

Occurrence Report

After 2017 Redesign

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Field Office

Nuclear Waste Partnership

(Laboratory, Site, or Organization)

Name: Salter, Scott

Telephone No.: (575) 234-8695

(Facility Manager/Designee)

Name: Knox, Jeff W.

Telephone No.: (575) 234-8462

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: EM-CBFO--NWP-WIPP-2018-0009

Employee exceeded Carbon Tetrachloride exposure limits

2. Report Type and Date: FINAL

	Date	Time
Notification:	10/25/2018	16:51 (ETZ)
Initial Update:	10/25/2018	16:51 (ETZ)
Latest Update:	10/25/2018	16:51 (ETZ)
Final:	10/25/2018	16:51 (ETZ)

Report Level: L

4. Division or Project: NWP/WIPP

5. Secretarial Office: EM - Environmental Management

6. System, Bldg., or Equipment: WH01/411/NA

7. UCNI?: No

Reviewed for Public Release:

8. Plant Area: CH Bay

9. Date and Time Discovered: 10/10/2018 10:00 (MTZ)

10. Date and Time Categorized: 10/12/2018 12:15 (MTZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
10/12/2018	11:25 (MTZ)	Bobby Franco	NWP/FSM
10/10/2018	10:00 (MTZ)	Robert Macfarlane	NWP/ESHM
10/12/2018	12:15 (MTZ)	Ralph Sanders	CBFO/FR
10/10/2018	10:20 (MTZ)	Scott Salter	NWP/DOM
10/12/2018	11:25 (MTZ)	James Wheeler	NWP/FOM

13. Subject or Title of Occurrence:

Employee exceeded Carbon Tetrachloride exposure limits

14. Reporting Criteria:

2A(7) - Personnel exposure to chemical, biological or physical hazards above limits established in 10 CFR Part 851, Worker Safety and Health Program (see 10 CFR Section 851.23, Safety and Health Standards), but below levels deemed IDLH.

15. Description of Occurrence:

On October 12, 2018, the Facility Shift Manager (FSM) was notified that a Waste Handler's lapel monitor data indicated exposure levels above the 8 hour Time Weighted Average (TWA) and Short Term Exposure Limit (STEL) for carbon tetrachloride. The lapel monitor sample was taken on August 8, 2018. The lab report identified 11 parts per million (ppm) of carbon tetrachloride and calculated an 8 hour TWA of 7.33 ppm. The American Conference of Governmental Industrial Hygienists (ACGIH) have determined the 8 hour TWA exposure limits to be 5.0 ppm and the Short Term Exposure Limit (STEL) to be 10 ppm. The FSM directed

an operational work pause in the Contact Handling (CH) Bay and determined this issue to be a reportable occurrence under reporting criterion 2A(7)L. A Fact Finding meeting was conducted.

On October 24, 2018, the FSM was notified that a Waste Handler's lapel monitor data indicated exposure levels above the 8 hour TWA for carbon tetrachloride. The lapel monitor sample was taken on October 2, 2018. The Lab report calculated an 8 hour TWA of 8.5 ppm. The ACGIH have determined the 8 hour TWA exposure levels to be 5.0 ppm. The FSM determined this issue to be a reportable occurrence under reporting criterion 2A(7)L.

Causal analysis and corrective actions for both occurrences are being addressed in the site's Issues Management process (WIPP Form).

FIRST EXPOSURE DETAILS:

8/6/18 - Lapel monitor sample was collected after waste handling activities were completed.

8/8/18 - Sample was shipped to laboratory for analysis.

8/15/18 - Lab received sample.

8/17/18 - Sample was analyzed at lab.

8/20/18 - Lab report was received at WIPP. Report identified 11 ppm of carbon tetrachloride for sampling period; calculated TWA of 7.33 ppm; ACGIH occupational exposure limit - 8 hour TWA of 5.0 ppm; ACGIH STEL of 10 ppm; and OSHA exposure limit of 10 ppm.

9/4/18 - Results entered into WIPP Industrial Hygienist (IH) database.

10/10/18 - Results validated by WIPP IH group. IH personnel made notifications to management.

10/12/18 - FSM received notification of 8/6/18 readings. FSM directed an operational work pause in CH Bay and categorized the issue as an ORPS reportable occurrence.

10/16/18 - Work pause was lifted after it was verified there was no waste in the CH Bay or in route from the waste stream being worked on 8/6/18.

10/17/18 - A Fact Finding meeting was conducted.

SECOND EXPOSURE DETAILS:

10/2/18 - Lapel monitor sample was collected.

10/18/18 - Lab received sample.

10/20/18 - Sample was analyzed at lab.

10/24/18 - Lab report was received at WIPP. Report identified 8.5 ppm of carbon tetrachloride for sampling period; calculated TWA of 6.4 ppm; ACGIH occupational exposure limit - 8 hour TWA of 5.0 ppm; OSHA exposure limit of 10 ppm.

10/24/18 - Results entered into WIPP IH database.

10/24/18 - Results validated by WIPP IH group. IH personnel made notifications to management.

10/24/18 - FSM received notification of exposure level and categorized the issue as an ORPS reportable occurrence. NOTE: Because this exposure occurred after it was determined that none of the waste stream remained in the CH Bay or was in route (see first exposure details for 10/16/18) no work pause was initiated.

16. Is Subcontractor Involved? No

19. Immediate Actions Taken and Results:

Safety Pause established in CH Bay.

Determination of waste stream in the CH Bay and capture potential exposure limits on that waste stream.

Investigate times sampling began and ended.

Develop a procedure for medical testing of workers relative to these exceeded numbers.

Develop procedure for IH handling of sampling data.

Perform an Engineering evaluation of air flow at the docks/CH bay.

Research prior incidents and effectiveness.

Determine if real time sampling would be adequate.

20. ISM:

5) Provide Feedback and Continuous Improvement

21. Cause Code(s):

22. Description of Cause:

25. Corrective Actions

Local Tracking System Name: IMPS

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

[EM-CBFO--NWP-WIPP-2018-0005](#)

[EM-ALO--WWID-WIPP-1999-0008](#)

[EM-RFO--KHLL-SOLIDWST-1998-0022](#)

[DP-RL--WHC-PFP-1993-0024](#)

30. HQ Keyword(s):

01G--Inadequate Conduct of Operations - Inadequate Procedure

01N--Inadequate Conduct of Operations - Inadequate Job Planning (Other)

08C--OSHA Reportable/Industrial Hygiene - Industrial Hygiene Exposure

12J--EH Categories - OS/IH

14C--Quality Assurance - Quality Improvement Deficiency

14D--Quality Assurance - Documents and Records Deficiency

14E--Quality Assurance - Work Process Deficiency

31. HQ Summary:

On October 12, 2018, the Facility Shift Manager (FSM) was notified that a waste handler's lapel monitor data indicated exposure levels above the 8-hour Time Weighted Average (TWA) and Short Term Exposure Limit (STEL) for carbon tetrachloride. The lapel monitor sample was taken on August 8. The lab report identified 11 parts per million (ppm) of carbon tetrachloride and calculated an 8-hour TWA of 7.33 ppm. The American Conference of Governmental Industrial Hygienists have determined the 8-hour TWA exposure limits to be 5.0 ppm and the STEL to be 10 ppm. The FSM directed an operational work pause in the Contact Handling Bay. A fact-finding meeting was conducted. The FSM was notified of a second carbon tetrachloride exposure on October 24. A waste handler's lapel monitor data indicated exposure levels above the 8-hour TWA. The lapel monitor sample was taken on October 2. The Lab report calculated an 8-hour TWA of 8.5 ppm. Causal analysis and corrective actions for both occurrences are being addressed in the site's issues management process.