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**Department of Energy**
Carlsbad Field Office
P. O. Box 3090
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MAY - 4 2015

APR 3 0 2015

Mr. John E. Kieling, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87508-6303

Ms. Kathryn Roberts, Division Director
Resource Protection Division
Harold Runnels Building
1190 Saint Francis Drive, Room 4050
Santa Fe, NM 87502-5469

Subject: Monthly Report for the Reporting Period Ending March 31, 2015, as Required by NMED Administrative Orders dated February 27, 2014, May 12, 2014, and May 20, 2014, as Amended by NMED Directives dated August 29, 2014 and December 9, 2014

Dear Mr. Kieling and Ms. Roberts:

The purpose of this letter is to transmit the monthly report for the reporting period ending March 31, 2015, as requested by the February 27, 2014, May 12, 2014, and May 20, 2014 Administrative Orders, issued under the authority of the New Mexico Hazardous Waste Act § 74-4-13 from Ryan Flynn to Messrs. Hellstrom, Franco, Cook, and McQuinn, and as amended by the August 29, 2014 and December 9, 2014 directives from Ryan Flynn to Messrs. Franco and McQuinn. This report is enclosed along with a compact disc containing the electronic version of the report.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at (575) 234-7488.

Sincerely,

Jose R. Franco, Manager
Carlsbad Field Office

Robert L. McQuinn, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure

| | |
|---|---|
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# Monthly Status Report for the New Mexico Environment Department Administrative Orders

**Reporting Period March 1, 2015, through March 31, 2015**

## Introduction

On February 5, 2014, a vehicle fire occurred in the Waste Isolation Pilot Plant (WIPP) underground, resulting in normal operations and waste shipments from generator sites being temporarily suspended. On February 14, 2014, while the fire investigation was still underway, a continuous air monitor detected airborne radiation in the WIPP underground facility, causing the ventilation exhaust to automatically realign to high efficiency particulate air (HEPA) filtration mode. The ventilation system has been operating in filtration mode since that time. Entries into Panel 7 in the underground have confirmed that at least one container from a nitrate salt bearing waste stream from Los Alamos National Laboratory has been breached and is most likely the source of the release. The independent Technical Assistance Team (TAT) issued its report during this reporting period, which confirmed that one drum in Panel 7, Room 7, from Los Alamos National Laboratory was responsible for last year's radiological release. The report concluded that the drum contained chemically incompatible materials, ultimately leading to the release. The *overarching conclusion* is that chemically incompatible contents of Drum 68660 from Los Alamos National Laboratory in combination with physical conditions (e.g., the configuration of the materials in the drum) supported exothermic chemical reactions leading to a thermal runaway; the consequent build-up of gases within the drum displaced the drum lid, venting radioactive materials and hot matter that further reacted with air or other materials outside the drum to cause the damage observed in WIPP Panel 7, Room 7. Shipments of waste to the WIPP facility have been suspended.

The New Mexico Environment Department (NMED) has issued two Administrative Orders (AOs) to address certain activities relative to the WIPP Hazardous Waste Facility Permit (Permit) that cannot be performed because the underground is inaccessible for normal activities. The AOs provide requirements for monitoring and reporting to the NMED concerning the status of recovery from the two events. The first administrative order (AO1) issued on February 27, 2014, addressed above-ground compliance, and required a weekly report to be submitted with regard to surface-related requirements of the Permit. On May 12, 2014, a second administrative order (AO2) was issued to address, in part, Permit-required activities that cannot currently be performed due to restriction on access to the underground. The second administrative order changed the reporting period from weekly to biweekly, with additional information required to supplement the information required by AO1. A directive from the Secretary of the NMED was issued on August 29, 2014, which amended the reporting frequency from biweekly to monthly for reporting required under AO1 and AO2 with the submittal being due to NMED no later than the 15th of the month for activities conducted during the previous month. A new directive from the Secretary of the NMED was issued on December 9, 2014, which amended the submittal frequency for this report. The new due date for the monthly submittal shall be the last day of the subsequent month for activities conducted during the previous month.

This report serves to fulfill the reporting requirements set forth by AO1 and AO2, as amended by the NMED directives dated August 29, 2014, and December 9, 2014. The following sections combine the information required by both orders, as appropriate, and provide references to the applicable paragraphs from AO1 and AO2.

In accordance with Paragraph 17(a) of AO2, and a subsequent letter from the NMED dated September 24, 2014, the Permittees submitted a revised draft of the underground compliance plan (UCP) on October 30, 2014, for NMED's review and comments. Pertinent elements of the WIPP Recovery Plan were integrated into the UCP as these elements pertain to the Permit-related requirements addressed by the AOs. The monthly reports serve to provide a status of recovery-related activities, as outlined in AO1 and AO2. In accordance with Paragraph 18(a) of AO2, subsequent reports will identify new information since the previous reporting period.

## 1.0 Status of Permit-related surface and underground inspections for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraphs 18(c) and 18(e)(iii) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:

See Attachment 1, *Surface and Underground Inspections*, for the current status of each Permit-required inspection, including accessibility of underground equipment for personnel performing the inspections. This list is taken from Permit Attachment E, Table E-1. The surface and underground inspections required by Table E-1a related to remote-handled (RH) transuranic (TRU) waste are pre-operational. Because the WIPP facility has not been handling RH TRU waste, and there is no RH TRU waste being stored at the WIPP facility at this time, these pre-operational inspections do not currently apply. Inspections and preventative maintenance (PM) are not required for equipment that is out of service. Prior to commencing RH TRU waste handling operations, PMs and/or inspections will be brought into a current/compliant status.

As indicated in Attachment 1, a few underground inspections cannot currently be performed due to the inaccessibility to those portions of the underground where inspections are required. Some inspections are being completed in order to facilitate recovery. In accordance with Paragraph 17(a) of AO2 and an NMED letter dated September 24, 2014, the Permittees were required to submit a revised UCP to the NMED by October 30, 2014. The order requires that the UCP shall include a detailed compliance schedule for those requirements described in Paragraph 13 of AO2. The compliance schedule includes a proposed timeline, including dates, for achieving underground recovery and attaining compliance with these Permit-required activities. Before these activities can resume, however, certain prerequisite activities must be performed in order to establish the safety and habitability of the work areas in the underground. The UCP will be updated as information becomes available, and these updates will be provided to the NMED for review and comment prior to being incorporated. Future updates to the UCP, will be reflected in the monthly reports, as required by Paragraph 18(c) of AO2.

## 2.0 Status of Permit-related monitoring activities for this reporting period, as requested per Paragraph 14(a) of AO1 and Paragraph 18(c) of AO2, including the accessibility for personnel performing these Permit-required activities per Paragraph 18(e)(i) of AO2 and the status of recovery activities per Paragraph 18(e)(ii) of AO2:

In accordance with Paragraph 17(a) of AO2, the draft UCP was submitted to the NMED by June 26, 2014. On September 24, 2014, the NMED notified the Permittees that review of the draft UCP had been suspended pending the release of the WIPP Recovery Plan. Currently, certain monitoring activities cannot be performed due to the inaccessibility to those portions of the underground where monitoring activities occur. The UCP contains a compliance schedule including a proposed timeline, including dates, for achieving underground recovery and attaining compliance with these Permit-required activities. Before these activities can resume, however, certain prerequisite activities must be performed in order to establish the safety and habitability of the work areas in the underground. A status of these activities, as described in future updates to the UCP, will be reflected in the monthly reports, as required by Paragraph 18(c) of AO2.

### Volatile Organic Compound (VOC) Monitoring

Repository VOC monitoring activities (required by Permit Part 4, Section 4.6.2, including Table 4.6.2.3, and associated requirements in Attachment N) are not currently being performed due to the inaccessibility of those portions of the underground required to perform these activities. Additionally, room-based VOC monitoring activities (required by Permit Part 4, Sections 4.4.3 and 4.6.3, Tables 4.4.1 and 4.6.3.2, and associated requirements in Attachment N) cannot currently be performed due to the inaccessibility of those portions of the underground needed to perform these activities.

Surface VOC monitoring is being conducted in lieu of underground monitoring during re-entry and recovery operations utilizing portable passive air sampling kits. Surface monitoring is being performed to assure that the Permit environmental performance standards (i.e., carcinogenic and non-carcinogenic risk due to VOC emissions from the disposed waste) for surface-based non-waste workers are met. Samples are being collected twice each week at two locations on-site and one location off-site. These samples are 24-hour VOC samples collected on the surface near the Building 489 Intake, and north of the Training Building (Building 489 North Air Intake), with an off-site location approximately a mile southeast of the Training Building at location WQSP-4. These samples are used to quantify VOC exposure to a receptor in the Training Building. The samples on-site and at location WQSP-4 are used to quantify background VOC concentrations in the ambient air. Acquisitions in both Full-Scan and Selective Ion Monitoring (SIM) Gas Chromatography/Mass Spectroscopy (GC/MS) mode are acquired to ensure a good quantification. Scan parameters, as seen in SIM mode, provide more averages over a smaller peak width, resulting in superior spectra and less noise; therefore better compound detection and sensitivity with results in parts per trillion (ppt). Full-Scan mode monitors the tentatively identified compounds (TIC) over a range of masses and is required for confidence and confirmation of results in parts per billion (ppb). Both modes of GC/MS results are provided (Full-Scan and SIM). In accordance with Paragraph 19 of AO2, the Permittees began monitoring for trichloroethylene as a target analyte on May 12, 2014.

Disposal room VOC monitoring is not being conducted in the underground as stated above. This does not pose a threat to underground waste workers because waste handling is not underway in the underground, and no emplacement rooms are active. Disposal room monitoring will be restarted prior to resuming waste emplacement activities.

**Geomechanical Monitoring**

The purpose of geomechanical monitoring is to confirm the structural integrity of the underground repository. Geomechanical monitoring data is transmitted electronically via remote instruments located in Rooms 6 and 7 of Panel 7 in accordance with Permit Part 4, Section 4.6.1, associated requirements in Attachment A2-5b(2), and Attachment E, Table E-2. Not all geomechanical monitoring activities that require the manual reading of underground equipment can be performed due to inaccessible portions of the underground. However, visual inspections of the underground areas during recent re-entries have provided information regarding the stability of the underground and identified those areas that require bolting. Bolting has resumed as part of recovery activities in the underground.

**Hydrogen and Methane Monitoring**

Hydrogen and methane monitoring activities (required by Permit Part 4, Section 4.6.5 and associated requirements in Attachment N1) cannot currently be performed due to the inaccessibility of those portions of the underground where these activities are performed. This does not pose a threat to underground waste workers because underground activities are not underway in the vicinity of Panels 3 and 4. Hydrogen and methane monitoring will be restarted during recovery.

**Mine Ventilation Rate Monitoring**

Mine ventilation rate monitoring activities (required by Permit Part 4, Section 4.6.4 and associated requirements of Attachment O) are currently being performed. However, due to reduced air flow in the underground because of operating in filtration mode, the minimum running annual average ventilation rate set forth by the Permit cannot be maintained. The ventilation system has been operating in filtration mode since February 14, 2014, with a flow rate of approximately 60,000 standard cubic feet per minute (SCFM). The calculated annual running average ventilation flow rate as of 3/31/15 was approximately 59,956 SCFM. Surface VOC monitoring is being used to ensure the reduced flow rate does not pose a threat to the surface non-waste worker.

## 3.0 Summary of waste shipment information and any other relevant records that document the site of origin, volumes and receipt dates of TRU waste that is currently located at the facility WHB and parking area unit, as requested per Paragraph 14(c) of AO1, and information specifying the deadlines for each individual waste assembly as it relates to AO1, as requested per Paragraph 14(d) of AO1:

Waste is currently being stored in the Waste Handling Building (WHB). Since the submittal of the last monthly report, there has been one standard waste box placed in storage in the WHB. This waste box houses one set of moderate efficiency pre-filter bank filters from

the February 2014 radiological event, which were replaced in June 2014; custody of the filters were released back to the Permittees in March by the AIB. See Attachment 4, *Surface and Underground Derived Waste Currently in Storage at the WIPP Facility*, for detailed waste inventory information.

## 4.0 Location of any environmental monitoring equipment, including the identification of whether they are stationary, mobile, or permanent. This includes, but is not limited to, VOC monitoring stations, radiological monitoring stations, meteorological monitoring, surface water monitoring, vegetation sampling. The reports shall include dates of deployment and sampling, and all data that has been produced by these monitoring stations for his reporting period, as requested per Paragraph 14(f) of AO1:

See Attachment 3, *Environmental Monitoring,* which includes tables with the locations of environmental monitoring equipment (including identification whether they are stationary, mobile, or permanent) and new data for this reporting period. Aerial photos and diagrams displaying monitoring locations are included. The following briefly describes the monitoring information in Attachment 3, *Environmental Monitoring*.

- VOC monitoring stations – Portable surface monitoring equipment has been deployed since February 25, 2014. Samples are being collected twice each week at the locations indicated in Attachment 3. The results are included in Attachment 3, *Environmental Monitoring*.
- Radiological monitoring – During this reporting period, monitoring results were below minimum detectable concentrations. The results are included in Attachment 3, *Environmental Monitoring*.
    - Air sample – air samples were obtained on the dates and at the locations shown in Attachment 3.
    - Surface water samples – surface water samples were obtained on the dates and at the locations shown in Attachment 3.
    - Biota samples – Biota samples were obtained on the dates shown in Attachment 3.

## 5.0 Updates on activities performed pursuant to the Underground Derived Waste Storage Plan, including a description of any surface and underground derived waste produced, whether the derived waste is mixed or non-mixed, the contents, container type, container location, total container count, and approximate volume of derived waste per container, as requested per Paragraph 14(i) of AO1 and Paragraph 18(d) of AO2:

In accordance with Paragraph 17(b) of AO2, the draft *Underground Derived Waste Storage Plan (UDWSP)* was submitted to the NMED by June 26, 2014 for review and comment. On December 2, 2014, NMED provided comments on the UDWSP and notified the Permittees that the draft UDWSP had been approved. The Permittees addressed the comments, incorporated changes and resubmitted the UDWSP to NMED on January 6, 2015. During this reporting period, there has been one standard waste box placed in storage in the WHB. This waste box houses one set of moderate efficiency pre-filter bank filters from the February 2014 radiological event, which were replaced in June 2014;

custody of the filters were released back to the Permittees in March by the AIB. See Attachment 4, *Surface and Underground Derived Waste Currently in Storage at the WIPP Facility,* detailed waste information regarding the standard waste box.

**6.0 The current status of activities required by the RCRA Contingency Plan, Permit Attachment D, including identification of applicable sections of the Contingency Plan, the schedule for actions required under the Contingency Plan, and any deviations from any Contingency Plan requirements, as requested per Paragraph 18(b) of AO2. Non-applicable sections shall also be identified and explanations shall be provided as to why such sections do not apply:**

There has been no change in the status of the RCRA Contingency Plan implementation since the submittal of the last monthly report. Accordingly, Attachment 5, *Status of RCRA Contingency Plan Required Activities*, is currently reserved.

RCRA Contingency Plan changes were provided to NMED as a Class 1 Permit Modification Request in February 2015 under Appendix I to 40 CFR §270.42 B6b: Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed. The Class 1 Permit Modification Notification was incorporated into the Permit by the NMED on March 4, 2015.

On March 30, 2015 approval of the WIPP Nitrate Salt Bearing Waste Container Isolation Plan, Revision 1, was received by NMED with the exception of Sections 3.2.3 and 3.3.3. These exceptions include the proposed activities for permanent closure of Panel 6.

**7.0 The monthly report shall include the submission of a list containing all additional requirements placed upon the WIPP by any state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of the May 12, 2014, Administrative Order, including requirements by other segments of DOE, as requested by Paragraph 18(f) of AO2:**

During this reporting period, no additional requirements were placed upon the Permittees by any other state or federal agency relating to corrective actions or recovery and as a result of the incidents referenced in Paragraphs 8 and 9 of AO2, including requirements by other segments of the U.S. Department of Energy (DOE). As additional Judgments of Need are identified as a result of the completion of subsequent phases of the Accident Investigation Board radiological release event investigation, they will be provided in Attachment 6, *Corrective Actions Required for Recovery*, which is currently reserved.

**8.0 The Permittees shall provide documentation of the "as found" condition of Panel 7, including relevant photographs of the waste, as requested per Paragraph 18(i) of AO2:**

Photographic evidence of the radiological event was collected by the Project Reach Team using a remotely operated video camera during the last monthly reporting period. The photographs in Attachment 7, *As-Found Condition of Panel 7*, depict some of the Project Reach activities.

## 9.0 The Permittees shall provide documentation of the "as found" condition of Panel 6 partial closure system, including relevant photographs, as requested per Paragraph 18(j) of AO2:

Geotechnical surveys were performed in the area of the Panel 6 entrance and photographs of the S-2750 and S-3080 drifts in the area west of W-170 (toward Panel 6) were taken for the first time following the February 2014 incidents. These photographs are provided in Attachment 9, *As-Found Condition of Panel 6.* Bolting to the entrance of the access drift of Panel 6 is completed. Panel 6 interim closure preparations are proceeding, with bolting in the 200-foot access area to the Panel 6 entrance complete and bulkhead installation to follow. As of the end of this reporting period, the bulkhead has been moved to the entrance of Panel 6 for installation.

## 10.0 The Permittees shall provide a status of recovery-related activities relative to the underground per Paragraph 18(e)(ii) of AO2 and a summary of recovery-related work performed in Panel 7, including relevant photographs, as requested per Paragraph 18(k) of AO2:

Consistent with the WIPP Recovery Plan, the focus of underground entries has been on radiological characterization and rollback, geotechnical evaluation, habitability surveys, clean up, electrical and mechanical evaluation of systems, and equipment and repairs as needed to support bolting and installation of the initial closures in Panel 6. Activities in contaminated areas will be performed using separate equipment and personnel protective equipment. Attachment 8, *Panel 7 Recovery-Related Work*, provides a map of the current status of the WIPP underground rollback areas during this reporting period.

During this reporting period, activities commenced in the WIPP underground facility to address the radiological contamination that remains as a result of the February 14, 2014 event. For decontamination activities, water is sprayed on the walls and the floor. The water removes some of the loose contamination from the walls and washes it down to the floor. When the salt recrystallizes from being wet, it encapsulates contamination that was not washed to the floor and prevents any re-suspension of radioactive particles. In addition to the water spray, brattice cloth will be laid on the floor and run-of-mine salt is placed over the cloth to trap any contamination on the floor. These activities will continue for the next several months throughout the areas where contamination is present. Employees performing these tasks are taking all necessary precautions, including wearing appropriate personal protective equipment.

Priorities continue to include resumption of bolting and the initial closure of Panel 6. There are now more than 1,600 bolts installed in the underground since bolting resumed in November 2014, with catch up bolting approximately 70% complete. Bolting activities are prioritized based on geotechnical inspections and surveys. The number of pieces of diesel equipment that can be operated for roof bolting is limited by the available ventilation in the work area and the minimum ventilation flow rate assigned to each piece of equipment based on Mine Safety and Health Administration air quality requirements. Due to these limitations, ventilation adjustments will have to be made as a prerequisite in each location where bolting equipment will operate to ensure equipment airflow requirements are met.

The independent Technical Assistance Team (TAT) issued its report on March 26, 2015, which confirmed that one drum in Panel 7, Room 7, from Los Alamos National Laboratory was responsible for last year's radiological release. The report concluded that the drum contained chemically incompatible materials, ultimately leading to the release.

During this reporting period, progress was made in restoration of equipment, with the recent decontamination in Panel 7 of nine forklifts, two CH waste transporters, a bolter, a man lift and two load haul dump trucks. In radiological mitigation efforts, a recent test of the approach for the floors was successful (brattice cloth covered with salt), and this approach will be used in the contaminated areas leading to and including Panel 7 itself.

Also during this reporting period, replacement of the moderate efficiency (MOD) pre-filters, and high efficiency filters, part of the High Efficiency Particulate Air (HEPA) filtration system for the WIPP underground ventilation system was completed successfully. Two individual filter banks were isolated, at separate times, in order to allow old filters to be removed, surveyed and packaged for proper disposal and new filters to be installed.

The interim ventilation system (IVS), consisting of two skid mounted fans and high efficiency particulate air (HEPA) filter units, is progressing. Fabrication of ductwork is in progress, and fan units for the IVS are expected to arrive to the WIPP site in April. The project, which adds HEPA skids and fan units to the existing ventilation system, has a June target date. Ongoing visual checks are being performed to evaluate the extent of soot accumulation on electrical equipment and, if necessary, to clean the equipment. As of this reporting period, underground electrical cleaning was approximately 70 percent complete.

As the Permittees continue to conduct recovery-related activities, additional descriptions will be provided in subsequent reports.

# Attachment 1
# Surface and Underground Inspections

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Air Intake Shaft Hoist | Underground Operations | Preoperational | WP 04-HO1004<br>Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with Mine Safety and Health Administration (MSHA) requirements | Current | 2/25/15 | N/A | |
| Exhaust Shaft | Underground Operations | Quarterly | PM041099<br>Inspecting for Deterioration and Leaks/Spills | Not Current | 12/31/13 | N/A | Shaft is not accessible due to the fire and radiological events, and inspections cannot be performed. |
| Salt Handling Shaft Hoist | Underground Operations | Preoperational | WP 04-HO1002<br>Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability in accordance with MSHA requirements | Current | 3/31/15 | N/A | |
| Self-Rescuers | Underground Operations | Quarterly | WP 04-AU1026<br>Inspecting for Deterioration and Functionality in accordance with MSHA requirements | Current | 3/28/15 | N/A | |
| Underground Openings—Roof Bolts and Travelways | Underground Operations | Weekly | WP 04-AU1007<br>Inspecting for Deterioration | Current | 3/31/15 | N/A | |
| Waste Hoist | Underground Operations | Preoperational | WP 04-HO1003<br>Inspecting for Deterioration, Safety Equipment, Communication Systems, and Mechanical Operability, Leaks/Spills, in accordance with MSHA requirements | Current | 3/17/15 | N/A | Hoist is operational for conveyance of equipment and emergency egress. |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Explosion-Isolation Walls | Underground Operations | Quarterly | Integrity and Deterioration of Accessible Areas | Current | 2/4/15 | N/A | |
| Bulkhead in Filled Panels | Underground Operations | Monthly | Integrity and Deterioration of Accessible Areas | Not Current | 2/4/15 | N/A | Inaccessible area due to ground control. Bolting required for entry. |
| MSHA Air Quality Monitor | Maintenance/ Underground Operations | Daily | WP 12-IH1828<br>Inspecting for Air Quality Monitoring Equipment Functional Check | Current | 3/31/15 | N/A | |
| Ambulances (Surface) and related emergency supplies and equipment | Emergency Services | Weekly | 12-FP0030<br>Inspecting for Mechanical Operability, Deterioration, and Required Equipment | Current | 3/29/15 | N/A | |
| Ambulances (Underground) and related emergency supplies and equipment | Emergency Services | Weekly | 12-FP0030<br>Inspecting for Mechanical Operability, Deterioration, and Required Equipment | Current | 3/28/15 | N/A | |
| Fire Detection and Alarm System (Underground) | Emergency Services | Semiannually | 12-FP0027<br>Inspecting for Deterioration, Operability of indicator lights and, underground fuel station dry chemical suppression system. Inspection is per NFPA 17 | Current | 1/8/15 | N/A | |
| Fire Extinguishers (Surface) | Emergency Services | Monthly | 12-FP0036<br>Inspecting for Deterioration, Leaks/Spills, Expiration, seals, fullness, and pressure | Current | 3/31/15 | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Fire Extinguishers (Underground) | Emergency Services | Monthly | 12-FP0036<br>Inspecting for Deterioration, Leaks/Spills, Expiration, seals, fullness, and pressure | Current | 3/31/15 | N/A | |
| Fire Hoses | Emergency Services | Annually (minimum) | 12-FP0031<br>Inspecting for Deterioration and Leaks/Spills | Current | 2/28/15 | N/A | |
| Fire Hydrants | Emergency Services | Semiannual/ annually | 12-FP0034<br>Inspecting for Deterioration and Leaks/Spills | Current | 3/28/15: (Semiannual)<br>7/15/14: (Annual) | N/A | |
| Fire Pumps | Emergency Services | Weekly/<br>annually | WP 12-FP0026<br>Inspecting for Deterioration, Leaks/Spills, valves, and panel lights | Current | 3/30/15 | N/A | |
| Fire Sprinkler Systems | Emergency Services | Monthly/ quarterly | WP 12-FP0025<br>Inspecting for Deterioration, Leaks/Spills, static pressures, and removable strainers | Current | 3/23/15, 3/25/15, 3/26/15 | N/A | A series of building fire sprinkler systems are inspected on a weekly basis so that a complete system inspection is accomplished on a monthly basis. |
| Fire and Emergency Response Trucks (Seagrave Fire Apparatus, Fire Suppression Truck) | Emergency Services | Weekly | 12-FP0033<br>Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment | Not Current | 3/27/15 | N/A | The Emergency One Apparatus was replaced with a Fire Suppression Truck. Its inspections begin in April. |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Fire and Emergency Response Trucks (Underground Rescue Truck) | Emergency Services | Weekly | 12-FP0030 and 12-FP0033<br>Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment | Not Current | 2/8/14 | N/A | As the underground rescue truck is returned to service as part of the recovery, the Permit required inspections will be scheduled and performed and the inspection dates will be noted in this table. |
| Hazardous Material Response Equipment | Emergency Services | Weekly | 12-FP0033<br>Inspecting for Mechanical Operability, Deterioration, and Required Equipment | Current | 3/31/15 | N/A | |
| Miners First Aid Station | Emergency Services | Quarterly | 12-FP0035 Inspecting for Required Equipment | Current | 1/5/15 | N/A | |
| Personal Protective Equipment (not otherwise contained in emergency vehicles or issued to individuals):<br>—Self-Contained Breathing Apparatus | Emergency Services | Weekly | 12-FP0029<br>Inspecting for Deterioration and Pressure | Current | 3/28/15 | N/A | |
| Rescue Truck (Surface) | Emergency Services | Weekly | 12-FP0030 and 12-FP0033<br>Inspecting for Mechanical Operability, Deterioration, Leaks/Spills, and Required Equipment | Current | 3/26/15 | N/A | |
| Vehicle Siren (Surface Vehicles) | Emergency Services | Weekly | Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks | Current | 3/26/15, 3/27/15,<br>3/29/15 | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Vehicle Siren (Underground Vehicles) | Emergency Services | Weekly | Functional Test included with inspection of the Ambulances, Fire Trucks, and Rescue Trucks | Current/ Underground Ambulance Only | 3/28/15 | N/A | |
| Adjustable Center of Gravity Lift Fixture | Waste Handling | Preoperational | WP 05-WH1410<br>Inspecting for Mechanical Operability and Deterioration | Current | 3/25/15 (41-T-037)<br>10/23/14 (41-T-038)<br>3/28/15 (41-T-032)<br>8/20/14 (41-T-036) | N/A | There are four ACGLFs, but the pre-operational inspection was only performed on the one fixture updated. The other ACGLFs will be inspected prior to use. |
| Contact-Handled (CH) TRU Underground Transporter | Waste Handling | Preoperational | WP 05-WH1603<br>Inspecting for Mechanical Operability, Deterioration, and area around transporter clear of obstacles | Current | 2/5/14 | When waste disposal operations resume | Equipment not in use due to the fire and radiological events. |
| Conveyance Loading Car | Waste Handling | Preoperational | WP 05-1406<br>Inspecting for Mechanical Operability, Deterioration, path clear of obstacles and guards in the proper place | Current | 12/15/14 (41-H-018) | When waste disposal operations resume | Equipment not in use due to the fire and radiological events. The preoperational inspection was completed for training purposes only. Inspection not intended for daily operations. |
| Facility Transfer Vehicle | Waste Handling | Preoperational | WP 05-WH1204<br>Inspecting for Mechanical Operability, Deterioration, path clear of obstacles, and guards in the proper place | Current | 3/23/15 (41-H-020A)<br>3/27/15 (41-H-020B) | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) on Surface | Waste Handling | Preoperational | WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412<br>Inspecting for Mechanical Operability, Deterioration, and On board fire suppression system | Current | 3/27/15 (41-H-009)<br>3/28/15 (41-H-013)<br>3/23/15 (41-H-051)<br>8/9/14 (41-T-051)<br>3/28/15 (41-H-012D)<br>3/28/15 (41-H-012E)<br>2/21/15 (74-H-010B) | N/A | |
| Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment) in Underground | Waste Handling | Preoperational | WP 05-WH1201, WP 05-WH1207, WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and WP 05-WH1412<br>Inspecting for Mechanical Operability, Deterioration, and On board fire suppression system | Current | 2/5/14 | When waste disposal operations resume | Equipment not in use due to the fire and radiological events. |
| Surface TRU Mixed Waste Handling Area | Waste Handling | Preoperational or Weekly | WP 05-WH1101<br>Inspecting for Deterioration, Leaks/Spills, Required Aisle Space, Posted Warnings, Communication Systems, Container Condition, and Floor coating integrity | Current | 3/25/15 (Weekly) | N/A | |
| TRU Mixed Waste Decontamination Equipment | Waste Handling | Annually | WP 05-WH1101<br>Inspecting for Required Equipment | Current | 12/30/14 | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Underground TRU Mixed Waste Disposal Area | Waste Handling | Preoperational | WP 05-WH1810<br>Inspecting for Deterioration, Leaks/Spills, mine pager phones, equipment, unobstructed access, signs, debris, and ventilation | Current | 2/5/14 | When waste disposal operations resume | Waste handling operations are suspended therefore preoperational inspections are not being performed. |
| TDOP Upender | Waste Handling | Preoperational | WP 05-WH1010<br>Inspecting for Mechanical Operability and Deterioration | Current | 10/9/13 | When waste disposal operations resume | Equipment not in use due to the fire and radiological events. |
| Waste Handling Cranes | Waste Handling | Preoperational | WP 05-WH1407<br>Inspecting for Mechanical Operability, Deterioration, and Leaks/Spills | Current | 1/6/15 (41-T-151A)<br>1/14/14 (41-T-151B)<br>3/28/15 (41-T-151D) | N/A | There are four cranes, but the pre-operational inspections were only performed on the cranes listed. The other crane will be inspected prior to use. |
| Push-Pull Attachment (Surface) | Waste Handling | Preoperational | WP 05-WH1401<br>Inspecting for Damage and Deterioration | Current | 3/28/15 (41-T-160A)<br>2/21/15 (41-T-160B) | N/A | |
| Push-Pull Attachment (Underground) | Waste Handling | Preoperational | WP 05-WH1401<br>Inspecting for Damage and Deterioration | Current | 2/5/14 | When waste disposal operations resume | Equipment not in use due to the fire and radiological events. |
| Trailer Jockey | Waste Handling | Preoperational | WP 05-WH1405<br>Inspecting for Mechanical Operability and Deterioration | Current | 2/15/15 (41-H-151B)<br>3/24/15 (41-H-151A)<br>12/02/14 (41-H-046) | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Bolting Robot | Waste Handling | Preoperational | WP 05-WH1203<br>Mechanical Operability | Current | 6/29/12 | When waste disposal operations resume | Equipment is currently out of service. |
| Yard Transfer Vehicle | Waste Handling | Preoperational | WP 05-WH1205<br>Mechanical Operability, clear of obstacles and Guards in proper place | Current | 7/29/14 (41-H-021A)<br>3/23/15 (41-H-021B) | N/A | |
| Payload Transfer Station | Waste Handling | Preoperational | WP 05-WH1208<br>Mechanical Operability, Deterioration, and Guards in proper place | Current | 2/16/15 (41-Z-041) | N/A | |
| Monorail Hoist | Waste Handling | Preoperational | WP 05-WH1202<br>Mechanical Operability, and leaks/spills | Current | 3/23/15 (41-H-027) | N/A | |
| Bolting Station | Waste Handling | Preoperational | WP 05-WH1203<br>Mechanical Operability, Deterioration, and Guards in proper place | Current | 3/23/15 (41-T-053A) (41-T-054A) | N/A | |
| Backup Power Supply Diesel Generators | Facility Operations | Monthly | WP 04-ED1301<br>Inspecting for Mechanical Operability and Leaks/Spills by starting and operating both generators. Results of this inspection are logged in accordance with WP 04-AD3008. | Current | 3/29/15 (#1)<br>3/29/15 (#2) | N/A | |
| Central Monitoring System (CMS) | Facility Operations | Continuous | Automatic Self-Checking | Current | 3/31/15 | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Mine Pager Phones (between surface and underground) | Facility Operations | Monthly | WP 04-PC3017<br>Testing of PA and Underground Alarms and Mine Page Phones at essential locations | Current | 3/26/15 | N/A | |
| Mine Pager Phones (underground) | Facility Operations | Monthly | WP 04-PC3017<br>Testing of PA and Underground Alarms and Mine Page Phones at essential locations | Current | 3/26/15 | N/A | |
| Public Address (and Intercom System) on Surface | Facility Operations | Monthly | WP 04-PC3017<br>Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode | Current | 3/26/15 | N/A | |
| Public Address (and Intercom System) in Underground | Facility Operations | Monthly | WP 04-PC3017<br>Testing of PA and Underground Alarms and Mine Page Phones at essential locations Systems operated in test mode | Current | 3/26/15 | N/A | |
| Radio Equipment | Facility Operations | Daily | Radios are operated daily and are repaired upon failure | Current | 3/31/15 | N/A | |
| Uninterruptible Power Supply (Central UPS) | Facility Operations | Daily | WP 04-ED1542<br>Inspecting for Mechanical Operability and Deterioration with no malfunction alarms. Results of this inspection are logged in accordance with WP 04- AD3008. | Current | 3/31/15 | N/A | |
| Water Tank Level | Facility Operations | Daily | SDD-WD00<br>Inspecting for Deterioration, and water levels. Results of this inspection are logged in accordance with WP 04-AD3008. | Current | 3/31/15 | N/A | |

| System/Equipment Name | Responsible Organization | Inspection Frequency | Procedure Number and Inspection Criteria | Inspection Status (Current/ Not Current) | Date of Last Inspection | Proposed Start Date (if Not Current or Equipment Not in Use)[1] | Comments |
|---|---|---|---|---|---|---|---|
| Facility Inspections (Water Diversion Berms) | Facility Engineering | Annually | WP 10-WC3008<br>Inspecting for Damage, Impediments to water flow, and Deterioration | Current | 9/7/14 | N/A | |
| Eye Wash and Shower Equipment (Surface) | Equipment Custodian | Weekly | WP 12-IS1832<br>Inspecting for Deterioration | Current | 3/30/15 | N/A | |
| Eye Wash and Shower Equipment (Underground) | Equipment Custodian | Weekly | WP 12-IS1832<br>Inspecting for Deterioration | Current | 3/28/15 | N/A | |
| Perimeter Fence, Gates, Signs | Security | Daily | PF0-010<br>Inspecting for Deterioration and Posted Warnings | Current | 3/31/15 | N/A | |
| Underground—Geomechanical Instrumentation System (GIS) | Geotechnical Engineering | Monthly | WP 07-EU1301<br>Inspecting for Deterioration | Current | 3/31/15 | N/A | Complete at accessible areas. |
| Ventilation Exhaust | Maintenance Operations | Quarterly | IC041098<br>Check for Deterioration and Calibration of Mine Ventilation Rate Monitoring Equipment | Not Current | 41F30703 Fan A (11/9/13)<br>41F30704 Fan B (5/20/13)<br>41F30702 Fan C (12/18/13) | N/A | The 700 horsepower fans are not in use because underground ventilation system is operating in filtration mode. |

[1] Inspection proposed start date of first quarter of calendar year 2016, is an estimate from the WIPP Recovery Plan. Inspections may be initiated prior to 3/31/16 as work zones are released in the underground. Therefore, 3/31/16 is a “placeholder,” and proposed start dates may be revised as recovery work progresses.

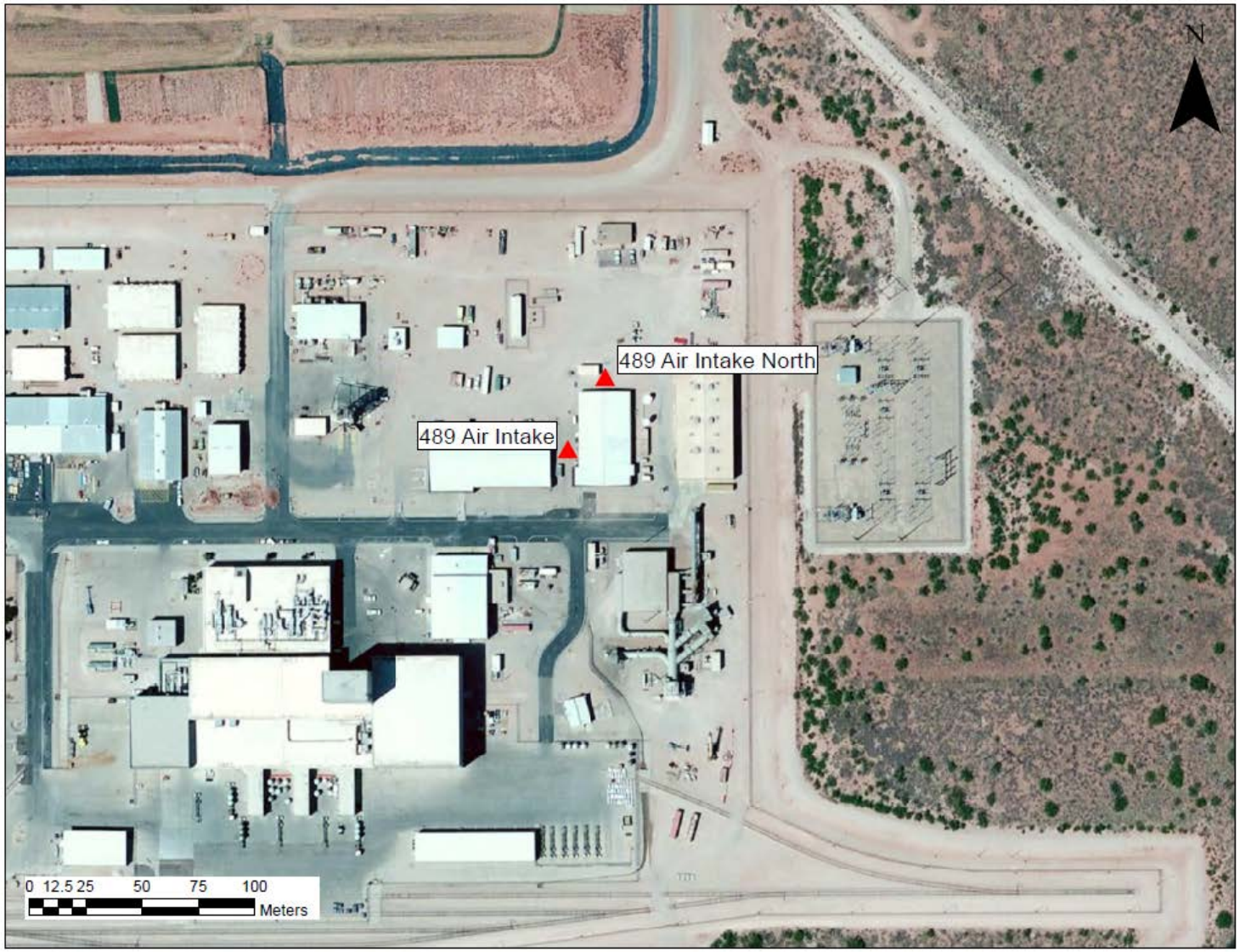
Attachment 2
TRU Mixed Waste Currently in Storage at the WIPP Facility (reserved)

# Attachment 3
# Environmental Monitoring

This attachment contains the following environmental monitoring data:

- VOC Monitoring
- Radiological Monitoring
  - Air samples
  - Surface water samples
  - Biota samples

**VOC Sampling Locations**




**(cont.) VOC Sampling Locations**

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.3 | 0.09 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.3 | 0.495 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Butane | 106-97-8 | PPBV | | 7.725 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Butane, 2-methyl- | 78-78-4 | PPBV | | 3.57 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Cyclohexane, methyl- | 108-87-2 | PPBV | | 1.425 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Cyclopentane, methyl- | 96-37-7 | PPBV | | 1.845 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.51 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Heptane | 142-82-5 | PPBV | | 0.555 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 4.125 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 4.365 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.53 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Pentane, 3-methyl- | 96-14-0 | PPBV | | 0.855 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Propane | 74-98-6 | PPBV | | 6.3 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 150 | 61.71 J |

**Qualifiers:**

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).
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NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 91.32 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Toluene | 108-88-3 | PPTV | 150 | 507.27 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 150 | 13.23 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 59.13 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9189 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | 0.12 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | 0.44 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | 0.36 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | 0.14 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 8.5 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 3.84 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 1 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.44 NJ |

**Qualifiers:**

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Isobutane | 75-28-5 | PPBV | | 4.56 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 4.36 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.32 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Pentane, 3-methyl- | 96-14-0 | PPBV | | 0.7 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 8 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 72.52 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 432.58 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | 57.74 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 200 | 377.72 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 46.9 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 46.86 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9187 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | 138.84 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | 0.36 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |

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NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

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* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 8.76 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 3.8 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 1.1 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 1.54 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.46 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Heptane | 142-82-5 | PPBV | | 0.44 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Isobutane | 75-28-5 | PPBV | | 4.64 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 4.52 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.34 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 7.98 NJ |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 72.34 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 136.4 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | 13.24 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 200 | 379.9 |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 17.06 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | 31.72 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 49.72 J |
| CEMRC | 2/4/2015 | 2/13/2015 | 9188 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | 17.62 J |

**Qualifiers:**

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U = Compound not detected above the MDL.
NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.3 | 0.09 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Acetone | 67-64-1 | PPBV | | 0.315 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Butane | 106-97-8 | PPBV | | 3 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Dichlorodifluoromethane | 75-71-8 | PPBV | | 0.375 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 1.695 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 1.38 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Propane | 74-98-6 | PPBV | | 2.76 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 150 | 69.24 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 96.18 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Toluene | 108-88-3 | PPTV | 150 | 112.52 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 150 | 14.73 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 22.91 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9192 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 3.84 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 1.88 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Dichlorodifluoromethane | 75-71-8 | PPBV | | 0.46 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Isobutane | 75-28-5 | PPBV | | 2.08 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 1.68 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.44 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 3.98 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 77.82 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 122.38 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | 8.42 J |

**Qualifiers:**

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 200 | 146.82 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 17.18 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 27.42 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9190 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | 8.14 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 3.56 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.46 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Dichlorodifluoromethane | 75-71-8 | PPBV | | 0.4 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Isobutane | 75-28-5 | PPBV | | 1.98 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 1.62 NJ |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 3.62 NJ |

**Qualifiers:**

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 79.1 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 116.28 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | 7.82 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 200 | 152.68 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 14.72 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 27.98 J |
| CEMRC | 2/5/2015 | 2/13/2015 | 9191 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | 7.04 J |
| | | | | | | | | | |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.6 | 0.39 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.6 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Butane | 106-97-8 | PPBV | | 7.26 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Butane, 2-methyl- | 78-78-4 | PPBV | | 3.63 NJ |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.93 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Cyclopentane, methyl- | 96-37-7 | PPBV | | 1.29 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 3.93 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 4.8 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.29 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Propane | 74-98-6 | PPBV | | 8.19 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 300 | 47.79 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 300 | 86.7 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 300 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 300 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Toluene | 108-88-3 | PPTV | 300 | 398.85 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 300 | 10.65 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 300 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 300 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 300 | 36.21 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9195 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 300 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | 0.56 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 6.52 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 3.14 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 1.08 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 1.24 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.44 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Isobutane | 75-28-5 | PPBV | | 3.48 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 4.5 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.38 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 6.74 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 49.02 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 108 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | 11.5 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 200 | 582.34 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 14.34 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 37.12 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9193 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | 20.92 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.3 | 0.075 J |

**Qualifiers:**

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U = Compound not detected above the MDL.
NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | 0.375 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.3 | 0.645 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | 0.135 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Benzene | 71-43-2 | PPBV | | 0.39 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 5.955 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 2.76 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 1.08 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.975 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.405 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Heptane | 142-82-5 | PPBV | | 0.435 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Isobutane | 75-28-5 | PPBV | | 3.15 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 4.095 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 1.26 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Pentane, 3-methyl- | 96-14-0 | PPBV | | 0.675 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 5.1 NJ |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 150 | 50.91 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 354.44 |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | 55.23 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 150 | 690.03 |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 150 | 38.91 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 37.58 J |
| CEMRC | 2/11/2015 | 2/18/2015 | 9194 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | 128.09 J |
| | | | | | | | | | |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Acetone | 67-64-1 | PPBV | | 0.465 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Butane | 106-97-8 | PPBV | | 1.44 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Dichlorodifluoromethane | 75-71-8 | PPBV | | 1.185 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 1.065 NJ |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 0.675 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Propane | 74-98-6 | PPBV | | 2.07 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 150 | 62.52 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 88.59 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Toluene | 108-88-3 | PPTV | 150 | 92.55 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 150 | 14.03 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 18.92 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9198 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | 0.1 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 1.26 NJ |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 0.62 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 1.46 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 68.72 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 91.84 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 200 | 99.18 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 14.04 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 18.34 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9196 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.4 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 1.14 NJ |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 0.56 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 1.34 NJ |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 200 | 67.4 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 200 | 84.3 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 200 | 90.4 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 200 | 12.86 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 200 | U |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 200 | 17.46 J |
| CEMRC | 2/12/2015 | 2/18/2015 | 9197 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 200 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.3 | 0.075 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.3 | 0.21 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Butane | 106-97-8 | PPBV | | 4.965 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Butane, 2-methyl- | 78-78-4 | PPBV | | 2.085 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.45 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.495 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 2.73 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 3.12 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.78 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Propane | 74-98-6 | PPBV | | 5.295 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 150 | 59.79 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 80.84 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Toluene | 108-88-3 | PPTV | 150 | 228.77 |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 150 | 13.34 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 27.9 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9201 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | 0.165 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.3 | 0.24 J |

**Qualifiers:**

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).
U = Compound not detected above the MDL.
NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 5.145 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 2.235 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.51 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.585 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Isobutane | 75-28-5 | PPBV | | 2.745 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 3.315 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.9 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 5.4 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 150 | 62.75 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 162.02 |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | 20.6 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 150 | 266.13 |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 150 | 20.61 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 30.39 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9199 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | 33.98 J |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | 0.15 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.3 | 0.27 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 5.265 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 2.235 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.51 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.6 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Isobutane | 75-28-5 | PPBV | | 2.835 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Nonanal | 124-19-6 | PPBV | | 0.42 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 3.39 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.9 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Pentane, 3-methyl- | 96-14-0 | PPBV | | 0.435 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 5.415 NJ |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 150 | 63.39 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 157.79 |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | 16.91 J |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 150 | 285.2 |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 150 | 21.21 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 30.11 J |
| CEMRC | 2/18/2015 | 2/19/2015 | 9200 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | 31.04 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Methylene Chloride | 75-09-2 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Toluene | 108-88-3 | PPBV | 0.3 | 0.315 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Butane | 106-97-8 | PPBV | | 4.275 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Butane, 2-methyl- | 78-78-4 | PPBV | | 1.905 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.57 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.555 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Isobutane | 75-28-5 | PPBV | | 2.205 NJ |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Pentane | 109-66-0 | PPBV | | 2.865 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.825 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Propane | 74-98-6 | PPBV | | 4.44 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Methylene Chloride | 75-09-2 | PPTV | 150 | 59.36 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 81.03 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Toluene | 108-88-3 | PPTV | 150 | 322.62 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Chloroform | 67-66-3 | PPTV | 150 | 12.41 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 28.95 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9204 | WQSP-4 | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Toluene | 108-88-3 | PPBV | 0.3 | 0.285 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | U |

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**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Butane | 106-97-8 | PPBV | | 4.08 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 1.875 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.57 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.555 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Cyclopropane, ethyl- | 1191-96-4 | PPBV | | 0.78 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Isobutane | 75-28-5 | PPBV | | 2.055 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Pentane | 109-66-0 | PPBV | | 2.7 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Propane | 74-98-6 | PPBV | | 4.185 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Methylene Chloride | 75-09-2 | PPTV | 150 | 63.24 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 127.08 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | 12.77 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Toluene | 108-88-3 | PPTV | 150 | 305.13 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Chloroform | 67-66-3 | PPTV | 150 | 16.74 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 29.45 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9202 | Building 489 North Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | 17.43 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPBV | 0.3 | 0.075 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPBV | 0.3 | 0.555 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Toluene | 108-88-3 | PPBV | 0.3 | 0.3 |

**Qualifiers:**

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).
U = Compound not detected above the MDL.
NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.

# Validated VOC Monitoring Data – Surface Sampling at the WIPP

analytical services by Carlsbad Environmental Monitoring & Research Center (CEMRC)

| Lab | Sample Date | Analysis Date | Sample ID | Location | Compound | CAS | UNITS | MRL* | Concentration |
|---|---|---|---|---|---|---|---|---|---|
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Chloroform | 67-66-3 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPBV | 0.3 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPBV | 0.3 | 0.18 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Butane | 106-97-8 | PPBV | | 4.035 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Butane, 2-methyl- | 78-78-4 | PPBV | | 1.875 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Cyclohexane, methyl- | 108-87-2 | PPBV | | 0.57 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Cyclopentane, methyl- | 96-37-7 | PPBV | | 0.555 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Isobutane | 75-28-5 | PPBV | | 2.055 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Pentane | 109-66-0 | PPBV | | 2.685 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Pentane, 2-methyl- | 107-83-5 | PPBV | | 0.765 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Propane | 74-98-6 | PPBV | | 4.095 NJ |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Methylene Chloride | 75-09-2 | PPTV | 150 | 70.65 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Carbon Tetrachloride | 56-23-5 | PPTV | 150 | 559.46 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1,1-Trichloroethane | 71-55-6 | PPTV | 150 | 107.13 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Chlorobenzene | 108-90-7 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Toluene | 108-88-3 | PPTV | 150 | 308.78 |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Chloroform | 67-66-3 | PPTV | 150 | 46.07 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1-Dichloroethylene | 75-35-4 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,1,2,2-Tetrachloroethane | 79-34-5 | PPTV | 150 | U |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | 1,2-Dichloroethane | 107-06-2 | PPTV | 150 | 27.92 J |
| CEMRC | 2/19/2015 | 2/19/2015 | 9203 | Building 489 Air Intake | Trichloroethylene (1) | 79-01-6 | PPTV | 150 | 181.89 |

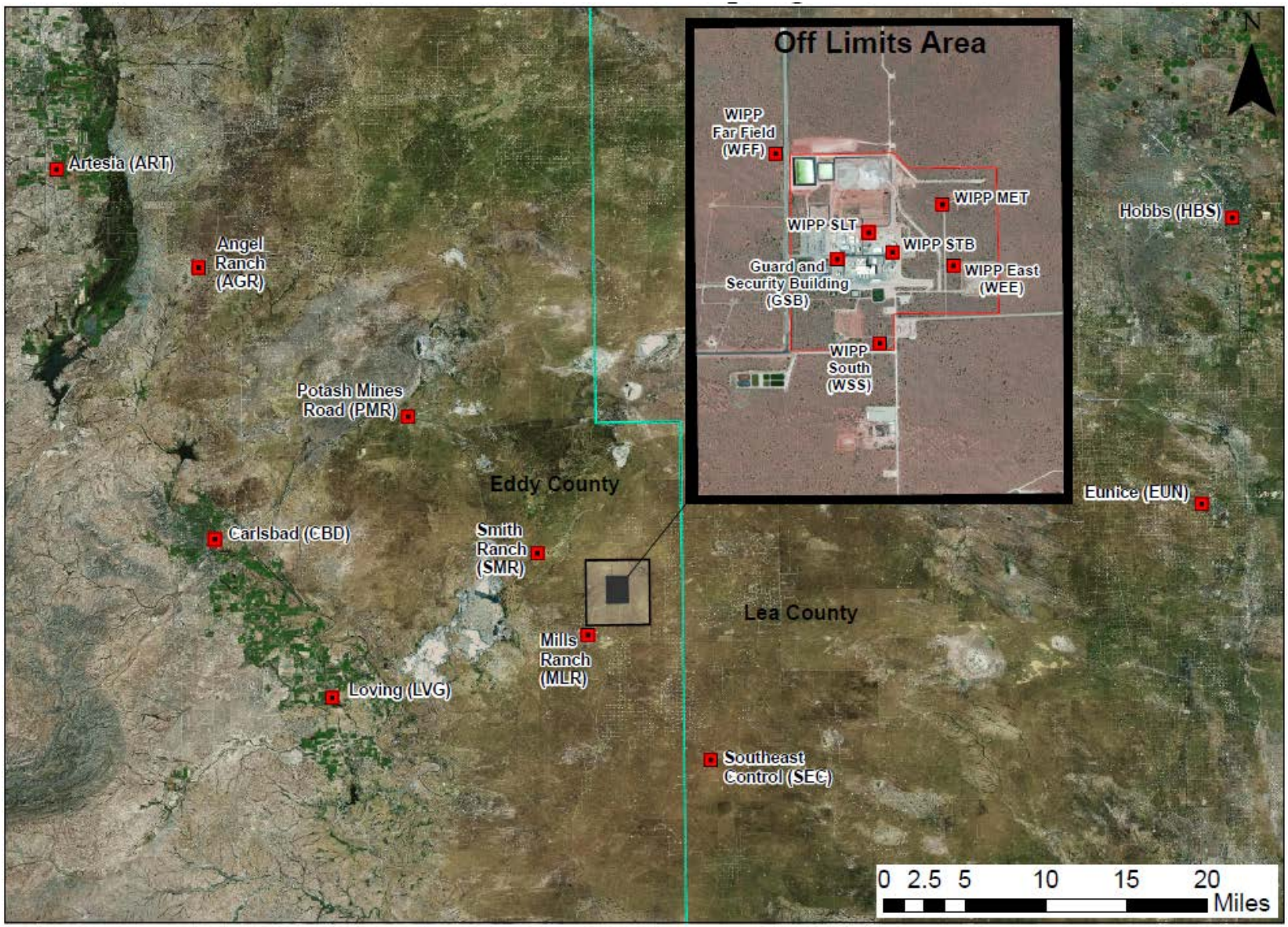
**Qualifiers:**

J = Estimated value; below laboratory's method reporting limit (MRL), but above method detection limit (MDL).
U = Compound not detected above the MDL.
NJ = Presumptive evidence of the presence of the compound at an estimated quantity; only used for tentatively identified compounds (TICs).

**Notes:**

(1) Starting with samples collected on or after May 12, 2014, trichloroethylene (TCE) is a target analyte in compliance with Administrative Order dated 5/12/2014. For samples collected before 5/12/2014, TCE is an additional requested analyte; not a Permit-prescribed target analyte but included in the laboratory quantitative analysis.

* A value will not appear in the MRL column for TICs.




**Active DOE Air Sampling Sites**

# Environmental Monitoring & Hydrology Airborne Particulates Sampling

| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/sample) | Pu-238 (dpm/sample) | Pu-239/240 (dpm/sample) |
| WIPP Far Field (WFF) | EE-WFF-20150217-1.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) co-located | EE-WFF-20150217-2.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) | EE-WEE-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) | EE-WSS-20150217-1.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) co-located | EE-WSS-20150217-2.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) | EE-MLR-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) | EE-CBD-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) | EE-SMR-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) | EE-SEC-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Meteorology Tower Building (MET)[†] | EE-MET-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Salt Hoist (SLT)[†] | EE-SLT-20150217-1.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Salt Hoist (SLT) co-located | EE-SLT-20150217-2.2 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Southeast of Training Building (STB)[†] | EE-STB-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Guard and Security Building (GSB)[‡] | EE-GSB-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Artesia (ART)[§] | EE-ART-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Eunice (EUN)[§] | EE-EUN-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Hobbs (HBS)[§] | EE-HBS-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Loving (LVG)[§] – aborted | EE-LVG-20150217-1.1 | 02/24/2015 | --- | --- | --- |
| Potash Mines Road (PMR)[‡‡] | EE-PMR-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| Angel Ranch (ANG)[§§] | EE-ANG-20150217-1.1 | 02/24/2015 | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) | EE-WFF-20150303-1.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/sample): 1.89E-02 to 5.05E-01

MDC Pu-238 (dpm/sample): 1.89E-02 to 1.57E+01

MDC Pu-239/240 (dpm/sample): 1.70E-02 to 5.94E-01

# Environmental Monitoring & Hydrology Airborne Particulates Sampling

| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/sample) | Pu-238 (dpm/sample) | Pu-239/240 (dpm/sample) |
| WIPP Far Field (WFF) co-located | EE-WFF-20150303-2.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) | EE-WEE-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) | EE-WSS-20150303-1.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) co-located | EE-WSS-20150303-2.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) | EE-MLR-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) | EE-CBD-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) | EE-SMR-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) | EE-SEC-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Meteorology Tower Building (MET)[†] | EE-MET-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Salt Hoist (SLT)[†] | EE-SLT-20150303-1.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Salt Hoist (SLT) co-located | EE-SLT-20150303-2.2 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Southeast of Training Building (STB)[†] | EE-STB-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Guard and Security Building (GSB)[‡] | EE-GSB-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Artesia (ART)[§] | EE-ART-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Eunice (EUN)[§] | EE-EUN-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Hobbs (HBS)[§] | EE-HBS-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Loving (LVG)[§] | EE-LVG-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Potash Mines Road (PMR)[‡‡] | EE-PMR-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |
| Angel Ranch (ANG)[§§] | EE-ANG-20150303-1.1 | 03/10/2015 | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/sample): 1.89E-02 to 5.05E-01

MDC Pu-238 (dpm/sample): 1.89E-02 to 1.57E+01

MDC Pu-239/240 (dpm/sample): 1.70E-02 to 5.94E-01

# Environmental Monitoring & Hydrology Airborne Particulates Sampling

| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/sample) | Pu-238 (dpm/sample) | Pu-239/240 (dpm/sample) |
| WIPP Far Field (WFF) 1st Quarter 2014 | AL-WFF…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) 1st Quarter 2014 | AL-WEE…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) 1st Quarter 2014 | AL-WSS…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) 1st Quarter 2014 | AL-MLR…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) 1st Quarter 2014 | AL-CBD…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) 1st Quarter 2014 | AL-SMR…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) 1st Quarter 2014 | AL-SEC…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) Dup 1st Quarter 2014 | AL-SEC…(Composite 6 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) 2nd Quarter 2014 | AL-WFF…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) 2nd Quarter 2014 | AL-WEE…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) 2nd Quarter 2014 | AL-WSS…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) 2nd Quarter 2014 | AL-MLR…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) 2nd Quarter 2014 | AL-CBD…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/sample): 1.89E-02 to 5.05E-01

MDC Pu-238 (dpm/sample): 1.89E-02 to 1.57E+01

MDC Pu-239/240 (dpm/sample): 1.70E-02 to 5.94E-01

# Environmental Monitoring & Hydrology Airborne Particulates Sampling

| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/sample) | Pu-238 (dpm/sample) | Pu-239/240 (dpm/sample) |
| Smith Ranch (SMR) 2nd Quarter 2014 | AL-SMR…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) 2nd Quarter 2014 | AL-SEC…(Composite 7 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) 3rd Quarter 2014 | AL-WFF…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) 3rd Quarter 2014 | AL-WEE…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) 3rd Quarter 2014 | AL-WSS…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) 3rd Quarter 2014 | AL-MLR…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) 3rd Quarter 2014 | AL-CBD…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) 3rd Quarter 2014 | AL-SMR…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) Dup 3rd Quarter 2014 | AL-SMR…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/sample): 1.89E-02 to 5.05E-01

MDC Pu-238 (dpm/sample): 1.89E-02 to 1.57E+01

MDC Pu-239/240 (dpm/sample): 1.70E-02 to 5.94E-01

# Environmental Monitoring & Hydrology Airborne Particulates Sampling

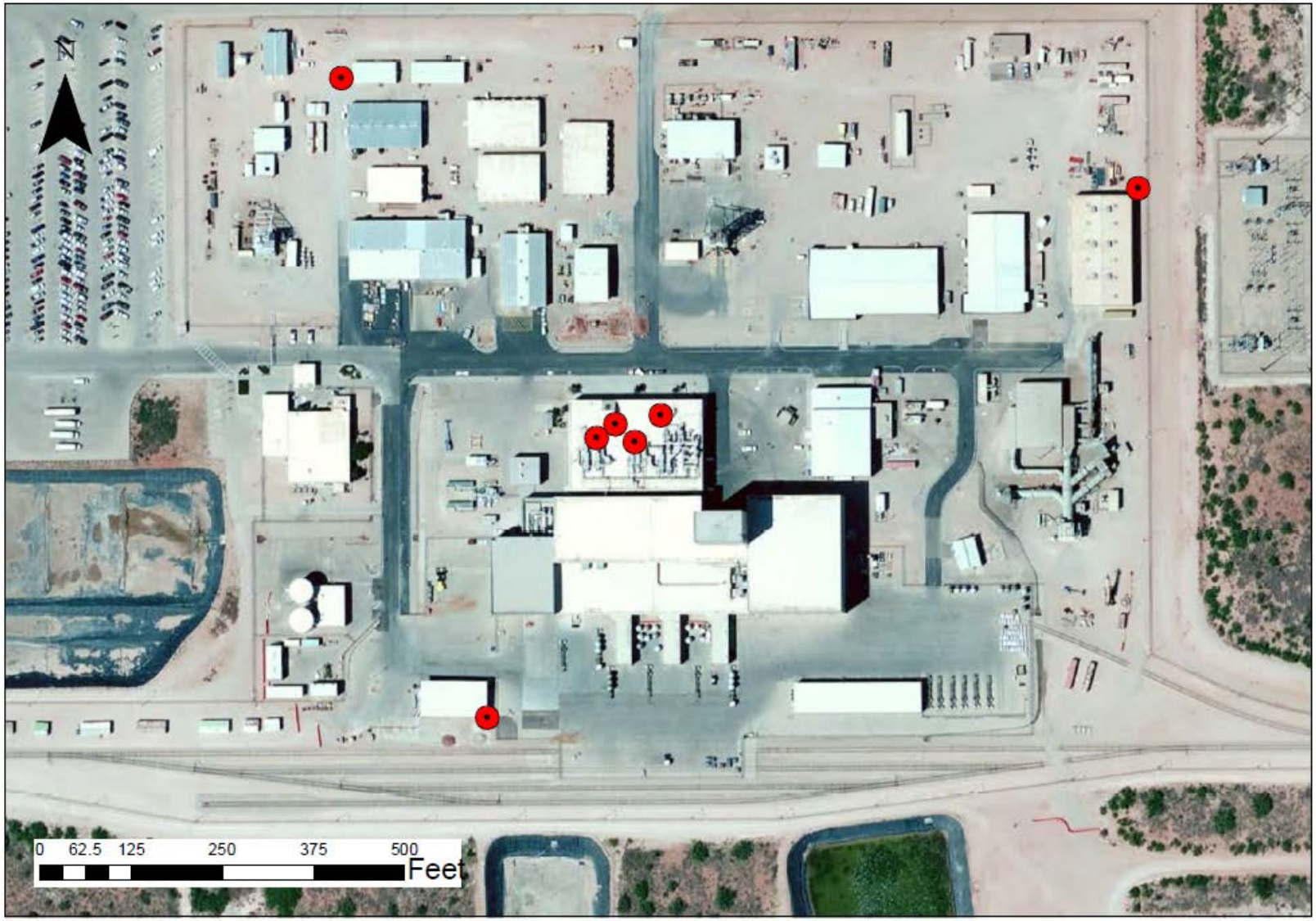
| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/sample) | Pu-238 (dpm/sample) | Pu-239/240 (dpm/sample) |
| Southeast Control (SEC) 3rd Quarter 2014 | AL-SEC…(Composite 14 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) 4th Quarter 2014 | AL-WFF…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP Far Field (WFF) Dup 4th Quarter 2014 | AL-WFF…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP East (WEE) 4th Quarter 2014 | AL-WEE…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| WIPP South (WSS) 4th Quarter 2014 | AL-WSS…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| Mills Ranch (MLR) 4th Quarter 2014 | AL-MLR…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| Carlsbad (CBD) 4th Quarter 2014 | AL-CBD…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| Smith Ranch (SMR) 4th Quarter 2014 | AL-SMR…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |
| Southeast Control (SEC) 4th Quarter 2014 | AL-SEC…(Composite 13 samples) | --- | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/sample): 1.89E-02 to 5.05E-01

MDC Pu-238 (dpm/sample): 1.89E-02 to 1.57E+01

MDC Pu-239/240 (dpm/sample): 1.70E-02 to 5.94E-01




**Surface Water Sampling Locations**

**Samples of Opportunity, January 31, 2015**

# Environmental Monitoring & Hydrology Surface Water Sampling

| Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/L) | Pu-238 (dpm/L) | Pu-239/240 (dpm/L) |
| Sample of Opportunity | WS-SOO-20150131-1.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |
| Sample of Opportunity (Dup) | WS-SOO-20150131-2.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |
| Sample of Opportunity | WS-SOO-20150131-3.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |
| Sample of Opportunity | WS-SOO-20150131-4.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |
| Sample of Opportunity | WS-SOO-20150131-5.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |
| Blank | WS-BLK-20150131-6.6 | 1/31/2015 | Below MDC | Below MDC | Below MDC |

**MDC ranges are:**

MDC Am-241 (dpm/L): 4.34E-02 to 1.51E-01

MDC Pu-238 (dpm/L): 2.84E-02 to 9.47E-02

MDC Pu-239/240 (dpm/L): 2.79E-02 to 7.60E-02

# Environmental Monitoring & Hydrology Biota Sampling - Fauna

| Tissue Type/Location | Sample ID Number | Sample Date | WIPP Labs Radiochemistry | | |
|---|---|---|---|---|---|
| | | | Am-241 (dpm/g) | Pu-238 (dpm/g) | Pu-239/240 (dpm/g) |
| Biotic Rabbit/Sample of Opportunity | BR-SOO-20150120-1.1 | 1/20/2015 | Below MDC | Below MDC | Below MDC |
| Biotic Quail/WIPP East | BQ-WEE-20150129-1.1 | 1/29/2015 | Below MDC | Below MDC | Below MDC |

**MDCs ranges are:**

MDC Am-241 (dpm/g): 2.01E-02 to 5.01E-02

MDC Pu-238 (dpm/g): 1.27E-02 to 2.60E-02

MDC Pu-239/240 (dpm/g): 8.64E-03 to 2.52E-02

# Attachment 4
# Surface and Underground Derived Waste Currently in Storage at the WIPP Facility

| Site of Origin | Shipment | Receipt Date/Time | ICV Closure Date/Time | Venting Deadline | Venting Date | WHB Deadline | Assembly | Unemplaced Containers | Waste Volume[1] ($ft^3$) |
|---|---|---|---|---|---|---|---|---|---|
| WIPP[2] | --- | 3/1/2015 | --- | --- | --- | 05/06/15 | WISD012[3] | 1 SWB | 66.3 |

Notes:

[1]55G Drum=7.4 $ft^3$, SWB=66.3 $ft^3$, TDOP=160 $ft^3$, 85G Drum=11.4 $ft^3$, 100G Drum=13.4 $ft^3$, SLB2=261 $ft^3$ (Permit Part 3, Section 3.3.1)

[2]Waste generated at the WIPP facility as a result of decontamination activities and characterized as derived waste (Permit Part 2, Section 2.3.5)

[3]Derived-waste container number

SWB – standard waste box

WHB – Waste Handling Building

# Attachment 5
# Status of RCRA Contingency Plan Required Activities (reserved)

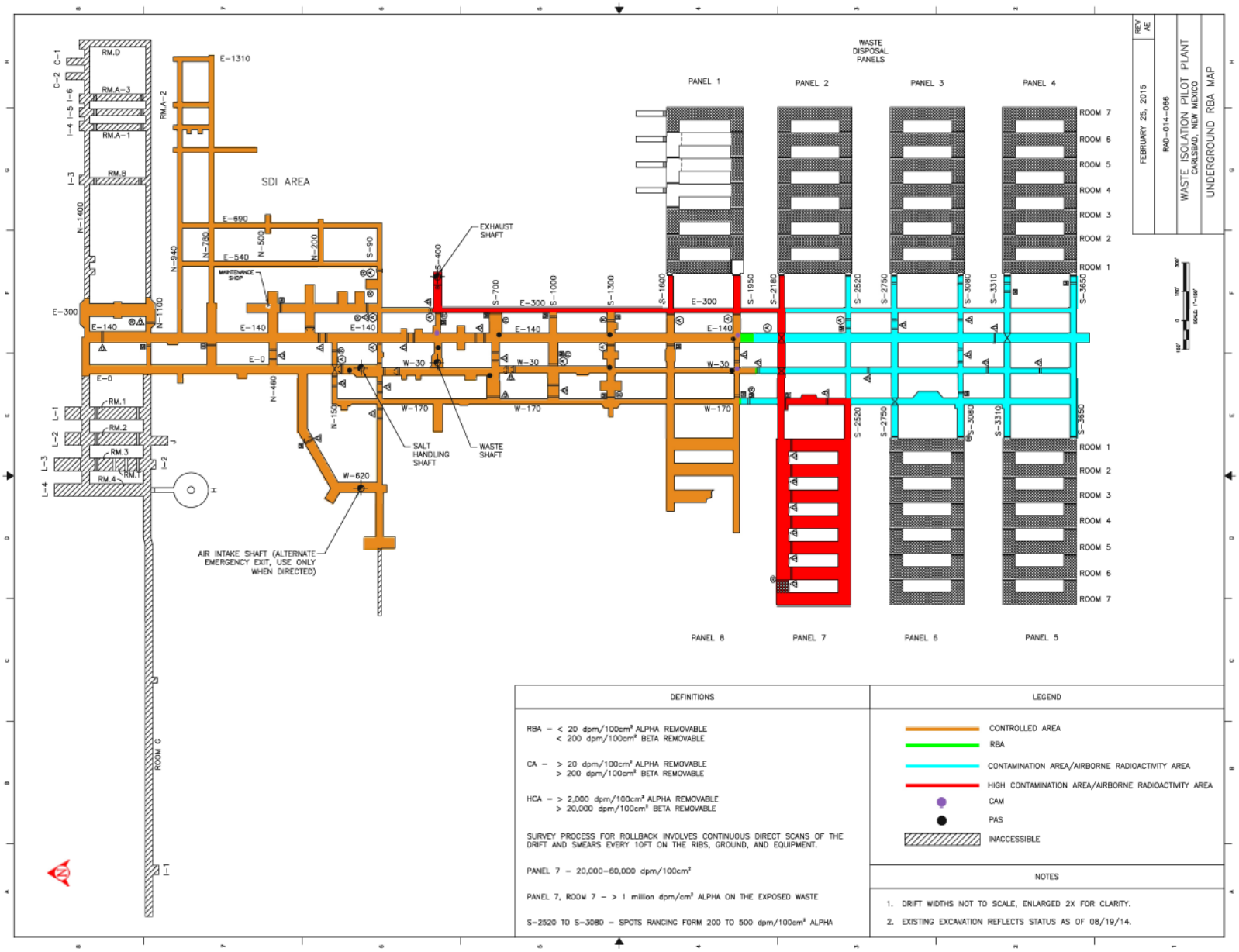
# Attachment 6
# Corrective Actions Required for Recovery (reserved)

# Attachment 7
# As-Found Condition of Panel 7

Project Reach team members work to obtain video of emplacement waste located in Panel 7, Room 7 where the radiological release occurred.

Project Reach's 90-foot boom is positioned over the top of waste containers in Panel 7, Room 7, as a remotely operated video camera collects photographic evidence.

# Attachment 8
# Panel 7 Recovery-Related Work




**Status of the WIPP Underground Rollback Areas for this Reporting Period**
**February 25, 2015**

Attachment 9
As-Found Condition of Panel 6

**As-Found Condition of Panel 6, S-3080 Drift between W-30 and W-170**

**As-Found Condition of Panel 6, S-2750 Drift**