
**Title 40 CFR Part 191
Subparts B and C
Compliance Recertification Application 2014
for the
Waste Isolation Pilot Plant**

**Inspections
(40 CFR § 194.21)**



**United States Department of Energy
Waste Isolation Pilot Plant**

**Carlsbad Field Office
Carlsbad, New Mexico**

Compliance Recertification Application 2014
Inspections
(40 CFR § 194.21)

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Acronyms and Abbreviations

AMWTF	Advanced Mixed Waste Treatment Facility
CCA	Compliance Certification Application
CARD	Compliance Application Review Document
CCP	Central Characterization Project
CFR	Code of Federal Regulations
CH-TRU	contact-handled transuranic
CRA	Compliance Recertification Application
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
INL	Idaho National Laboratory
LANL	Los Alamos National Laboratory
NRD	Naval Reactor Division
ORNL	Oak Ridge National Laboratory
QA	quality assurance
RH-TRU	remote-handled transuranic
TRU	transuranic
WIPP	Waste Isolation Pilot Plant
WWIS	WIPP Waste Information System

Elements and Chemical Compounds

MgO	magnesium oxide
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1 **21.0 Inspections (40 CFR § 194.21)**

2 **21.1 Requirements**

§ 194.21 Inspections

(a) The Administrator or the Administrator's authorized representative(s) shall, at any time:

(1) Be afforded unfettered and unannounced access to inspect any area of the WIPP, and any locations performing activities that provide information relevant to compliance application(s), to which the Department has rights of access. Such access shall be equivalent to access afforded Department employees upon presentation of credentials and other required documents.

(2) Be allowed to obtain samples, including split samples, and to monitor and measure aspects of the disposal system and the waste proposed for disposal in the disposal system.

(b) Records (including data and other information in any form) kept by the Department pertaining to the WIPP shall be made available to the Administrator or the Administrator's authorized representative upon request. If requested records are not immediately available, they shall be delivered within 30 calendar days of the request.

(c) The Department shall, upon request by the Administrator or the Administrator's authorized representative, provide permanent, private office space that is accessible to the disposal system. The office space shall be for the exclusive use of the Administrator or the Administrator's authorized representative(s).

(d) The Administrator or the Administrator's authorized representative(s) shall comply with applicable access control measures for security, radiological protection, and personal safety when conducting activities pursuant to this section.

3

4 **21.2 Background**

5 40 CFR § 194.21 (U.S. EPA 1996) provides the U.S. Environmental Protection Agency (EPA)
6 with the authority to inspect all activities at the Waste Isolation Pilot Plant (WIPP) and all
7 activities located off-site that provide information relevant to any compliance applications.

8 **21.3 1998 Certification Decision**

9 The EPA conducted no inspection under the authority of section 194.21 prior to the 1998
10 Certification Decision. With the issuance of its 1998 Certification Decision (U.S. EPA 1998),
11 the EPA identified inspections that may be performed under the authority at section 194.21.
12 These include the following:

- 13 • The inspection of the panel closure system on waste panels that have been filled and are
14 being sealed to confirm compliance with Condition 1 of the EPA's 1998 Certification
15 Decision (U.S. EPA 1998)
- 16 • The verification that specific actions identified by the U.S. Department of Energy (DOE) in
17 the Certification and supplementary information (and in any additional documentation
18 submitted in accordance with Condition 4) are being taken to test and implement passive
19 institutional controls
- 20 • Announced and unannounced inspections of activities at the WIPP and at all off-site facilities
21 that provide information included in certification applications

- 1 • The inspection of the DOE’s implementation of the monitoring plans that the DOE has set
2 forth to demonstrate compliance with 40 CFR § 194.42
- 3 • The inspection of any records relevant to the Certification kept by the DOE, including those
4 records required to be generated in accordance with the compliance criteria
- 5 • The inspections of approved quality assurance (QA) programs at the WIPP and at waste
6 generator sites to ensure the programs are being adequately maintained and documented

7 After the 1998 Certification Decision, the EPA began using the authority given by section 194.21
8 to conduct inspections at the WIPP. Inspections include magnesium oxide (MgO) backfill, waste
9 emplacement, the monitoring programs established to collect data for each of the monitored
10 parameters identified in Table 21-1, and the examination of documentation (records) to verify
11 compliance at the WIPP.

12 **Table 21-1. Monitored Parameters**

Monitored Parameters	
Geomechanical Parameters <ul style="list-style-type: none"> • Creep closure • Extent of deformation • Initiation of brittle deformation • Displacement of deformation features Hydrological Parameters <ul style="list-style-type: none"> • Culebra groundwater composition • Change in Culebra groundwater flow direction 	Waste Activity Parameters <ul style="list-style-type: none"> • Waste activity subsidence parameter • Subsidence measurements Drilling-Related Parameters <ul style="list-style-type: none"> • Drilling rate • The probability of encountering a Castile brine reservoir

13

14 The monitoring inspection activities included an examination of monitoring and sampling
15 equipment both on- and off-site and underground. The EPA also reviewed sampling procedures
16 and measurement techniques and verified implementation of an effective QA program for
17 monitoring activities.

18 This provision of the EPA’s Compliance Criteria was not applied prior to the 1998 Certification
19 Decision. After 1998, the EPA used the authority given by section 194.21 to inspect the WIPP
20 monitoring programs, MgO backfill, and waste emplacement requirements.

21 **21.4 Changes in the CRA-2004**

22 The 2004 Compliance Recertification Application (CRA-2004) (U.S. DOE 2004) did not address
23 the EPA’s inspection activities under section 194.21. However, the EPA inspection activities
24 were addressed in Compliance Application Review Document (CARD) 21 (U.S. EPA 2006a).
25 CARD 21 identified monitoring inspections and waste emplacement inspections that were
26 conducted from March 23, 1999, through July 12, 2005. This information is duplicated in Table
27 21-2.

Table 21-2. CRA-2004 Monitoring and Waste Emplacement Inspection Results (1999–2005)

Date of Inspection	Inspection Type	Inspection Results	Reference
March 24–25, 1999	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 1999a)
September 8, 1999	Waste Emplacement	The EPA had no findings. The EPA had one minor concern that two procedures did not specify the form that records must take. This concern did not require a response from the DOE.	(U.S. EPA 2000a)
June 21–22, 2000	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2000a)
June 20–22, 2000	Waste Emplacement	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2000b)
June 20–21, 2001	Monitoring	The EPA had one finding and no concerns. The finding noted that the subsidence monitoring program at the WIPP did not have an adequate written procedure to implement an effective QA program. In response to the EPA’s finding, the DOE developed a new subsidence procedure. The EPA evaluated the procedure and found it to be adequate.	(U.S. EPA 2001a)
June 21, 2001	Waste Emplacement	The EPA had no findings and one concern. The concern noted that the DOE did not appear to have a procedure that required proper documentation of off-normal events. This concern did not require a response from the DOE because the DOE provided all documentation requested.	(U.S. EPA 2001b)
June 26–28, 2002	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2002a)
June 24–27, 2002	Waste Emplacement	The EPA had no findings or concerns during this inspection.	U.S. EPA 2002b)
June 18–19, 2003	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2003a)
June 17–19, 2003	Waste Emplacement	The EPA had one finding and no concerns during this inspection. The EPA was unable to determine that waste was being emplaced in a random manner. This finding was resolved in the CRA-2004.	(U.S. EPA 2003b)

Table 21-2. CRA-2004 Monitoring and Waste Emplacement Inspection Results (1999–2005) (continued)

Date of Inspection	Inspection Type	Inspection Results	Reference
June 28 through July 1, 2004	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2004a)
June 28 through July 1, 2004	Waste Emplacement	The EPA had no findings and one concern during this inspection. The EPA found that the DOE did not appear to have a real-time system to track and calculate the actual MgO placed with waste at disposal. This concern was resolved by using the WIPP Waste Information System (WWIS) to track the quantities of MgO.	(U.S. EPA 2004b)
July 12–15, 2005	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2005a)
May 17–19, 2005	Waste Emplacement	The EPA had no findings and one concern during this inspection. The EPA found that the DOE needed to develop a formal procedure that guides the MgO emplacement decision-making process rather than using training materials, and that the WWIS needed to be back-populated with the quantity of emplaced MgO. In response to this concern, the WWIS was back-populated.	(U.S. EPA 2005b)

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2 **21.5 EPA’s Evaluation of Compliance for the 2004 Recertification**

3 During each of the inspections listed in Table 21-3, the DOE provided the EPA with unfettered
4 access to facilities, lists of records, access to these records as requested, and access to private
5 office space. Additionally, the DOE actively supported the EPA’s inspection activities. Based
6 on the EPA’s review and evaluation of the CRA-2004, the EPA determined that the DOE
7 continued to comply with the requirements for section 194.21 (U.S. EPA 2006a).

8 **21.6 Changes or New Information Between the CRA-2004 and the CRA-2009** 9 **(Previously: Changes or New Information Since the 2004 Recertification)**

10 Table 21-3 lists the seven inspections conducted by the EPA under the authority of section
11 194.21 since the inspections reported in CARD 21 (U.S. EPA 2006a).

12 During each of the inspections listed in Table 21-3, the DOE met all the requirements of section
13 194.21, providing the EPA with unfettered access to facilities, lists of records, access to the

1 records requested, and access to private office space. Additionally, the DOE actively supported
 2 the EPA’s inspection activities as required by section 194.21.

Table 21-3. Post-CRA-2004 Monitoring and Waste Emplacement Inspection Results (2006–2007)

Date of Inspection	Inspection Type	Inspection Results	Reference
June 20–22, 2006	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA(2006b))
June 20–22, 2006	Waste Emplacement	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2006c)
July 10–12, 2007	Monitoring	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2007a)
July 10-12, 2007	Waste Emplacement	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2007b)
January 9–11, 2007	Remote-handled Transuranic (RH-TRU) Emplacement Plan	The EPA had no findings or concerns during this inspection. The EPA verified that RH-TRU waste could be emplaced in the WIPP repository according to the RH-TRU Emplacement Plan.	(U.S. EPA 2007c)
October 7, 2007	Unannounced inspection at the Advanced Mixed Waste Treatment Facility (AMWTF) and the Accelerated Retrieval Project at the Idaho National Laboratory (INL)	The EPA had no findings or concerns during the inspections. However, the EPA requested information on the process used for regrouping four pre-1970 buried waste streams. EPA also requested information for estimating transuranic (TRU), mixed TRU, and low-level waste volumes. On December 28, 2007, the DOE provided the EPA with the requested information. Letter from the EPA to the DOE (March 18, 2008) acknowledging receipt of additional information requested that adequately addressed the EPA concerns.	(U.S. EPA 2007d) (U.S. EPA 2008a)
November 21–28, 2007	DOE document development and review process	The EPA made five process improvement recommendations.	(Reyes 2008)

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4 **21.7 EPA’s Evaluation of Compliance for the 2009 Recertification**

5 The inspections section of the compliance criteria, 40 CFR 194.21, lists specific requirements
 6 related to the EPA’s ability to perform inspections involving the WIPP. These requirements
 7 include unfettered and unannounced access equivalent to that of DOE employees, availability of
 8 records for review, and private office access if needed to perform inspections. The EPA

Table 21-4. Post-CRA--2009 40 CFR 194.21 Inspection Results (2007–2012)

Date of Inspection	Inspection Type	Inspection Results	Reference
	in the WIPP repository.	MgO was calculated and emplaced properly. The EPA had no findings or concerns during the inspection. However, the EPA recommended the DOE maintain a permanent photographic record of the RH canister number as it is removed from the transportation cask.	
June 24–25, 2009	Other – Unannounced Inspection at Oak Ridge National Laboratory (ORNL) of the Central Characterization Project (CCP) waste characterization program for contact-handled transuranic (CH-TRU) and RH-TRU waste focusing on radiological characterization and visual examination of RH-TRU wastes, and real-time radiography of CH-TRU waste. Chain-of-custody practices for CH and RH-TRU wastes were also reviewed.	The EPA had no findings or concerns during this inspection.	(U.S. EPA 2009b)
July 14–16, 2009	Inspections at the WIPP to examine the DOE’s ability to monitor the 10 parameters listed in the CCA section 7.0 Table 7.7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, and confirmed that the results of the monitoring programs were reported annually. The EPA also concluded that waste emplacement activities were adequate and MgO was calculated and emplaced properly. The EPA had no findings or concerns during the inspection. However, the EPA recommended that procedure documentation errors be corrected, as noted in the emplacement inspection report. A new procedure, WP 05-WH.02, Revision 1, <i>WIPP Waste Handling Operations WDS User’s Manual</i> , corrected this issue.	(U.S. EPA 2009a) (WP05-WH.02)
June 29–July 1, 2010	Inspections at the WIPP to examine the DOE’s ability to monitor the 10 parameters listed in the CCA section 7.0 Table 7.7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, and confirmed that the results of the monitoring programs were reported annually. The EPA also concluded that waste emplacement activities were adequate and MgO was calculated and emplaced properly. The EPA had no findings or concerns during the inspection.	(U.S. EPA 2010a)
May 10–12, 2011	Inspections at the WIPP to examine the DOE’s ability to monitor the 10 parameters listed in	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, and	(U.S. EPA 2011)

Table 21-4. Post-CRA--2009 40 CFR 194.21 Inspection Results (2007–2012)

Date of Inspection	Inspection Type	Inspection Results	Reference
	the CCA section 7.0 Table 7.7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	confirmed that the results of the monitoring programs were reported annually. The EPA also concluded that waste emplacement activities were adequate and MgO was calculated and emplaced properly. The EPA had no findings or concerns during the inspection.	
September 19–20, 2011	Other – Unannounced inspections at INL and the CBFO for CCP waste characterization program activities for CH-TRU.	The EPA confirmed that INL-CCP characterization of small quantity site waste from the Naval Reactor Division (NRD) is consistent with the conditions and limitations set forth in the EPA’s baseline approval and subsequent Tier 1 changes.	(U.S. EPA 2012)
July 17–19, 2012	Inspections at the WIPP to examine the DOE’s ability to monitor the 10 parameters listed in the CCA section 7.0 Table 7.7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	Inspection results were not received by the data cutoff date of December 31, 2012.	None

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2 The DOE continues to comply with section 194.21, and there are no outstanding issues with the
3 EPA regarding section 194.21.

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