Hazard Recognition Challenge - Heatmaps

Full List of Heatmap Areas of Interest

Challenge 1 (Shop)

Heatmap Area of Interest: Housekeeping

- Challenge takers may consider this area of the shop to be a housekeeping hazard. Poor housekeeping can lead to injuries because mineworkers can trip and fall over clutter and unattended spillage. Use the NIOSH Toolbox Talk to discuss the adequacy of housekeeping at your site, to identify situations where poor housekeeping can increase risks to workers, and to determine who is responsible for cleaning up in those situations.

Heatmap Area of Interest: Parts Washer Lid Left Open

- Parts washers typically contain highly flammable cleaning solvents and can be a hazard if left open. Be sure to check your equipment installation, operation, and maintenance (IOM) manuals for best practices on use and care. Improper storage, use, and handling of flammable and combustible liquids can result in fires or explosions. Use the MSHA toolbox talk to discuss safety issues related to storage of flammable liquids.

Heatmap Area of Interest: Missing Wheel Chocks on Skid Steer Loader

- According to the Code of Federal Regulations, mobile equipment must be wheel-chocked if it is parked on a grade [30 CFR 56/57.14207]. However, the slope of a grade is subjective and often difficult to determine without taking a measurement. Because of this, many mines have site-specific policies that state that all mobile equipment must be wheel-chocked. It is always a best practice to set the parking brake and securely block equipment and components against hazardous motion while performing work or maintenance work. As reported by an MSHA fatality alert, a contract mechanic was fatally injured performing a maintenance task on a front-end loader that was parked on a slight grade with no wheel chocks in place.

Heatmap Area of Interest: Lunchroom Door Left Open

- The door to the shop lunchroom has been left open and may lead to inadvertent exposure to dust, toxic materials, or other agents in a food consumption and preparation area. To prevent adverse health effects from exposure to these agents, it is a best practice to physically separate the lunchroom area from work areas and prohibit the storage of toxic materials near food and beverages.

Heatmap Area of Interest: Flammable Materials Near Welding Area

- These flammable materials are near a welding area. To prevent fires while welding, the American Welding Society suggests workers inspect their work area before welding begins, keep flammables from the work area, cover holes and cracks, wear appropriate personal protective equipment (PPE), and keep a fire extinguisher nearby.

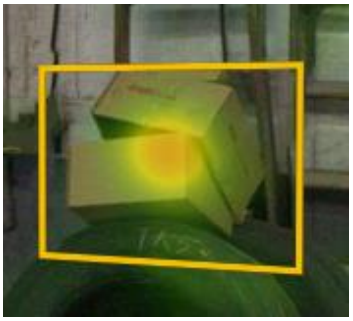
Heatmap Area of Interest: Exhaust Hood Not Stored Away

- This exhaust hood has not been stored away from potential foot traffic. Use the NIOSH Toolbox Talk to discuss the adequacy of housekeeping at your site, to identify situations where poor housekeeping can increase risks to workers, and to determine who is responsible for cleaning up in those situations.

Heatmap Area of Interest: Fire Extinguisher Blocked

- A clear path should be maintained to all fire extinguishers. When stored and used properly, fire extinguishers can save lives and property by being used to put out or control a small fire until help arrives. The Occupational Safety and Health Administration (OSHA) provides tips on placement and spacing so that fire extinguishers are readily accessible in an emergency situation.

Heatmap Area of Interest: Housekeeping



- Good housekeeping is critical for mineworker safety. Use the NIOSH Toolbox Talk to discuss the adequacy of housekeeping at your site, to identify situations where poor housekeeping can increase risks to workers, and to determine who is responsible for cleaning up in those situations.

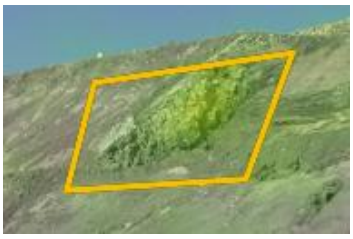
Challenge 2 (Plant)

Heatmap Area of Interest: Housekeeping

- Good housekeeping is critical for mineworker safety. Mine operations can use the NIOSH mobile app ErgoMine for suggestions on ways to prevent slips, trips, and falls of mine maintenance workers. According to data analyzed by NIOSH, from 2008 to 2017, 28.7% of all nonfatal lost-time accidents in the metal/nonmetal industry were slips, trips, or falls.

Challenge 3 (Pit)

Heatmap Area of Interest: Ground Control (Area 1)



- Mineworkers are at risk of being struck by falling material from an unstable highwall. The unstable condition should be reported immediately so a qualified person can inspect the area to certify it is safe or to initiate corrective action to avoid fatalities like this one reported by MSHA in 2016. Berms should be constructed to catch any small loose material that could otherwise impact the working area.

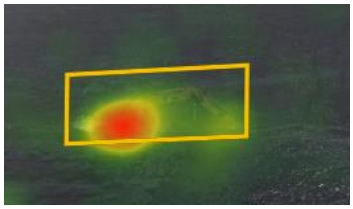
Heatmap Area of Interest: Ground Control (Area 2)

- Mineworkers are at risk of being struck by falling material from an unstable highwall. The unstable condition should be reported immediately so a qualified person can inspect the area to certify it is safe or to initiate corrective action to avoid fatalities like this one reported by MSHA in 2016. Berms should be constructed to catch any small loose material that could otherwise impact the working area.

Heatmap Area of Interest: Dust Around Plant Area

- Respirable dust poses a significant health hazard to mineworkers. At surface mines, rock drilling, blasting, and crushing are a major source of dust as well as the operation of heavy equipment such as loaders, shovels, dozers, draglines, and haul trucks. According to the Centers for Disease Control National Institute for Occupational Safety and Health (CDC NIOSH), millions of U.S. workers are exposed to dangerous levels of respirable crystalline silica in a variety of industries including construction and mining. Mine operations can use the NIOSH information circular Best Practices for Dust Control in Metal/Nonmetal Mining for suggestions on ways to prevent dust exposure.

Heatmap Area of Interest: Dust Around Excavator



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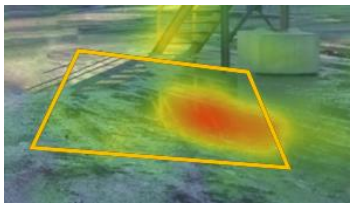
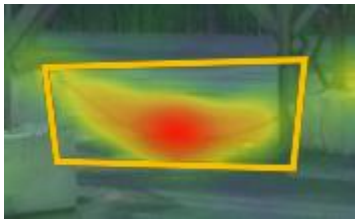
Challenge 4 (Roadway)

Heatmap Area of Interest: Puddle Near Walkway



- This puddle may be a slip hazard. Mine operations can use the NIOSH mobile app ErgoMine for suggestions on ways to prevent slips, trips, and falls of mine maintenance workers. According to data analyzed by NIOSH, from 2008 to 2017, 28.7% of all nonfatal lost-time accidents in the metal/nonmetal industry were slips, trips, or falls.

Heatmap Area of Interest: Tripping Hazard



- The hose in the area may be a trip hazard. Poor housekeeping can lead to injuries because mineworkers can trip and fall over clutter, unattended tools, and equipment. Use the NIOSH Toolbox Talk to discuss the adequacy of housekeeping at your site, to identify situations where poor housekeeping can increase risks to workers, and to determine who is responsible for cleaning up in those situations.

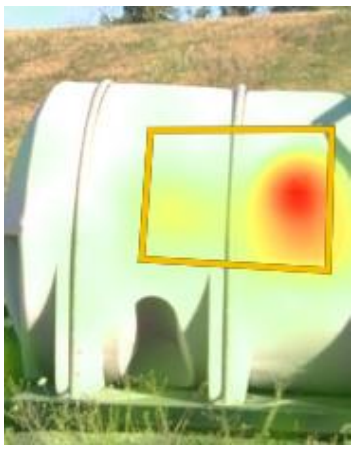
Heatmap Area of Interest: Personal Protective Equipment

- Mineworkers must wear appropriate personal protective equipment to prevent exposure to a chemical, physical agent, or physical trauma. NIOSH's Personal Protective Technology Program has estimated that 20 million workers use personal protective equipment (PPE) on a regular basis. Visit the program's website to learn more about how workers use PPE to protect themselves from hazards on the job.

Heatmap Area of Interest: Wheel Chocks on SUV

- According to the Code of Federal Regulations, mobile equipment must be wheel-chocked if it is parked on a grade [30 CFR 56/57.14207]. However, the slope of a grade is subjective and often difficult to determine without taking a measurement. Because of this, many mines have site-specific policies that state that all mobile equipment must be wheel-chocked. It is always a best practice to set the parking brake and securely block equipment and components against hazardous motion while performing work or maintenance work. As reported by an MSHA fatality alert, a contract mechanic was fatally injured performing a maintenance task on a front-end loader that was parked on a slight grade with no wheel chocks in place.

Heatmap Area of Interest: Unlabeled Tank



- This unlabeled tank may put mineworkers at risk of chemical hazards. According to MSHA standards, mine operators must develop, implement, and maintain a written HazCom program. Operators must identify chemicals, make a hazard determination, ensure that containers of hazardous chemicals have labels, and have and make available a Material Safety Data Sheet (MSDS) for each hazardous chemical used or produced at the mine [30 CFR Part 47].

Heatmap Area of Interest: Ladder Safety and Safe Access

- This ladder may not be designed to provide safe access. Mine operators must maintain safe access to all working places and identify where fall protection is needed. Additionally, according to MSHA standards, fixed ladders should project at least three feet above landings, or substantial handholds must be provided above the landings [30 CFR 56/57.11006].