR ADDITIONAL INFORMATION
Name: Karla Salomon
Phone number: 510-242-3629

I. SUMMARY OF EVENT:

On 12/28 at 20:45PM during the startup of Richmond Lube Oil Plant compressor K-1900, additional relief gas was sent to the flare gas recovery (FGR) system and caused flaring. There was a CWS level 1 reported.

II. AGENCIES NOTIFIED, INCLUDING TIME OF NOTIFICATION:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Person Reached</th>
<th>Phone Number</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County Health Services Department</td>
<td>Amanda Ackerman</td>
<td>925-677-6700</td>
<td>23:00</td>
</tr>
<tr>
<td>Richmond Fire/Police central dispatch</td>
<td>Alison ID#1615</td>
<td>510-620-6933</td>
<td>23:01</td>
</tr>
<tr>
<td>BAAQMD</td>
<td>Tracy Lee</td>
<td>415-749-4979</td>
<td>23:05</td>
</tr>
</tbody>
</table>

III. AGENCIES RESPONDING, INCLUDING CONTACT NAMES AND PHONE NUMBERS:

BAAQMD followed up 12/29/2016
IV. EMERGENCY RESPONSE ACTIONS:

The Chevron Fire Department Incident Command System was not required nor initiated, and Fire Brigade members were not mobilized.

No mutual aid was required for this event.

The Chevron fire department monitored for odors.

V. IDENTITY OF MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES:

Emissions are calculated consistent with BAAQMD Regulation 12 Rule 11.

<table>
<thead>
<tr>
<th>Vent Gas Volume (SCF)</th>
<th>18,012</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂ (lbs)</td>
<td>14.6</td>
</tr>
<tr>
<td>Methane (lbs)</td>
<td>9.4</td>
</tr>
<tr>
<td>Non-Methane Hydrocarbon (lbs)</td>
<td>8.1</td>
</tr>
<tr>
<td>H₂S (lbs)</td>
<td>0.1</td>
</tr>
<tr>
<td>NOₓ (lbs)</td>
<td>1.4</td>
</tr>
</tbody>
</table>

* Flare emissions data presented herein is for flaring that occurred on 12/28/2016 from approximately 2041 – 2133 hours. Estimates herein are based on currently available data.

VI. METEOROLOGICAL CONDITIONS AT TIME OF EVENT including wind speed, direction, and temperature:

Temperature – Approx. 48 DEGF
Wind Speed Approx. 6 mph
Wind Direction from the NNE

VII. DESCRIPTION OF INJURIES:

There were no injuries associated with this event.

VIII. COMMUNITY IMPACT including number of off-site complaints, air sampling data during event, etc.:

2 offsite incident complaints
IX. INCIDENT INVESTIGATION RESULTS
Is the investigation of the incident complete at this time? _______Yes _____ X____No
If the answer is no, submit a 30 day final or interim report.
If the answer is yes, complete the following:

X. SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:

XI. SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE
INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION: