

# EVENT INVESTIGATION REPORT

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

(WRPS-PER-2017-0089)



\_\_\_\_\_  
Performance Assurance, Event Investigation Team Lead

3/27/2017  
Date

\_\_\_\_\_  
Central Shift Office Manager, PER Responsible Manager

3/27/17  
Date

## Investigation of Grout Loop AOP-015 Event

### Investigation Summary

At 0740 on January 25<sup>th</sup>, 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.



*Aerial View of AP Farm and Grout Loop (Figure 1)*

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...H<sub>2</sub>S, 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 26<sup>th</sup>, 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 25<sup>th</sup> 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 26<sup>th</sup>, 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 25<sup>th</sup>, 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 NH<sub>3</sub>, 0 ppb VOC’s, 0 ppm H<sub>2</sub>S (hydrogen sulfide).

At 1200 on the 30<sup>th</sup> 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 25<sup>th</sup> and 26<sup>th</sup> 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 25<sup>th</sup>, Weather Station 6**

Time	Direction	Speed (MPH)
0600	W/SW	5
0700	W/SW	7
0800	W/SW	5
0900	W/SW	4
1000	W/SW	5
1100	W	2
1200	W	3
1300	N/NW	1
1400	N	1
1500	N	2

**January 26<sup>th</sup>, Weather Station 6**

Time	Direction	Speed (MPH)
0600	W	4
0700	W/SW	3
0800	W/SW	3
0900	W/SW	2
1000	W	2

**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)
- 0912: CSO Log states “Initiated Event Investigation for Grout Loop AOP-015 event. POC: ”. EIR-2017-001 issued.
- 1052: Email notification sent from Communications and Public Relations to All WRPS Employees regarding Odors reported (see attachment 3)
- 1230: WRPS-PER-2017-0089 Initiated.
- 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 NH<sub>3</sub>, 0 ppb VOC’s, 0 ppm H<sub>2</sub>S (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)**

PER

Problem Evaluation Request (PER)		WRPS-PER-2017-0089	
		In Process/Work	
<b>PER No</b>	<b>Date of Discovery</b>	<b>Time of Discovery (24:00)</b>	<b>Project</b>
WRPS-PER-2017-0089	01/25/2017	12:30	Production Operations: Tank Farms
<b>Location</b>			
OTHER			
<b>How Was Problem Discovered</b>			
Other			
<b>Description of Concern or Problem</b>			
Entered AOP15 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.			
<b>Requirement Not Satisfied</b>		<b>Source Document Number</b>	
<b>Equipment Identification Number</b>		<b>System Identification</b>	
		None	
<b>Does issue require immediate actions?</b>			
I Don't Know			
<b>Immediate actions Taken or Planned</b>			
Contacted shift office			
<b>Recommended Corrective Actions</b>			
Comply to the proper AOP.			
<b>Originator Contact</b>			
Yes			
<b>Originators Name</b>	<b>Originators ID</b>	<b>Originators Phone</b>	<b>Date Initiated</b>
			01/26/2017
<b>SHIFT OPERATIONS REVIEW</b>			
<b>Title</b>			
AOP-015 entry into poated area			
<b>Reportability</b>	<b>SSC Operability</b>	<b>Operability Review</b>	<b>Comp Measures Req</b>
Non-Reportable	N/A	N/A	
<b>Describe actions Taken or Recommended</b>			
No additional actions taken or recommended by the POCSSO.			
<b>SO Reviewer Name</b>	<b>SO Reviewer ID</b>	<b>SO Reviewer Phone</b>	<b>SO Review Date</b>
			01/27/2017
<b>SCREENING</b>			
<b>PER Significance Level</b>	<b>Analysis Level</b>	<b>How Discovered</b>	
PIE/CIM		1 Internal (Self-Identified; Internal Assessments)	
<b>Ind Assessment Rev</b>	<b>Occurrence Rpt #</b>	<b>DOE CAP Required?</b>	
		No	
<b>Assigned Responsible Manager</b>	<b>Facilities Rep / SSO</b>	<b>Safety Mgmt Rep</b>	<b>Potentially Recurring Issue</b>
<b>Program</b>		<b>Requirements Area Manager (RAM)</b>	
<ul style="list-style-type: none"> <li>• ^N/A^</li> </ul>		<ul style="list-style-type: none"> <li>• CO150A - Conduct of Operations / Technical Procedures - CONOPS - 2.p (1)-(9) / Expectations for the use of Technical Procedures</li> </ul>	

[http://estars.tl.gov/per/screens/printableper.cfm?perid=50127\[2/13/2017 1:16:54 PM\]](http://estars.tl.gov/per/screens/printableper.cfm?perid=50127[2/13/2017 1:16:54 PM])



**Attachment 1 (page 2 of 2)**

PER

		to perform operations	
<b>PER Screening Comments</b>			
1-30-17 PIE/CIM to			
<b>ORPS Code</b>	<b>Functional Area</b>	<b>Work Process</b>	<b>ISMS</b>
Not Applicable	Operations	<ul style="list-style-type: none"> <li>Routine Facility Operation</li> </ul>	
<b>PER Screening Chair</b>	<b>PER Screening Chair ID</b>	<b>PER Screening Chair Phone</b>	<b>PER Screening Date</b>
			01/30/2017
<b>PAAA REVIEW</b>			
<b>PAAA Screening</b>	<b>PAAA Codes</b>	<b>Function Codes</b>	
Not subject to PAAA			
<b>PAAA Cause Analysis Review</b>	<b>NTS Report Number</b>	<b>NTS Report Date</b>	
No			
<b>PAAA Screening Comments</b>			
1) Basis for PAAA screening is in file attached to PER. In file, see highlighted green text for non-compliance. 2) Approval per procedure TFC-ESHQ-PAAA-D-08 dated 7/19/2012 (paragraph 4.1.5-7).			
<b>PAAA Reviewer Name</b>	<b>PAAA Review Date</b>		
	01/30/2017		
<b>PAAA Approver Name</b>	<b>PAAA Approve Date</b>		
	01/30/2017		
<b>PIE/ CIM</b>			
<b>Evaluation of PIE/CIM Initiative</b>			
<b>Has the evaluation of this PER resulted in additional information that could affect the Central Shift Office (CSO) determination of operability or reportability?</b>		<b>Comments</b>	
No			
<b>Submitter Name</b>	<b>Submitter ID</b>	<b>Submitter Phone</b>	<b>Initial Submit Date</b>
<b>CAUSE CODES</b>			
<b>ATTACHMENTS</b>			
Link to PER			
PAAA_Screen_1-30-17.pdf			
2017-0089 originator contact .msg			
<b>AUDIT HISTORY</b>			
<b>Change Date</b>	<b>Auditor</b>	<b>Comments</b>	
01/26/2017 07:38		Initiator Tab initial submission.	
01/27/2017 02:25		SO Tab initial submission.	
01/30/2017 13:15		Screening Tab initial submission.	
01/30/2017 13:40		PAAA Tab initial submission.	
01/31/2017 10:03		Originator Contact Task Launched by	
01/31/2017 10:03		Responsible Manager Task Launched	

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

[http://estars.rl.gov/per/screens/printableper.cfm?perid=50127\[2/13/2017 1:16:54 PM\]](http://estars.rl.gov/per/screens/printableper.cfm?perid=50127[2/13/2017 1:16:54 PM])

**Attachment 2 (page 1 of 6)**

**Attachment 2 (page 2 of 6)**

**Attachment 2 (page 3 of 6)**

**Attachment 2 (page 4 of 6)**

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**Attachment 2 (page 5 of 6)**

**Attachment 2 (page 6 of 6)**

**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

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**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.

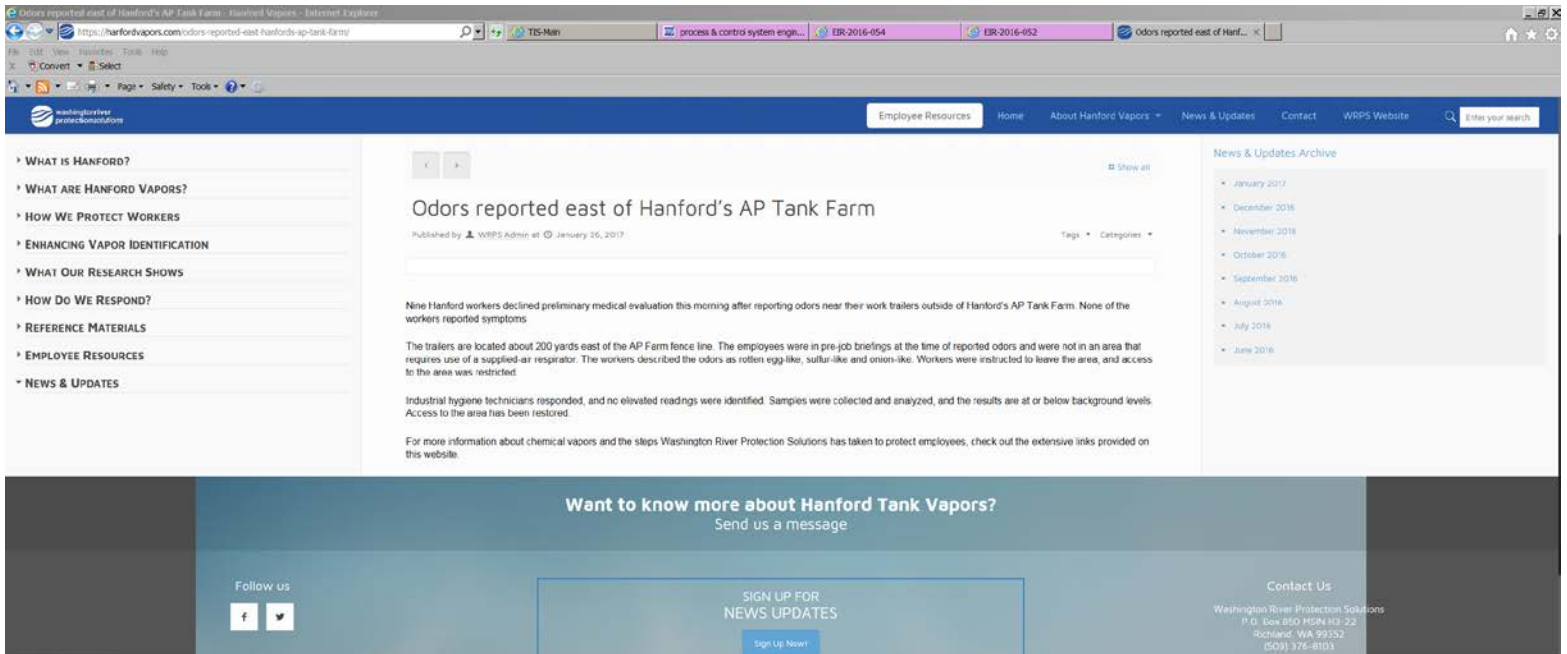
For more information about chemical vapors and the steps Washington River Protection Solutions has taken to protect employees, visit [hanfordvapors.com](http://hanfordvapors.com).



**Attachment 3 (page 2 of 2)**



# Attachment 4



**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 1 of 14)**

**Odor Response Card**

1. Contact CSM, [redacted] complete below bulleted information and map.

- Date and time odor was noticed 1-25-17 0730
- Your name and the work you were performing CIT/Safety
- Location of odors (mark area on map and wind direction) marked
- 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 ? Possible septic odor  
guess H<sub>2</sub>S dimethyl  
sulfide or dimethyl  
disulfide.
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/Weakness  Sore/Burning Throat  Difficulty Breathing  Watery/Irritated  
Eyes/Trouble with Vision  Tingling/Numbness/Paralysis  Rash/Itching No symptoms  
 Other \_\_\_\_\_

2. Send this card to the Central Shift Office.

Revised 2/9/15

**Attachment 9 (page 2 of 14)**

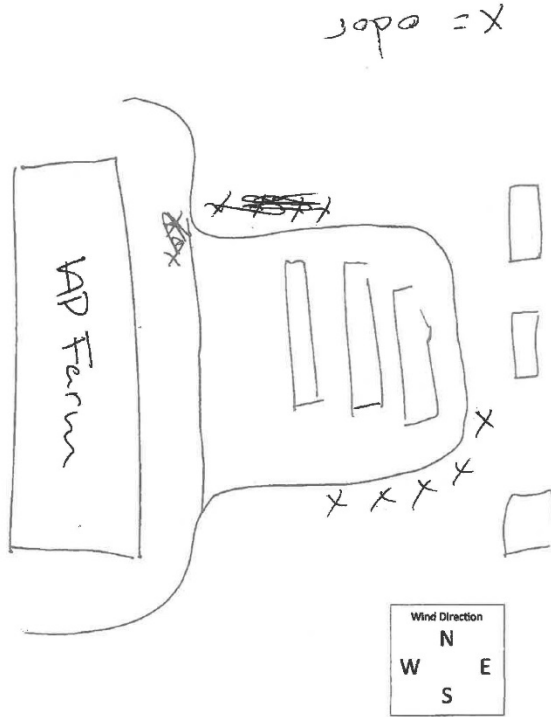
**Odor Response Card**

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [REDACTED] 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, [REDACTED] 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.





**Attachment 9 (page 3 of 14)**

**Odor Response Card**

1. Contact CSM, [REDACTED] complete below bulleted information and map.

- Date and time odor was noticed 01/25/17 0732 15H
- Your name and the work you were performin \_\_\_\_\_ PREVIOUS DISCUSSIONS FOR ART'S WORK TO BE IMPROVED IN PE/C TRUCKS @ GROW YARD
- Location of odors (mark area on map and wind direction) \_\_\_\_\_ PE & C PERSONNEL
- Name of others in or near the affected ar \_\_\_\_\_
- Was an IHT present? No
- Describe the odor  Sweet  Sour  Musty  Earthy  Metallic  Smoky  Rotten  Onion  
 Cleaning Solution  Ammonia  Other SULFUR
- Possible source UNKNOWN (TRANSFER TRUCK PLEKLE OVERNIGHT)
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/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.

Revised 2/9/15

**Attachment 9 (page 4 of 14)**

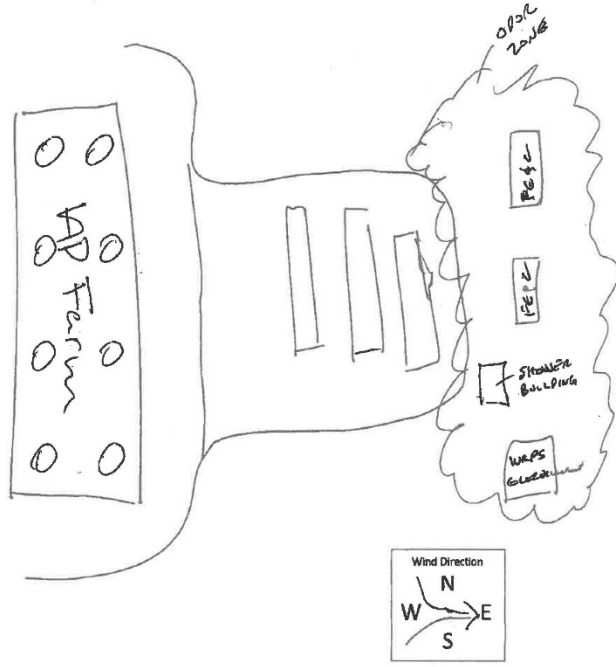
**Odor Response Card**

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.



**Attachment 9 (page 5 of 14)**

**Odor Response Card**

1. Contact CSM, [redacted] 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) on back
- Name of others in or near the affected area ferc crew
- 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/Drowsiness/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.

Revised 2/9/15

**Attachment 9 (page 6 of 14)**

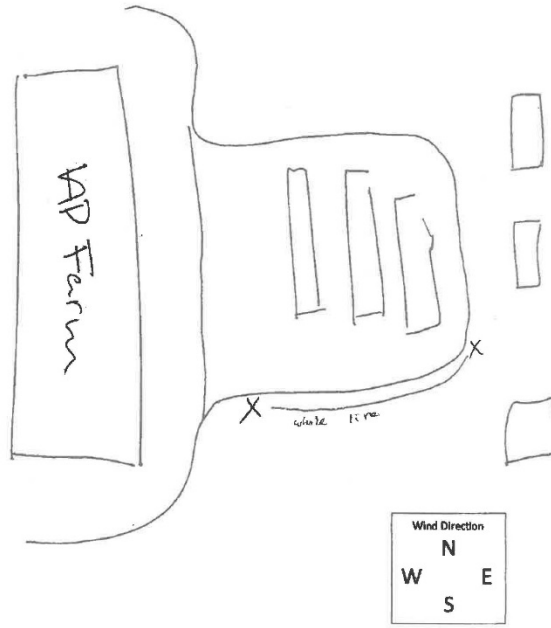
**Odor Response Card**

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [REDACTED] 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, [REDACTED] 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.



**Attachment 9 (page 7 of 14)**

**Odor Response Card**

1. Contact CSM, [redacted] complete below bulleted information and map.

- Date and time odor was noticed 1-27-17 7:30 am
- Your name and the work you were performing driving
- Location of odors (mark area on map and wind direction) East of BP Farm
- 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 no idea
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/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.

Revised 2/9/15

**Attachment 9 (page 8 of 14)**

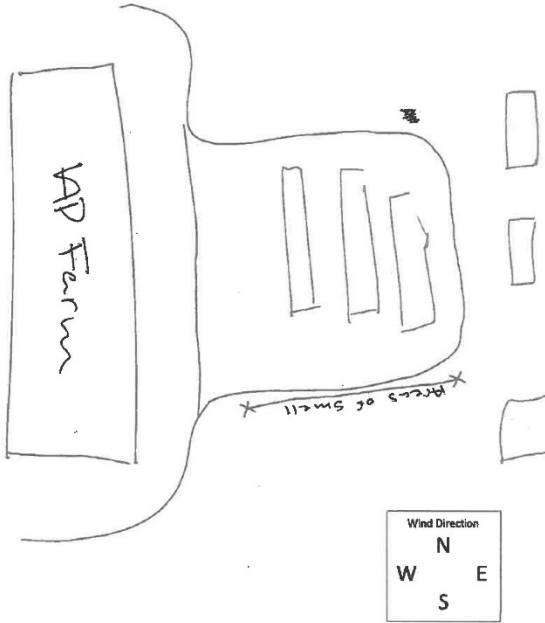
**Odor Response Card**

Odors Detected with NO  
Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [REDACTED] 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, [REDACTED] 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.



**Attachment 9 (page 9 of 14)**

**Odor Response Card**

1. Contact CSM, [redacted] 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 performi Banking W/O with crew (FWS)
- Location of odors (mark area on map and wind direction) Fore office north of Grant Loop
- Name of others in or near the affected area Fore crew driving Grant Loop
- Was an IHT present? No
- Describe the odor  Sweet  Sour  Musty  Earthy  Metallic  Smoky  Rotten  Onion  
 Cleaning Solution  Ammonia  Other \_\_\_\_\_
- Possible source ? Not Sure
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/Weakness  Sore/Burning Throat  Difficulty Breathing  Watery/Irritated  
Eyes/Trouble with Vision  Tingling/Numbness/Paralysis  Rash/Itching  
 Other Sweat odor

2. Send this card to the Central Shift Office.

Revised 2/9/15

**Attachment 9 (page 10 of 14)**

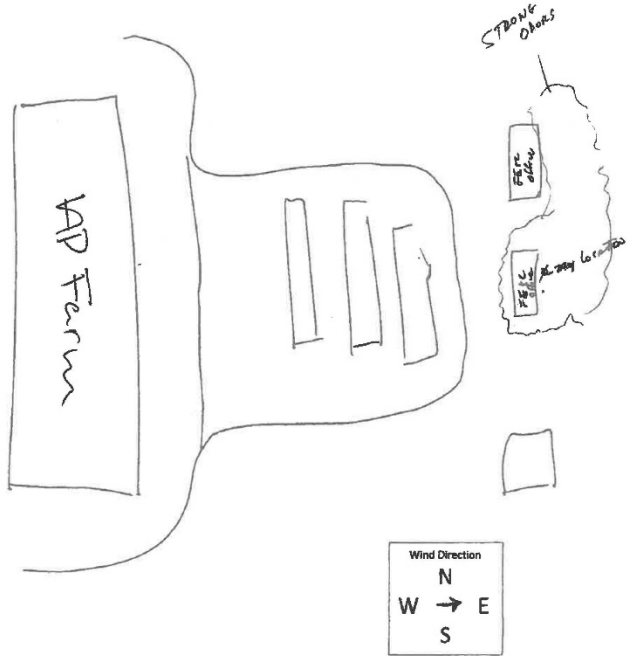
**Odor Response Card**

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] 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 IHT 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, [redacted] complete below bulleted information and map.

- Date and time odor was noticed 1-25-17 7:30
- Your name and the work you were performin Picking up Air Bottles
- Location of odors (mark area on map and wind direction) ~~west~~ EAST
- Name of others in or near the affected area RICKY EGGS
- 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/Drowsiness/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.

Revised 2/9/15

**Attachment 9 (page 12 of 14)**

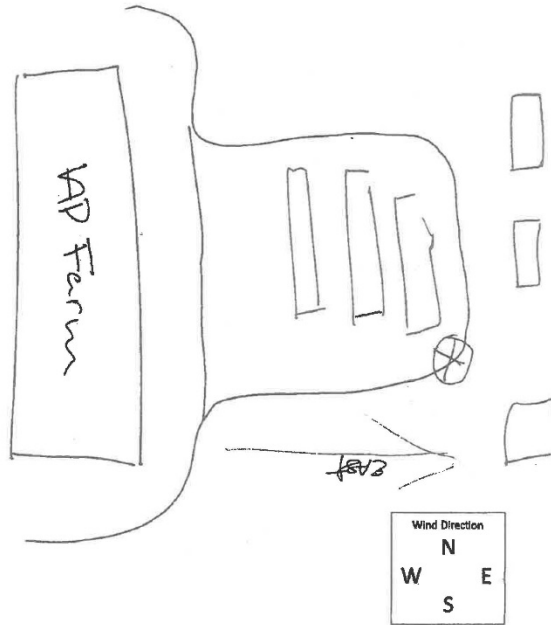
**Odor Response Card**

Odors Detected with *NO*  
Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] 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 IHT 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 1-25-17, 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  Smoky  Rotten  Onion  
 Cleaning Solution  Ammonia  Other \_\_\_\_\_ Eggs
- 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  Tingling/Numbness/Paralysis  Rash/Itching  
 Other \_\_\_\_\_

2. Send this card to the Central Shift Office.

Revised 2/9/15

**Attachment 9 (page 14 of 14)**

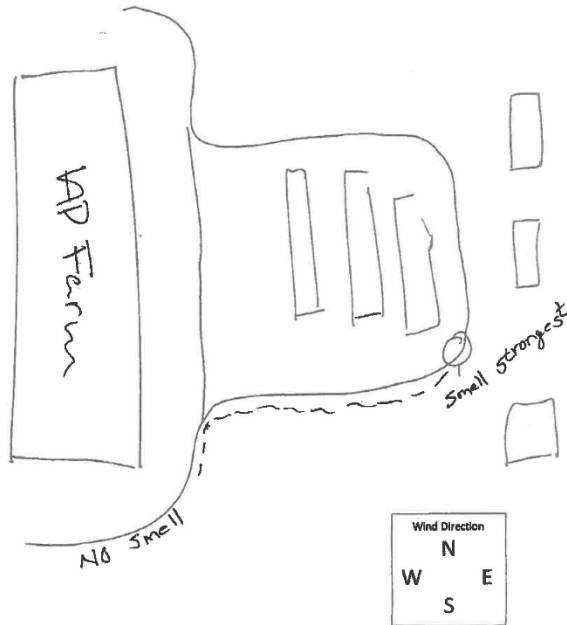
**Odor Response Card**

Odors Detected with **NO**  
Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] 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 IHT 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)**

Washington River Protection Solutions		PER Number: N/A
TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT		EIR Number: EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"		
<p>1. <b>Field response actions:</b> Event Summary (including number of workers involved and activity in progress):</p> <p>0730 01/25/2017 3 FE&amp;C employees were driving in route to, and 7 FE&amp;C employees were receiving a "pre-job discussion" outside of "FE&amp;C office trailers" NE of "wet grout loop" when all of them sensed a "rotten-egg, rotten, sulfur, onion, musty, possible septic" odor. None of the employees reported experiencing any symptoms, and all declined precautionary medical evaluation.</p> <ul style="list-style-type: none"> <li>• Was an IHT Present during initiating event? [ ] Yes [X] No           <ul style="list-style-type: none"> <li>◦ IH Monitoring/ Sample Survey Reports:               <ul style="list-style-type: none"> <li>- 17-00193 Enhanced Monitoring; A Complex Perimeter</li> <li>- 17-00293 AOP-015-Wet Grout Loop</li> <li>- 17-00298 Area Rae's Days</li> </ul> </li> </ul> </li> </ul> <p>Weather Conditions at Time of Event: <span style="float: right;">0730 01/25/2017</span></p> <ul style="list-style-type: none"> <li>• Weather station: <span style="float: right;">6</span></li> <li>• Wind Direction &amp; Speed : <span style="float: right;">7mph WSW (250°)</span></li> <li>• Barometric Pressure (steady/rising/falling) : <span style="float: right;">29.52 inHg and rising slightly</span></li> <li>• Temperature (°F) : <span style="float: right;">29.5</span></li> <li>• Humidity: <span style="float: right;">94.8%</span></li> </ul> <ul style="list-style-type: none"> <li>• Field Response Timeline:           <ul style="list-style-type: none"> <li>0730 PO IHT supervisor notifies EV Team IH, AN Team IH, COMs Team IH, and PO IH Manager of potential AOP-015 entry.</li> <li>0733 EV Team IH, AN Team IH, and COMs Team IH arrive at CSO.</li> <li>0734 FE&amp;C work crew supervisor notifies CSO that employees evacuating area. CSO sets initial stand-off distance at 100m.</li> <li>0734 PO IH Manager arrives at CSO.</li> <li>0735 PO IHT lead arrives at CSO. EV Team IH, AN Team IH, COMs Team IH request H<sub>2</sub>S instrumentation.</li> <li>0735 CSO notifies EV Team IH, AN Team IH, COMs Team IH and PO IH Manager that (AN Team OE) is FOS.</li> <li>0736 CSO makes all-call radio announcement: "Entering AOP-015, evacuate wet grout area"</li> <li>0737 CSO gives direction to Shift SOE of where to place blockades</li> <li>0739 Shift SOEs leave CSO to set up access restrictions.</li> <li>0741 SOEN: "Entering AOP-015 for unusual odors in the grout loop area. All personnel evacuate the grout loop area. CSM"</li> <li>0745 PO Shift IHTs arrive at CSO and briefed by EV Team IH, AN Team IH, COMs Team IH:               <ul style="list-style-type: none"> <li>• Sweep wet group loop and FE&amp;C Trailers by basketball court</li> <li>• Check out wet grout septic field and lift pump</li> <li>• H<sub>2</sub>S, NH<sub>3</sub>, VOC DRI monitoring</li> <li>• Pull grab air samples in area of concern and in "wet grout loop" trailer area.</li> </ul> </li> <li>0749 PO Shift IHTs leave CSO to gather supplies and prep instruments.</li> <li>0749 PO IH Manager contacts PO shift IHTs to require supplied air RPE as per TF-AOP-015 RPF Rev.3 Task 2</li> <li>0755 COMs Team IH contacts PO IHT Lead to confirm acquisition of H<sub>2</sub>S capable DRI.</li> <li>0755 CSO notifies DOE FR of AOP-015 entry.</li> </ul> </li> </ul>		

**Attachment 10 (page 2 of 20)**

Washington River Protection Solutions		PER Number: N/A
TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT		EIR Number: EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"		
<p>0808 Projects IH and IS arrive at CSO and brief EV Team IH, AN Team IH, COMs Team IH, and PO IH Manager:</p> <ul style="list-style-type: none"> <li>• Sulfur smell outside of trailer</li> <li>• Offered SUMMA canisters</li> </ul> <p>0812 Projects IS notifies EV Team IH, AN Team IH, and COMs Team IH that the FE&amp;C CIH/IS smelled the odor and was with the work crew at the time of the odor event.</p> <p>0814 AN Team IH calls FE&amp;C CIH/IS. FE&amp;C CIH/IS briefs AN Team IH:</p> <ul style="list-style-type: none"> <li>• Was present during odor event</li> <li>• H<sub>2</sub>S "septic odor"</li> <li>• Work crews were working on septic lift pump on 01/24/2016</li> <li>• Recommended using H<sub>2</sub>S sensor to locate and confirm possible odor source</li> </ul> <p>0817 AN Team IH briefs CSO on information from FE&amp;C CIH/IS.</p> <p>0836 Assistant BED leaves CSO to confirm boundary restriction.</p> <p>0837 PO Shift IHTs return to CSO to report observations:</p> <ul style="list-style-type: none"> <li>• H<sub>2</sub>S 0 ppm</li> <li>• NH<sub>3</sub> 0 ppm</li> <li>• VOC 0 ppb</li> <li>• 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.</li> </ul> <p>0839 AN Team IH directs PO Shift IHTs to analyze grab air samples with Miran SaphiRe, Lumex, and HAPSITE.</p> <p>0840 PO Shift IHTs leave CSO to continue response actions in 272AW IHT lab.</p> <p>0844 Odor response cards delivered to CSO by Projects IS</p> <p>0844 FE&amp;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.</p> <p>0846 FE&amp;C CIH/IS briefs EV Team IH, AN Team IH, and COMs Team IH on events and explains the odor response cards in detail.</p> <p>0848 FE&amp;C CIH/IS says odors were not from a tank farm source in his professional opinion.</p> <p>0855 AN Team IH contacts R&amp;C IH to acquire AreaRAE data from "wet grout loop".</p> <p>0856 Assistant BED returns to CSO and reports that access restriction looks good.</p> <p>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.</p> <p>0903 EIR Investigator requests briefing from EV Team IH, AN Team IH, and COMs Team IH.</p> <p>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.</p> <p>0913 Programs IS Manager contacts AN Team IH to get briefed of events and response actions.</p> <p>0943 R&amp;C IH contacts AN Team IH to coordinate delivery of "wet grout loop" AreaRAE data.</p> <p>0953 FE&amp;C Supervisor arrives at CSO to inquire about monitoring and sample results.</p> <p>0957 PO Shift IHT arrives at CSO and notifies EV Team IH, AN Team IH, and COMs Team IH that all DRIs posted.</p> <p>1003 Programs AOP-015 IH SME contacts CSO for briefing.</p> <p>1009 SOM 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.</p> <p>1021 AN Team Day Shift Manager contacts CSO to inquire about gaining access to their trailers.</p>		

**Attachment 10 (page 3 of 20)**

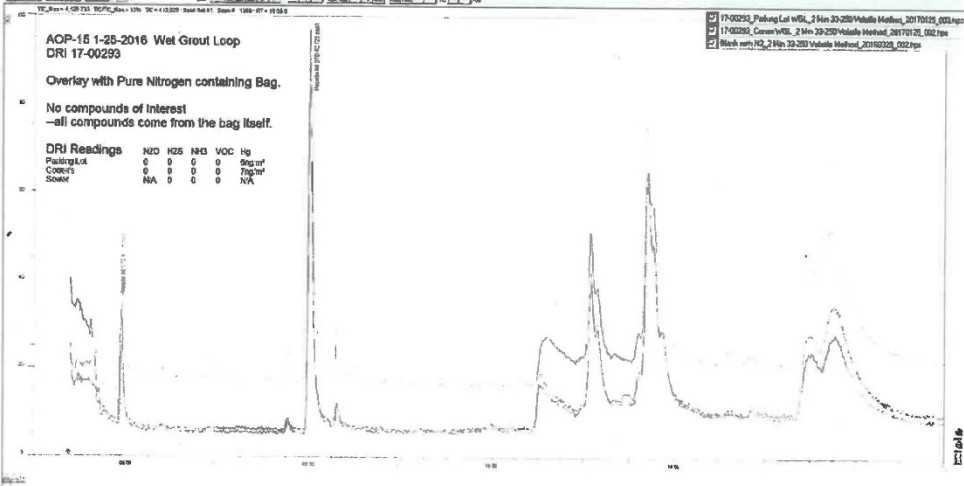
<b>Washington River Protection Solutions</b>		<b>PER Number:</b> N/A
<b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>		<b>EIR Number:</b> BIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"		
<p>1025 PO IH Manager informs AN Team IH, EV Team IH, and COMs Team IH of proposal to grant access AN Team Employees into the restricted access area with IHT escort to acquire sustenance. PO IH Manager requests AN Team IH to accompany PO Shift IHT, AN Team Employees, AN Team Maintenance Manager, and AN Team FWS and provide supervision and interpretation of DRI monitoring results in real time.</p> <p>1036 PO IH Manager informs AN Team IH and COMs Team IH that the PO IHT Lead will coordinate with the PO Shift IHTs to meet at 1100 for entry into restricted access area. Pre-Job briefing will occur at AN Team Area Day Shift Manager's office.</p> <p>1046 PO Shift IHTs arrive at MO267 to support entry into restricted access area.</p> <p>1047 AN Team IH, COMs Team IH, and PO Shift IHT leave MO267 to meet with AN Team FWS, Maintenance Manager, and AN Team Employees to support entry to retrieve personal items from restricted access area.</p> <p>1049 AN Team IH, COMs Team IH, and PO Shift IHT arrive at MO158 and brief AN Team FWS, AN Team Maintenance Manager, and AN Team Employees on entry plan:</p> <ul style="list-style-type: none"> <li>• IHTs will survey into restricted access area and monitor continuously.</li> <li>• Entry group will stay together and maintain accountability</li> <li>• Entry group will acquire personal items in a timely manner and exit in a group</li> <li>• IHTs will monitor continuously until all employees have egressed from restricted access area</li> </ul> <p>1051 PO Shift IHTs escort MSA Custodial employee to retrieve work vehicle.</p> <p>1052 WRPS General Delivery issued a statement from Communications and Public Relations on "Odors reported 1/25/17" to All WRPS employees.</p> <p>1053 PO Shift IHTs arrive back at MO158 to escort AN Team employees to MO159.</p> <p>1055 The AN Team employees, PO Shift IHTs, AN Team IH, and COMs Team IH depart MO158 as a group to MO159.</p> <p>1057 The AN Team employees, PO Shift IHTs, AN Team IH, and COMs Team IH enter MO159 to retrieve personal items</p> <p>1102 AN Team employees, PO Shift IHTs, AN Team IH, and COMs Team IH exited MO159, AN Team IH confirms everyone has egressed.</p> <p>1104 AN Team employees, PO Shift IHTs, AN Team IH, and COMs Team IH exit restricted access area.</p> <p>1104 Coms Team IH is briefed on readings from PO Shift IHTs</p> <ul style="list-style-type: none"> <li>• H<sub>2</sub>S 0 ppm</li> <li>• NH<sub>3</sub> 0 ppm</li> <li>• VOC 0 ppb</li> </ul> <p>1107 Coms Team IH reports to PO IH Manager that all employees have been escorted out of restricted access area.</p> <p>1210 MultiRAE with H<sub>2</sub>S sensor is delivered to ETF for use for work evolution.</p> <p>1215 AN Team Area Dayshift Manager contacts PO IH Manager to inquire about making another entry to retrieve another personal item for medical reasons.</p> <p>1245 PO Shift IHTs and AN Team IH arrive at MO158 to escort second group. Expectations for entry are re-iterated.</p> <p>1305 PO Shift IHTs and AN Team IH return to MO 158, briefs and escorts FE&amp;C Employees to retrieve personal items.</p> <p>1315 PO Shift IHTs and AN Team IH briefs and escorts additional personnel to remove personal vehicles and government vehicles from the restricted access area.</p> <p>1323 PO Shift IHTs and AN Team IH briefs and escorts FE&amp;C CIH/IS to retrieve personal items.</p>		
Page 3 of 20		A-6005-744 (REV 4)

**Attachment 10 (page 4 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>		PER Number: N/A
Time/Date & Event location: 0730 01/25/2017 "Wet Grout Loop"		EIR Number: EIR-2017-001
<p>1338 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:</p> <ul style="list-style-type: none"> <li>• NH<sub>3</sub> 0 ppm</li> <li>• VOC 0 ppb</li> </ul> <p>1345 PO Shift IHTs and AN Team IH return to MO267.</p> <p>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.</p> <p>1359 PO IH Manager calls CSO and notifies AN Team IH that AOP-015 can be exited on the authority of IH Programs Manager.</p> <ul style="list-style-type: none"> <li>• Results of HAPSITE analysis are at or below background levels.</li> <li>• Chromatograms and interpretation by Programs Chemist to follow.</li> </ul> <p>1400 AN Team IH briefs CSM:</p> <ul style="list-style-type: none"> <li>• HAPSITE results are at or below background levels</li> <li>• Recommends exiting as per TF-AOP-015 4.1.3.1</li> </ul> <p>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."</p> <p>1406 SOEN: "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"</p> <p>1412 CSM requests Shift SOE to follow up with barricade removal.</p> <p>1456 AN Team IH and COMs Team IH contacts R&amp;C IHT for AreaRAE survey number. All readings for AreaRAE located in the SE corner of 241-AP Farm were:</p> <ul style="list-style-type: none"> <li>• NH<sub>3</sub> 0 ppm</li> <li>• VOC 0 ppb</li> </ul>		
IH Author	(Print) _____ (Sign) _____	Phone _____ Date 01/25/2016



**Attachment 10 (page 5 of 20)**

<p>Washington River Protection Solutions  <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b></p>	<p><b>PER Number:</b> N/A</p> <p><b>EIR Number:</b> EIR-2017-001</p>																								
<p><b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"</p>																									
<p><b>Outgassing</b></p> <div style="border: 1px solid black; padding: 5px;"> <p>ACP-16 1-25-2016 Wet Grout Loop                      DRI 17-00293</p> <p>Overlay with Pure Nitrogen containing Bag.</p> <p>No compounds of interest                      —all compounds come from the bag itself.</p> <table border="1" style="font-size: small;"> <thead> <tr> <th>DRI Readings</th> <th>H2O</th> <th>H2S</th> <th>H2O</th> <th>VOC</th> <th>Hg</th> </tr> </thead> <tbody> <tr> <td>Packing Lot</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>Sig. m<sup>3</sup></td> </tr> <tr> <td>Comps</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>7.0g m<sup>3</sup></td> </tr> <tr> <td>Stack</td> <td>NA</td> <td>0</td> <td>0</td> <td>0</td> <td>N/A</td> </tr> </tbody> </table>  </div> <p>There were no chemicals other than those outgassing from the bag material were observed. Consequently, there was nothing detected at or above action levels.</p>		DRI Readings	H2O	H2S	H2O	VOC	Hg	Packing Lot	0	0	0	0	Sig. m <sup>3</sup>	Comps	0	0	0	0	7.0g m <sup>3</sup>	Stack	NA	0	0	0	N/A
DRI Readings	H2O	H2S	H2O	VOC	Hg																				
Packing Lot	0	0	0	0	Sig. m <sup>3</sup>																				
Comps	0	0	0	0	7.0g m <sup>3</sup>																				
Stack	NA	0	0	0	N/A																				
<p>IH (Pri)                      Author (Sig)</p>	<p>Phone _____</p> <p>Date <u>3/23/2017</u></p>																								
<p>3. <u>Additional Information:</u></p> <ul style="list-style-type: none"> <li>• Odor Response Cards received:</li> </ul>																									

**Attachment 10 (page 6 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	<b>EIR Number:</b> EIR-2017-001

**Odor Response Card**

1. Contact CSM, [REDACTED] complete below bulleted information and map.

- Date and time odor was noticed 01/25/17 0732 WH
- Your name and the work you were performing: PERFORM DISC-BUILDING FOR 217'S  
WORK TO BE COMPLETED IN
- Location of odors (mark area on map and wind direction): W/FC TRAILERS @ GRANT YARD
- Name of others in or near the affected area: W/FC PERSONNEL
- Was an IHT present? NO
- Describe the odor:
 

<input type="checkbox"/> Sweet	<input type="checkbox"/> Sour	<input type="checkbox"/> Musty	<input type="checkbox"/> Earthy	<input type="checkbox"/> Metallic	<input type="checkbox"/> Smoky	<input checked="" type="checkbox"/> Rotten	<input type="checkbox"/> Onion
<input type="checkbox"/> Cleaning Solution	<input type="checkbox"/> Ammonia	<input checked="" type="checkbox"/> Other	<u>SULFUR</u>				
- Possible source: UNKNOWN (TRANSFER TOOL PLACE OVERNIGHT)
- Your symptoms (if any):
 

<input type="checkbox"/> Headache	<input type="checkbox"/> Dizziness/Light-Headed	<input type="checkbox"/> Nausea	<input type="checkbox"/> Cough
<input type="checkbox"/> Fatigue/Drowsiness/Weakness	<input type="checkbox"/> Sore/Burning Throat	<input type="checkbox"/> Difficulty Breathing	<input type="checkbox"/> Watery/Irritated Eyes/Trouble with Vision
<input type="checkbox"/> Tingling/Numbness/Paralysis	<input type="checkbox"/> Rash/Itching	<input type="checkbox"/> Other	

2. Send this card to the Central Shift Office.

Revised 2/9/15

**Attachment 10 (page 7 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	
<div style="border: 1px solid black; border-radius: 15px; padding: 10px;"> <p style="text-align: center;"><b>Odor Response Card</b></p> <p><b>Odors Detected with <u>NO</u></b> Immediate symptoms</p> <ol style="list-style-type: none"> <li>1. Notify Immediate Supervisor.</li> <li>2. Contact Central Shift Manager, [REDACTED] Provide below bulleted information.</li> <li>3. Complete map, return to Central Shift Office as soon as practicable.</li> </ol> <p style="text-align: center;"><b>Odors Detected <u>WITH</u></b> Symptoms</p> <ol style="list-style-type: none"> <li>4. Notify Immediate Supervisor.</li> <li>5. Contact CSM, [REDACTED] complete below bulleted information and map.                             <ul style="list-style-type: none"> <li>• Your name and the work you were performing</li> <li>• Your symptoms (if any)</li> <li>• Date and time odor was noticed</li> <li>• Location of odors (mark area on map and wind direction)</li> <li>• Describe the odor</li> <li>• Name of others in or near the affected area</li> <li>• Was an IHT present?</li> <li>• Possible source</li> </ul> </li> <li>6. Provide information on the back of card.</li> <li>7. Send this card immediately to the Central Shift Office.</li> </ol> </div>	

**Attachment 10 (page 8 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	<b>EIR Number:</b> EIR-2017-001

**Odor Response Card**

1. Contact CSM, [redacted] completes below bulleted information and map.

- Date and time odor was noticed 1-25-17 0730
- Your name and the work you were performing: OH/Safety
- Location of odors (mark area on map and wind direction) marked
- 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 ? Possible septic odor  
guess H<sub>2</sub>S (mercaptan)  
Sulfide or dimethyl  
disulfide.
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/Weakness  Sore/Burning Throat  Difficulty Breathing  Watery/Irritated  
 Eyes/Trouble with Vision  Tingling/Numbness/Paralysis  Rash/Itching  NO symptoms  
 Other \_\_\_\_\_

2. Send this card to the Central Shift Office.

Revised 2/9/13

**Attachment 10 (page 9 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	<b>EIR Number:</b> EIR-2017-001

**Odor Response Card**

Odors Detected with NO Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [REDACTED] 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, [REDACTED] 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.

3000 = X

The map shows a rectangular area labeled 'AD Farm' on the left. To its right is a larger area containing several vertical rectangular shapes, possibly representing buildings or equipment. Several 'X' marks are scattered around this area, indicating where odors were detected. A handwritten note at the top right says '3000 = X'. A wind direction indicator at the bottom right shows a square with 'N' at the top, 'S' at the bottom, 'W' on the left, and 'E' on the right.


**Attachment 10 (page 10 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
	<b>EIR Number:</b> EIR-2017-001

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

**Odor Response Card**

1. Contact CSM, [REDACTED] 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 performin Driving
- Location of odors (mark area on map and wind direction) on back
- Name of others in or near the affected area ferc crew
- 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/Drowsiness/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.

Revised 2/9/15

**Attachment 10 (page 11 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A			
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"				
<p><b>Odor Response Card</b></p> <p>Odors Detected with <u>NO</u> Immediate symptoms.</p> <ol style="list-style-type: none"> <li>1. Notify Immediate Supervisor.</li> <li>2. Contact Central Shift Manager, [REDACTED] provide below bulleted information.</li> <li>3. Complete map, return to Central Shift Office as soon as practicable.</li> </ol> <p>Odors Detected <u>WITH</u> Symptoms</p> <ol style="list-style-type: none"> <li>4. Notify Immediate Supervisor.</li> <li>5. Contact CSM, [REDACTED] complete below bulleted information and map.             <ul style="list-style-type: none"> <li>• Your name and the work you were performing</li> <li>• Your symptoms (if any)</li> <li>• Date and time odor was noticed</li> <li>• Location of odors (mark area on map and wind direction)</li> <li>• Describe the odor</li> <li>• Name of others in or near the affected area</li> <li>• Was an IHT present?</li> <li>• Possible sources</li> </ul> </li> <li>6. Provide information on the back of card.</li> <li>7. Send this card immediately to the Central Shift Office.</li> </ol>	<p style="text-align: center;">Wind Direction</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="padding: 2px;">N</td></tr> <tr><td style="padding: 2px;">W      E</td></tr> <tr><td style="padding: 2px;">S</td></tr> </table>	N	W      E	S
N				
W      E				
S				

**Attachment 10 (page 12 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>		<b>PER Number:</b> N/A
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"		<b>EIR Number:</b> EIR-2017-001

**Odor Response Card**

1. Contact CSM, [REDACTED] complete below bulleted information and map.

- Date and time odor was noticed 1-27-17 7:30 am
- Your name and the work you were performing driving -
- Location of odors (mark area on map and wind direction) East of 08 Farm
- 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 no idea
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/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.

Revised 2/9/15



**Attachment 10 (page 13 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
	<b>EIR Number:</b> EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	

**Odor Response Card**

Odors Detected with *NO* immediate symptoms

1. Notify immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] 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 IHV present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.

Wind Direction

	N	
W		E
	S	

**Attachment 10 (page 14 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	PER Number: N/A
EIR Number: EIR-2017-001	
Time/Date & Event location: 0730 01/25/2017 "Wet Grout Loop"	

**Odor Response Card**

1. Contact CSM, [REDACTED] complete below bulleted information and map.

- Date and time odor was noticed 7:29 AM 1/05/17
- Your name and the work you were performing Refr. WO with chem (FWS)
- Location of odors (mark area on map and wind direction) Ferc office trailer at Grout Loop
- Name of others in or near the affected area Ferc area during Grout Loop
- Was an IHT present? No
- Describe the odor  Sweet  Sour  Musty  Earthy  Metallic  Smokey  Rotten  Onion  
 Cleaning Solution  Ammonia  Other \_\_\_\_\_
- Possible source ? Not Sure
- Your symptoms (if any)  Headache  Dizziness/Light-Headed  Nausea  Cough  
 Fatigue/Drowsiness/Weakness  Sore/Burning Throat  Difficulty Breathing  Watery/Irritated  
 Eyes/Trouble with Vision  Tingling/Numbness/Paralysis  Rash/Itching  
 Other Sweet odor

2. Send this card to the Central Shift Office. Revised 2/9/15

**Attachment 10 (page 15 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
	<b>EIR Number:</b> EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	

**Odor Response Card**

Odors Detected with **NO** Immediate symptoms

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager, [redacted] 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, [redacted] complete below bulleted information and step.
  - 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 IHT present?
  - Possible source
6. Provide information on the back of card.
7. Send this card immediately to the Central Shift Office.

AD Fern

STBWP Odors

Wind Direction

N
W → E
S

**Attachment 10 (page 16 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A <b>EIR Number:</b> EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	

**Odor Response Card**

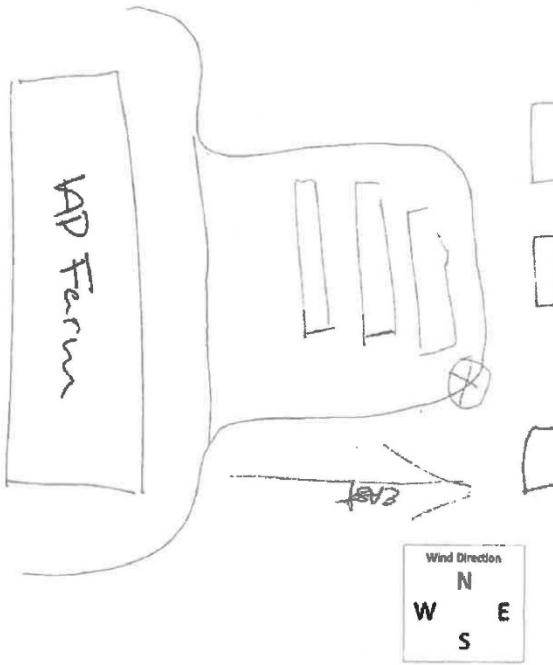
1. Contact CSM, [REDACTED] complete below bulleted information and map.

- Date and time odor was noticed 1-25-17 7:30
- Your name and the work you were performing Picking up Air Bottles
- Location of odors (mark area on map and wind direction) west of 15'
- Name of others in or near the affected area ROTTEN EGGS
- 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/Drowsiness/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.

Revised 2/9/15

**Attachment 10 (page 17 of 20)**

<b>Washington River Protection Solutions</b> <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	<b>PER Number:</b> N/A
	<b>EIR Number:</b> EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	
<div style="border: 1px solid black; border-radius: 15px; padding: 10px;"><p style="text-align: center;"><b>Odor Response Card</b></p><p>Odors Detected with <u>NO</u> Immediate symptoms</p><ol style="list-style-type: none"><li>1. Notify Immediate Supervisor.</li><li>2. Contact Central Shift Manager, [REDACTED] Provide below bulleted information.</li><li>3. Complete map, return to Central Shift Office as soon as practicable.</li></ol><p>Odors Detected <u>WITH</u> Symptoms</p><ol style="list-style-type: none"><li>4. Notify Immediate Supervisor.</li><li>5. Contact CSM, [REDACTED] complete below bulleted information and map.<ul style="list-style-type: none"><li>• Your name and the work you were performing</li><li>• Your symptoms (if any)</li><li>• Date and time odor was noticed</li><li>• Location of odors (mark area on map and wind direction)</li><li>• Describe the odor</li><li>• Name of others in or near the affected area</li><li>• Was an HWT present?</li><li>• Possible source</li></ul></li><li>6. Provide information on the back of card.</li><li>7. Send this card immediately to the Central Shift Office.</li></ol></div>	

**Attachment 10 (page 18 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	PER Number: N/A
EIR Number: EIR-2017-001	
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	

**Odor Response Card**

1. Contact CSM, [REDACTED] 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  Smoky  Rotten  Onion  
 Cleaning Solution  Ammonia  Other Eggs
- 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  Tingling/Numbness/Paralysis  Rash/Itching  
 Other \_\_\_\_\_

2. Send this card to the Central Shift Office.

Revised 2/9/15

**Attachment 10 (page 19 of 20)**

Washington River Protection Solutions <b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>	PER Number: N/A
EIR Number: EIR-2017-001	
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"	
<p><b>Odor Response Card</b></p> <p>Odors Detected with <u><b>NO</b></u> immediate symptoms</p> <ol style="list-style-type: none"> <li>1. Notify Immediate Supervisor.</li> <li>2. Contact Central Shift Manager, [REDACTED] Provide below bulleted information.</li> <li>3. Complete map, return to Central Shift Office as soon as practicable.</li> </ol> <p>Odors Detected <u><b>WITH</b></u> Symptoms</p> <ol style="list-style-type: none"> <li>4. Notify Immediate Supervisor.</li> <li>5. Contact CSM, [REDACTED] complete below bulleted information and map.                         <ul style="list-style-type: none"> <li>• Your name and the work you were performing</li> <li>• Your symptoms (if any)</li> <li>• Date and time odor was noticed</li> <li>• Location of odors (mark area on map and wind direction)</li> <li>• Describe the odor</li> <li>• Name of others in or near the affected area</li> <li>• Was an IHT present?</li> <li>• Possible source</li> </ul> </li> <li>6. Provide information on the back of card.</li> <li>7. Send this card immediately to the Central Shift Office.</li> </ol>	<p>The map shows a rectangular area labeled 'ADP Ferrous'. A dashed line indicates a path or boundary. A label 'No Smell' is written near the bottom left of the path. Another label 'Small Strongest' is written near the bottom right of the path. To the right of the main area, there are several small rectangular shapes representing buildings or structures. A wind direction indicator is shown as a square with 'N', 'S', 'E', and 'W' directions.</p>
<ul style="list-style-type: none"> <li>• Summary of IH Monitoring and Sampling Data:                             <ol style="list-style-type: none"> <li>a. Monitoring: Direct-reading instruments for ammonia, volatile organic carbons, and hydrogen sulfide did not indicate anything present.</li> <li>b. Sampling: The GC/MS analysis did not indicate any chemicals above action levels.</li> </ol> </li> <li>4. <u>Summary of Employee Reported Information (e.g., symptoms):</u> There were ten workers that experienced a rotten egg sewer gas odor. Three were driving when they smelled the odors. None of them reported symptoms and all declined a trip to HPMC.</li> <li>5. <u>Recommendations/Conclusions:</u></li> </ul> <p><u>Other:</u> Nothing else was determined that might be of use.</p>	

**Attachment 10 (page 20 of 20)**

<b>Washington River Protection Solutions</b>		<b>PER Number:</b> N/A
<b>TF-AOP-015 INDUSTRIAL HYGIENE INVESTIGATION REPORT</b>		<b>EIR Number:</b> EIR-2017-001
<b>Time/Date &amp; Event location:</b> 0730 01/25/2017 "Wet Grout Loop"		
<b>S&amp;H Program Mgmt.</b> (Print) (Sign)	None	3/9/17 Date