MSHA Mine Emergency Operations
by
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MSHA Mine Emergency Operations

Current Coal Mine Emergency Unit Information

- Fully Equipped Mine Rescue Stations for Coal are Maintained in Pittsburgh, Beckley, and Price

- The Coal Unit is Comprised of About 30 Members who Practice Four Days each Quarter.

Current Metal and Non-Metal Mine Rescue Team Information

- Mine Rescue Station is located in Beckley
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Mine Rescue Team Trucks Located in Beckley and Price

Trucks Contain Support Equipment for the Mine Emergency Unit
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Pittsburgh Station – National Headquarters

New Command Vehicle – State of the Art Communications

Under Construction
MSHA Mine Emergency Operations

Pittsburgh Station – National Headquarters

Mobile Monitoring Vehicle
Infra-red Detectors
MSHA Mine Emergency Operations

Pittsburgh Station – National Headquarters

Mobile Laboratory
Chromatographs
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Seismic Location System

*Upgrades Underway*
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Borehole Camera System
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Modified (Permissible) Remotec Andros Wolverine Robot
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Rapid Response Vehicle

Satellite Phone, Mobile Phone, Computer Station, GPS, CD, Secure Radio
MEU Mobilization From Bruceton, PA

Timeline in Hours

MSHA is Notified of Incident
0

Bruceton, PA

Timeline in Hours
MEU Mobilization From Bruceton, PA

MSHA is Notified of Incident
Initial Preparation Completed.
Ready to Deploy
Timeline in Hours

Bruceton, PA

Initial Preparation
MSHA is Notified of Incident
MSHA is Notified of Incident

Initial Preparation Completed. Ready to Deploy

MEU Mobilization From Bruceton, PA

Timeline in Hours

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
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Beckley Station

Command Vehicle
MSHA Mine Emergency Operations

Beckley Station

PEIR Communication Vehicle
Truck Under Construction
MSHA Mine Emergency Operations

Beckley Station

Urban Search and Rescue / Field Office Trailer
MSHA Mine Emergency Operations

Beckley Station

Under Construction

Rapid Response Vehicle

Satellite Phone, Mobile Phone, Computer Station, GPS, CD, Secure Radio
MEU Team Mobilization From Beckley, WV

Timeline in Hours

MSHA is Notified of Incident

0

Beckley, WV

Timeline in Hours
MEU Team Mobilization From Beckley, WV

Initial Preparation Completed. Ready to Deploy

Timeline in Hours

MSHA is Notified of Incident

0 1 2 3
MSHA is Notified of Incident

Initial Preparation Completed. Ready to Deploy

Timeline in Hours

MEU Team Mobilization From Beckley, WV

Beckley, WV
MSHA Mine Emergency Operations

Price Station / Denver Office

Command Center
MSHA Mine Emergency Operations

Price Station / Denver Office

Mobile Monitoring Vehicle
Under Construction
Infra-red Detectors
MSHA Mine Emergency Operations

Price Station / Denver Office

PEIR Communication Vehicle
Trailer Under Construction
MSHA Mine Emergency Operations

Price Station / Denver Office

Under Construction

Rapid Response Vehicle
Satellite Phone, Mobile Phone, Computer Station, GPS, CD, Secure Radio
MEU Team Mobilization From Price, UT

Timeline in Hours

MSHA is Notified of Incident
Initial Preparation Completed.
Ready to Deploy

Price, UT
MSHA is Notified of Incident

Initial Preparation Completed. Ready to Deploy

Timeline in Hours

MEU Team Mobilization From Price, UT
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WHAT ELSE?

1. Specialized Equipment
2. Training
3. Experience
What is MSHA looking for?

- Information from underground
- Gas readings
By the Numbers

Sanborn Creek Mine

CO Airfree and Oxygen

Carbon Monoxide Trend Upwards

By the Numbers

Dates:
- 4/2/99 0:00
- 4/4/99 0:00
- 4/6/99 0:00
- 4/8/99 0:00
- 4/10/99 0:00
- 4/12/99 0:00
- 4/14/99 0:00
- 4/16/99 0:00
- 4/18/99 0:00
- 4/20/99 0:00
- 4/22/99 0:00
- 4/24/99 0:00
- 4/26/99 0:00
- 4/28/99 0:00
- 4/30/99 0:00

By the Numbers

Carbon Monoxide and Oxygen Levels
Gas Readings

• In General;
  – An upward trend in methane or carbon monoxide is not positive.
  – Higher than normal concentrations of methane must be explained.
  – A stable trend may be positive
  – A downward trend may be positive
Thoughts

• If all personnel are safely withdrawn from the mine:
  – Wait 72 hours

• If the mine or a portion of the mine is sealed:
  – Wait 100 days
DO NOT CHANGE VENTILATION
 WITHOUT KNOWING THE FULL SITUATION AND BEING ABLE TO TAKE ONE STEP BACK
Know your Options

Look at the Numbers.
If it is too dangerous for Mine Rescue Teams, explore other options.
Start Drilling!!!
96 Hours
Establishing a Command Center

Distribute the information

WHO IS IN YOUR COMMAND CENTER?
Family Members are Brought in to Observe Drilling Operations
Media

From the local newspaper…

The Messenger
THURSDAY

Mine fire forces crews to evacuate

No one injured in Dotiki blaze, which defies efforts to extinguish

ST. AMANDA RICHARDSON
The Messenger Times Staff Writer

“Watt had an unexpected surprise”
Browning said. “Hopefully, it’s a clear call. Activity’s up in the mine and we’re trying to get the fire started.”

Browning noted that the fire was still burning on the morning of Wednesday, causing mine rescue efforts to be suspended.

Hopkins County Sheriff’s Deputy Richard Hicks monitors the smoke rising from the Dotiki Mine entrance. Wednesday. He was guarding the entrance road to the mine located near Neko. The fire was still burning Wednesday night (Messenger Photo, Lawerence Maripul)
Media

To National News…
Sampling Tube

Plan for the Worst!!!
Keep Looking at Options!!!
Learn What May Work and Its Limitations.

Beware of Salesmen Who Promise Everything.

From Inert Gas Foam to....
Identifying Necessary Resources
Mine maps help to guide the rescue efforts.
Identifying Necessary Resources

Dependent upon the type of emergency...

Water Inundation

Pumps, survey equipment
Identifying Necessary Resources

Some areas are so remote that it is necessary to fly in supplies.
Identifying Necessary Resources

Dependent upon the type of emergency…
Emergencies typically require coordination of medical help as well as police for access control.
Identifying Necessary Resources

Dependent upon the type of emergency…
Once all of the rescue personnel arrive, there is a big communication and IT demand. Food and Sanitary facilities are always needed!
Gas Sampling

Instantaneous Monitoring Equipment
Gas Sampling

Gas chromatograph setup at a mine fire
Cameras and Robotics

Cameras have been used in mine emergency responses for a number of years.
Cameras and Robotics

Boreholes have allowed access with these devices to areas to verify the integrity of ventilation controls, observe ground conditions and smoke within open entries, and search for missing miners.
Remote Plugs were Installed Using this Equipment.
Based on information from Boreholes 1, 2, and 3 and underground observations, it was expected that conditions underground would be more severe in the high cover, +2000 ft, indicated in red, but that conditions would improve inbye.

During a rescue effort, the first responsibility is the safety of the rescuers. Even when you cover all of the bases, the unexpected can occur.....
Training