

EVENT INVESTIGATION REPORT

AOP-015 Entry Outside of 204AR

Event Investigation Report Number: EIR-2016-006

Event Investigation Team Lead

03/22/2016

Date

PER Responsible Manager

3/22/16

Date

PER No. WRPS-PER-2016-0408

EIR-2016-006 “AOP-015 Entry Outside of 204AR”**Investigation Summary**

On Thursday February 25, 2016 Washington River Protection Solutions (WRPS) two Health Physics Technicians (HPT) and two Industrial Health Technicians (IHT) were on morning break in the 204AR parking lot west of Buffalo when they encountered a “stronger than normal” odor, they were supporting construction efforts on the east side of Buffalo Road. The HPTs/IHTs reported the odor as a “body odor/onion” smell. The smell was discussed with the WRPS Construction Manager (CM) and the Grant Field Work Supervisor (FWS). The IHTs and the HPTs were in the process of contacting their management, WRPS IH professionals arrived as the WRPS CM was making contact to the Central Shift Office (CSO). The CM informed the CSO that the IHTs had metering equipment, but were not picking up any readings. Because the source of the odor was not readily identifiable the CSO made the determination to clear the area and enter into AOP-015. No symptoms were reported by the two HPTs or the IHTs who noticed the smell and all denied the offer for further evaluation at HPMC. WRPS CM discussed with the construction crew working east of Buffalo the AOP-15 and advised them to report any stronger than normal smells immediately. CM also discussed with the IHTs supporting the construction work to monitor the workers close proximity to ensure nothing was detected for the remainder of the shift. No findings were identified.

Industrial Hygiene (IH) responded to the shift office after receiving the Central Shift Managers (CSM) Shift Office Event Notification (SOEN) announcing entry of AOP-015 for the area between 204AR and 244AR. IH discussed location and sampling plan with CSM and then dispatched IHTs to take samples along the west side of Buffalo Rd. based on the description of where the HPTs encountered the odor. IH sampling results were returned at 1629, reporting samples at or below background levels.

Weather Information

At 1005 when the HPTs first reported the smell winds were out of the NW with an average wind speed of 4.6-4.2 mph with gusts up to 7.4 mph.

15-Minute Data Station #6 (200E) 2-25-2016									
Date/Time	Wind Speed	Direction	Gust	Avg Temp	Max Temp	Min Temp	Pressure	Humidity	Pressure
	(mph)	(deg)	(mph)	(F)	(F)	(F)	(millibars)	(%)	(inches)
2/25/2016 9:00	5.3	304.3	8.3	42.1	42.5	41.5	1002.807	67.6	29.61
2/25/2016 9:15	5.1	314.6	9.1	42.8	43.2	42.4	1002.625	66.7	29.61
2/25/2016 9:30	6.5	308.3	8.9	43.1	43.8	42.6	1003.021	65.4	29.62
2/25/2016 9:45	5.5	325.7	8.1	44.3	45.0	43.5	1002.620	63.7	29.61
2/25/2016 10:00	4.6	347.6	7.4	45.7	46.8	44.1	1002.960	61.4	29.62
2/25/2016 10:15	4.2	352.2	7.2	47.0	47.9	46.4	1002.986	59.5	29.62
2/25/2016 10:30	4.6	349.9	7.9	47.8	48.5	47.4	1003.123	56.9	29.62
2/25/2016 10:45	4.1	8.6	7.0	48.8	49.3	48.4	1002.841	53.7	29.61
2/25/2016 11:00	3.2	349.2	5.8	49.0	49.7	48.5	1002.479	52.1	29.60
2/25/2016 11:15	3.6	349.4	6.6	49.9	51.2	48.7	1002.733	51.7	29.61
2/25/2016 11:30	3.2	14.6	6.0	50.6	51.6	50.0	1002.476	48.2	29.60
2/25/2016 11:45	3.9	329.2	7.7	51.8	52.4	50.8	1002.304	46.0	29.60
2/25/2016 12:00	5.5	335.6	10.2	51.7	52.6	50.9	1002.195	45.5	29.59
2/25/2016 12:15	4.8	339.1	10.6	52.3	53.2	51.8	1001.936	43.9	29.59
2/25/2016 12:30	5.5	335.4	11.2	53.0	53.7	51.9	1001.893	43.3	29.59
2/25/2016 12:45	5.0	327.2	10.0	53.2	54.5	52.2	1001.911	43.1	29.59
2/25/2016 13:00	5.5	359.4	10.6	54.7	55.4	53.9	1001.332	41.4	29.57

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Map of Area

The following map shows a depiction of where the HPTs encountered the odor.



Photo of Area



EIR-2016-006 “AOP-015 Entry Outside of 204AR”**Event Timeline****02/25/2016**

- 1000 Work crew were on their morning break from construction efforts along the east side of buffalo road and went across the street to 204AR parking lot.
- 1005 HPTs encounter a foul smell and notify management. Management makes notification to the Central Shift Office.
- 1052 SOEN: Entered AOP-15 for stronger than normal odors around 204AR and south of 244AR. Access restricted. CSM
- 1056 IH reported to CSO and briefed: 4 individuals reported smelling “stronger than normal body odor, onion” at 244AR/204AR with no reported symptoms.
- 1102 R/C IH arrives at CSO with odor response cards. Briefs CSM that he personally noticed odors more abundantly when IHT/HPT vehicle was running and odor diminished when vehicle was shut off. IHT’s at the scene saw no direct readings on multiRAE Pro above 50ppb.
- 1103 CSM sent operator to cord off area and post “Restricted Access”
- 1107 IH/Safety Manager/IHT supervisor met with Shift IHT to give direction for DRI route and instructions to pull 2 bag samples for analysis.
- 1119 Shift IHT’s deployed.
- 1135 Receive phone call from R/C IH-IHT’s have car running across street from 244AR and still detect odors.
- 1137 Receive phone call from Construction IHT Stated that his DRI instrumented had been picking up between 30-50ppb on Multi-Rae Pro and would send DRI report to IH when completed.
- 1213 Bag samples on route for analysis at 2704HV
- 1214 CSM notified of non-detectable DRI readings in the area.
- 1215 Notified that 3 bag samples taken with the third at direction of affected IHT.
- 1629 Hapsite results completed and distributed.

02/28/2016

- 1845 Exited AOP-015.

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1. HPTs declined further evaluation at HPMC.
2. SOEN Entry into AOP-015 outside of 204AR.
3. Initiated EIR-2016-006
4. Restricted access to affected area.
5. IHT responded and took sampling bags. They walked the perimeter between 244AR and 204AR, staying south of 244AR and North of 204AR. No readings detected; 0 VOC and 0 Ammonia. The first bag sample was pulled south of 244AR, second bag was sampled north of 204AR, and third bag sample was pulled west of Buffalo Rd and sent to Hapsite for analysis.

Compensatory Measures

No compensatory measures were identified.

Discussion of Potential Causes

Based on a review of the following, the source of the odors encountered by the two HPTs was not able to be definitively determined.

1. Review of information and investigative IH monitoring and sampling of the area. All samples came back at or below background.
2. No fugitive emissions were identified.
3. Input from affected workers described the odor as “Bodily Odor” and “Onion”.
4. *“Only possible odor causing agent present in all three bags was carbon disulfide with a concentration below 1 ppb” – IH Analysis.*

Preliminary Extent of Condition Review

The AOP-015 entry was specific to the parking lot area west of Buffalo Rd. between AR204 and AR244. With no fugitive emission sources detectible and the potential cause being unknown the preliminary extent of conditions is bound to the parking lot area. There was discussion from the HPTs that there was a prior event in the same general region in the summer of 2015, but no documentation was found in prior EIRs or in the PER database.

Discussion of Barriers That Could Have Impacted the Cause

Impacting barriers is an unknown because the cause of the odors was not able to be definitively determined.

Conditions Adverse to Quality

1. There was a substantial delay from the time the Hapsite results were completed and the time the central shift office closed and exited AOP-015. Hapsite results were finished Thursday (2/25) at 1629 and the AOP-015 wasn't exited until Sunday (2/28) evening at 1845. *Issued PER-2016-0524 to address communication deficiencies.*

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Recommendations/Proposed Corrective Actions

There are no proposed corrective actions as the cause of the odors was not able to be definitively determined.

Attachments (As they apply):

1. Photos
2. Odor Response Card
3. Industrial Hygiene GCMS Sample Results

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Attachment 1
Photos

Area between 244AR and 204AR west of Buffalo Rd.



Overlay Positional Map



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Attachment 2
Odor Response Cards

Odor Response Card

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

- Your name and the work you were performing Down posting Southend at A Area for water install
- Your symptoms (if any) NONE
- Time odor was noticed 10:05
- Location of odors (mark area on map and wind direction) See other side
- Describe the odor Bad Body Odor
- Name of others in or near the affected area _____
- Was an IHT present? Yes
- Possible source 12-44 AR vault

2. Send this card to the Central Shift Office.

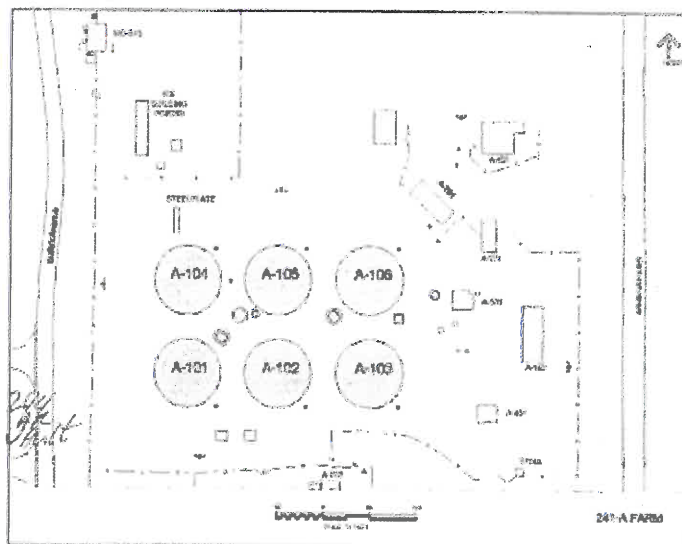
Odor Response Card

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)
 - 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.



Wind - West
5-10 mph

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Odor Response Card

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

- Your name and the work you were performing
at A Farm for trailer install
- Your symptoms (if any) None
- Time odor was noticed 10:05
- Location of odors (mark area on map and wind direction)
- Describe the odor Baby odor, occasional drain
- Name of others in or near the affected area
- Was an IHT present? YES
- Possible source 244-AR Vault

2. Send this card to the Central Shift Office

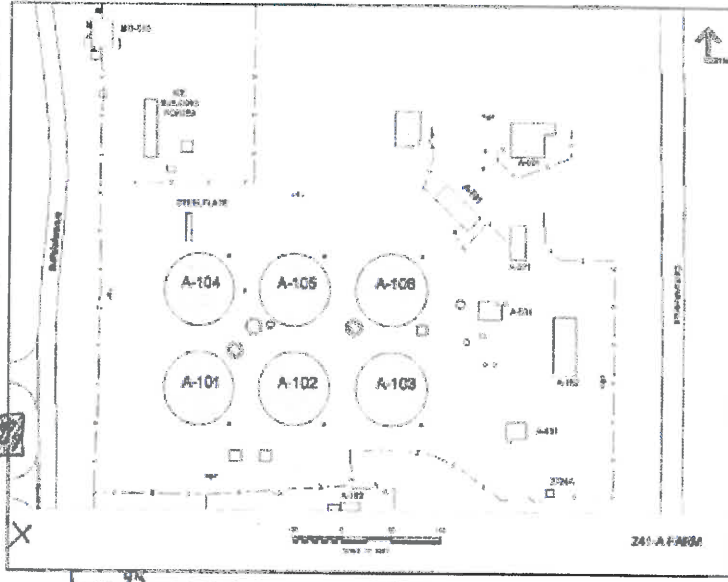
Odor Response Card

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

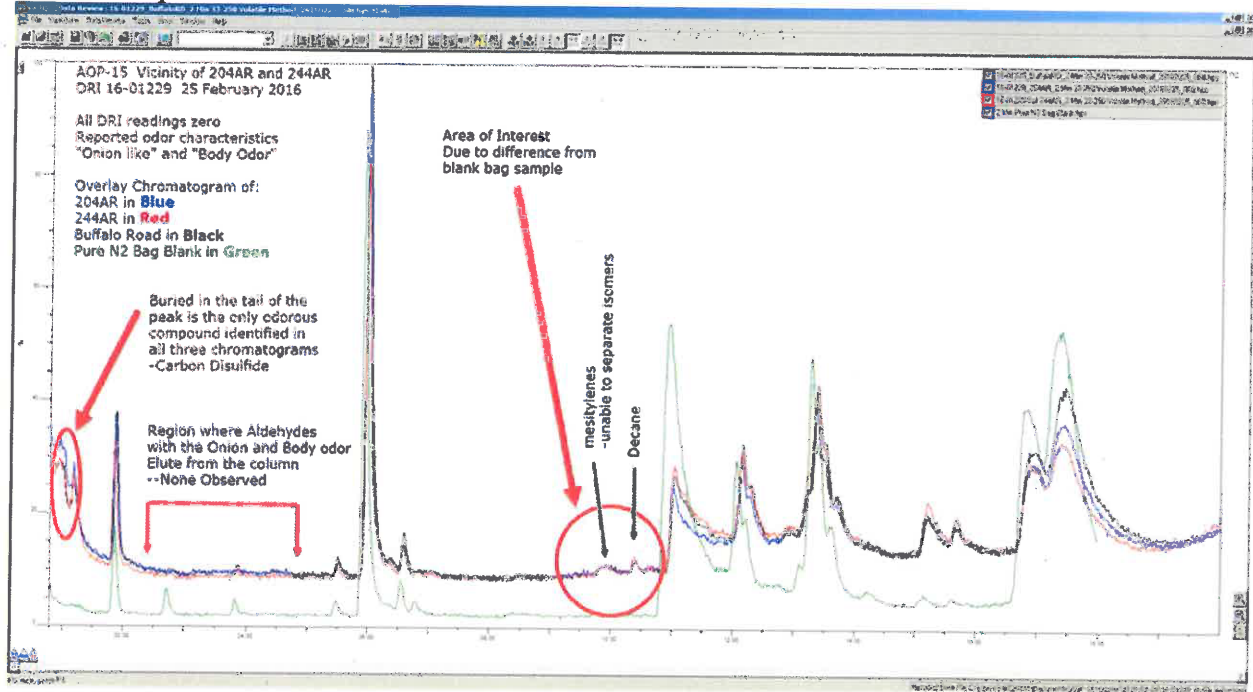
4. Notify Immediate Supervisor.
5. Contact CSM, [redacted] complete below bulleted information and map.
 - Your name and the work you were performing
 - Your symptoms (if any)
 - Time odor was noticed
 - Location of odors (mark area on map and wind direction)
 - Describe the odor
 - Name of others in 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.



wind 7 mph
gust to 13

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Attachment 3
Industrial Hygiene Sampling Plan

GCMS Sample Results:

Chromatograms are overlaid with a pure nitrogen blank sample to discount trace materials present in the bag itself.

- *No chemicals of concern identified.*
- *Only possible odor causing agent present in all three bags was carbon disulfide with a concentration below 1 ppb.*

Hapsite analysis provided by