NOTICE

1. Enclosed is a copy of a decision by an Administrative Law Judge of the Federal Mine Safety and Health Review Commission. The issuance date of this decision appears on the first page of the Decision.

THIS DECISION MUST BE POSTED ON THE MINE BULLETIN BOARD BY THE OPERATOR.

2. You may petition for review of this decision by the Commission. A PETITION FOR DISCRETIONARY REVIEW must be received by the Commission within thirty (30) calendar days after the issuance date of the decision to be considered [29 C.F.R. § 2700.5(f) and .70(a)]. If this decision is an ORDER OF TEMPORARY REINSTATEMENT, the Petition for Review must be received within 5 days of the receipt of the order [29 C.F.R. § 2700.45(f)].

If a party wishes to file a petition for discretionary review, you are encouraged to file it within the Commission's electronic filing system (https://www.fmshrc.gov). Petitions are not currently being accepted via fax during the Commission's pandemic related operational changes (https://www.fmshrc.gov). If you mail the petition, you should allow enough time for delivery by the thirtieth day. Petitions should be filed at:

DOCKET OFFICE
FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION
1331 Pennsylvania Ave., N.W., Suite 520 N
WASHINGTON, D.C. 20004-1710
Telephone No. (202) 434-9950

3. The Federal Mine Safety and Health Review Commission's Rules of Procedure specify that a petition may be filed only on one or more of the following grounds:

   A. A finding or conclusion of material fact is not supported by substantial evidence.
   B. A necessary legal conclusion is erroneous.
   C. The decision is contrary to law or to the duly promulgated rules or decision of the Commission.
   D. A substantial question of law, policy or discretion is involved.
   E. A prejudicial error of procedure was committed.

Each issue shall be separately numbered and plainly and concisely stated, and shall be supported by detailed citations to the record when assignment of error are based on the record. Statutes, regulations or principal authorities shall be relied upon. Except for good cause shown, no assignment of error by any party shall rely on any question of fact or law upon which the administrative law judge has not been afforded an opportunity to pass. For further details on the filing of documents and the review process, see 30 U.S.C. § 823{d) and Commission rules 5 through 9 and .70 through .78 [29 C.F.R. §2700.5-.9 and .70-.78].

4. **A Petition for Review must be served on the opposing party.**

5. **If a petition is filed, each party will be notified of the Commission's action on the petition.**

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

OFFICE OF THE CHIEF ADMINISTRATIVE LAW JUDGE
1331 PENNSYLVANIA AVE., N.W., SUITE 1400
WASHINGTON, DC 20004-1710
TELEPHONE: 202 434-9987

November 9, 2026

SECRETARY OF LABOR MINE SAFETY AND HEALTH ADMINISTRATION (MSHA), Petitioner,	**CIVIL PENALTY PROCEEDINGS** Docket No. CENT 2023-0202 A.C. No. 16-00970-576979 Docket No. CENT 2023-0237 A.C. No. 16-00970-580681
v.	Docket No. CENT 2023-0278 A.C. No. 16-00970-582744 Docket No. CENT 2024-0001 A.C. No. 16-00970-584876
MORTON SALT, INC., Respondent.	Mine: Weeks Island Mine and Mill

DECISION AND ORDER AFTER HEARING

Before: Judge Young

Appearances: Raymond Lee, Jr., Esq., and W. Tyler Nash, Esq., U.S. Department of Labor, Office of the Solicitor, Dallas, TX, for the Petitioner

Donna Vetrano Pryor, Esq., and Daniel Zimmer, Esq., Husch Blackwell LLP, Denver, CO, for the Respondent

SUMMARY

Citation No. 9674933 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360) – 1600 Ramp Belt'

Fact of violation	Vacated	pp. 42-45 (Slip op.)

Order No. 9674986 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360)

Fact of violation	Vacated	pp. 46-47

Order No. 9674987 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360)

Fact of violation	Vacated	pp. 48-49

Order No. 9674988 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360)

Fact of violation	Vacated	pp. 50-51

Order No. 9674990 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360)

Fact of violation	Vacated	pp. 52-53

Order No. 9674997 – Failure to Provide Adequate Ground Support (30 C.F.R. § 57.3360)

Fact of violation	Vacated	pp. 54-55

Order No. 9674967– Failure to Maintain Escapeway (30 C.F.R. § 57.11051(a))

Fact of violation	Affirmed	pp. 57-59
S&S	Yes	p. 59
Negligence	Moderate	pp. 59-60
Penalty:	$5,000.00	pp. 60-61

Order No. 9674982 – Barricades and Warning Signs (30 C.F.R. § 57.20011)

Fact of violation	Vacated	pp. 62-63

Order No. 9674991 – Failure to Maintain Escapeway (30 C.F.R. § 57.11051(a))

Fact of violation	Affirmed	pp. 64-65
S&S	Yes	p. 65
Negligence	Moderate	p. 65
Penalty:	$6,000.00	p. 65

I. INTRODUCTION

These cases[1] are before me for assessment of civil penalty filed by the Secretary of Labor ("Secretary" or "Petitioner") through the Mine Safety and Health Administration ("MSHA") against Respondent Morton Salt, Inc. ("Morton" or "Respondent"), pursuant to section 105(d) of the Mine Safety and Health Act of 1977 ("Mine Act" or "Act"), as amended, 30 U.S.C. § 815(d). At issue are one 104(a) citation and eight 104(e)(2) orders issued by the Secretary against Respondent between March 15 and August 2, 2023. On behalf of the Commission, I conducted a hearing on February 12–14, 2025, in Lafayette, Louisiana, for the citation and orders discussed this decision.[2] Following the hearing, the parties submitted posthearing and supplemental briefs.[3]

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[1] These four dockets are part of a larger grouping of eight dockets: Docket Nos. CENT 2023-0202, CENT 2023-0203, CENT 2023-0237, CENT 2023-0278, CENT 2024-0001, CENT 2024-0081, CENT 2024-0173, and CENT 2024-0193. All eight dockets, which involve the same operator and mine, were initially assigned to one ALJ, and then subsequently reassigned to another ALJ. On January 15, 2025, these dockets were reassigned to me. Before these cases were assigned to me, the parties worked with the second ALJ to plan four hearings grouped by the types of violations at issue and common witnesses.

I chose to continue with this hearing schedule after the dockets were assigned to me. Prior to the hearing, the parties resolved several citations and orders, which are included as an appendix to this decision. Following the issuance of this decision, there are no outstanding enforcement actions in any of the eight dockets.

[2] The hearing took place over the course of three days. In this decision, the transcript for the first day, February 12, 2025, is cited as "Tr. Vol. I." The transcript for the second day, February 13, 2025, is cited as "Tr. Vol. II." The transcript for the third day, February 14, 2025, is cited as "Tr. Vol. III."

Both parties also submitted exhibits at the hearing, which are identified numerically, starting with "GX-1" and "RX-1" for Petitioner and Respondent, respectively. These exhibits were Bates numbered, and both parties entered into the record exhibits that appear to have been Bates numbered by the opposing party. Exhibits that were Bates numbered by Petitioner include a prefix "DOL," e.g., "DOL0025." *See* GX-1 (first page of exhibit). Exhibits that were Bates numbered by Respondent include a prefix "Morton" followed by the docket number in parentheses, e.g., "Morton (202 & 203) 00293." *See* RX-3 (first page of exhibit).

This decision will identify specific pages in a cited exhibit using Bates numbers excluding the prefix or leading zeroes in the page number, e.g., using "GX-1 at 25" to identify the first page of GX-1 and "RX-3 at 293" to identify the first page of RX-3.

[3] After the Commission's decision in *Consol Pennsylvania Coal Company*, 47 FMSHRC 793 (Sept. 2025), in which the Commission reformulated the analysis for determining whether a violation is Significant and Substantial ("S&S"), the parties were given the opportunity to submit supplemental briefs on the S&S issue. *See* Order on Post-Hr'g Brs. (Sept. 30, 2025); Second Order on Suppl. Post-Hr'g Brs. (Nov. 14, 2025).

The Secretary's initial brief is cited as "Sec'y Br.," and her supplemental brief is cited as "Sec'y Suppl. Br." *See generally* Sec'y Br. (May 21, 2025); Sec'y Suppl. Br. (Jan. 16, 2026). Respondent's initial brief is cited as "Resp't Br.," and its supplemental brief is cited as "Resp't Suppl. Br." *See generally* Resp't Br. (June 5, 2025); Resp't Suppl. Br. (Jan. 16, 2026).

For the reasons set forth below, I affirm the violations of Order Nos. 9674967 and 9674991. I find there is insufficient evidence to establish violations as alleged in Citation No. 9674933 and the remaining orders in this proceeding and vacate those issuances.

II. FACTS

A. Parties' Stipulations

At the beginning of the hearing, the parties entered these stipulations into the record:

1. Jurisdiction exists because Respondent was an operator of a mine defined in Section 3(b) of the Federal Mine Safety and Health Act of 1977, otherwise known as the "Mine Act[,]" 30 U.S.C. Section 803(b), in the products of the subject line, entered the stream of commerce or the operations of products, thereof, affecting commerce within the meaning and scope of Section 4 of the Mine Act.

2. [These] dockets involve an underground salt mine known as Weeks Island Mine and Mill, which is owned and operated by Respondent. Respondent has been identified as the operator of the mine as defined by Section 3(d) of the Mine Act. Section 802 also states at which time of the issue of these proceedings that Respondent was the operator of the mine at all relevant times.

3. The assessable penalty would not affect Respondent's ability to remain in business.[4]

4. The citations were properly served by a duly-authorized representative of the Secretary of Labor upon an agent [of] Respondent on or about the date and place stated therein and may be admitted into evidence for the purpose of establishing its issuance and not for the truthfulness or relevance of any statements asserted therein.

Tr. Vol. I at 13–15 (numbering added and cleaned up).[5]

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[4] At the hearing, the parties stated the following with respect to this stipulation: "However, given the mine's pattern of violation ("POV") status, the citations could result in the mine's temporary or permanent closure." Tr. Vol. I at 15.

I take administrative notice of the fact that on April 7, 2025, the Department of Labor issued a news release stating MSHA had released Weeks Island Mine and Mill from the agency's POV designation. *U.S. Department of Labor Removes Morton Salt Inc., Weeks Island Mine and Mill from MSHA's Pattern of Violations List*, U.S. Dep't of Labor, (Apr. 7, 2025), https://www.msha.gov/news-media/news-releases/2025/04/07/us-department-labor-removes-morton-salt-inc-weeks-island-mine-and-mill-mshas-pattern-violations.

[5] The text for these stipulations is copied from pages 13–15 of Transcript Volume I. While brackets are used to indicate text or grammatical marks that have been added, ellipses are not used to indicate omissions.

B. Weeks Island Mine and Mill

Weeks Island Mine and Mill ("Weeks Island") is an underground domal salt mine located on the eastern shore of Weeks Bay on the Gulf Coast in New Iberia, Louisiana. Tr. Vol. II 279–80. Stone Canyon took ownership of the mine from K&S in 2021. *Id.* at 67, 282–83.

Weeks Island has been in operation for more than a century and employs between 120 and 130 employees who produce more than one million tons of rock salt per year. *Id*. II at 280. The mine contains five levels: the 1000' level, 1200' level, 1400' level, 1500' level, and 1600' level. *Id*. At the time the enforcement actions in this decision were issued, active mining (i.e., extracting salt from the face) was only taking place at the 1600' level. Tr. Vol. I at 40; Tr. Vol. II at 280.

The mine extracts salt using the room-and-pillar method following a grid pattern. Salt is removed from openings called "rooms," and the remaining portions of rock are called "pillars," which hold up the salt around them. Tr. Vol. II at 32.

The mine uses a drill to create an opening, which is filled with explosives that are detonated to extract the salt. *Id*. Explosives are shot at the end of an evening shift. Tr. Vol. I at 40. Miners on the next shift haul extracted salt to the crushers, which bring the salt to the belt line that carries it to the mill for processing before leaving the mine. *Id*.

C. Witnesses

Inspector Norman Ryes, an MSHA inspector with the Broussard, Louisiana field office, issued all the enforcement actions at issue in this decision. At the time of the hearing, he had nine years of experience as an MSHA inspector, had visited Weeks Island ten times, and was the lead MSHA inspector in eight of those inspections. *Id.* at 26–28.

Five current or former employees testified for Respondent: Jessica Garcia, Eric Gaudreau, Quinn Norwood, Jack Maxey, and Scott Frith. Garcia is the Maintenance Manager at Weeks Island and is responsible for maintenance of mobile and fixed equipment. Tr. Vol. II at 26. She previously served as the mine's Engineering Manager, where she oversaw projects, including mining guide planning and short-term and long-term planning at Weeks Island. Tr. Vol. II at 26. Garcia has worked at Weeks Island since May 2018. *Id.* at 27. Gaudreau has been Engineering Manager at Weeks Island for nearly two years and has been with the mine for about six years and worked as a Project Engineer and Mine Engineer before assuming his current position.. *Id.* at 70–71. *Id*. Norwood has served as the mine's EHS Coordinator[6] since July 2024. *Id.* at 278–79. Norwood previously spent eight years at the mine as a Miner "A," working "on just about every job in production." *Id.* at 279.

Maxey is the Production General Foreman at Weeks Island. Tr. Vol. III at 6. At the time of the hearing, he had worked at Weeks Island for three years and had a total of ten to twelve

[6] Norwood identified his job title as "EHS Coordinator" and did not state what "EHS" stood for.

years of mining experience. *Id.* at 6. Before working at Weeks Island, Maxey spent five years working at the Cargill Avery Island mine, another domal salt mine. *Id.* at 7. Frith worked at Weeks Island from February 2022 to June 2024. *Id.* at 94. For approximately the first year of his tenure at the mine, Frith worked as the Production Supervisor before being appointed Safety Superintendent, assisting the EHS Manager and accompanying MSHA inspectors on their inspections. *Id.* at 94-95.

Both parties presented testimony from expert witnesses on rock salt mechanics who offered observations and opinions on Weeks Island and the areas at issue in these enforcement actions. These expert witnesses authored reports, which were entered as evidence. *See generally* GX-13 (MSHA report on laboratory evaluation of bolts and plates retrieved from Weeks Island); GX-14 (MSHA report on field investigation at Weeks Island); RX-50 (Respondent's expert report on conditions observed during visit to Weeks Island).

The Secretary's expert, Dr. Christopher Mark, works in the Roof Control Division ("RCD") at MSHA Technical Support. Tr. Vol. II at 141. While Mark's educational background and experience is concentrated in coal mining, he has experience in "pretty much all aspects of underground mine ground control." *Id.* at 142–46. One salt mine project on which Mark worked was the Waste Isolation Pilot Plant ("WIPP"), a former bedded salt mine in New Mexico that was being evaluated for hazardous waste disposal. *Id.* at 146–47. Mark and an RCD colleague visited Weeks Island on March 23, 2023, to assess the 1500' level ramp belt.

Respondent's expert, Cody Vining, is Manager, Rock Mechanics, at RESPEC, a firm retained by Respondent in the ordinary course of its business. His practice focuses primarily on rock mechanics at evaporite mines, including salt mines, and he testified that he has visited about 13 salt mines over the course of his career. Tr. Vol. III at 143. Vining also worked with Respondent to develop its roof control plan at Weeks Island, and he has visited the mine annually since 2018. *Id.* at 144. Regarding the enforcement actions at issue in this decision, Vining visited Weeks Island on May 16, 2024.

D. Rock Salt Mechanics

There are two types of rock salt mines: bedded and domal. The salt in bedded mines has inherent discontinuities where separations can affect ground control. Tr. Vol. II at 216; Tr. Vol. III at 146. In contrast, domal salt mines lack these inherent discontinuities and tend to be more consistent. Tr. Vol. III at 146-47.

Both Mark and Vining testified that salt in domal salt mines is initially and generally competent and self-supporting. According to Vining, "[t]he greatest contributing factor to the development and progression of roof falls in evaporite settings is the presence and location of separations within the salt back." RX-50 at 2005. In domal salt, there are no separations inherently present after active mining occurs. *See* Tr. Vol. III at 147.

Rock salt is different from most other types of rock and may change shape and even increase volume through two time-dependent processes of deformation: salt creep and salt dilation. RX-50 at 2004. Salt creep is a process by which salt can move from an area of high

stress to an area of low stress. *Id.* This is an isochoric process, meaning the salt changes shape without changing volume. Tr. Vol. III at 150.

When describing salt creep, Mark said salt "behaves like a viscous liquid" and compared it to both ice and a glacier. Tr. Vol. II at 148. As a glacier "will flow under its own weight," Mark said salt will shorten and to expand under the weight of the pillar, putting pressure on the roof and the ridge of the pillar. *Id.* at 148-49. Salt creep itself does not cause fracturing in the salt, but Mark noted that cracks can develop from pressure created by the process. *Id.*

Vining compared salt to a cylinder of Play-Doh, which will deform and "barrel out" as pressure is applied from above. Tr. Vol. III at 145. Salt responds similarly to pressures underground because of salt creep and can deform without causing damage. *Id*.

The process of salt creep is "generally too complicated to be captured entirely in formulas." Tr. Vol. II at 151. In rock salt, fractures develop in response to creep and typically do not form naturally without it. *See Id.* at 154. Salt creep is unavoidable, occurring wherever there is a difference in stress in the salt back and cannot be fully arrested or avoided. *See* RX-50 at 2004. However, the process is not inherently hazardous. Tr. Vol. III at 151.

Vining testified that salt creep's effect on the salt back is varied. It can occur without inducing separations in the back. *Id.* at 151. He also testified that salt creep does not damage the salt. *Id.* at 227. Mark testified that salt creep can heal fractures that develop in the salt back, although he later clarified this healing process does not apply to active salt mines and occurs over a long "geologic" time frame. Tr. Vol. II at 221, 257–58.

In contrast to salt creep, the process of salt dilation increases the volume of the salt. As Vining characterized it, salt dilation is the damage measure. Tr. Vol. III at 145. When dilation occurs, small microfractures at the crystalline boundary begin to form. *Id*. The salt then progressively and slowly increases in volume, a process that will continue "as long as the shear stress exceeds the dilation resistance of the salt." RX-50 at 2004. According to Vining's report, these processes of salt creep and salt dilation are coupled and that over time, salt creep will effect the continual closure of a mined excavation, redistributing and decreasing shear stresses in the surrounding salt and decreasing progress toward dilation. *Id.*

E. Ground Control and Roof Bolting Practices at Weeks Island

1. Respondent's Ground Control Plan

During the relevant time period, there were two versions of the ground control plan in place at Weeks Island. The first version of the plan is dated August 26, 2022. *See generally* GX-8. The second version of the plan is dated May 26, 2023, and was updated after MSHA issued some of the enforcement actions in this decision. *See generally* RX-51.[7]

[7] In this decision, these plans will be referred to as the August 2022 and May 2023 plans. Respondent argued in its brief that "there are no relevant differences between the two ground control plans." Resp't Br. at 9 n. 4. However, as the Secretary notes changes in the May 2023

Respondent's ground control plan applies to all active underground areas of the mine, including faces, roadways, travelways, and escapeways. GX-8 at 1387; RX-51 at 790. An "active area" is any area in which miners are currently working. Tr. Vol. II at 37. An "active production area" or "production area" is an area in which the mine is currently extracting salt through the room-and-pillar mining and drill-blast methods. *Id.* at 80, 126.

Both versions of Respondent's ground control plan only require bolting patterns and timing in production areas. GX-8 at 1387; RX-51 at 791. The mine's typical bolting pattern is 7 ft x 7 foot spacing with 7 bolts per row. *Id*. At intersections, the pattern is 7 ft x 7 ft with 8 bolts per row. *Id*. Respondent installs additional bolts to these patterns in areas where needed. *Id.* .

The August 2022 plan states production bolting is to be installed in anticipation of advancing the face 80 feet, and at intersections prior to advancing the face 40 feet. GX-8 at 1387. The May 2023 plan does not differentiate timing for intersections and only states the standard practice "is to bolt the roof within 210 [feet] from the last face advance." RX-51 at 791.

Both versions of the ground control plan also include information on the production bolting system, the installation of telltales (tattletales),[8] and the verification process to ensure that bolts are properly installed. GX-8 at 1388; RX-51 at 790–91. *See also* discussion *infra,* Section II.E.3 and 4 (discussing roof bolt installation process and use of telltales at Weeks Island). They also contain appendices detailing ground control training for miners and the process for evaluating the effectiveness of the ground control system. GX-8 at 1397; RX-51 at 800.

The May 2023 plan describes the salt back as "generally competent and self-supporting, and says bolting is usually done preemptively as potential hazards may develop from growing separations and loose rock in the salt back. RX-51 at 790. Inspections are cited as an effective means of identifying separations. *Id.*

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plan include additional statements about preemptive roof bolting and rehabilitation. Sec'y Br. at 3–4. *See also* slip op. at pp. *infra* (noting changes in the two ground control plans).

Both plans were written by Gaudreau, authorized by General Manager Nathan Boles, and list Mine Manager Tim McFarland as the owner, but only the May 2023 plan is signed by all three. *Compare* GX-8 at 1384 *with* RX-51 at 787. According to Gaudreau, the plan is updated based on conditions at the mine. Tr. Vol. II at 74. However, he could not recall the reason for the updated plan in RX-51. Tr. Vol. II at 74.

[8] A telltale (also called a tattletale) is a device used by Respondent to monitor ground conditions. *See infra* Section II.E.4.i. (discussing telltales in greater detail).

Some witnesses called these devices "telltales," and other witnesses called them "tattletales." In exhibits and transcripts, both words, as well as the spelling "tell tales" were used. Where testimony or an exhibit is being directly quoted, this decision will use the word used by the witness or in the exhibit. Otherwise, this decision will use "telltale," the word and spelling used by Respondent in its roof control plan. *See e.g.,* RX-51 at 790

Both versions of the plan discuss support in areas needing rehabilitation and miscellaneous ground support and state the mine "will develop a plan based on the specific conditions and support requirements." GX-8 at 1389; RX-51 at 792. However, the August 2022 plan states only that standard bolting practices will be implemented following rehabilitation. GX-8 at 1389. In contrast, the May 2023 plan says areas with some failed bolts may be evaluated for separations and signs of hazards, and that if none are identified, rehabilitation may proceed without interrupting travel in the affected area. RX-51 at 792.

Unlike the August 2022 version, the May 2023 plan addresses ground support in active non-production areas, noting that where pattern bolting has not been maintained, the area will be monitored to identify and mitigate hazards under plans approved by management. *Id.* Remediation of potential hazards may include scaling, telltales, test holes, extensometers, mechanical fixtures, or other methods. *Id.*

2. Types of Bolts Used at Weeks Island

Bolts used under Weeks Island's roof bolting plan have gotten progressively more robust over time. GX-13 at 335.[9] Before the mid-1990s, the mine installed JENNMAR six-foot-long, ⅝-inch-diameter, Grade 60, mechanically anchored smooth bar bolts installed with Grade 2 donut bearing plates. *Id*. Around 1995, the mine switched to rebar because deterioration from corrosion caused smooth-bodied bolts fail prematurely at the head. *Id.*

After investigating a large, non-injury roof fall in the 1400' level of the mine in 2001, MSHA RCD recommended adding a short resin column to enhance the anchorage of the bolts and retard corrosion. *Id.* Following a 2009 fatal roof fall on the 1500' level, the diameter of bolts used was increased to ¾-inch to combat premature failure of corroded bolts." *Id.*

After another ground fall in 2017 in the drift between intersections 21E and 22E on the 1500' level, Weeks Island began using JENNMAR six-foot-long, 0.804- and ⅞-inch-diameter mechanically anchored, resin-assisted (MARA) deformed bar Bolts. *Id*. In 2020, the most recent change adopted similar bolts from another maker with Grade 3 dome bearing plates. *Id.* Fully grouted 7/8-inch diameter bolts eight feet long or longer were also an option. *Id.*

At the hearing, witnesses testified about the use of six-foot-long bolts for roof support. *See e.g.,* Tr. Vol. I at 43–44 (Ryes noting the bolts used to control the roof are six feet long); Tr. Vol. II at 45 (Garcia testifying about installing six-foot-long roof bolts). However, the witnesses provided no testimony on the specific types of bolts or plates in their testimony and generally did not correlate bolt failure to the age or type of bolt.

[9] Both MSHA reports, GX-13 and GX-14, contain nearly identical passages about the types of bolts used at Weeks Island. *Compare* GX-13 at 335, *with* GX-14 at 321–23. This section will only cite to the passage contained in GX-13.

3. Roof Bolt Installation Process

Mark explained roof bolting generally involves drilling a hole slightly larger than the diameter of the bolt and anchoring the bolt in ground believed to be stable, using either a mechanical shell anchor, resin, or both. Tr. Vol. II at 158–59. Fully-grouted bolts are not generally used in salt mines because of salt creep, so that the support can expand to accommodate the creep "without being overloaded at any one point." *Id.*

Garcia's testimony about the bolting process specifically at Weeks Island similarly described the installation process as drilling a six-foot dep hole, placing resin in the back of the hole, and then pushing the bolt in the hole. Tr. Vol. II at 46. The bolt is "torqued," or tensioned, to ensure that the plate is secure against the roof. *Id.* As this is done, a lead at the end of the bolt "kind of opens up and holds it in instantaneously." *Id.* After installation, the roof bolts are torque tested at the first bolt, every tenth bolt, and the last bolt, as required by MSHA regulation. Tr. Vol. II at 46–47. *See also* 30 C.F.R. § 57.3203(f)(2).

4. Measures Used to Assess Competency of the Ground and Roof Bolts

Respondent has adopted measures and practices to assess the competency of the ground and ground control system at Weeks Island. These include the installation of telltales, the use of scratch holes, ping testing, listening for reverberations that can indicate a potential separation in the ground, and conducting inspections of the ground and ground control system in the mine.

i. Telltales

Telltales are used to monitor ground conditions at Weeks Island, specifically the amount of sagging or movement in the back.[10] Tr. Vol. III at 170 A telltale is an eight-foot-long roof bolt that is installed at a depth of seven feet into the back. On the one-foot portion of bolt that extends from the back, there are three two-inch pieces of green, yellow, and red tape. The green tape is installed at the 12-inch mark, in-line with the back, followed by the yellow tape, and then the red tape. *See also* GX-8 at 1394 (drawing of telltale indicator and installation depth). The remaining six inches of the roof bolt is not covered in tape. *Id.*

The roof control plan requires a telltale to be installed in the center of each intersection as well as at other points in the travelway or drift as mining advances. GX-8 at 1388; RX-51 at 790.[11]

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[10] As Vining notes in his report, telltales are monitoring devices only and are part of the mine monitoring program are not part of the support system and do not contribute to the suspension capacity of the installed ground support. RX-50 at 2029.

[11] The August 2022 Plan requires telltales at least in the center of each intersection and every 105 feet down each travelway and every 25 feet in unbolted sections when mining advances 80 feet beyond installed roof bolts, with another five telltales required when mining advances 40 feet beyond an intersection. GX-8 at 01388.

ii. Scratch Holes (Scope Holes)

Scratch holes, used in conjunction with the telltales, are placed next to roof bolts in the ceiling. Tr. Vol. I at 230. While Respondent is not required to install scratch holes next to every bolt installed at the mine, it frequently puts a scratch hole of similar depth next to installed telltales. Tr. Vol. II at 75; Tr. Vol. III at 230.

These scratch holes are examined as part of the mine's ground control monitoring process. Per Gaudreau, "if we see scales forming, if we see any kinds of separations that are hazards, tattletales, we look in scratch holes and then determine if any remediation or what kind of remediation needs to be done." Tr. Vol. II at 99.

There are several ways a miner can examine the scratch hole to determine if a separation, crack, or other anomaly is present in the back. Tr. Vol. I at 230–31; Tr. Vol. II at 76; Tr. Vol. III at 8. Some miners will do a "scratch test," where they put their measuring tape in the hole to see where separations exist. Respondent's engineering group also has borehole cameras that allow the miner to visually examine what's inside the hole. Tr. Vol. II at 76.

Scratch hole testing is commonly used to assess competency of ground. But Mark testified that this is "not definitive. . . . [Y]ou can't do one scratch test or even a couple of them and say there couldn't possibly be a roof fall here." Tr. Vol. II at 192.

iii. Ping Testing

A ping test is used to see if there's still tension in the tested bolt. Tr. Vol. III at 197. The bolt or plate is hit with a small tool or hammer. Tr. Vol. II at 50. If the bolt still has tension, it will have a high ring or "ping" sound when it is hit. Tr. Vol. II at190; Tr. Vol. III at 197. In contrast, a bolt for which the anchorage has slipped or is otherwise compromised will make a dull thud sound. Tr. Vol. II at190; Tr. Vol. III at 197.

Mark was skeptical about the utility of ping testing. He noted the test is only effective at identifying whether the bolt has completely failed. Tr. Vol. II at 190. Other functional issues with the bolt might not be identified by the ping test. Tr. Vol. II at 190.

iv. Extensometers and Convergence Stations

The other measurement instruments used at Weeks Island are extensometers and convergence stations. *See* Tr. Vol. III at 149. An extensometer has nodes that help analyze and measure the rate of movement in the back. Tr. Vol. II at 44, 78–79. Convergence stations also assess movement of ribs toward each other or the roof's movement toward the ribs. *See* Tr. Vol. III at 149; Tr. Vol. II at 121.

The May 2023 plan mandates a telltale every 55 feet in a drift when mining advances beyond 210 feet of installed roof bolts, and five additional telltales when mining advances beyond 210 feet of an intersection. RX-51 at 790–791.

v. Auditory and Visual Inspections

All employees at Weeks Island are trained to perform workplace exams, which include examining the roof of the travelways and workplaces. They assess the competency of the ground and the roof support measures installed in the back during visual inspections. Tr. Vol. III at 13. Witnesses testified about the mine's approach to safety and inspections. All miners at Weeks Island perform a workplace exam every day, and escapeways are examined weekly.[12] *Id.*

Vining testified about the visual indications he looks for when inspecting ground competency, including things such as cracks, which could indicate "significant deformation" if running longitudinally along the centerline of the room. Tr. Vol. III at 165. He also discussed looking at the condition of roof bolt plates and the level of corrosion on installed support. Tr. *Id.* at 165. If salt back expansion is present or the roof bolts are loaded, "you can see the dome compressed" if dome plates are present. Tr. Vol. III at 165.

Auditory indications may also be used to assess ground competency. Vining stated that when he performs a site visit at Weeks Island, he talks to his escort and listens for an echo, which can be heard if there are prominent separations in the back. Tr. Vol. III at 165. However, Vining admitted that he did not know whether miners at Weeks Island were trained to detect these audible reverberations or echoes. Tr. Vol. III at 214.

5. Mine's Approach to Ground Control, Roof Bolting, Safety, and Inspections

Garcia testified that Respondent maintains its roof bolts after they are installed at Weeks Island by "preemptively roof bolting so that . . . if a roof bolt were to deteriorate or corrode over time that it doesn't necessarily mean that [the] ground control plan isn't being maintained." Tr. Vol. II at 53. She said miners continually examine the ground and roof bolts. *Id.* at 54. Any employee at Weeks Island can raise support concerns for discussion. *Id*.

Gaudreau testified about the rehabilitation performed at Weeks Island, which is needed because of the constant movement of the salt dome and conditions that may naturally deteriorate. Tr. Vol. II at 83. This rehabilitation can include scaling, visual inspection of the back, monitoring telltales, and even blasting. *Id.* at 83.

When the rehabilitation includes blasting, parts of the installed roof bolts often remain in the back and can be removed by a mechanical scaler[13] or cut down with a grinder. *Id*. If bolts are removed in the scaling process, Respondent assesses whether installation of new bolts is necessary. *Id.* at 85–86. If there are scratch holes present, Respondent will use a camera or scratch tests to determine if there are separations present and whether those separations pose a

[12] *But see* Section , *infra*; GX- (Order issued and testimony noting escapeway apparently not examined as required).

[13] According to Gaudreau, a mechanical scaler is a diesel-powered piece of equipment "that applies a lot of pressure on the back through usually a deck." Tr. Vol. II at 83. While the amount of force used can depend on the configuration of the equipment, distance, and angle, Gaudreau estimated a scaler would use roughly 10,000 pounds of pressure. Tr. Vol. II at 83.

hazard or potential hazard. *Id.* at 86. Respondent does not typically rebolt if no worrisome separations are present. *Id.* at 86. Whether Respondent uses a standard production bolt or a larger bolt depends on observed conditions. *Id.* at 86.

Garcia, Maxey, and Frith also testified about what they would do if they came across a fallen, rusted, or otherwise concerning roof bolt at Weeks Island. Garcia discussed this in the context of her testimony about managers' inspections of ground support during their daily inspections. The response depends on an assessment of the area and the conditions observed. *Id.* at 55-56. A single missing or fallen bolt would prompt an assessment of the surrounding bolts, while a concern with a general area could cause someone to barricade the area and report the conditions to a supervisor. *Id.*

Maxey similarly described how he would respond if he found a fallen bolt. *Id.* at 52-53. He too testified he would inspect the area, the condition of surrounding bolts, telltales, and perform a "good inspection, looking for bad roof conditions. *Id.* If multiple bolts were missing, he would perform a more thorough inspection. *Id.* If he had the means, he might use tape to block access to the area until he could assess it. *Id.*

Maxey discussed Respondent's process of trying to "complete a loop of the mine every three months, checking escape routes and checking for scales, checking bolts, roof conditions, everything like that." Tr. Vol. III at 12. As part of this examination process, miners will ping test bolts and remove any bolts that pop loose during the test. *Id.* at 13–14.

Frith also testified about searching from area to area, looking for hazards or concerns when conducting monthly safety audits as part of his job. *Id.* at 99. These audits are designed as "mock inspections, which is basically what the MSHA inspectors come to do." *Id.* Depending on the situation, he would either barricade areas where hazards were found or wait until someone else addressed it. *Id.*

F. Ground Conditions Observed at Weeks Island

At the hearing, witnesses testified about the ground conditions they observed in the areas of the mine at issue in the enforcement actions levied against Respondent. Both parties also submitted evidence, including reports and photographs, detailing the ground conditions observed at Weeks Island.

1. The 1600' Ramp Belt - Citation No. 9674933

The 1600' ramp belt connects the 1500' and 1600' levels of the mine. It is used to convey salt from the 1600' level up to the 1500' level. Miners routinely use the north side of the belt as the main travelway. Tr. Vol. I at 39. The south side of the belt is rarely accessed and is only used for maintenance or other work on the belt line. Tr. Vol. III at 57. At all relevant times, this area was not a "production area" where salt was being extracted. Tr. Vol. III at 58. Accordingly, the mine's ground control plan did not require a 7-by-7 bolting pattern in this area. Tr. Vol. III at 58.

On March 15, 2023, Ryes was performing an E01 inspection along the 1600' ramp belt. While traveling on the south side of the ramp belt, he noticed a roof bolt in the roadway. Tr. Vol. I at 45. The bolt had fallen from the ceiling. *Id*. Ryes examined the bolt and found it showed signs of stress and did not have a clean break. *Id*. It was tapered to a narrow breaking point where the bolt finally gave. *Id.* at 46. He compared this to a piece of gum "popping" after it is stretched to its breaking point. *Id.* at 45–46.

Ryes also found two other roof bolts that had fallen from the ceiling and were suspended in the air and tie-wrapped to a cable. GX-1 at 25. The hanging bolts were not in the direct path of travel. *Id.* All three of the roof bolts Ryes found were located between the 15B and 15C intersections on the 1600' ramp belt. *Id*.

Frith was with Ryes when they found the roof bolt in the roadway. He stated one of the suspended roof bolts, which was hanging from a tie wrap, was not going to come down on its own and the mine cut the tie wrap down in order to remove the bolt. Tr. Vol. III at 97. Frith also stated other MSHA inspectors had traveled on the ramp belt in the past and hadn't recognized the hazards alleged by Ryes. Tr. Vol. III at 98.

Frith also inspected the roof bolts found in this area. He disagreed with Ryes' statement that the bolts had stretch marks. Tr. Vol. III at 121. However, he did think that deterioration and rust was present on the bolts. *Id.* at 121–22. He also stated that he had seen other deteriorated bolts on the 1600' ramp belt lying on the ground, as well as elsewhere at the mine. *Id.* at 122.

Gaudreau testified that while he was not with Ryes at the time Citation No. 9674933 was issued, he visited the area after. Tr. Vol. II at 109. Maxey was also not with Ryes at the time the ramp belt was inspected but was later called to the area. Based on a visual inspection, Maxey did not see any evidence that this section of the ramp belt was unsafe. Tr. Vol. III at 53. This area had multiple generations of roof bolts installed in "at least" a 5-by-5 pattern. *Id.* at 53–54. Like Frith, Maxey stated that a bolt hanging in mid-air was not going to come down on its own because it was held up by zip ties rated for 120 pounds, far greater than the bolt's weight. Tr. *Id.* at 54

Maxey also testified about the workplace examinations that Weeks Island employees performed in the area of the 1600' ramp belt. Tr. Vol. III at 54–56. Miners had not reported any hazards or concerns with the roof in this area on their workplace examination cards. Tr. Vol. III at 55. *See also generally* RX-3 (workplace examination cards).

Mark and his RCD colleague, Matthew Pezze, visited the mine and examined the 1600' level, including the ramp belt, as part of an MSHA Technical Support investigation on March 28, 2023. Tr. Vol. II at 169–70. *See also* GX-14 at 320. Mark and Pezze began their inspection at the 15C intersection on the 1600' ramp belt. *Id.* at 325. They found many roof bolts in this intersection "had pulled through their bearing plates" or had "broken and fallen from the roof." *Id.* The bolts and plates they recovered from the mine floor appeared to show "[s]ignificant corrosion." *Id.*

Mark and Pezze used a basket lift to get a closer look at the roof and conduct additional tests at the 15C intersection. *Id.* at 327. They conducted scratch tests on seven holes, including both open test holes and holes that previously contained roof bolts. *Id.* Four of the holes contained cracks ranging from 1/8 to 1-inch thick between 8 to 24 inches above the roof line. *Id.* Two of the holes were blocked by broken bolts that remained in the back at 5 to 6 inches above the roof line. Only one of the empty holes did not show any roof separations. *Id.*

They also ping tested several bolts. *Id.* "All tested bolts appeared to be securely attached. However, even the bolts that were starting to pull through the bearing plate passed the ping test." *Id.* Thus, they concluded the ping test "may indicate good bolt anchorage even when the bolt is compromised by a failed plate." *Id.*

Mark and Pezze also examined three telltales installed in the 15C intersection. *Id.* at 328. One telltale showed no signs of roof movement, while another showed an inch of exposed steel between the green piece of tape and the roof. *Id.* On the third telltale, the roof line was sitting between the green and yellow pieces of tape, indicating 2 inches of roof sag. *Id.*

Mark and Pezze continued their inspection along the 1600' ramp belt to the 15A intersection of the mine. *Id.* They found similar conditions in that area, including "numerous bolts hanging from the roof, pulling through bearing plates, or missing altogether." *Id.* None of the telltales showed any roof movement. However, they found one telltale installed next to a failed roof bolt with a ½-inch separation at 17 inches above the roof line. *Id.* at 329. They also tested several holes that showed separations ranging from ⅛- to ¾-inch-wide separations at 11 to 36 inches above the roof line. *Id.*

They also conducted a survey of roof bolts in a section of the back between the 15A and 15B intersections, beginning about 20 feet from the rib corner in 15A and extending 47 feet towards 15B. *Id.* at 330 (also containing Figure 9, a diagram of all the surveyed bolts). Of the 108 bolts that had been installed in this area, they determined only 51 of these bolts (47%) "appeared to be serviceable" and in good condition. *Id.* Of the remaining bolts, 35 bolts (33% of the total) had completely failed due to a missing bolt or plate. *Id.* The other 22 bolts (20% of the total) were in the process of failing. *Id.*

Gaudreau testified that he was with Mark and Pezze during their evaluation. Tr. Vol. II at 114. They examined the entire ramp belt area on foot and used a basket lift to examine roof conditions. *Id.* Gaudreau looked at roof bolts as the inspectors ping-tested them. *Id.* at 115. Some of the bolts passed the ping test, while others did not. *Id.* Gaudreau also testified that he did not see any sagging in the roof or any evidence indicating this area was not safe. *Id*. He also found corrosion on bolts, indicating they could have "rusted over." *Id.* at 117.

Vining also visited the 1600' ramp belt between intersections 15B and 15C as part of his site visit on May 15, 2024. Tr. Vol. III at 174. He conducted a visual and auditory inspection of the area. *Id*. He did not see anything in the back "that would change my conclusion that the salt's competent in that area." *Id*. The telltales he observed in this area were also still green, even though it had been more than a year since Citation No. 9674933 was issued. *Id.* at 174–75; RX-50 at 2009. Vining did not find any evidence of cracks or separation in the back and did not

think ground control was necessary in this area. Tr. Vol. III at 175. *See also* RX-50 at 2009 (detailing Vining's observations in this area of the mine).

2. The 1200' Level and No. 4 Shaft Landing - Order No. 9674967

The No. 4 shaft landing is a landing on the 1200' level of the mine. At all relevant times, this area was part of a primary escape route at Weeks Island. Tr. Vol. I at 73. Miners can access the 1200' level from this shaft. *Id.* There are also phones present and miners bring serviceable components to this area. According to Maxey, access to the 1200' level is infrequent, but he and other supervisors access this area weekly for inspection purposes. Tr. Vol. III at 15; GX-28 at 14. Maxey also testified that equipment is watched from this level as it is being lowered by this hoist, and that equipment has been taken off this hoist on the 1200' level. Tr. Vol. III at 15.

On May 24, 2023, Ryes was traveling on 1200' foot level. As he approached the No. 4 shaft landing, he noticed deteriorated, broken, and missing bolts in the ceiling. Tr. Vol. I at 72. There were also numerous plates on the floor, and he could see where the plates had fallen from the ceiling. *Id*. Other plates that were left in the ceiling were rotted and rusted, and the bolt heads were pulling through them, causing the plates to invert. *Id*.

Ryes also observed scales (loose pieces of ground). GX-28 at 14. There were several 8-inch chunks on top of an I-beam ledge on the frame around the shaft landing, as well as scales overhead. Tr. Vol. I at 78. He observed several scales that had already fallen on the ground and noted another section where he believed a roof failure had occurred. GX-28 at 14.

Frith testified that he was with Ryes during this inspection. Tr. Vol. III at 100. He recalled Ryes' concern that the escape route was not being taken care of because of the chunks on the I-beam ledge. *Id*. He also recalled material on the ground at the landing, which signaled to him that "the area was checked and inspected." *Id*. He recalled seeing a date spray painted on the ceiling to mark when the area was inspected but could not recall the date. *Id.* at 100-01. Frith also discussed telltales installed in the back on the 1200' level. *Id.* at 102–03. Specifically, he testified about a photograph he believed he took of the 1200' foot level that showed a telltale in the green. *Id*. *See also* RX-25 (photograph of the telltale in the ceiling).[14]

Following Ryes' arrival at the shaft landing, Maxey was called to the area. Tr. Vol. III at 15. He stated that the area had been rehabbed several months before, in March 2023, as evidenced by a date spray painted on the ceiling. Tr. Vol. III at 18. According to Maxey, the date spray painted on the ceiling was "3-21-23." *Id.* at 20. This means that on March 21, 2023, "somebody was in that area, hand-scaled an area, and it was determined that it was competent." *Id*. The date is put there to "prove that we've been there and we've checked that area." *Id*.

At the hearing, Respondent presented Maxey with a picture of this area of the mine taken by Ryes. *Id.* at 19. *See also* GX-30 at 156. Per Maxey, this picture showed a date of "9 dash-

[14] When asked if he took the photograph in RX-25, Frith stated "Probably so, yes." Tr. Vol. III at 102. He later testified that he recalled taking a photograph of the telltale in the ceiling on the 1200' level. Tr. Vol. III at 103.

24-dash something," with the year unclear. *Id*. He stated that this was not the date he saw on the ceiling when he visited the area on May 24, 2023. *Id.* at 19–20.

Maxey remembered seeing material on the ground that "would've got there [on the ground] whenever we handscaled." *Id.* at 20. The area in which Ryes had stated a ground fall occurred was blocked off so there was no access and was on the 1000' foot level. *Id.* at 23. Maxey told Ryes that he believed the ground in that area had not fallen but was shot with explosives based on the "broken up" pieces of rock on the ground. *Id*. "Usually it'll come down in one piece if it falls on its own." *Id.* at 24. He also testified that he was not aware of any scales that came down on the 1200' foot level after Ryes' inspection. *Id*.

On May 16, 2024, Vining visited the 1200' level. RX-50 at 2016. Vining conducted a visual and auditory inspection of the area by walking around the shaft landing and listening for any audible indications that would suggest separations in the back. Tr. Vol. III at 176. As he testified at the hearing, "what I saw[] didn't change my thought that" ground support was not needed. *Id.* at 177. He found no visual indications suggesting there was a crack or separation in the back and heard no audible echoes. *Id*. He recalled possibly seeing a seeing a telltale but did not put that into his report. *Id.*

Vining also testified about the April 2022 picture of the shaft landing showing the scales on the I-beam ledge and recalled seeing the scales on the I-beam ledge during his site visit. *Id.* at 179. He stated that he saw "no apparent difference over several years" between the photographs. *Id.* at 180. He testified that he thought the escapeway was safe for travel. *Id.*

3. The 9-F Rib of the Electrical Shop on the 1400' Level - Order No. 9674982

The electrical shop is located on the 1400' level of mine. Tr. Vol. I at 130. Also on this level are the main shop, other shops, the crane bay area, and a welding area. Miners access these shops "every day, every shift." *Id.* During his inspection on July 11, 2023, Ryes noticed a bolt hanging from the ceiling near the 9-F Rib of the electrical shop. *Id.* at 131. This bolt was "clearly obvious" as it caught Ryes' attention in his peripheral vision. *Id*. This bolt was hanging by a tie wrap approximately nine feet above the ground from the tie wrap was tethered to a light power cable, and the bolt showed signs of stress near the breakage point. *Id* ; GX-34 at 93.

Ryes' notes reported two other roof bolts nearby that were coming out of the roof but had not completely fallen yet. Tr. Vol. I at 131.[15] Ryes indicated there was a telltale located 12 to 14 feet away, but he did not note its color. *Id.* He also observed several tire tracks underneath the hanging bolt. *Id.* There were no cones, barriers, or other barricades in place on the ground below where the bolt was hanging. *Id.*

Gaudreau was not with Ryes during his inspection of this area but came after the order was issued. Tr. Vol. II at 91. Gaudreau testified that he saw this bolt hanging from a tie wrap and that it was close to the rib. *Id.* at 91-92. He could not see any signs of stress on the bolt

[15] Ryes later stated that the hanging roof bolt was the only bolt at issue in this order. Tr. Vol. I at 312.

because it was still hanging in the back. *Id.* at 91. He also testified that there were other roof bolts up in this area. *Id.* at 92.

Frith testified that he was with Ryes during the July 11 inspection. Tr. Vol. III at 107. He stated that Ryes was concerned about a single hanging off to the side of the shop close to a rib. *Id*. *See also* RX-32. He also stated that miners were not working under the roof bolt at the time the order was issued. Tr. Vol. III at 108. He testified that the bolt was not going to come down on its own and that someone needed to go up and cut the tie strap to remove it. *Id.* at 107. While he disagreed with Ryes' opinion that the bolt was under stress, he stated he was "pretty sure" the bolt was rusted or deteriorated. *Id.* at 123.

At the hearing, Vining did not testify about visiting this area, but does discuss this location in his report. RX-50 at 2017.[16] The report details his findings that the back appeared to be competent based on a visual and auditory inspection, and that there was a telltale still in the green zone, indicating a "negligible change in the salt back deformation." *Id. at* 2017–18.

4. The 10-F Rib of the Electrical Shop on the 1400' Level - Order No. 9674986

On July 18, 2023, Ryes was traveling through the mine's electrical shop when he noticed a bolt hanging from the ceiling over a permissible fan near the corner rib of the 10-F west rib. Tr. Vol. I at 145. The bolt was held up by a tie wrap that was tied to a plate. GX-42 at 10; Tr. Vol. I at 323. The ceiling was 25 feet high in this area of the shop, and this part of the shop was lit. GX-42 at 10; Tr. Vol. I at 322. The fan that was underneath this hanging bolt was open, and tools were left in the area, indicating that work was being done on the fan at the time Ryes noticed the hanging bolt. Tr. Vol. I at 146, 154. *See also* GX-50 at 2. After encountering this hanging roof bolt, Ryes issued Order No. 9674986. Respondent abated this order by taking down the roof bolt. Tr. Vol. I at 323.

Frith was with Ryes during this inspection. He recalled seeing the bolt hanging from the tie wrap. It was off to the side of the shop, close to the rib, and nobody was working under the bolt at the time they came across it. *Id.* at 107–08. A miner cut the tie strap down to remove the bolt. Tr. Vol. III at 107.

While Gaudreau was not with Ryes at the time the inspector noticed this hanging bolt, he visited this area of the electrical shop after the order was issued. Tr. Vol. II at 96. He saw that the hanging roof bolt was close to the rib. It was also tie-wrapped and had no chance of falling.

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[16] Vining's report has a section for "Citation 9674983," which was for an alleged Section 57.3360 violation issued on July 11, 2023, for an area of the mine consisting of "the electrical shop near 9F on the 1400 level." RX-50 at 2017. Citation No. 9674983 was originally assessed against Respondent as part of Docket No. CENT 023-0278 and was vacated in a partial settlement. *See* Amended Decision Approving Partial Settlement, Nos. CENT 2023-0202, CENT 2023-0237, CENT 2023-0278, and CENT 2024-0001 (May 22, 2025).

While Vining's observations pertain to a different specific location in the mine, it is in the same general area.

Tr. Vol. II at 96–97. There was a lot of "bolt iron" in this area of the electrical shop, meaning that missing bolt would not have compromised ground support. *Id.* at 97. Gaudreau also recalled seeing a green telltale in the intersection near this area. *Id*.

Vining also visited the 10-F Corner Rib of the electrical shop during his May 16, 2024, site visit. He performed a visual inspection of the back in this area and said the back was flat, and he did not see or hear any indications of change in ground conditions that would necessitate ground support. Tr. Vol. III at 183. He did not see any cracks along the centerline or elsewhere in the back. He also recalled the telltales installed in the back were still in the green, suggesting minimal roof movement. *Id. See also* RX-50 at 2018–20.

5. The Hose-Making Area in the Electrical Shop - Order No. 9674987

In the 10-F room of the same maintenance/electrical shop, miners make the hoses for hydraulic equipment. Tr. Vol. I at 157. Much of the mining equipment at Weeks Island is hydraulic-driven and a hose can rupture every two to three days, suggesting the area is frequently accessed by miners. *Id*. While examining this area of the shop on July 18, 2023, Ryes noticed a plate stuck in the ceiling. *Id.* at 156. The associated roof bolt had already fallen. *Id*. There was nothing holding the plate in place or keeping it from falling. *Id.* at 156, 163–64.

Ryes saw a bolt that had broken off at the 5'6" mark. *Id.* at 156. He also noted the corner rib had a roof bolt sticking out of the ceiling near electrical cables. *Id.* at 156, 158; GX-43 at 2. That bolt was hanging from the ceiling and had not fallen yet. Tr. Vol. I at 158. The ceiling in this area was 25 to 30 feet high. *Id.* at 159.

Gaudreau visited this area after Ryes issued Order No. 9674987. This area of the 1400' level maintenance shop was near the engineering trailer, where he recalled the missing roof bolt. Tr. Vol. II at 119. To abate the order, Respondent did not need to install a new roof bolt and was only required to remove the plate and hanging bolt. *Id*; GX-43 at 1. Because this area is heavily traveled by miners at Weeks Island, Gaudreau stated they "would constantly make sure the ground conditions look good. We go and check a test hole. We check the tattletales. We scale what needs to be scaled, and we make sure the ground is in good condition." Tr. Vol. II at 120.

Gaudreau said due to "relatively good ground conditions in this area," he did not believe bolting was necessary to control ground. *Id.* at 120–21. He testified that the ground in this area does not move much and is "almost benched in" due to its proximity to the shaft. *Id.* at 120. This reduces the amount of convergence here. *Id.* at 120–21.

During his May 2024 site visit, Vining conducted the same type of auditory and visual inspection in this area of the shop as he performed in other areas. Tr. Vol. III at 185. at the hearing, he recalled seeing a telltale installed "that was still within the green zone." *Id*. Vining also did not see any cracks or other separations in the back. *Id*. Based on these observations and his knowledge of the salt back at Weeks Island, he did not think ground support was necessary in this area. Tr. Vol. III at 186–87.

6. The 11-F Room - Order No. 9674988

The 11-F Room is in the main shop next to the storeroom. Tr. Vol. I at 166. This is the locker room, where miners store their tools and eat lunch. *Id.* at 166. The area is accessed daily. *Id.* at 168. The ceiling in this area of the mine is 20 to 25 feet high. Tr. Vol. I at 169. At all relevant times, this was not a production area. Tr. Vol. I at 333; Tr. Vol. III at 42.

On July 18, 2023, while inspecting this area of the mine, Ryes noticed a number of roof bolts missing in the ceiling, such that the 7-by-7 bolting pattern—as required by Respondent's ground control plan in active production areas—had not been maintained. Tr. Vol. I at 167. He did not know how many bolts were still present in the back but estimated that more than half of the bolts in this area were missing. *Id.* at 339.

Ryes reasoned that ground support was not being maintained here because of the number of missing bolts and deteriorated plates in the ceiling, as well as a plate he observed stuck in the ceiling, with no bolt holding it in place. Tr. Vol. I at 167; 175, 177. *See also* GX-50a (picture of a plate stuck in the ceiling circled in red pen). He did not find any loose bolts on the ground or see any bolts hanging from the ceiling. *Id.* at 170. Ryes discussed his observations with Heath Segura, the maintenance general foreman at Weeks Island. *Id.* at 168; GX-44 at 3. Segura agreed with Ryes that over half the bolts in this room were "bad." *Id*.

Maxey testified that he looked at this area with Ryes, "probably [] before" Order No. 9674988 was issued. Tr. Vol. III at 42. When he examined the back, he did not see any hazards, scales, or indications "of what we call 'belling in,' like—if a roof or back has taken on weight, it'll kind of sag. *Id.* at 43. "Nothing concerned me at all." *Id*. He also recalled seeing a green telltale. *Id*. A contractor checked scratch holes in the area and did not tell him about separations in the back. *Id.* at 43–44.

Vining also examined this area as part of his site visit in May 2024. *Id* at 188. He visually examined the back and also listened "for indications of echoes that may suggest there's separations in the back." *Id.* at 189. "Similar to all the other places on the level . . . the salt back was still in good condition." *Id*. He also recalled seeing a couple telltales that were "still within the green: and examined three scope holes that did not show any separations. *Id*.

7. The 1400' Level Storeroom - Order Nos. 9674990 and 9674991

This storeroom is located in the main shop. Tr. Vol. I at 178. Miners pass through this area after they land on the skip from the surface. *Id*. They walk through this area to walk to access the production and maintenance offices, as well as other areas of the mine. *Id*. According to Gaudreau, this is "one of the most traveled areas" of the mine and is inspected often. Tr. Vol. II at 104.

On July 18, 2023, Ryes was inspecting the ceiling near the rear gate of the storeroom, between the crane bay and the travelway to the #4 shaft. He noticed numerous deteriorated roof bolts and plates where the heads of roof bolts were pulling through. Tr. Vol. I at 179. Ryes noted the bolts appeared "aged" based on the deterioration, coloration, thinness of the plates, and

metal rusting away. *Id.* at 180–81; GX-45 at 4. He also noted a telltale for which part of the green section was "in the hole indicating some downward movement of the roof." GX-45 at 4.

Gaudreau testified that he came to this area after Ryes issued Order No. 9674990. Tr. Vol. II at 100. He recalled inspecting the back at the time the order was issued and stated that the ceiling had been in the same condition for "a couple years." *Id.* at 101. He stated that the 7-by-7 pattern was "not necessarily" needed in this area and noted this was an older area where "a couple generations of bolts" had been installed. *Id.* at 101–02. He also recalled seeing a telltale "in the green" that showed "almost no movement." *Id.* at 103.

Frith also testified about this area of the storeroom. He stated that the roof here had been "pretty much the same since I started" working at Weeks Island in February 2022. Tr. Vol. III at 114. He recalled seeing many bolts in the back, as well as a telltale that was in the green. *Id.* at 114–16; RX-43 at 156 (picture of telltale in the green).

Maxey was called to the storeroom after Ryes inspected this area. Tr. Vol. III at 45. He stated the roof had looked the same that day as it did for the "whole time I was there" working at the mine. *Id.* at 47. He also recalled telltale that was "in the green, I think." *Id.* at 49–50.

Vining examined this area between the crane bay and the #4 shaft as part of his May 16, 2024, site visit. RX-50 at 2023–2025; Tr. Vol. III at 191–92. He conducted a visual inspection noting that the back was flat and that there were no audible echoes or cracks suggesting separations or "significant deformation" in the back. Tr. Vol. III at 191. The telltales he observed were still "within the green," and noted several scope holes that had no separations in the back.[17] *Id.* at 192. Based on his observations, he stated there was "no reason to believe there's separations in the back that would need to be supported" and that a 7-by-7 bolting pattern was not required in this area. *Id.*

8. The 8-EE Laydown Area on the 1500' Level - Order No. 9674997

The 8-EE area is the mechanic lay-down area on the 1500' level and is used by mechanics to store and retrieve parts, including oversize parts, as needed. Tr. Vol. I at 212-13. Ryes testified that he is not sure how often that is, but miners do not access this area every day. Tr. Vol. I at 213. Maxey testified that people on the production team "don't really go in" this area, but that maintenance comes "maybe" once or a couple times a week. Tr. Vol. III at 36. The ceiling here is 25 to 30 feet high. Tr. Vol. I at 215.

On August 2, 2023, Ryes noticed several issues with bolts and plates in the ground here, including "deteriorated bolts, missing plates, and plates pulling through the heads." *Id.* at 213.

[17] In his report, Vining stated that separations of approximately ¼ inch were identified at depths of 1 and 2.75 ft in the observation hole at 12D, near a remnant brow. RX-50 at 2024. He attributed this to the remnant brow and did not find this suggested any persistent separations or large structural instability in the back. *Id.*

These conditions, coupled with the footprints Ryes noticed in this area, led him to conclude there was a "hazardous situation" and a threat of possible roof fall, movement, or collapse. *Id.* at 214.

Ryes also noticed six roof bolts that were broken yet still partially lodged in the ceiling but not hanging by a tie wrap, as well as the imprints of roof plates in the ceiling. Tr. Vol. I at 216–17; GX-48 at 0028.[18] The room appeared to have been partially scaled, and most of the roof bolts broke off and were not replaced. GX-48 at 0028.

Gaudrau came to this area after Order No. 9674997 was issued. Tr. Vol. II at 105. He recalled seeing a green telltale. Tr. Vol. II at 105. The area had been scaled, as evidenced by marks in pictures of the area. *See* RX-49. After the scaling was done, Gaudreau stated Respondent had decided rebolting the area was not necessary based on the observable ground conditions. Tr. Vol. II at 108.

Maxey examined this area after Ryes issued Order No. 9674997. Tr. Vol. III at 36–37. The area had been scaled, as evidenced by the marks visible in the picture of the back in this area. Tr. Vol. III at 37. He recalled there was a green telltale in this area. Tr. Vol. III at 38. When he inspected the roof from his vantage point on the ground, he did not have any concerns. Tr. Vol. III at 40–41. Moreover, he testified that nobody had told him about any separations nor was he aware of any hazards in the back at the time the order was issued. Tr. Vol. III at 41–42.

During his May 16, 2024, site visit, Vining conducted a visual inspection of the roof, noting the area was flat and had no cracks, suggesting minimal roof movement. Tr. Vol. III at 193–94. The telltales he observed were also "still within the green zone." RX-50 at 2027, 2086.

G. Prior Roof Falls

The parties presented evidence pertaining to three roof falls that occurred at Weeks Island in 2001, 2009, and 2017. In 2001, a roof fall occurred on the 1400' level at the intersection of the D-entry and #12 crosscut. RX-61 at 602. According to the MSHA report, the area where this fall occurred had only been face-mined, and no mining had been done on the level directly above this area. *Id.* The area had been mined and bolted approximately four years before the fall. *Id.*

This area was also located near an intake air shaft, and the mine had experienced roof control problems "to a lesser degree" in other areas located near an intake shaft. *Id.* The salt's typical physical characteristics had also "deteriorated from normal" in this area. *Id.* MSHA concluded the fall was the due to the failure of roof bolts to support the ground, most likely the result of a combination of poor anchorage and bolt installation procedures. *See id. at* 604 ("A load of this magnitude should not have been enough to cause all of the installed bolts to be pulled out.").

Vining was questioned about the report for the 2001 roof fall. He noted two of MSHA's findings. Tr. Vol. III at 169. First, the mine could prevent a recurrence of this by sounding the

[18] The citation sheet lists that there were five broken bolts that were hanging in the ceiling. GX-48 at 0028. However, Ryes's notes and testimony both mention six bolts hanging in the ceiling. *Id.* at 0030; Tr. Vol. I at 216–17.

roof bolts. *Id.* Second, the report recommended the mine install sag monitors in travelways. *Id*. Mark also briefly testified about this report, stating the bolts installed were in a "very light support pattern" and subject to poor installation issues. Tr. Vol. II at 194–95.

In 2009, a miner suffered a fatal injury in a fall on the 1500' level of the mine. *See supra* Section II.E.2; GX-13 at 3. *See also* GX-14 at 322 (map of mine indicating where the roof fall occurred). A miner "was cleaning equipment when a 50-foot long, 2- to 3-foot slab of roof salt fell from the back." GX-13 at 335. The area was fully bolted with mechanical bolts that had been installed more than a year earlier. *Id.* "Several roof bolts pulled out of the overlying strata with the rock that fell in the area of the accident, indicating poor bolt anchorage. . . . Apparently, the capacity of the installed roof support system was insufficient to carry the weight of the slab that had separated from the main back." *Id.* According to Respondent, at the time of the accident, this was an active production area where drilling and blasting took place every day. Resp't Br. at 22. While MSHA created a report on the 2009 roof fall, neither party entered it into evidence.[19] According to Mark, this report does not mention salt creep other than that "it took place in the salt mine." Tr. Vol. II at 222.

Mark testified about the 2009 roof fall at the hearing. He stated that he thought the failure was probably related to salt creep but admitted that MSHA did not know when or how it occurred. Tr. Vol. II at 154. He later admitted he was not "certain" that the fall was related to creep, but said, "[I]t seems unlikely that [the roof] fell on its own accord." Tr. Vol. II at 222.

In 2017, another large ground fall occurred in the drift between intersections 21E and 22E on the 1500' level. Minimal information was presented about this roof fall. In both his testimony and the MSHA reports, Mark stated this roof fall triggered a change in the roof bolts used by Respondent to address corrosion issues. Tr. Vol. II at 180. *See also* GX-14; GX-15.

H. Expert Reports

1. MSHA Reports

The Secretary submitted two MSHA reports into evidence. The first report summarized the findings from MSHA RCD's visit on March 28, 2023, which are largely discussed above. *See generally* GX-14. *See also* discussion *infra* (summarizing the findings of this visit – cite to relevant section once the final section number is determined).

Mark's second report discussed the results of a laboratory investigation of the bolts and bearing plates obtained from the March 28, 2023, visit. *See generally* GX-13. RCD examined seven JENNMAR ¾-inch-diameter, Grade 60 headed rebar bolts, nine JENNMAR 6 inch-x-6 inch, Grade 2 donut plates, five JENNMAR 6 inch-x-6 inch, Grade 3 donut plates, and five

[19] While MSHA's report on the 2009 roof fall was not entered into evidence by either party, I note that both MSHA reports the Secretary entered into evidence for this case contain a URL for the MSHA fatality report created for the 2009 roof fall. GX-13 at 335; GX-14 at 323. I did not access this URL and review this report because neither party sought to make it part of the record in this case.

Minova 6 inch-x-6 inch Grade 3 dome plates. *Id. at* 4. All of the bolts and plates, except for the Minova plates, had been previously installed at the mine and were found on the ground during Mark's visit. *Id.* RCD estimated the Grade 2 plates were up to 23 years old, and the Grade 3 plates and bolts were up to seven years old. *Id.*

RCD performed several tests on these bolts and plates. Six of the seven bolts were long enough to test for mechanical properties. *Id.* Four of the six bolts failed the 10 wedge test procedure, used to determine tensile strength and demonstrate "head quality." *Id. at* 4–5. While all six bolts met the yield strength requirement of 26,400 pounds, four failed to meet the ultimate strength of 39,600 pounds. *Id. at* 5.[20]

RCD was also able to perform an elongation test on three of the bolts; one of the bolts failed minimum specified elongation of 9%. *Id.* The report noted that the seven bolts had, on average, a 31.6% section loss at the end of the bolt where they had failed underground, which was likely caused by factors including "the highly corrosive salt environment, 'necking' that occurs in steel bar as it reaches its full capacity, [and] shear deformation from salt creep." *Id*. at 7. He also noted "each bolt likely failed in the field under less load than that seen in the laboratory testing. . . . because the bolts would have failed at their weakest point underground, and the laboratory tests evaluated the portion of the bolts that were strong enough to withstand the initial underground loading." *Id.*

RCD was unable to test most of the bearing plates due to bolt head pull-through or corrosion damage to the plates' center holes. However, it performed a four-inch hole test on four of the JENNMAR Grade 2 plates and all of the Minova Grade 3 plates. *Id.* All four of the JENNMAR Grade 3 plates failed that test, while all five Minova Grade 3 plates passed. *Id. at* 6–7. These results were expected, based on the facts that the JENNMAR Grade 2 plates were installed up to 23 years ago in a highly corrosive environment and had experienced damage prior to testing, and that the Minova plates were never installed. *Id. at* 8.

Ultimately, RCD stated that the roof support system failures observed at Weeks Island were the result of corrosion and highly deformative salt creep. *Id.*

2. Vining's Report

Vining also created a report about the enforcement actions at issue in this decision for Respondent. *See generally* RX-50. A large portion of Vining's report summarized his observations of the areas at issue in the citation and orders contained in these cases. *See id. at* 7–

[20] "Yield strength" is "The stress at which a material exhibits a specified deviation from proportionality of stress and strain," while "The ultimate strength in tension, compression or shear, respectively, is the maximum tensile, compressive, or shear stress that the material can sustain, calculated on the basis of the ultimate load and the original or unstrained dimensions." Am. Geol. Inst., *A Dictionary of Mining, Mineral, and Related Terms*, 596; 694 (2d Ed. 1997) ("Mining Dictionary"). The calculation is uniaxial, i.e., the force is applied in one direction and, for roof bolts, along the same axis as the length of the bolt. *Id.* at 596.

26. *See also* discussion *infra* (cite to sections that discuss Vining's findings at each of the sites he visited).

This report also discussed the ground control strategy for Weeks Island. *Id. at* 4–6. The report concluded that the salt has generally uniform conditions, making systematic roof bolt installation "not deemed necessary in some areas for certain durations." *Id. at* 5. Instead, the mine installs bolts preemptively and employs a spot-bolting strategy. *Id.* This approach is based on several characteristics observed by Vining and RESPEC over the years. *Id.* Laboratory testing showed that intact salt at Weeks Island was slightly stronger and had a greater dilation resistance than salt found at other bedded and domal salt mines. *See id.* Moreover, the Q-value[21] estimate results for six rock specimens obtained at Weeks Island indicated that the rock was in the support category, "Unsupported or Spot Bolting." *Id.* Vining also mentioned Respondent's history of using routine inspections and scaling to provide safe access on 1400-1200 and 1200-1000 slopes and the fact that large areas of the 1400 level have remained unbolted. *Id.*

III. APPLICABLE LEGAL STANDARDS

A. Burden of Proof

The Secretary bears the burden of proving a cited violation by a preponderance of the evidence. *RAG Cumberland Resources Corp.*, 22 FMSHRC 1066, 1070 (Sept. 2000). This standard "requires the trier of fact 'to believe the existence of a fact is more probable than its nonexistence.'" *Id.*, *quoting In re: Contests of Respirable Dust Sample Alteration Citations*, 17

[21] According to Vining's report, "[t]he Q-system [] is a widely accepted empirical method used internationally to classify the rock mass around an underground opening with respect to the stability of the underground opening." RX-50 at 2006. Mark characterized the Q-system as "a way to take geologic information and turn that into a number that can be used for engineering design and can relate to the stand and support." Tr. Vol. II at 167.

Mark appeared to disagree with Vining on the relevance of the Q-system to the salt at Weeks Island. He testified about his belief that any rock mass classification system, like the Q system, "is most applicable to case histories that are like the ones that went into its development . . . [and] that the behavior mechanisms and failure mechanisms of the material and the case that you're interested in have to be similar to the ones that are covered by" classification system and the databases used in its development. Tr. Vol. II at 168. In the case of rock salt, the mechanism of salt creep "is not addressed at all" in the databases used to develop the Q-system, making it difficult to use the Q-system directly to analyze rock salt. Tr. Vol. II at 169.

Mark further stated that he believes the Q-value of salt rock is constantly changing as a result of salt creep. *See* Tr. Vol. II at 169. Consequently, he would not find it helpful "to determine what the Q-value was prior to mining because it was going to be constantly changing as creep developed." Tr. Vol. II at 169.

FMSHRC 1819, 1838 (Nov. 1995), *quoting Concrete Pipe and Prods. of Cal. v. Constr. Laborers Pension Trust for S. Cal.*, 508 U.S. 602, 622 (1993).

This standard is met when "the evidence supporting the violation [is] more convincing than the evidence which is offered in opposition to it. Where the evidence is equally balanced or if it cannot be said upon which side it weighs more heavily the plaintiff has not met his or her burden of proof." *Newmont Gold Co.*, 20 FMSHRC 1035, 1038 (Sept. 1998) (ALJ) (internal citations and quotations omitted).

B. Cited Regulations

1. 30 C.F.R. § 57.3360 – Ground Support Use

The Secretary issued one Section 104(a) citation and five Section 104(e)(2) orders against Respondent for alleged failures to provide ground support in violation of 30 C.F.R. § 57.3360. This regulation states:

> Ground support shall be used where ground conditions, or mining experience in similar ground conditions in the mine, indicate that it is necessary. When ground support is necessary, the support system shall be designed, installed, and maintained to control the ground in places where persons work or travel in performing their assigned tasks. Damaged, loosened, or dislodged timber use for ground support which creates a hazard to persons shall be repaired or replaced prior to any work or travel in the affected area.

30 C.F.R. § 57.3360.

2. 30 C.F.R. § 57.11051(a) – Escape Routes

The Secretary issued two Section 104(e)(2) orders against Respondent for alleged violations of 30 C.F.R. § 57.11051(a), which states: "Escape routes shall be—(a) Inspected at regular intervals and maintained in safe, travelable condition." 30 C.F.R. § 57.11051(a).

3. 30 C.F.R. § 57.20011 – Barricades and Warning Signs

The Secretary issued one Section 104(e)(2) order against Respondent for an alleged violation of 30 C.F.R. § 57.20011, which requires that "[a]reas where health or safety hazards exist that are not immediately obvious to employees shall be barricaded, or warning signs shall be posted at all approaches. Warning signs shall be readily visible, legible, and display the nature of the hazard and any protective action required." The Secretary defines "Barricaded" as "obstructed to prevent the passage of persons, vehicles, or flying materials." 30 C.F.R. § 57.2.

C. Significant and Substantial ("S&S")

The Mine Act describes a significant and substantial ("S&S") violation as being "of such nature as could significantly and substantially contribute to the cause and effect of a coal or other mine safety or health hazard." 30 U.S.C. § 814(d)(1). "A violation is S&S when a miner is exposed, or would be exposed in the normal course of mining, to a violation that could significantly and substantially contribute to a mine safety or health hazard." *Canyon Fuel Co.*, 48 FMSHRC ___, slip op. at 13 (Jan. 2026) (citing *Consol Pa. Coal Co.*, 48 FMSHRC 793, 823 (Sept. 2025).[22] This determination is consistent with Steps 1 and 2 of the formerly applied *Mathies* test and: "(1) whether there is a hazard to which the violation might contribute and, if so, (2) whether the violation significantly and substantially contributes to that hazard." *See id.* (citing *Mathies Coal Co.*, 6 FMSHRC 1, 3–4 (Jan. 1984); *Sec'y of Labor v. Jim Walter Res.*, 111 F.3d 913, 917 (D.C. Cir. 1997)).

The determination that a violation is S&S must be based on "facts existing at the time of issuance and assuming continued normal mining operations, absent any assumption of abatement or interference that the violative condition will cease. *Consol Pa. Coal Co.*, 43 FMSHRC 145, 148 (Apr. 2021) (citing *U.S. Steel Mining Co.*, 6 FMSHRC 1573, 1574 (Jan. 1984)).

D. Negligence

Negligence is defined as "conduct, either by commission or omission, which falls below a standard of care established under the Mine Act to protect miners against the risks of harm." 30 C.F.R. § 100.3(d). The Mine Act holds operators to a high standard of care and requires them "to be on the alert for conditions and practices in the mine that affect the safety or health of miners and to take steps necessary to correct or prevent hazardous conditions or practices." *Id.*

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[22] Under the *Mathies* test, a violation was S&S if the following four elements were met:

> (1) the underlying violation of a mandatory safety standard; (2) the violation was reasonably likely to cause the occurrence of the discrete safety hazard against which the standard is directed; (3) the occurrence of that hazard would be reasonably likely to cause an injury; and (4) there would be a reasonable likelihood that the injury in question would be of a reasonably serious nature.

Peabody Midwest Mining, LLC, 42 FMSHRC 379, 383 (June 2020) (integrating the refinement of the second *Mathies* step in *Newtown Energy, Inc.*, 38 FMSHRC 2033, 2037 (Aug. 2016)). *See also Mathies Coal Co.*, 6 FMSHRC 1, 3–4 (Jan. 1984) (articulating the original four *Mathies* steps); *Austin Power, Inc. v. Sec'y of Lab.*, 861 F.2d 99, 103–04 (5th Cir. 1988) (approving the *Mathies* test).

The Commission's decision in *Consol Pa. Coal Co.,* 48 FMSHRC 793 (Sept. 2025), has been appealed to the U.S. Court of Appeals for the Third Circuit. *Consol Pa. Coal Co. v. FMSHRC*, No. 25-3016 (3rd Cir. filed Oct. 17, 2025).

Part 100 of the Secretary's regulations defines degrees of negligence, including reckless disregard, "high," "moderate," "low," and "none." 30 C.F.R. § 100.3: Table X. Commission ALJs, however, are not bound by the degrees of negligence in Part 100 and may evaluate negligence in a holistic manner. *See Brody Mining, LLC*, 37 FMSHRC 1687, 1701 (Aug. 2015); *accord Mach Mining, LLC v. Sec'y of Labor*, 809 F.3d 1259, 1264 (D.C. Cir. 2016).

E. Penalty

The Mine Act authorizes Commission ALJs to assess civil penalties *de novo* for violations of the Mine Act. 30 U.S.C. § 820(i); *Sellersburg Stone Co.*, 5 FMSHRC 287, 291 (Mar. 1983). The Mine Act requires an ALJ to consider the six statutory criteria specified in section 110(i) of the Act when assessing a penalty:

> (1) the operator's history of previous violations, (2) the appropriateness of such penalty to the size of the business of the operator charged, (3) whether the operator was negligent, (4) the effect on the operator's ability to continue in business, (5) the gravity of the violation, and (6) the demonstrated good faith of the person charged in attempting to achieve rapid compliance after notification of a violation.

30 U.S.C. § 820(i) (numbering added).

IV. DISPOSITION

A. Section 57.3360 and Evaluating the Necessity of Ground Support at Weeks Island

Six of the nine enforcement actions at issue in these cases allege Respondent violated Section 57.3360 by failing to adequately control the ground at Weeks Island. Respondent installed roof bolts in these areas of the mine when they were production areas subject to Respondent's ground control plan.

However, no salt extraction was occurring in any of these areas at the time of Ryes' inspection. Thus, they were not "production areas" as defined by Respondent, and its ground control plan did not require it to continue utilizing the 7-by-7 bolting pattern in the cited areas of the mine. A finding that ground support was "necessary" cannot be established based on the ground control plan requiring ground support in this area. Instead, the determination of necessity must be based on ground conditions and mining experience in similar ground conditions.

1. Regulatory History and Purpose of Section 57.3360 and Related Regulations

Section 57.3360 was first promulgated in 1986 and has not been revised since. *Compare* 30 C.F.R. § 57.3360 (2023) *with* 30 C.F.R. § 57.3360 (1986). This regulation was adopted to revise and combine "existing underground standards 57.3020, which deals with ground support

use and 57.3026, which addresses hazards associated with timbering." *Safety Standards for Ground Control at Metal and Nonmetal Mines*, 51 Fed. Reg. 36192, 36195 (Oct. 8, 1986). Those existing standards were previously codified as Sections 57.3–20 and 57.3–26 between 1969 and 1984, and they were renumbered in 1985.[23]

The preamble to the final rule adopting Section 57.3360 stated:

> The circumstances which necessitate ground support have been clarified. Under the final rule, ground conditions and mining experience are the criteria for determining if support is required. The standard does not specify the type of ground support system to be used, only that it controls the ground. When rock fixtures are used for support, [standard] 56/57.3203, rock fixtures, would also apply.
>
> The final rule requires that the support system be designed, installed, and maintained to control the ground and that damaged, loosened, or dislodged timbers used for ground support be repaired or replaced prior to any work or travel in the affected area of an underground mine. Under the final rule, changes to support systems would have to meet this performance requirement.

51 Fed. Reg. at 36195.

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[23] Former Section 57.3020/57.3-20 stated:

> Ground support shall be used if the operating experience of the mine, or any particular area of the mine, indicates that it is required. If it is required, support, including timbering, rock bolting, or other methods shall be consistent with the nature of the ground and the mining method used.

30 C.F.R. § 57.3020 (1985); 30 C.F.R. § 57.3–20 (1984).

Former Section 57.3026/57.3–26 stated:

> Timbers used for support of ground in active workings shall be set, blocked, or blocked and wedged so that a tight fit is achieved. Damaged, loosened, or dislodged timbers which create a hazardous condition shall be promptly repaired or replaced.

30 C.F.R. § 57.3026 (1985); 30 C.F.R. § 57.3-26 (1984).

Sections 57.3020 and 57.3026 included "Mandatory" before the above-quoted language.

In the same final rule, the Secretary defined "rock fixtures" in Section 57.3000 as "Any tensioned or nontensioned device or material inserted into the ground to strengthen or support the ground." 51 Fed. Reg. at 36199. *See also* 30 C.F.R. § 57.3000 (1986). Commentary indicates MSHA intended "rock fixture" to encompass all devices, including rock bolts and rock stabilizing devices, used to support the ground." 51 Fed. Reg. at 36193. This definition was moved to Section 57.2 in 2004. *Definitions for Surface and Underground Metal and Nonmetal Mines*, 69 Fed. Reg. 38837, 38840, 38842 (June 29, 2004). *See also* 30 C.F.R. § 57.2 (including a definition for "rock fixture").

2. Evaluating the Necessity of Roof Support Required by Section 57.3360

Section 57.3360 establishes three criteria for ground support: "in locations (1) where ground support is necessary (2) the support system shall be designed, installed, and maintained to control the ground (3) in places where persons work or travel." *Coeur Alaska, Inc.,* 38 FMSHRC 2384, 2386 (Sept. 2016) (ALJ) (citing *Hecla Ltd.*, 37 FMSHRC 877, 884 (Apr. 2015) (ALJ)).[24] The threshold requirement when analyzing an alleged Section 57.3360 violation is whether ground support is necessary. *See*. *The Doe Run Co.*, 42 FMSHRC 521, 530 (Aug. 2020). Where support is necessary, "the resulting design, installation, and maintenance" of the ground support also rest upon the operator's experience "in the particular mining conditions to indicate appropriate ground control measures." *Id* at 535.

This standard is applied as a "reasonably prudent person" test. *Id. at* 540. The fact-specific test asks whether the standard prescribed the obligation with sufficient specificity to provide adequate notice of the requirements to a reasonably prudent mine operator and whether the facts demonstrate noncompliance with the standard. *Id. at* 527. Relevant factors bearing upon what a reasonable person would do include accepted safety standards, considerations unique to the mining industry, and circumstances at the operator's mine. *BHP Minerals Int'l Inc.*, 18 FMSHRC 1342, 1345 (Aug. 1996) (citing *US Steel Corp.*, 5 FMSHRC 3, 5 (Jan. 1983)).

A determination that ground support is necessary is broadly based on: (1) ground conditions, and (2) mining experience in similar ground conditions in the mine. The Commission has stated that "[t]he terms 'experience,' 'similar,' 'indicate,' and 'necessary' are clearly indicative of a 'judgment call' on when and what ground control is needed, based on all the relevant ground conditions in the mine." *Doe Run*, 42 FMSHRC at 534.

In *White Pine Copper Division*, the Commission held that "operating experience' broadly encompasses all relevant facts tending to show the condition of the mine roof in question and whether, in light of the roof condition, roof support is necessary." 5 FMSHRC 825, 836 (1983). This includes both prior history and present-day experience. *Id.*

[24] The ALJ also phrased the requirement for establishing a Section 57.3360 violation as "a reasonably prudent person familiar with mining must conclude that (1) the area required ground support, (2) the method was installed, designed, and maintained to support the ground, and (3) miners worked in or traveled along the walkway." *Coeur Alaska*, 38 FMSHRC at 2389 (citing *Canon Coal*, 9 FMSHRC at 668; *Hecla*, 37 FMSHRC at 884).

An alleged Section 57.3360 violation may be found where the operator adopted a ground control plan that requires it to provide ground support in the cited area, and there is either no ground support or inadequate support installed in that area, or where a ground control plan does not require support in the cited area, but ground conditions and mining experience indicate ground support was necessary at the time the citation was issued. The first circumstance is sufficient to establish the need for ground support because an operator that has a ground control plan requiring support in a specific area already has exercised its judgment and has determined that ground support is necessary in said area.

However, the fact that an operator's ground control plan does not require ground support in a cited area does not resolve the question. As one Commission judge has noted, "[l]ike ventilation plans, roof control is a dynamic process and conditions not anticipated by the ground control plan may arise that would alert a reasonably prudent operator that an out-of-plan response is necessary, but the absence of any such condition indicates that there is nothing that should have put the operator on notice that additional action was necessary." *Pattison Sand Co., LLC,* 33 FMSHRC 3096, 3137 (Dec. 2011) (ALJ) (*citing Plateau Mining Corp. v. Fed. Mine Safety & Health Review Comm'n,* 519 F.3d 1176, 1197 (10th Cir. 2008)).[25] When an operator has not adopted a ground control plan, or where its plan does not mandate support in a cited area, the determination that ground support is necessary must be established by the location, time-specific ground conditions, and applicable prior mining experience in similar ground conditions.

3. Scope of Section 57.3360 with Respect to Ground and Installed Support

As discussed extensively in this decision, the majority of the citations/orders at issue pertain to roof bolts previously installed into the ground that had fallen to the mine floor or were suspended in the air, were missing, or were present in the ground but in a broken or deteriorated state. The cited areas of the mine were previously production areas where active mining (salt extraction using the drill-blast methods) had taken place, but none was occurring at the time the citations were issued, so they were not covered under the roof control plan as production areas. Because Section 57.3360 is directed specifically at controlling the ground, it is important to define what "ground" means in the regulation.

When evaluating an agency's interpretation of a regulation, a court must first determine whether the regulation is "genuinely ambiguous" after "exhaust[ing] all the 'traditional tools' of construction," including its text, structure, history and purpose. *Kisor v. Wilkie*, 588 U.S. 558, 575 (2019) (citations omitted). If a regulation is genuinely ambiguous, the agency's construction "must fall 'within the bounds of reasonable interpretation.'" *Id.* at 576 (quoting *City of Arlington v. FCC*, 569 U.S. 290, 296 (2013).

To determine whether an agency's construction is reasonable, the court looks at the "text, structure, history, and so forth [to] establish the outer bounds of permissible interpretation." *Id.* Finally, the court must consider "important markers" indicating that *Auer* deference to the agency's interpretation is appropriate. *Id.*

[25] Dr. Mark also was an expert witness for the Secretary in this case.

The Court's directive in *Kisor* to use the traditional tools of regulatory construction are helpful in determining the meaning of "ground" in Section 57.3360. Looking first to the text, neither Section 57.3360 nor any other regulations concerning underground metal/nonmetal mines define "ground." *See generally* 30 C.F.R. Part 57. The MSHA handbook, "Roof Control Pan and Ground Support Review Procedures," defines "ground" as "a general term used to define the rock surrounding the mine opening, including, the roof, back, rib, face or wall." RX-53 at 00433. This document defines back as "the strata making up the overhead portion of" a metal/nonmetal mine, "equivalent to the 'roof' in a coal mine." *Id.*

Mining dictionaries offer similar definitions for "ground." *See* Mining Dictionary at 247 (defining "ground" as "[t]he mineralized deposit and the rocks in which it occurs"); Bureau of Mines, U.S. Department of Interior, *Dictionary of Mining, Mineral and Related Terms* (1968) at 514 (defining "ground" as "a. Any rock or rock material. . . . b. As used by miners, any specific part of a mineral deposit, or the rock in which a mineral deposit occurs").

Neither party addresses the definition of "ground" in their briefs or at hearing. There thus seems to be no question in the parties' minds that "ground" refers to the "back" or roof of at Weeks Island. *See e.g.,* Tr. Vol. II at 30 (Garcia defining "ground" as "[t]he rock stratus surrounding the mining environment").

All of the Section 57.3360 violations alleged in this decision cite areas where roof bolts or plates have fallen or are hanging from the mine roof. There is no doubt that a fallen, hanging, or broken roof bolt or plate is not being "maintained," at least in a general sense.[26] However, the language of Section 57.3360 requires bolts or plates be maintained for the express purpose of controlling the ground. When the bolt or plate is not necessary for ground control purposes, any maintenance issues are outside the scope of the regulation, which establishes necessity for the support as a prerequisite for the maintenance requirement.

Thus, a question could arise: Does a bolt or plate, after being inserted into the back at Weeks Island, become part of the ground that needs to be controlled under Section 57.3360? The answer must be "No." First, the parties' briefs are consistent with the dictionary definitions above, interpreting "ground" to apply only to the salt or other rock making up the back or roof of the mine. Second, "Yes" contradicts the presumption of consistent usage because "ground" would have two different meanings within a single sentence of the regulation. *See U.S. v. Bittner,* 19 F.4th 734, 741 (5th Cir. 2021) (noting that under this presumption, "'a term generally means the same thing each time it is used,'" and applies to "proximate terms") (quoting *U.S. v. Castleman*, 572 U.S. 157, 174 (2014) (Scalia, J., concurring)). *See also Peabody Southeast Mining, LLC*, 47 FMSHRC 454 (June 2025) (ALJ) (describing this presumption and stating the same interpretation of a word should apply across regulatory sections).[27]

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[26] "Maintain" is defined as "to keep in an existing state (as of repair, efficiency, or validity): preserve from failure or decline." Maintain, Merriam-Webster, https://www.merriam-webster.com/dictionary/maintain (last visited August 11, 2026). A bolt or plate that is broken or has fallen partially or totally out of the back is not in the same state as when it was first installed.

[27] The word "ground" is used six times in Section 57.3360. The instances in the first sentence undoubtedly refer to a mine roof as that sentence establishes what must be meant to

The final sentence of Section 57.3360 addresses the scope of Section 57.3360 in a different way. Unlike the two preceding sentences of the regulation, this sentence does not mention the necessity of ground support at all but is limited to an operator's responsibility to remediate damaged timber used for ground support. This duty exists regardless of whether that ground support is necessary.

The fact that there is no evidence of Respondent using any type of wooden support to control the ground at Weeks Island forecloses any possibility that the third sentence of Section 57.3360 would apply here. The Secretary has not asserted that "timber" as used in the third sentence of the regulation should be read more broadly than its ordinary meaning to encompass other types of non-wooden ground support.

Even if the Secretary advanced such an argument, "timber" is generally defined to encompass wooden (including partially-wooden) support installations. *See* Mining Dictionary (1997) ("Any of the wooden props, posts, bars, collars, lagging, steel joists or beams, etc., used to support mine workings."); Merriam-Webster online definition of timber ("a large squared or dressed piece of wood ready for use or forming part of a structure"). The third sentence of Section 57.3360, as well as the predecessor Sections 57.3-26 and 57.3026 appear to have only been applied in the context of wooden support. *See e.g., Original Sixteen to One Mine, Inc.*, 39 FMSHRC 590 (Mar. 2017) (ALJ).

Broadly defining both words—and thus the scope of Section 57.3360 as a whole—to include metal bolts and plates used for roof support as "ground" or "timbers" also raises the issue of fair notice. *See Phelps Dodge Corporation v. FMSHRC*, 681 F.2d 1189, 1190 (9th Cir. 1982)[28] (Holding it was inappropriate for MSHA to issue a citation when the regulation did not "give fair warning that it was applicable to" the operator's conduct) The court agreed with a ruling by the U.S. Court of Appeals for the Fifth Circuit in an Occupational Safety and Health

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necessitate support. If ground included support measures such as rock fixtures, the second word of the regulation's term "ground support" would be redundant.

If "ground" included bolts, plates, or other rock fixtures installed into the ground, the same word would have two different meanings in the same sentence. For example, the second sentence would read: "When [mine roof] support is necessary, the support system shall be designed, installed, and maintained to control the [mine roof and rock fixtures installed into the roof as support] in places where persons work or travel in performing their assigned tasks."

[28] I also note an ALJ cited *Phelps Dodge* in *UNC Mining & Milling,* 5 FMSHRC 1164, 1180–81 (June 1983) (ALJ). That case dealt with an alleged violation of former Section 57.3–26 for a damaged and broken timber cap that was present in a haulageway. *Id.* at 1178. at issue was whether the hazard presented by the timber cap was contemplated by Section 57.3–26. The operator argued the hazard posed by the timber cap was restrictive clearance or obstructions, not a hazard related to ground control. *Id.* The ALJ determined Section 57.3-26 was "unconstitutionally vague as to all hazards except when applied to the hazards associated with ground support." *Id.* at 1180. He vacated this citation because he did not find the timber posed such a hazard. *Id.*

Review Commission ("OSHRC") case: "If a violation of a regulation subjects private parties to criminal or civil sanctions, a regulation cannot be construed to mean what an agency intended but did not adequately express." *Id. at* 1193 (quoting *Diamond Roofing Co., Inc., v. OSHRC*, 528 F.2d 645, 649 (5th Cir. 1976). The court in *Diamond Roofing* also stated that the Secretary, as enforcer of the [Occupational Safety and Health] Act, has the responsibility to state with ascertainable certainty what is meant by the standards he has promulgated." 528 F.2d at 649.

Even if the Secretary intended to regulate directly the condition of fixtures installed in the ground, I find that he has failed to adequately express that intent here. Thus, the roof bolts and plates do not become part of the "ground" upon installation, nor are they within the standard's requirements applicable to timbers.

4. Dangers Posed by Roof Falls and the Inherent Danger of Mine Roofs

The Secretary's posthearing brief notes, "It has been acknowledged that mine roofs are inherently dangerous and even a good roof can fall without warning." Sec'y Br. at 14, *citing Jval Inc.*, 13 FMSHRC 1649, 1652 (Oct. 1991) (ALJ) (citing *Consolidation Coal Co.*, 6 FMSHRC 34, 37–38 (Jan. 1984); *Halfway, Inc.*, 6 FMSHRC 8, 13)). The Secretary also cited *Elk Run Coal Company*, 28 FMSHRC 190 (Mar. 2006) (ALJ) in which the ALJ held that "requiring the Secretary to prove an S&S violation by establishing that the mine roof is under 'any specific type of stress that could lead to a roof fall,' 26 FMSHRC at 768-69, places an onerous burden of proof on the Secretary," and noted Congress's intent in to provide comprehensive protection against roof falls. Sec'y Br. at 14–15, *quoting Elk Run Coal Co.* 28 FMSHRC at 192 (citing *Elk Run Coal Co.,* 26 FMSHRC 761 (Sept. 2004) (*Elk Run I)*and *Elk Run Coal Co.,* 27 FMSHRC 899, 906–07 (Dec. 2005)(*Elk Run II)*).

Respondent does not address the Secretary's citation to *Jval*. *See* Resp't Br. at 18. However, it contends the Secretary's citation to *Elk Run* is "deeply misleading," as that case was about an alleged violation of an underground coal mine standard "completely inapplicable to Weeks Island." *Id.* Respondent further contends that the sole question in *Elk Run* was whether, after it had been established that a coal mine wasn't complying with its roof control plan, specific evidence of what kind of conditions existed at the site of the violation was necessary to support a conclusion that the violation was significant and substantial." *Id. at* 18–19.

I do not find the Secretary's citations to *Jval* or *Elk Run* bolster the necessity of ground support here. The points the Secretary makes using both cases contradicts Section 57.3360's requirement that ground support must be necessary in the cited area of the mine. *See Jval*, 13 FMSHRC at 1652 (ALJ relied exclusively on underground coal precedents and found their "reasoning is equally applicable here," without explaining why).

If the roof of an underground metal/nonmetal mine posed the same inherent dangers as a coal mine, Secretary could—and arguably should—have imposed the same strict ground control requirements for both types of mines. He has not. Implicit in the adoption of Section 57.3360's location-specific analysis is the idea that the roofs of underground metal/nonmetal mine do not possess the same inherent dangers that make roof support a strict necessity in underground coal

mines. *See also* Tr. Vol. II at 159, 237-38 (Mark admitting that some mines do not require bolting at all and pattern bolting is not required in all underground domal salt mines).

Contra the Secretary's citation to *Elk Run* and other underground coal cases, the regulatory language makes clear that a violation of Section 57.3360 must be premised on a finding that ground support was necessary in the cited area. If there is a dispute over the necessity of ground support in the cited area, the Secretary bears the burden of establishing that necessity, and thus the applicability of Section 57.3360, using evidence of conditions present or known at the time the citation was issued.

B. Common Findings Applicable to Multiple Citations/Orders

1. Common Arguments Made by the Secretary

In his brief, the Secretary repeats many of the same arguments to support finding violations for all the enforcement actions at issue in this decision. While each citation or order applies those arguments differently, their essence is set forth here as common bases for relief.

1. The History of Roof Falls at Weeks Island

For each citation or order alleging a violation of Section 57.3360, the Secretary cites the 2009 roof fall in which a miner was killed as evidence to support his claim that ground support was necessary. Sec'y Br. at 15, 21, 24, 27, 31, 37, 41, 44. The Secretary argues that the event shows "major roof falls" can occur where support is compromised and that the fall was "a byproduct of salt creep" and a collapse that the installed support was inadequate to prevent. *Id*.

Any alleged violation of Section 57.3360 requires a location-specific analysis as to whether ground support was necessary at the time the citation was issued, and whether any installed ground support met the performance requirement. Thus, the relevance of the 2009 roof fall must be determined individually for each citation/order at issue. This is based on whether the 2009 roof fall is representative of "mining experience in similar ground conditions" contemplated by the regulation.

Here, whether the 2009 roof fall is relevant "mining experience" under Section 57.3360 depends on whether ground conditions were sufficiently similar in both the area where the roof fall occurred and the areas cited in the relevant citation/orders. The testimony and evidence presented by the parties establishes that all the alleged Section 57.3360 violations occurred in locations which were not production areas when the enforcement actions were issued.

While Respondent asserts in its brief that the 2009 roof fall occurred in a production area, no evidence in the record supports this statement. I thus cannot credit Respondent's assertion as sufficient to establish that the 2009 roof fall occurred in a production area. However, the Secretary bears the burden of proof, including establishing that conditions were similar in two areas such that what occurred in one area could be considered relevant mining experience.

The cause of the 2009 roof fall is important to that determination and was not persuasively supported at the hearing. The two MSHA reports submitted by the Secretary state that the installed support was insufficient to carry the separated slab of mine roof,[29] but that does not explain why a separation occurred in the first place. While Mark testified that he believes creep contributed to this roof fall, I infer that the MSHA report on the roof fall, which was not entered into evidence, did not reach this conclusion, or Mark would have cited it. Instead, he attributed the accident to poor anchorage of the roof bolts and subsequently expressed uncertainty about salt creep being the cause of the fall.

Since the 2009 roof fall, Respondent has changed its bolting practices by installing larger bolts, including ¾-inch diameter inch bolts installed after this roof fall and 0.804- and ⅞-inch-diameter bolts installed following a 2017 roof fall. For most of the areas cited in the orders at issue in this decision, the parties did not present evidence about what types of roof bolts and plates were present, including what damaged, deteriorated, hanging, or missing bolts and plates were present in the mine. However, Mark and Pezze did retrieve and analyze seven ¾-inch-diameter JENNMAR bolts form the 1600' Ramp Belt near the 15C intersection and 8A intersection on the 1500' level. GX-13 at 336. The general timeframe when these bolts were installed provides some indication of the stresses and the effect of time—especially in establishing that bolts installed after the 2009 roof fall could fail—but the Secretary did not support broader conclusions about bolts used in the areas addressed at this hearing.

2. The Effect of Salt Creep and Corrosion on Installed Ground Support

For every enforcement action at issue in this case, the Secretary states that "[t]he combination of salt creep and corrosion degrades the ground support system at Weeks Island" and "[s]alt creep will stretch and elongate bolts to the point of failure, regardless of whether a separation is present within the back." While the Secretary is correct in his assertions, inferring compromised ground integrity from degraded bolts and plates is unsound for two reasons.

First, both experts testified that the loss of a single roof bolt does not mean the ground support system is compromised or that the structural integrity of the ground is compromised such that it could fall. In other words, the Secretary cannot conflate the failure of a single unit of the ground support (i.e., a roof bolt and/or plate) with a failure of the entire system of ground support (all or a critical mass of the installed roof bolts and plates).

Second, the effects and consequences of salt creep are varied and the process is complex. Mark credibly testified that fractures in the back of a domal salt mine generally result from salt creep. Yet Vining similarly credibly testified that salt creep is not inherently dangerous. Any contradictions in the experts' testimony uncertain nature of salt creep and its effects.

On a fundamental level, salt creep is a force that represents the potential for a specific action or result to occur: that salt moves from an area with a higher level of stress to one with zero or low stress. But the mere fact of salt creep is insufficient evidence of the potential for a roof fall or the effectiveness of the installed support in preventing one.

[29] This is essentially an unhelpful tautology.

This potential for roof falls in metal/non-metal mines is of course known to the Secretary, yet he has not required underground domal salt mines to provide any roof bolting, let alone pattern bolting. Mark expressly acknowledged this. See Tr. Vol. II at 233-235 (Admitting the absence of regulatory authority to compel Respondent to adopt his recommendations).

3. Changes in Salt Mine Openings and the Back

The Secretary raised as support for finding a violation in every enforcement action here two admissions by Vining: that most openings in salt mines, given enough time, will exhibit some form of ground control issues requiring rehabilitation to eliminate or mitigate hazards; and that changes in the salt back will not necessarily be evident on the surface of the back. *See* Sec'y Br. at 15-16, 21–22, 24–25, 27–28, 31–32, 34–35, 37–38, 41–42, 44–45.

The Secretary overvalues Vining's admission that openings in a domal salt mine will exhibit ground control issues. When asked whether "most openings, given enough time, will exhibit some form of ground control issues that require rehabilitation," Vining stated said "[t]hey could." Tr. Vol. III at 211. He continued to explain this possibility explains why ground conditions must be monitored to identify changes and potential issues before problems occur. Tr. Vol. III at 211–12. Vining's response suggests the possibility of undetected ground control issues arising in salt mine openings is not as definitive as the Secretary argues. Ground conditions may vary widely, and indicators of ground stability, such as separations or cracks, telltales, and scope holes, may be used to assess conditions and to determine whether ground support is necessary in a given area of a domal salt mine.

The Secretary is correct in stating that changes within the salt back would not necessarily be manifest on the surface. This statement, however, is a generalization, and is not by itself sufficient to establish the necessity of ground support or the potential for a roof fall hazard in a cited area of the mine, which is dependent on conditions in that area. Evidence supporting that determination must also be based on conditions in the cited location or a demonstrated similarity to another area where ground support was deemed necessary.

4. Necessity for Ground Support

For every citation/order at issue in this decision except for Order No. 9674967, the Secretary stated that that ground support or roof bolts were necessary in the cited area because the evidence showed the roof bolts were designed to support the roof and Respondent installed them for that purpose. Sec'y Br. at 16–17, 25, 28, 31, 34, 38, 41, 45. (Citing Tr. Vol I at 42, 44–45; and Tr. Vol. II at 29, 32–33, 53–54, 149–50, 187–89. However, the conclusion that support was necessary in current conditions does not rest on evidence about those conditions and assumes that the fact that support was installed at any point is proof of present necessity.

Ryes testified that under 57.3360, "ground support is [] needed whenever you find a condition that warrants the support." Tr. Vol. I at 42. He also described how roof bolts and plates work together to support the roof. Tr. Vol. I at 44–45. However, he did not describe specific conditions requiring support.

Garcia testified about Respondent's process and rationale for installing roof bolts at Weeks Island. Tr. Vol. II at 29, 32–33, 53–54. While this testimony arguably establishes that Respondent had determined ground support was necessary at some point, the Secretary never distinguished between support installed in production areas under the roof control plan and that installed "preemptively," as Garcia said, for other reasons.

Mark expressed a belief that pattern ground re-support is necessary "because in most mines there is a reasonable likelihood that somewhere that you can't predict in advance there may be a hazardous roof condition." Tr. Vol. II at 187–89. But this ignores two key distinctions relevant to this decision.

First is the regulatory difference between coal and metal/non-metal mine roof support. Underground coal mines are governed by extensive, detailed requirements, including the requirement to adopt a roof control plan that generally precludes miners from working under unsupported top. *See* 30 C.F.R. § 75.202 (requiring that roof, face and ribs where miners work or travel shall be supported or otherwise controlled," and that miners may not work or travel under unsupported roof" except where permitted by Subpart C—Roof Support). This is grounded in standards in the Act. *See* 30 U.S.C. § 862 (interim mandatory safety standards providing detailed, specific roof control requirements for underground coal mines).

In contrast, the regulations governing metal/non-metal mines generally defer the decision to provide support to the operator's reasonable judgment. The Secretary, in promulgating the standard, might have sought to regulate in accordance with Mark's views—essentially a precautionary principle—but this approach generally must be authorized by Congress under the applicable statute. *See East Fork Enterprises, Inc. v. EPA*, ___ F.4th ___, Slip Op. at 8 (11th Cir. 2026) citing *Me. Lobstermen's Ass'n v. Nat'l Marine Fisheries Serv.*, 70 F.4th 582, 599 (D.C. Cir. 2023) (Rejecting "lowest possible risk" standard under language of Toxic Substances Control Act and noting, "As the D.C. Circuit held, courts must not infer a precautionary principle from unclear statutory text.").

Congress did not clearly mandate specific roof control requirements for underground non-coal mines. After active mining ceases at Weeks Island, such bolting is no longer required under the mine's roof control plan. Hence, I reject the general premise upon which the Secretary relies, i.e. the ever-present possibility that an unknown and unseeable condition may lead to a roof fall requires roof support to be maintained in perpetuity after it has been installed. This rests on a general assumption about underground mining, and not specific conditions or experience, as the standard requires.

Which brings us to the second distinction, which is the geologic differences between underground coal and domal salt mines. Coal is typically found in seams layered between other types of mineral or rock. Here, though, nearly all the material in the mine is rock salt. While salt creep may affect the shape and stresses found in the back, I credit Vining's opinion of the back as generally competent and self-supporting. In general, even accounting for the fact thar he has been retained as an expert by Respondent, his familiarity with the mine is much more extensive

than Mark's and began well before the inspections at issue in this case. His report is supported by meticulous scientific and engineering data.

Even Mark noted the view that has been offered "half-facetiously that we probably don't need 90 percent of the roof bolts that we put in . . . but we just don't know which 10 percent we do need." and related this observation to *all* underground mining, generally. Tr. Vol. II at 188. Congress has made a policy decision to err on the side of caution in underground coal mines but has not similarly authorized a "lowest risk" approach for ground control in non-coal underground mines. The statute does not authorize the expansive reading advanced by the Secretary here.

Because the governing standard in this case requires a showing that ground support is necessary, and because the Secretary has not proved necessity by a preponderance of the evidence for any of the violations of Section 57.3360, those enforcement actions will be vacated. This does not mean that it would not have been possible for the Secretary to cite the hazards posed under other regulations which obligate Respondent to protect miners against potential hazards and to ensure that places where miners work or travel are kept in a safe condition. Standards which might be applied to enforce that obligation regulations include:[30]

- 30 C.F.R. § 57.11001: requiring an operator provide and maintain safe means to access "all working places";

- 30 C.F.R. § 57.18002(a): requiring a competent person examine each working place at least once each shift, before work begins, "for conditions that may adversely affect safety or health";

- 30 C.F.R. § 57.3200: requiring an operator to take down or support ground conditions that create a hazard to persons "before other work or travel is permitted in the affected area."[31]

2. Respondent's Arguments based on *Doe Run*

The distinction between coal and non-coal mining, drawn by Congress and recognized by the Commission, is a central theme of Respondent's case. In its brief, Respondent takes issue several times with the Secretary's suggestion that the fact ground support is present in a cited area means ground support is necessary under Section 57.3360. Resp't Br. at. 21, 41, 45, 49, 61.

In *Doe Run*, the Commission examined an ALJ's affirmance of a Section 57.3360 violation alleging that the roof of an underground lead, copper, and zinc mine was not adequately

[30] By noting that other standards may have applied to hazards created by unsecured ground control fixtures, I do not suggest that I would necessarily have found a violation of any of them.

[31] While ground control devices do not become part of the "ground" upon installation, they could be considered as part of the "ground conditions" for the purposes of Section 57.3200. The parties did not address this in their briefs, and I express no opinion on this interpretive question.

designed and installed to control the ground after a miner was killed in a roof fall. 42 FMSHRC 522. Before the roof fall, the mine had no history of issues with the stability of the dolomite rock which made up the mine roof. *Id.*

Applying the reasonably prudent person test to Section 57.3360 and the question of fair notice, the Commission stated that the "evidence demonstrate[d], unequivocally, that the operator's prior years of *mining experience* in *similar* ground conditions in the same and other mines *did not indicate* that [roof support different than what was installed] was necessary. To the contrary, the experience indicated that [such roof support] was not necessary." *Id.* In finding that Section 57.3360 was not violated, the Commission similarly focused on the lack of evidence showing that the operator was "on notice" of the need for support. *Id. at* 541–42.

The Commission concluded in *Doe Run* that the operator had no way of knowing that the ground support which had been installed was insufficient based on the circumstances and ground conditions present at the mine up to the instant before the roof fall occurred. Here, there is similarly no evidence that Respondent had any reason to believe that the maintenance of installed support in perpetuity was "necessary," the threshold question posed by the standard at issue.

An alleged violation of this regulation must be grounded on what was known at the time the citation was issued, not on ground conditions that develop after the fact (such as the type of unexpected and unforeseeable roof fall that occurred in *Doe Run*), and not on operating conditions which required the installation of support under the ground control plan while areas were being actively mined. Of course, the Secretary could have proved that Respondent's experience or the ground conditions established the requisite necessity. The record does not support this conclusion for any of the alleged violations of this standard.

In *White Pine Copper,* the Commission the Commission determined that the ALJ erred in considering the operator's experience in one mining configuration, under one type of roof rock, as experience applicable to a different configuration under different ground. 5 FMSHRC at 836. The Commission held that only those conditions under the same configuration were relevant in determining its operating history, while also noting that "present day experience" may be relied on as operating experience. *Id.*

White Pine illustrates how the type of work being performed at a mine—which necessarily includes the forces to which the ground would be exposed—is important in evaluating the operating history, and thus the mining experience which informs whether ground support is necessary. As the Commission stated, the "operating experience" that must be considered "broadly encompasses all relevant facts tending to show the condition of the mine roof in question and whether, in light of the roof condition, roof support is necessary." *Id.* The Commission noted that "experience" may be commonly defined as "practical wisdom resulting from what one has encountered, undergone, or lived through." *Id.* at n.23, quoting *Webster's Third New International Dictionary* at 800 (unabridged 1981).

Here, Respondent's use of the room-and-pillar mining method and the work done during production represents one mining configuration. When specific activities, namely salt extraction, are conducted, the production areas of the mine, including the ground and any installed support,

are exposed to sudden and dramatic forces from the use of explosives and machinery, which may affect the structural integrity of the ground and any ground support.

Once an area at Weeks Island is no longer a production area, it is subject to a different mining configuration. The circumstances of that area of the mine have changed, and it is incumbent on the Secretary to demonstrate how conditions that may affect the structural integrity of the ground compel a continuation of pattern bolting or the maintenance of previously installed support after production in the area has concluded. [32]

The 7-by-7 pattern bolting requirement for production areas at Weeks Island is a policy that developed to address the specific mining configuration applicable to those areas during active production, because that's what the roof control plans say. While only the May 2023 plan details the ground control measures (or lack of measures) used in non-production areas, both versions specify that the 7-by-7 pattern is to be used in "production areas."

Implicit in Respondent's decision to specify a pattern for production areas is a recognition that ground support needs can differ between production and non-production areas. Due to the change in circumstances and mining configuration that occurs when active mining ceases in an area of the mine, I find the requirements applicable to a production area are not required for an area at Weeks Island once that area stops being a production area.

For similar reasons, the fact that Respondent installed roof bolts in the 7-by-7 pattern in an area of the mine because it was previously a production area does not mean that same pattern, or any ground support at all, is required for that area of the mine in perpetuity. Such a rigid standard is contrary to the purposefully flexible requirement in Section 57.3360.

C. Citation No. 9674933 – 1600 Ramp Belt

Ryes issued 104(a) Citation No. 9674933 on March 15, 2023. GX-1 at 25, describing the violative condition or practice as follows:

> While traveling along the south side of the 1600 ramp belt, a roof bolt was noticed in the roadway. The roof bolt had fallen from the ceiling and appeared to show some signs of stress near the breaking point of the bolt. Two other roof bolts had fallen also but were suspended in the air because they were tie wrapped to an overhead

[32] At the hearing Gaudreau testified that Respondent can use blasting as part of rehabilitation but did not state anything beyond the fact that this can occur as part of rehabilitation. Such a general statement is insufficient to suggest that this area of the ramp belt would be exposed to blasting forces in the future. Without more information about the rehabilitation process, including the likelihood of explosives to be used and the timeline or frequency with which this rehabilitation may occur, it is not possible to conclude that Respondent was required to contemplate the possibility of blasting forces or the use of explosives as part of rehabilitation in an area when determining whether ground support was necessary in any of the areas cited for alleged Section 57.3360 violations in this decision.

> cable. This condition puts miners traveling the belt line at risk for falling objects exposing them to serious injuries.

Id. This citation was assessed as unlikely to cause a permanently disabling injury, non-S&S, with one person affected, and moderate negligence. *Id.*

1. Fact of Violation

i. Parties' Arguments

The Secretary argues that the evidence that Respondent failed to maintain necessary roof bolts along the 1600' level ramp belt is 'overwhelming,' noting that the location is less than 1,000 vertical feet from the 2009 roof fall 1500' level. The slab of rock that fell had been bolted, and there was a fracture that formed about two feet up in the roof that was the product of salt creep. *Id.* Per Mark, "the fundamental issue that resulted in the roof collapse was that the ground support was inadequate to support and hold the slab of rock up." *Id.*

On necessity, the Secretary does not cite evidence of specific conditional similarity, arguing only that witness testimony supports that the roof bolts were designed and installed to support the roof in the cited area. *Id.* He cites Mark's analysis that up to 50% of roof bolts in a portion of the ramp belt had failed, likely because of salt creep and corrosion. *Id.* He also cites observations of corrosion on the roof bolts, separations in the back, and other conditions observed by Ryes and Frith. *Id.* The Secretary also cited Vining's testimony that most openings in salt mines at some point in time exhibiting ground control issues, and the facts that salt creep will cause bolts to stretch to the point of failure and that changes in the salt back are not necessarily manifested on the surface of the back. *Id.*

The Secretary alleged that because the ramp belt was a main travelway to the active mining area and miners performed maintenance on the belt, "it is clear that miners work in and travel" in this area. *Id.* He further argues that the roof bolts, once installed, needed to be maintained, and Respondent's failure to maintain those bolts increased the risk of a hazard. *Id.*

Respondent argues this citation should be vacated for a lack of evidence because the Secretary failed to prove that ground control was necessary at the cited area on the ramp belt, the "central question" at issue in establishing a violation. Resp't Br. at 20. It notes Ryes admitted he determined that roof bolting was necessary because an area which once had a roof bolt no longer had one, contrary to the Commission's decision in *Doe Run* and that installing support does not give rise to a duty that it "be maintained in identical condition in perpetuity or that installed support *per se* indicates that ground support was actually necessary." *Id.*

Respondent faults the Secretary's exclusive reliance on the 2009 roof fall to enforce a general requirement to maintain support where it has been installed. *Id.* This contradicts the flexible standard applicable in metal/non-metal mines and disregards improvements to its ground control system since the 2009 roof fall and the fact that its MSHA-approved plans only require pattern bolting in production areas. *Id.*

Citing the testimony of its witnesses, Respondent points to evidence that there were no adverse roof conditions here and that even if there had been, the installed ground support in this area of the ramp belt had a tighter bolting pattern than required in the ground control plan. *Id.* The three missing roof bolts cited by Ryes would not compromise a roof control system and did not indicate the existence of a hazard in the mine roof. *Id.*

ii. Discussion

There is no dispute that miners worked or traveled on this side of the belt, albeit infrequently.[33] Thus, the crux of the alleged violation is whether ground support was necessary in the 1600' ramp belt between 15B and 15C, and if so, whether the support present was designed, installed, and maintained to control the ground.

When asked whether the fact roof bolts were installed in the past means roof bolts are required, Ryes stated that roof bolts are "installed for a reason. . . . If there was a reason in the past, then . . . the reasoning don't go away." Tr. Vol. I at 228. Respondent correctly argues Ryes' "inspection philosophy is impossible to comport with the Commission's holding in *Doe Run* [which] implicitly recognized that just because ground support was installed at one point in time, or in one portion of a mine, it does not follow that the ground support must be maintained in identical condition in perpetuity or that installed ground support per se indicates that ground support was actually necessary." Resp't Br. at 21.

At the time this citation was issued, active mining was occurring on the 1600' level but the 1600' ramp belt was a non-production area. Tr. Vol. I at 254; Tr. Vol. III at 58. Thus, ground support installed while the 1600' ramp belt was a production area was not required to be maintained or replaced under Section 57.3360 at the time Citation No. 9674933 was issued, absent evidence that ground conditions in this area or the mine's operating experience in similar ground conditions compel the maintenance of pattern bolting on the ramp belt.

The Secretary cites Weeks Island's history of "major ground falls [that] can occur in areas when the ground support is compromised." Sec'y Br. at 16. However, the conditions may be distinguished, refuting the notion of a pattern. For example, the 2001 roof fall occurred in an area that was located near an intake air shaft and where the salt in the back had "deteriorated from normal" conditions. No similar conditions were cited in this area of the 1600' ramp belt.

The fact that the 2009 roof fall occurred less than 1,000 feet from the area at issue in Citation No. 9674933 provides some support for the conclusion that the areas have similar ground conditions and that fall could be considered part of the relevant mining experience. However, while Mark testified that he believed salt creep contributed to this fall, he could not definitively cite creep as the cause. I also consider Vining's testimony that the report of this fall

[33] While the north side of ramp belt is used as the main travelway in the mine and the south side is not regularly accessed, Ryes stated that miners do access the south side for maintenance. Even if it is accessed on an infrequent basis, such a determination does not contradict the fact that miners do "work or travel" on the south side of the ramp belt.

did not identify salt creep as the cause of the roof fall—an assertion that Mark, who witnessed the entire hearing, did not dispute.

The absence of persuasive evidence on the cause of the fall makes it difficult to assess the role salt creep may have played. Thus, while the 2009 roof fall is relevant, its occurrence alone is insufficient to establish a need for ground support in this area at the time of Ryes' inspection.[34]

The Secretary also cites Mark's report and the observations from his and Pezze's March 28, 2023, site visit to support a need for ground control in the 1600' ramp belt of the mine. This visit occurred within a week of the citation's issuance, supporting an inference that the conditions observed by Ryes and Mark had not changed considerably between the two examinations.

As part of their visit, Mark and Pezze examined the 15C intersection on the ramp belt, where they found several scope holes that showed separations in the back, and also found a telltale that showed a two-inch roof sag. Along the ramp belt to the 15A intersection, they found additional holes that had minor separations in the back above the roof line. They also conducted a survey of roof bolts in a section of the back here and concluded that most of the roof bolts present were not in good condition.

Respondent correctly notes that these observations were not made in the exact location where Ryes cited Respondent. However, they are on the same level of the mine and ramp belt. I find no evidence of significant differences between the locations.

RCD's survey of the roof bolts clearly indicates that there are issues with roof bolts that have been installed on this level of the mine, but this is significant only if evidence of ground conditions here shows that ground support was necessary, either because the conditions indicated compromised structural integrity in the ground or similarity to other areas where support was deemed necessary.

The mere fact that there are failed roof bolts in the ceiling does not establish that ground support was necessary. However, the conditions testified to establish that there was some separation in the back and sagging in the roof on the 1600' ramp belt. The telltale showed downward movement of the roof. While this was not dispositive, by itself, Respondent did have some indication of possible sagging in the roof along the belt.

The separations identified via scope holes by Mark and Pezze at the 15C intersection raise a serious question about the integrity of the ground in this area. While this is not the exact location cited in Citation No. 4674933, it is close enough to infer that the roof conditions were comparable enough to qualify as "similar ground conditions."

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[34] As stated *infra*, there is limited evidence about the 2009 roof fall. Respondent contends in its brief that this fall occurred in a production area, where active mining was occurring. Neither party testified to this directly to this at the hearing, and Respondent does not provide any citation to support its assertion that the roof fall occurred in an active production area. I thus have not credited the assertion made in the brief.

I conclude that the operator could have determined from the sagging shown by the telltale—at least to the border between green and yellow—that there was potential movement requiring examination in this general area. Respondent could have used scope holes to check for separations in the area but did not.

The consequences of unplanned ground movement in any underground mine are grave. While the standard here entrusts to the operator the responsibility for determining when ground support is necessary, its judgment must be an informed one. As the Commission held in *Doe Run*, a violation of section 57.3360 is determined by applying the "reasonably prudent person" test. *Doe Run*, 42 FMSHRC at 527-28. *See also* p. 31, *supra. Doe Run* also noted that the standard at question here "*explicitly directs* the mine operator to base its judgment upon experience in similar ground conditions and knowledge of the ground conditions. *Doe Run,* 42 FMSHRC at 534 (emphasis in original). The Commission's holding thereby noted the importance of the operator's "knowledge of the ground conditions," which implies a duty to constantly evaluate those conditions in applying its judgment.

The fact that Mark and Pezze found evidence of separation from scope holes supports the possibility that the roof movement was the result of separation and not salt creep. This area could have been considered as congruent with the specific location evaluated by Mark and Pezze, and that the Secretary could have demonstrated sufficient evidence based on conditions observed by Ryes in this location and the more detailed findings found by the experts from the Roof Control Division.

The problem is the citation itself and the evidence at trial cannot support a finding of violation. Unlike some other citations and orders addressed at this hearing, this specific enforcement action cited only the danger of miners being struck by falling objects. GX-1 at DOL0025. There is no allegation that the conditions observed presented a risk of ground fall. As explained in Section A.3, *supra*, fixtures do not become part of the "ground," as the term is employed in 30 C.F.R. Section 57.3360, when they are installed in it.

Additionally, Ryes did not testify to a ground fall hazard. The non-S&S citation issued here was exclusively related to the hazard posed by falling bolts. *See* Tr. V.I, 61-66. The violation as alleged and charged is outside the scope of the standard and unsupported by evidence of ground conditions showing a potential hazard from ground movement. Citation 9674933 is therefore vacated.

D. Order No. 9674986 – 10-F Rib on the 1400' Level

Ryes issued this 104(e)(2) order on July 18, 2023, for an alleged violation of Section 57.3360. GX-42 at 9:

> There was a roof bolt in the electrical shop near the corner rib of 10-F west rib that was hanging from ceiling. The bolt had broken at the 5ft 6 inch mark and showed some signs of stress. Miners also accessed the area to work on a permissible fan that was directly

> beneath the bolt that was hanging from the twenty-five feet ceiling. This condition creates a hazard for falling objects from the roof exposing miners to serious injuries.

Id. This order was assessed as reasonably likely to cause lost workdays or restricted duty injury, S&S, with one person affected, and moderate negligence. *Id.* To abate this order, Ryes required the plate and hanging bolt to be removed from the ceiling. *Id.*

1. Fact of Violation

i. Parties Arguments

The Secretary relies on the same thesis employed in defending other orders, i.e. roof bolts present in the back here, once installed, needed to be maintained, and Respondent's failure to maintain them increased the risk of a hazard. Sec'y Br. at 27. He again relies on the 2009 roof fall and Vining's testimony about salt creep and ground control issues. *Id.* The Secretary notes miners traveled and worked in this area, as evidenced by the recent work performed on the permissible fan. *Id.* He also complains that Respondent's management did not provide Mark with any information about the stability of the ground in this area. *Id.*

Respondent argues this citation should be vacated for a lack of evidence that ground support was necessary in this area. Resp't Br. at 40. Respondent takes issue with the Secretary's point that Mark was not provided with information about the stability of rock on the 1400' level, noting it was never asked for nor had a reason to ask for this information because his investigation took place nearly four months before this citation was issued. *Id.*

Respondent repeats its argument that the mere fact that historic support is present in an area does not mean the ground support was necessary for the purpose of Section 57.3360, citing *Doe Run, id.*, and argues that even if ground support was necessary here, the system was being maintained. Resp't Br. at 40. Respondent notes Ryes only required it to remove the hanging roof bolt to abate this order, which proves there was no violation of the standard. *Id.*

ii. Discussion

The evidence clearly establishes, and Respondent has not disputed, that this was an area where miners worked and traveled to perform their assigned duties. The 10-F rib is in the mine's electrical shop and, as Ryes stated, miners access this and other shops on this level every day. Tr. Vol. I at 130.

I do not find the 2009 roof fall to be relevant mining experience in similar ground conditions. The 10-F rib is not located near and is in fact located on a level 100 vertical feet above, the location of the roof fall. The forces of pressure and salt creep generally increase as one goes deeper underground. Absent any contrary evidence, any difference one would anticipate on the 1400' level would be less pressure than the 1500' level where the ground fall occurred. The Secretary offered no evidence about specific roof conditions in this area, while

Vining described the roof as competent and generally self-supporting. Neither party compared this area to the area affected by the 2001 roof fall, and I find no evidence of relevant similarity.[35]

Ryes' determination that ground support was necessary in this area of the electrical shop thus rests entirely on the fact that he found a roof bolt hanging from the ceiling. He admitted as much in his testimony. He found no visible cracks or other signs of movement in this area of the back. Other witnesses similarly testified that they saw no evidence that would indicate a separation in the back or other ground conditions were present suggesting the ground was not anything but stable and self-supporting.

Nobody testified that this hanging roof bolt was "necessary" to meet the 7-by-7 bolting pattern required for production areas under Respondent's ground control plan.[36] However, Gaudreau's testimony about numerous other bolts in the ceiling here suggests that this portion of the roof had other roof bolts providing support and perhaps even met the 7-by-7 pattern.

There was no testimony that the remaining bolts were inadequate to support the roof. The fact that Ryes only required Respondent to remove the hanging roof bolt and not to install additional support to abate this order refutes the suggestion that the bolt was necessary to support the roof. Were the bolt necessary, the appropriate action to abate this citation would have been removal of the hanging bolt *and* replacement with another properly installed roof bolt. Thus, ground support was not actually necessary in this area of the mine roof, or the missing roof bolt did not compromise the support system's ability to control the ground. Under either conclusion, one of the criteria required for a Section 57.3360 is not met and a violation cannot be established.

I therefore find the Secretary has failed to provide a preponderance of evidence establishing Respondent violated Section 57.3360 here and vacate Order No. 9674986.

E. Order No. 9674987 – The Hose-Making Area in the 10-F Room on the 1400' Level

Ryes issued this 104(e)(2) order on July 18, 2023, for an alleged violation of Section 57.3360:

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[35] In particular, the 2001 roof fall was attributed to roof bolt installation problems. The mine's roof bolting procedures (including the type of bolts, anchorage, and plates used) had changed since that roof fall, and there was no evidence that the materials used in the area of the 2001 roof fall were present in the 10-F rib.

[36] Even though the ground control plan would not apply here because this is not a production area, I find that the ground control plan's requirement for the 7-by-7 bolting pattern reflects a judgment call made by the operator that such a bolting pattern is sufficient to control ground in areas where ground support is required at Weeks Island. Thus, evidence that an area has the 7-by-7 bolting pattern would suggest that the ground support was designed to control the ground.

> There was a missing roof bolt in the ceiling in 10-F near the hose making area. However the plate was still on the ceiling with nothing holding it from falling in the roadway beneath it. This travel way is accessed by miners throughout the shift daily to get to and from their tools and supplies. There was also a roof bolt that had broke [sic] in the ceiling and was sticking out approximately four feet near an electrical cable on the corner rib. This condition creates the potential for the plate and the bolt to fall on a miner exposing him to serious injuries.

CENT 2024-0001 Pet. at 17. This order was assessed as reasonably likely to cause lost workdays or restricted duty injury, S&S, with one person affected, and moderate negligence. *Id.* *See also* GX-43 at 1 (copy of citation sheet).

1. Fact of Violation

i. Parties' Arguments

The parties again tread common ground in debating this violation in their briefs. The Secretary again relies on the 2009 roof fall, Vining's testimony, and ground conditions observed in the mine and argues this was an area where miners worked or traveled, noting miners accessed the hose-making machine as needed and that of the heavy use of hydraulic equipment at the mine makes this "a high traffic area every day." *Id.* Respondent did not dispute this element.

Once again, Respondent argues this order should be vacated for lack of evidence that support was necessary here, based on *Doe Run* and testimony that the failure of one or two roof bolts is generally not a concern in domal salt mines. *Id.* Respondent also notes Ryes conceded the roof bolt at issue in this order was not necessary, and Ryes did not require another roof bolt to be installed in order to abate this order. *Id.*

ii. Discussion

The evidence conclusively establishes the hose-making area was a place where miners regularly worked or traveled in performing their assigned tasks. Thus, the third element required for a Section 57.3360 violation is met here.

However, the missing bolt, a plate adhered to the back without a bolt, and a broken roof bolt in the ceiling are not sufficient to establish a violation of Section 57.3360. The Secretary must establish that the hose-making area both required ground support to be installed in this area at the time the order was issued and that said ground support was not adequately designed, installed, or maintained to control the ground.

For the same reasons as discussed for Order No. 9674986, *supra*, Section IV D, the Secretary's arguments about the relevance of the 2009 roof fall and Respondent's failure to provide Mark with information about the stability of the roof are unpersuasive. The hose-

making area is on the same level as the 10-F rib. Similarly, evidence relating to the 2001 roof fall also fails to substantiate a claim of similar conditions requiring support.

Ryes testified that he determined roof support was necessary because there were other bolts installed in the ceiling next to this plate but admitted that the missing bolt "wasn't a required bolt." Tr. Vol. I at 326. In fact, he stated that Respondent was still within its 7-by-7 pattern required for production areas, even though this was not a production area and the roof control plan did not require pattern bolting here. Tr. Vol. I at 326.

The evidence about the ground conditions present in the hose-making area is insufficient to establish a need for ground support here. While Ryes noted that the bolts he identified had signs of stress, neither his inspection notes nor his testimony identified any non-roof bolt or plate-related ground conditions that could indicate a hazard in the back, such as cracks, dipping, or sagging. GX-43 at 2; Tr. Vol. I at 326–330.

The evidence is to the contrary. Gaudreau testified that he did not see any hazardous ground conditions and that the ground was constantly examined in this area to ensure the ground remained in good condition. I also credit Vining's testimony that he did not see any hazardous ground conditions in this area and that he saw a telltale in the green zone when he inspected the area nearly one year after Ryes issued this order. Thus, Section 57.3360 does not apply to the hose-making area because ground support was not necessary here.

Even if I were to find support was necessary, Ryes' testimony that Respondent was within its 7-by-7 pattern here even with the missing bolt precludes a finding of violation. MSHA's approval of Respondent's plan recognizes the 7-by-7 pattern as adequate to control and maintain stability of the ground, even under production conditions absent at the time of the inspection.

Once again, Ryes only required the plate and hanging bolt to be removed for abatement and did not require replacement. The same analysis and conclusions drawn from the abatement of Order No. 9674986, *see* discussion, Section IV.D., *supra,* apply to this order and negates any claim that the remaining support was inadequate.

The fact that there was a broken bolt hanging from the ceiling with no plate and a plate on the ceiling with nothing but adhesion to the salt preventing them from falling into the roadway is concerning and could pose a hazard to miners' health and safety. However, Section 57.3360 has a clearly stated purpose of controlling the ground—here, the salt rock in the back. The plate and bolt were not part of the "ground," and if either were to fall, it would not constitute a ground fall. There is thus no evidence to support a hazard here from an unplanned ground fall.

Accordingly, I **vacate** Order No. 9674987.

F. Order No. 9674988 – 11-F Area of Electrical Shop

Ryes issued this 104(e)(2) order on July 18, 2023, for an alleged violation of Section 57.3360:

> There were several roof bolts in the ceiling of 11-F that had deteriorated plates and some bolts were missing with the plate still on the ceiling. The room is accessed by miners to go to and from their lockers and get supplies. This condition creates the potential for falling objects exposing miners to serious injuries.

CENT 2024-0001 Pet. at 18. This order was assessed as reasonably likely to cause lost workdays or restricted duty injury, S&S, with one person affected, and moderate negligence. *Id.* *See also* GX-44 at 1 (copy of citation).

1. Fact of Violation

i. Parties' Arguments

Again, the Secretary argues Section 57.3360 was violated here because Respondent failed to maintain the roof bolts installed in this area. Sec'y Br. at 34. The Secretary proved miners travel through this area daily, as evidenced by the fact this area contained a storeroom, locker area, and lunch area. Tr. Vol. I at 166, 168. The Secretary relies here on the same arguments offered in support of other citations and orders, including the 2009 roof fall, the effect of salt creep, and the necessity to maintain roof bolts simply because they were once installed to support the roof. *See* Sec'y Br. at 34-35.

Respondent also relies on the same common arguments and a lack of evidentiary support in contending that this citation should be vacated because Ryes' conclusion that ground support was necessary here was based solely on the fact an area that roof bolts that had been installed were now missing, and notes he did not know why. *Id*.

ii. Discussion

As noted above, the evidence establishes the 11-F area of the electrical shop was a place where miners work or travel every day. Ryes' notes indicated the area where the support had deteriorated was in a corner of the room, but the context was a discussion of Respondent's negligence. GX-44. The specific location was not isolated to the point where it would be considered outside an area frequented by miners, and that element of the violation has been met.

However, the Secretary's arguments about the 2009 roof fall fail for the same reasons as for the other alleged violations cited on the 1400' level of the mine. The 11-F area is located on a level 100 vertical feet above the location of that roof fall, suggesting it may have been exposed to lesser pressures. There was no evidence to the contrary.

Similarly, I do not find evidence of the 2001 roof fall constitutes operating experience in similar ground conditions that would indicate ground support is necessary in the 11-F area. While that fall and this cited area are on the same level of the mine, there is no evidence of similar conditions, nor has the Secretary considered the significant changes in roof bolting practices since that fall.

Ryes based his determination that Section 57.330 was violated here in part on the fact that pattern bolting was not present in this area, *see* Tr. Vol. I at 167. But any lack of the 7-by-7 pattern, alone, is not sufficient to establish a violation here because this area was not a production area at the time Order No. 9674988 was issued.

As a non-production area, the shop was not exposed to the drill-blast or other forces or that could reasonably be expected to compromise ground stability. Respondent therefore has no obligation under the plan, and the record does not establish that ground conditions or mining experience indicate support is necessary here.

Ryes and Segura estimated that about half of the roof bolts installed in this area were "bad." Tr. Vol. I at 168. While Ryes also required this room to be scaled and rebolted to abate this order, GX-44 at DOL0014, lending some credence to his determination that roof support was necessary, an absence of cognitive dissonance from the abatement required does not equate to a positive evidentiary showing of necessity.

Fundamentally, a violation of Section 57.330 is about the conditions of the ground, and the reasons why such conditions warrant the installation and maintenance of control measures. However, Ryes' determination ultimately appears based on the conditions of the bolts that were present or missing in the roof, and not conditions that relate more directly to the stability of the rock present in the back.

The condition of deteriorated or missing roof bolts and plates in the back is only relevant after it has been established that that ground support is necessary. Ryes testified that his notes did not indicate any separations in the back, sagging, or issues with telltales in this area of the shop. *See* Tr. Vol. I at 166–70, 332–34. In fact, the Secretary makes no mention of any site-specific conditions, excluding the condition of roof bolts, that would indicate any issues with the ground in this area of the shop. *See* Sec'y Br. at 33–35 (making no mention of separations or sagging in the back, issues with telltales or scope holes.

In contrast, Respondent's witnesses testified that both at the time of Ryes' inspection and Vining's inspection nearly one year later, there were not any concerning ground conditions in this area. I credit these witnesses' testimony and find the ground conditions present at the time this order was issued do not establish that ground support was necessary here. I therefore **vacate** Order No. 9674988.

G. Order No. 9674990 – 1400' Level Storeroom

Ryes issued this 104(e)(2) order on July 19, 2023, for an alleged violation of Section 57.3360:

> There were several deteriorated bolts in the ceiling near the rear gate of the storeroom leading up to the crane bay and proceeding to the travel way to the #4 shaft. There were many bolts missing and the company's roof control plan could not be established. The area is accessed daily on every shift by miners to go to and from the #4 shaft. Failure to maintain roof control exposes miners to possible roof falls resulting in fatal injuries.

CENT 2024-0001 Pet. at 20–21. This order was assessed as reasonably likely to cause a lost workday or restricted duty injury, S&S, with one person affected, and moderate negligence. *Id. at* 20. *See also* GX-45 at 1 (copy of citation).

1. Fact of Violation

i. Parties' Arguments

The Secretary argues that Respondent failed to maintain the roof bolts in this area of the 1400' level storeroom. Sec'y Br. at 37. In addition to the same general arguments proffered for other alleged violations of this standard, the Secretary notes that this is one of the first areas through which miners travel daily at the beginning of their shifts. *See id.*

Respondent presents two overarching arguments for vacating this order. Resp't Br. at 53. First, it argues that this order and Order No. 9674991 pertain to the same conduct and hazard and are duplicative and that at least one of the orders should be vacated. *Id.* Respondent also argues it lacked fair notice that a fallen roof bolt in an evacuation route is a *per se* violation of Sections 57.3360 and 57.11051(a), and that the citation should be vacated on these grounds. *Id.*

Respondent further asserts this order should be vacated because the Secretary failed to put forth any evidence that ground support was necessary here. Its ground control plan does not require a 7-by-7 bolting pattern in the storeroom, a non-production area. *Id.* Even if ground support was required in this area, Respondent asserts roof bolting was present. This portion of back had multiple generations of roof bolts installed in greater density than required for production areas under the ground control plan. *Id.* Respondent also contends Ryes did no investigation to determine whether ground support was necessary here or whether the installed support was sufficient. *Id.* In contrast, Respondent said Vining's observations and investigation concluded the ground was stable and self-supporting here. *Id.*

ii. Discussion[37]

The evidence clearly establishes this storeroom was an area where miners work or travel. Both Ryes and Respondent's witnesses testified about miners traveling and working in this area. Thus, the third element of Section 57.3360 is met. However, this storeroom was not a

[37] Respondent's argument that Order Nos. 9674990 and 9674991 are duplicative is addressed *infra* in Section IV.K.

production area at the time Order No. 9674990 was issued, and thus it was not required to comply with the 7-by-7 roof bolting pattern in Respondent's ground control plan.

Because this is an area where miners work or travel, the next relevant question is whether ground support was necessary to control the back in the 1400' level storeroom at the time Order No. 9674990 was issued. The Secretary recycles arguments about the 2009 roof fall and conclusory statements about the need for ground support. In a non-production area, those vehicles lack credibility without evidentiary support about conditions and/or experience. Similarly, I do not find the 2001 roof fall constitutes "mining experience in similar ground conditions" because there was no evidence demonstrating the required similarity.

As with the preceding order, Ryes' found a Section 57.3360 violation based on missing and deteriorated roof bolts and plates in the ceiling, and the absence of a 7-by-7 bolting pattern. The fact that there are deteriorated and missing roof bolts, alone, is not sufficient to establish a violation here. As both parties' expert witnesses testified, a failed or missing bolt does not, by itself, compromise the integrity of a roof support system or establish a Section 57.3360 violation. While there were several missing and deteriorated bolts and plates in the back of the storeroom, the relevance of those missing and deteriorated plates depends on whether those bolts and plates were needed to ensure the ground is controlled and does not fall.

As with Order No. 9674988, Ryes required this area to be rebolted to abate the citation. GX-45 at 18. This action by Ryes provides some support for his determination that ground support was necessary here because, by requiring the pattern to be established, he at least had the subjective belief that the roof was inadequately controlled here. However, the inverted, deteriorated, and missing roof bolts and plates are the only adverse conditions cited by the Secretary. Ryes did not note cracks or separations in the back, issues with scope holes, or other conditions showing that the integrity of the ground was compromised. While Ryes stated that one telltale indicated some downward movement of the roof, the telltales in this area were "in the green" both at the time of Ryes' inspection and Vining's visit nearly a year later.

Even if I were to find this movement to be significant—which I do not based on its minimal change over an extended period— other observable ground conditions indicate the ground was stable at the time of both visits. I also credit Frith's testimony that the roof condition had remained the same for at least one year before Order No. 9674990 was issued, including the presence of missing and deteriorated bolts. Accordingly, I do not find sufficient evidence that ground support was necessary in 1400' level storeroom at the time Order No. 9674990 was issued, and the Order is therefore vacated.

H. Order No. 9674997 – 8-EE Laydown Area

Ryes issued this 104(e)(2) order on July 19, 2023, for an alleged violation of Section 57.3360:

> There were several missing roof bolts and plates missing from the ceiling in 8-EE on the 1500ft level. There were also five bolts noticed that were broken in the ceiling but were still hanging and could fall at anytime [sic]. The prints of the plates were noticeable

> as the broken bolts hang in the ceiling. The room had been partially scaled breaking most of the roof bolts but none were put back to aid against any type of movement in the ceiling or to regain roof control pattern as per the company's roof control plan. The room was open to traffic as miners accessed this area to store and retrieve mechanical parts. This condition creates a hazard for falling objects or material resulting in serious injuries to a miner.

CENT 2024-0001 Pet. at 28. This order was assessed as reasonably likely to cause lost workdays or restricted duty injury, S&S, with one person affected, and moderate negligence. *Id.* *See also* GX-48 at 1 (copy of citation sheet).

1. Fact of Violation

i. Parties' Arguments

Following the same thesis and relying on the same contentions employed in the other alleged violations Section 57.3360, the Secretary urges the violation be affirmed here because roof bolts were not maintained in this area on the 1500' level. Sec'y Br. at 44. The Secretary notes Ryes' observations that the roof bolts in this area were consistent with the natural process of salt creep. *Id.*

Respondent argues this citation should be vacated for a lack of evidence. Resp't Br. at 60. Because this was a non-production area, the 7-by-7 bolting pattern was not required, and the Secretary offered no evidence of roof instability or other conditions indicating a need for ground support here. *Id.* "In fact, all affirmative evidence put forth at the hearing indicated that the ground was stable and self-supporting in this area." *Id.*

ii. Discussion

The evidence establishes that the 8-EE laydown area was a place where miners worked or traveled. While the evidence suggests this area is not accessed daily, both Ryes and Maxey testified miners enter the area on a regular, if infrequent basis to store and retrieve equipment. *See* Tr. Vol. I at 213 (Ryes testifying about "as-needed" access to this area); Tr. Vol. III at 36 (Maxey testifying miners visit this area one or two times a week). This area was not barricaded, nor were warnings against travel posted. Tr. Vol. I at 216–16. Thus, the third requirement of Section 57.3360—that the area be a place where persons work or travel—is met.

Ryes' determination that ground support was necessary again was based entirely on the condition of the roof bolts and plates present in the back. He did not testify about other ground conditions that could indicate potential problems with the back, such as sagging, cracks, separations, or issues with telltales.

The 2009 roof fall does have some salience as history and operating experience to demonstrate the need for ground support in this area. The Secretary correctly notes that both the roof fall and the 8-EE laydown area are on the same level of the mine. Sec'y Br. at 44. Thus,

both areas could be subject to some of the same stresses and forces by nature of being at the same depth underground. However, limited information was presented about the cause of the 2009 roof fall and ground conditions that may have contributed to it. The roof fall also occurred in an intersection, and this area is not an intersection. I, therefore, find that the 2009 roof fall, by itself, does not establish that ground support was necessary in the 8-EE Laydown area at the time Order No. 9674997 was issued.

Ryes' sole focus on the condition of the bolts and plates again seeks to simplify the Secretary's proof problem by assuming away the threshold question of necessity. Unless the record shows that support was necessary, there can be no violation.

Here, Ryes did not testify about or record, and the Secretary cannot cite, any observable conditions indicating the ground's structural integrity was compromised, such as sagging, cracks, separations, or issues with telltales. The observations of Respondent's employee witnesses at the time this order was issued similarly did not identify any observable adverse conditions. Gaudreau recalled seeing a telltale in the green, an observation Vining similarly made nearly about nine months after this order was issued when he conducted his site visit.

I find insufficient evidence to establish ground support was necessary to control the ground in this area and vacate Order No. 9674997.

I. Order No. 9674967 - 1200' Level Order on Escapeways

Ryes issued this 104(e)(2) Order No. 9674967 on May 24, 2023, for an alleged violation of Section 57.11051(a): The Order describes the condition or practice, in relevant part, as follows:

> There were deteriorated, broken and missing roof bolts in the ceiling at the #4 shaft landing at the 1200ft level. There were also scales overhead and chunks of material on top of an I Beam ledge that could fall at anytime. This area is part of the primary evacuation route and was not restricted with any barrier to impede against entry at the time of inspection. This condition is a hazard for falling material exposing miners to fatal injuries.

CENT 2023-0237 Pet. at 14. This order was assessed as reasonably likely to cause a fatal injury, S&S, with one person affected, and moderate negligence. *Id.* *See also* GX-28 at 13. (copy of citation).

1. Fact of Violation

i. Parties' Arguments

The Secretary argues Respondent violated this standard because the evacuation route was not maintained in a safe, travelable condition. Sec'y Br. at 21. He cites Ryes observations of scales, material on an I-beam ledge, fallen roof bolt plates, and missing, broken, and deteriorated

roof bolts, including bolts that were hanging out of the ceiling. *Id.* He also notes nothing was put up—such as caution tape, barriers, or cones—to prevent miners from accessing this area. The Secretary also states that the roof bolts were designed and installed to support the roof and relies on many of the same arguments he made in support of the alleged Section 57.3360 violations on this issue. *Id.*

The Secretary also notes miners went to this landing to access the 1200' level, and that this area contained serviceable components, such as mine phones, that would bring miners here. *Id.* He also cites Maxey's statement to Ryes that he and other supervisors inspected this area at least once a week, and his testimony that miners would come to this area when lowering equipment down from the surface. *Id.* This is therefore an area where miners would work or travel.

Respondent argues this citation should be vacated for a lack of evidence of any conditions in the 1200' landing that rendered this escapeway unsafe. Resp't Br. at 28. It states the condition of roof bolts did not render the escapeway unsafe, and that pattern bolting was not necessary here. *Id.* It notes the ramps going from the 1000' to 1200' and 1200' to 1400' levels are unbolted, and if the Secretary's position is that an escapeway needs pattern bolting to be safe, "it is inexplicable why Inspector Ryes" would not require the 1000' and 1200' slopes—both escapeways at the time Order No. 9674967 was issued—to also be bolted." *Id.* Respondent also cites evidence and testimony showing the ground here was stable. *Id.*

Respondent also takes issue with the Secretary's assertion that the material on the I-beam ledge and the scales made the escapeway unsafe. Regarding the material on the I-beam, it argues that there was no evidence establishing this was a hazard. The material had been stationary since 2022 and is not significantly vibrated when the hoist is used. *Id.* Respondent also notes there was no evidence of scales present in the area and that Ryes did not observe scaling during his inspection. Respondent also points to inconsistences in Ryes' testimony and complains that he misidentified some photographs. *Id.*

ii. Discussion

Unlike all the citations and orders discussed in the preceding sections, this order alleges a violation of Section 57.11051, which requires the operator to maintain an escapeway in a "safe, travelable condition." 30 C.F.R. § 57.11051(a). By its language, Section 57.3360 is clearly directed toward the specific hazard of ground loss/fall/instability. In contrast, there are no specific safety concerns at which Section 57.11051 is narrowly directed.

As the Commission recently noted, "Section 57.11051 does not define "safe" or "travelable," and does not provide any examples of unsafe or non-travelable conditions." *Cargill Inc.*, 48 FMSHRC 100, 103 (Mar. 2026). Thus, "this regulation is 'drafted in general terms in order to be *broadly* adaptable to the varying circumstances of the mine" and is considered under a reasonably prudent person test. *Id.* (quoting *FMC Wyoming Corp*., 11 FMSHRC 1662, 1629 (Sept. 1989) (emphasis in original). This test assesses "whether a reasonably prudent person, familiar with the factual circumstances surrounding the allegedly hazardous condition, including any facts peculiar to the mining industry, would recognize a hazard within the purview of the

applicable regulation." *M-Class Mining , LLC,* 41 FMSHRC 579, 585 (Sept. 2019) (citations omitted). Thus, a violation here does not require a finding that roof support was necessary but may rest on any identified hazard cognizable to a reasonably prudent mine operator.

1. Finding of Violation.

Here, Ryes cited several conditions to support a claim that this escapeway on the 1200' level was unsafe: deteriorated, broken, and missing roof bolts in the ceiling; scales; and chunks of material on an I-beam ledge. As a result of the presence of these conditions, miners could be exposed to the dangers of either the chunks falling or a "roof collapse." GX-28 at 13–14; Tr. Vol. I at 78.

I find the facts establish that (1) this was an escapeway within the scope of Section 57.11051, and (2) this area was not barricaded to prevent miners from accessing it in the event of an emergency. The Secretary has failed to demonstrate that the chunks of material on the I-beam ledge posed a hazard to miners. As evidenced by the April 19, 2022, and May 15, 2023, photos presented in Vining's report, this material had been in the same position on the ledge for at least one year before Ryes' inspection of this area. While Ryes testified that the frame on the shaft landing could vibrate when someone uses the hoist, Tr. Vol. I at 371, Maxey testified the steel structure on which the chunks were present was not attached to the hoist. Tr. Vol. III at 18.

I credit Maxey's testimony because of his familiarity with this shaft. The chunks appear not to have moved at all for more than a year, during which the hoist presumably has been used. As long as the chunks of material remain stationary—and there is insufficient evidence to suggest they might be dislodged —they pose no danger of falling and injuring a miner using this hoist or escapeway.

The evidence is also insufficient to demonstrate scales posed a hazard of falling on a miner here. Although Ryes mentioned scales in the condition or practice of this order as well as his notes, at the hearing, he stated he was "not sure if I saw any scales." Tr. Vol. I at 79. *See also* GX-28 at 13–14. At the hearing, Frith testified that there was material on the ground that showed "the area was checked and inspected," and both he and Maxey talked about the scaling that had previously occurred in this area. Tr. Vol. III at 18–20; 100–01.

After this order was issued, no scales were pulled down from this area. Tr. Vol. III at 24. I find the conflicting and limited evidence about these scales unpersuasive to establish that there were any scales present that even remotely posed a hazard in this escapeway.[38]

[38] Ryes also stated a roof failure had occurred on the 1200' level. GX-28 at 14. At the hearing Maxey testified that this fall occurred on the 1000' level. Tr. Vol. III at 23. The Secretary did not address this alleged roof failure when discussing this order in her posthearing brief. *See* Sec'y Br. at 21–23. Because of the limited and conflicting information about any roof failure on the 1200' level, I find there is insufficient evidence to establish there was a roof fall on the 1200' level that affected the safety or travelability of this escapeway.

I credit Ryes' testimony that there were deteriorated, broken, and missing roof bolts in the ceiling here. There are photographs that show deteriorated and hanging roof bolts and plates in the ceiling, as well as plates that had fallen onto the floor.[39] *See generally* GX-30; GX-32 (photographs of the roof). *See also* Tr. Vol. I at 90–98 (Ryes testifying about the conditions observed in the photographs in GX-32). Ryes stated that the condition of these bolts and plates exposed miners to a hazard of a roof fall in the escapeway. The fact that a roof bolt or plate is missing or deteriorated is only relevant with respect to the hazard of a roof fall if the condition of the bolt or plate could indicate that the ground itself is unstable or compromised.

The evidence here does not support a ground fall or failure hazard rendering the escapeway unsafe for travel. Frith credibly testified about a telltale in the green at the time Ryes issued this order, which suggests there had been little or no roof movement since that telltale was installed. Ryes did not note any separations in the back, visible cracks or sagging, or issues with telltales or scope holes in the area of the escapeway.

This escapeway was on the 1200' level of the mine. Although the Secretary does not cite any roof fall to establish a need for ground support in this escapeway, I note its depth at the 1200' level is lesser than the 1400' and 1500' levels where prior roof falls occurred and thus might not be subject to the same pressure hat increase as one goes deeper underground. There is not any contrary, credible evidence about exceptional conditions of the salt rock in this escapeway to suggest that a roof fall will occur here.

I also credit Vining's testimony that he felt this escapeway was "fine to travel along" during his May 2024 site visit, as well as both his and Frith's observations that the roof conditions in this escapeway had remained largely the same since 2022. Tr. Vol. III at 114, 180; RX-50 at 2017. The minimal change in the condition of the roof over the course of several years suggests the salt in the back here is stable, competent, and self-supporting.

While the deteriorated condition of the roof bolts and plates does not establish a need for ground control or suggests the potential for roof fall, that does not mean that the 1200' level escapeway is being maintained in a safe and travelable condition. On the contrary, the evidence clearly establishes that bolts and plates have fallen from the back in this area. I also find that there is the potential for more deteriorated bolts and plates to fall. As Frith testified, he had seen roof bolts and plates fall at various places in the mine.

A deteriorated roof bolt or plate is an unsafe condition because of its potential to fall and strike a miner. *See* Tr. Vol. I at 215 (Ryes stating a falling roof bolt could result in "at least a lost workday injury"). I find this escapeway was not being maintained in a safe, travelable condition because the deteriorated and broken roof bolts and plates in the roof posed the danger of falling and striking miners traversing this escapeway.

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[39] In its brief, Respondent notes that Ryes testified that GX-31 also contained photographs of the 1200' level, although Maxey later testified those photographs were of the 1000' level. Resp't Br. at 30. Because of the conflicting testimony, I am not convinced that GX-31 contains photographs of the 1200' level escapeway. However, I do find that GX-30 and GX-32 contain photographs of this escapeway.

I therefore affirm the finding of a violation in Order No. 9674967.

2. Gravity/Significant and Substantial

The Commission has determined that a violation may be found to be significant and substantial where it could significantly and substantially contribute to a mine safety and health hazard and that miners could be exposed to the hazard during continued normal mining operations. *Sec'y of Labor v. Consol Penn. Coal Co.*, 47 FMSHRC 793, 823 (Sept. 2025); *Id.*, n23. In so doing, the Commission focused on the need for fidelity to the statutory language to construe the words of the statute "in their context, and with a view toward their place in the overall statutory scheme." *Consol,* 47 FMSHRC at 821-22, quoting *FCA v. Brown & Williamson Tobacco Corp.,* 529 U.S. 120, 132-33 (2000) (citations omitted).

Section 57.11051 is not an emergency standard, but considering the regulation and its meaning, its place in the statutory and regulatory scheme and the purpose of the Act, I find that the standard contemplates the use of the escapeway during an emergency and requires the protection of miners against hazards while traveling through the escapeway during said emergency. That was not done here, and a violation has been established.

The hazard has also been proved. The failure to ensure that unsecured bolts and plates cannot fall on miners creates a possibility that a miner will be struck by a metal object falling from a height of approximately 25 feet during an emergency evacuation. I also note that the potential for a fire due to combustible materials in this area, and the unavailability of the escapeway due to the required abatement, is why this area and the mine itself were closed by Respondent until the abatement had been completed. Tr. V.I at 208.

The hazard could expose miners directly to potential fractures, puncture wounds, serious contusions or other injuries. If fallen bolts and plates are not detected, they could be a tripping hazard, impeding a swift and orderly exit from the mine during an emergency. The condition also could endanger miners who might need to pause during an evacuation to care for an injured co-worker, delaying their escape.

The hazard has been established as a direct result of the violation. The potential for miners to be exposed to it has also been established. I therefore find that the violation is significant and substantial.

3. Negligence.

The Secretary proposed a finding of moderate negligence under Part 100. He asserts that the violation would have been obvious had the area been inspected. S. Br. at 43. Inspector Ryes said it seemed the area had been overlooked during regular inspections. Tr. V. I, 201; 210-11.

Missing an area, by itself, is not an aggravating factor. But it appears that throughout the mine, Respondent did not systematically identify protruding or loose bolts or plates that remained adhered to the top, but not secured as intended, after a bolt had broken and fallen out.

Thus, even if the area had been examined as required, it is not certain that the loose bolts and plates would have been taken down.

The widespread presence of loose and fallen bolts and plates disregards the possibility that compromised support bolts and plates may fall from the roof, and that a miner might be struck and seriously injured. There was no evidence that the loose fixtures, which could fall at any time once the integrity of the bolt, anchor, and plate comprising the support has been severed, were being routinely identified and scheduled for removal when observed during examinations.

I find that the mine's failure to more carefully manage this hazard reflects a serious lack of reasonable care due to its scope and is at the high end of moderate negligence. It is not reasonable to expect the mine to remove every bolt or plate as soon as it fails, but the evidence does not indicate the care a reasonably prudent operator would apply. Ryes testified that he would have assessed this as high negligence if the conditions had been noted in an examination and not addressed. Tr. V.I, 198-99. While the risk of injury is relatively small, it appears that this may have lulled Respondent into complacency.

The mine's examiners should be trained to notice compromised bolts and plates and to schedule them for removal. While Respondent's witnesses testified about a regular cycle of examinations throughout the mine and daily area inspections by "all" employees, it does not appear that a widespread pattern of broken bolts and tenuous plates were a concern.

4. Penalty.

The Secretary proposed a penalty of $**2,238.00**. Commission judges assess penalties *de novo* upon consideration of the six factors in section 110(i) of the Act. While not itself a factor, the deterrent effect of the penalty should also be considered as an overarching consideration, such that the cost outweighs the savings gained by non-compliance.

I do not consider the operator's history of violations of this standard in a vacuum. It has also been cited here for violations of section 57.3360 which have been vacated in this proceeding but involve essential the same failure. I therefore have also considered evidence of bolts that were not removed but where the failure to do so may have been cited under the wrong standard.

Respondent is a large operator, and the parties stipulated that the payment of the total penalty at issue in this proceeding would not affect its ability to remain in business. Tr. Vol. I at 14. I have noted the operator's negligence is at the high end of the moderate range because the hazard here, a risk of being struck by unaddressed roof support fixtures that were no longer secured to the top, appears to have been a common problem at the mine. While Respondent's witnesses testified about structured examinations to identify and remove loose ground and fixtures area by area, it was apparently ineffective in identifying, documenting, and ensuring the removal of the numerous loose, damaged, and unsecured bolts and plates found throughout the areas of the mine addressed in this proceeding.

I also credit Respondent's appropriately swift response in closing the shop and the mine to abate the hazard after being informed of the violation. Considering all those factors and then confirming that the penalty so calculated will have the appropriate deterrent effect, I assess a penalty of $**5,000.00** for this violation.

J. Order No. 9674982 – 1400' Level Hanging Roof Bolt Order for Failure to Warn/ Barricade

Ryes issued this 104(e)(2) order on July 11, 2023, for an alleged violation of Section 57.20011:

> There was a roof bolt that fell out of the ceiling in the electrical shop on the 1400 level near the west rib of 9-F. The bolt appeared to have signs of stress at the point of breakage as it was suspended overhead. There was no check performed to the area where the area where the bolt fell from. No barrier was put in place to restrict against entry as tire tracks were noted directly beneath the hanging bolt.

CENT 2023-0278 Pet. at 15. This order was assessed as reasonably likely to cause a fatal injury, S&S, with one person affected, and high negligence. *Id.* *See also* GX-34 at 92 (copy of citation sheet).

1. Fact of Violation

i. Parties' Arguments

The Secretary argues Section 57.20011 was violated here because Respondent failed to warn miners of or prevent miner access to this section of the shop where roof bolts were hanging from the ceiling. He notes that miners access this shop every day during every shift, and the shop serves multiple purposes, including a welding area and crane bay. *Id.* He cites Ryes' testimony of multiple roof bolts hanging out of the ceiling and of miners using vehicles in this area, many of which have inadequate fall protection. The Secretary also makes similar arguments about Vining's testimony on salt creep, observations of roof bolts and ground conditions, and the effects of salt creep and corrosion at the mine. *Id.*

Respondent counters that this citation should be vacated for insufficient evidence proving the existence of a non-obvious health and safety hazard here. Resp't Br. at 35. It first notes Ryes has been inconsistent about whether the hazard was the hanging roof bolt itself or the mine roof. It argues the hanging roof bolt is not violation of the standard, which only applies to hazards that are not immediately obvious, because the bolt was "obvious," as admitted by Ryes. Respondent also cites MSHA's program policy manual to support its conclusion that Section 57.20011 only applies to non-obvious or imperceptible hazards. *Id.*

Furthermore, Respondent argues that even if the roof needed barricading due to a missing bolt, the Secretary did not put forward evidence demonstrating that the roof posed a hazard here, obvious or otherwise. *Id.* It argues that there were other roof bolts in the area and no evidence that the bolts that had broken or become dislodged compromised the ground control. *Id.*

Respondent also notes that Ryes not requiring Respondent to install a new bolt forecloses a violation here. *Id.* While Ryes also testified at the hearing that two additional bolts sticking out in the ceiling also posed a hazard, it argues Ryes' testimony is contradicted by that of Mark, who stated that the bolts were just incorrectly installed and there were no signs of roof movement. *Id.*

ii. Discussion

Respondent argues that this citation should be vacated because the hanging bolt was readily visible and "obvious," which seemingly contradicts the language of Section 57.20011. While Respondent correctly notes that the regulation only applies to non-obvious or imperceptible hazards, it seems to conflate the obviousness of a condition (the hanging roof bolt) with the obviousness of a hazard (the bolt or the roof falling).

In the case of a non-obvious condition, any hazard presented by the condition would similarly be non-obvious. *See The Silver Queen Mine, LLC*, 38 FMSHRC 726, 746 (Apr. 2016) (ALJ) (finding a violation when a hole in the roof of a mine was "not obvious" and thus the hazard presented by the hole was also not obvious). The opposite cannot be said. The mere fact that a condition is readily visible and obvious to a miner working in that area does not mean the hazard posed by that condition is also obvious. However, I do credit Ryes' testimony that he noticed this bolt even though he was not looking directly at it as sufficient to establish the obviousness of this condition.

Here, whether the hazard is non-obvious would depend on what the hazard is. The Secretary put forth evidence suggesting two possible hazards posed by the hanging bolt: (1) the bolts falling, and (2) the mine roof falling. Dispensing with the easier question first, I find that the hazard of a ground fall was not obvious, if it could be established such a hazard existed. There was no evidence of any loose ground, fissures, separations, or any other indication that could be seen by a person standing below in the area cited. The Secretary has not seriously pursued this theory. His brief says nothing about ground conditions but argues that roof bolts could have fallen and struck a miner traveling or working below. Sec'y Br. at 26.

While Ryes noted—and the Secretary points out in his brief—that there were two additional roof bolts that had partially fallen from the roof, the citation sheet for this order only mentions the bolt suspended by the tie wrap. GX-34 at 93; Sec'y Br. at 24–25.[40] At the

[40] In her brief, the Secretary cites to page 3 of GX-36 when discussing these two other hanging roof bolts. At the hearing, neither party entered into evidence exhibit GX-36. I note that GX-38 contains pictures related to this order. Pages 1 and 2 of this exhibit appear to show one roof bolt hanging from the ceiling, but other bolts hanging from the ceiling do not appear to be visible based on the photographs. GX-38 at 1–2.

hearing, Ryes testified that the only roof bolt addressed by Order No. 9674892 was the hanging roof bolt, and that bolt is the only hazard discussed in his brief. *See* Sec'y Br. at 26. [41]

Obviousness aside, the evidence is insufficient support the possibility that the loose and fallen bolts would contribute to the hazard of a roof fall. There was no evidence of cracks, separations in the back, or any other indicators to suggest instability. The Secretary did not present evidence to suggest other roof bolts installed in the ceiling were inadequate to support the roof. Aside from a boilerplate recitation of the need for roof support, his brief cites no location-specific evidence supporting a ground failure hazard here. *See* Sec'y Br. at 24–25.

Because the Secretary's theory of the violation relates only to the hanging roof bolt and the risk of it falling on a miner, that is the only hazard at issue here. That bolt was held up by a tie wrap, which, as previously stated, was rated to hold a weight far heavier than the bolt. There was no evidence to suggest the tie wrap was incapable of supporting its rated weight. This precludes finding a hazard from the bolt. Its obviousness is thus irrelevant. Accordingly, I find the Secretary has failed to establish by a preponderance of the evidence that there was a violation of Section 57.20011 here, and Order No. 9674982 is vacated.

K. Order No. 9674991 – 1400' Level Storeroom Escape Route Order

Ryes issued this 104(e)(2) order on July 19, 2023, for an alleged violation of Section 57.11051(a):

> There were several broken, missing and deteriorated bolts in the ceiling from the rear entrance gate of the storeroom to the crane bay and around the rib leading to the #4 shaft on the 1400ft level. The area is heavily traveled daily and on every shift. This condition creates the potential for a possible roof fall exposing miners to fatal injuries.

CENT 2024-0001 Pet. at 23. This order was assessed as reasonably likely to cause a fatal injury, S&S, with one person affected, and moderate negligence. *Id. See also* GX-46 at 1 (copy of citation).

1. Fact of Violation

i. Parties' Arguments

The Secretary argues Respondent violated this standard by failing to maintain this evacuation route in safe, travelable condition. Sec'y Br. at 41. He cites Mark's examination, which found more than 50 percent of the roof bolts installed in this area were missing or

[41] The Secretary's brief states "[t]he specific hazard posed by this violation was that the roof bolts identified by Inspector Ryes could have fallen from the roof and contacted a miner traveling or working below, resulting in broken bone injuries resulting in lost workdays or restricted duty." Sec'y Br. at 26.

deteriorated and offered no support. *Id.* The Secretary states the roof bolts were designed and installed to support the roof and relies on many of the same arguments deployed in defending the Section 57.3360 violations, salt creep's effect on the back and Respondent's failure to provide Mark with information about the stability of the salt back on this level of the mine. *Id.* He also notes this was a "high traffic area" through which miners traveled daily, and argues evidence indicates Respondent failed to inspect this route at regular intervals. *Id.*

Respondent first argues this citation is duplicative of Order No. 9674990. Resp't Br. at 53. "At a minimum," one of these orders should be vacated because both cite an identical condition. *Id.* Respondent also argues it lacked fair notice that the presence of a fallen roof bolt in an evacuation route is a *per se* violation of Sections 57.3360 and 57.11051(a), and that the citation should be vacated on these grounds. *Id.*

Finally, Respondent points out that the Secretary failed to put forth any evidence that ground support was necessary here, and thus that the escapeway was not being maintained in a safe, travelable condition.

ii. Discussion

In their briefs, both parties recognize that Order Nos. 9674990 and 9674991 apply to the same area in the 1400' level storeroom. *See* Sec'y Br. a 40 n.17 (citing Ryes' testimony that these orders "essentially cover adjacent areas . . . all under the same roof"); Resp't Br. at 51 & n.12 (stating the orders "relate to identical conditions" and noting Ryes' testified that both citations relate to the same area). Ryes also identified the same hazard of a roof fall for both orders. *See* GX-45 and GX-46 (the citation sheets and documentation for these orders, in both of which Ryes' identifies a roof fall hazard). Because I found that there was no violation of Section 57.3360 in Order No. 9674990 and have vacated that order, Respondent's contention that both orders cannot be sustained because they are duplicative is moot.

1. Finding of Violation

The hazard of a roof fall is the same for both orders, so my finding that the evidence was insufficient to establish ground support was necessary at the time Order No. 9674990 was issued also is applicable to the Secretary's contention that the escapeway was not maintained in a safe, travelable condition because of the hazard of a roof fall. *See supra* Section IV.G.1.i.

Yet there is no question that the presence of deteriorated and fallen roof bolts in this area of the mine posed a hazard. It is a fortunate that nobody has been injured by a roof bolt falling from the ceiling. This was cited as a hazard in the other escapeway violation, Order No. 9674967. Here, however, the citation notes the "broken, missing, and deteriorated bolts," but says, "This condition creates the potential for a possible roof fall exposing miners to fatal injuries." GX 46, DOL 0020. The inspector's notes similarly note the potential for "fatal injuries form roof fall." *Id.,* DOL 0022.

Section 104(a) of the Mine Act requires the Secretary to issue a citation that "describe[s] with particularity the nature of the violation." 30 U.S.C. § 814(a). "[T]his requirement for

specificity serves the purpose of allowing the operator to discern what conditions require abatement, and to adequately prepare for a hearing on the matter." *Cyprus Tonopah Mining Corp.,* 15 FMSHRC 367, 379 (Mar. 1993).

I find that the citation sufficiently informed Respondent of the specific nature of the violation. While the citation does focus on the hazard from a potential roof fall, the loose fixtures are specifically mentioned. Furthermore, Ryes testified that miners could be injured by falling bolts or plates, and there is nothing obscure about the danger created by the loose fixtures. I therefore find that the Secretary has established a violation of the standard. The finding of violation is affirmed.

2. Negligence.

The Secretary proposed a finding of moderate negligence under Part 100. As with Order No. 9674967, this area also reflects a degree of negligence at the high end of the moderate range, evinced by a failure to systematically address fixtures which lack a secure anchorage to the back and thus pose a hazard of falling and striking a miner. I find that there is a common breach of the duty of care, and the same analysis applies to both violations.

3. Gravity/Significant and Substantial

The S&S analysis is also the same here because both violations involve the same hazard, which has been established as a direct result of the violation here as well. The potential for miners to be exposed to it has also been established. The finding of bolts and plates on the mine floor confirms what common sense suggests: fixtures no longer secured to the roof may fall at any time, and a miner struck by such fixtures could be seriously injured. I therefore find that the violation is significant and substantial.

4. Penalty.

The Secretary proposed a penalty of $2,238.00. The penalty analysis applicable to Order No. 9674967 is generally the same for this violation, because I have found both violations, which involve a common hazard, to be S&S violations resulting from the operator's elevated negligence. However, the initiative taken by the operator in quickly deciding to close the shop and then the mine is not a factor here. Considering all the relevant factors and confirming that the penalty thus calculated will have an appropriate deterrent effect, I assess a penalty of $**6,000.00** for this violation.

V. CONCLUSION AND ORDER

For the reasons above, Order Nos. 9674967 and 9674991 are **AFFIRMED.** A penalty of $5,000.00 is assessed for Order No. 9674967 and a penalty of $6,000.00 is assessed for Order No. 9674991. Citation No. 9674933 and Order Nos. 9674982, 9674986, 9674987, 9674988, 9674991 and 9674990 are **VACATED**.

Respondent is **ORDERED TO PAY** the sum of $**11,000.00** within 30 days of the date of this decision.[42] As there are no citations or orders outstanding in any of these dockets, they are **DISMISSED** upon payment of the penalty.



Michael G. Young
Administrative Law Judge

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[42] Please pay penalties electronically at Pay.Gov, a service of the U.S. Department of the Treasury, at https://www.pay.gov/public/form/start/67564508.

APPENDIX I

List of Other Settlement Orders Affecting the Dockets in this Case:

- Decision Approving Partial Settlement, No. CENT 2023-0202 (March 26, 2024)
- Decision Approving Partial Settlement, Nos. CENT 2023-0202, CENT 2023-0278, and CENT 2024-0001 (January 22, 2025)
- Decision Approving Partial Settlement, Nos. CENT 2023-0202, CENT 2024-0001, CENT 2024-0173, and CENT 2024-0193 (March 3, 2025)
- Order of Dismissal, Nos. CENT 2024-0173 and CENT 2024-0193 (April 2025) (dismissing these dockets because there were no outstanding enforcement actions)
- Amended Decision Approving Partial Settlement, Nos. CENT 2023-0202, CENT 2023-0237, CENT 2023-0278, and CENT 2024-0001 (May 22, 2025)
- Order in Response to Notice of Withdrawal, Nos. CENT 2023-0202, CENT 2023-0203, and CENT 2024-0081 (May 22, 2025) (recognizing Respondent's withdrawal of contest for enforcement actions in these dockets that were scheduled for a hearing in August 2025, and ordering Respondent to pay the penalties assessed for these enforcement actions)