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**Title 40 CFR Part 191  
Subparts B and C  
Compliance Recertification Application 2019  
for the  
Waste Isolation Pilot Plant**

**Structure of the CRA-2019**



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

Carlsbad Field Office  
Carlsbad, New Mexico

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# **Compliance Recertification Application 2019**

## **Structure of the CRA-2019**

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### **Acronyms and Abbreviations**

CFR	Code of Federal Regulations
CRA	Compliance Recertification Application
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
PA	Performance Assessment
WIPP	Waste Isolation Pilot Plant

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## 1.0 Structure of the CRA-2019

The 2019 Compliance Recertification Application (CRA-2019) is organized to follow the sections/requirements of 40 Code of Federal Regulations (CFR) Part 194. In particular, each numbered section of the CRA-2019 corresponds to a major section of 40 CFR Part 194 and the requirements therein. This approach aligns with the organization used by the U.S. Environmental Protection Agency (EPA) for their Compliance Application Review Documents and is intended to facilitate the EPA's review of the application.

Beginning with this CRA, historical text from previous CRAs will no longer be carried forward. With this change, the content of the application is focused on any new data and new information that have become available since the CRA-2014 ([U.S. DOE 2014](#)) data cutoff date (December 31, 2012). This focus on new information and new data allows a direct evaluation of any changed information with respect to previous applications and is consistent with the requirements in 40 CFR Part 194.15. Historical information and data from previous compliance applications is consistent with past U.S. Department of Energy (DOE) compliance positions and EPA compliance decisions documented in the CRA-2014 ([U.S. DOE 2014](#)).

Each numbered section of the CRA-2019 includes the following components:

1. Requirements: The text of the regulation.
2. Background: A brief description of the historical context of how the DOE and the Waste Isolation Pilot Plant (WIPP) have complied with the regulation.
3. Changes or New Information Since the CRA-2014: A description of the changes since the most recent compliance application that are relevant and necessary for inclusion as specified by 40 CFR 194.15. For the CRA-2019, this time period is from January 1, 2013, to January 8, 2018.
4. References: The list of references cited in each numbered section. At the request of the EPA, the required paper copies of the CRA-2019 are supplemented with an electronic version. The electronic version includes hyperlinks to all references cited in the text, except for copyrighted references.

Some numbered sections, such as those for 194.23 and 194.34, follow an alternate format to better match the organization of the applicable section in 40 CFR 194. Sections and appendices included in CRA-2019 are listed in Table STRUCT-1 below. The application also includes an Executive Summary and attachments to several appendices.

**Table STRUCT-1. Summary of CRA-2019 Contents**

<b>CRA-2019 Sections (40 CFR 194 Requirements)</b>	<b>CRA-2019 Appendices</b>	<b>CRA-2019 Attachments</b>
<ul style="list-style-type: none"> <li>• 8: Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP</li> <li>• 15: Content of Compliance Recertification Application(s)</li> <li>• 21: Inspections</li> <li>• 22: Quality Assurance</li> <li>• 23: Models and Computer Codes</li> <li>• 24: Waste Characterization</li> <li>• 25: Future State Assumptions</li> <li>• 26: Expert Judgment</li> <li>• 27: Peer Review</li> <li>• 31: Application of Release Limits</li> <li>• 32: Scope of Performance Assessments</li> <li>• 33: Consideration of Drilling Events in Performance Assessments</li> <li>• 34: Results of Performance Assessments</li> <li>• 41: Active Institutional Controls</li> <li>• 42: Monitoring</li> <li>• 43: Passive Institutional Controls</li> <li>• 44: Engineered Barriers</li> <li>• 45: Consideration of the Presence of Resources</li> <li>• 46: Removal of Waste</li> <li>• 51-52: Consideration of Protected Individual and Exposure Pathways</li> <li>• 53: Consideration of Underground Sources of Drinking Water</li> <li>• 54: Scope of Compliance Assessments</li> <li>• 55: Results of Compliance Assessments</li> </ul>	<ul style="list-style-type: none"> <li>• Appendix AUD: Audits and Surveillances</li> <li>• Appendix DATA: Monitoring Data and Reports</li> <li>• Appendix GEOCHEM: Implementation of Chemistry Conceptual Models</li> <li>• Appendix HYDRO: Hydrologic Investigations</li> <li>• Appendix IGP: Individual and Groundwater Protection Requirements</li> <li>• Appendix MgO: Magnesium Oxide as an Engineered Barrier</li> <li>• Appendix MON: WIPP Monitoring Programs</li> <li>• Appendix SOTERM: Actinide Chemistry Source Term</li> <li>• Appendix TFIELD: Transmissivity Fields</li> </ul>	<ul style="list-style-type: none"> <li>• Attachments to Appendix GEOCHEM                             <ul style="list-style-type: none"> <li>- Attachment A: Calculation of MgO Hydration Rates for Martin Marietta MgO</li> <li>- Attachment B: Addition of Magnesium Sulfate to the WIPP Chemical Conditions Process Model</li> <li>- Attachment C: Re-evaluation of the Formation Constant for Hydromagnesite in the WIPP Chemical Conditions Process Model</li> <li>- Attachment D Proposed Changes to the WIPP Chemical Conditions Process Model for Interactions with Organic Ligands</li> <li>- Attachment E: Re-evaluation of Borate Solids and Species in the WIPP Chemical Conditions Process Model</li> <li>- Attachment F: Addition of Lead Solids and Species to the WIPP Chemical Conditions Process Model</li> <li>- Attachment G: Addition of Iron Solids and Species to the WIPP Chemical Conditions Process Model</li> </ul> </li> <li>• Attachment to Appendix HYDRO                             <ul style="list-style-type: none"> <li>- Attachment A: WIPP Borehole Update</li> </ul> </li> <li>• Attachment to Appendix TFIELD                             <ul style="list-style-type: none"> <li>- Attachment A: TFIELD Visualization</li> </ul> </li> </ul>

The CRA-2019 is being submitted in two parts: (1) the main body of the application in March 2019, and (2) documentation for the Deferred Performance Assessment (PA) submittal. The



following appendices will not be included with the application in March 2019 but will be updated (from CRA-2014) and included as part of the Deferred PA submittal:

- Appendix MASS: Performance Assessment Modeling Assumptions
- Appendix PA: Performance Assessment
- Appendix PORSURF: Porosity Surface
- Appendix SCR: Feature, Event, and Process Screening for Performance Assessment

Figure STRUCT-1 maps the relationships of the 23 sections and 13 appendices for the CRA-2019 to specific sections in the CRA-2019 and the Deferred PA submittal. As shown in Figure STRUCT-1, there are many instances where an appendix contains technical information similar to that covered in a section. In these instances, the section is a summary of the information provided in the appendix. However, appendices submitted as part of the Deferred PA submittal will contain new information that is not summarized in CRA-2019 sections.

## 2.0 References

(\*Indicates a reference that has not been previously submitted)

U.S. Department of Energy (DOE). 2014. Title 40 CFR Part 191 Subparts B and C. Compliance Recertification Application for the Waste Isolation Pilot Plant (March). Carlsbad, NM: Carlsbad Field Office. DOE/WIPP 2014-3503.\*

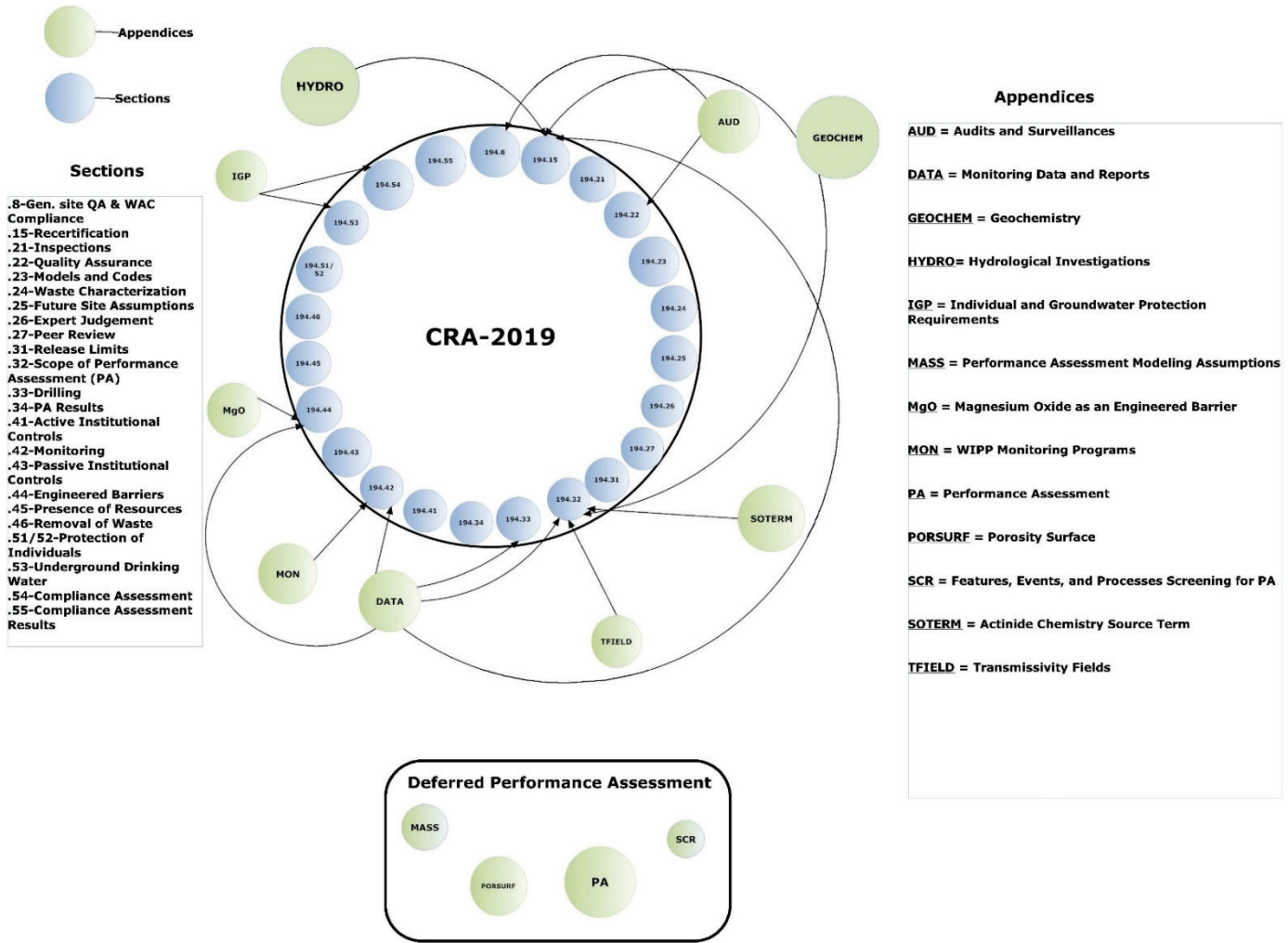


Figure STRUCT-1. CRA-2019 and Deferred Performance Assessment Pictorial Roadmap