EVENT INVESTIGATION REPORT

EIR-2017-001 "Investigation of Grout Loop AOP-015 Event"

(WRPS-PER-2017-0089)

Performance Assurance, Event Investigation Team Lead  

Date  

Central Shift Office Manager, PER Responsible Manager  

Date  

WRPS-EIR-2017-001 for WRPS-PER-2017-0089
Investigation of Grout Loop AOP-015 Event

Investigation Summary

At 0740 on January 25th, 2017, the Central Shift Office (CSO) received initial notification of nine Federal Engineers and Constructors (FE&C) reporting a strong unusual odor near the east end of Grout Loop. The CSO elected to enter into an AOP-015 event and made the appropriate notifications via Shift Office Event Notification (SOEN) and radio announcement.

Personnel were dispatched to establish road blocks and initial barriers at 0745, however, due to additional reports of odors along the southern border of Grout Loop, boundaries were re-established and verified by 0858. All affected building occupants for the event were relocated outside boundary lines.

Seven Odor Response Cards (ORC) were initially submitted by the FE&C employees which described the odors as rotten, onion, eggs and/or sulfur. The assigned FE&C Industrial Hygienist stated “possible septic odor…H₂S, Dimethyl/Sulfides or dimethyl/disulfide”. No FE&C employees reported any symptoms at the time and no personnel elected to seek medical treatment to this point. It should be noted septic field 2607E10 and SNS Field are located in the immediate area (see figure 1). Additionally, a Porta-Potti is located on the south side of MO-282, and MO-2522 (an assigned male/female restroom) is located directly south of where odors were reported.

An Event Investigation Lead was dispatched to the CSO at 0800 and Event Investigation Report (EIR) EIR-2017-001 was issued at 0912. Additionally, Email notification went out to all Washington River Protection Solutions (WRPS) employees regarding the odors reported for this event (see attachment 3) and Problem Evaluation Request (PER) WRPS-PER-2017-0089 was initiated (see attachment 1).
At 1405, the CSO received notification that the sample analysis for this event was completed and results were at or below background levels. CSO exited AOP-015 for Grout Loop.

At 0726 on January 26th, 2017, the CSO received notification of an odor “identical to odor experienced yesterday…at the wet grout facility” The individual reporting this event was involved in the January 25th AOP-015 event at Grout Loop and stated that he suspected the septic field (septic field 2607E10) to be the source.

The CSO Log documents approximately 15 employees detected the odor on the 26th, but no symptoms were reported. One employee requested medical surveillance and was released to return to work without restrictions at approximately 1645. Given the location and similarities of the previous event on the 25th, the CSO elected to follow the guidance of Standing Order OPS-16-008 “Response to readily apparent or general purpose facility odors” and dispatched Industrial Hygiene Technicians to complete a sample plan as per IHSP-COPC-LTV-01. It should be noted Standing Order OPS-16-008 has been superseded by TFC-OPS-OPER-C-67 “Response to readily apparent or general purpose facility odors”.

The CSO notified both the on-call ORP Facility Representative and Injury & Illness Manager of the event, and at approximately 0815, the assigned IHT’s completed their sweeps of the wet grout area and reported the following results: 0 ppm NH3, 0 ppb VOC’s, 0 ppm H2S (hydrogen sulfide).

At 1200 on the 30th of January, 2017, a meeting was held to discuss the sewer odors encountered at the Grout Loop area. This meeting was to provide information regarding the two events, and the potential connection with septic field 2607E10 as a possible source of the odors reported on the 25th and 26th of January. Mission Support Alliance (MSA) conducted the meeting which included the power point presentation titled “01252017 AOP-15 Grout Loop Vapors Team Evaluation” (to be attached in ESTARS when authorized).

End of Summary

No Fact Finding Meeting has been held to this date
Weather Information

Yellow highlights weather conditions on or around the CSO and ORC times listed.

January 25th, Weather Station 6

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January 26th, Weather Station 6

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Event Timeline

1/25/2017

0337: CSO Log states “Retrieval AX-102 to AP-102 secured. Admin lock condition applied to AY-102 SL pump & AP-102 SN pump”

0740: CSO Log states “…reports that there is a strong unusual odor near the grout facility east of AP Farm. The odor is a rotten egg/sulfur/onion type odor. 9 individuals smelled the odor No symptoms have been reported at this time.”

0740: CSO Log states “Entering AOP-015 for grout loop area. SOEN and radio announcement complete.”

0741: SOEN Email notification sent “Entering AOP-015 for unusual odors in the grout loop area. All personnel evacuate the grout loop area. CSM”
Event Timeline (continued)

1/25/2017

0745: CSO Log entry. “Dispatched Juan Duarte, SPT OE, and shift personnel to establish road blocks and boundary around event scene…”

0754: CSO Log entry. “Event scene boundary established adjacent to eastern edge of MO-283”

0755: CSO Log entry. “Notified ORP on-call FR…”

0756: CSO Log entry. “Late entry 0749…IHTs briefed on response plane…and dispatched.”

0800: Event Investigation Lead Investigator dispatched to CSO Office. Accompanied qualified Central Shift Manager on walk down of event area outside of established boundaries.

0815: CSO Log states “Reports of odor along the southern portion of Grout Loop Road. Moving boundaries…”

0816: CSO Log states “Late Entry 0800: All personnel from MO-159 have been offered and declined medical surveillance.”

0858: CSO Log states “Boundary was verified to be established along eastern edge of MO-283 to septic field south of MO-283. West along septic field to CONEX boxes and blocking entire southern portion of Grout Loop Rd.”

0859: CSO Log states “Personnel that smelled the odor were…” (Names redacted)


1052: Email notification sent from Communications and Public Relations to All WRPS Employees regarding Odors reported (see attachment 3)


1405: CSO Log states “sample analysis for the AOP-015 event at the grout loop area has been completed and the results are at or below background levels. Exiting AOP-015.”

1/26/2017

0726: CSO Log states and individual “reports an odor identical to odor experienced yesterday at 0740 at the wet grout facility…suspects the septic field to be the source…No employees are experiencing symptoms, one employee…has request medical surveillance. There were approximately 15 employees that detected the odor…”

0737: ORP on-call FR notified (CSO Log)

0745: CSO Log states “IHTs dispatched to perform IHSP-COPC-LTV-01 at wet grout”
Event Timeline (continued)

1/26/2017

0815: CSO Log states “IHT sweeps of wet grout area are complete. Results as follows: 0 ppm NH₃, 0 ppb VOC’s, 0 ppm H₂S (hydrogen sulfide)”

1648: CSO Log states the individual listed in 0726 entry “was released to return to work w/o restrictions.”

1/30/2017

1200: Meeting held at CR-MO234/116/200E to discuss sewer odors event at Grout Loop. Power Point presentation titled “01252017 AOP-15 Grout Loop Vapors Team Evaluation” was given (no roster of attendees available)

Compensatory Measures

1. CSO receives reports of strong unusual odors and enters into AOP-015 “Investigation of odors for Grout Loop AOP-015 event”.
2. SOEN and radio notification sent out.
3. Applicable boundaries identified and barriers placed.
4. CSO notifies Office of River Protection (ORP) Facility Representative (FR).
5. Investigative walk down of the area provides possible odor source as Septic Field 2607E10.
6. Access restricted to the Grout Loop area until samples could be evaluated

Preliminary Extent of Condition Review

This AOP-15 entry was specific to Grout Loop and occurred outside of Tank Farm boundaries. Given the potential source and associated potential causes, the preliminary extent of condition is bound to the immediate area.
Discussion of Potential Causes

Based upon the review of information obtained, the following factors could have contributed or been the cause of the strong unusual odor:

1. Septic field 2607E10 and associated SNS field is located in the immediate vicinity of where the AOP-015 event took place.
2. Both the septic and SNS fields have been covered in snow due to a significant amount of snow fall and below average colder temperatures seen during the months of December 2016 and January 2017 and may have adversely affected the operational characteristics of the aging septic system.
3. A weather inversion during this time period may have contributed to abnormal atmospheric conditions in and around the area (i.e., suppression of normally vented septic gases)

Discussion of barriers that could have impacted the cause

There are no known barriers that either failed to prevent, or contributed to this event.

Recommendations/Proposed Corrective Actions

Based upon the findings, consider evaluating Septic Field 2607E10 and the associated SNS Field for long term continued use.

Attachments:

1. WRPS-PER-2017-0089 (2 pages)
2. Copy of CSO log book, Pages 185 thru 187, 189, 190, 192 (6 pages)
3. Copy of Email sent from Communications and Public Relations to All WRPS Employees regarding Odors reported 1/25/17 (2 pages)
4. Copy of Hanford Vapors Website Release
5. East end of Grout Loop looking west over Septic Field 2607E10 and SNS Disposal Field towards AP Farm (1/25/2017)
6. SNS Disposal Field looking west (1/25/2017)
7. View of septic field 2607E10 looking east (1/25/2017)
8. NW view from east end of Grout Loop looking over Septic Field 2607E10 (2/14/2017)
9. Individual Odor Response Cards (14 pages)
10. TF-AOP-015 Industrial Hygiene Investigation Report, EIR-2017-001, dated 01/25/2017 (20 pages)
### Attachment 1 (page 1 of 2)

**Problem Evaluation Request (PER)**

<table>
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<th>PER No</th>
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<th>Time of Discovery (24:00)</th>
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<td>Production Operations: Tank Farms</td>
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**Location**

- OTHER

**How Was Problem Discovered**

- Other

**Description of Concern or Problem**

Entered AOP 015 at the grout loop for odors posted the affected areas and shortly after lunch noticed prior to having sample results and before down posting a lot of foot traffic in the affected area and vehicle traffic dropping the roped off area to drive out of the affected area.

**Requirement Not Satisfied**

- Source Document Number

**Equipment Identification Number**

- System Identification

- None

**Does issue require immediate actions?**

- I Don’t Know

**Immediate actions Taken or Planned**

- Contacted shift office

**Recommended Corrective Actions**

- Comply to the proper AOP.

**Originator Contact**

- Yes

<table>
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<th>Originators Phone</th>
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**SHIFT OPERATIONS REVIEW**

**Title**

AOP-015 entry into poled area

**Reportability**

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**Describe actions Taken or Recommended**

No additional actions taken or recommended by the POCSO.

**SO Reviewer Name**

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**SCREENING**

**PER Significance Level**

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**Ind Assessment Rev**

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**Assigned Responsible Manager**

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### Attachment 1 (page 2 of 2)

#### PER

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#### PAAA REVIEW

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<td>2) Approval per procedure TPC-ESHQ-PAAA-D-08 dated 7/19/2012 (paragraph 4.1.5-7).</td>
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### PIE/CIM

**Evaluation of PIE/CIM Initiative**

Has the evaluation of this PER resulted in additional information that could affect the Central Shift Office (CSO) determination of operability or reportability? **Comments**

| No |
|    |

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### CAUSE CODES

### ATTACHMENTS

- Link to PER
- PAAA_Screen_1-30-17.pdf
- 2017-0089 originator contact .msg

### AUDIT HISTORY

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End of Report 
02/13/2017 01:16 PM

http://estart.rl.gov/per/screens/printable/per.cfm?period=50127[2/13/2017 1:16:54 PM]

WRPS-EIR-2017-001 for WRPS-PER-2017-0089  
Page 9 of 56
Attachment 3 (page 1 of 2)

From: "WRPS General Delivery"
Subject: Odors reported 1/25/17
Date: Wednesday, January 25, 2017 10:52:16 AM

TO: All WRPS employees
(Please pass this message on to those who did not receive it.)

ISSUED: Jan. 25, 2017

FROM: Communications and Public Relations

SUBJECT: Odors reported 1/25/17

Nine Hanford workers declined preliminary medical evaluation this morning after reporting odors near their work trailers outside of Hanford's AP Tank Farm. None of the workers reported symptoms.

The workers described the odors as rotten egg-like, sulfur-like and onion-like. Industrial hygiene technicians responded, and no elevated readings were identified. Samples were collected and sent for analysis.

The trailers are located near the wet grout facility in the grout loop area about 200 yards east of the AP Farm fence line (see map below). The employees were in pre-job briefings at the time of reported odors and were not in an area that requires use of a supplied-air respirator. Workers were instructed to leave the area, and access to the area has been restricted.

For more information about chemical vapors and the steps Washington River Protection Solutions has taken to protect employees, visit hanfordvapors.com.
Odors reported east of Hanford’s AP Tank Farm

Published & Available on: January 24, 2021

Hanford workers detected preliminary neutralization this morning after reporting odors near their work stations outside of Hanford’s AP Tank Farm. More attentive workers reported immediately.

The tanks are located about 200 yards east of the AP Farm fence line. The employees were in pre-job briefings at the time of reported odors and were notified to area that requires certification and a respirator. The workers described the odors as petrochemical, sulfurous and acidic-like. Pilots were instructed to leave the area and access to the area was withheld.

Industrial hygiene technicians responded, and co-aligned readings were identified. Samples were collected and analyzed, and the results are all at background levels. Air monitors have been removed.

For more information about chemical vapors and the Hanford River Protection Solutions (HRPS), Hanford employees, check out the extensive web presence on the website.

Want to know more about Hanford Tank Vapors?

Send us a message
Attachment 5

East end of Grout Loop looking west over Septic Field 2607E10 and SNS Disposal Field towards AP Farm (1/25/2017)
Attachment 6

SNS Disposal Field looking west
(1/25/2017)
Attachment 7

View of septic field 2607E10 looking east (1/25/2017)
Attachment 8

NW view from east end of Grout Loop
looking over Septic Field 2607E10
(2/14/2017)
Attachment 9 (page 2 of 14)

**Odor Response Card**

Odors Detected with **NO** Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, **Provide below bulleted information.**
3. Complete map, return to Central Shift Office as soon as practicable.

Odors Detected **WITH** Symptoms

4. Notify Immediate Supervisor.
5. Complete CSM. **Complete below bulleted information and map.**
   - Your name and the work you were performing
   - Your symptoms (if any)
   - Date and time odor was noticed
   - Location of odor (mark area on map and wind direction)
   - **Describe the odor**
   - Name of others in or near the affected area
   - Was an HHF present?
   - Possible source
6. Provide Information on the back of card.
7. Send this card immediately to the Central Shift Office.
Odor Response Card

1. Contact CSM, complete below bulleted information and map.
   - Date and time odor was noticed: [3/5/17 0732 UT]
   - Your name and the work you were performing:
   - Location of odors (mark area on map and wind direction):
   - Name of others in or near the affected area:
   - Was an IHT present? [No]
   - Describe the odor: [Sweet, Sour, Musty, Earthy, Smoky, Fruity, Onion, Cleaning Solution, Ammonia, Other: JUICE]
   - Possible source: [UNKNOWN (TRAUNFELD TOOL PLATE OVERMOUNT)]
   - Your symptoms (if any): [Headache, Dizziness/Light-Headed, Nausea, Cough, Fatigue/Drowsiness/Weakness, Sore/Burning Throat, Difficulty Breathing, Watery/Inflamed Eyes/Trouble with Vision, Tingling/Numbness/Paralysis, Skin/Irritation, Other:]

2. Send this card to the Central Shift Office.
Attachment 9 (page 4 of 14)

Odor Response Card

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager. Provide below bulleted information.
3. Complete map, return to Central Shift Office as soon as practicable.
   Odors Detected WITH Symptoms

4. Notify Immediate Supervisor.
5. Contact CSM, complete below bulleted information and map.
   • Your name and the work you were performing
   • Your symptoms (if any)
   • Date and time odor was noticed
   • Location of odors (mark area on map and wind direction)
   • Describe the odor
   • Name of others in or near the affected area
   • Was an IVT present?
   • Possible source
6. Provide Information on the back of card.
7. Send this card immediately to the Central Shift Office.
Odor Response Card

1. Contact CSM, complete below bulletted information and map.
   - Date and time odor was noticed: 1/25/17, 7:30 am
   - Your name and the work you were performing: Driving
   - Location of odors (mark area on map and wind direction): on truck
   - Name of others in or near the affected area: Field crew
   - Was an IHT present? No
   - Describe the odor: Sweet, Sour, Musty, Metallic, Smoky, Foul
   - Possible source: Gas
   - Your symptoms (if any): Headache, Dizziness, Light-Headed

2. Send this card to the Central Shift Office.

Revised: 2/6/15
Attachment 9 (page 6 of 14)

Odor Response Card

Odors Detected with: [ ] Immediate symptoms
1. Notify Immediate Supervisor.
2. Contact Central Shift Manager. [ ] Provide below bulleted information.
3. Complete map, return to Central Shift Office as soon as practicable.

Odors Detected: [ ] None

Symptoms
4. Notify Immediate Supervisor.
5. Contact CSM, [ ] Complete below bulleted information and map.
   - Your name and the work you were performing
   - Your symptoms (if any)
   - Date and time odor was noticed
   - Location of odor (mark area on map and wind direction)
   - Describe the odor
   - Name of others in or near the affected area
   - Was an H2S present?
   - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.
Odor Response Card

1. Complete below bulleted information and map.
   - Date and time odor was noticed: 12/7/17 7:30 a.m.
   - Your name and the work you were performing: driving.
   - Location of odors (mark area on map and wind direction): East of A8 Farm.
   - Name of others in or near the affected area: 
   - Was an IHT present? No.
   - Describe the odor: Sweet, Sour.
   - Possible source: No idea.
   - Your symptoms (if any): Headache, Dizziness, Headache, Nausea, Cough.
     Fatigue, Drowsiness, Weakness, Sore, Burning Throat, Difficulty Breathing, Watery/Irritated.
     Eyes, Trouble with Vision, Tingling, Itching, Paralysis, Rash.

2. Send this card to the Central Shift Office.
   Revised 2/9/13
Odor Response Card

Odors Detected with NO Immediate symptoms
1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, provide below bulleted information.
3. Complete map, return to Central Shift Office as soon as practicable.
   Odors Detected WITH Symptoms
5. Contact CEM, complete below bulleted information and map.
   * Your name and the work you were performing
   * Your symptoms (if any)
   * Date and time odor was noticed
   * Location of odors (mark area on map and wind direction)
   * Describe the odor
   * Name of others in or near the affected area
   * Was an H2S present?
   * Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.
**Odor Response Card**

1. Contact CSM, complete below bulleted information and map.

   - Date and time odor was noticed: 7:29 am, 1/85/17
   - Your name and the work you were performing:
   - Location of odors (mark area on map and wind direction)
   - Name of others in or near the affected area
   - Was an IHT present? No
   - Describe the odor: Sweet, Sour, Musty, Earthy, Smoky, Rotten, Onion
   - Possible source: Not Specified

2. Send this card to the Central Shift Office.

   Revised 2/5/15
Attachment 9 (page 10 of 14)

Odor Response Card

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager.
3. Complete map, return to Central Shift Office as soon as practicable.
4. Notify Immediate Supervisor.
5. Contact EHS complete below bulleted information and map.
   - Your name and the work you were performing
   - Your symptoms (if any)
   - Date and time odor was noticed
   - Location of odor (mark area on map and wind direction)
   - Describe the odor
   - Name of others in or near the affected area
   - Was an IHIT present?
   - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.
Attachment 9 (page 11 of 14)

Odor Response Card

1. Contact CSM, complete below bulleted information and map.
   - Date and time odor was noticed: 1-25-17, 7:30
   - Your name and the work you were performing: Parking Air Bottles
   - Location of odors (mark area on map and wind direction):
   - Name of others in or near the affected area:
   - Was an IHT present: No
   - Describe the odor: Sweet, Sour, Musty, Earthy, Metallic, Smoky, Rotten, Onion, Cleaning Solution, Ammonia, Other
   - Possible source:
   - Your symptoms (if any): Headache, Dizziness/Light-Headed, Nausea, Cough, Fatigue/Fatiguedness/Weakness, Severe/Burning Throat, Difficulty Breathing, Watery/Irritated Eyes/Trouble with Vision, Tingling/Numbness/Paralysis, Itch
   - Other:

2. Send this card to the Central Shift Office.

Rev 9/16/15
Odor Response Card

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, provide below bulleted information.
3. Complete map, return to Central Shift Office as soon as practicable.

Odors Detected WITH Symptoms

4. Notify Immediate Supervisor.
5. Contact CSM, complete below bulleted information and map.
   - Your name and the work you were performing
   - Your symptoms (if any)
   - Date and time odor was noticed
   - Location of odor (mark area on map and wind direction)
   - Describe the odor
   - Name of others in or near the affected area
   - Was an off-gas present?
   - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.
Attachment 9 (page 13 of 14)

Odor Response Card

1. Contact CSM, [redacted] complete below bulleted information and map.
   - Date and time odor was noticed: 1-2-17, 7:30 AM
   - Your name and the work you were performing: Driving
   - Location of odors (mark area on map and wind direction): Wind traveling East
   - Name of others in or near the affected area: [redacted]
   - Was an IHT present? No
   - Describe the odor: Sweet, Sour, Musty, Earthy, Metallic, Smokey, Rotten, Fart, Egg

2. Possible source: [redacted]

3. Your symptoms (if any): Headache, Dizziness/Headache, Nausea, Cough, Fatigue, Drowsiness, Weakness, Sore/Burning Throat, Difficulty Breathing, Dry/Effloresced Eyes/Trouble with Vision, Tingling/Numbness/Paresthesia, Rash/Itching

4. Other: [redacted]

5. Send this card to the Central Shift Office.

Revised 2/6/15
attachment 9 (page 14 of 14)

Odor Response Card
Odors Detected with NO Immediate symptoms
1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, Provide below bulleted information.
3. Complete map, return to Central Shift Office as soon as practicable.
Odors Detected WITH Symptoms
4. Notify immediate supervisor.
5. Contact CSM, complete below bulleted information and map.
   • Your name and the work you were performing
   • Your symptoms (if any)
   • Date and time odor was noticed
   • Location of odor (mark area on map and wind direction)
   • Describe the odor
   • Name of others in or near the affected area
   • Was an IRV present?
   • Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.
Attachment 10 (page 1 of 20)
0808 Projects IH and IS arrive at CSO and brief EV Team IH, AN Team IH, COMs Team IH, and PO - IH Manager:
  * Sulfur smell outside of trailer
  * Offered SUMMA canisters

0812 Projects IS notifies EV Team IH, AN Team IH, and COMs Team IH that the FE&C CIH/IS smelled the odor and was with the work crew at the time of the odor event.

0814 AN Team IH calls FE&C CIH/IS. FE&C CIH/IS briefs AN Team IH:
  * Was present during odor event
  * H2S "septic odor"
  * Work crews were working on septic lift pump on 01/24/2016
  * Recommended using H2S sensor to locate and confirm possible odor source

0817 AN Team IH briefs CSO on information from FE&C CIH/IS.

0836 Assistant BED leaves CSO to confirm boundary restriction.

0937 PO Shift IH/Ts return to CSO to report observations:
  * H2S 0 ppm
  * NH3 0 ppm
  * VOC 0 ppb
  * Began sweep at 0820, pulled first grab air sample at 0821 at conex lot, pulled second grab air sample at 0826 at parking lot, finished sweep at 0831.

0839 AN Team IH directs PO Shift IH/Ts to analyze grab air samples with Miran SaphirRa, Lumex, and HAPSITE.

0840 PO Shift IH/Ts leave CSO to continue response actions in 272AW IH lab.

0844 Odor response cards delivered to CSO by Projects IS

0844 FE&C CIH/IS arrives at CSO and educates EV Team IH, AN Team IH, and COMs Team IH on reduced sulfur compound chemistry, field detection techniques, and analytical methodology.

0846 FE&C CIH/IS briefs EV Team IH, AN Team IH, and COMs Team IH on events and explains the odor response cards in detail.

0848 FE&C CIH/IS says odors were not from a tank farm source in his professional opinion.

0856 AN Team IH contacts R&C IH to acquire AreaRAE data from "wet grout loop".

0856 Assistant BED returns to CSO and reports that access restriction looks good.

0901 Program Chemist contacts PO IH Manager to inquire about status of response actions and any additional information that may be pertinent to interpretation of HAPSITE data.

0903 EIR Investigator requests briefing from EV Team IH, AN Team IH, and COMs Team IH.

0910 AN Team Maintenance Manager contacts AN Team IH to inquire about getting his employees back into their trailer to acquire supplies to go to work.

0913 Programs IS Manager contacts AN Team IH to get briefed of events and response actions.

0943 R&C IH contacts AN Team IH to coordinate delivery of "wet grout loop" AreaRAE data.

0953 FE&C Supervisor arrives at CSO to inquire about monitoring and sample results.

0957 PO Shift IH/T arrives at CSO and notifies EV Team IH, AN Team IH, and COMs Team IH that all DIFs posted.

1003 Programs AOP-015 IH SME contacts CSO for briefing.

1009 SCM informs AN Team IH, EV Team IH, and COMs Team IH that the PO IH Manager is working with the Programs Chemist to expedite analysis of grab air samples.

1021 AN Team Day Shift Manager contacts CSO to inquire about gaining access to their trailers.
Attachment 10 (page 3 of 20)
Attachment 10 (page 4 of 20)

Washington River Protection Solutions

TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT

Time/Date & Event location:
0730 01/25/2017 “Wet Grout Loops”

1336 PO Shift IHTs and AN Team IH escort AN Team IT to retrieve personal vehicle from restricted access area. All readings for all additional entries:
* NH₃ 0 ppm
* VOC 0 ppb
1346 PO Shift IHTs and AN Team IH return to MO267.
1350 AN Team IH and COMs Team IH arrive at CSO to report that restricted access area has been cleared of personal and government vehicles and numerous personal items. AN Team Area Dayshift Manager is satisfied that no other entries will need to be made.
1359 PO IH Manager calls CSO and notifies AN Team IH that AOP-015 can be exited on the authority of IH Programs Manager.
* Results of HAPSITE analyses are at or below background levels.
* Chromatograms and interpretation by Programs Chemist to follow.
1400 AN Team IH briefs CSM:
* HAPSITE results are at or below background levels
* Recommends exiting as per TF-AOP-015 4.1.3.1
1405 CSM makes all-call radio announcement: “Sample analysis of AOP-015 event at grout loop area has been completed and the results are at or below background levels. Exiting TF-AOP-015.”
1406 SOE: “Sample analysis for the TF-AOP-015 event at the grout loop area has been completed and the results are at or below background levels. Exiting TF-AOP-015. CS”
1412 CSM requests Shift SOE to follow up with barricade removal.
1456 AN Team IH and COMs Team IH contacts R&C IHT for AreaRAE survey number. All readings for AreaRAE located in the SE corner of 241-AP Farm were:
* NH₃ 0 ppm
* VOC 0 ppb

IH
Author (Print) Phone
(Sign) Date 01/25/2016
There were no chemicals other than those outgassing from the bag material were observed. Consequently, there was nothing detected at or above action levels.

3. Additional Information:
   - Odor Response Cards received:

   [Graphical data and text related to outgassing and chemical levels, including dates and measurements.]

   [Signature and date: 3/22/2017]
Attachment 10 (page 6 of 20)
Attachment 10 (page 7 of 20)
Attachment 10 (page 8 of 20)
Attachment 10 (page 10 of 20)
Odor Response Card

1. Contact CSM, [redacted] completes below bulleted information and map.
   - Date and time odor was noticed: 1/27/17 7:30 a.m.
   - Your name and the work you were performing: driving
   - Location of odor (mark area on map and wind direction): east of al forno
   - Name of others in or near the affected area: 
   - Was an IHT present? No

2. Describe the odor: sweet, sour, musty, earthy, metallic, smoky, glutton, onion, cleaning solution, ammonia, other:

3. Possible source: no idea

4. Your symptoms (if any): headache, dizziness/light-headed, nausea, cough, fatigue/breathlessness, weakness, sore/burning throat, difficulty breathing, watery/irritated eyes/trouble with vision, tingling/numbness paralysis, rash/itching, other:

2. Send this card to the Central Shift Office.

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Attachment 10 (page 15 of 20)
Attachment 10 (page 16 of 20)
Attachment 10 (page 17 of 20)
Attachment 10 (page 18 of 20)

Odor Response Card

1. Contact CSM, complete below bulleted information and map.
   - Date and time odor was noticed: 1-25-17, 7:30 AM
   - Your name and the work you were performing: Driving
   - Location of odors (mark area on map and wind direction): Wind traveling East
   - Name of others in or near the affected area: Rotten Eggs
   - Was an IHT present? No
   - Describe the odor: □Sweet □Sour □Musty □Earthy □Metallic □Smoke □Rotten □Onion
   □Clean □Solution □Ammonia □Other
   - Possible source: 
   - Your symptoms (if any): □Headache □Dizziness/Light-Headed □Nausea □Cough
   □Fatigue/Drowsiness/Weakness □Sore/Burning Throat □Difficulty Breathing □Watery/Irritated
   □Eyes/Trouble with Vision □Irritating/Numbness/Paralysis □Faint/Choking
   □Other

2. Send this card to the Central Shift Office.
Attachment 10 (page 19 of 20)

Washington River Protection Solutions
TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT

Time/Date & Event location:
0730 01/25/2017 "Wet Grout Loop"

Odor Response Card

1. Notify immediate Supervisor.
2. Contact Central Shift Manager, [name redacted].
3. Complete map, return to Central Shift Office as soon as practicable.

Odors Detected with Symptoms

5. Contact ESM. Provide below information and stop:
   a. Year name and the week you were performing.
   b. Year symptoms (if any)
   c. Date and time odor was noticed.
   d. Location of odors (mark area on map and wind direction).
   e. Describe the odor.
   f. Name of others in or near the affected area.
   g. Was an HTR present?
   h. Possible source.
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.

Summary of IH Monitoring and Sampling Data:

a. Monitoring: Direct-reading instruments for ammonia, volatile organic carbons, and hydrogen sulfide did not indicate anything present.
b. Sampling: The GC/MS analysis did not indicate any chemicals above action levels.

4. Summary of Employee Reported Information (e.g. symptoms): There were ten workers that experienced a rotten egg, sewer gas odor. Three were driving when they smelled the odor. None of them reported symptoms and all declined a trip to HPWC.

5. Recommendations/Conclusions:

Other: Nothing else was determined that might be of use.
Attachment 10 (page 20 of 20)