

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: OPERATIONS FIELD SUPPORT 2. Report Date: 7/8/25
3. Investigation Title: Personal Ammonia Monitoring Alarm Activated- AOP-015 SY Farm
4. Investigation Report Number: EIR-2025-055
5. Responsible Manager: [REDACTED]
6. Event Investigator: [REDACTED]
7. Area / Building / Location: 200W/241SY

8. Date and Approximate Time of Event: Date: 6/26/2025 Time (military): 0956 hours
9. Associated Action Request (AR) Number: na

10. Associated Occurrence Report Number (if applicable): na

11. Event Investigation Meeting Held: Yes [] or No [X] Date: _____ Time (military): _____

12. Activity in Progress: (What activity was under way, include procedures and work order numbers, as applicable)
2 Nuclear Chemical Operators were escorting a crane out of SY Farm for Work Order (WO) #1048207, "TBI Extraction and Storage".

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

- H2C Nuclear Chemical Operator (NCO) - 2
- Total crew was estimated at 20 workers in the farm supporting the TBI activity.

14. What Happened: (Provide a short discussion of what happened)
On 06/26/2025 a crew of approximately 20 workers had completed crane operations in support of Work Order (WO) #1048207, "TBI Extraction and Storage". Two Nuclear Chemical Operator (NCO) were escorting a crane exiting SY farm. At approximately 0951 hours the Ventis Pro5 Personal Ammonia Monitor (PAM) of the NCO in a van began alarming at the threshold alarm value of 6 Parts Per Million (ppm). The PAM of the other NCO in the immediate area did not alarm. No other PAMs alarmed. No IHT was in the farm at the time of the event with a MultiRae Pro.

A call was made at 0956 hours to the Central Shift Manager (CSM) reporting the alarm. All workers were instructed to put their work in a safe condition and exit the farm. Access to the area was restricted.

At 1011 hours, the CSM entered TF-AOP-15, Response to Personal Ammonia Monitor Alarm and sent the Shift Office Event Notification (SOEN).

At 1054, the Department of Energy Facility Representative was notified of the event.

At 1042 hours The Industrial Hygiene Technician (IHT) arrived to begin Direct reading instrument (DRI) readings.

At 1058, the two affected workers completed the Odor/Vapor Response Card. The two NCOs did not report symptoms and declined a precautionary medical evaluation. No odors or symptoms were reported by other members of the crew.

At 1205, the in-farm response was complete. DRI instrument readings were below action levels. Data from the Ventis Pro5 Personal Ammonia Monitor recorded a peak

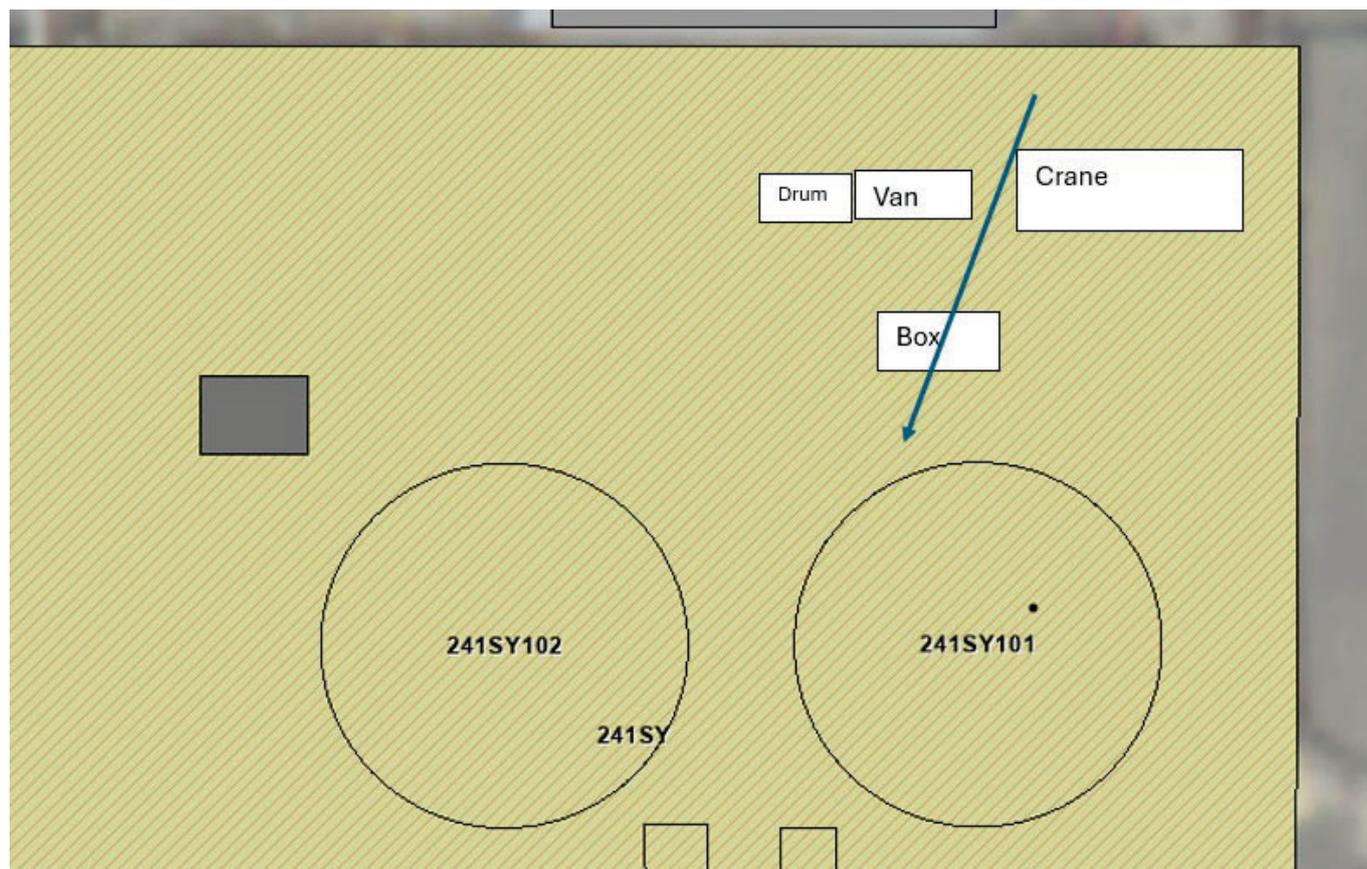
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concentration of 7 ppm, sustained for a duration of six seconds, followed by a swift return to normal levels.

At 1247 hours, all response actions were completed and TF-AOP-015 was exited. Response did not indicate further actions were necessary regarding worker safety and health occupational exposure limits. Access was restored to SY Farm.

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

- The ammonia alarm event occurred inside a van parked between 241SY101 and M0655 inside 241-SY Farm as shown below:



- At the time of the PAM alarm, the SY Farm workers were wearing a single set of anti-contamination (anti-C) clothing.
- The personnel were in an area that required the use of respiratory protection. Workers were wearing Full Face Air Purifying Respirators with Gas/Vapor cartridges (MSA GME) as required by Standing Order SO-OPS-17-003, "Use of Respiratory Protection in the Tank Farms" and TF-PLN-173 "Use of FFAPR in Actively Ventilated Farms."
- The work location was posted as a radiation area (RA) and contamination area (CA).
- DFAS indicated the following weather conditions on 06/26/2025 at 200E:
 - Wind Speed: 5 miles per hour
 - Wind Direction: 197°
 - Stability Class: A
 - Mixing Height: 1000 Feet above Grade
- Weather Station 7 reported the following weather conditions at 0955:
 - Temperature: 76°F
 - Wind Speed: 4 miles per hour
 - Wind Direction: from the Northeast
 - Barometric Pressure: 29.18 (inches Hg)
 - Relative Humidity: 34%

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

Access was restricted to SY farm for approximately 2 hours and 36 minutes. No impacts to facility safety status, operational capabilities, or facility reliability occurred.

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

- CSM initiated TF-AOP-015 and restricted access to SY Farm.
- CSM requested Odor/Vapor Response Cards from affected workers.
- The workers were offered precautionary medical evaluation. The workers declined medical evaluation.
- The DOE Facility Representative was notified of the event.
- IH Production Operations initiated TF-AOP-015 response actions and monitoring per IHSP-PROG-MULTI-TF-AOP-15 Rev 0. DRI readings were below action levels for ammonia concentration and volatile organic compounds.
- Event Investigation EIR-2025-055, "TF-AOP-015 inside SY Farm", was initiated.

18. Compensatory Actions Taken:

None.

19. Remedial Actions Taken:

None.

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

The Industrial Hygiene Equipment Investigation report, IHEI-0003 "AOP-015 inside SY Farm" documented anomalous behaviour of the Ventis Pro 5 during the physical inspection when the inlet was covered. The instrument produced positive readings up to 4 ppm when covered for a few seconds. The report stated: this suggests the sensor is more susceptible than normal and likely needs to be replaced. The inspection revealed no evident damage to the monitor.

The Industrial Hygiene Equipment Investigation report also stated: it is possible that the exhaust from the crane in proximity to the PAM contributed to the readings (ammonia slip from malfunctioning selective catalytic reduction), however this is unlikely.

The PAM of the nearby second NCO recorded an ammonia level of zero in the data log. Personal Ammonia Monitors worn by other workers in the vicinity did not alarm despite their being closer to potential sources of ammonia in the farm.

21. Positive Aspects Identified:

None.

22. Key Take Aways / Learning Opportunities:

Any obstruction, such as PPE fabric, can affect the sensitivity of the Ventis Pro5 Personal Ammonia Monitor, potentially leading to false alarms, or the lack of alarms if ammonia was present in the work area.

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.

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EVENT SUMMARY

Responsible Manager 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: Personal Ammonia Monitoring Alarm Activated - AOP-015 SY Farm	IHIR Number: IHIR-00119
	IHEI Number: IHEI-00003

Date: 6/26/2025	Time: 0956	Location: 200 West, SY Farm
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Event Summary and Timeline:

Event Summary:

At approximately 0956 on 6/26/2025 a single pam alarmed while in SY Farm. The worker was staged in the supply van prepared to exit the farm after the crane. When the crane drove by the PAM alarmed at 7 ppm. No other PAMs alarmed. All workers declined medical evaluation. The crew size was estimated to be 20 workers. No IHT was in the farm at the time of the event with a MultiRae Pro. No odors or symptoms were reported. SY Farm was restricted.

Field Response Timeline:

- 0956 Central Shift Manager (CSM) was called to report Personal Ammonia Monitor (PAM) alarm
- 0957 Projects Industrial Hygienist (IH) contacted by Projects Industrial Hygiene Technician (IHT) to report PAM alarm
- 1002 Projects IH informed by Projects IHT that TF-AOP-015 will be entered
- 1008 CSM contacted Production Operations (PO) IH
- 1010 PO IH contacts Level 3 Production Operations (PO) Safety and health (S&H) Manager for resources
- 1011 CSM sent Shift Office Event Notification (SOEN)
 - o Entered TF-AOP-015 "Response to Personal Ammonia Monitor Alarm" for a personal ammonia monitor alarm at 6ppm at SY farm. Access to SY farm is restricted. CSM
- 1012 PO IH arrives at Central Shift Office (CSO)
- 1013 Projects IH informed that all workers declined medical.
- 1015 CSM contacted Field Work Supervisor (FWS). No symptoms or odors were reported. All workers declined a medical evaluation.
- 1016 Contacted RWO (Retrieval West Operations) level 3 H&S manager
- 1017 PO level 3 H&S manager at CSO
- 1020 IH checks Data Fusion Advisory System (DFAS), 200E
 - o Stability Class A
 - o Wind Speed: 5 mph
 - o Wind Direction: 197
 - o Mixing Height: 1,000 ft.
- 1023 PO IH contacted weather station
 - o Station 7 at 9:55
 - o NE 4 mph
 - o 76 F
 - o 29.18 to 34% Relative Humidity
- 1025 CSM contacts FWS to request PAM to CSO with Odor Vapor Response Cards (OVRCS)
- 1028 PO IH requested IHIR
- 1033 PO Level 3 H&S manager and Projects level 3 H&S manager discuss IH Items
- 1034 PO level 3 H&S manager contacts IHT Shift Supervisor for resources and sensors.
- 1038 SWIHD #25-04642 created
- 1039 PO IH Checks Vapor Monitoring Detection System (VMDS) for ammonia at 0955
 - o POR518 (241-A) 13.894 ppm
 - o POR519 (241-A) 9.460 ppm
 - o 241-AN 31.307 ppm
 - o 241-AP N/A
 - o 241-AW N/A
 - o POR 126 (241-AX) N/A
 - o POR 127 (241-AX) N/A

Field Response Timeline Continued on Next Page

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

Field Response Timeline Continued

- o 702AZ (241-AY-A) 14.243 ppm
- o SY 0 ppm
- 1040 Shifter IHT Shift Supervisor contacted
- 1042 IHT Shifter arrives
- 1045 Affected worker at CSO with PAM
 - o PAM # 005893 (220635F-071)
- 1046 Affected worker and co-located worker given OVRCS to complete
- 1049 PO IH level 3 H&S manager give affected worker issues and concerns form. PO IHT Supervisor contacted the Technical Integrations (TI) representative and provides PAM information.
- 1050 PO IHT supervisor en route to download information
- 1052 CSM contacts Contractor Assurance to request Event Investigator
- 1052 PO IH contacts PO Shift IHT
 - o Provides IHSP information and RPF options (TF-AOP-015 or MDRPF-PLN-173)
- 1054 CSM contacts DOE FAC Representative for notifications
- 1058 OVRC complete, affected workers leave CSO
- 1059 Shifter IHT contacts CSM for a RPE issuer
- 1102 PO IH and PO level 3 H&S manager contact PO Shift IHT and Supervisor
 - o Provide map, survey points, and photo information
- 1104 Response team exists CSO
- 1114 Projects IH contacts Meteorological Station, 200 W mixing height was 1500 meters
- 1115 Projects IH informs PO IH that 200 W mixing height was 1500 meters
- 1117 CSM contacts event investigator
- 1118 PO level 3 H&S manager notified level 1 and 2 H&S managers
- 1128 CSM attempts to contact FAC Rep
- 1134 A FWS contacts the CSM for an update regarding SY access
- 1110 PO IH contacts Projects IH with updates
- 1153 A worker contacts CSM requestion an update on SY access
- 1143 Response team dressing out
- 1205 Response team contacts PO IH, in-farm response complete
 - o Results less than detectable on Direct Read Instrument (DRI) and PAM.
- 1213 IHT Shift Supervisor provides PO IH updates
 - o Photos Received
- 1231 PO IH contacts Projects IH field results update, less than detectable so far communicated
- 1234 PO Shift IHT Supervisor contacts the PO IH
 - o Post use function test passed
- 1236 PO IH informs Projects IH post use function test passed
- 1238 PO IH informs PO level 3 H&S manager of results and passed post test
- 1243 CSM emailed odor/vapor event notification
- 1247 CSM sent out SOEN
 - o Exited TF-AOP-015 "Response to Personal Ammonia Monitor Alarm" in SY farm. Instrument DRI readings less than detectable. Normal access to SY farm restored. CSM

Field Response Timeline Acronyms:

CSM	Central Shift Manager	mph	miles per hour
CSO	Central Shift Office	DFAS	Data Fusion Advisory System
DOE	Department of Energy	PO	Production Operations
DRI	direct reading instrument/instrumentation	EIR	Event Investigation Report
ppm	parts per million	H&S	Health and Safety
FWS	Field Work Supervisor	SOEN	Shift Office Event Notification
IH	Industrial Hygienist	VMDS	Vapor Monitoring Detection System
IHT	Industrial Hygiene Technician	VOC	volatile organic compound

Sampling/Monitoring Results:

Ventis Pro5, 005893 (Event Initiating Personal Ammonia Monitor)

The PAM had a peak concentration of 7 ppm, sustained for a duration of six seconds.

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

Sampling/Monitoring Results:

Average Readings, 10 Second Interval (See Data log of Affected Worker):

- 9:51:13 0 ppm
- 9:51:23 0 ppm
- 9:51:33 0 ppm
- 9:51:43 5 ppm
- 9:51:53 3 ppm
- 9:52:03 -3 ppm
- 9:52:13 -2 ppm

Ventis Pro5, 005904 (Co-Located Worker)

All results were zero. See Data log of Unaffected worker.

Field Response Area Readings, MultiRAE Pro (SWIHD 25-04642)

All DRI area monitoring results during TF-AOP-015 were less than detectable for ammonia and VOC. Readings were taken within the general area, the area surrounding the van, and the areas surrounding the waste box and waste drum.

SWIHD References:

SWIHD #25-04642, "TF-AOP-015 SY Farm"

IHSP: IHSP-PROG-MULTI-AOP-015

Additional Information:

N/A

Recommendations/Conclusions:

At the time of the event about 20 workers were supporting TBI at SY Farm. Workers were wearing a single set of anti-contamination clothing and FF-APR with chemical cartridges. The affected worker was in the van preparing to exit the farm after a crane when the PAM alarmed (005893). In addition to the worker who was staged in the van, a second worker who was wearing a PAM (005904) was present in the immediate area.

Per the affected worker, there were others who were closer to the potential ammonia sources (waste drums) who did not have a PAM alarm.

The wind was coming from the NE (197 degrees). The SY exhauster would be downwind of the affect worker. There are no other tank farms in the immediate vicinity, mainly S and SX farm, which could have caused the PAM to alarm.

The waste box was located between the van and SY-101, which would have been downwind of the affected worker. The affected worker confirmed the waste box was located downwind.

The waste drum was located behind the van, which also would have been downwind of the affect worker. The affected worker confirmed the drum was behind the van and downwind.

Per the affected worker, there were other workers in the general area of the waste box and waste drum, no other workers reported an alarm.

Based on the odor vapor response card and the FWS, the crane was roughly in the NE direction of the affected worker. Therefore, there is a potential that exhaust fumes could have blown towards the affected worker. Additionally, both odor response cards indicate the crane exhaust as a possible source.

VMDS data for SY showed the peak as 0 ppm for the day when responding at the time of the event.

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

Recommendations/Conclusions:

The DRI results indicated that further response was not necessary. TF-AOP-015 was exited and the restriction on SY farm was removed.

Although unlikely, the IHEI reported that the vehicle exhaust may have contributed to elevated readings (see Area Map). If ammonia was present, it would be anticipated that the other worker(s) in the immediate vicinity would alarm. The unaffected worker's PAM was 0 ppm at the time of the event. If ammonia was present, there should be a gradual increase and decrease from the peak, which was not seen here. The variability in the data supports that this was not an ammonia event in addition to no reported or known ammonia sources located upwind of the affected worker.

Recommendations:

The IHEI reported the sensor as being more susceptible than normal. Based on the physical inspection, the sensor should be replaced.

Others:

All workers denied medical examination. No odors or symptoms were reported.

Associated Documents:

iCAS Number: N/A

EIR Number: EIR-2025-055

Industrial Hygienist:

<p>██████████ _____ <i>Print First and Last Name</i></p>	<p>██████████ ██████████ ██████████ _____ <i>Signature / Date</i></p>
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Industrial Hygiene Level 3 Manager

<p>██████████ _____ <i>Print First and Last Name</i></p>	<p>██████████ ██████████ ██████████ _____ <i>Signature / Date</i></p>
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Industrial Hygiene Level 2 Manager:

<p>██████████ _____ <i>Print First and Last Name</i></p>	<p>██████████ ██████████ ██████████ _____ <i>Signature / Date</i></p>
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ODOR/VAPOR RESPONSE CARD - 241 SY FARM

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

- Date and time of event: 6-26-25
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- _____ you were performing: Demolish Box Van out of SY-Farm
- Other Work Underway? Describe: Yes, Crane was moving out of SY-Farm.
- Location of event (mark area on map and wind direction): SY Farm
- Name(s) of others in or near the affected area: _____
- Was Industrial Hygiene present, who? Yes at change trailer
- Describe the odor:
 Sweet Sour Smoky Septic/Sewer Musty Rotten
 Metallic Onion Earthy Ammonia Citrus Solvent
 Other (describe): No odor
- Is source known/likely? Describe: I don't believe it was likely. But may have been exhaust.
- Your symptoms? None
 Headache Dizziness Nausea Cough Fatigue
 Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 Itch Tingling Numbness Taste
 Other (describe): None

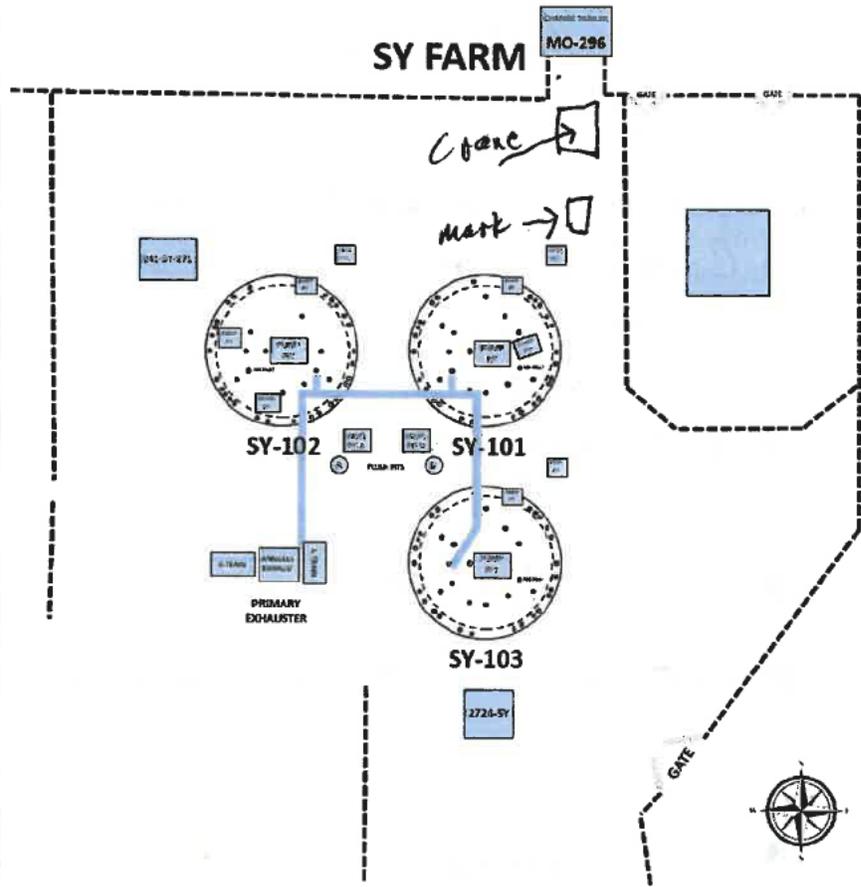
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 241 SY FARM

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 - 241 SY FARM

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

- Date and time of event: 6/26/25 9:56 am
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other) describe: Light Alarm with affected person
- Your name and the work you were performing: [redacted] moving van and supplies out of Sy farm
- Other Work Underway? Describe: Crane was also exiting Sy farm
- Location of event (mark area on map and wind direction): Sy farm
- Name(s) of others in or near the affected area: [redacted]
- Was Industrial Hygiene present, who? yes, inside change trailer
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): no odor
- Is source known/likely? Describe: may have been from Crane exhaust
- 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.

