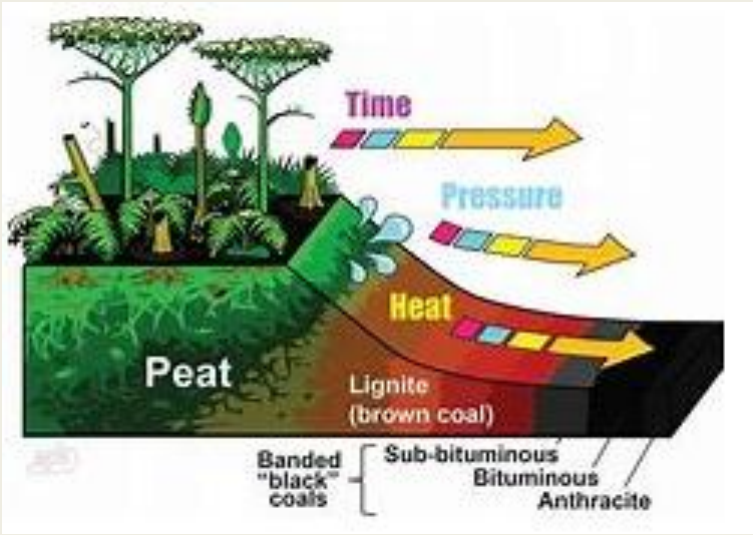
COAL

THE *original* BLACK DIAMOND

WHAT IS COAL?



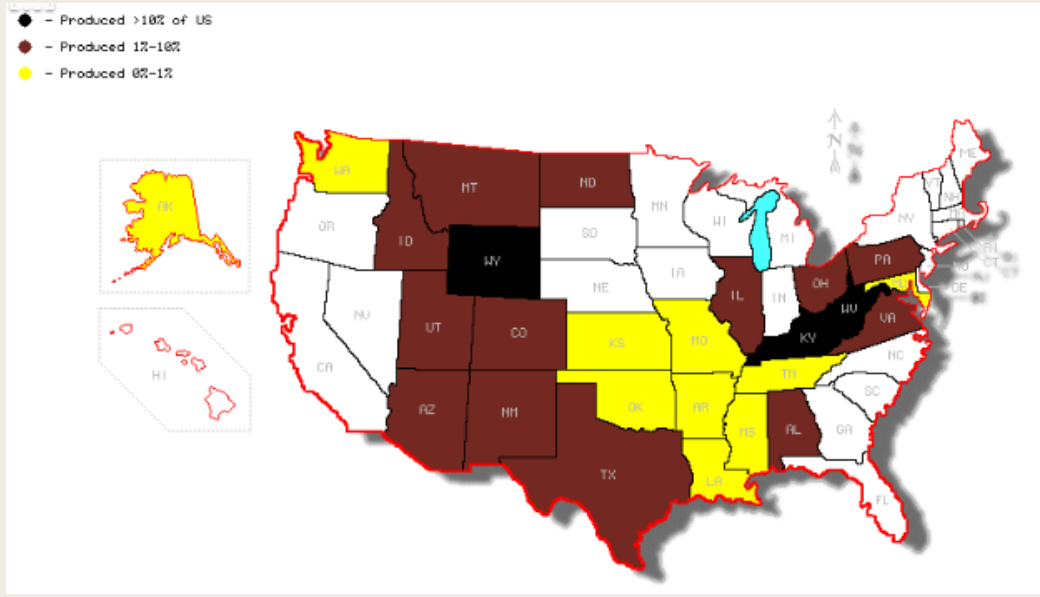
- Coal is a non-renewable energy source created by plants. A famous geologist one called it, “Imprisoned sunshine that warmed a swamp which stood here millions of years ago.” Coal, oil and natural gas are known as FOSSIL FUELS.
- In this area Coal was formed about 40-50 million years ago.
  - *Leaves/Plant Material Decay and settle to make a spongy brown material called **peat.***
  - ***Water** is on top of and mixed with the peat*
  - *Plate tectonics further distorted the geography plus **heat** and pressured on the peat and water in turn **created coal**.*
- It takes 9 feet of leaves/plant material to make one (1) foot of coal.
- It took 90 feet of plant materials over 30 million years to create one 10’ coal seam. There are 18 coal seams in Black Diamond.

WHERE IS COAL?

- It exists on every continent in the world, including Antarctica.
- It is found in 48 states, all but Hawaii & Florida.
- Montana actually has the most coal reserves (119 billion tons) but Wyoming is the top coal producing state.
- Coal is found in Black Diamond and other areas of Washington including Bellingham, Renton, Newcastle, Issaquah, Ravensdale, Cumberland, Roslyn, Cle Elum, Carbonado, Wilkeson, and Centralia. Coal mining was a major activity in Washington from the late 1800s through the mid 1900s.

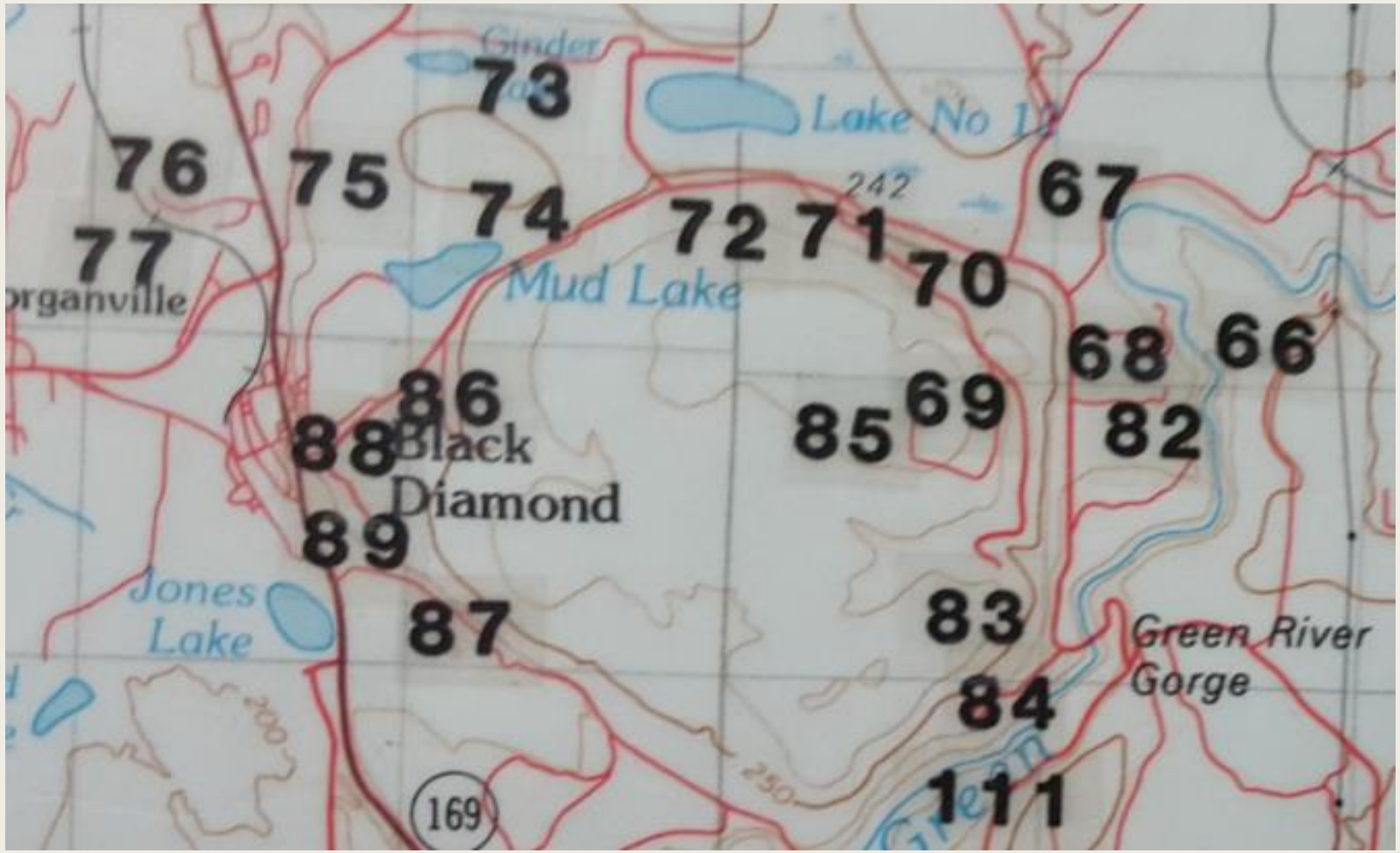
COAL IN THE U.S.

- The United States produces about 700 million tons of coal annually, 2nd in the world, about 9% of the world's supply. China is 1st with 3.5 billion tons or more than five times the U.S. production.
- Coal generates about 27% of the electricity in the United States!
- 9 out of 10 tons of coal mined are actually used to generate electricity.
- The U.S. has about a 325 year supply of coal if it is used in the future at the same rate as today.
- Up until the 1930s most homes in the U.S. were heated by coal.



66. Section 8/Rainier prospect
67. Black Beauty & Okay mines
68. Hi Heat-Franklin No. 10
69. Strain New Franklin
70. Black Diamond / Sec. 7
71. No. 7 Mine
72. Old No. 12
73. Ginder Lake mine (McKay)
74. No. 12
75. Upper Diamond mine
76. “B” Mine / Skunk Cabbage
77. Morgan Slope / Mine # 11
83. Franklin #9, 10, 11, 12, McKay #14 & Gem #17 seams
84. New Hi Heat- #10 seam
85. Franklin Gem (#17 seam)
86. Lawson Mine (McKay)
87. Prospect on Gem
88. No. 2 - Franklin #12 seam
89. No. 14 Mine (McKay)
111. Outcrop of Franklin #12 in Green River Gorge

COAL IN BLACK DIAMOND



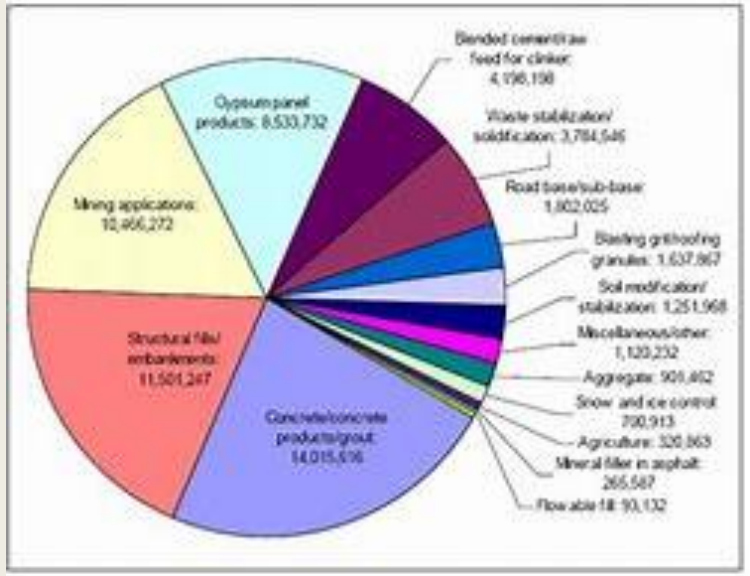
HOW COAL IS MINED

UNDERGROUND:
Tunnels or shafts are dug into the earth usually along the coal seam. Using tools and equipment workers mine and remove it. In Black Diamond Mine #11 followed the McKay one mile down along the slope (2,000 feet vertical depth from surface)!

SURFACE:
Bulldozers and excavating shovels remove overburden to expose and remove coal from shallow seams near the surface.

WHAT IS COAL USED FOR?

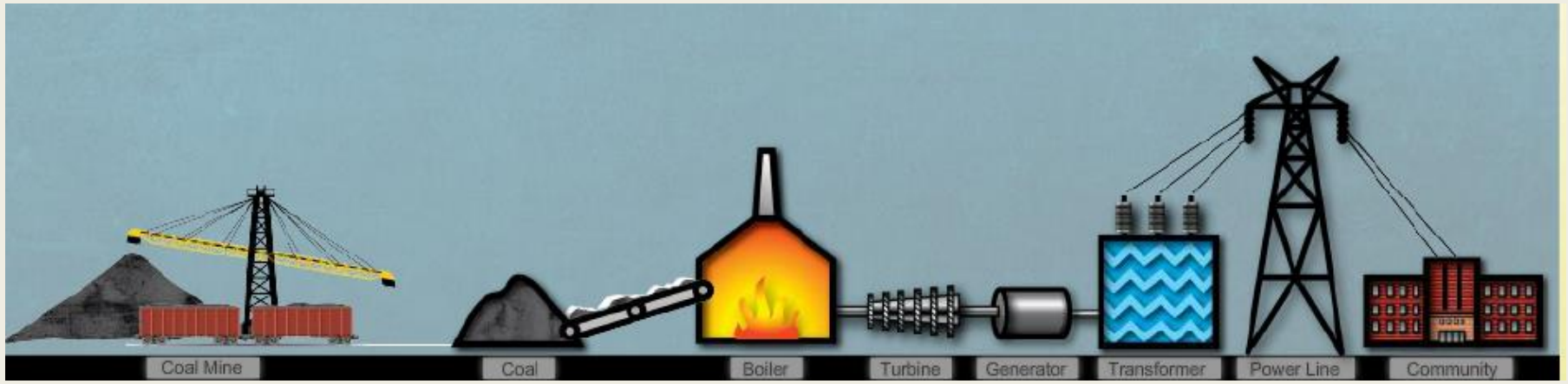
- Primarily it is used to generate electricity. About 27% of the electricity generated in the U.S. comes from coal.
- It is used to make chemicals, cement, paper, ceramics and metal products.
- It is also used to make plastics, medicines, fertilizers and tar.
- It is heavily used in the iron and steel industries.
- It is also uses in TNT, baking powder, smelling salts, rubber cement, laughing gas, electric plugs, billiard balls, perfumes, roofing materials, soda water and street lighting.



USED FOR ELECTRICITY

- Generating plants burn coal to make steam.
- The steam turns turbines which generate electricity.
- Electrical utility companies expect to use MORE coal as they convert oil and gas-fired plants.
- Electrical utilities consume about 90% of all the coal mined in the U.S. Most of the rest is used for steel making.

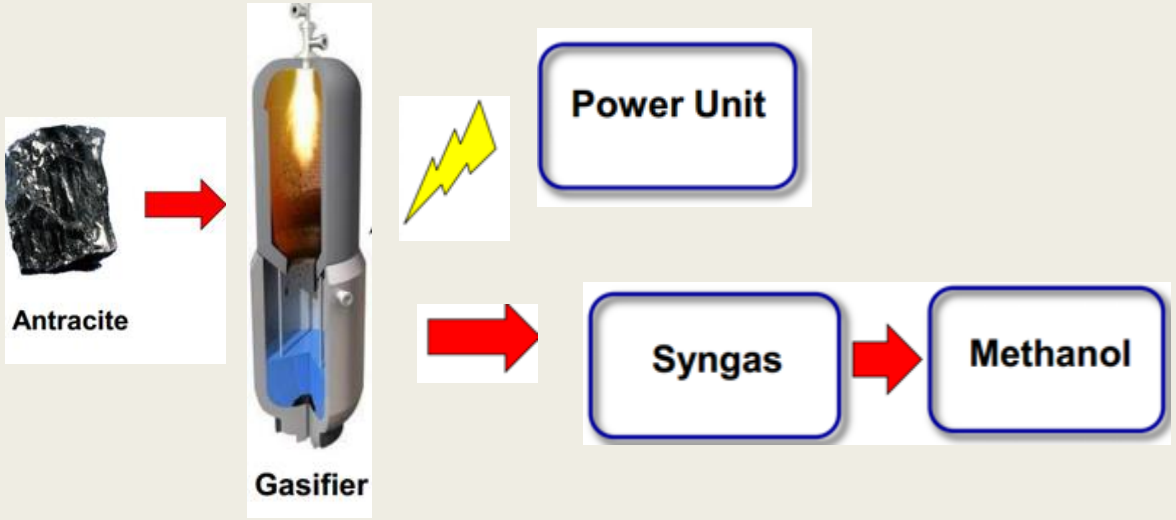
TURNING COAL TO ELECTRICITY



- Trains pulling open cars carry coal on railroads from mine to the power plant.
- Conveyer belts moved it to the boiler where it is combusted to create steam.
- Steam turns a turbine to power a generator producing electricity.
- The electricity is transmitted as moving electrons through a series of high voltage line which transformers reduce to 110v to 440v for homes and business.

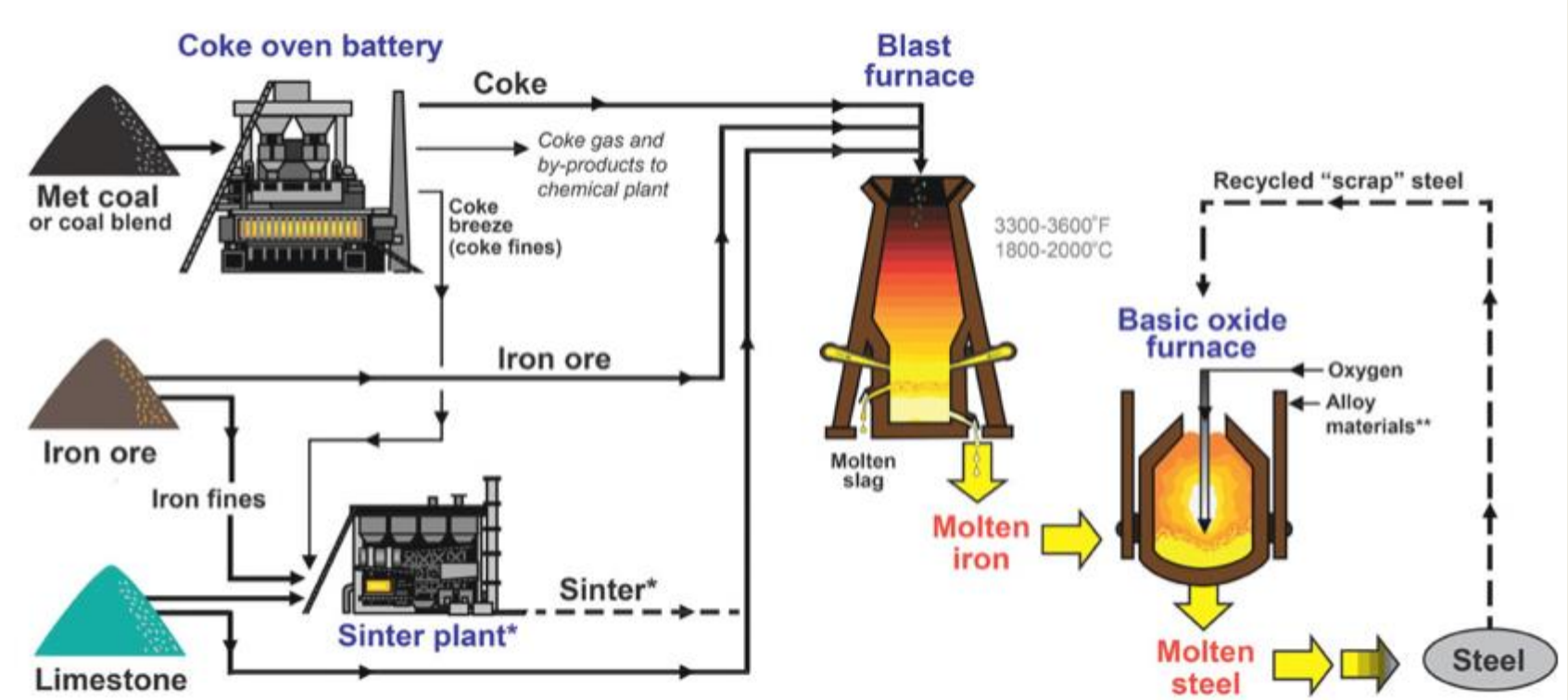
USED IN INDUSTRY

- Coal ingredients are frequently separated, e.g. into methanol and ethylene.
- Use to make plastics, tar, synthetic fibers, fertilizers and medicines.
- The concrete and paper industries also burn larger amounts of coal.



USED FOR MAKING STEEL

- Coal is baked in hot furnaces to make COKE.
- Coke is used to smelt iron ore into iron needed to make steel.
- It is the carbon in the coal that gives steel strength and versatility.
- Steel is used to make many things including bridges, building and automobiles.
- 60% of steel made today comes from coal.



Generalized diagram showing how steel is made.

Information sources:

- American Coal Foundation
- TeachCoal.Org
- Kentucky Coal Education
- World Coal Association
- Black Diamond Historical Society