

Hanford Tank Waste Operations & Closure
EVENT SUMMARY

NOTE: This form provides timely notification to management and documents preliminary information of an event that may require a more formal investigation. Details may change upon further examination and analysis. The following is a current status of available information:

1. **Project:** Maintenance Facilities 2. **Report Date:** 07/09/2025
3. **Investigation Title:** C-67 Response at M02522
4. **Investigation Report Number:** EIR-2025-054
5. **Responsible Manager:** [REDACTED]
6. **Event Investigator:** [REDACTED]
7. **Area / Building / Location:** 200E/MO-2522
8. **Date and Approximate Time of Event:** **Date:** 06/24/2025 **Time (military):** 1317 hours
9. **Associated Action Request (AR) Number:** ITDC-AR-2025-2226
10. **Associated Occurrence Report Number (if applicable):** N/A
11. **Event Investigation Meeting Held:** Yes [] or No [x] **Date:** N/A **Time (military):** N/A

12. Activity in Progress: *(What activity was under way, include procedures and work order numbers, as applicable)*

At the time of the event, 3 H2C workers were performing an Employee Accident Prevention Council (EAPC) building walkdown of the MO-2522 shower trailer in accordance with TFC-ESHQ-S_SAF-C-12, *Safety Inspections*.

13. Personnel Involved: *(Job positions, number of personnel, identify any support organizations or subcontractors)*

1 H2C Industrial Safety (IS) Professional
1 H2C Operations Engineer (OE)
1 H2C Radiological Control Technician (RCT)

14. What Happened: *(Provide a short discussion of what happened)*

At approximately 1317 hours on 06/24/2025 three workers encountered a stronger than normal odor described as "sulfur/septic, rotten, musty, sour, moldy" while performing an EAPC walkdown in MO-2522. Personnel also indicated odors were similar to what's observed when the p-traps had dried out. The workers did not report experiencing symptoms and were offered, yet declined, precautionary medical evaluation at the on-site medical provider.

At 1356 hours the Central Shift Manager (CSM) sent Shift Office Event Notification (SOEN), "Responding per TFC-OPS-OPER-C-67 stronger than normal odors reported inside of MO2522 shower trailer. Access restricted to MO2522."

Industrial Hygiene Technicians (IHTs) conducted TFC-OPS-OPER-C-67 response actions and performed direct reading instrument (DRI) monitoring at the affected area per Industrial Hygiene Sample Plan (IHSP) *POE-MULTI-TFCOPSOPER67*. Responding personnel did note odors were still observed in the affected area. All monitoring results were below action levels, with peak results of Ammonia of 1 Parts Per Million (PPM), Volatile Organic Compounds (VOCs) of .110 PPM and Hydrogen Sulfide <.1 PPM. IHTs completed TFC-OPS-OPER-C-67 response actions at approximately 1509 hours, however, access restriction was decided to remain in place until Facilities personnel could perform further investigation of the MO-2522 p-traps and perform remediation actions (i.e., add water) if necessary.

On 06/25/2025, at approximately 1202 hours, access to the MO-2522 shower trailer was restored after Facilities investigation of the functionality of the p-traps and filling the p-traps with water was completed.

Hanford Tank Waste Operations & Closure
EVENT SUMMARY

15. Where Did It Happen: *(Description of work area and working conditions. Include information on weather conditions, PPE, Postings, etc.)*

The odor event occurred in the 200 East Area of the Hanford site at the MO-2522 shower trailer building.

The workers performing the EAPC walkdown were wearing street clothes and were in a work location that is not posted as a radiological controlled area. Workers were not in an area requiring the use of respiratory protection or a personal ammonia monitor (e.g., VentisPro).

The Hanford Site Meteorological Station #6 in the 200 East area was utilized for outdoor weather details at the time odors were reported. The Hanford Site Meteorological Station #6 indicated the following weather conditions at 1320 hours on 06/24/2025:

- Temperature: 91°F
- Relative Humidity: 19%
- Wind Speed: 4 mph
- Wind Direction: from Northeast
- Barometric Pressure: 29.18 inches of mercury and falling.

16. Impact to Facility: *(Caused by the event or a description of known consequences)*

No impacts to facility safety status, operational capabilities, or facility reliability occurred.

Access to the MO-2522 shower building was restricted until TF-OPS-OPER-C-67 response actions were completed. No additional impacts to scheduled work evolutions occurred.

17. Immediate Actions Taken: *(List immediate actions taken to stabilize the scene or respond to the event)*

- The workers were offered precautionary medical evaluation at on-site medical provider but declined evaluation.
- CSM restricted access to MO-2522, *Response to Stronger than Normal Odors TFC-OPS-OPER-C-67.*
- IHTs performed DRI monitoring per IHSP *POE-MULTI-TFCOPSOPER67.*
- Initiated EIR-2025-054, *C-67 Response at M02522.*

18. Compensatory Actions Taken:

None.

19. Remedial Actions Taken:

Facilities personnel filled the MO-2522 p-traps with water. The Area Dayshift Manager (ADM) walked down the affected area after water was added to the p-traps and did not detect residual odors.

20. Key Elements of the Investigation: *(Key investigation points)*

To summarize the conclusion of IHIR-00118, "*TFC-OPS-OPER-C-67 MO2522*", odors were consistent with a dried p-trap and the likely cause of the odor was determined to be resultant of passive ventilation of sewer gases through the p-trap. This location was also noted as having a history of similar odor events resultant of dried p-traps. The review of the atmospheric conditions around the reported time of the event indicates the cause of the odor is unlikely to be from Tank Farm emissions. The atmospheric mixing height was 1400 feet above grade and the VMDS/VMDS Alternate Monitoring Ammonia concentrations were well below the high alarm set points, therefore, the cause of the odor is unlikely to be from actively ventilated tanks. Additionally, there were no passively ventilated tank farm tanks upwind of the Affected Area, so the cause of the odor is unlikely to be from a passively ventilated tank waste.

DRI monitoring performed during response actions did not indicate further action was necessary to protect worker safety and health, however, access to MO-2522 remained restricted until the p-traps were filled with water and remaining odors had dissipated.

Hanford Tank Waste Operations & Closure EVENT SUMMARY

The following considerations support the IHIR-00118 conclusions:

- 1) The DFAS dashboard provides an Exhauster Potential Exposure Zone (PEZ) Model of exhaust plumes at the reported time of the event based on wind speed, wind direction, mixing height, and atmospheric stability class (Refer to Figure 1). Evaluation of the weather details determined the cause of the odor event was unlikely to be resultant of Tank Farms exhauster emissions based on the location of the reported odors and mixing height (1400 feet above grade).

Figure 1 illustrates 200 East Area (with 241-AW, 241-AP, 241-AN, 241-AY/AZ, 241-AX, 241-A Farm projected plume models) at 1317 06/24/2025 from DFAS application, powered by SmartSite™. NOTE: 241-AN, 241-A, 241-AW Farm Exhausters are not connected to the DFAS; however, an approximate exhauster plume was added for each based on other modeled plumes.

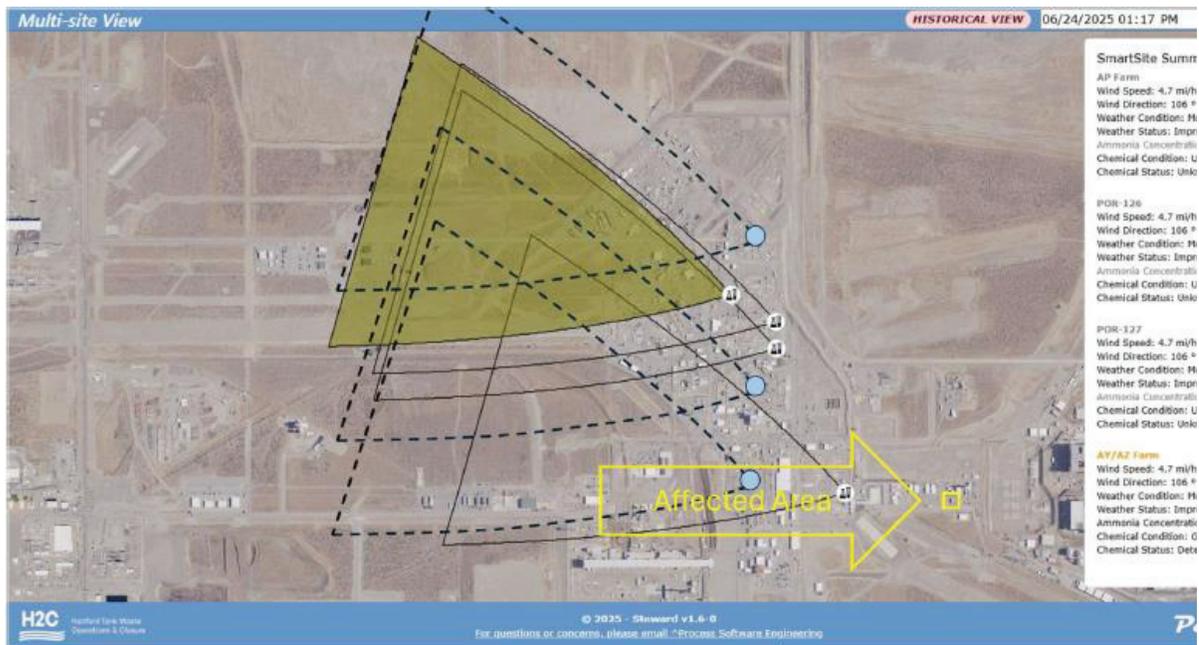


Figure 1- DFAS Exhauster Potential Exposure Zones and Reported Odor Location

- 2) While the reported odor descriptions are inconsistent with Tank Waste Chemical Vapors, due to the location odors were reported being in proximity to the Tank Farms, monitoring for Tank Waste Chemical Vapors was still conducted during the TFC-OPS-OPER-C-67 response.

Because nitric acid was utilized in nearly all production processes that generated tank waste, and the most common by-product of those processes was reduction of nitrate ion to ammonia during the dissolution (oxidation) of irradiated fuel, ammonia is the most prevalent chemical of potential concern (COPC) found in all tanks. Therefore, ammonia is utilized as a sentinel indicator for Tank Waste Chemical Vapor COPCs and DRIs equipped with an ammonia sensor are utilized at a minimum when monitoring for tank waste chemical vapors/COPCs. Monitoring for VOCs utilizing DRIs equipped with 10.6 eV photoionization detectors provides further indication for Tank Waste Chemical Vapors/COPCs.

Investigative TFC-OPS-OPER-C-67 DRI area monitoring was performed in the general areas around the MO-2522 shower trailer. Investigative TFC-OPS-OPER-C-67 DRI area monitoring indicated peak concentrations were below action levels for ammonia (1 ppm) and VOCs (0.110 ppm), therefore, providing further indication the cause of the reported odors was unlikely to be resultant of Tank Farm exhauster emissions.

**Hanford Tank Waste Operations & Closure
EVENT SUMMARY**

- 3) The Affected Area has a long history of similar odors or odors that have been found to be associated with sources other than Tank Farm vapor source emissions, such as septic tank gaseous emissions. The initiating event was a stronger than normal "sewer/septic, rotten" odor which are indicative of organic sulfur-based compounds (e.g., hydrogen sulfide) resultant of nearby septic related equipment. The closest sewer system to the Affected Area, and connected to the Affected Area's drains, is the 2607-E10 Septic Tank system (~100' downwind).

Additionally, transient odors are an anticipated occurrence when a p-trap in drainage piping dries out. Hydrogen sulfide, ammonia, and VOC gas production rate is a function of bacteria/organics concentrations, temperature, and dissolved oxygen. Therefore, low levels of hydrogen sulfide gas (consistent with Affected Workers' odor description), ammonia, and various VOCs may be produced by the stagnant water and/or from a dried-out p-trap.

Hydrogen sulfide gas has an offensive distinct rotten egg odor that is perceived by the human olfactory sense at very low concentrations, with the lower range of odor values for hydrogen sulfide being 0.00004 ppm. Ammonia gas has an offensive pungent, irritating odor that is detectable at very low concentrations, with the lower range of odor values being 0.043 ppm.

The resolution of DRI equipped with hydrogen sulfide (0.1 ppm) and ammonia (1 ppm) sensors are comparatively inadequate as a detection tool at the concentrations perceived by the human olfactory sense. While the resolution of the DRI equipped with these sensors are insufficient to detect concentrations at the lower range of odor threshold values, they are sufficient to detect hydrogen sulfide and ammonia at concentrations that are still well below levels of worker exposure concern and their established occupational exposure limits (OELs).

The event response DRI results were less than detectable in the affected area for hydrogen sulfide (<0.01 ppm) and were below action limits for ammonia (1 ppm) and VOCs (0.110 ppm).

- 4) At the approximate time of the event, the Barometric Pressure was decreasing. When the outside air pressure changes, there is a small pressure imbalance between the headspace of a passively ventilated tank and the outside air. This imbalance pushes air into the tank or draws it out (barometric breathing). As the outside air pressure was decreasing at the time of the event, passively ventilated tanks, such as septic tanks, draw air out of the tank ("breathing-out"). The responding team did note sewer odors. Therefore, the cause of the odors has potential to be from septic tank gaseous emissions, via barometric breathing and/or dried-out p-traps, from the shower drains located inside the MO-2522 Shower Trailer at that time.
- 5) Memo WRPS-1904672.1, TANK FARM EXHAUST STACK CONCENTRATION ALARM/ ACTION LEVELS FOR AMMONIA establishes stack alarm/action set points for tank farm exhausters. Based on the predicted ammonia concentration at unspecified ground receptors utilizing the Quantitative Risk Assessment (QRA) model prediction. The exhauster high level alarm was established at concentrations where the predicted ground receptor ammonia concentration of 2.5 ppm (or 10% of the established Occupational Exposure Limit for ammonia) could be observed.

The exhauster high level alarm conservatively established for A Complex (excluding A farm) is 460 ppm. According to the Vapor Monitoring and Detection System (VMDS), the ammonia concentration observed at the time of event occurrence was 27.72 ppm at the 241-AN exhauster and 16.273 ppm at 702-AZ exhauster. The VMDS was out-of-service for the 241-AW exhauster, 241-AP exhauster, POR-126 exhauster, and POR-127 exhauster, therefore, alternate readings were acquired once per calendar day in accordance with TF-OPS-IHT-037, *IHT Ammonia Monitoring on Exhausters*, and ARP-T-041-00002. The highest ammonia concentrations observed between 06/17/2025 and 06/24/2025 was 7 ppm at the 241-

**Hanford Tank Waste Operations & Closure
EVENT SUMMARY**

AW exhauster, 28 ppm at the 241-AP Exhauster, 0 ppm at the POR-126 exhauster, and 0 ppm at the POR-127 exhauster. Conservatively utilizing the higher ammonia concentration observed in the 241-AP exhauster, a predicted ground receptor ammonia concentration of 0.152 ppm (or 0.61% of the established Occupational Exposure Limit for ammonia) would be expected if AN, AY/AZ, AX, or AW farm exhauster emissions were present.

The exhauster high level alarm conservatively established for A farm is 160 ppm. According to the Vapor Monitoring and Detection System (VMDS), the ammonia concentration observed at the time of event occurrence was 14.68 ppm at the POR-518 exhauster and 10.10 ppm at the POR-519 exhauster. Thus, a predicted ground receptor ammonia concentration of 0.23 ppm (or 0.92% of the established Occupational Exposure Limit for ammonia) would be expected if A tank farm exhauster emissions were present.

Therefore, providing additional indication the reported odor was unlikely to be resultant of Tank Farms exhauster emissions.

21. Positive Aspects Identified:

Personnel responded promptly to the event, implementing the applicable TFC-OPS-OPER-C-67 procedure and response actions.

22. Key Take Aways / Learning Opportunities:

Infrequently accessed and utilized trailers can result in the p-trap of drainage piping drying out from nominal water additions to the system.

23. Event Investigation:

- An Event Investigation will be completed per [TFC-OPS-OPER-C-14](#).
- This event will be managed by another process, i.e., Operability Evaluation, Engineering Technical Evaluation, etc.
- This event does not require continuation of the Event Investigation process.

Responsible Manager Approval:

Per Telecom Approval

Name (First, Middle Initial, Last)

Signature / Date

CAS Manager Approval:

Name (First, Middle Initial, Last)

Signature / Date

INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR)

Event Title: TFC-OPS-OPER-C-67 Response at MO2522	IHIR Number: IHIR-00118
	IHEI Number: N/A

Date: 06/24/2025	Time: 1317	Location: MO2522
----------------------------	----------------------	----------------------------

Event Summary and Timeline:

Event Summary:

At approximately 1317 on 06/24/2025 three workers encountered a stronger than normal "sulfur/septic, rotten, musty, sour, moldy" odor while performing an Employee Accident Prevention Council (EAPC) walkdown in MO2522. The workers did not report symptoms. The workers were offered precautionary medical evaluation at the on-site medical provider and declined. Access to the area was restricted.

Field Response Timeline:

- 1326 Central Shift Manager (CSM) contacts Level 3 Production Operations (PO) Safety and Health (S&H) Manager 1 of reported odor and requests Industrial Hygiene (IH) support.
- 1330 Level 3 PO S&H Manager 1 notifies Acting Level 3 Direct Feed Low Activity Waste (DFLAW) S&H Manager of reported odor and to support CSM.
- 1330 Acting Level 3 DFLAW S&H Manager communicates to PO Industrial Hygienists (IHs) 1 and 2 to support CSM.
- 1331 Level 3 PO S&H 1 attempts to contact PO IHs.
- 1331 Level 3 PO S&H Manager 1 notifies Level 3 PO S&H Manager 2 of reported odors and to report to Central Shift Office (CSO).
- 1332 PO IH 1 and 2 arrive at the CSO.
- 1334 CSM briefs PO IH 1 and 2 that workers on an EAPC walkdown encountered a septic-like odor in the MO2522 shower trailer. Suspected odor source was a failed p-trap. Location has a history of similar odor issues.
- 1334 PO S&H Managers informed PO IH 2 that Shift Industrial Hygiene Technicians (IHTs) were directed to prepare Direct reading instrumentation (DRI) equipped with a hydrogen sulfide sensor, ammonia sensor, and volatile organic compound (VOC) 10.6 electron-volt (eV) photoionization detector (PID).
- 1335 CSM has phone call with Affected Worker Point of Contact, asked if any symptoms, answer was no. CSM requested workers to go to CSO and fill out odor vapor response cards (OVRC). Determined location is owned by DFLAW.
- 1336 Level 3 PO S&H Managers and Acting Level 3 DFLAW S&H Manager arrive at CSO.
- 1337 PO IH 1 requests Industrial Hygiene Event Investigation Report (IHIR) number.
- 1341 PO IH 1 asks CSM for approximate time of event, CSM indicated 1320.
- 1341 PO IH 1 contacts Hanford Meteorological Station for weather information for Station #6 at 1320 on 06/24/2025:
 - Temperature: 91°F
 - Relative Humidity: 19%
 - Wind Speed: 4 mph
 - Wind Direction: from Northeast
 - Barometric Pressure: 29.18 inches of mercury and falling
- 1342 PO IH 1 attempts to check Data Fusion Advisory System (DFAS), powered SmartSite™, technical difficulties are encountered including access. PO IH 1 troubleshoots.
- 1345 PO IH 1 checks DFAS, powered SmartSite™, for current weather data.
 - Wind Speed: 5.3 mph
 - Wind Direction: 62° (out of East Northeast)
 - Mixing Height: 1400 feet above grade
 - Stability Class: A (extremely unstable conditions)
- 1346 PO IH 1 creates SWIHD Survey 25-04563 for responding IHT and notifies CSM of survey number.
- 1347 PO IHs receive and review completed OVRCs to verify required response instrumentation based on proximity to tank farms and descriptors from OVRC "sewer/septic and rotten" and to confirm no reported symptoms. Additional descriptors included dried out p-trap, moldy, and musty.
- 1350 Level 3 PO S&H Manager 1 notifies Level 2 IH Manager of reported odor and TF-OPS-OPER-C-67 response.
- 1355 Shift IHT arrives at the CSO.

Field Response Timeline continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

Field Response Timeline (continued):

- 1355 PO IH 1 checks Vapor Monitoring Detection System (VMDS) exhauster ammonia readings on 06/24/2025 @ 1355:
- POR518 (241-A): 24.886 ppm
 - POR519 (241-A): 13.206 ppm
 - 241-AN: 27.473 ppm
 - 241-AP: N/A
 - 241-AW: N/A
 - POR126 (241-AX): N/A
 - POR127 (241-AX): N/A
 - 702AZ (241-AY/AZ): 15.62 ppm
 - 241-SY: N/A
- 1356 Shift Office Event Notification (SOEN): " Responding per TFC-OPS-OPER-C-67 for stronger than normal odors reported inside of MO2522 shower trailer. Access restricted to MO2522. CSM"
- 1359 Level 3 PO S&H Manager 1 notifies Level 1 Environmental, Safety, Health, & Quality (ESH&Q) Manager, Level 1 ESH&Q Deputy Manager, Level 2 IH Manager of reported odor, ongoing TF-OPS-OPER-C-67 response, descriptor of odor type, number of employees, no symptoms reported, and workers declined medical.
- 1419 CSM and PO IH 1 sign TFC-OPS-OPER-C-67 Attachment A Sheet 1 of 2, Response Plan.
- 1423 PO IHs brief response team
- Level 3 PO S&H Manager 2, 1 IHT
 - Monitor per IHSP-POE-MULTI-TFCOPSOPERC67:
 - o Monitor perimeter then monitor for entry.
 - o DRI equipped with the following sensors:
 - Hydrogen Sulfide
 - Ammonia
 - VOC 10.6 eV PID
 - o Contact IH and CSM if action limit met or exceeded.
 - Respiratory Protection Equipment not required, Voluntary Use
 - Obtain photos
 - No known location hazards or radiological postings, contact IH and CSM if unexpected hazards are encountered.
- 1423 Response team departs CSO.
- 1452 Response team calls to clarify that access to trailer is locked on east side door.
- 1509 Level 3 PO S&H Manager 1 updates Level 1 ESH&Q Manager, Level 1 ESH&Q Deputy Manager, and Level 2 IH Manager that monitoring is complete, results were less than action limits, once post function tests received the response will be completed. CSM will be requesting a Facilities action to investigate the p-traps.
- 1509 Responding IHT confirms the instrument passed post-use function test and communicates peak readings observed. Highest readings were observed in the south shower room:
- Hydrogen Sulfide <0.1 ppm
 - Ammonia 1 ppm
 - VOC 10.6 eV PID 0.110 ppm
- 1520 Response team returns to CSO and briefs PO IHs and CSM on response.
- 1528 Level 3 PO S&H Manager 1 updates Level 1 ESH&Q Manager, Level 1 ESH&Q Deputy Manager, and Level 2 IH Manager that access restriction will remain in place pending Facilities investigation.
- 1533 CSM and PO IH 1 sign TFC-OPS-OPER-C-67 Attachment A Sheet 2 of 2, Response Plan

Field Response Timeline Acronyms:

CSM	Central Shift Manager	mph	miles per hour
CSO	Central Shift Office	OVRC	Odor-Vapor Response Cards
DFAS	Data Fusion Advisory System	PID	photoionization detector
DLAW	Direct Feed Low Activity Waste	PO	Production Operations
DRI	direct reading instrument	ppm	parts per million
ESH&Q	Environmental, Safety, Health, & Quality	S&H	Safety & Health
eV	electron-volts	SOEN	Shift Office Event Notification
IH	Industrial Hygienist/Industrial Hygiene	SWIHD	Site Wide Industrial Hygiene Database
IHIR	Industrial Hygiene Event Investigation Report	VMDS	Vapor Monitoring Detection System
IHT	Industrial Hygiene Technician	VOC	Volatile Organic Compound

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Sampling/Monitoring Results:

Direct Reading Instrument Monitoring Results:

- Monitoring was performed around the perimeter of the Affected area. Once the exterior had been cleared, the Response Team cleared the south shower room and then the north shower room.
- Peak readings during response, associated with south shower room:
 - o Ammonia: 1 ppm
 - o Volatile Organic Compounds (10.6 eV lamp): 0.110 ppm
 - o Hydrogen Sulfide: less than 0.1 ppm

SWIHD References:

Event Response Site Wide Industrial Hygiene Database (SWIHD) Direct Reading Instrumentation (DRI) Survey:

- # 25-04563 "TF-OPS-OPER-C-67 Odor Response at MO2522"

Additional Information:

06/25/2025

1202 SOEN: "Access to MO-2522 Shower Trailer has been restored. CSM"

1556 PO IH 1 contacts the CSM via phone and confirms that prior to access restoration, Facilities filled the p-trap and an Area Dayshift Manager walked down the Affected Area and did not detect residual odor.

Concurrent Co-located Work

No co-located work was noted by the Affected Worker Point of Contact or the Response Team.

Respiratory Protection

Respiratory Protection Equipment was not prescribed for the Initiating Event. Accordingly, at the time of the Initiating Event, the Affected Personnel were not wearing Respiratory Protection Equipment. Respiratory Protection Equipment was not required, nor worn, for Response Actions.

Tank Waste Chemical Vapors

While the odor description is inconsistent with Tank Waste Chemical Vapors, due to the proximity to the Tank Farms, monitoring for Tank Waste Chemical Vapors was performed:

Ammonia is used as a sentinel Tank Waste Chemical Vapor for chemicals of potential concern (COPC). Each Hanford production process had different feedstock chemicals and generated different waste streams. Hanford production processes were also separated temporally, with different processes being performed at different times in the history of Hanford production (1943 - 1986). Some chemicals are common to all processes/waste streams (e.g., nitric acid), while others are specific to particular processes/waste streams. Some in-tank waste treatment processes (e.g., neutralization and de-nitrification) used the same chemical feed stocks (e.g., sodium hydroxide solution) in most, if not all Tank Farms. The chemistry and radiochemistry of these compounds result in waste stream similarities across all tank farms. Because nitric acid was common to nearly all processes that generated tank waste, and the most common result of those processes was reduction of nitrate ion to ammonia during the dissolution (oxidation) of irradiated fuel, ammonia is the most common COPC and is found in all tanks. It is logical to choose ammonia for the sentinel as it is a byproduct of all production processes and found in all tanks.

Therefore, when monitoring for Tank Waste Chemical Vapors/COPCs, Direct Reading Instrumentation (DRI) equipped with an ammonia sensor is utilized at a minimum. Additional COPC monitoring was conducted concurrently with ammonia during the event response. The COPC with DRI monitoring capabilities readily available at the Tank Farms includes Volatile Organic Compounds (VOCs). As individual agents are not identified when monitoring for VOCs, an Action Limit was developed as an indicator of Tank Farm emissions (mixture of organic vapors) that could impact workers' health and conservatively set at 2 parts per million (ppm)*. When monitoring for Tank Waste VOC vapors, DRI equipped with a 10.6 electron-volt (eV) photoionization detector (PID) is utilized to detect multiple VOC COPCs simultaneously.

*NOTE: The 2 ppm Action Limit is not applicable to chemical use.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Review of the Data Fusion Advisory System (DFAS) application, powered by SmartSite™, Weather Details dashboard for the approximate time of the Event:

06/24/2025 @ 1317 (weather data at approximate time of Initiating Event):

- Wind Speed: 4.7 mph
- Wind Direction: 106° (out of East Southeast)
- Mixing Height: 1400 feet above grade
- Stability Class: A (extremely unstable conditions)

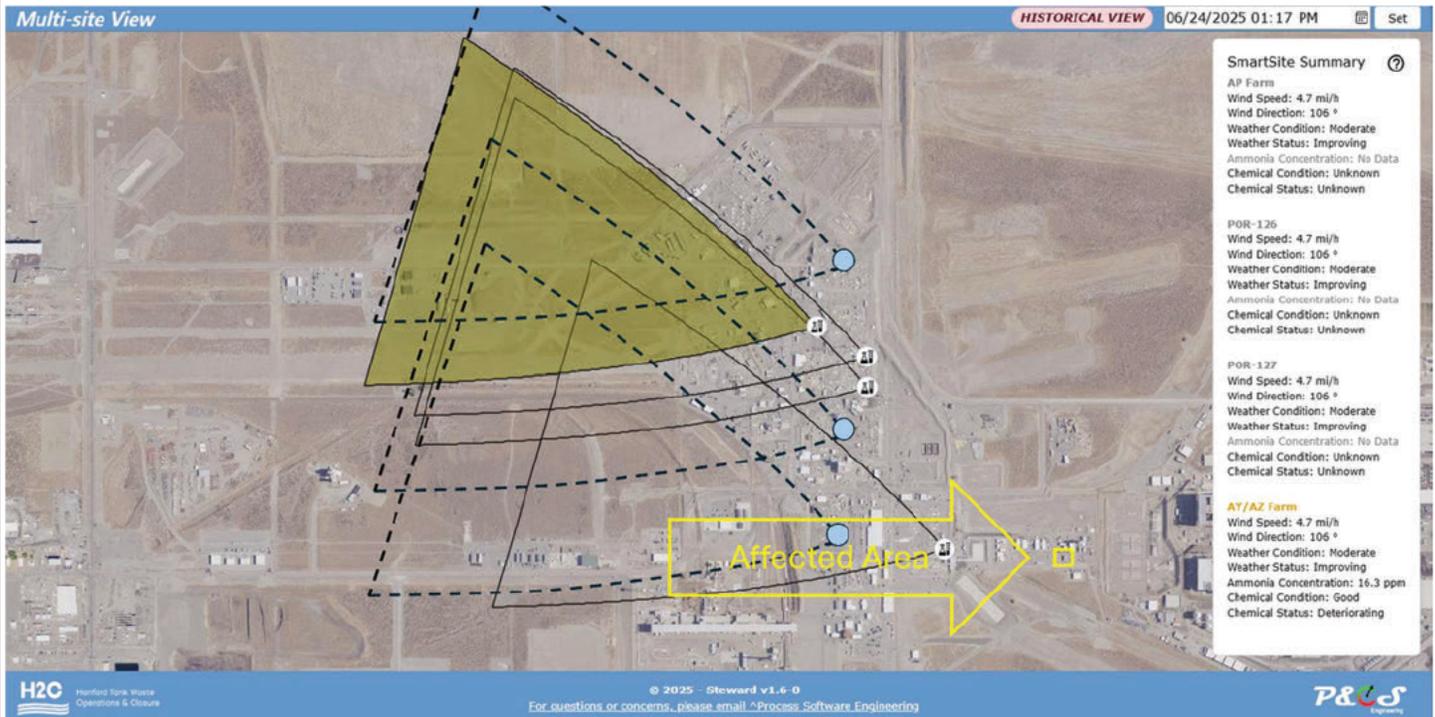


Figure 1. 200-East Area (with 241-AW, 241-AP, 241-AN, 241-AY/AZ, 241-AX, 241-A Farm projected plume models) at 1317 06/24/2025 from DFAS application, powered by SmartSite™.

NOTE: 241-AN, 241-A, 241-AW Farm Exhausters are not connected to the DFAS; however, an approximate exhauster plume was added for each based on other modeled plumes.

Review of the DFAS application, powered by SmartSite™, Weather Details dashboard for conditions during response actions:

06/24/2025 @ 1345 (current weather data for Response actions):

- Wind Speed: 5.3 mph
- Wind Direction: 62° (out of East Northeast)
- Mixing Height: 1400 feet above grade
- Stability Class: A (extremely unstable conditions)

Meteorological information from the Hanford Weather Station for Station #6 on 06/24/2025 @ 1320:

- Temperature: 91°F
- Relative Humidity: 19%
- Wind Speed: 4 mph
- Wind Direction: from Northeast
- Barometric Pressure: 29.18 inches of mercury and falling

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Vapor Monitoring Detection System (VMDS) exhauster ammonia readings on 06/24/2025 @ 1317:

- POR518 (241-A): 14.680 ppm
- POR519 (241-A): 10.100 ppm
- 241-AN: 27.712 ppm
- 241-AW: N/A
- POR126 (241-AX): N/A
- POR127 (241-AX): N/A
- 702AZ (241-AY/AZ): 16.273 ppm
- 241-AP: N/A

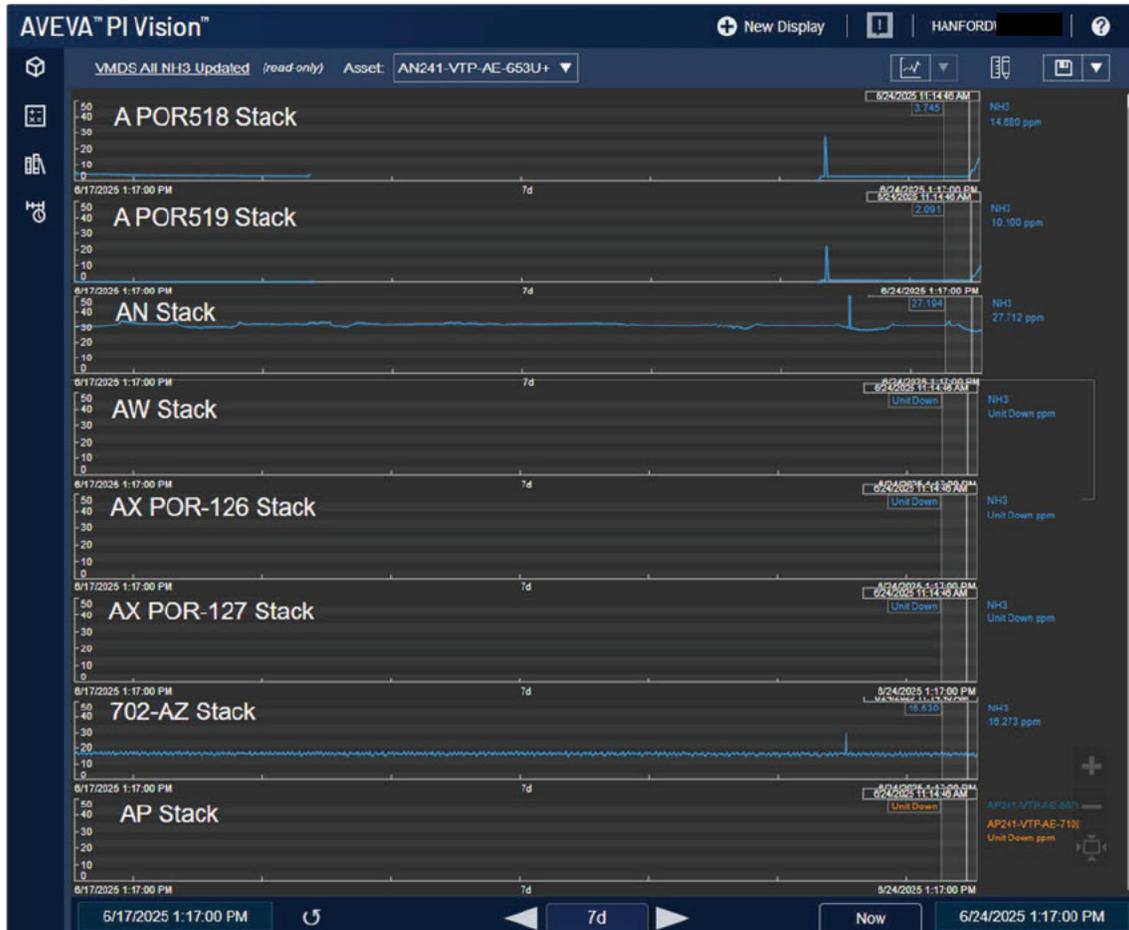


Figure 2. AVEVA PI Vision VMDS Ammonia Concentrations for 1317 06/24/2025.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Memo WRPS-1904672.1, TANK FARM EXHAUST STACK CONCENTRATION ALARM/ ACTION LEVELS FOR AMMONIA establishes stack alarm/action set points for Tank Farm Exhausters. The alarm/action set points are based on a linear extrapolation of the Quantitative Risk Assessment (QRA) model prediction; conservatively established at the ammonia stack concentration that could result in various ammonia concentrations at an unspecified ground receptor:

- High Alarm → ammonia concentration of 2.5 ppm at an unspecified ground receptor
- High High Alarm → ammonia concentration of 5 ppm at an unspecified ground receptor

Memo WRPS-1904672.1, TANK FARM EXHAUST STACK CONCENTRATION ALARM/ ACTION LEVELS FOR AMMONIA:

Tank Farm	Exhauster	High Alarm	High High Alarm
241-A	POR518/POR519	160 ppm	320 ppm
241-AN	Primary		
241-AP	Primary		
241-AW	Primary	460 ppm	920 ppm
241-AX	POR126/POR127		
241-AY/AZ	702AZ		

VMDS 06/17/2025 @ 1317 to 06/24/2025 @ 1317:

Tank Farm	Exhauster	Minimum*	Maximum*
241-A	POR518/POR519	0 ppm	27.271 ppm
241-AN	Primary	26.865 ppm	59.733 ppm
241-AY/AZ	702AZ	14.660 ppm	30.082 ppm

* VMDS Alternate Real Time Monitoring performed 06/18/2025 to 06/24/2025 for 241-AW and 241-AX. VMDS Alternate Real Time Monitoring performed 06/18/2025 to 06/23/2025 for 241-A. VMDS Alternate Real Time Monitoring performed 06/18/2025, 06/19/2025, and 06/24/2025 for 241-AP. VMDS Alternate Real Time Monitoring performed 06/19/2025, 06/21/2025, 06/22/2025, 06/23/2025, and 06/24/2025 for 241-SY.

Maximum reading includes maintenance activities. Peaks on 06/23/2025, see Figure 2, are indicative of VMDS routine maintenance verification checks. Further investigation including discussion with the applicable Maintenance Field Work Supervisors would be required to verify the peaks were caused by maintenance activities.

Readings are acquired in accordance with TF-OPS-IHT-037 when Stack Monitoring for ammonia via the VMDS is unavailable. Stack readings are required once per calendar day in accordance with ARP-T-041-00002.

VMDS Alternate Monitoring 02/06/2025 to 02/13/2025:

Tank Farm	Exhauster	Minimum	Maximum
241-A	POR 518/519	0 ppm	3 ppm
241-AP	Primary	2 ppm	28 ppm
241-AW	Primary	2 ppm	7 ppm
241-AX	POR 126/127	0 ppm	0 ppm
241-SY	Primary	6 ppm	8 ppm

The event response DRI results were detectable in the Affected Area for ammonia and VOCs but less than action limits and associated with shower drains. These results along with the review of the atmospheric conditions (DFAS application, powered by SmartSite™, and those provided by On-Duty Forecaster) around the reported time of the event indicate the cause of the odor is unlikely to be from Tank Farm emissions.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Location History

The Affected Area has a long history of similar odors or odors that have been found to be associated with sources other than Tank Farm vapor source emissions, such as septic tank gaseous emissions which are known to change odor profile across a gradient when diluted by ambient atmosphere with distance from a point source. The initiating event was a stronger than normal "sewer/septic, rotten" odor. These odors are indicative of nearby septic related equipment. The closest sewer system to the Affected Area, and connected to the Affected Area's drains, is the 2607-E10 Septic Tank system (~100' downwind).

MO2522 NI Narrative, Original Inspection Date 04/2013-

The MO2522 unit was constructed in 2008, installed in 2010, and is 360 gross square feet in size. The unit was previously installed at 200W and has recently [prior to 04/2013] been relocated at the grout facility at the east end of the 200E. The unit has electric, water, sewer, and the Heating, Ventilation, and Air Conditioning (HVAC) is provided by a Bard wall mounted heat pump on the south end. Building access is provided by two personnel doors on the west side with one door on the east side of the unit. The structure provides shower and locker space for site contractor personnel.

Reference

MO2522 NI Narrative. Retrieved from

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:



Figures 3 through 6 clockwise from top left. MO2522 West side.
MO2522 South side. MO2522 East side. MO2522 North side.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:



Figure 7. Monitoring at edge of air gap of MO2522 crawlspace.

Grout Treatment Facility (GTF) Waste Information Data System (WIDS) General Summary Report-

The GTF included the Transportable Grout Equipment from the 241-AP-102 tank. The feed line is WIDS sitecode 200-E-308-PL. The fenced area, previously known as the Grout Treatment Facility has been transitioned to the construction contractor that will build the new Waste Treatment Facility (vitrification plant). The head end of the 216-A-29 ditch was located within this fenced area. The ditch was backfilled and stabilized.

The technology and process operation of the GTF was demonstrated from August 1988 through July 1989 with the treatment of 3,785,400 liters (1,000,000 gallons) of radioactive, non-dangerous waste. Processing of this waste generated leachate that was a corrosive mixed waste. The leachate was stored at GTF and later transferred back to the Double Shell Tank (DST) System.

The GTF was put on long term standby and the project was later canceled. The feed transfer system was disconnected from the 241-AP-102 Tank. The High Efficiency Particulate Air (HEPA) filters were removed from the Liquid Collection Tank/Mixer Module (Transportable Grout Equipment) ventilation system. This reduced the level of contamination in the facility. A failed mixer pump in Tank 241-AP-102 was removed in 1995. The Grout Treatment Facility was to be used as an emergency option in the event that tank space is not available to resolve tank safety issues. During operations, the waste was stored in Tank 241-AP-104 and pumped to the Grout Feed Tank 241-AP-102. The dry materials (from the Dry Materials Receiving and Handling Facility) were trucked to the Transportable Grout Equipment. The Transportable Grout Equipment mixed the dry blend with liquid additives and aqueous waste to form a cementitious slurry. The slurry was pumped to a below grade vault located in the Grout Treatment Facility Landfill, where it hardened. Excess water from the vaults and flush solutions from the Transportable Grout Equipment were pumped to feed Tank 241-AP-102 or other tanks in the tank farms.

2607-E10 Septic System-

Water to MO2522 was tied in to the existing line currently feeding the restrooms in MO-041. Sewer was tied in down stream from MO-041 to the existing system flowing to drain field 2607-E10.

The 2607-E10 Septic Tank system consists of two tanks and two drain fields. It receives sanitary wastewater and sewage. The drain fields associated with this system has a design capacity of 1,298 gallons (4,900 liters) per day and an estimated rate of 665 gallons (2,500 liters) per day. This unit lies north of the 216-A-37-1 Crib and east of the 241-AP Tank Farm, in the GTF area. The 2607-E10 Septic Tank is associated with a drain field, the Grout Trailer, MO-392, MO-041, MO-282, MO-283, MO-284, MO-997 and MO-243-G4.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

As of 10/06/2021, the 2607-E10 Septic Tank system was an active, permitted system that was scheduled to be abandoned in the year 2023. Document 51506-39-SUB-096-001 states MSA removed pumps, piping, valves, pipe stands, electrical wires, grouted plug openings, removed structure to 2 ft. below grade and filled with Controlled Density Fill (CDF) in 2020. One existing tank was left in place for emergency storage.

References

WIDS. 2607-E10; 2607-E10 Septic System- General Summary Report. Retrieved from

WRPS-NVC-12-007. Relocate Shower Facility to Wet Grout Area. Retrieved from

Hydrogen Sulfide

Based on the odor descriptor "sewer/septic and rotten", monitoring for hydrogen sulfide vapors was performed:

- The American Industrial Hygiene Association (AIHA) Odor Threshold for Chemicals with Established Health Standards, 2nd Edition, lists hydrogen sulfide with the odor character "rotten eggs".
- Refer to TOC-IH-58956 for more detail on the monitoring strategy for response to odors.

The Hanford Site Tank Operations Contractor, Washington River Protections Solutions, LLC (WRPS), Chemical Vapor Solutions Team (CVST) chartered a Fugitive Emissions (FE) sub-team. The primary focus of the FE workscope was to identify odor sources around the Tank Farms work areas, characterizing the type and concentration of the odor constituents. The FE sub-team's investigations included characterizing how septic/sewer odors change odor profile across a gradient when diluted by ambient atmosphere with distance from a point source. The major components of sewer gases can include: hydrogen sulfide, carbon dioxide, methane, and ammonia. The FE sub-team's investigations found that close to the septic system (within approximately 20') the odor was described as sewer. Further away from septic system (within approximately 100') the odor was described as skunk. Even further away from septic system (within approximately 200') the odor was described as body odor. It should be noted that odors are a perception and can vary between individuals.

Hydrogen sulfide gas has an offensive distinct rotten egg odor that is detectable at very low concentrations. The lower range of odor values for hydrogen sulfide as 40 parts per trillion (ppt) or 0.04 parts per billion (ppb) or 0.00004 ppm). Ammonia gas has an offensive pungent, irritating odor that is detectable at very low concentrations. The lower range of odor values for ammonia as 43 ppb (or 0.043 ppm) (AIHA, 2013). While odors may be readily perceived, concentrations are still well below levels of worker exposure concern. Hydrogen sulfide, ammonia, and VOC gas production rate is a function of bacteria/organics concentrations, temperature, and dissolved oxygen.

The resolution of DRI equipped with hydrogen sulfide (0.1 ppm) and ammonia (1 ppm) sensors are comparatively inadequate as a detection tool at the concentrations perceived by the human olfactory sense. While the resolution of the DRI equipped with these sensors are insufficient to detect concentrations at the lower range of odor threshold values, they are sufficient to detect hydrogen sulfide and ammonia at concentrations that approach their established occupational exposure limits (OELs).

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Limit Type	Hydrogen Sulfide	Concentrations	
		Ammonia	VOCs
Odor Response Action Limit	0.5 ppm	12 ppm	2 ppm
ACGIH 8-hour TWA-TLV	1 ppm	25 ppm	--
ACGIH 15-minute STEL-TLV	5 ppm	35 ppm	--
OSHA 8-hour TWA-PEL	--	50 ppm	--
OSHA Ceiling-PEL	20 ppm	--	--
OSHA 10-minute Peak-PEL*	50 ppm	--	--
NIOSH IDLH	100 ppm	300 ppm	--

*Allowed for 10-minutes if there is no other exposure to hydrogen sulfide during the shift

The event response DRI results were less than detectable in the Affected Area for hydrogen sulfide and less than action limits for hydrogen sulfide, ammonia, and VOCs.

Stagnant Water/Dried-Out P-Trap Odors-

Transient odors are associated with stagnant water. Additionally, transient odors are an anticipated occurrence when a p-trap in drainage piping dries out. Low levels of hydrogen sulfide gas (consistent with Affected Workers' odor description), ammonia, and various VOCs may be produced by the stagnant water and/or from a dried-out p-trap. While odors may be readily perceived, concentrations are still well below levels of worker exposure concern.

References

American Conference of Governmental Industrial Hygienists (2016). TLVs® and BEIs® Based on the Documentation of the Threshold Limit Values for Chemicals Substances and Physical Agents & Biological Exposure Indices. Cincinnati, OH: Signature Publications.

American Industrial Hygiene Association (2013). Odor Thresholds for Chemicals with Established Health Standards, 2nd Edition.

Silva, D.P. (2002). The chemical logic behind... Fermentation and Respiration. Retrieved from <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/chapter-1-the-decomposition-process/>

Texas A&M (2009). Earth-Kind Landscaping: Chapter 1, The Decomposition Process. Retrieved from <https://web.archive.org/web/20080917123419/http://www2.ufp.pt/~pedros/bq/respi.htm>

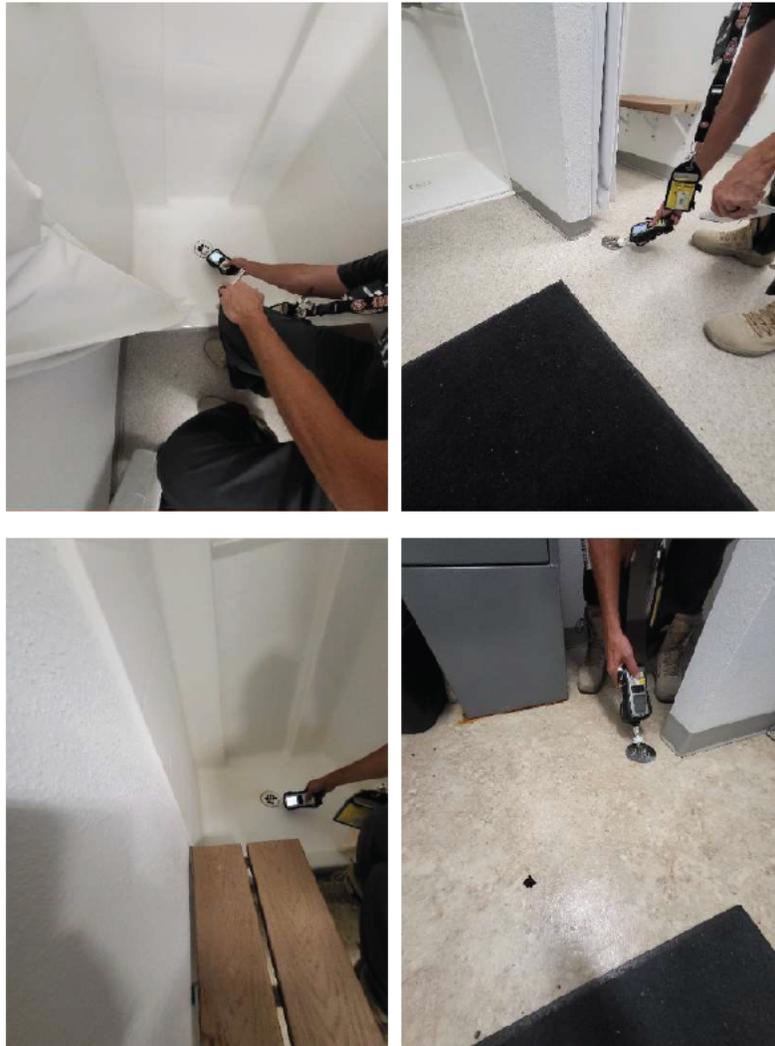
The event response DRI results were less than detectable in the Affected Area for hydrogen sulfide and were below action limits for hydrogen sulfide, ammonia, and VOCs. These results along with the review of the atmospheric conditions (DFAS application, powered by SmartSite™, and those provided by On-Duty Forecaster) outside of Affected Area around the reported time of the event indicate the cause of the odor is unlikely to be from Tank Farm emissions. The Atmospheric Stability Class at 1317 was extremely unstable. The Atmospheric Mixing Height was 1400 feet above grade.

At the approximate time of the event, the Barometric Pressure was decreasing. When the outside air pressure changes, there is a small pressure imbalance between the headspace of a passively ventilated tank and the outside air. This imbalance pushes air into the tank or draws it out (barometric breathing). As the outside air pressure was decreasing at the time of the event, passively ventilated tanks, such as septic tanks, draw air out of the tank ("breathing-out"). The responding team did note sewer odors. Therefore, the cause of the odors has potential to be from septic tank gaseous emissions, via barometric breathing and/or dried-out p-traps, from the shower drains located inside the MO2522 Shower Trailer at that time.

Additional Information continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:



Figures 8 through 11. Various drains monitored during response

References

- American Conference of Governmental Industrial Hygienists (2016). TLVs® and BEIs® Based on the
- Documentation of the Threshold Limit Values for Chemicals Substances and Physical Agents & Biological Exposure Indices. Cincinnati, OH: Signature Publications.
- American Industrial Hygiene Association (2013). Odor Thresholds for Chemicals with Established Health Standards, 2nd Edition.
- Silva, D.P. (2002). The chemical logic behind... Fermentation and Respiration. Retrieved from <https://aggie-horticulture.tamu.edu/earthkind/landscape/dont-bag-it/chapter-1-the-decomposition-process/>
- Texas A&M (2009). Earth-Kind Landscaping: Chapter 1, The Decomposition Process. Retrieved from <https://web.archive.org/web/20080917123419/http://www2.ufp.pt/~pedros/bq/respi.htm>

Additional Information Acronyms on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Additional Information Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists	OEL	occupational exposure limit
AIHA	American Industrial Hygiene Association	OSHA	Occupational Safety & Health Administration
CDF	Controlled Density Fill	PEL	Permissible Exposure Limit
COPC	Chemical of Potential Concern	PID	photoionization detector
CVST	Chemical Vapor Solutions Team	ppb	parts per billion
DFAS	Data Fusion Advisory System	ppm	parts per million
DRI	Direct Reading Instrument	ppt	parts per trillion
eV	electron-volts	QRA	Quantitative Risk Assessment
FE	Fugitive Emissions	STEL	short-term exposure limit
GTF	Grout Treatment Facility	TLV	Threshold Limit Value
HEPA	High Efficiency Particulate Air	TWA	time-weighted average
HVAC	Heating, Ventilation, & Air Conditioning	VMDS	Vapor Monitoring Detection System
mph	miles per hour	VOC	Volatile Organic Compound
MSA	Mission Support Alliance	WRPS	Washington River Protections Solutions, LLC
NIOSH	National Institute for Occupational Safety and Health		

Recommendations/Conclusions:

Recommendations:

Location has had a history of similar odor events. A preventative maintenance activity to add water to the p-traps on a routine basis should be considered.

Conclusions:

Direct Reading Instrumentation monitoring performed during response actions did not indicate further action was necessary to protect worker safety and health. Due to remaining odor, access remained restricted until the p-traps were filled and odor had dissipated. The review of the atmospheric conditions around the reported time of the event indicates the cause of the odor is unlikely to be from Tank Farm emissions. The atmospheric mixing height was 1400 feet above grade and the VMDS/VMDS Alternate Monitoring Ammonia concentrations were well below the high alarm set points. Therefore, the cause of the odor is unlikely to be from actively ventilated tanks. The barometric pressure trend was decreasing at the time of the event, so passively ventilated tanks would be pushing air out of the tank. There were no passively ventilated tank farm tanks upwind of the Affected Area, so the cause of the odor is unlikely to be from a passively ventilated tank waste. Odors were consistent with a dried p-trap. Therefore, it is possible that the cause of the odor is from passive ventilation of sewer gases through the p-trap.

Others:

N/A

Associated Documents:

iCAS Number: AR-2025-2226

EIR Number: EIR-2025-054

Industrial Hygienist:

 Print First and Last Name

 Signature / Date

Industrial Hygiene Level 3 Manager

 Print First and Last Name

 Signature / Date

Industrial Hygiene Level 2 Manager:

 Print First and Last Name

 Signature / Date

ODOR/VAPOR RESPONSE CARD

1. Complete below information and map (Page 1).

- Date and time of event: 6/24/25 1317
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing: [REDACTED] EAPC walkdown
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction): MO 2522
- Name(s) of others in or near the affected area: [REDACTED]
- Was Industrial Hygiene present, who? NO
- Describe the odor:
 - Sweet Sour Smoky Septic/Sewer Musty Rotten
 - Metallic Onion Earthy Ammonia Citrus Solvent
 - Other (describe): _____
- Is source known/likely? Describe: Yes, dried out p-trap
- Your symptoms? None
 - Headache Dizziness Nausea Cough Fatigue
 - Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 - Itch Tingling Numbness Taste
 - Other (describe): _____

2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

1. Complete below information and map (Page 1).

- Date and time of event: 4/24/25 13:17
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing: [REDACTED] EAPC Walkdown
- Other Work Underway? Describe: None
- Location of event (mark area on map and wind direction): MO-2522
- Name(s) of others in or near the affected area: Personnel on Walkdown; [REDACTED]
- Was Industrial Hygiene present, who? No
- Describe the odor:

<input type="checkbox"/> Sweet	<input checked="" type="checkbox"/> Sour	<input type="checkbox"/> Smoky	<input checked="" type="checkbox"/> Septic/Sewer	<input checked="" type="checkbox"/> Musty	<input type="checkbox"/> Rotten
<input type="checkbox"/> Metallic	<input type="checkbox"/> Onion	<input type="checkbox"/> Earthy	<input type="checkbox"/> Ammonia	<input type="checkbox"/> Citrus	<input type="checkbox"/> Solvent
<input type="checkbox"/> Other (describe): _____					
- Is source known/likely? Describe: septic / Md by smell
- Your symptoms? None

<input type="checkbox"/> Headache	<input type="checkbox"/> Dizziness	<input type="checkbox"/> Nausea	<input type="checkbox"/> Cough	<input type="checkbox"/> Fatigue
<input type="checkbox"/> Weakness	<input type="checkbox"/> Sore Throat	<input type="checkbox"/> Difficulty Breathing	<input type="checkbox"/> Eye Irritation	<input type="checkbox"/> Rash
<input type="checkbox"/> Itch	<input type="checkbox"/> Tingling	<input type="checkbox"/> Numbness	<input type="checkbox"/> Taste	
<input type="checkbox"/> Other (describe): _____				

2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM.
If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

1. Complete below information and map (Page 1).

- Date and time of event: 6/24/25 13:30^{LML 6/24/25} 13:15
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] EAPC Walkdown
- Other Work Underway? Describe:
None
- Location of event (mark area on map and wind direction):
MD2522
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
NO
- Describe the odor:
 Sweet Sour Smoky Septic/Sewer Musty Rotten
 Metallic Onion Earthy Ammonia Citrus Solvent
 Other (describe): _____
- Is source known/likely? Describe:
I am not sure. Smells like sewer.
- Your symptoms? None
 Headache Dizziness Nausea Cough Fatigue
 Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 Itch Tingling Numbness Taste
 Other (describe): _____

2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM.
If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.