

WP 05-WH1105

Revision 3

**Magnesium Oxide
Sample Records
Management**

Management Control Procedure

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APPROVED FOR USE

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INTRODUCTION

This procedure provides the administrative guidance for Washington TRU Solutions LLC (WTS) Operations personnel to maintain the records associated with magnesium oxide (MgO) sampling activities. Sampling activities are required by the subcontracts between WTS and the MgO supplier and between WTS and a subcontracted laboratory. Sampling records include the Analysis of Shipment from the MgO supplier (which contains a Certificate of Analysis [COA]), Request for Analysis (RFA), and Chain of Custody (CoC), and reactivity testing results ($\geq 94\%$) where MgO reactivity is defined as mole percent periclase + lime.

The Analysis of Shipment contains information including weight percent (wt%) magnesium, calcium, silicon, iron, aluminum, chloride, and sulfur; Phosphoric Acid Temperature Rise (PATR); Loss on Ignition, tap bulk density, and the percent of product passing through screens of 3/8-inch mesh and others including 6, 16, 30, and 100 mesh.

The WTS Waste Handling organization is responsible for placing super sacks containing MgO at the top of each waste column of contact-handled (CH) waste in the Waste Disposal Panel.

The WTS MgO Coordinator acts as the MgO Subcontract Technical Representative (STR) for procurements associated with MgO that include:

- Obtaining a supplier for the MgO and associated Analysis of Shipment that contains the information as stated above; and MgO transportation from the supplier to the bagging contractor.
- Obtaining laboratory services for MgO reactivity testing for each shipment and reactivity testing on sample composites for several different shipments.
- Obtaining the super sacks in which to configure the MgO for waste handling at Waste Isolation Pilot Plant (WIPP).
- Obtaining services to bag the MgO provided by the MgO supplier and to deliver the completed super sacks to WIPP.

WTS contracts with an MgO supplier who provides the MgO product to the super sack preparers. The MgO supplier is also required to include an Analysis of Shipment on each shipment of MgO and send a sample and associated documentation from each MgO shipment to an independent laboratory, also contracted by WTS, for reactivity testing. A shipment is considered to be either one rail car or one truckload of MgO.

The subcontracted laboratory is required to perform the MgO reactivity testing and transmit the resulting information to the WTS MgO STR.

The MgO STR is the designated individual who is responsible for reviewing the sampling records to ensure that the reactivity meets the requirements, resolving discrepancies, and maintaining the sampling records associated with each shipment of MgO.

Performance of this procedure generates the following record(s), as applicable. Any records generated are handled in accordance with departmental Records Inventory and Disposition Schedules (RIDS).

- Analysis of shipment which, shall include a COA
- RFA
- CoC
- Reactivity testing results

REFERENCES

BASELINE DOCUMENTS

- U.S. Department of Energy (DOE). 1996. Title 40 CFR Part 191 Compliance Certification Application for the Waste Isolation Pilot Plant (October). 21 vols. DOE/CAO-1996-2184. Carlsbad, NM: Carlsbad Field Office.
- Reyes, J. 2008. Letter (with attachments) to D.C. Moody (Subject: Approving the DOE's Request to Decrease the Amount of Excess MgO that it Emplaces in the WIPP). February 11, 2008. U.S. Environmental Protection Agency, Office of Air and Radiation. Washington, DC.
- Specification D-0101, Specification for Prepackaged MgO Backfill
- WP 05-WH.02, WIPP Waste Handling Operations WDS User's Manual
- WP 05-WH1025, CH Waste Downloading and Emplacement
- WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Description
- WP 13-QA3004, Nonconformance Report
- WP 15-PM3526, Receipt Discrepancies
- EA15PC3041-2-0, Approval/Variation Request

PRECAUTIONS AND LIMITATIONS

- Nonconforming or aborted samples shall be identified and documented by the WTS MgO STR and maintained in the files with the MgO sample results. Aborted samples may be subject to analysis before discarding at the discretion of the STR.
- A shipment or shipments of MgO may be sent to the super sack preparer prior to WTS obtaining the reactivity sample results from the laboratory
- MgO from the shipment in question that does not meet reactivity requirements must be dispositioned prior to shipping the MgO to the WIPP site.

PERFORMANCE

1.0 MgO WTS SITE TECHNICAL REPRESENTATIVE RESPONSIBILITIES

NOTE

Composite sample information will be entered on the MgO sample Tracking Spreadsheet when applicable.

NOTE

The actual spreadsheet may contain additional information other than that listed in Step 1.1 and on Attachment 1.

- 1.1 MgO WTS STR, ensure the following information is on the MgO Sample Tracking Spreadsheet (Attachment 1) for each shipment:
- Supplier Shipment Number
 - Supplier Shipment Sample Date
 - Supplier Chain of Custody Number
 - Date Supplier Sample Shipped to Laboratory
 - Laboratory Name
 - Date Sample Accepted by the Laboratory
 - Laboratory Sample Number
 - Date Sample Analyzed by Laboratory
 - Sample Results (mol % periclase + lime)
 - Date Analysis Results Reported to WTS MgO STR
 - Laboratory Composite Sample Number
 - Sample numbers composited for reactivity (periclase + lime) testing
 - Date Composite Sample Analyzed by Laboratory
 - Composite Sample Results (mol % periclase +lime)
 - Date Composite Analysis Results Reported to WTS MgO STR

1.2 MgO STR Interface with MgO Supplier

1.2.1 MgO STR, ensure the subject purchase requisition with the MgO Supplier contains the following requirements:

- Supplier to provide the Analysis of Shipment that contains information including wt% magnesium, calcium, silicon, iron, aluminum, chloride, and sulfur; PATR; Loss on Ignition, tap bulk density, and the percent of product passing through screens of 3/8-inch mesh and others, including 6, 16, 30, and 100 mesh.
- Supplier to provide a sample from each MgO shipment, package the sample and associated CoC documentation, and ship the sample for each MgO shipment to the WTS subcontracted laboratory for reactivity analysis on the MgO sample.
- Supplier to contact/notify the WTS MgO STR for each sample sent to the laboratory including the shipment number, packaging details, CoC information, and shipping details.
- Supplier to transmit the COA containing the corresponding Shipment Number and/or distinct supplier number to the WTS MgO STR.

1.3 MgO STR Interface with Subcontracted Laboratory for MgO Analysis.

1.3.1 MgO STR, ensure the subject purchase requisition with the laboratory that performs the MgO analysis contains the following requirements:

- Laboratory to receive the sample and associated documentation including CoC and COA.
- Laboratory to prepare the sample, perform the required reactivity testing and complete the associated documentation per RFA instructions.
- Laboratory to composite samples as required and complete associated documentation.
- Laboratory to provide results of the reactivity testing to the WTS MgO STR.

- Laboratory to archive the remaining individual shipment sample material and a minimum of 10 grams of a composite sample in separate containers.
- Laboratory to store the archived sample material in such a way that significant moisture and/or air can not reach the sample.
- Laboratory to obtain written approval from the WTS MgO STR prior to disposing sample archives.

1.3.2 WTS MgO STR perform the following:

- Collect the COA from the MgO supplier.
- Collect the completed CoC from the subcontract laboratory.
- Provide a completed RFA (Attachment 2) to the subcontract laboratory.
- Collect the reactivity testing results from the subcontract laboratory.

1.3.3 WTS MgO STR, if MgO reactivity results are < 94% reactivity, contact the super sack preparer and instruct them to place the affected shipment on hold and segregate pending WTS disposition.

1.3.4 WTS MgO STR, ensure the following actions are initiated for MgO reactivity results that are <94% reactivity:

- A. Request the lab of record to conduct additional sample testing for the MgO lot(s) in question.
- B. Ensure the lab of record initiates EA15PC3041-2-0, an Approval/Variation Request (AR/VR) to document the additional sample testing results.
- C. Ensure the AR/VR for the additional sample testing results are reviewed and dispositioned.
- D. If AR/VR(s) are received that reflect two consecutive MgO reactivity results for a lot of MgO <94% reactivity, ensure that the MgO lot is rejected and a Nonconformance Report (NCR) is generated in accordance with WP 13-QA3004.
- E. Ensure the affected lots are processed in accordance with the NCR disposition

F. Ensure the MgO supplier and super sack preparer take the actions required by the NCR disposition.

1.4 WTS MgO STR, ensure the following:

- At least one copy of the signed CoC, COA, and RFA is placed in the Operation and Disposal files along with original reactivity testing results for each supplier shipment.

1.5 WTS STR, ensure that satisfactory analysis results are received at WTS.

2.0 RECORD KEEPING

2.1 WTS MgO STR, perform the following:

- Store all records in a fireproof cabinet while on-site.
- Maintain MgO sampling records on-site a minimum of six months.
- Dispose of MgO sampling records in accordance with the RIDS.

