



Dust Control Parameters for

Special Mining Situations

Special Mining Situations

- In-Mine Construction Plans
- Seam-to-Seam Slope Construction Plans
(slopes that originate in underground workings and take mining operations from one seam to another)
- Sandstone Channel or Washout Plans

Overall

- All three have parameter requirements on bit maintenance
- All three have parameter requirements on water spray configurations and spray maintenance
- Scrubber use has been discouraged in construction plans
- Scrubber use has not been allowed in Slope and Sandstone Channel Plans

In-Mine Construction

- Belt Channels
- Overcasts
- Grading Bottom
- Shearing Ribs
- Rehab of Old Works

Requested Parameters...

- Dust control parameters to protect employees doing construction activities
- Description of equipment used for construction work (e.g. continuous mining machine)
- Description of the ventilation including air direction, volume of air, velocities, entry height and width
- Statement that no one will be working downwind of construction activity
- Statement that construction crew will not be working in the return air of an actively producing mechanized mining unit (MMU)
- If a continuous mining machine is utilized to cut material, a minimum number of sprays and water pressure (PSI)
- Location and intervals of methane tests

Both Seam-to-Seam Slope and Sandstone Channel Plans

- Require operator to meet with MSHA
- Review hazards involved & explain Agency concerns
- Review operator's initial draft and provide input from each technical group involved
- Result in the activation of a MMU requiring requisite sampling by MSHA and the operator
- Recommend pre-project chest x-rays
- Subsequently meet with crews on site
 - Why we asked for the parameters in place
 - Recommend respirator use
 - Recommend chest x-ray

Seam-to-Seam In-Mine Slopes

- Developed under Part 75
- Electrical Group has overall oversight (as in Surface-to-Seam slopes)
- Initiated with group meeting of all involved parties (operator and technical groups). Operator presents rough draft.
- Routed through several technical groups:
 - Roof Control
 - Ventilation
 - Health
 - Impoundments (for blasting plan)

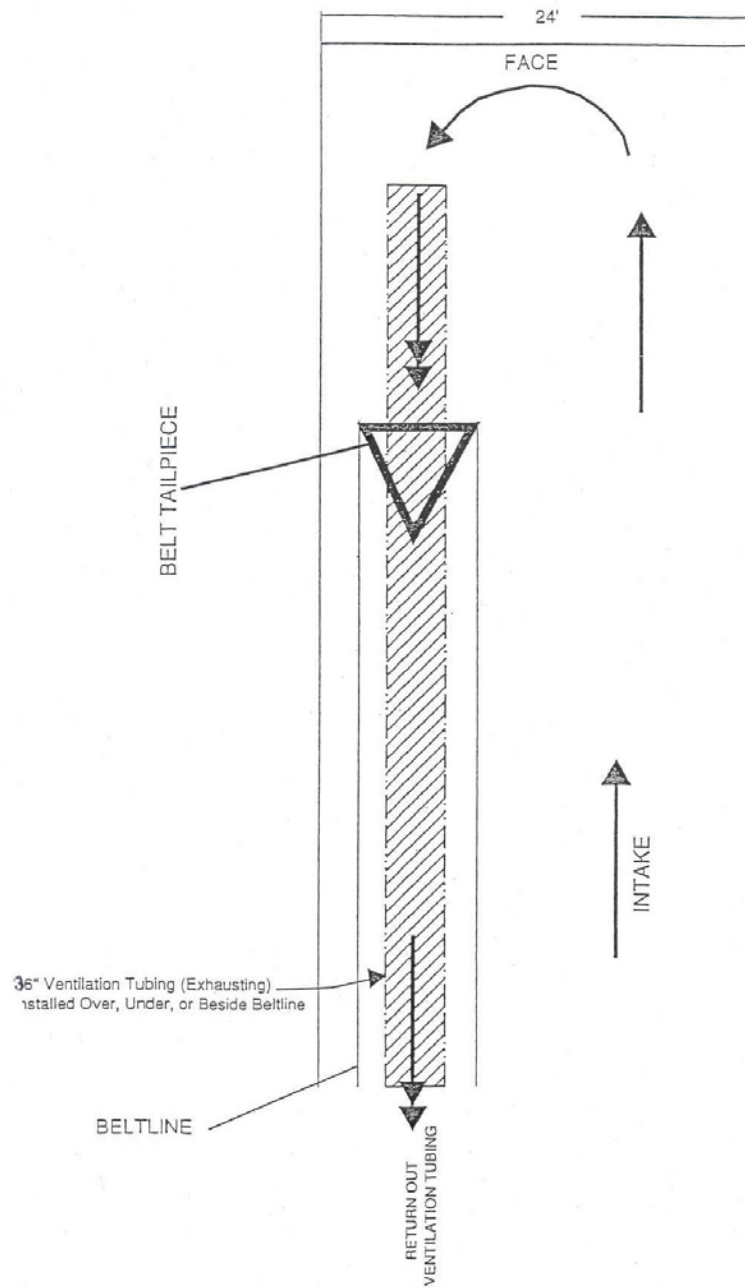
To date slope construction has consisted of...

- Drilling and blasting rock faces
- Loading accomplished with continuous mining machine
- Trimming (dressing) ribs and roof accomplished with continuous mining machine
- Set of equipment assigned a mechanized mining unit (MMU) number for the duration of the project
- MMU abandoned upon completion of the project

Minimum Parameters Required

- Meet requirements of Part 75 (vs Part 77); assigned an MMU number
- Auxiliary fan with exhaust tubing in faces (minimum of 9,000 cfm)
- No one down wind of cutting, loading, mining, or drilling operations
- Utilize wet drilling (or dust collection system)
- Wet down muck prior to load out
- Continuous miner operator to be located outby end of tubing

TYPICAL SLOPE VENTILATION



MSHA ID 46-

STATE ID U-50.

MSHA Inspector Dust Sample Results

Mine ID: 4608808 Current Operator: Spartan Mining Co., Inc.

Please Note: Spartan Mining Co., Inc. has been the current operator since 11/1/1999

Concentrations greater than 2.0 mg are shown in Red

Date	Cass. No.	Entity No.	Job Code	Initial Weight	Final Weight	Concentration	Sample Type	Sample Time	Tons Produced	Average
8/18/2004	57498913	0050	036	497.24	497.31	0.09	1	480	80	0.076
8/18/2004	57498962	0050	046	496.71	496.77	0.08	2	480	80	
8/18/2004	57498917	0050	050	500.10	500.15	0.06	2	480	80	
6/15/2004	57499111	0050	036	498.09	498.16	0.04	1	480	80	0.013
6/15/2004	57499101	0050	046	497.05	497.09	0.00	2	480	80	
6/15/2004	57499048	0050	050	496.90	496.93	0.00	2	480	80	
5/12/2004	57499334	0050	036	497.62	497.76	0.19	1	480	81	0.18
5/12/2004	57499328	0050	046	496.85	496.98	0.18	2	480	81	
5/12/2004	57499346	0050	050	500.04	500.16	0.17	2	480	81	

Note: MSHA Total Average 0.089 mg/m³

Operator Sample Results

Cassette	Date	Concentration	Usage
50741871	04/27/2004	0.201	COMP (0.705 average)
50712526	04/05/2004	0.178	COMP
50712521	04/02/2004	1.864	COMP
50712482	03/29/2004	1.095	COMP
50712492	03/27/2004	0.189	COMP
50741827	07/16/2004	0.227	COMP (0.212 average)
50741815	07/15/2004	0.153	COMP
50741808	07/14/2004	0.031	COMP
50741830	07/13/2004	0.605	COMP
50741807	07/12/2004	0.044	COMP
50755985	10/13/2004	0.034	COMP (0.064 average)
50755981	10/11/2004	0.081	COMP
50755996	10/11/2004	0.051	COMP
50741876	10/06/2004	0.033	COMP
50755993	10/06/2004	0.122	COMP (0.327 total avg)

Sandstone Channel or Washout

- Coordinated by Health Group
- Impoundment Group involved in approval of blasting plans
- Ventilation Groups involved in projections and any ventilation changes
- Roof Control Group determines if any plan changes were necessary, particularly if entry size varies

Example Mine: Developing through Sandstone Channel

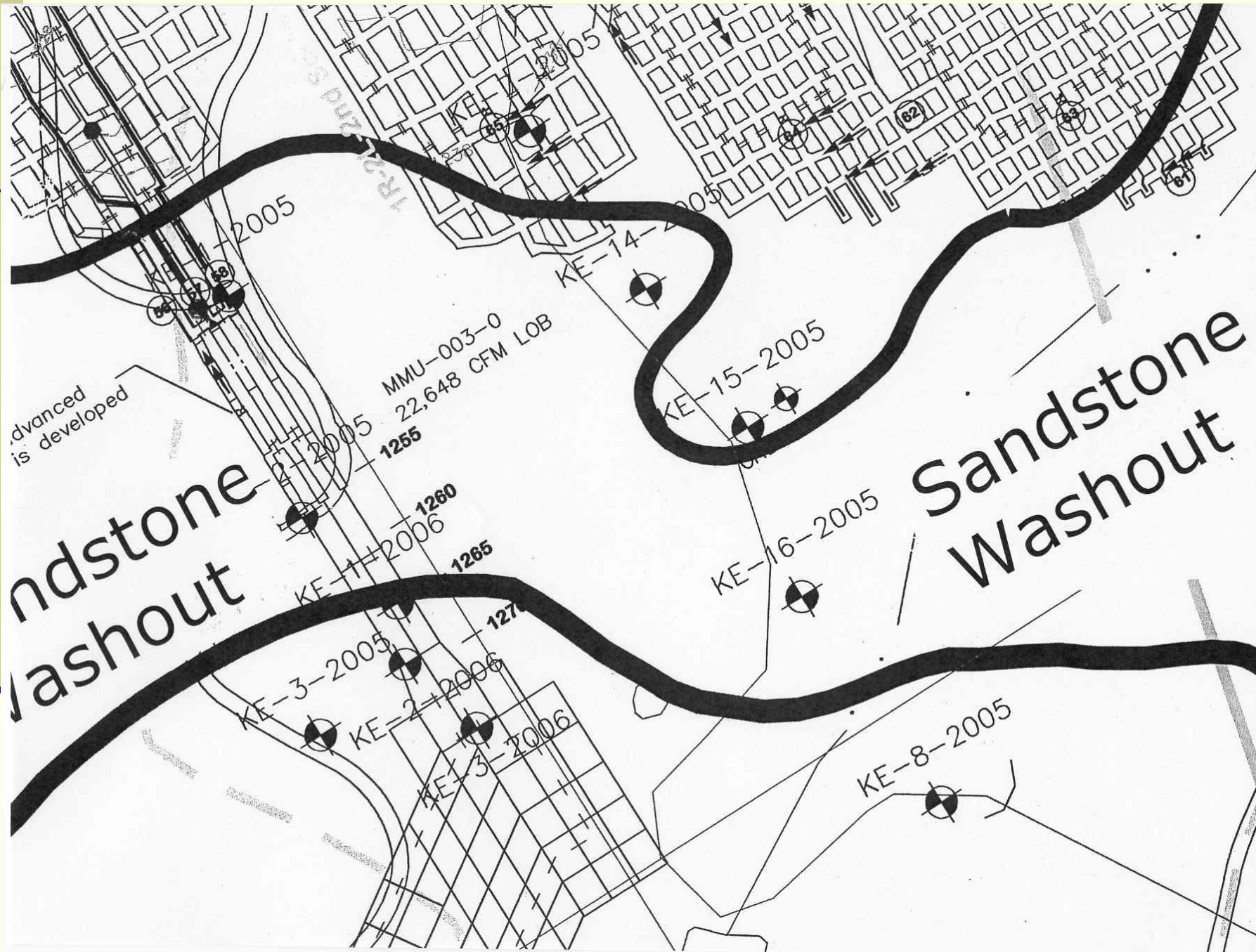
- Originally projected to be three entries developed 1200 to 1800 feet through sandstone channel
- Quartz analysis later revealed strata consistently ranged from 40 to 60 % silica
- Need to mine through channel first reported by roof control specialist. Operator contacted by Health Group
- MMU plan developed specifically for this project
- Blasting plan also developed specifically for this project

To date entries developed through sandstone channels consisted of...

- Drilling and blasting rock faces
- Loading accomplished with continuous mining machine
- Trimming ribs and roof accomplished with continuous mining machine
- Set of equipment assigned an mechanized mining unit (MMU) number for the duration of the project
- MMU abandoned upon completion of the project

Minimum Parameters Required

- Auxiliary fan with exhaust tubing in each face (minimum 9,000 cfm)
- No one down wind of cutting, loading, mining, or drilling operations
- Utilize wet drilling (or dust collection system)
- Wet down muck prior to load out
- Miner operator to be located outby end of tubing



Sandstone Channel

- Actual project took 18 months
- Operator provided approximately 13,000 cfm at the end of the tubing
- Each employee was sampled once per week through special arrangement with Pittsburgh Dust Lab
- In 18 months, two samples exceeded 1 mg/m³; the remainder were in the 0.1 to 0.4 mg/m³ range (300 approx.) The entity was on reduced standards as low as 0.3 mg/m³

As this project approached completion ...

MSHA personnel visited the mine and reviewed sample history with both management and the crew working the channel entry construction. Conveyed MSHA's appreciation for the efforts taken to control silica dust levels during this project and requested feedback on the parameter requirements.

Both operator and miners involved indicated that while they had initially resisted using auxiliary fans, they were grateful that MSHA insisted on their use. They indicated there was a “world of difference” in the level of dust to which they were exposed when using normal ventilating curtain compared to auxiliary fan tubing.