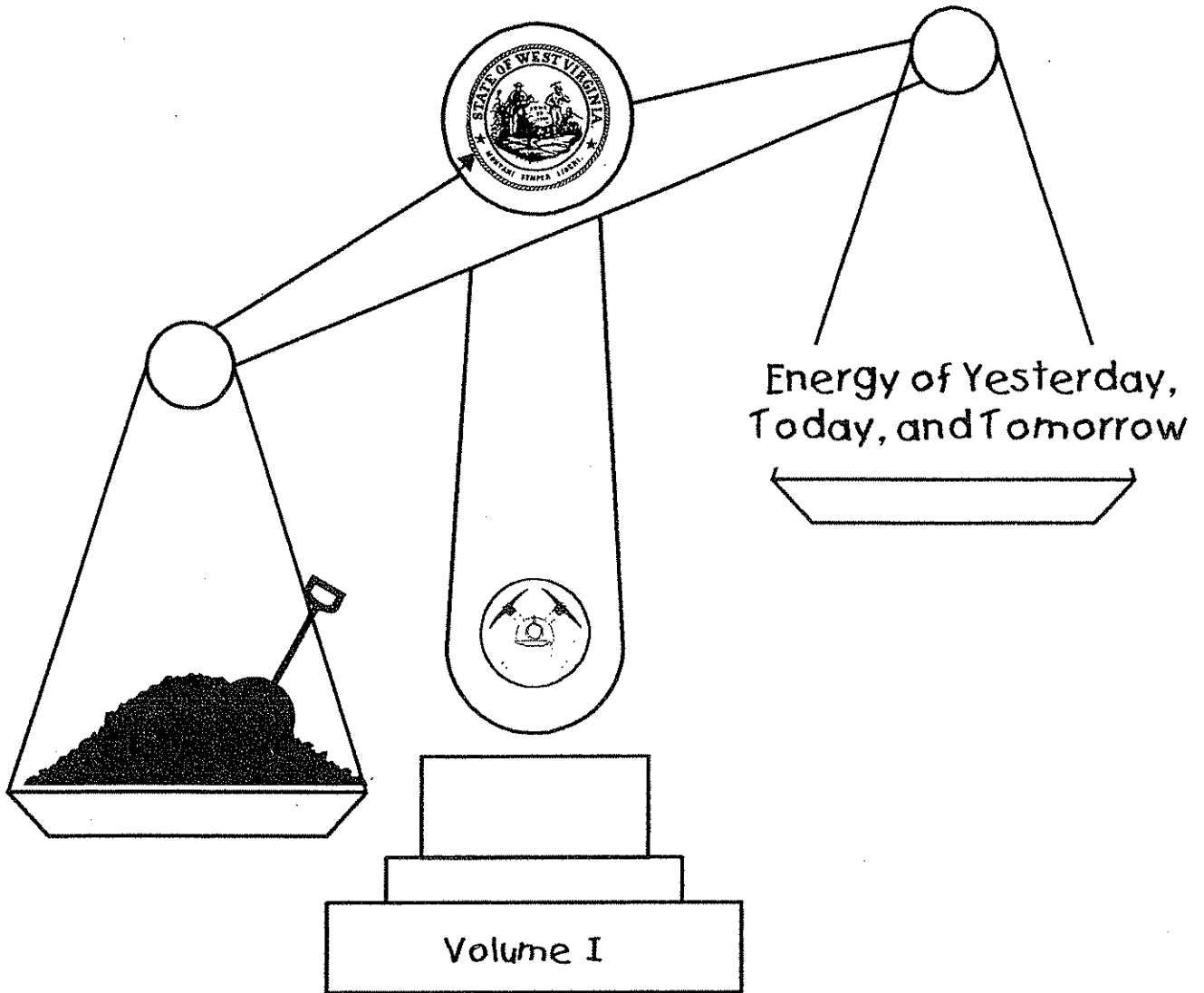


Coal Mining Counts!



Coloring and Activity Book

West Virginia Office of Miners'
Health, Safety and Training

This booklet is dedicated to the
children of West Virginia in which our future lies.

1615 Washington Street, East
Charleston, WV 25311-2126
Phone (304) 558-1425
FAX (304) 558-1282
www.wvminesafety.org

WV Office of Miners' Health, Safety and Training

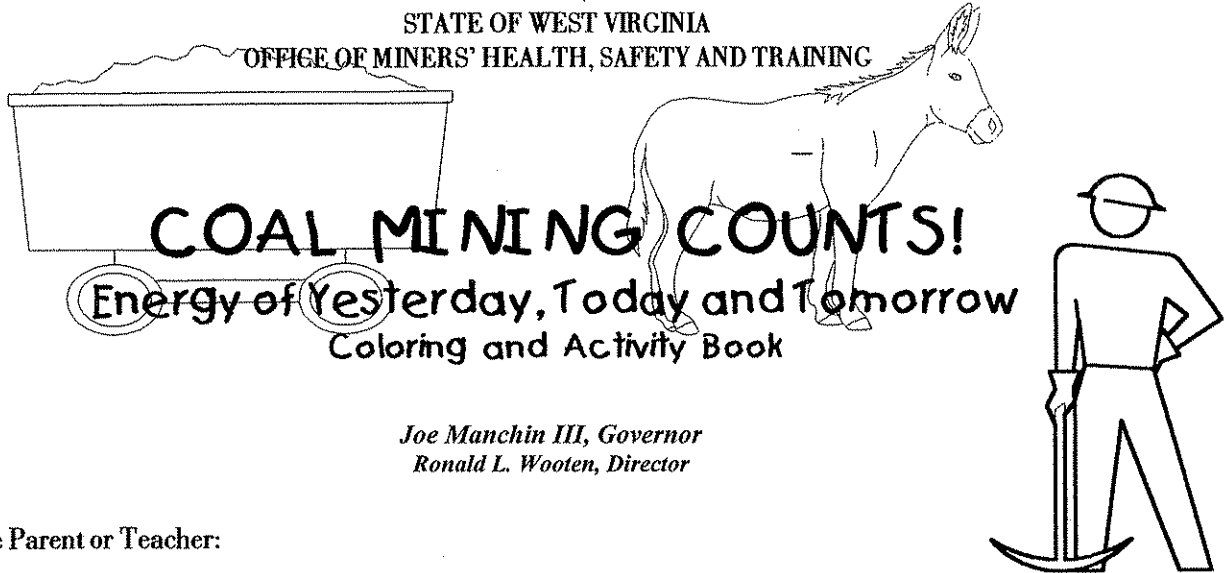
Region 1 – Westover
14 Commerce Dr., Ste. 101
Westover, WV 26501
(304) 285-3268

Region 3 - Danville
137 Peach Court, Ste. 2
Danville, WV 25053
(304) 369-7823

Region 2 – Welch
891 Stewart Street
Welch, WV 24801
(304) 436-8421

Region 4 – Oak Hill
142 Industrial Dr.
Oak Hill, WV 25901
(304) 469-8100

STATE OF WEST VIRGINIA
OFFICE OF MINERS' HEALTH, SAFETY AND TRAINING



Joe Manchin III, Governor
Ronald L. Wooten, Director

To the Parent or Teacher:

Mining is an important part of the West Virginia economy. Most of the electricity used in this state comes from Coal. Sand, gravel, limestone and other rock products are a major resource in construction and are economically vital in certain areas of the state. Almost every county in West Virginia has some type of mining activity. These mines range from large underground mining complexes, to small sand and gravel dredging operations and include all types of surface structures and equipment.

Coal Mining Counts! is intended to help the young people of West Virginia learn more about this vital industry. By reading the text and completing the activity pages, we hope to generate interest and an understanding of the importance of Coal to West Virginia. Listed below are several additional sources of information.

Suggested Internet Sites for Additional Information

For more information on the West Virginia Coal Industry and the West Virginia Office of Miners' Health, Safety and Training, find our home page and explore the linked pages:

www.state.wv.us/mhst

For information on the geology of West Virginia, go to the West Virginia Geological Survey's site:

www.wvgs.wvnet.edu

US Department of Labor, Mine Safety and Health Administration (MSHA):

www.msha.gov

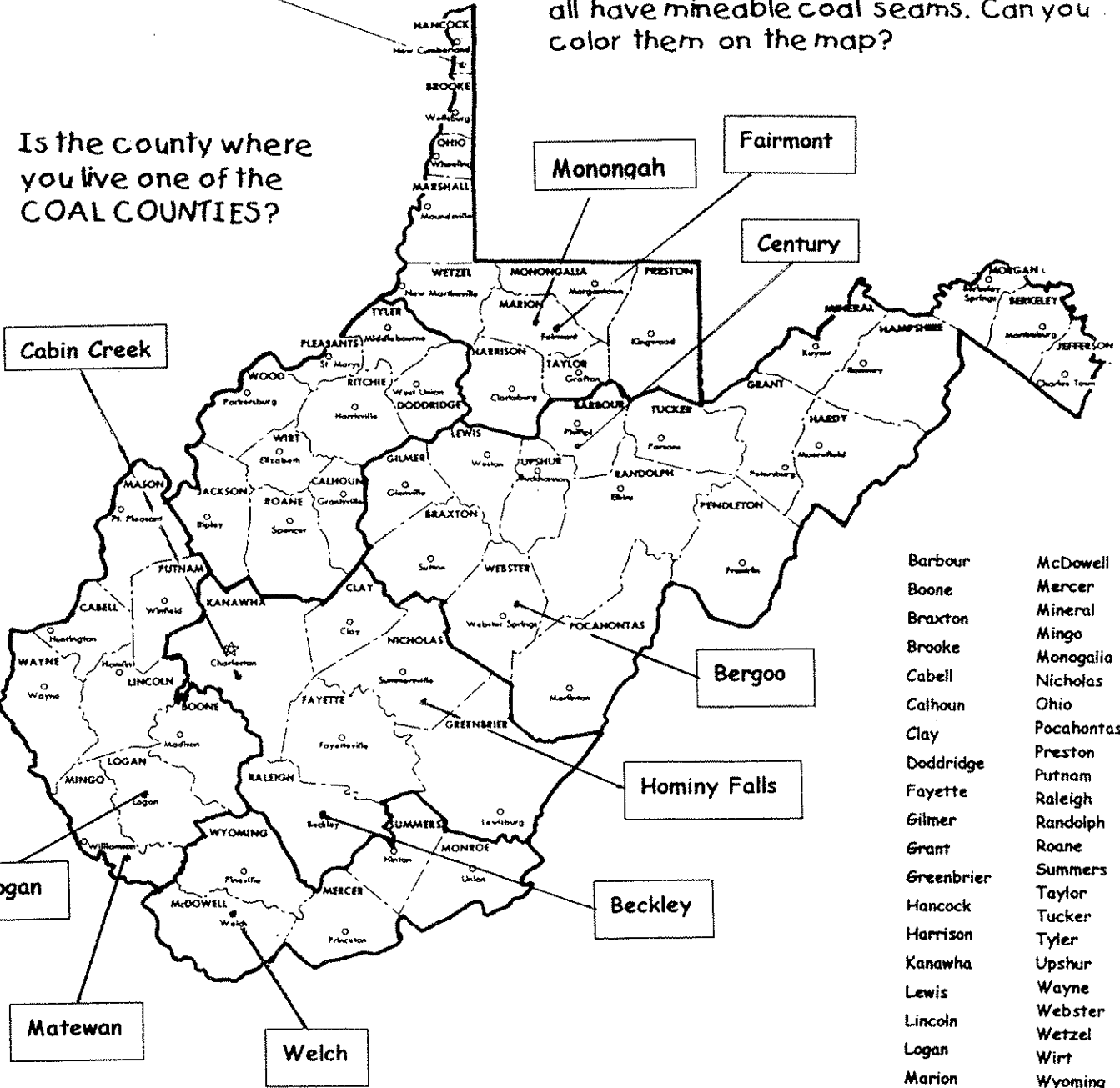
US Office of Surface Mining: www.osmrc.gov

Coal Information Page: www.coalinfo.com

Weirton

The West Virginia counties listed below all have mineable coal seams. Can you color them on the map?

Is the county where you live one of the COAL COUNTIES?

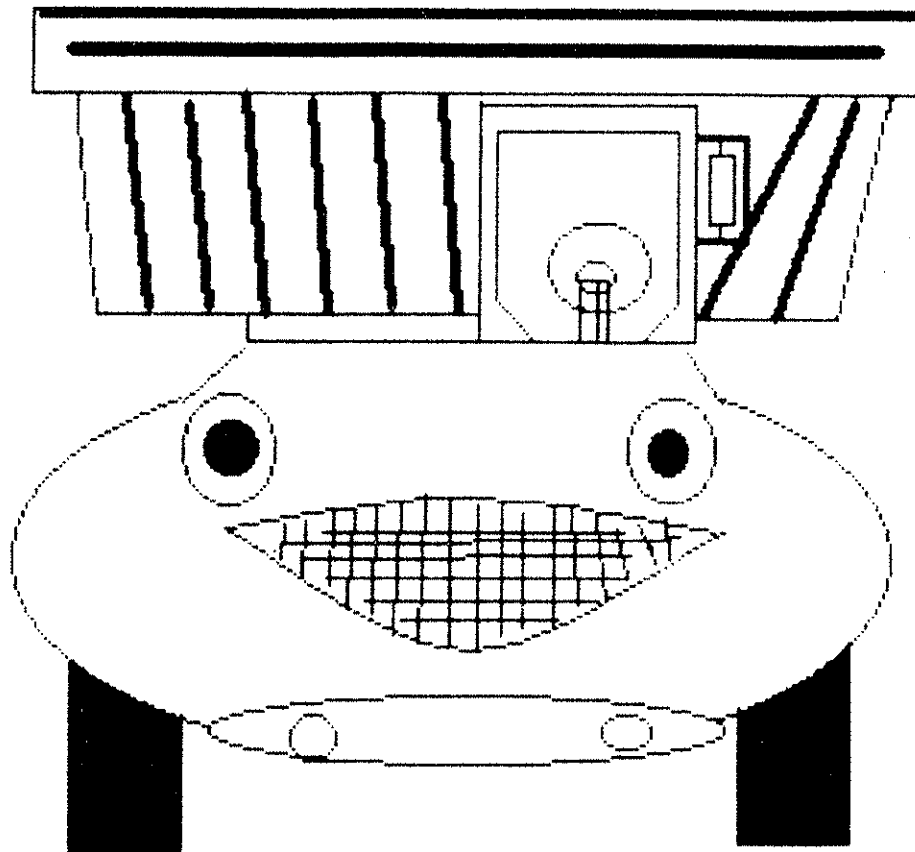


- Barbour
- Boone
- Braxton
- Brooke
- Cabell
- Calhoun
- Clay
- Doddridge
- Fayette
- Gilmer
- Grant
- Greenbrier
- Hancock
- Harrison
- Kanawha
- Lewis
- Lincoln
- Logan
- Marion
- Marshall
- Mason
- McDowell
- Mercer
- Mineral
- Mingo
- Monongalia
- Nicholas
- Ohio
- Pocahontas
- Preston
- Putnam
- Raleigh
- Randolph
- Roane
- Summers
- Taylor
- Tucker
- Tyler
- Upshur
- Wayne
- Webster
- Wetzel
- Wirt
- Wyoming

Famous West Virginia Mining Towns (these are just a few...)



WV Coal Fact: In 1931, West Virginia overtakes Pennsylvania as the leading producer of bituminous coal.



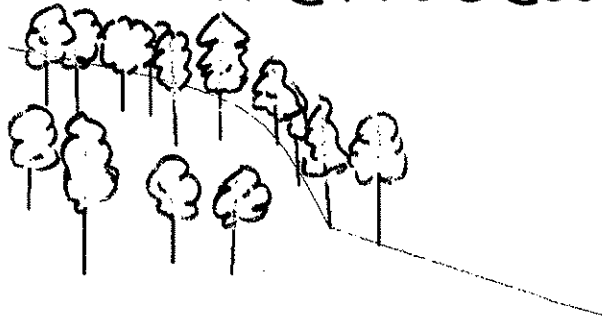
Hello!! I'm Smiley. I'm a rock truck and I work at a surface coal mine. I'm going to introduce you to some mining equipment that is used to mine coal on a surface coal mine.

First, let me tell you a little about how a surface coal mine works.

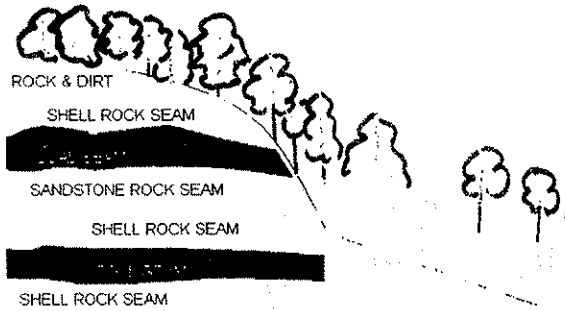
Ready? Let's go!!



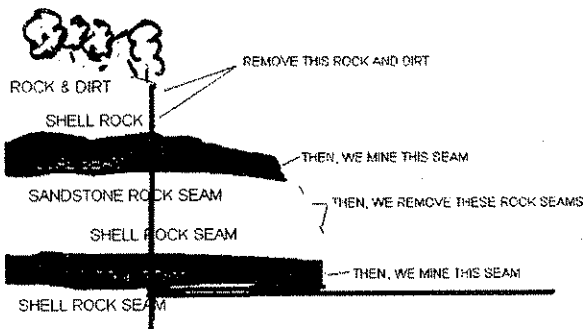
The Process of Surface Mining



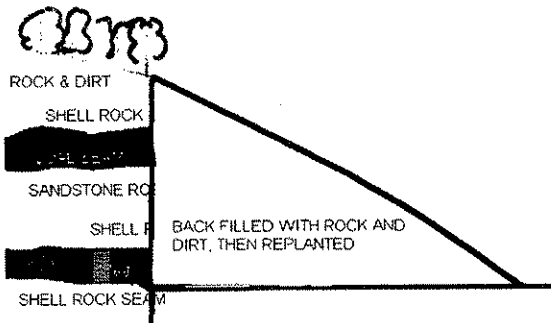
1. When we look at a mountain, we see trees, grass, rocks and flowers.



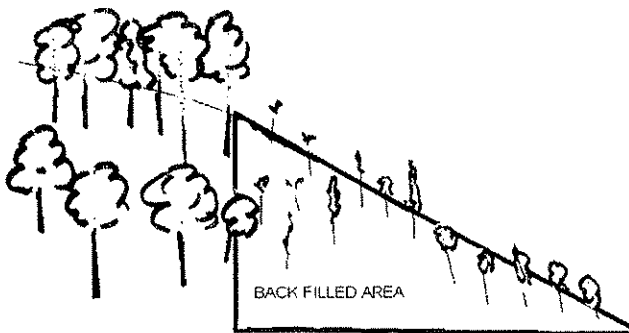
2. Let's slice the mountain and look inside. You see, there are seams or layers of various rocks and coal.



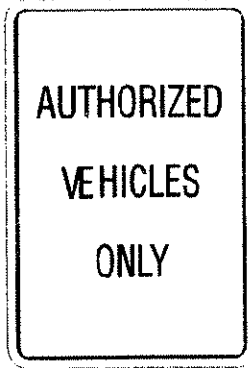
3. To get to the coal, we must first remove the dirt and rock covering it. Then we can mine the coal.



4. After we mine the coal, we must put back the rocks, dirt and plants. This is called reclamation.

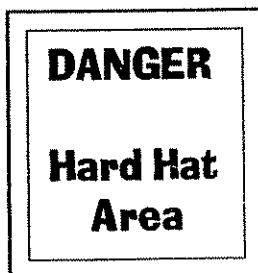
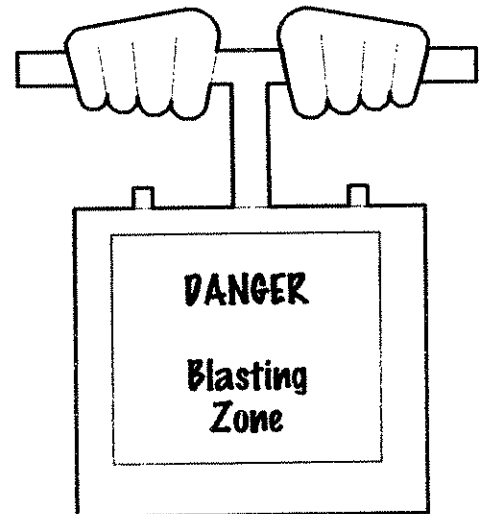
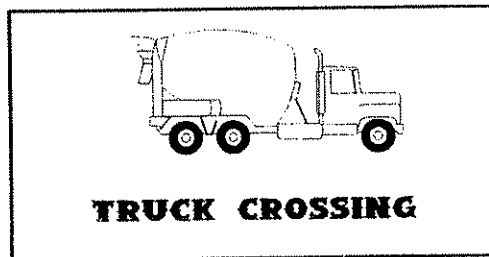
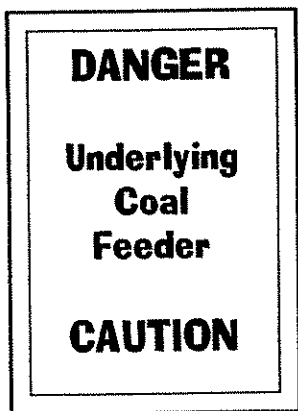
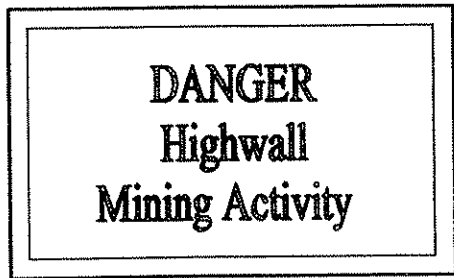
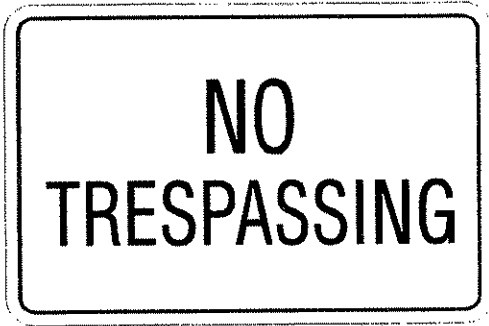


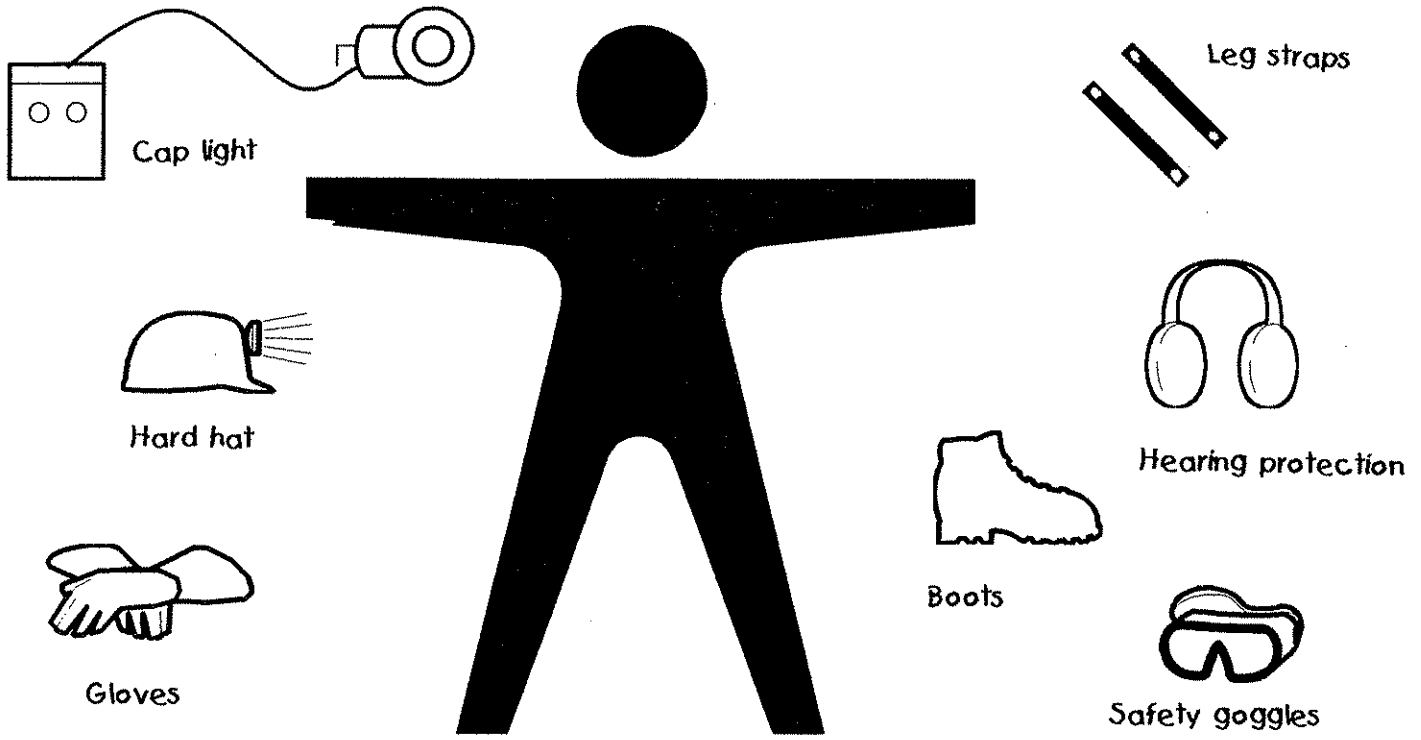
5. After a few years, the mountain will have trees, grass, flowers and wildlife such as deer, turkey, rabbits, and maybe a bear or two.



Can you tell what these signs are trying to safely tell you?

Smiley says to play safely and obey ALL signs!!





Can you draw a line to where the equipment should be?

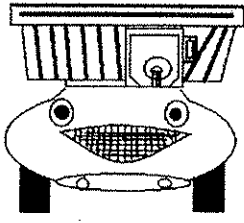
Smiley says if he were a surface coal miner and not a truck, he would wear certain clothing while he works. Try to guess which article of clothing goes on our miner, and answer the questions below.

- I wear this on my head to protect it when something falls. _____
- I wear these on my pants to keep them from getting caught in a piece of equipment. _____
- I wear these to keep my eyes from getting dirt or other things into them. _____
- I may need this at night to help me see when I work. _____
- I put these on my feet for protection from falling objects. _____

These things are not all I may need to help protect me at work. I may also need hearing protection. They look like earmuffs to go over my ears or others are plugs put into my ears.

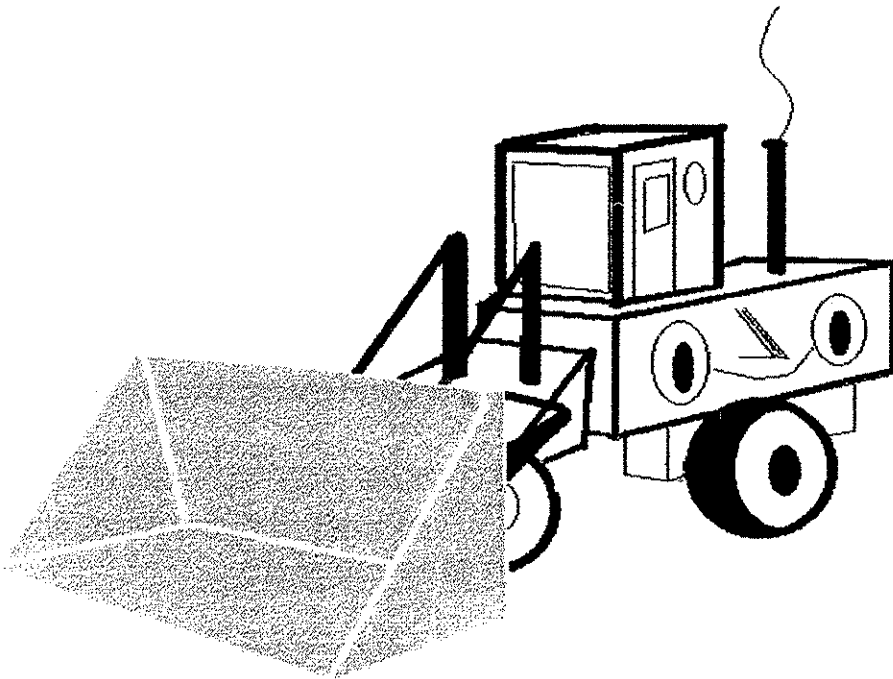
THANKS FOR HELPING. NOW I'M DRESSED SAFELY FOR WORK!!!



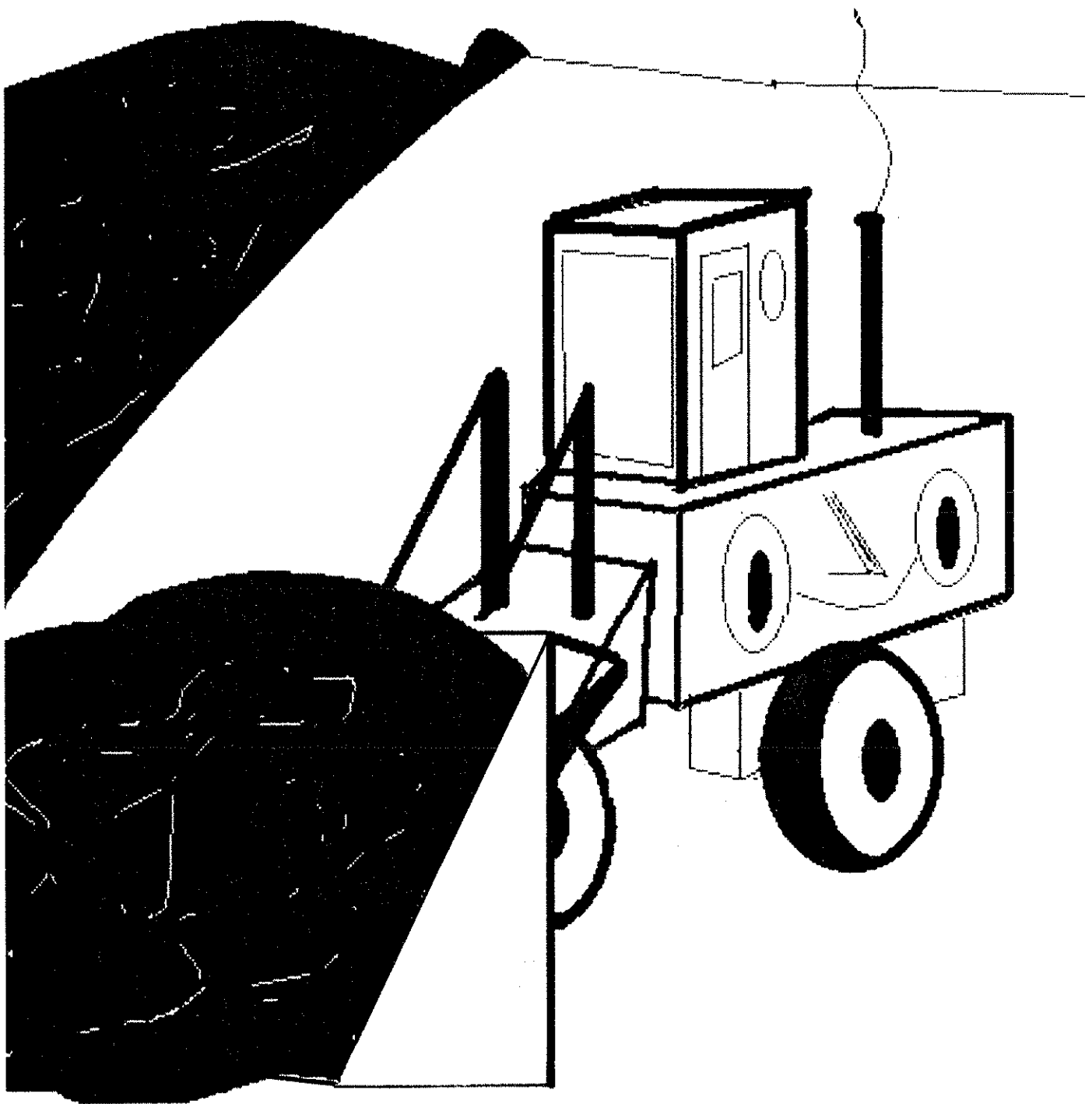


This handsome guy below is Eddie the Endloader.

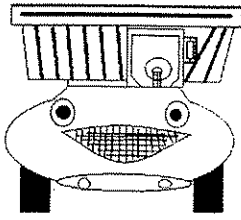
He mostly loads coal, but sometimes he moves dirt and rocks with his big bucket. He steers kind of funny. You see - his middle bends to make turns. We call this "articulation." Eddie articulates to turn. Sounds funny to me! How about you?



WV Coal Fact: West Virginia has about 85 quarry mines producing limestone, sandstone, and sand.

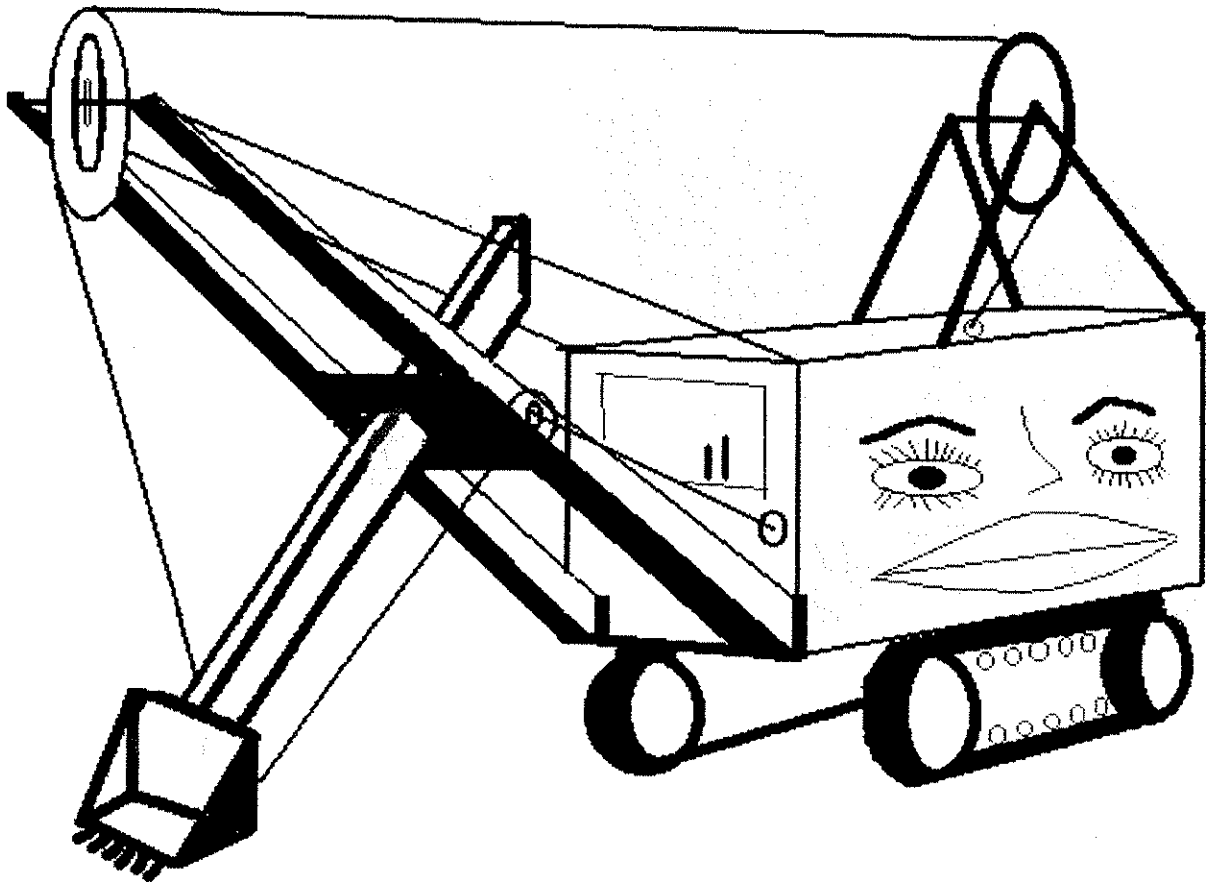


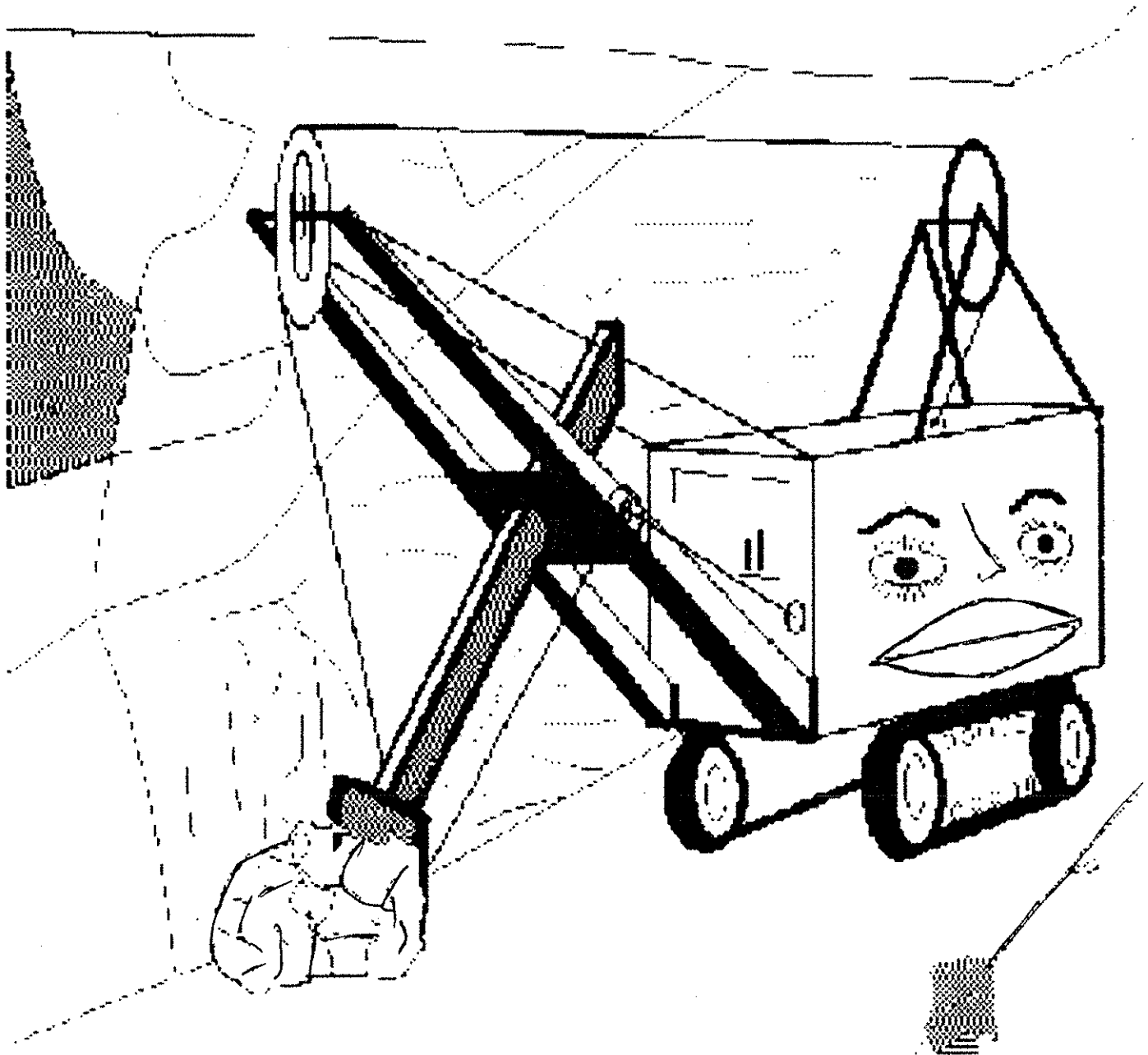
Hi there! I'm Eddie the Endloader, and right now I'm getting coal to load into my friend Clyde. You'll meet Clyde later. Why not color me your favorite color?



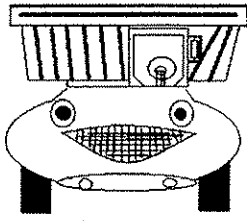
This cute girl below is
Sherry the Shovel.

She's the biggest piece of equipment
on our surface coal mine. She has a 10
cubic yard bucket, which means she
can pick up very heavy rocks and dirt.



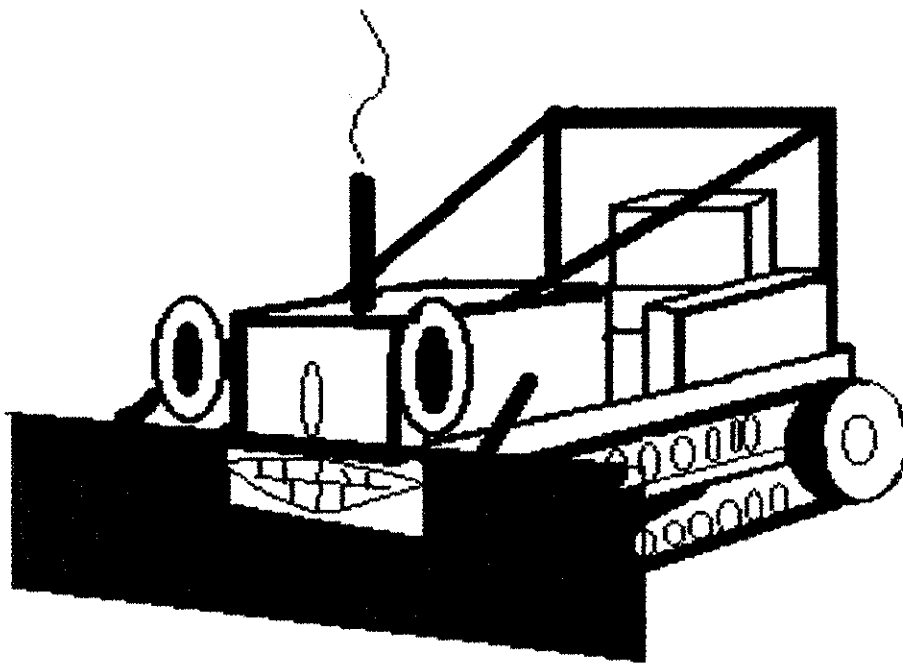


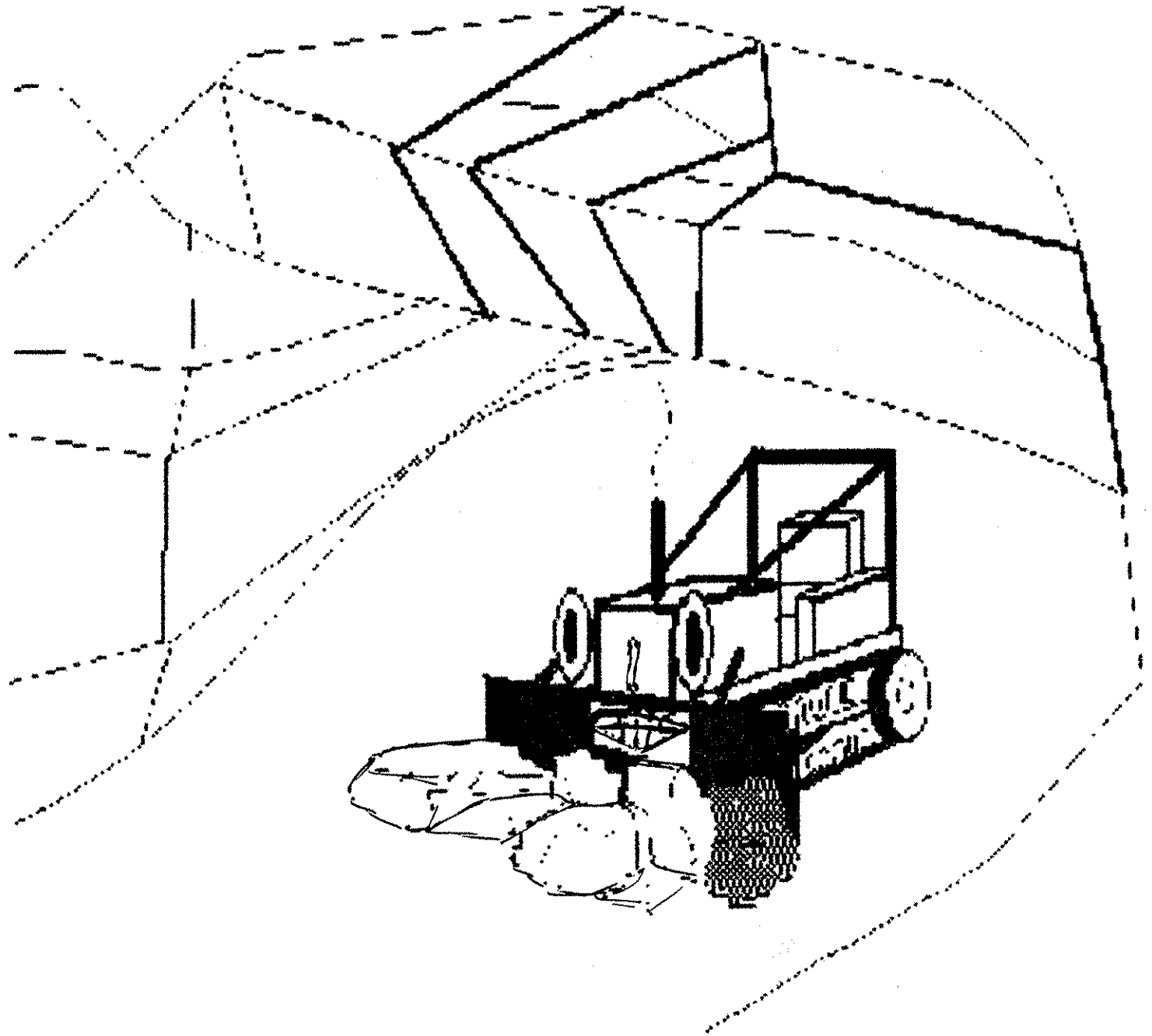
Welcome! I'm Sherry the Shovel. I get my power from electricity. Shovels used to be called steam shovels because they were powered by steam engines. Now, we are called power shovels. I dig rocks and dirt, and load rock trucks like Smiley and Ron. You'll meet Ron later.



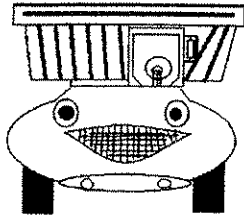
This guy below is
Dakota the Dozer.

Sometimes he's called a bulldozer.
He is the most well known of all the
equipment of a surface coal mine.
You will see his family all over the
place, not just coal mines. Some
dozers are big, and some are small.



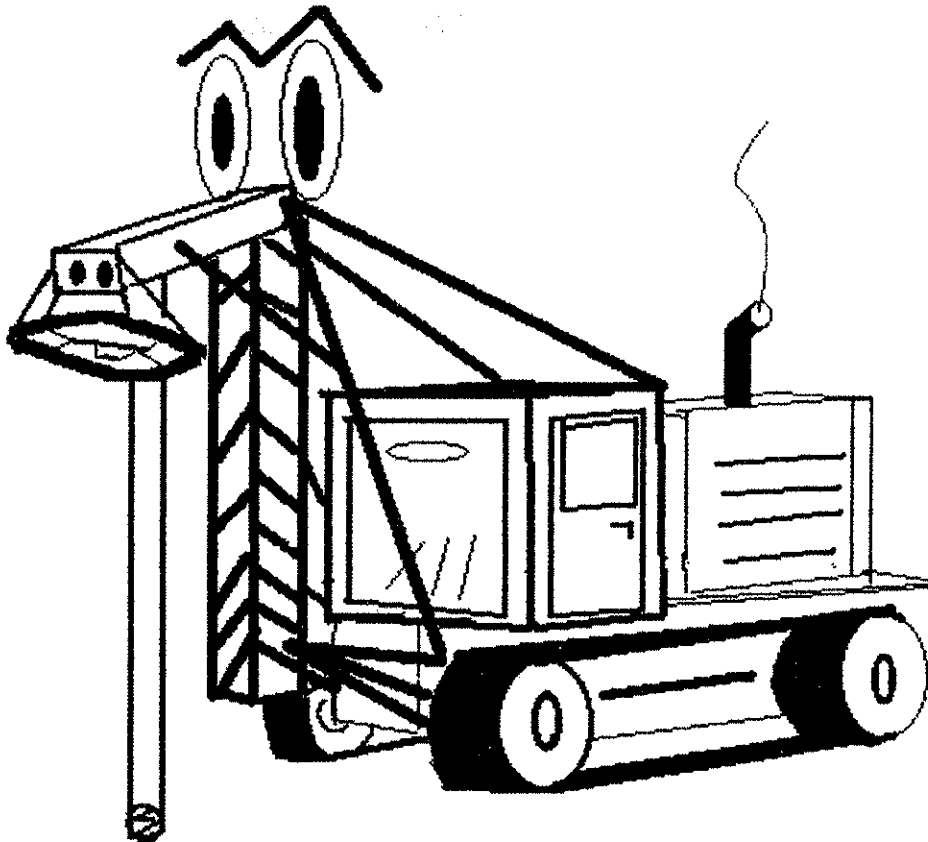


Hey there! I'm Dakota the Dozer. I really push my weight around. I can shove big rocks and big piles of dirt just about anywhere. I help keep Sherry a clean place to work. I also make roads for other equipment. Maybe you've seen some of my brothers helping make highways or cleaning off building lots.

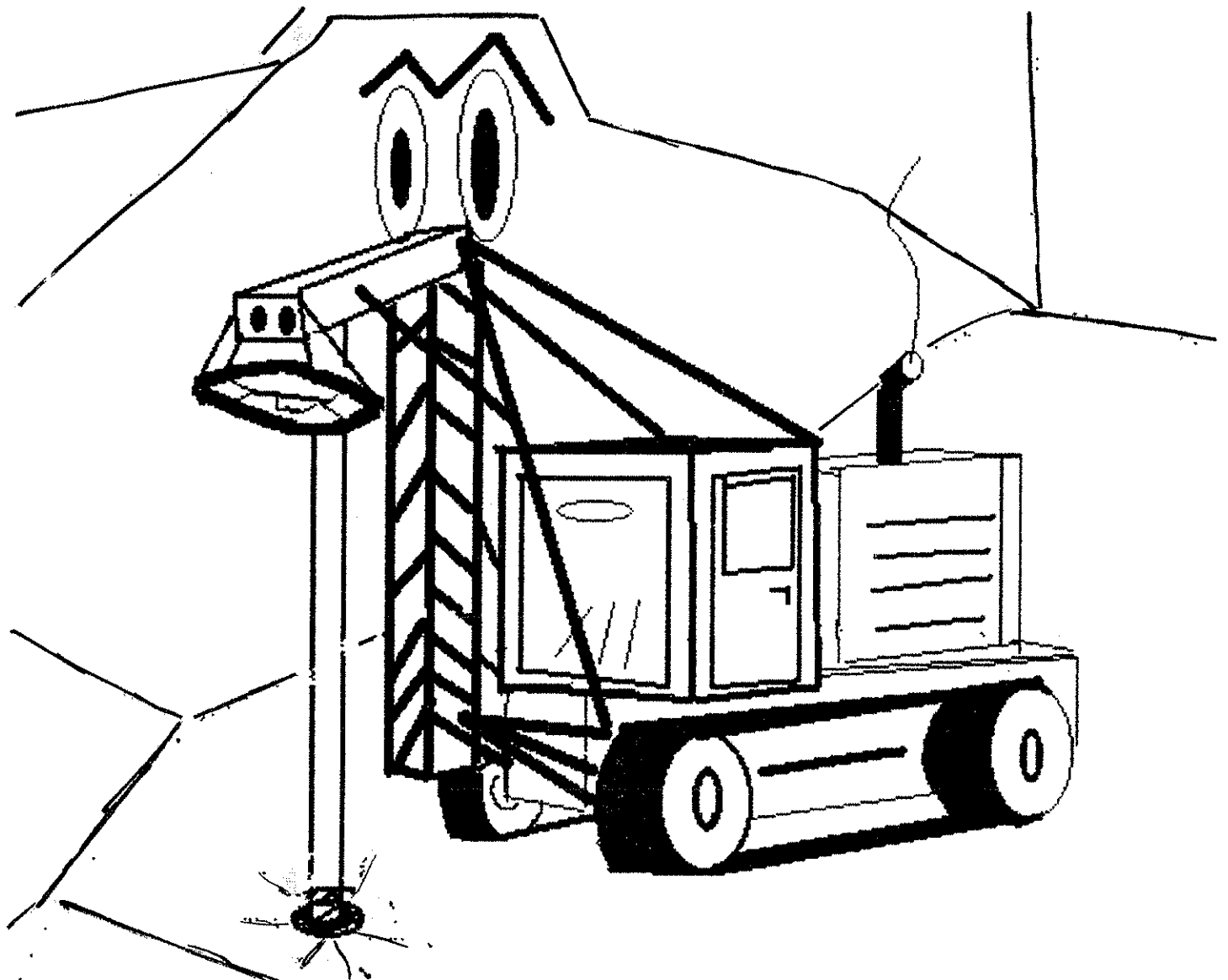


This tall fellow below
is Donald the Drill.

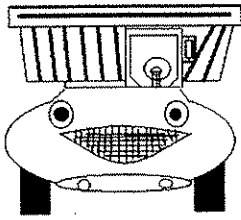
Don drills holes into big rocks that
are part of the mountain. Explosives
are put into the hole and the rock is
blown up. This makes smaller rocks
that other equipment, like Sherry
and Dakota, can move off the coal.



WV Coal Fact: The top producing coal county in West Virginia in 1998 was Boone County. Other top producing counties: Mingo, Logan, Kanawha, and Raleigh.

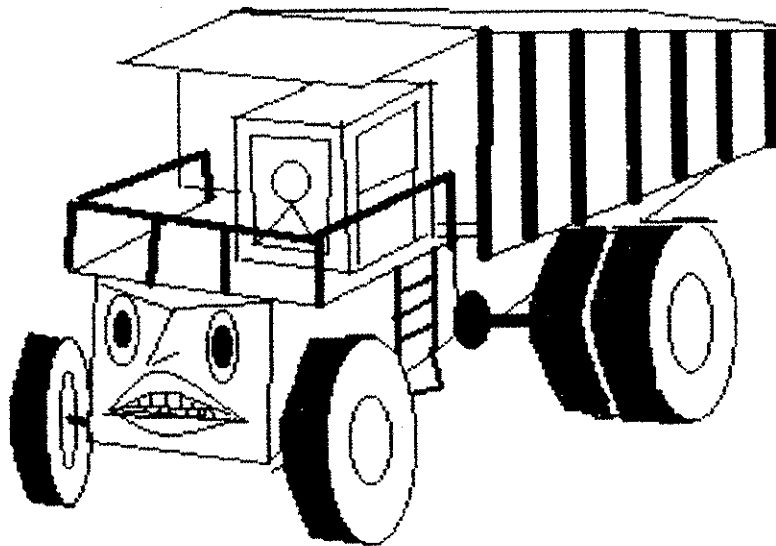


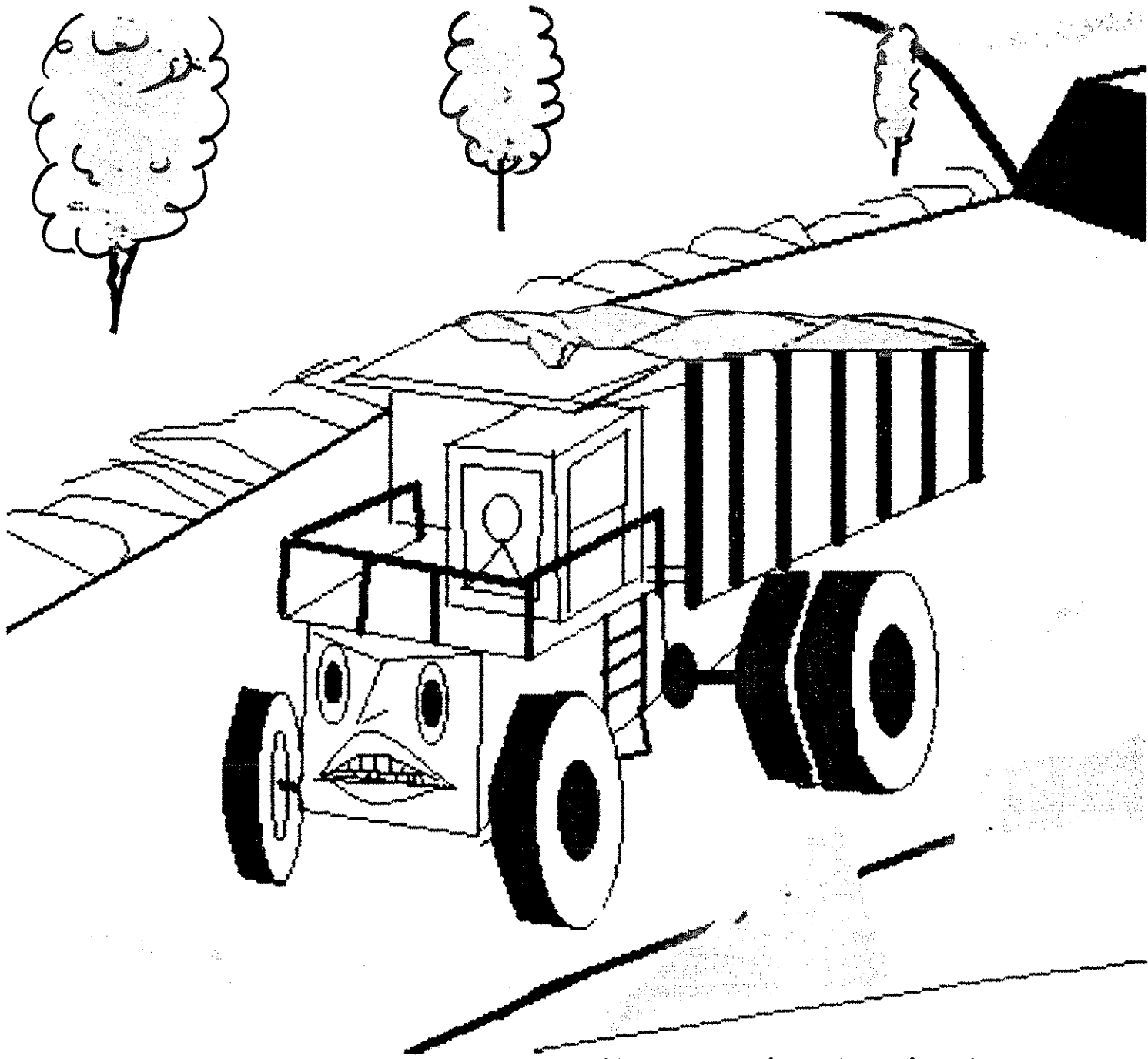
Hi there my friend! I'm Donald the Drill. I have such a boring job, like boring holes in rocks, ya' know?! Ha, ha! Just a joke! My proper name is a Highwall drill. I don't get to move around much, but I usually sit high on the mountain upon a wall and can watch the other equipment work while I drill holes all day.



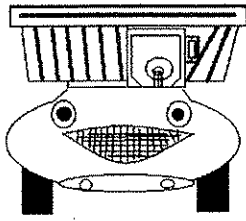
Hey! Here's my best friend, Ron the Rock Truck.

He's a big boy! He hauls 350 tons of rock at a time. Remember, a ton is 2,000 pounds. He is big, but the people that drive him say he rides like a car. Ron is too big to drive on the road. He would take up both traffic lanes.



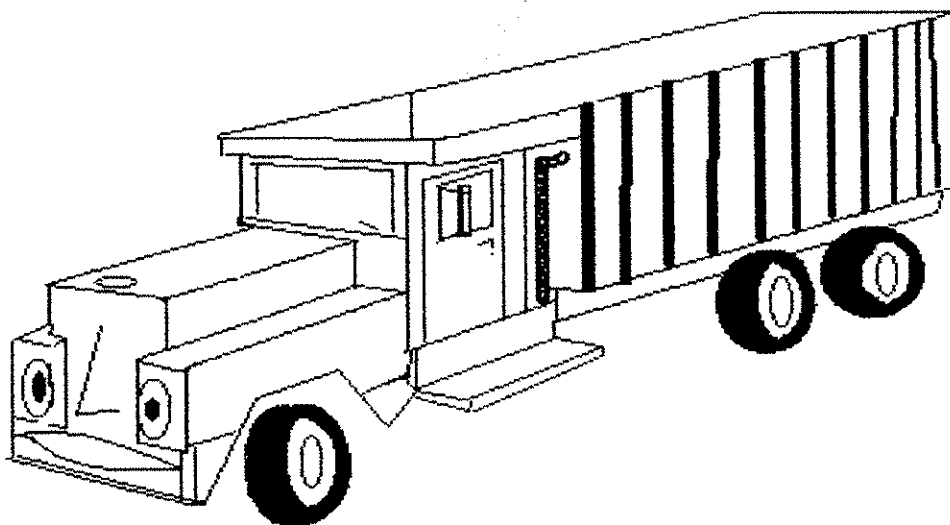


I'm glad you came! I'm Ron the rock truck. I haul big rocks that Sherry the shovel loads into my bed. I take the rocks and put them in a place where we can get them later to backfill with. I have a dump bed. A dump bed raises up in the front and the rocks fall out the back.

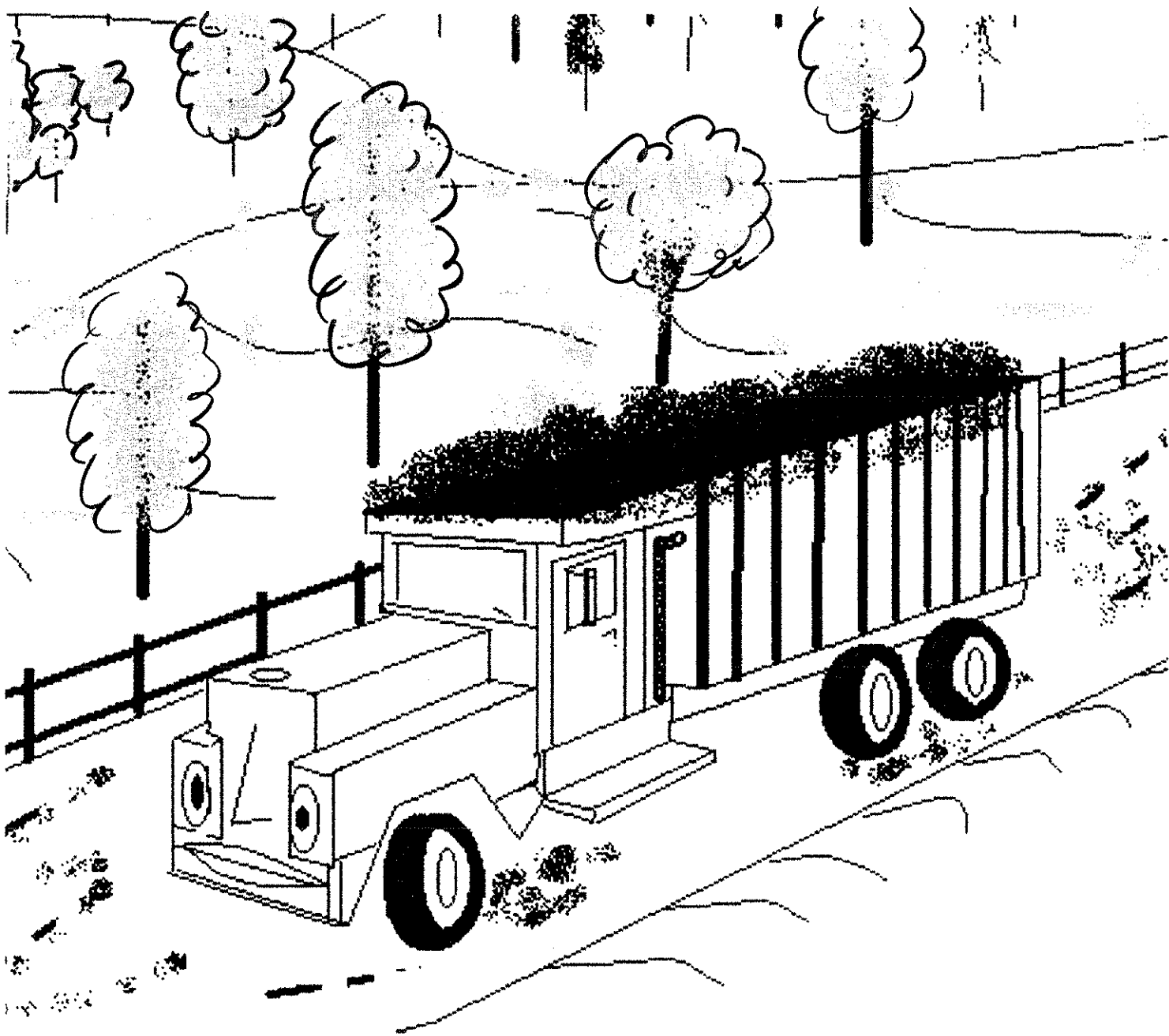


Look at the guy
below. He's Clyde
the Coal Truck.

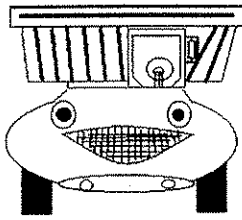
Clyde has ten wheels. I'll bet
you've seen trucks like him on the
road. Some of Clyde's friends haul
gravel and sand on the highway.
Clyde hauls coal on mine roads
and on the highway.



WV Coal Facts: The number one producing WV underground mine in 1998 was the Mountaineer Mine in Mingo County with 7.4 million tons.

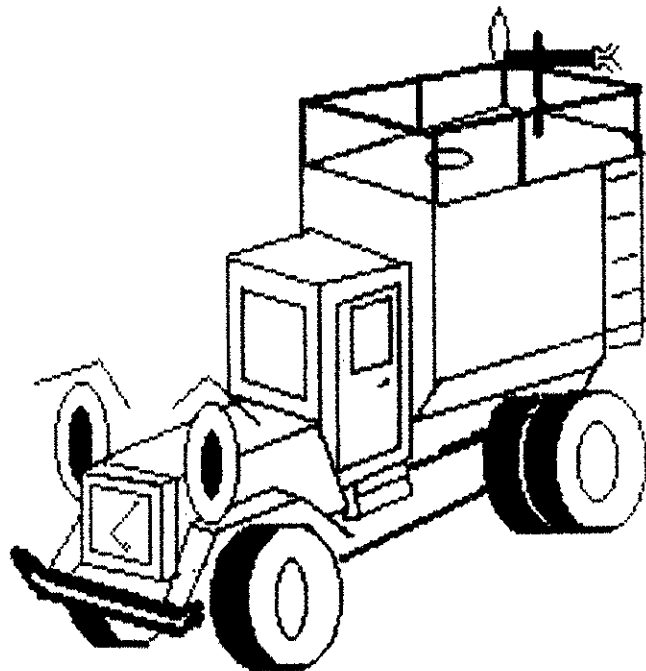


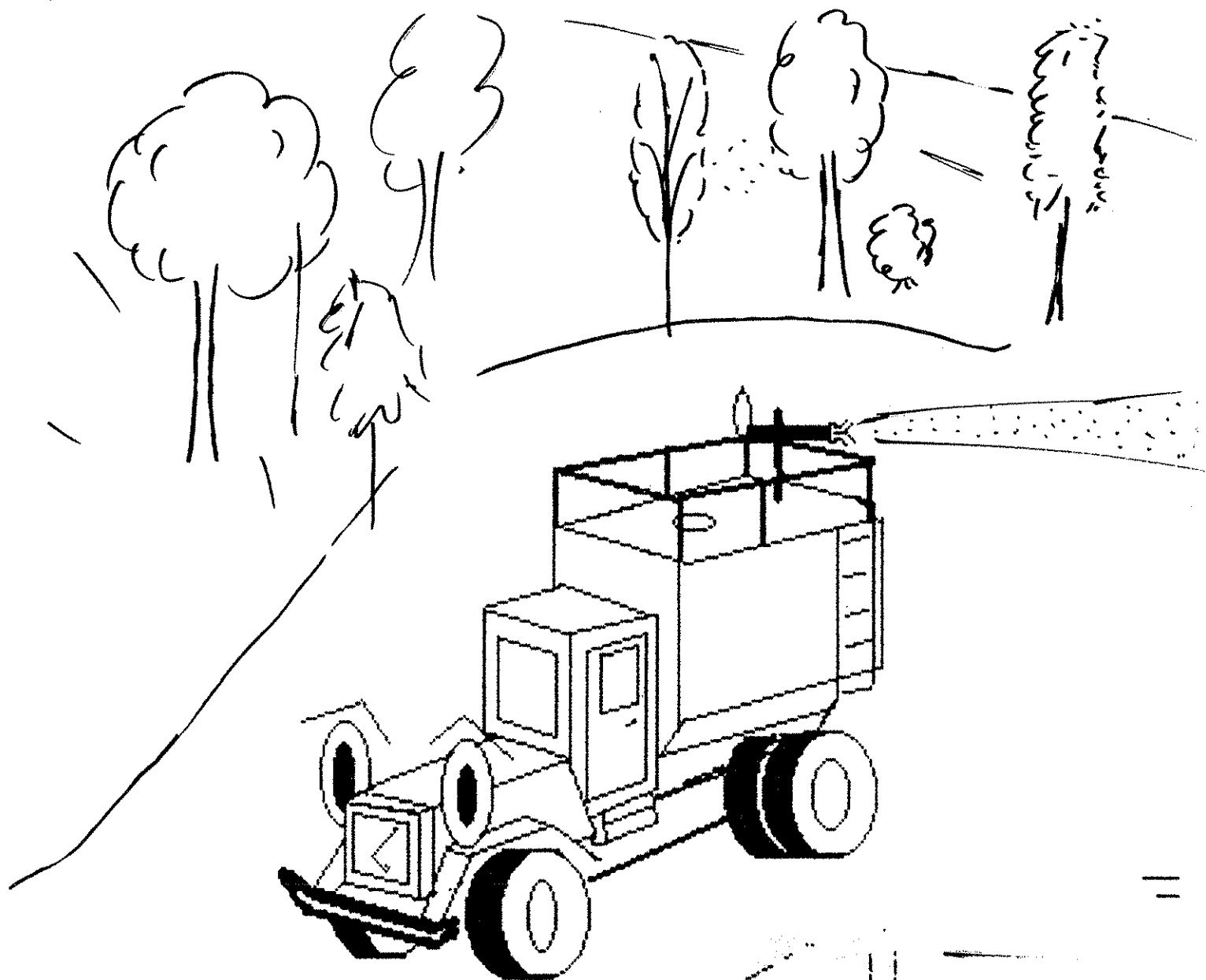
They call me Clyde the coal truck. I haul coal from the surface coal mine to the preparation plant, where the coal is cleaned and loaded into railroad cars or river barges. I can haul 25 tons of coal at a time. Look for me the next time you are riding in a car. Color me any color you like because trucks like me come in many colors.



This fellow is Harry the Hydroseeder.

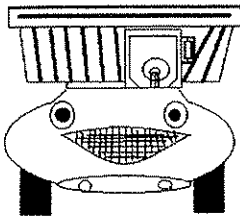
Harry is a Hydroseeding Truck. His job is pretty important. After the coal has been mined and the land backfilled, Harry comes in and sprays a mixture that will help new grass to grow.





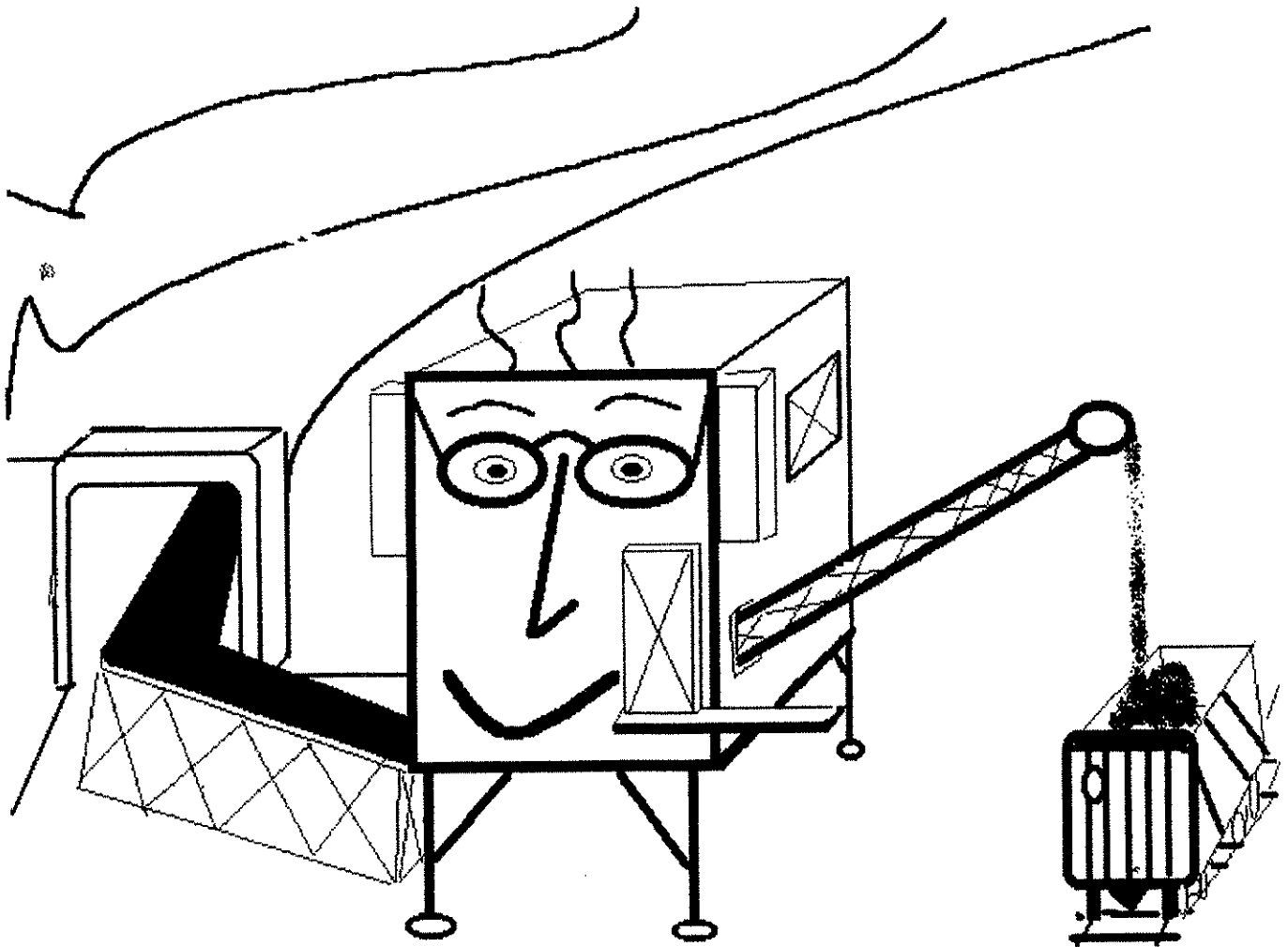
Hi! I'm Harry the Hydroseeder. I'm kind of the last piece of equipment that you would find at a surface mine. My job starts when all the others are through. I release a compound mixture that enables new grass to grow in reclaimed areas. Trees will also be planted to help to restore the land as much as possible to it's original state. After a while, you will notice all sorts of new wildlife occupying the areas that mining equipment once did.





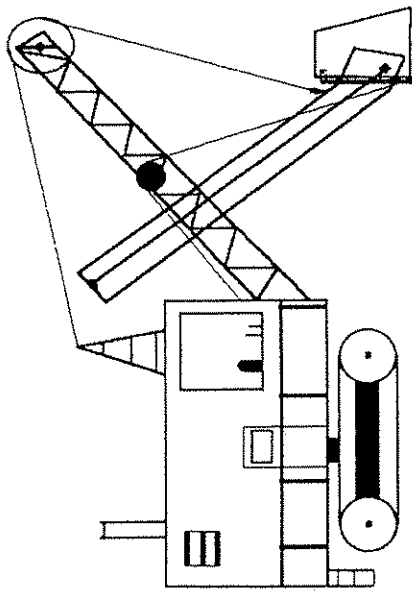
This big fellow below is Peter the Prep Plant.

The coal goes to the plant after it is mined. Peter cleans, sorts, sizes, dries, and then loads it into river barges or coal cars like he's doing here. Peter is a building, so he doesn't move around. He's over 60 feet tall.

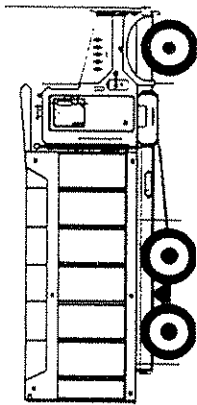


WV Coal Fact: Over 100 million tons of coal is shipped by railroad in West Virginia.

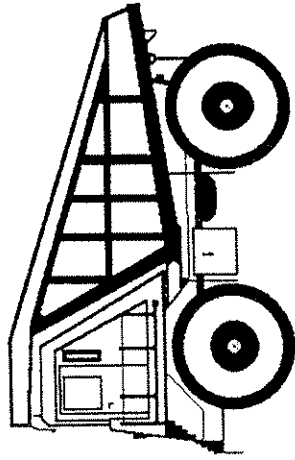
Can you identify the different types of surface mining equipment shown below?



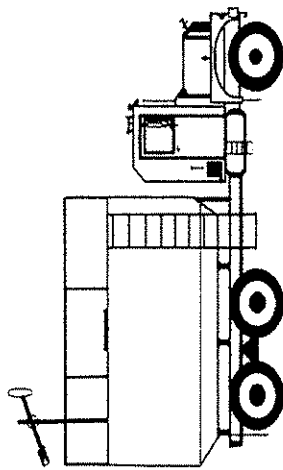
1.



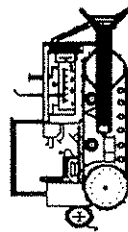
4.



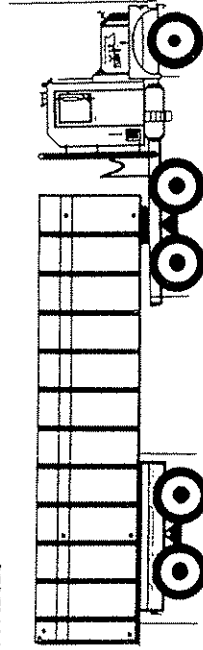
5.



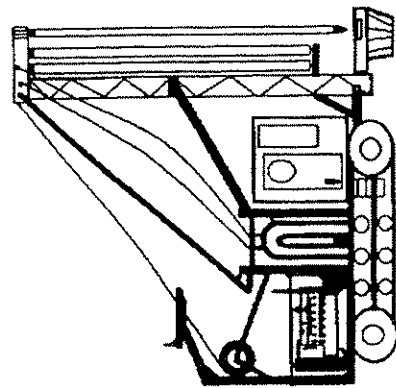
2.



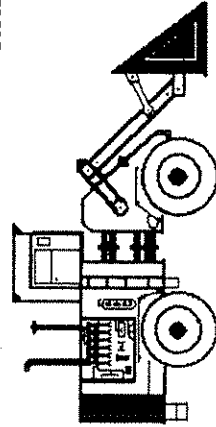
6.



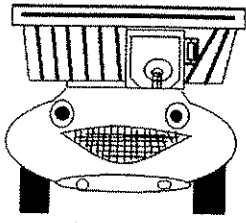
7.



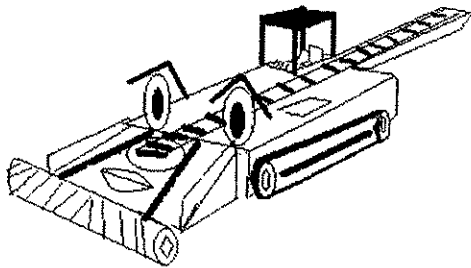
3.



8.

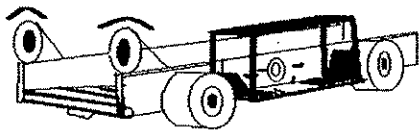
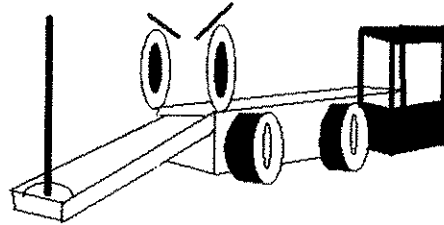


Not all coal is mined at surface mines. Some is mined underground and requires different equipment. Below are some of the machines used in an underground coal mine.



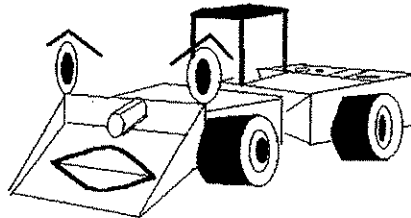
Continuous Miner

Roof Bolter



Shuttle Car

Scoop



WORD SEARCH



See how many of the mining-related words listed below that you can find in the puzzle to the left.

- Anthracite
- Bituminous
- Boots
- Bulldozer
- Cap light
- Coal
- Coal Seam
- Coal Truck
- Danger
- Drill
- Endloader
- Hard hat
- Highwall
- Lignite
- Longwall
- Miner
- Pit
- Power Shovel
- Prep Plant
- Rock
- Rock Truck
- Shovel
- Spoilbank
- Surface Mine
- Warning Signs

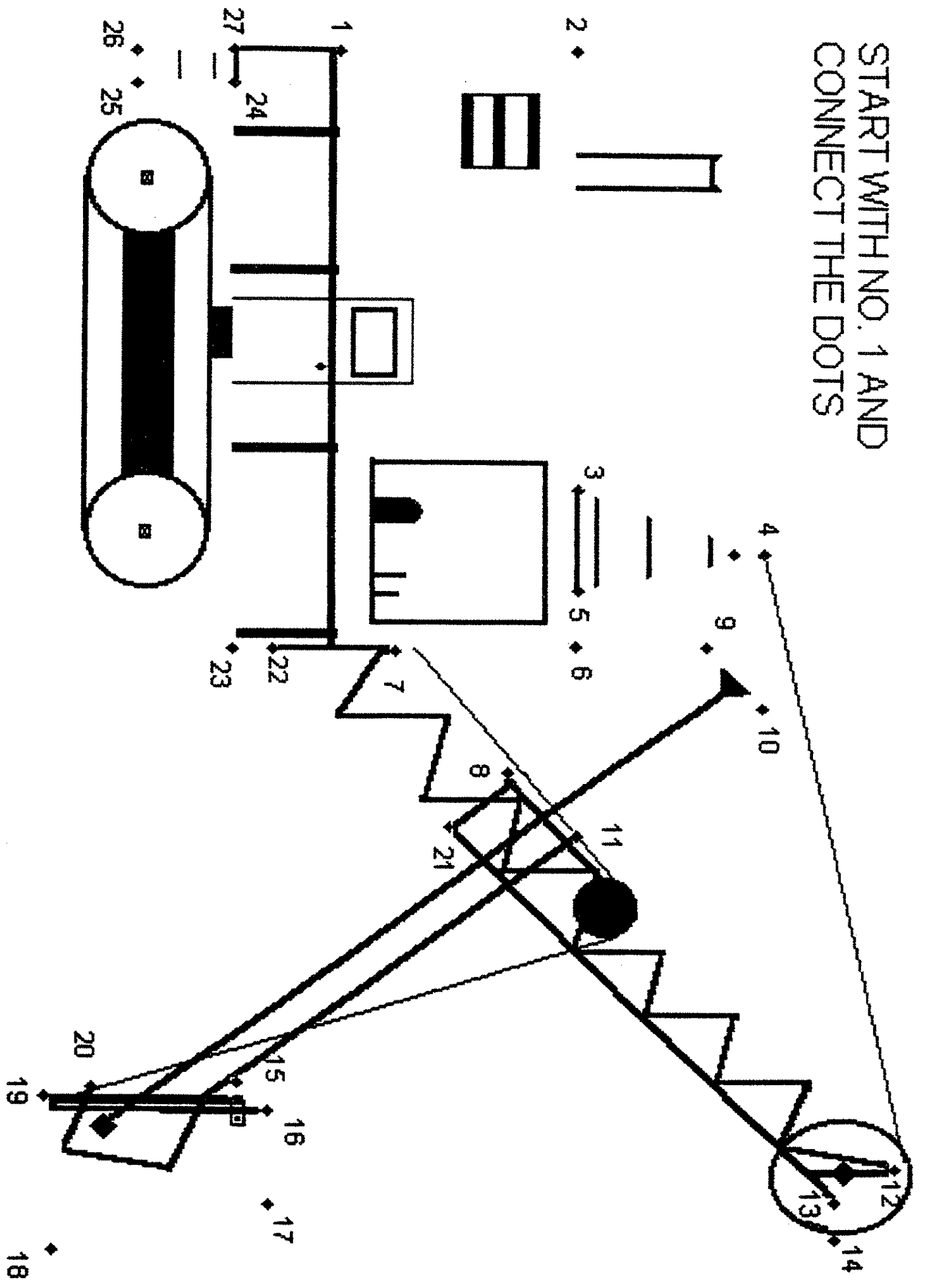
Word Scramble

See if you can unscramble these mining words:

- | | |
|------------|-------|
| ZBEURLOLD | ----- |
| RLEEANODD | ----- |
| WHHAIGLL | ----- |
| GNLWALLO | ----- |
| STNIIBUOMU | ----- |
| TCAHNRIATE | ----- |

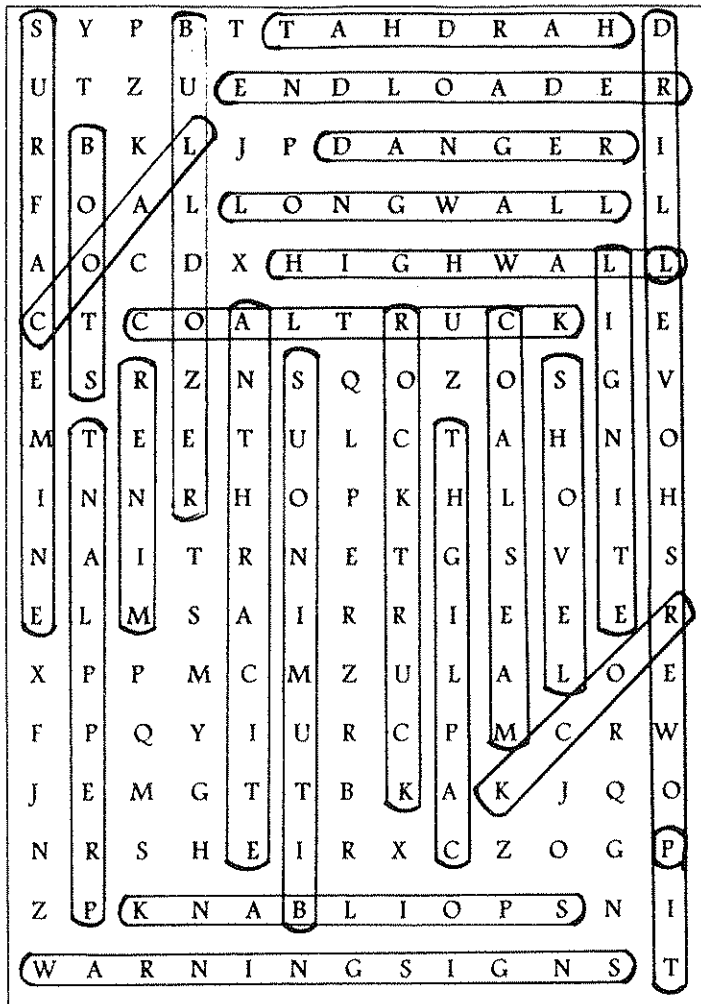


START WITH NO. 1 AND
CONNECT THE DOTS



Solutions

Word Search



Word Scramble

Bull Dozer Longwall
 End Loader Bituminous
 Highwall Anthracite

How to Grow a Crystal Garden

Materials needed:

Piece of charcoal briquette/coal/brick
 Wide/deep soup bowl or similar dish
 6 tbsp. (90 ml) laundry bluing
 6 tbsp. (90 ml) table salt
 1 tbsp. (15 ml) ammonia
 Food coloring (if desired)

- 1) Break up briquette/coal/brick into about 1 - 2 inch pieces and place in bottom of bowl.
- 2) If laundry bluing is liquid, mix with 1 - 2 tbsp. of water. If bluing is powder, mix with 6 tbsp. water.
- 3) Add salt and ammonia to laundry bluing.
- 4) Pour mixture over pieces in bowl. You can either sprinkle drops of food coloring over the chunks and mixture now, or wait until the crystals start to grow.
- 5) Set the bowl someplace where it won't be disturbed. The rate that it grows will depend on the humidity in the air.

Surface Mining Equipment

- | | |
|-------------------|----------------|
| 1. Power Shovel | 5. Rock Truck |
| 2. Hydroseeder | 6. Bull Dozer |
| 3. Highwall Drill | 7. Coal Hauler |
| 4. Coal Truck | 8. End Loader |



Look for our upcoming issue
dealing with Underground Mining
(Volume II)

Compiled by the employees of the
West Virginia Office of Miners' Health, Safety and Training
in conjunction with the
U.S. Department of Labor
Mine Safety and Health Administration

June, 1999

Edited by: Garry McComas, Tina Estep, and Dave Kessler