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

Removal of Waste
(40 CFR § 194.46)**



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

**Carlsbad Field Office
Carlsbad, New Mexico**

**Removal of Waste
(40 CFR § 194.46)**

Table of Contents

46.0 Removal of Waste (40 CFR § 194.46) 46-1
 46.1 Requirements..... 46-1
 46.2 Background 46-1
 46.3 1998 Certification Decision..... 46-1
 46.4 Changes in the CRA-2004..... 46-2
 46.5 EPA’s Evaluation of Compliance for the 2004 Recertification 46-2
 46.6 Changes or New Information Since the 2004 Recertification..... 46-2
 46.7 References 46-2

This page intentionally left blank.

Acronyms and Abbreviations

CARD	Compliance Application Review Document
CCA	Compliance Certification Application
CRA	Compliance Recertification Application
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
WIPP	Waste Isolation Pilot Plant

This page intentionally left blank.

1 **46.0 Removal of Waste (40 CFR § 194.46)**

2 **46.1 Requirements**

§ 194.46 Removal of Waste

Any compliance application shall include documentation which demonstrates that removal of waste from the disposal system is feasible for a reasonable period of time after disposal. Such documentation shall include an analysis of the technological feasibility of mining the sealed disposal system, given technology levels at the time a compliance application is prepared.

3

4 **46.2 Background**

5 The U.S. Environmental Protection Agency's (EPA's) 40 CFR § 194.46, "Removal of Waste"
6 (U.S. Environmental Protection Agency 1996a), is one of the six assurance requirements in the
7 Compliance Criteria. The EPA states in the preamble to the 1985 promulgation of the disposal
8 standards 40 CFR Part 191 (U.S. Environmental Protection Agency 1993) that the assurance
9 requirements were included in the disposal standards to compensate in a qualitative manner for
10 the inherent uncertainties in projecting the behavior of natural and engineered components of the
11 Waste Isolation Pilot Plant (WIPP) for many thousands of years.

12 **46.3 1998 Certification Decision**

13 To meet the criteria of section 194.46, the EPA states in their Compliance Application Guidance
14 that compliance with the section 194.46 criteria is demonstrated by an analysis that includes (1)
15 procedures for removal of waste after disposal are complete, (2) descriptions of current
16 technology that could be used in implementing these procedures, and (3) an estimate of when it
17 will no longer be technologically feasible to remove the waste (U.S. Environmental Protection
18 Agency 1996b).

19 The U.S. Department of Energy's (DOE's) demonstration of compliance with section 194.46
20 was included in the Compliance Certification Application (CCA) (U.S. Department of Energy
21 1996), Chapter 7.0 and Appendix WRAC. The DOE presented a five-phased approach to
22 accomplish the removal of waste. This approach was supported by a discussion of techniques
23 that could be used to remove the waste, given repository conditions at the time of removal. The
24 EPA reviewed the material to assess the completeness of the strategy and the justification of the
25 proposed technology for removing the waste. The EPA states in their 1998 Certification
26 Decision (U.S. Environmental Protection Agency 1998a) for section 194.46 that the DOE has
27 demonstrated it is possible to remove waste from the repository for a reasonable period of time
28 after disposal; therefore, the EPA found the DOE in compliance with section 194.46. A
29 complete description of the EPA's decision can be found in U.S. Environmental Protection
30 Agency 1998a, Section VIII.D.6, and Compliance Application Review Document (CARD) 46
31 (U.S. Environmental Protection Agency 1998b).

1 **46.4 Changes in the CRA-2004**

2 The DOE did not report any changes in the 2004 Compliance Recertification Application (CRA-
3 2004) (U.S. Department of Energy 2004) to the information on which the EPA based their 1998
4 Certification Decision (U.S. Environmental Protection Agency 1998a). The DOE maintained
5 their original position on waste removal after closure, which was presented in the CCA, Chapter
6 7.0, Section 7.6. Only editorial changes were made to the original text in the CCA, Chapter 7.0,
7 Section 7.6, pp. 7-90 through 7-91. The CRA-2004 included the CCA, Appendix WRAC by
8 reference; no changes were made to Appendix WRAC.

9 **46.5 EPA's Evaluation of Compliance for the 2004 Recertification**

10 Based on the EPA's review of the activities and conditions in and around the WIPP site, the EPA
11 did not identify any significant changes in the planning and execution of the DOE's strategy for
12 removal of waste since the 1998 Certification Decision (U.S. Environmental Protection Agency
13 1998a). The CRA-2004 provides documentation that the removal of waste from the disposal
14 system is feasible for a reasonable period of time after disposal (see the CRA-2004, Chapter 7.0,
15 Section 7.6.2).

16 The EPA did not receive any public comments on the DOE's continued compliance with the
17 removal-of-waste requirements of section 194.46 presented in the CRA-2004.

18 Based on a review and evaluation of the CRA-2004 and the CCA, Appendix WRAC, the EPA
19 determined that the DOE continued to comply with the requirements of section 194.46 (U.S.
20 Environmental Protection Agency 2006, Section V.E).

21 **46.6 Changes or New Information Since the 2004 Recertification**

22 The DOE has not changed its position on waste removal presented in the CCA, Chapter 7.0,
23 Section 7.6. There have been no design changes or changes to the disposal system in waste
24 emplacement within the disposal area since the CRA-2004. There have been no changes in the
25 planning or execution of the DOE's strategy for removal of waste since the EPA's 1998
26 Certification Decision (U.S. Environmental Protection Agency 1998a). Thus, there is no new
27 information to be provided as part of the CRA-2009, and the information presented in the CRA-
28 2004, Chapter 7.0, Section 7.6, pp. 7-90 through 7-91 and the CCA, Appendix WRAC, continues
29 to demonstrate compliance with the provisions of section 194.46.

30 **46.7 References**

31 U.S. Department of Energy (DOE). 1996. *Title 40 CFR Part 191 Compliance Certification*
32 *Application for the Waste Isolation Pilot Plant* (October). 21 vols. DOE/CAO-1996-2184.
33 Carlsbad, NM: Carlsbad Area Office.

34 U.S. Department of Energy (DOE). 2004. *Title 40 CFR Part 191 Compliance Recertification*
35 *Application for the Waste Isolation Pilot Plant* (March). 10 vols. DOE/WIPP 2004-3231.
36 Carlsbad, NM: Carlsbad Field Office.

- 1 U.S. Environmental Protection Agency (EPA). 1993. “40 CFR Part 191: Environmental
2 Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-
3 Level and Transuranic Radioactive Wastes; Final Rule.” *Federal Register*, vol. 58 (December
4 20, 1993): 66398–416.
- 5 U.S. Environmental Protection Agency (EPA). 1996a. “40 CFR Part 194: Criteria for the
6 Certification and Recertification of the Waste Isolation Pilot Plant’s Compliance with the 40
7 CFR Part 191 Disposal Regulations: Final Rule.” *Federal Register*, vol. 61 (February 9, 1996):
8 52234–45.
- 9 U.S. Environmental Protection Agency (EPA). 1996b. *Compliance Application Guidance for*
10 *40 CFR 194* (March 29). EPA 402-R-95-014. ERMS 239159. Washington, DC: Office of
11 Radiation and Indoor Air.
- 12 U.S. Environmental Protection Agency (EPA). 1998a. “40 CFR Part 194: Criteria for the
13 Certification and Recertification of the Waste Isolation Pilot Plant’s Compliance with the
14 Disposal Regulations: Certification Decision; Final Rule.” *Federal Register*, vol. 63 (May 18,
15 1998): 27353–406.
- 16 U.S. Environmental Protection Agency (EPA). 1998b. “CARD No. 46: Removal of Waste.”
17 *Compliance Application Review Documents for the Criteria for the Certification and*
18 *Recertification of the Waste Isolation Pilot Plant’s Compliance with the 40 CFR 191 Disposal*
19 *Regulations: Final Certification Decision* (May) (pp. 46-1 through 46-4). Washington, DC:
20 Office of Radiation and Indoor Air.
- 21 U.S. Environmental Protection Agency (EPA). 2006. “Recertification CARD No. 46: Removal
22 of Waste.” *Compliance Application Review Documents for the Criteria for the Certification and*
23 *Recertification of the Waste Isolation Pilot Plant’s Compliance with the 40 CFR 191 Disposal*
24 *Regulations: Final Recertification Decision* (March) (pp. 46-1 through 46-2). Washington, DC:
25 Office of Radiation and Indoor Air.