

Stakeholder Meeting

- MSHA Birmingham District
- February 13, 2024

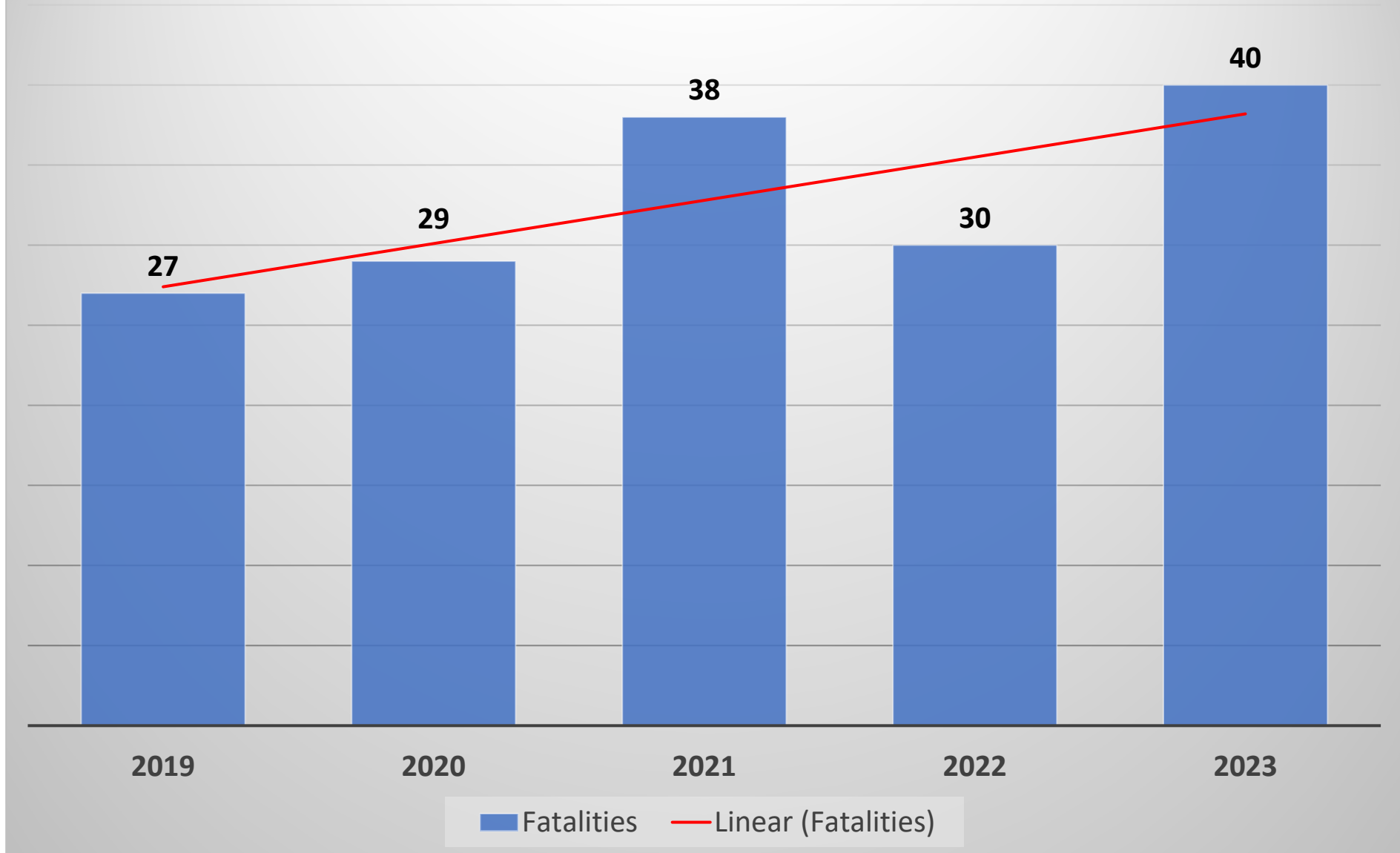


AGENDA

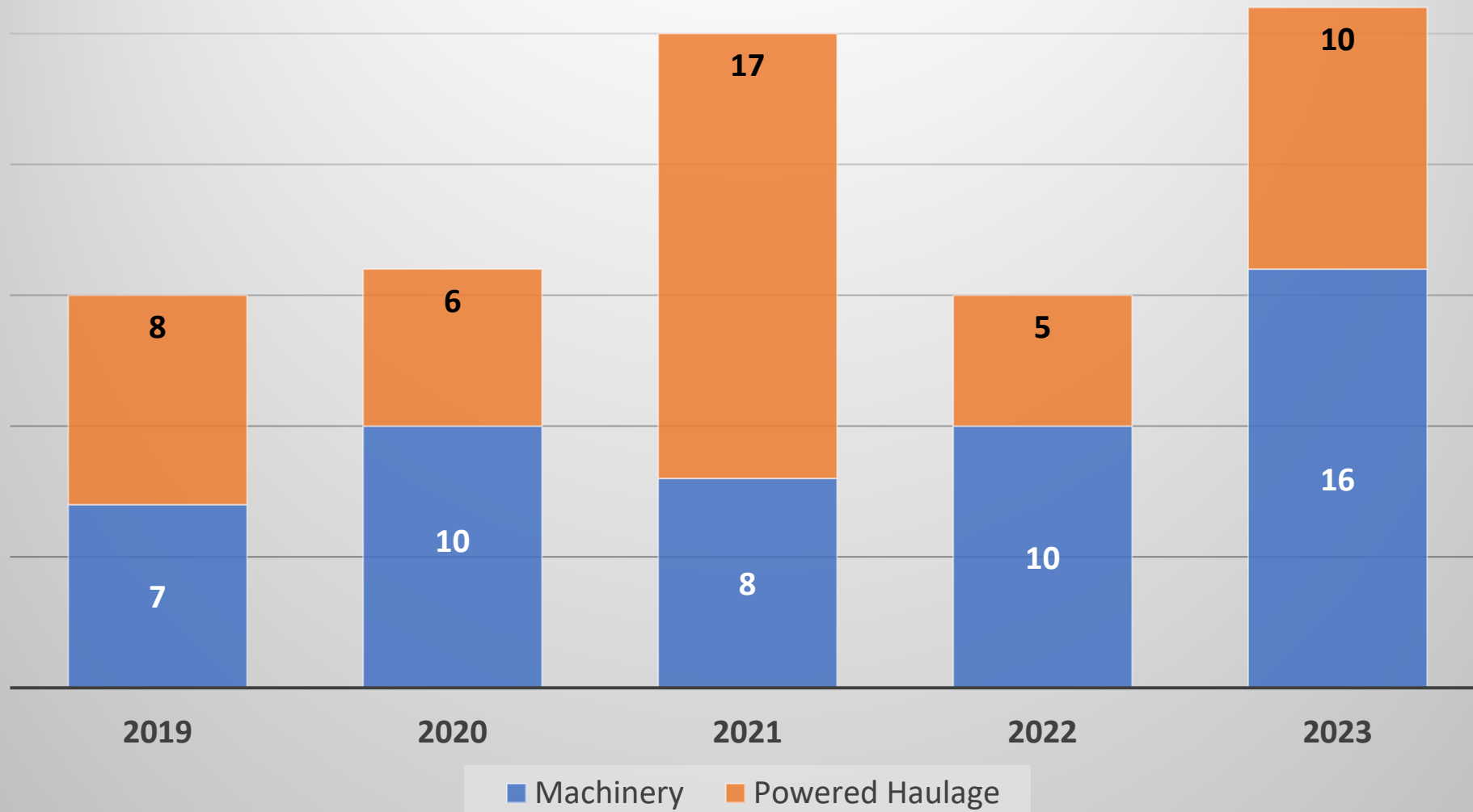
- District Presentation
- Stakeholder Presentations
- Safety Mobile Equipment
Program- New Rule
- Open Discussion
- Closing

Why is MSHA holding District Stakeholder Meetings?

Fatal Accidents



Machinery and Powered Haulage Fatalities



MSHA Accident Prevention Committee

Created in September 2023 to study the causes of accidents and develop strategies to prevent accidents

District Stakeholder Meetings

Will be held in all districts to discuss the causes of accidents, prevention of accidents, and other important information.

Birmingham District Presentation

Birmingham District Mine Portfolio

Mine Type	Total Number of Mines	Active Mines	Active/Non-Producing Mines	Intermittent Mines
Underground	18	16	2	0
Surface	904	824	13	67
Facility	76	68	5	3
Grand Totals	998	908	20	70

**Birmingham District Accident Data
Accident Prevention Stakeholder Meeting
Data as of 1/3/2024**

Total Accidents (CY 2018-2023)			
Degree of Injury	Number of Accidents/Mine Type		
	Surface	Underground	Combined
1 - Fatality	18	3	21
2 - Permanently Disabled (partially/totally)	22	7	29
3 - Days Away from Work Only	674	500	1174
4 - Days Away from Work & Restricted Duty (both)	300	24	324
5 - Day Restricted Duty Only	690	66	756
6 - No Days Away From Work/No Restricted Duty	639	136	775
Total/Mine Type	2343	736	
Grand Total- All			3079

Number of Fatalities by Classification			
Classification	Surface	Underground	Combined
Confined Space	1		1
Electrical	3		3
Fall of Face/Rib/Pillar/Side/Highwall	2		2
Falling/Sliding/Rolling Rock/Materials	2		2
Hoisting	1		1
Ignition/Explosion of Gas/Dust	1		1
Machinery	5	2	7
Powered Haulage	3	1	4
Total/Mine Type	18	3	
Grand Total All			21

Number of Permanently Disabling by Classification

Classification	Surface	Underground	Combined
Machinery	10	1	11
Handling of Materials	6	3	9
Powered Haulage	5	2	7
Hand Tools (non-powered)	1		1
Falling/Sliding/Rolling Rock/Materials		1	1
Total/Mine Type	22	7	
Grand Total All			29

Number of Lost Workdays/Restricted Duty by Classification

Classification	Surface	Underground	Combined
Handling of Materials	97	9	106
Slip/Fall of Person	83	2	85
Handtools (non-powered)	36	1	37
Machinery	32	4	36
Powered Haulage	28	2	30
Other	12	1	13
Exploding Vessels Under Pressure	4	1	5
Stepping or Kneeling on Object	3	1	4
Striking or Bumping	1	2	3
Fall of Face/Rib/Side/Highwall	1		1
Falling/Sliding/Rolling of Rock/Materials	1		1
Fire	1		1
Nonpowered Haulage	1		1
Fall of Roof or Back		1	1
Total/Mine Type	300	24	
Grand Total All			324

Total Citations Issued CY 2018-2023**40,622**

Underground Coal Violations	
30 CFR Part 75	
Total- 10,688	
Top 5 Standards Issued	
Standard	# Issued
75.400	1631
75.202(a)	670
75.220(a)(1)	415
75.370(a)(1)	390
75.512	385

Underground M/NM Violations	
30 CFR Part 57	
Total- 827	
Top 5 Standards Issued	
Standard	# Issued
57.20003(a)	119
57.12004	49
57.11001	39
57.14100(b)	38
57.14107(a)	37

Training Violations	
30 CFR Part 46	
Total- 1139	
Top 5 Standards Issued	
Standard	# Issued
46.5(a)	136
46.8(a)(2)	91
46.7(a)	90
46.3(a)	55
46.5	55

Surface Coal Violations	
30 CFR Part 77	
Total- 1731	
Top 5 Standards Issued	
Standard	# Issued
77.1110	147
77.1104	130
77.400(a)	122
77.1606(c)	89
77.502	87

Surface M/NM Violations	
30 CFR Part 56	
Total- 22,842	
Top 5 Standards Issued	
Standard	# Issued
56.20003(a)	1981
56.12004	1383
56.14100(b)	1293
56.14107(a)	1269
56.14112(b)	1099

Training Violations	
30 CFR Part 48	
Total- 139	
Top 5 Standards Issued	
Standard	# Issued
48.31(a)	17
48.25(a)	12
48.26(a)	11
48.29(a)	8
48.5(a)	7



District Resources Available to Stakeholders: Educational Field & Small Mines Services

Training Plan Development

Training Certificate 5000-23

Part 46 Training Records / Certificates

Training Providers, State Grantees

EFSMS works closely with MSHA District enforcement offices to identify industry needs and provide assistance to mines with safety and health issues. EFSMS provides assistance to the mining community through outreach initiatives, which are developed in collaboration with MSHA and the mining industry to address current or trending accidents in the mining community. These programs help mine operators develop or revise training, safety and health programs to address the conditions and hazards specific to their mines. Additionally, EFSMS provides assistance with developing training plans, instructor training (train-the-trainer), evaluating instructors.



[Contact Us](#)

[Education and Training](#)

Mine Safety and Health Administration

EDUCATIONAL FIELD AND SMALL MINE SERVICES

Educational Field and Small Mine Services (EFSMS) provides assistance in the development and improvement of the health and safety programs of mine operators and contractors in the mining community. The EFSMS specializes in training programs tailored to reduce the number of injuries and illnesses in the mining industry. Additionally, EFSMS evaluates industry instructors to ensure miners receive quality and effective training.

EFSMS staff are located in 31 states and travel to mines and training centers to provide assistance that will strengthen and modernize training.

National Data for District Stakeholder Meeting

Recurring Fatal Accidents CY 2018 to 2023

Work Activity – The Top 10 Work Activities that resulted in mine related fatalities over the past 6 years, CY 2018 to 2023 are illustrated in the following slides.



- **Belt Conveyors – December 23, 2019,** a miner was attempting to remove a splice pin from a 72-inch mainline conveyor belt. A belt clamp and ratchet-style chain come-along failed, releasing stored energy and causing the belt to shift upward and pin the miner against the frame of the belt tailpiece.
- **Best Practices - Identify, isolate, and control stored energy.**
- **Check belt clamps and blocking equipment are substantial and properly rated.**
- **Conduct examinations to identify hazards and items needing maintenance or repair.**
- **Ensure miners are trained on safe work procedures, particularly non-routine jobs.**
- **Properly block belts to secure components against motion.**
- **De-energize power and lock and tag the visual disconnect.**
- **Communicate and ensure everyone is clear before re-starting the belt.**

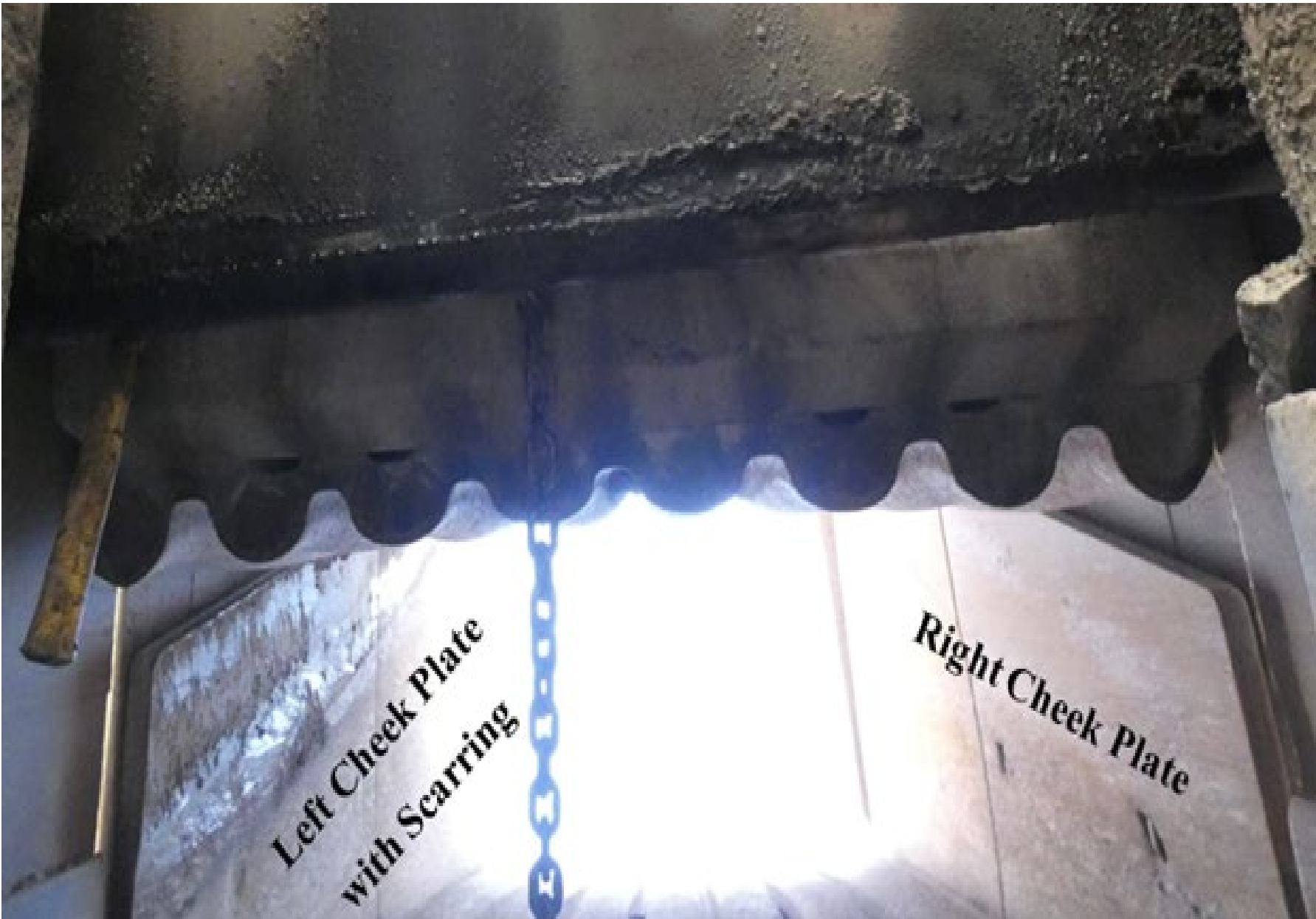
Bulldozers – Feb. 26, 2023, contract miner died while operating a bulldozer. The bulldozer traveled over the edge of an access road and rolled 375 feet down an embankment, ejecting miner from the operator’s cab.

- **Best Practices - Always wear a seatbelt when operating mobile equipment.**
- **Examine ground conditions before beginning work and as conditions change.**
- **Task train miners on safe work procedures, and to identifying hazards.**
- **Always be aware of your position relative to roadway edges and benches.**



Crushers – Jan. 4, 2023, a miner was fatally injured performing maintenance inside a jaw crusher. The pitman assembly (moving jaw) rotated, pinning the miner against the crusher housing.

- **Best Practices - Block machinery components against motion before beginning maintenance.**
- **Position miners in a safe location, away from potential pinch points.**
- **Conduct repairs according to manufacturer's recommendations.**
- **Develop procedures for working safely in confined spaces.**





Kobelco SK500
Excavator

Caterpillar D8T
Bulldozer

Excavators – June 9, 2023, a contract truck driver died when an excavator bucket struck him. The excavator was used to assist unloading a fuel tank from a lowboy trailer when the excavator bucket suddenly moved.

- **Best Practices - Do not place yourself in a position that exposes you to hazards.**
- **Follow the manufacturer's warning and engage safety lock mechanisms before getting out of the operator's seat.**
- **Train miners in safe work procedures and hazard recognition before working around moving equipment.**

Front-end Loaders (FEL)

Dec. 15, 2020, a miner was fatally injured while changing the rear tire on a FEL. The victim was underneath the FEL when it fell.

- **Best Practices - Securely block raised equipment to prevent movement. Do not rely solely on hydraulic jacks.**
- **Perform equipment maintenance requiring lifting or raising equipment on level and solid ground.**
- **Follow the manufacturer's recommendations for changing tires.**
- **Ensure all workers are trained in safe operating procedures.**



Trucks - May 22, 2023, a miner died when the haul truck overturned, as the edge of the bank at a dump point gave way. The haul truck landed on the roof of the cab.

- **Best Practices - Conduct ground condition examinations before work begins and maintain throughout the shift.**
- **Dump material from a safe distance and push the material over the edge with a bulldozer.**
- **Construct substantial berms as a visual indicator to prevent overtravel and clearly mark.**
- **Never load material from the toe of a stockpile below an active dump point. This may lead to an steep and unstable slope.**
- **Wear a seatbelt. Install advanced systems such as proximity devices.**



**Hoppers – Nov. 5, 2022,
a miner died when he
was engulfed in a coal
stockpile.**

- **Best Practices - Equip grates and feeders with mechanical clearing devices and visibly mark the location.**
- **Train miners there is no travel allowed on stockpiles or near the toe of stockpile slopes.**
- **Make sure miners can be seen, heard, or can communicate with others when working alone under hazardous conditions.**
- **Proper examinations to identify and correct hazardous conditions from falling or sliding materials prior to allowing access to areas in or around grates and feeders.**



Personnel Carriers – Nov. 1, 2021, miner was fatally injured while traveling down mine slope. He lost control of a rubber-tired personnel carrier, crashing at the bottom of slope.

- **Best Practices - Remove equipment from service immediately when defects affecting safety are found. Ensure braking systems are effective.**
- **Conduct preoperational checks and weekly exams of mobile electrical equipment and correct any defects affecting safety.**
- **Maintain control and stay alert when operating mobile equipment.**
- **Maintain roadway conditions and operate mobile equipment at speeds consistent with road conditions.**



FALL OF PERSONS - January 30, 2023, a miner died while troubleshooting a belt conveyor when he fell through a 37-inch-long by 34-inch-wide hole created by the removal of a section of grating. The miner fell approximately 35 feet from the catwalk to the ground below.

Best Practices:

- Provide fall protection where there is a danger of falling and train miners on its proper use.
- Replace guarding/grating that protects temporary access openings as soon as completing work.
- Conduct proper examinations and immediately correct any unsafe conditions.

01 . 31 . 2023

Fall of roof/back and rib/side/highwall

March 20, 2022, miner died when he was struck by a roof fall in an intersection outby the retreat mining section. The roof fall was approximately 40 feet long, 18 feet wide, and five feet thick.

- **Best Practices - Conduct a visual examination of the roof, face, and ribs immediately before any work is started in an area.**
- **Be alert to changing roof conditions, especially during retreat mining.**
- **Train miners on how to identify hazardous roof and rib conditions.**



National Data for District Stakeholder Meeting

Recurring Fatal Accidents CY 2018 to 2023

There are 2 common threads with the majority of these fatalities just discussed – Training and Examinations.

Training

- Miners with 2 years or less experience at the mine and/or at the activity they were performing at the time of the fatal accident.

Top 5 training issuances:

30 CFR	
46.7	New task training - surface Part 46 mines
48.27	New task training - surface Part 48 mines
48.7	New task training - underground mines
46.5	New miner training - surface Part 46 mines
46.11	Site-specific hazard awareness training - surface Part 46 mines

National Data for District Stakeholder Meeting

Recurring Fatal Accidents CY 2018 to 2023

Examinations

- **Workplace exams** – Primarily involving bulldozers, haul trucks, excavators, hoppers, OTR trucks
- **Pre-operational exams** – Primarily of bulldozers, haul trucks, excavators, hoppers, OTR trucks
- **On-shift exams (surface coal)** – Primarily involving bulldozers, haul trucks, excavators, hoppers, OTR trucks
- **Ground condition exams** – Underground and surface

Stakeholder Presentations

Mosaic Fertilizer, LLC

Jon Heaser CSP, OHST

Safety Lead

Safety Program for Surface Mobile Equipment

February 12, 2024



mosaicco.com



Meeting Agenda

- Introductions
- History
- Existing Written Programs
- Program Development & Review
- Inspections
- Service
- Training
- Program Reviews
- Technology
- Audits
- Program Access
- Questions and wrap up



Introductions

Joe Alderdice

Senior Manager H&S, NA Mining

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Jon Heaser

Safety Lead

jon.heaser@mosaicco.com

Mosaic History

Global Fertilizer Company Est. in 2004

Publicly traded

- Combination of several companies including:
 - IMC Global
 - Cargill
 - CF Industries
 - Predecessor companies





Mosaic History

Merging of companies resulted in merging of Programs.

- 8 US mines reduced to 4
- 6 US fertilizer facilities reduced to 4

Contractors shared



Mosaic History

Similar risks and risk profiles across sites

Internal corporate compliance audits

- Repeated deficiencies at each location
- Developed 1 set of governing programs/procedures
 - Applicable to Mosaic and Contractors
 - MSHA and OSHA
 - Compliance, Best Practices, Incident mitigation



Programs

- Aerial Lifts
- Powered Industrial Trucks (Forklifts)
- Draglines and Ground Control
- Heavy Mobile Equipment
- Mobile Cranes
- Railroads
- Vehicles and Roadways



Program Development

Team representation

- Health & Safety Subject Matter Expert (SME)
- Management SME
- Hourly Representatives
 - minerals
 - concentrates
- Procurement
- Manufacturer/Vendor Representative
- Technical Expert (Contractor)





Inspections

- Daily / Pre-use
 - Mobile App / Paper
- Periodic or Frequent (Preventative)
- Depending on use and/or environment
- Annual

Vehicle Daily Checklist



New Vehicle
Inspection

New Personnel
Carrier Inspection



Service

- Mobile Equipment maintenance support from 3rd party w/ oversight by Mosaic
- Utilize Maintenance Mgmt. Software
 - Periodic or Frequent depending on use and/or environment
 - Manufacturer's Recommendations
 - Reactive – pre-use inspection and use issues



Training

Initial - classroom

On the Job Training (Task)

Refresher

- Set schedule per program requirements
- Post incident

Program Review

Project Management Office

- Governance and oversight of Mosaic H&S programs
 - Perform program reviews based on established timetable or post incident review
 - Utilize change management process for program changes related to compliance, incident takeaways, or best practice adoption



Technology

- Black Box
- Sleep Deprivation
- Equipment Interlocks
- Proximity Detection including high voltage
- Drones / Helicopters
- Dragline Monitoring





Technology

- White Noise – Back up Alarms
- Lytx Drivecam
- Cameras
- Remote control operations – Bull Dozers
- Hi Vis flags / Flashers / seat belt covers



Field Verification Audits

- Several methods of ensuring compliance / accountability
 - LEGO's – Leaders Engage / Go Observe
 - Action based audits performed by management on EE's & Contractors
 - Life Critical Inspections
 - Series of standardized forms with specific questions to evaluate compliance
 - 300 & 3 Observations
 - Shared observation tool between Mosaic & Contractors
 - Action Based Safety
 - Peer to peer observations (frontline EE driven)

← Questions ▾

Mobile Equipment

16 Is the pre-operation checklist completed and on the equipment?

Unsafe NA Safe

Guideline Photos Comments Severity of Findings

17. If any deficiencies have been noted,...

18. Are seatbelts being worn properly?

19. If passengers are riding in the bed, a...

20 Is a 5 lb or above fire extinguisher av...

Save Pages •

← Compl...



Accessing Mosaic Safety Programs

Mosaic Contractor Website

<https://contractorsweb.mosaicco.com/>

Mobile App

<ehsmobile.mosaicco.com>



Questions



Caterpillar Equipment Company

Sal Angelone

Caterpillar Representative for Driver Safety Program

Surface Mobile Equipment Safety Program

Mine Safety and Health Administration

Patricia Silvey- Deputy Assistant Secretary for Operations

Timothy Watkins- Deputy Administrator



Safety Program for Surface Mobile Equipment - Standard

Purpose

- The purpose of the standard is to promote and support a positive safety culture and improve miners' safety at the mine.

Scope

- All production operators and part 45 independent contractors must have a written safety program for surface mobile equipment.
- The standard applies to surface mobile equipment at surface areas of underground coal mines and metal and nonmetal mines.

Safety Program for Surface Mobile Equipment - Standard

Part 45 Independent Contractors

- Part 45 independent contractors have the same responsibilities as production operators.
- MSHA expects most independent contractors will develop and implement their own safety program or integrate their safety programs into the production operators' safety program.
- MSHA expects production operators and part 45 independent contractors to communicate and coordinate with each other on their respective safety programs.

Safety Program for Surface Mobile Equipment - Standard

Surface mobile equipment includes:

- Wheeled, skid-mounted, track-mounted, or rail-mounted equipment capable of moving or being moved, and any powered equipment that transports people, equipment, or materials.
- The rule excludes belt conveyors and any manually powered tools such as wheelbarrows, hand carts, push carts, welding carts, cylinder carts basic hand trucks, or dollies.

Safety Program for Surface Mobile Equipment - Standard

Requirements for Written Safety Program

- A written safety program includes actions taken to:
 1. Identify and analyze hazards and reduce the risks related to the movement and operation of surface mobile equipment.
 2. Develop and maintain procedures and schedules for routine maintenance and non-routine repairs for surface mobile equipment;
 3. Identify currently available and newly emerging feasible technologies that can enhance safety at the mine and evaluate whether to adopt them; and
 4. Train miners and other persons at the mine to identify and address or avoid hazards related to surface mobile equipment.
- Production operators and part 45 independent contractors must solicit input from miners and their representative in developing and updating the written safety program.

Safety Program for Surface Mobile Equipment - Standard

Requirements for Written Safety Program

- Identify and analyze hazards and reduce the risks related to the movement and operation of surface mobile equipment.

A responsible person must evaluate and update the safety program at least annually or as:

- mining conditions or practices change that may affect miners safety or health;
- accidents or injuries occur; or as
- surface mobile equipment changes or modifications are made.

Safety Program for Surface Mobile Equipment - Standard

Responsible Person

- Production operators and part 45 independent contractors must designate at least one person to evaluate and update the safety program.
- The responsible person must have experience and knowledge about mining conditions and processes necessary to evaluate and update the written safety program.
- Multiple persons can be designated as a responsible person.

Safety Program for Surface Mobile Equipment - Standard

Requirements for Written Safety Program

- Develop and maintain procedures and schedules for routine maintenance and non-routine repairs for surface mobile equipment.
 - Procedures and schedules for maintenance and repairs can reflect or reference existing procedures and schedules.

Safety Program for Surface Mobile Equipment - Standard

Requirements for Written Safety Program

- Identify currently available and newly emerging feasible technologies that can enhance safety at the mine and evaluate whether to adopt them.
 - Consider feasible technologies that are capable of being used successfully at the mine.
 - Demonstrate compliance by:
 1. attending industry meetings, or NIOSH and/or MSHA meetings that discuss available or newly emerging technologies;
 2. reviewing equipment vendor material; or
 3. attending mine safety and health conferences that include vendor exhibits and equipment demonstrations.

Safety Program for Surface Mobile Equipment - Standard

Requirements for Written Safety Program

- Train miners and other persons at the mine to identify and address or avoid hazards related to surface mobile equipment.
 - Safety program training may be integrated into part 46 and part 48 training plans.

Safety Program for Surface Mobile Equipment - Standard

Records and Inspection

Production operators and part 45 independent contractors must:

- make the written safety program available for inspection by MSHA, miners, and miners' representatives; and
- provide copies, upon request.

Safety Program for Surface Mobile Equipment - Standard

Compliance Assistance

- MSHA will work with industry, labor, and other stakeholders to develop written safety program templates.
- MSHA will also provide the mining community training materials, best practices and guidance, and technical assistance.
- All compliance assistance materials will be posted on MSHA's website.

Safety Program for Surface Mobile Equipment - Standard

Compliance Dates

- The final rule became effective on January 19, 2024.
- MSHA will enforce the standard on July 17, 2024.

Discussion/Q & A

Open Discussion

Closing