

WP 04-AU1007

Revision 9

Underground Openings Inspections

Technical Procedure

EFFECTIVE DATE: 12/10/08

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APPROVED FOR USE

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INTRODUCTION

This procedure provides instructions to perform a ground control inspection of the ground conditions and roof bolts in the underground at the Waste Isolation Pilot Plant (WIPP).

Performance of this procedure will generate the following Quality/Resource Conservation and Recovery Act records:

- Mine Operations Shift Logbook
- Attachment 1, Underground Openings Inspection Checklist

REFERENCES

BASELINE DOCUMENTS

- 30 CFR Part 57, "Safety and Health Standards - Underground Metal and Nonmetal Mines"
- Hazardous Waste Facility Final Permit, Waste Isolation Pilot Plant, Permit No. NM4890139088-TSDF, issued by the New Mexico Environment Department
- New Mexico Mine Safety Code for all Mines
- WP 15-PR, WIPP Records Management Program

REFERENCED DOCUMENTS

- WP 04-IM1000, Issues Management Processing of WIPP Forms
- EA04IM1000-1-0, WIPP Form

EQUIPMENT

- Scaling bar or other appropriate sounding device (e.g., hammer, drillsteel, or roof bolt of appropriate length)
- Lift truck where needed for sounding high back

PRECAUTIONS AND LIMITATIONS

- Personnel performing this work, at a minimum, must have completed the U.S. Department of Labor, Mine Safety and Health Administration 40-Hour Newly Employed, Inexperienced Miner Training.
- Inspections should begin at a safe and sound starting point.

- Ground conditions that create a hazard to persons **SHALL** be taken down **OR** supported before other work or travel is permitted in the affected area. Until corrective work is completed, the area **SHALL** be posted with a warning against entry and, when left unattended, **SHALL** have a barrier installed to impede unauthorized entry.^{1,2}

PERFORMANCE

1.0 EMPLOYEE WORK AREA DAILY GENERAL INSPECTION

- 1.1 Employee, prior to performing work, visually conduct inspection of the work area for the following:
- Back and rib bolts damaged/missing
 - Roof bolts for loose, or deformed plates
 - Back and rib for cracks, fractures, and separations that may be hazardous

NOTE

Bad back or rib will have a drummy, hollow, or unsolid sound when sounded.

NOTE

When broken or missing bolts are replaced, the load-bearing plate is to be marked with the letter "R" to indicate that a replacement bolt has been installed in the area.

- 1.2 Sound suspicious roof bolts, back, and rib in the work area to determine the following:
- Loose roof bolts
 - Bad back or rib

WARNING

To avoid injury, prescribed methods must be followed when using a scaling bar during scaling operations.

- 1.3 Using a scaling bar long enough to allow operator to work under good ground, remove bad ground.^{3,4}

- 1.4 **IF** loose, broken, or missing roof bolts are found,
THEN perform the following:
- 1.4.1 Notify the Mine Operations Engineer, Mine Operations Manager, or Underground Facility Operations.
 - 1.4.2 Proceed as directed following notification.
 - 1.4.3 Document action taken on Attachment 1.²
- 1.5 **IF** bad ground **CANNOT** be removed manually,
THEN check the following are performed:
- 1.5.1 Post area to warn others of deficiencies.
 - 1.5.2 If area is to be left unattended, have barriers posted.¹
 - 1.5.3 Notify manager of deficiencies.
 - 1.5.4 Proceed as directed by supervisor.

2.0 MINE OPERATIONS UNDERGROUND TRAVELWAY WEEKLY VISUAL INSPECTIONS

- 2.1 Employee, visually inspect travelway roof bolts, back, and rib for the following:
- Roof bolts for loose or deformed plates
 - Back and rib for cracks, fractures, and separations that may be hazardous⁵

NOTE

Bad back or rib will have a drummy, hollow, or unsolid sound when sounded.

- 2.2 Sound suspicious roof bolts, back, and rib to determine the following:
- Loose roof bolts
 - Bad back or rib

WARNING

To avoid injury, prescribed methods must be followed when using a scaling bar during scaling operations.

2.3 Using a scaling bar that is long enough to allow operator to work under good ground, remove bad ground.^{3, 4}

2.4 **IF** loose, broken, or missing roof bolts are found, **THEN** perform the following:

2.4.1 Notify the Mine Operations Engineer, Mine Operations Manager, or Underground Facility Operations.

2.4.2 Proceed as directed following notification.

2.4.3 Document action taken on Attachment 1.²

2.5 **IF** bad ground **CANNOT** be removed manually, **THEN** check the following are performed:

2.5.1 Post area to warn others of deficiencies.

2.5.2 If area is to be left unattended, have barriers posted.¹

2.5.3 Notify manager of deficiencies.

2.5.4 Proceed as directed by supervisor.

2.5.5 Document action taken on Attachment 1.

2.5.6 Manager, review Attachment 1 for completeness and to ensure that it is properly filled in.

3.0 MINE OPERATIONS UNDERGROUND FACILITY ANNUAL PHYSICAL INSPECTIONS

3.1 Employee, physically sound/inspect all accessible areas' roof bolts, back, and rib for the following:

- Back and rib for cracks, fractures, and separations that may be hazardous

NOTE

Bad back or rib will have a drummy, hollow, or unsolid sound when sounded.

3.2 Sound roof bolts, back, and rib to determine the following:

- Loose roof bolts
- Bad back or rib

WARNING

To avoid injury, prescribed methods must be followed when using a scaling bar during scaling operations.

3.3 Using a scaling bar that is long enough to allow operator to work under good ground, remove bad ground.^{3, 4}

3.4 **IF** loose, broken, or missing roof bolts are found, **THEN** perform the following:

3.4.1 Notify the Mine Operations Engineer, or Mine Operations Manager, or Underground Facility Operations.

3.4.2 Proceed as directed following notification.

3.4.3 Document action taken on Attachment 1.²

3.5 **IF** bad ground **CANNOT** be removed manually, **THEN** check the following are performed:

3.5.1 Post area to warn others of deficiencies.

3.5.2 If area is to be left unattended, have barriers posted.¹

3.5.3 Notify manager of deficiencies.

3.5.4 Proceed as directed by supervisor.

3.5.5 Document action taken on Attachment 1.

3.5.6 Manager, review Attachment 1 for completeness and to ensure that it is properly filled in.

4.0 DELINQUENT INSPECTIONS

NOTE

A delinquent inspection occurs when personnel discover that a scheduled Weekly Visual, or Annual Physical inspection, has not been performed. Delinquent Inspections require actions that should be verified by Management. These actions are listed in Steps 4.1 through 4.3.

- 4.1 Notify Site Environmental Compliance immediately of the delinquent inspection.
- 4.2 Initiate a WIPP Form (EA04IM1000-1-0) in accordance with WP 04-IM1000.
- 4.3 Schedule and complete the inspection.

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
E-300 Drift from N-1400 to N-1100			
E-300 Drift from N-460 to S-1000			
E-300 Drift from S-1000 to S-1950			
E-300 Drift from S-1950 to S-2520			
E-300 Drift from S-2520 to S-3650			
E-300 Alcove north off N-460			
N-460 Alcove east off E-300			
N-250 Alcove east off E-300			
N-90 Alcove east off E-300			
N-0 Alcove (Golf Cart Shop) east off E-300			
S-400 drift east off E-300 (to Exhaust Shaft)			
S-1600 Drift from E-300 to Panel 1 Block Wall			
S-1950 Drift from E-300 to Panel 1 Block Wall			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-2180 Drift from E-300 to Panel 2 Block Wall			
S-2520 Drift from E-300 to Panel 2 Block Wall			
E-140 Drift from N-1400 to N-780			
E-140 Drift from N-780 to N-150			
E-140 Drift from N-150 to S-1000			
E-140 Drift from S-1000 to S-2180			
E-140 Drift from S-2180 to S-3080			
E-140 Drift from S-3080 to S-3650			
S-3650 Drift (to waste face) from E-140 to Panel 4, Room 3			
S-3310 Drift from E-140 to Panel 4, Room 3			
N-780 Alcove east off E-140			
N-460 Drift between E-140 and E-300			
N-300 Drift between E-140 and E-300			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	
		Annual: _____	
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-90 Drift between E-140 and E-300			
S-220 Alcove (Switch Station 2) east off E-140 Drift			
S-300 Alcove (I&C Conex) east off E-140 Drift			
S-400 Drift between E-140 and E-300			
S-520 Alcove (water collection area) east off E-140 Drift			
S-520 Alcove (cart parking) west off E-140 Drift			
S-700 Drift between E-140 and E-300			
S-1000 Drift between E-140 and E-300			
S-1300 Drift between E-140 and E-300			
S-1600 Drift between E-140 and E-300			
S-1950 Drift between E-140 and E-300			
S-2180 Drift between E-140 and E-300			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-2520 Drift between E-140 and E-300			
S-2750 Drift between E-140 and Panel 3 BH			
S-3080 Drift between E-140 and Panel 3 BH			
Panel 4, Room 3			
Panel 4, Room 2			
Panel 4, Room 1			
0-East Drift between N-1400 and N-780			
0-East Drift between N-780 and S-90			
W-30 Drift between S-90 and S-1000			
W-30 Drift between S-1000 and S-1950			
W-30 Drift between S-1950 and S-3650			
N-1400 Drift between E-0 and E-300			
N-1100 Drift between E-0 and E-300			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
N-940 Alcove west off E-0 Drift			
N-780 Drift between E-0 and E-300			
N-620 Alcove west off E-0 Drift			
N-460 Drift between E-0 and E-300			
S-90 Drift (inc. SS #1) between E-0 and E-140			
S-225 Alcove (fire truck alcove) west off W-30			
S-300 Alcove (ambulance alcove) west off W-30			
S-550 Alcove west off W-30 (U/G Services)			
S-700 Drift between W-170 and E-140			
S-1000 Drift between W-170 and E-140			
S-1300 Drift between W-170 and E-140			
S-1600 Drift between W-170 and E-140			
S-1950 Drift between W-170 and E-140			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-2180 Drift between W-170 and E-140			
S-2520 Drift (SSW 5/Maint) between W-170 and E-140			
S-2750 Drift between W-170 and E-140			
S-3080 Drift between W-170 and E-140			
S-3310 Drift between W-170 and E-140			
S-3650 Drift between W-170 and E-140			
W-170 Drift between N-150 and S-1000			
W-170 Drift between S-1000 and S-2180			
W-170 Drift between S-2180 and S-3650			
N-150 Drift between W-170 and E-0			
N-90 Alcove (fuel bay) west off W-170 Drift			
S-400 Alcove (core storage) west off W-170 Drift			
S-1300 Alcove (oil bay) west off W-170 Drift			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
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MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	Annual: _____
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-3310 Drift from W-170 to Panel 5, Room 7			
S-3650 Drift from W-170 to Panel 5, Room 7			
Panel 5, Room 1			
Panel 5, Room 2			
Panel 5, Room 3			
Panel 5, Room 4			
Panel 5, Room 5			
Panel 5, Room 6			
Panel 5, Room 7			
S-90 Drift from W-170 Drift to Q-Room			
W-620 Drift from AIS (shaft) to Switch Station 4			
N-300 Drift to AIS (shaft) between E-0 and W-620			
N-135 Alcove (Geotech Conex) west off W-620 Drift			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____		Weekly: _____	
		Annual: _____	
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
S-2750 Drift from W-170 Drift to Panel 6, Room 7			
S-3080 Drift from W-170 Drift to Panel 6, Room 7			
Panel 6, Room 1			
Panel 6, Room 2			
Panel 6, Room 3			
Panel 6, Room 4			
Panel 6, Room 5			
Panel 6, Room 6			
Panel 6, Room 7			
ADDITIONAL INFORMATION			
INSPECTION PERFORMED BY (PRINT NAME): _____			
SIGNATURE: _____			
REVIEWED BY: _____			
MANAGER SIGNATURE			DATE

Attachment 1 - Underground Openings Inspection Checklist

DATE: _____		TIME: _____	
Record Inspection Type: _____			
Weekly: _____		Annual: _____	
DRIFT	INITIALS	COMMENT & OBSERVATION	ACTION TAKEN & DATE
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