

Spring Hazard Identification

The hazards associated with the changing seasons and the coming of spring impact surface mines and surface facilities with little regard to the commodities being mined. Historically surface mining has shown itself to be significantly safer than underground mining, both in terms of accident frequencies and severities. However, as surface mining has contributed an ever greater share to total coal production so has its contributed to the overall industry accident injury experience increased. Consequently, significant opportunities to reduce fatalities and injuries exist in emphasizing the safe operation and maintenance haul trucks, water trucks, rubber tired end loaders and other surface mining machinery.

- Frequent freeze / thaw loosen once solid rock on highwalls, road cuts and portal face ups. **Heightened awareness by mine managers and MSHA inspectors and special attention to work area examination, immediate isolation and marking of hazard areas and removal of loosened material are a must for safety.**
- Structural fills of mine refuse, fills for constructing impoundments, and fills on which to build facilities, roads or stockpiles cannot be properly constructed of wet / frozen materials and are loosened by frequent freeze / thaw. **Mine inspectors and mine managers must look to the long term safety of the mines and public and assure the designed requirements for the placement and compaction of fill materials as outline in approved plans and good engineer practice are being satisfied. Heavy precipitation can and should necessitate suspending refuse disposal and construction of structural fills.**
- Sudden thaw and precipitation all too often overwhelm drainage systems, damage road surfaces, plug culverts, fill settling ponds and overwhelm designed capacities and spillways at impoundments. **Every MSHA district and every mine operator should have a plan in place to examine and monitor high risk impoundments, settlement basins, culverts and diversion ditches during unusual storm event. Common sense says that these facilities should be examined and deteriorated capacity restored before the late spring and summer storms occurred**
- Muddy roads, deferred repairs or construction of berms, damaged dump points or fill areas compromised by thawing of frozen fill or excess moisture can pose serious operating hazards for haulage equipment. These conditions also increase maintenance demands when

field maintenance is inconvenient and difficult. **Muddy roads and clogged ditches are not “just” an inconvenience, they can be killers. Mine management and MSHA must assure road are safe for travel. Travel frequency and speed must be reduced when ever and wherever road maintenance is needed or underway. Higher designed road gradients are more seriously impacted by bad weather and delayed or inadequate road maintenance and any equipment operation must recognize the increased difficulty in maintaining control. Again, further reductions in traffic and speed may be the only practical action while and until road conditions are improved.**

- **Pre-operating examinations of mobile equipment and repairs of equipment are complicated by bad weather and accumulations of mud. Frequently repairs must be made in the field and under extremely adverse conditions. MSHA inspectors and mine managers must continually emphasize the need to plan work and prepare work sites so that repairs can be made efficiently and safely. Some delay in stating work is far better than injuries or poorly executed repairs.**
- **Haul trucks experience increased wear braking systems and serious degradation of operator visibility due to mud spatter on windshields, head lights, and brake and tail lights. Falling hazards associated with mounting and dismounting trucks to place tarps and/or conduct other activities, increases where roads and step surfaces are muddy. MSHA inspectors and mine management must emphasize frequent periodic brake inspection and continuous removal of mud spatter to equipment operators and contract haulers as and essential part of an effective safety program. Stations for cleaning windshields and lighting systems or to remove accumulated mud before trucks return to public highways may be necessary where road maintenance cannot fully address the problem.**
- **High winds, heavy precipitation and accumulations of mud or spilled coal all contribute to overloading mine structures such as conveyor galleries, preparation plants, transfer towers and storage facilities. In addition, poor weather often delays or inhibits good house keeping, accelerates corrosion and increases mechanical damage by equipment operators. All of the preceding can erode design safety factors to the point of structural failure. MSHA inspectors and mine management are the first line defense in identifying deteriorating structure and assuring appropriate repairing are made before structures fail. Mine examiners must concern themselves with reporting excessive loading , mechanical damage, cracked or failed welds, missing fastener \ broken nuts and bolts, excessive rust / corrosion, cracked or damaged concrete**

foundations and floors or masonry or poured walls. While structural failures are rare, the potential for serious injury and death are very real.

None of these areas of concern are new or entirely unique to spring. However, taking these preventative actions can be an opportunity for mine operators and MSHA to work together in preventing injury accidents, improve mine examination and maintenance practices and prevent serious production delays. The Safety Division has prepared a series of information and web site access packages for:

- Strip / Surface Mines
- Preparation Plants
- Surface facilities at Underground Mines
- Auger / Highwall Miner Operations, and
- Impoundments