



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



SEP 19 2006

OFFICE OF  
AIR AND RADIATION

David Moody, Manager  
Carlsbad Field Office  
U.S. Department of Energy  
P.O. Box 3090  
Carlsbad, New Mexico 88221-3090

Dear Dr. Moody:

During the week of June 19, 2006, the U.S. Environmental Protection Agency (EPA) performed inspections of the Waste Isolation Pilot Plant (WIPP) waste management and storage operations (EPA-WIPP-6.06-20a), waste emplacement (EPA-WIPP-6.06-20c) and the monitoring program (EPA-WIPP-6.06-20b). These inspections were performed under the authority of 40 CFR 194.21 and 40 CFR Part 191, Subpart A.

As a result of the inspection, EPA determined that the activities related to emissions monitoring during waste management and storage continue to comply with the requirements of 40 CFR Part 191, Subpart A. EPA also determined that DOE continues to adequately monitor the ten parameters that are important to the long-term containment of waste, as identified in EPA's 1998 Certification Decision and 2006 Recertification Decision. EPA's inspection also determined that waste is being appropriately emplaced in the repository and that the amount of magnesium oxide (MgO) is adequately calculated and tracked. In the emplacement inspection report and in the 2006 Recertification Decision, EPA noted that DOE needs to better understand the uncertainty range for the amount of cellulose, plastic and rubber material in repository. EPA will continue to work with DOE on this issue.

Copies of the enclosed inspection reports will be placed in the EPA public docket. If you have any questions regarding the enclosed reports, please call Chuck Byrum at (214) 665-7555.

Sincerely,

Juan Reyes, Director  
Radiation Protection Division

Enclosure

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EPA Docket

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**DOCKET NO: A-98-49**  
**Item: II-B3-97**

## **Monitoring Inspection Report**

**INSPECTION No. EPA-WIPP-6.06-20b**  
**OF THE**  
**WASTE ISOLATION PILOT PLANT**  
**June 20 to June 22, 2006**

**U. S. ENVIRONMENTAL PROTECTION AGENCY**  
**Office of Radiation and Indoor Air**  
**Center for Federal Regulation**  
**1200 Pennsylvania Avenue, NW**  
**Washington, DC 20460**

**September 2006**

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## 1.0 Executive Summary

The U.S. Environmental Protection Agency (EPA) conducted an inspection of the Department of Energy's (DOE) Waste Isolation Pilot Plant (WIPP) from June 20 to June 22, 2006, as part of our continuing WIPP oversight program. The purpose of this inspection was to verify that DOE continues to adequately monitoring the ten parameters listed in the Compliance Certification Application (CCA), Volume 1, Section 7.0, in particular Table 7-7 (See Table 1, COB-M2006-1). Attachment A contains the checklist and the inspection plan used by the EPA inspector, and Attachment B lists documents reviewed by the EPA inspector.

The inspection examined the implementation of monitoring for geomechanical, hydrological, waste activity, drilling related, and subsidence parameters. The EPA inspector toured locations where measurements are taken, reviewed parameter databases, and reviewed documents and procedures directing these monitoring activities.

The inspector found that DOE, through its contractor Washington TRU Solutions (WTS), effectively implemented the monitoring programs at WIPP for all areas. EPA did not have any findings or concerns. The inspector also confirmed that the results of DOE monitoring programs are reported annually.

## 2.0 Scope

The WIPP Compliance Criteria (40 CFR Part 194.42(a)) require DOE to "conduct an analysis of the effects of disposal system parameters on the containment of waste in the disposal system." The results of these analyses were included in the 1996 Compliance Certification Application (CCA), confirmed in the 2004 Compliance Recertification Application (CRA), and were used to develop pre-closure and post-closure monitoring requirements.

Volume 1, Section 7.0, of the CCA documented DOE's analysis of monitoring parameters. Table 7-7 of the CCA lists the ten parameters that DOE determined may affect the disposal system. These parameters are grouped into major categories and listed in Table 1.

<b>Table 1 - Monitored Parameters</b>	
<b>Geomechanical Parameters-</b> -Creep closure, -Extent of deformation, -Initiation of brittle deformation, and -Displacement of deformation features.	<b>Waste Activity Parameter-</b> -Waste Activity  <b>Subsidence Parameter-</b> -Subsidence measurements
<b>Hydrological Parameters-</b> -Culebra groundwater composition and -Change in Culebra groundwater flow direction.	<b>Drilling Related Parameters-</b> -Drilling rate and -The probability of encountering a Castile brine reservoir.

EPA accepted these ten monitoring parameters in the 1998 Certification Decision and confirmed them in the 2006 Recertification Decision. This inspection was performed under authority of 40 CFR 194.21, which authorizes EPA to verify the continued effectiveness of the parameter monitoring program at WIPP. Inspection activities included an examination of monitoring and sampling equipment both on and off site, and in the underground. EPA also reviewed numerous sampling procedures and measurement techniques and verified implementation of an effective quality assurance program, see the extensive document list in Attachment B.

### 3.0 Inspection Team, Observers, and Participants

The inspection consisted of four EPA staff. Four members of the New Mexico oversight group also observed the inspection, Tom Kline, Robert Blohm, John Hascherts, and Dean Foster.

Inspection Team Member	Position	Affiliation
Chuck Byrum	Inspection Leader	EPA
Barnes Johnson	Observer	EPA
Nick Stone	Observer	EPA
Tom Peake	Observer	EPA

Numerous DOE staff and contractors participated in the inspection; below is a partial list.

DOE/Contractor Participates	
Linda Frank-Supka	Ed Flynn
Joel Siegel	Don Harward
Sam Dominguez	Randy Elmore
John VandeKraats	Art Chavez
Steve Casey	Mansour Akbarzadeh
Dave Kump	Larry Madl
Daryl Mercer	Dave Hughes

### 4.0 Performance of the Inspection

The inspection began on Tuesday, June 20, 2006, with an opening meeting where changes in the parameter monitor programs since the previous inspection were discussed by site staff. The underground, where geomechanical convergence measurements are taken, was also

inspected. On June 21, 2006 the inspection continued with interviews and demonstrations of various aspects of each parameter monitoring area. On June 22, 2006 the EPA inspector examined the database(s) used to store Delaware Basin parameters and the WIPPP Waste Information System (WWIS) waste computer database system. The inspection closeout meeting was held on June 22, 2006.

The EPA inspector reviewed three fundamental areas to verify continued implementation of the DOE parameter monitoring program during the pre-closure phase: 1) written plans and procedures, 2) quality assurance procedures and records, and 3) results of the monitoring program in the form of raw data, intermediate reports, and final annual reports, if appropriate. The inspection checklist in Attachment A provides details of these inspection activities.

The EPA inspector reviewed various activities to verify effective procedure implementation. The inspector observed a demonstration of the WWIS and reviewed the Delaware Basin Drilling Surveillance Program, Groundwater Monitoring Program, and the Geomechanical Monitoring Program.

#### 4.1 Monitoring of Geomechanical Parameters



Figure 1 Convergence Measurement

DOE committed to measure four geomechanical parameters in the CCA: creep closure, extent of deformation, initiation of brittle deformation, and displacement of deformation features. WIPP has four programs that supply information for these four parameters: the geomechanical monitoring program, the geosciences program, the ground control program, and the rock mechanics program. These programs are documented in the WIPP Geotechnical Engineering Program Plan, WP 07-01 (COB-M2006-D). The results of the geotechnical program are reported in the Geotechnical Analysis Report for July 2004 - June 2005, DOE/WIPP-0-3177, Volumes 1 and 2 (COB-M2006-A and -A2).

The EPA inspector toured and reviewed underground instrumentation in Panels 3 and 4, the computer database, and field data sheets used to record raw measurement data. EPA also examined output convergence, roof-to-floor measurements, check prints to verify implement of the measurement plan (COB-M2006-S10, -S11, -S12, and -S13). While underground the inspector observed the acquisition of convergence using the new digital Geokon extensometer

(Figure 1) and load cell measurements.

## **4.2 Monitoring of Hydrological Parameters**

DOE committed to measure two hydrological parameters in the CCA: Culebra groundwater composition and changes in the Culebra groundwater flow direction. Related parameters are measured and documented in the WIPP environmental monitoring program. These programs are documented in the WIPP Groundwater Monitoring Program Plan, WP 02-1 (COB-M2006-C). Results of this program are documented in the Waste Isolation Pilot Plant 2004 Site Environmental Report, DOE/WIPP 05-2225 (COB-M2006-O). This document describes the groundwater monitoring program and reports results for the previous year.

During the 2006 inspection the EPA inspector requested information about changes in the program since last year. Joel Siegel noted that three new Culebra wells were drilled and 13 wells plugged (COB-M2006-S2). The current well monitor network consist of 41 Culebra, 11 Magenta, 4 dual Culebra/Magenta completions, 1 Dewey Lake, 2 Bell Canyon, and 16 shallow Santa Rosa/Dewey Lake wells.

## **4.3 Monitoring of Waste Activity Parameters**

DOE committed to monitor the activity of waste emplaced in the CCA. This parameter is part of the extensive database collected for each container shipped to WIPP and is stored in the WIPP Waste Information System (WWIS). The WWIS is a software system that screens waste container data and provides reports on the Transuranic (TRU) waste sent to WIPP. The requirements for the WWIS are discussed in the WIPP Waste Information Program and System Data Management Plan, WP 08-NT.01 (COB-M2006-G).

WWIS staff demonstrated that the WWIS can receive data and that the WWIS can generate needed reports. CBFO has committed to annual waste activity reports. The inspector obtained copies of the Nuclide Report (COB-M2006-S21).

## **4.4 Monitoring of Drilling Related Parameters**

DOE committed to measure two drilling related parameters in the CCA: the drilling rate and the probability of encountering a Castile brine reservoir. These parameters are measured as part of the Delaware Basin Drilling Surveillance Plan, WP 02-PC.02 (COB-M2006-F). This surveillance program measures and records many parameters related to drilling activities around the WIPP site. The results of the surveillance program are documented annually in the Delaware Basin Annual Report, DOE/WIPP 99-2308 (COB-M2006-N).

Inspectors reviewed the drilling surveillance database, examined drilling rate changes, and permitted and active injection wells while interviewing Dave Hughes. Inspectors received oil well scout tickets and maps of recent activity near WIPP (COB-M2006-S16, -S17, -S18, -S19 and -S20).

#### **4.5 Monitoring of Subsidence Parameters**

DOE committed to measure subsidence at the WIPP site. This parameter is documented as part of the WIPP Underground and Surface Surveying Program, WP 09-ES.01 (COB-M2006-B). DOE performs subsidence surveys at the site annually during pre-closure operations. The results of this program are reported annually in the WIPP Subsidence Monument Leveling Survey – 2005, DOE/WIPP 06-2293 (COB-M2006-E).

Ben Zimmerly showed the EPA inspector how selected raw field survey data is used to calculate final surface elevations published in their annual report.

#### **5.0 Summary of finding, observation, concerns, and recommendations.**

Based on program documents, interviews, and field demonstrations during the inspection, EPA concludes that the monitoring program covers the ten monitor parameters required by EPA's 1998 Certification Decision. This inspection determined that the monitoring, sample collection, and sample/data analysis procedures were complete and appropriate; that staff were adequately trained and implemented the procedures adequately; and that appropriate quality assurance measures are applied. For these reasons, EPA finds that DOE has maintained adequate parameter monitoring during the past year and has the procedures and requirements in place to sustain their program into the next year. EPA has no findings or concerns.

**Attachment A: Inspection Plan and Checklist**  
**2006 Monitoring Parameter Inspection Plan**

**Purpose:**

Verify that the Department of Energy (DOE) is appropriately monitoring the parameters required by EPA's compliance decisions and approvals. This inspection is conducted under the authority of 40 CFR 194, Section 21.

**Scope:**

Inspection activities will include an examination of monitoring and sampling equipment both on and off site, and in the underground. A review of sampling procedures and measurement techniques may be conducted. Quality assurance procedures and documentation for each of these activities will also be reviewed.

**Location:**

This inspection will be held at the WIPP facility location twenty-six miles south east of Carlsbad, New Mexico and the surrounding vicinity as needed.

**Duration:**

The EPA expects to complete its inspection in two days. Each day will begin with an opening meeting at 8:00 a.m. and end at 5:00 p.m. with a closeout session.

**Expected Date:** Week of June 19, 2006.

**Documents Required for Review:**

The documents should include revised version of all documents and procedures submitted during past inspections (such as current versions of Delaware Basin Monitoring Annual Report DOE/WTS 99-2308 Revision 5, Sept. 2004; and, Hydrological Monitoring: WIPP Groundwater Monitoring Program Plan WP 02-1 Revision 6, 3/6/03) and any new materials related to the site parameter monitoring program. If there are any questions as to the documents required, please contact Chuck Byrum at 214-665-7555.

Monitoring Commitments – June 2006		Geomechanical Parameters	
#	Question	Comment (Objective Evidence)	Result
1	<p>Does DOE demonstrate that they have implemented plans/programs/procedures to measure -</p> <p>a) Creep Closure;</p> <p>b) Extent of Deformation;</p> <p>c) Initiation of Brittle Deformation and</p> <p>d) Displacement of Deformation Features</p> <p>during the pre-closure phase of operations as specified in the CCA part of the geomechanical monitoring system?</p> <p>(CCA, Volume 1, Table 7-7; App MON, Table MON-1) 40 CFR 194.42 (c) and (e)</p>	<p>WIPP Geotechnical Engineering Program Plan, (WP 07-01: COB-M2006-D), documents plans to measure, report, and the QA requirements related to these activities. Section 3.0 of WP 07-01 documents the geomechanical monitoring program and records the activities associated with this program. Section 4.0 of WP 07-01 documents the quality assurance requirements for these activities.</p> <p>During this inspection Ricky Whitely and Sam Dominguez demonstrated the adequacy of the program and that the program produces satisfactory results (COB-M2006-S10, -S11, -S12, -S13a and -S13b). They showed samples remote measurement, sample plots, and Ricky Whitely performed underground measurements of convergence and rock bolt load cells (COB-M2006-S10 and -S11). WTS continues, as last year, to enhance roof control to mitigate the impact of stringers anhydrite stringers in Panels 3 and 4.</p> <p>Results of this program are documented annually in the Geotechnical Analysis Report for each reporting period (DOE/WIPP 06-3177: COB-M2006-A and -A2).</p> <p>The inspector toured and reviewed the computer system and databases used to collect and process recorded data.</p>	SAT
2	<p>Does DOE demonstrate that they have implemented an effective quality assurance program for item 1 above? 40 CFR 194.22</p>	<p>During this inspection the EPA inspector evaluated the quality assurance program and found it to be adequate.</p>	SAT
3	<p>Does DOE demonstrate that the results of the geotechnical investigations are reported annually? (CCA, App. MON, Page MON-10)</p>	<p>WP 07-01, Section 3.2 requires that analysis be performed annually and results are published in the geotechnical analysis report (DOE/WIPP 06-3177).</p>	SAT

SAT = Satisfactory

USAT = Unsatisfactory

	Monitoring Commitments – June 2006	Hydrological Parameters	
#	Question	Comment (Objective Evidence)	Result
1	<p>Does DOE demonstrate that they have implemented plans/programs/procedures to measure -</p> <p>a) Culebra Groundwater Composition;</p> <p>b) Change in Culebra Groundwater Flow Direction</p> <p>during the pre-closure phase of operations as specified in the CCA part of WIPP's groundwater monitoring plan?</p> <p>(CCA, Volume 1, Table 7-7; App MON, Table MON-1) 40 CFR 194.42 (c) and (e)</p>	<p>WIPP Groundwater Monitoring Program Plan, WP 02-1(COB-M2006-C) documents plans to measure, document, report, and the QA requirements for these activities. WP 02-1 records the activities associated with this program (Section 4), methods used (Section 5 and 6), and reporting requirements (Section 8). Section 11.0 of WP 02-1 documents quality assurance requirements.</p> <p>Joel Siegel discussed changes to the program over the past year (COB-M2006-S2). Rick Salness explained the new "hand" contouring techniques used to develop maps used to find flow direction in the Culebra (COB-M2006-S14, -S15a, and -S15b)</p>	SAT
2	<p>Does DOE demonstrate that they have implemented an effective quality assurance program for item 1 above? (CCA, App MON, Page MON-22) 40 CFR 194.22</p>	<p>During this inspection the EPA inspector evaluated the quality assurance program and found it to be adequate.</p>	SAT
3	<p>Does DOE demonstrate that the results of the groundwater monitoring program are reported annually? (CCA, App. MON, Page MON-22)</p>	<p>WP 07-01, Chapter 3.2 requires that analysis be performed annually and results are published in the annual Waste Isolation Pilot Plant Site Environmental Report (DOE/WIPP 05-2225: COB-M2006-O) Chapters 4.3 and 6.0.</p>	SAT

SAT = Satisfactory

USAT = Unsatisfactory

Monitoring Commitments – June 2006		Waste Activity Parameters	
#	Question	Comment (Objective Evidence)	Result
1	<p>Does DOE demonstrate that they have implemented plans/programs/procedures to measure -</p> <p>a) Waste Activity?</p> <p>(CCA, Volume 1, Table 7-7; App MON, Table MON-1) 40 CFR 194.42 (c) and (e)</p>	<p>WIPP Waste Information System Program and Data Management Plan (WP 08-NT.01: COB-M2006-G, Section 6.0) describes how the WWIS is used to measure and store waste activity information. WWIS User's manual (Section 9, DOE/CBFO 97-2273: COB-M2006-X) documents procedures used to gather, store, and process waste activity information. Table 3 of the Annual Change Report 2004/2005, (DOE/WIPP 05-3317: COB-M2006-Z) updates waste activity annually.</p> <p>WWIS staff demonstrated the use of the WWIS and generated numerous reports (COB-M2006-S21). Such as the Nuclide Report which summaries isotopes emplaced at WIPP. These activities demonstrate that waste activity is adequately monitored.</p>	SAT
2	<p>Does DOE demonstrate that they have implemented an effective quality assurance program for item 1? (CCA, App WAP, page C-30) 40 CFR 194.22</p>	<p>During this inspection the EPA inspector evaluated the quality assurance program and found it to be adequate.</p>	SAT
3	<p>Does DOE demonstrate that the results of the waste activity parameters are reported annually? (CCA Volume, Section 7.2.4 Reporting)</p>	<p>WP 08-NT.01 Section 6, page 11 "Regulatory Reporting" documents that results are reported annually.</p>	SAT

SAT = Satisfactory

USAT = Unsatisfactory

Monitoring Commitments – June 2006		Drilling Related Parameters	
#	Question	Comment (Objective Evidence)	Result
1	<p>Does DOE demonstrate that they have implemented plans/programs/procedures to measure -</p> <p>a) Drilling Rate; and</p> <p>b) Probability of Encountering a Castile Brine Reservoir?</p> <p>(CCA, Volume 1, Table 7-7; App MON, Table MON-1) 40 CFR 194.42 (c) and (e)</p>	<p>The Delaware Basin Drilling Surveillance Plan, (WP 02-PC.02: COB-M2006-F), documents the program planned to measure, document, report, and the QA requirements for these activities. Section 6.0 of WP 02-PC.02 documents quality assurance requirements. The Delaware Basin Drilling Database Upgrade Process (WP 02-EC3001: COB-M2006-R) documents the process used to update databases with information from various commercial and state sources. Drilling rate and Castile brine probability are updated annually in the Delaware Basin Monitoring Annual Report (DOE/WIPP 99-2308: COB-M2006-N) in Sections 2.5 and 2.6.</p> <p>Dave Hughes discussed changes during the past year (COB-M2006-S1). He reported on brine encounters, drilling rate calculations, and provided maps of drilling activities near WIPP (COB-M2006-S16, -S17, -S18, -S19, -S20 and -S24). He demonstrated that DOE is adequately monitoring these parameters.</p>	SAT
2	<p>Does DOE demonstrate that they have implemented an effective quality assurance program for item 1 above? (CCA, App DMP, page DMP-9) 40 CFR 194.22</p>	<p>During this inspection the EPA inspector evaluated the quality assurance program and found it to be adequate.</p>	SAT
3	<p>Does DOE demonstrate that the results of the drilling related parameters are reported annually? (CCA Volume, Section 7.2.4 Reporting; App DMP, page DMP-9)</p>	<p>WP 02-PC.02 Section 6.0 documents that results are reported annually. COB-M2006-N verifies that these parameters are updated and reported annually.</p>	SAT

**SAT = Satisfactory**

**USAT = Unsatisfactory**

	Monitoring Commitments – June 2006	Subsidence Measurements	
#	Question	Comment (Objective Evidence)	Result
1	<p>Does DOE demonstrate that they have implemented plans/programs/procedures to measure -</p> <p>a) Subsidence measurements?</p> <p>(CCA, Volume 1, Table 7-7; App MON, Table MON-1) 40 CFR 194.42 (c) and (e)</p>	<p>WIPP Underground and Surface Surveying Program (WP 09-ES.01: COB-M2006-B), documents the program used to measure, document, report, and the QA requirements for these activities. The WIPP Subsidence Monument Leveling Survey for 2005 (DOE/WIPP 06-2293: COB-M2006-E) documents that DOE reports this parameter annually and the results of this program.</p> <p>Ben Zimmerly demonstrated that procedures are adequately implemented when he showed how the raw field data collected is reduced to useful survey and how annual results are calculated. They demonstrated that subsidence is adequately monitored at the site.</p>	SAT
2	<p>Does DOE demonstrate that they have implemented an effective quality assurance program for item 1? 40 CFR 194.22</p>	<p>During this inspection the EPA inspector evaluated the quality assurance program and found it to be adequate.</p>	SAT
3	<p>Does DOE demonstrate that the results of the subsidence measurements are reported annually? (CCA Volume, Section 7.2.4 Reporting)</p>	<p>WP 09-ES.01 Section 1.1 documents that results are reported annually</p>	SAT



**Documents Received and Reviewed During Inspection 194.42 Monitoring Inspection June 2006 DOE**

<b>ID#</b>	<b>Document Title</b>	<b>Subject Matter</b>	<b>Documents Source</b>
COB-M2006-1	Table 7-7 from Chapter 7 of the CCA; Pre-closure and Post-closure Monitored Parameters.	Parameters committed by DOE to be measured.	DOE, CCA, Chapter 7, Table 7-7.
COB-M2006-2	CCA, Appendix MON and Attachment MONPAR. In particular Table MON-1, pages MON-10, MON-29	Both documents discuss the pre- and post-closure parameters selected to be monitored at the WIPP site.	DOE, CCA documentation.
COB-M2006-A and COB-M2006-A2	Geotechnical Analysis Report for July 2004 - June 2005, DOE/WIPP 06-3177, Volumes One and Two (Support Data), March and April 2006	This report is an example of the results of the geomechanical monitoring program.	DOE/WIPP
COB-M2006-B	Subsidence Monitoring: WIPP Underground and Surface Surveying Program WP 09-ES.01 Revision 4, 07/16/03	Demonstrates DOE's implementation of subsidence monitoring.	DOE/WIPP
COB-M2006-C	Hydrological Monitoring: WIPP Groundwater Monitoring Program Plan WP 02-1 Revision 6, 03/06/03	Demonstrates DOE's implementation of hydrological monitoring.	DOE/WIPP
COB-M2006-Q	Strategic Plan for Groundwater Monitoring at the Waste Isolation Pilot Plant DOE/WIPP-03-3230, February 2003	Describes the objectives and goals of the groundwater monitoring program.	DOE/WIPP
COB-M2006-D	Geomechanical Monitoring: WIPP Geotechnical Engineering Program Plan WP 07-01, Revision 4, 01/18/05	Demonstrates DOE's implementation of geomechanical monitoring.	DOE/WIPP
COB-M2006-E	WIPP Subsidence Monument Leveling Survey - 2005 DOE/WIPP 06-2293, December 2005	This report is an example of the results of the subsidence monitoring program.	DOE/WIPP
COB-M2006-F	Delaware Basin Drilling Surveillance Plan WP 02-PC.02, Revision 1, 7/1/04	Documents DOE's drilling monitoring plan.	DOE/WIPP
COB-M2006-G	WIPP Waste Information System Program and Data Management Plan WP 08-NT.01, Revision 13, DRAFT	Demonstrates DOE's implementation of waste activity monitoring.	DOE/WIPP
COB-M2006-R	Delaware Basin Drilling Database Upgrade Process - Management Control Procedure WP 02-EC3002, Revision 1, 06/14/00	Documents how state and commercial well data is entered.	DOE/WIPP
COB-M2006-S	Electric Submersible Pump Monitoring System Installation and Operation - Technical Procedure WP 02-EM1002, Revision 2, 02/16/06	Installation and operation instructions for submersible pump.	DOE/WIPP
COB-M2006-T	Final Sample and Serial Sample Collection - Technical Procedure WP 02-EM1006, Revision 5, 8/12/04	Describes water sample collection.	DOE/WIPP

**Documents Received and Reviewed During Inspection 194.42 Monitoring Inspection June 2006 DOE Documents**

<u>ID#</u>	<u>Document Title</u>	<u>Subject Matter</u>	<u>Source</u>
COB-M2006-U	WWIS Biennial Report run 06/05/06	WWIS report that list the total weights (kilograms) emplaced in the WIPP as of June 5, 2006.	DOE/WIPP
COB-M2006-W	Groundwater Serial Sample Analysis - Technical Procedure WP 02-EM1005, Revision 4, 06/11/03	Instruction for taking serial samples.	DOE/WIPP
COB-M2006-M	WTS Quality Assurance Program Description, WP 13-1, Revision 25, 6/16/05	Demonstrates DOE's implementation of quality assurance program.	DOE/WIPP
COB-M2006-N	Delaware Basin Monitoring Annual Report DOE/WIPP 99-2308, Revision 6, Sept. 2005	Demonstrates DOE's implementation of drilling surveillance program.	DOE/WIPP
COB-M2006-O	Waste Isolation Pilot Plant 2004 Site Environmental Report, DOE/WIPP 05-2225	Example of the results of the environmental monitoring program, in particular hydrological parameters.	DOE/WIPP
COB-M2006-P	Subsidence Survey Data Acquisition Report, Technical Procedure WP 09-ES4001 Revision 0, 6/13/02	Procedure documents methods used for acquiring data, creating database, and generating report on subsidence monuments.	DOE/WIPP
COB-M2006-X	WIPP Waste Information System User's Manual, DOE/CBFO 97-2273, Rev 9, WWIS Version 5.2, 12/12/05	User's manual for computerized data management system used by WIPP to gather, store, and process information, such as waste activity (Section 9), pertaining to CH and RH TRU waste for disposal	DOE/CBFO
COB-M2006-Z	Annual Change Report 2004/2005, DOE/WIPP 05-3317, 11/10/05	Table 3, Waste Emplacement Summary Report, of the annual change report updates waste activity yearly.	DOE/WIPP
COB-M2006-AA	WIPP CH Waste Documented Safety Analysis, DOE/WIPP-95-2065 Revision 9, September 2005	Describes various safety analysis done at WIPP.	DOE/WIPP
COB-M2006-AB	WIPP Environmental Monitoring Plan, DOE/WIPP-99-2194 Revision 3, September 2004	Describes environmental monitoring plan.	DOE/WIPP
COB-M2006-AC	Cation and Anion Analysis, Technical Procedure, WP 02-EM1007, Revision 1, 9/19/03	Documents steps to analysis cation and anions of water samples.	DOE/WIPP
COB-M2006-AD	Groundwater Level Measurement, Technical Procedure, WP 02-EM1014, Revision 3, 10/15/03	Steps to do borehole water level measurements.	DOE/WIPP
COB-M2006-AE	Pressure Density Survey, Technical Procedure, WP 02-EM1021 Revision 2, 10/29/02	Used to determine average density of fluid in borehole.	DOE/WIPP

Documents Received and Reviewed During Inspection 194.42 Monitoring Inspection June 2006 DOE

Documents

ID#	Document Title	Subject Matter	Source
COB-M2006-AF	Administrative Processes For Environmental Monitoring and Hydrology Programs, Management Control Procedure, WP 02-EM3001 Revision 8, 10/18/04	Guidance to maintain QA of monitoring sampling.	DOE/WIPP
COB-M2006-AG	WIPP Core Storage, Handling, and Distribution, Management Control Procedure, WP 07-EU3504, Revision 2, 6/20/02	Defines methods for storage, handling and distribution of cores at the core storage facility.	DOE/WIPP
COB-M2006-AJ	Geologic and Fracture Mapping Of Facility Horizon Drifts, Technical Procedure, WP 07-EU1001, Revision 1, 09/03/04	Define methods used for geologic and fracture mapping at WIPP.	DOE/WIPP
COB-M2006-AK	Geologic Core Logging, Technical Procedure, WP 07-EU1002, Revision 0, 03/07/03	Defines methods used for geologic rack core logging at WIPP.	DOE/WIPP
COB-M2006-AI	Manually Acquired Geomechanical Instrumentation Data, WP 07-EU1301, Revision 5, 04/12/06	Procedure provides instructions on how to manually collect data from convergence points, multi-position borehole extensometers, piezometer, strain gages, earth pressure cells, and rockbolt loadcells.	DOE/WIPP
COB-M2006-AL	Geomechanical Instrument Data Processing, Technical Procedure, WP 07-EU1303, Revision 1, 12/02/04	Describes methods used for processing manually and remotely acquired geomechanical instrument data at WIPP.	DOE/WIPP
COB-M2006-AM	Installing Convergence Reference Points, WP 07-EU1304, Technical Procedure, Revision 3, 08/23/05	Details steps needed to layout and install convergence points in new drifts or to replace point at WIPP.	DOE/WIPP
COB-M2006-AN	Installing Multiposition Borehole Rod Extensometers, Technical Procedure, WP 07-EU1305, Revision 2, 09/01/05	Details steps needed to install multi-position borehole extensometers.	DOE/WIPP
COB-M2006-AO	Installing Wire Convergence Meters, Technical Procedure, WP 07-EU1307, Revision 3, 09/08/05	Steps needed to install remote and manually read convergence meters.	DOE/WIPP
COB-M2006-AP	Radiochemistry Quality Assurance Plan, 12-RL.01, Revision 12, 02/14/06	Describes the management policy and organizational structure, and QA requirement for radiochemical analysis.	DOE/WIPP
COB-M2006-AQ	Sample Tracking and Custody, Technical Procedure, WP 12-RL1001, Revision 7, 03/21/06	Instructions for documenting receipt and storage of samples in WIPP laboratory.	DOE/WIPP
COB-M2006-AR	Alpha Spectroscopy System Operation, Technical Procedure, WP 12-RL1002, Revision 4, 03/31/05	Direction for calibrating and operating the Canberra Alpha Spectroscopy System as interfaced with the Genie 2000.	DOE/WIPP

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<b>ID#</b>	<b>Document Title</b>	<b>Subject Matter</b>	<b>Documents Source</b>
COB-M2006-AS	Establishing Gross Alpha and Gross Beta Self-Absorption Curves, Technical Procedure, WP 12-RL1008, Revision 2, 04/24/02	Instructions for preparing samples of known activity and known weight to generate self-absorption curves for each of the gas proportional counters.	DOE/WIPP
COB-M2006-AT	Gross Alpha and Gross Beta Activity in Air Filter, Soil, Water, Sludge, and Biota, Technical Procedure, WP 12-RL1009, Revision 2, 08/26/04	Guidance for rapidly performing a variety of screening matrices for both high and low activity radionuclides.	DOE/WIPP
COB-M2006-AU	Sample Preparation, Technical Procedure, WP 12-RL1010, Revision 7, 04/27/06	Directions for preparing samples to determine activity of radionuclides.	DOE/WIPP
COB-M2006-AV	Elemental Separation - Strontium 90, Technical Procedure, WP 12-RL1011, Revision 10, 04/26/06	Directions for performing elemental separation of strontium from samples.	DOE/WIPP
COB-M2006-AW	Elemental Separation - Transuranic Products, Technical Procedure, WP 12-RL1012, Revision 7, 05/08/06	Describes method for elemental separation and purification of actinide isotopes in samples.	DOE/WIPP
COB-M2006-AX	Sample Mounting, Technical Procedure, WP 12-RL1013, Revision 5, 09/28/04	Directions for electrodeposition sample mounting and neodymium fluoride coprecipitation sample mounting of actinides in preparation for alpha spectroscopy counting.	DOE/WIPP
COB-M2006-AY	Routine Laboratory Operations, Technical Procedure, WP 12-RL1014, Revision 4, 08/20/04	Instructions for routine laboratory operation.	DOE/WIPP
COB-M2006-AZ	Canberra Alpha Analyst System Operation, Technical Procedure, WP 12-RL1015, Revision 10, 04/18/06	Directions for calibrating and operating the Canberra Alpha Analyst 32-chamber alpha spectroscopy system.	DOE/WIPP
COB-M2006-BA	Operation of the Oxford Series 5 Gas Proportional Counter, Technical Procedure, WP 12-RL1016, Revision 6, 04/26/06	Guidance for the operation of the Oxford Series 5 Gas Proportional Counter.	DOE/WIPP
COB-M2006-BB	Plutonium-241 Analysis, Technical Procedure, WP 12-RL1200, Revision 0, 11/26/03	Provides method for the analysis of Pu 241 in any matrix after preparation of the sample in accordance with WP 12-RL1012 and WP 12-RL1015.	DOE/WIPP
COB-M2006-BI	Radiochemistry Laboratory Waste Management, Technical Procedure, WP 12-RL1400, Revision 6, 08/04/05	Instructions for handling, management, and disposal of laboratory waste.	DOE/WIPP
COB-M2006-BK	Radiochemistry Laboratory Data Validation and Verification, Technical Procedure, WP 12-RL3002, Revision 5, 04/28/04	Instructions for performing radiochemistry analytical data verification and validation by radiochemistry staff.	DOE/WIPP
COB-M2006-BL	Data Reduction and Reporting, Technical Procedure, WP 12-RL3003, Revision 5, 10/14/05	Instructions for processing laboratory data from the time of sample receipt to the reporting of final results.	DOE/WIPP

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ID#	Document Title	Subject Matter	Documents Source
COB-M2006-BM	Installing Wire Extensometers, Technical Procedure, WP 07-EU1308, Rev 1, 09/01/05	Steps to install remotely and manually read wire extensometers.	DOE/WIPP
COB-M2006-BN	Installing Rock Bolt Load Cells, Technical Procedure, WP 07-EU1306, Revision 2, 09/01/05	Steps to install rock bolt load cells.	DOE/WIPP
COB-M2006-BO	Control of Radioactive Standards, Technical Procedure, WP 12-RL1550, Revision 6, 03/31/06	Instructions for labeling, maintaining inventory, dilution of standards, completing standard logbook for new standards received, expired standards, depleted standards, and recertification of standards.	DOE/WIPP
COB-M2006-BP	WIPP Well Plugging and Abandonment Program Fiscal Year 2006, DOE/WIPP 06-3332, Rev 0, April 2006.	Work plan describes the program for plugging and abandonment or reconfiguration of ground water monitor wells at WIPP.	DOE/WIPP
COB-M2006-BQ	WIPP Panel Closure Survey Plan, WP 09-ES.02, Rev 0, 05/16/03	Panel closure procedure to ensure that WIPP complies with state permit requirements.	DOE/WIPP
<b>Documents Received During Inspection</b>			
COB-M2006-S0a	06 Inspection Agenda, June 20, 2006		DOE/WIPP
COB-M2006-S0b	Opening Meeting Sign-in Sheet		DOE/WIPP
COB-M2006-S1	Delaware Basin Handout	Handout during opening meeting. Notes changes during past year: drilling rate, air drilling activities (none in last year), Castile brine encounters, drilling activities in the nine township area, and solution mining activities	DOE/WIPP
COB-M2006-S2	Environmental Monitoring and Hydrology Handout	Handout during opening meeting. Notes changes during past year: new monitor wells drilled, recent well plugging activities, current monitor well network, Culebra flow direction, and water quality sampling changes.	DOE/WIPP
COB-A2006-S3	Handout related to Subpart A inspection activities.		
COB-M2006-S4	WIPP Laboratory Handout	Handout during opening meeting. List laboratory sample analysis for FY06.	DOE.WIPP

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COB-M2006-S5	WTS Geotechnical Engineering Handout	Handout during opening meeting. Notes changes during past year: changes in procedures - such as addition of the Geokon Tape Extensometer (digital) and discussed program results.	DOE/WIPP
COB-E2006-S6	Handout related to Emplacement inspection activities.		DOE/WIPP
COB-M2006-S7	WWIS Highlight Presentation Handout		DOE/WIPP
COB-M2006-S10	WP 07-EU1301 Attachment 5 - GIS Field Data Sheet from Ricky Whitely	Sample of field data sheet used to record convergence and load cell measurements. Recorded 6/19/06 using new digital Geokon extensometer. This is the new data sheet with multiple WEX and CVPT points.	DOE/WIPP
COB-M2006-S11	WP 07-EU1303 Attachment 1 - GIS Initial Data Sheet from Ricky Whitely	Sample of field data sheet after reinstallation of "C" point located at S3650 and E520 on 06/20/06 at 13:29.	DOE/WIPP
COB-M2006-S12	CVPT Field Data Checkprint	Sample checkprint of two, see COB-M2006-10, points measured, points 18941 and 18942, input into database system by Sam Dominguez.	DOE/WIPP
COB-M2006-S13a	CVPT Initial Data Checkprint	Sample checkprint of reinstalled "C" point 19139 recorded in COB-M2006-S11.	DOE/WIPP
COB-M2006-S13b	Checkprint of realtime rock bolt load measurements taken 062106 at 10:12.		DOE/WIPP
COB-M2006-S14	Sample of new "hand" contour method.	New triangulation contouring method used to contour fresh water heads to find the Culebra flow direction by Rick Salness.	DOE/WIPP
COB-M2006-S15a and -S15b	Spreadsheet and contour worksheets.	Used to calculated values used to perform "hand" contour to find Culebra flow direction.	DOE/WIPP
COB-M2006-S16	Map showing key coordinates at WIPP site.		DOE/WIPP
COB-M2006-S17	Map showing WIPP monitor well locations.		DOE/WIPP
COB-M2006-S18	Color map showing WIPP monitor well locations		DOE/WIPP
COB-M2006-S19	Scout Ticket for the 13 Neal 47 oil well.	Sample of information used to update Delaware Basin Database use to calculate drilling rate.	DOE/WIPP

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COB-M2006-S20	Scout Ticket for the 2 SS Snakebite Fee oil well.	Sample of information used to update Delaware Basin	DOE/WIPP
COB-M2006-S21	WIPP WWIS Nuclide Report as of 06/21/06 at 08:21 hours from the WWIS database system.	Database use to calculate drilling rate. List waste mass and activity of emplaced waste at WIPP.	DOE/WIPP
COB-M2006-S22	EPA inspection closeout comments/handout		EPA
COB-M2006-S23	Closeout Meeting Sign-in sheet		DOE/WIPP
COB-M2006-S24	Delaware Basin Databases	Earthquakes 2006.mdb, New Mexico 2006.mdb, NM Events 2006.mdb, and Texas 2006.mdb: Microsoft Access databases used to monitor Delaware Basin activities and to calculate drilling rate and Castile brine pocket encounters.	DOE/WIPP
COB-M2006-S25	Color map of nine township area around WIPP, DBM-55-2006	Hydrocarbon wells located within the nine township area around WIPP.	DOE/WIPP
COB-M2006-S26a and -S26b	Photo DSC-4859 Setting a New Convergence Point		DOE/WIPP
COB-M2006-S27	Photo DSC-4863 Convergence Measurement		DOE/WIPP
COB-M2006-S28	Photo DSC-4864 Taking Convergence Data		DOE/WIPP
COB-M2006-S29	Photo DSC-4867 Digital Convergence Instrument		DOE/WIPP
COB-M2006-S30	Photo DSC-4877 Convergence Measurement		DOE/WIPP
COB-M2006-S31	Photo DSC-GIS Field Data Sheet		DOE/WIPP
COB-M2006-S32	Photo DSC-5017 Sam D. Inputing Geomechanical Data Into Computer Database system		DOE/WIPP