

## **The Coal We Know**

By Alex Collins

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Coal is very important to Illinois. Illinois is ranked sixth in the United States for coal consumption and ranked seventh in coal distribution. Most of the coal is used to make electricity. Illinois produces over thirty million tons of coal per year and is distributed throughout the Midwest. Coal mining alone in Illinois brings in \$1.5 billion. Coal mining also accounts for 50% of rural jobs in Illinois. Without coal, Illinois would lose a billion dollars and unemployment in rural parts would be very high.

There are many job opportunities in the coal industry for citizens of Illinois. For every one miner hired five other people have job opportunities. There are jobs such as overseeing miners' safety, corporate management and other supporting jobs. Also, in Illinois if you do not live in a rural area there are jobs such as working in a coal power plant. Coal can provide a bright future of employment for many people in Illinois.

Electricity produced by coal is a major industry in Illinois. Coal power accounts for roughly half of Illinois' electricity. Currently our state is working on a coal power plant that will turn coal into energy with 15% fewer emissions. The new idea is being tested at a local college. Some citizens have been saying that if coal plants did not become more eco-friendly they would have to go. With new technology coal can be used to efficiently produce greener power.

## **Coal Mining in Illinois**

By Evan Gammicchia

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There are many jobs that are necessary for the production of coal in Illinois. These jobs are important for operating two different types of mines. One type of coal mine in Illinois is the deep underground mine. The second type of coal mine is one where the coal is mined directly under the surface. Coal mining provides both jobs and coal resources to the people of Illinois

The first type of mine, the underground mine, requires more time, manpower, and is the most dangerous. The initial jobs are for people to inspect the land. They look to find land for mining by testing for coal supply, then by checking areas for flood zones and fault lines. These people also test the land to make sure that it can hold up a mine. Once the area has been approved, they hire workers to bring in large machines to dig a hole straight down to get to the coal. When deep enough, they turn to go crossways to make an underground hallway for the miners. After the digging process is finished, workers are hired to bring all of the mining supplies underground because the miners stay underground all day long. The supplies brought down include digging tools and vehicles to transport the coal once it has been mined. When the supplies are down in the mine, they then dig rooms out of the hallway with a machine that has over one hundred drills on it. They also build emergency rooms that have oxygen in them in case the mine would ever collapse. They then hire people to operate the ram car or shuttle car that takes the coal from the continuous miner machine to a belt which takes it up to the surface. Then the coal is put in big trucks to be driven to wherever it is needed. After the coal is dug out, the miners put white chalk on the walls. They do this because it helps to keep the coal dust from getting in the air and it also helps the light in the mine be brighter.

The second type of coal mining in Illinois is mining right under the surface. The first thing that is necessary is to hire someone to remove all of the topsoil. The soil could be good or it could be bad with rocks in it. Once the soil is removed, they bring in huge trucks to scoop up the coal. The truck's wheels can be up to two stories high. After all of the coal is collected, they send it to wherever it needs to go. In the past, people would leave the huge craters from mining. Eventually the site with all of the craters would turn grey and have water in them. Now, laws have been passed that the mining company must make the land better than when they first started mining on it.

Mining has provided the people of Illinois with coal for many, many years. Coal is a valuable resource that helps to provide heat, energy, and many other uses. The two types of coal mining helps to give people jobs. With the land, manpower, machinery, and time, coal can be mined for many years to come.

## **Coal Mine Essay**

By Jeffrey Flint

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Back in the year of 1836, my great, great, great, great grandfather Eli Moore had purchased land in Mineral Township from the government for \$1.25 an acre. This land is now known as Sheffield. On this land Eli had discovered coal in the banks of Coal Creek. Eli along with John Green Read (Eli's nephew) were the first to deliver coal to Princeton.

Men would remove the coal from well below the earth's surface. They worked many long hours and there were accidents frequently. The walls of the mines would collapse. These men used their hands to get the coal. My grandfather, Irvin Flint, worked at the coal mines in Victoria, Illinois in the 1960's.

Today the coal mining procedure is quite different. Now mining is done within 200 feet below the earth's surface. This type of mining is called surface mining. If the coal is much further than 200 feet below the earth's surface then underground mining is performed. The United States produces a little over 1.1 billion tons of the world's coal supply. China is the largest producer of coal.

Coal will continue to be produced for as long as we have a need for it. As of today, the United States has enough of a supply of coal to last about 300 years. That is of course if it is used at the same rate as today. Coal is now and will be the most cost-effective fuel source next to natural gas and oil. Coal is widely used around the world and will continue to be, using it as a source of energy and the lower cost of the coal.

## **The Heart of Our State**

By Hanna Darwish

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Coal has always been part of Illinois. It provides heat and energy. The coal mines in Illinois also benefit the people who are suffering from the recession, because it has many job opportunities.

To begin with, Illinois residents have been relying on coal since the very first people moved to the state. It is one of the most plentiful natural resources in Illinois. Coal is a fossil fuel, and it is a black rock that can be burned to create heat. There are several different types and ranks of coal. Coal is classified by degrees of hardness, moisture and heat content. The most common form of coal is Bituminous. It is soft and is used to generate electricity. The other types of coal are lignite and anthracite. Coal is also known as “nature’s black diamond” and is being mined now more than ever. It is used to generate more than half of the country’s electricity.

Furthermore, the coal mines are also a way to help the people who are suffering from the recession. The mines require workers, and many people are looking for work. Last year, many people were hired. Also, because of the opening of new mines, more people can be offered jobs. The coal mines are like a win-win situation. Many people are hired, and they earn their hourly wages, and they’re also helping out the rest of the state because of the coal they’re mining.

In conclusion, coal is a major part of Illinois. It warms our homes and supplies us with electricity. Coal mines also offer jobs for people seeking work. Coal benefits everyone in our state. It’s been with us since the beginning, and it will stay with us until the end.

## **Coal Transportation in Illinois**

By Kelli Kluever

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Coal is a natural resource that we use each day to make our lives better. Americans use about the equivalent of twenty pounds of coal each day in the energy they use. It is an affordable, reliable and secure fuel. There are many steps involved in the coal mining process to get the coal from the mines to a usable form of energy in our homes. Many forms of transportation are used including ram-cars, trains, semi-trailers, and barges.

Coal Transportation begins in the mine. Illinois mines produce about thirty-two million tons of coal each year. Ram cars take the coal as it is mined to conveyer belts. These conveyer belts move the coal to the surface of the mine. Most mines in Illinois have three to five ram cars. These cars are low to the ground and can be filled with thirty-two tons of coal per minute. This is only the beginning of the long journey for the coal.

Besides in the mine, there is transportation outside of the mine. Track dozers, end-loaders and large trucks are used at surface mines. Today's trucks are able to carry a load of one hundred tons. Coal is transported by truck from the mine to a prep-plant to be processed for use. There are eleven counties in Illinois that currently mine coal. That means there is a lot of coal to move across the state. Illinois also sends about three-fourths of its coal to eighteen other states and even some to Europe. Illinois has many good interstates which make hauling coal by truck easy. Three interstates are boarder-to-boarder in Illinois.

Another way to transport coal is by railway. This is one of the oldest and best ways to move the fuel. Railroads ship 71% of coal in Illinois. There are over seven thousand miles of railroad track throughout the state. Coal can be taken to rail cars and loaded on with conveyer belts. Rail cars allow a lot of coal to be transported at one time. It is not uncommon to see coal loaded high above rail cars as they move through towns in Illinois.

Transportation of coal also takes place on water. There are over one thousand miles of rivers, lakes, and canals in Illinois that allow barges to move coal. Rail cars and trucks empty onto conveyer belts, which load the barges that can take coal all the way to the Atlantic Ocean and the Gulf of Mexico. This allows coal to be transported to locations that do not have coal as a natural resource.

All of these ways to transport coal eventually take it to power plants where it is needed to produce the energy that we use every day. The coal industry provides many jobs in our state and also allows us to have the comforts in our homes that require energy. So, the next time you turn on a light, think about how it was able to turn on. The transportation of coal was a key part in making it happen.

## **Illinois Coal**

By Tommy Maren

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Rotolo Middle School

Batavia, IL

Imagine you're a miner going down in a dark mine. You're working eight hours a day, and you see only a little sunlight a day. Just for coal. But miners realize that it is important to Illinois' future because it powers a lot of Illinois' daily-used electricity. So what is coal and how do we get it?

Coal is a black or brownish rock, made from plants that lived 100 to 400 million years ago. The plants died and fell into swamps. This process continued for years, and it eventually formed layers of dead plants. The plants got trapped under the water and did not decay completely. The soggy, heavy layers formed something called peat. Sand, dirt and clay covered the peat. Over time, heat and pressure made the peat become rich carbon deposits. Millions of years later the carbon deposits formed coal. The coal contains the energy that was in the plants. The energy is now used as fuel. The coal has energy from one-living plant; so it's called fossil fuel.

Surface mining is when the seam is fewer than 125 feet under the surface. Big equipment is used to clear trees, shrubs and topsoil. Holes are drilled into the ground and surface miners put explosives in these. The explosion breaks up dirt and rock, called overburden. Big earth-moving machines move the dirt and rocks (overburden) to expose the coal seam. When the miners find coal, bulldozers load it into large trucks. The topsoil is replaced for plants to be grown again.

Underground mining is used when the coal seam lies deep in the earth. Not all the coal is removed because some of the coal needs to support the roof of the mine so it doesn't collapse. Underground mines are a system of tunnels. The coal that is mined is put on a conveyor belt that takes the coal to the surface.

The formation of coal and how we mine it makes Illinois coal super important to our state's energy. Mining coal can be a dark, dirty and dangerous job, but it is an important one. 87% of coal mined in Illinois is used for electricity. Every day we use coal. As you can see, coal is very important for Illinois.

## Coal

By Madison Mathews

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Coal is used in many ways. It goes through a process before it can be used. Coal is black or brownish-black rock made from plants that lived and died about 100 to 400 million years ago. There are three different types of coal. One type of coal is anthracite, which is nicknamed "hard coal". The second type of coal is lignite, which is nicknamed "brown coal". The last type of coal is bituminous coal, which is nicknamed "soft coal". Illinois has the largest amount of bituminous coal of any state. Coal is found under 37,000 square miles of Illinois.

There are two types of coal mining. One is a surface mining. Surface mines were called strip mines.

Another kind of mining is underground mining. One type of an underground mine is room and pillar mine. In room and pillar mines, a continuous miner knocks down the coal and makes tunnels underground. The tunnels are the rooms. A continuous miner has a steel drum with carbide tip bits that break the coal loose. The miner has two paddle arms that sweep the coal into the metal conveyor belt that runs down the middle of the miner. This allows the coal to be loaded quickly and efficiently onto ram cars or shuttle cars. They leave sections of coal still standing to hold up the ceiling. These are the pillars. Then the miners take roof bolts and drill them in the ceiling to keep the ceiling from falling in.

Another type of underground mine is a long wall mine. A longwall miner knocks down all the coal underground. They leave no remains of anything.

Miners spray rock dust on the walls underground, and it makes the walls look like a whitish color. Semi trucks, train, and barge also transport coal from the mines.

Coal mines are very important to my family. One way coal mines are important is after coal is burned it is used for electricity. I use electricity at my house. Another way is that mines provide my family a job. If someone is looking for a job and mines are hiring then maybe they can get a job at the mine.

My grandfather worked in the coal mine for 14 years and now he has a trucking business that hauls coal for the mines. Three of my uncles are coal miners. I have three great-uncles that are also coal miners. Working in a coal mine can also be very dangerous, my step great-grandfather was killed in 1963, and his oldest son was killed in 1967 while working in the coal mine. When my dad worked at Eagle Valley, his leg was crushed by a huge rock. You cannot get out of your car or truck if you do not have a hard hat on. You have to wear a hard hat so if a piece of coal falls then your hat will secure your head, and you will not get hurt.

When coal miners dig up the land to get the coal they have to fix the land just as it was before. This is called reclamation. For example, if there were a lake there before they dug for coal, after they were done mining they would have to put in a lake right where it was at first. Coal mines even buy people's houses so they can get the coal from under their house. Usually mines are willing to pay a lot of money for your house, because coal is a fossil fuel, and fossil fuels are nonrenewable.

## **The Life of a Woman Coal Miner!**

By Katlynn Riley

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Jefferson Middle School

Tower Hill, IL

Pam Pugh was 40 when she started working as a miner in the “Tri-County Coal Mine.” Pam was born in 1965, and she still lives today. In fact, Pam is my aunt! She lives in Nokomis, Illinois. She drives almost an hour just to get to the mine.

Pam works with a big machine called the “continuous miner”. The continuous miner is huge. It has a roller with “teeth”, and it has a conveyor which “spits” the coal out. The continuous miner tears or cuts the coal at the face of the coal mine. Like I said before, the continuous miner has a conveyor which loads the coal onto the ram car by “spitting” the coal out.

The ram car is a big car that has coal loaded onto it. The ram car drives the coal to a belt which takes the coal to the surface, which can be anywhere from 250 to 1,000 feet down. After it is on the surface it is washed, cleaned, and dried to get clay mud and any other things out of the coal. After it is cleaned and everything, it is able to be sold on open market.

After the miner cuts the coal, a roof bolter goes into the coal mine, and roof bolts are bolted to the top of the mine to keep it from caving in. Then the process keeps on going on and on and on. Just think this is a really long process. Even though the continuous miner can cut thirty-eight tons of coal per minute it still takes a while. First they have to tear the coal and put it on the ram cars. They have to get it on the conveyors and make sure it goes up to the surface, so after it is there they have to wash and clean and even dry it. I mean that would take at least a maximum of three hours depending on how long it would take for the coal to go up because you are 250 feet down. That would take forever that’s for sure!

Pam still loves her job today! She has to wear a lot of equipment like a hard hat, also the light that goes on it so she can see, thick leather gloves, hard-toed boots, also many, many other things. After Pam rinses the coal she also has to send it to ADM in Decatur, Illinois or it can possibly be sold on the open market. Now remember if you ever see Pam at work you might not want to talk to her because she works very hard to do her job right!

## **Different Ways to Mine Coal**

By Gretchen Stevens

6<sup>th</sup> Grade

Rotolo Middle School

Batavia, IL

We get electricity and energy from coal. There are many different ways to mine coal. The most common ways to mine coal are surface mining and underground mining. To mine coal, the miners have to be very cautious because some miners have been injured or even killed by cave-ins, falling rocks, explosions and poisonous gases. This is why coal mining is one of the most dangerous jobs anyone can do.

Surface mining means that the soil and rock above the coal beds must be removed. "About 40 percent of coal mined in the world and 70 percent in the United States comes from surface mining." First, they have to clear the land above the coal area. They do this with bulldozers. Then they put explosives in the ground to get to the coal beds. They blow up the rock and remove it with giant power shovels until a large area is cleared off showing the coal. To get the coal out of the ground they have coal digging machines that load it onto trucks. There are two kinds of surface mining. One is if the land is flat or level that is called "area mining", and if the land is hilly or on a mountain, then that is called "contour mining".

A big problem with surface mining is that all the land is cleared away to get to the coal. So that means all the trees, rocks, and plants are removed. When the coal is gone, the companies who mined the land must put the land back the way it was. This is called "reclaiming the land".

The second most common way to mine coal is underground mining. Underground mining is much more dangerous than surface mining. To get to the coal, it is located at least 200 feet underground, and sometimes coal miners are working up to 700 feet underground. This means they have to dig tunnels to get to the coal deposits.

Underground mining needs more people to do the work compared to surface mining, but it also has the machinery to do the digging, loading and hauling. In underground mining they dig two separate entrances. One is used for the workers and the machines to get in and out and the second one is used to take out the coal. Both openings are important to help bring the air in and out of the mines. The three main types of underground mines are shaft mines, slope mines and drift mines.

Coal is very important to our country for energy. We get our coal from surface mining and underground mining. Both types of mining use machines and people to do the work. They also have to use explosives in surface mining to get to the coal. Because of these many reasons, coal mining is a very dangerous job.

## **The BIG Move**

By Rachel M. Warren

8<sup>th</sup> Grade

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Petersburg, IL

I was born some time ago  
I'm 65 million years old  
I've been waiting here a while  
Deep below the ground  
Sleeping quiet here alone  
But then, there came a sound.

I heard rough voices  
I heard a roar  
I heard some grinding rocks  
The earth shook and rubble fell  
Then light broke through a crack  
And men with hammers sharp and hard  
Came and smashed my home.

Later, sitting, wondering, waiting  
Thinking "What will my fate be?"  
I was placed upon a belt  
And moved to a machine.

I was washed with water,  
I was cleaned with heat,  
I was cleansed with living things  
And then you called me 'Coal'

I did not understand my job  
When you took me from the ground  
But now I know as the fire grows  
I make your world go 'round

I make your electricity,  
I make your steam trains go  
I power your huge factories  
And maybe you didn't know

That I who sit in burning flame,  
Who used to sit in rock  
When I was taken from the start  
May power your whole block!

## **The Amazing Ways of Transporting Coal**

By Tristan Wooldridge

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Jefferson Middle School

Tower Hill, IL

The coal transportation system is very fascinating. There are many methods of coal transportation but the ones I'd like to talk about is the train, colliers and barges which are significant and helpful to get the coal to markets.

The train called the unit train has a hundred cars that carry about a hundred tons in each car. There are shorter trains that may use railcars with an air-dump. The air-dump has pressure from the engine and a "hot shoe" which it relies on. When the hot shoe gets to the unloading trestle and comes in contact with the "hot rail", it shoots an electric shock through the air-dump apparatus which makes the door on the bottom open and then dumps the coal. The unloading of these cars takes anywhere from an hour to an hour and a half.

A cargo ship carrying coal or a "collier" may hold 40,000 long tons of coal and takes several days to unload. To unload their bunkers the colliers have their own conveying equipment. The others depend on the plants equipment. Colliers are large seaworthy self-powered ships. In calmer waters like rivers and streams they use barges which are flat bottomed vessels. Barges usually are unpowered and have to be moved by tug boats or towboats.

Illinois has been using barges since the 1840's. Keelboats tied to the sides of steamboats served as the first barges. Before the arrival of railroad and hard surface roadways the Illinois River was the main artery by which products were sent to markets.

## **The Rise and Fall of Illinois Coal**

By Trenton Black

7<sup>th</sup> Grade

Carmi White County Middle School

Carmi, IL

What would happen if one day our state's most abundant energy source, **coal**, disappeared? Coal, a fossil fuel, is combustible sedimentary rock occurring in layers inside the earth. Formed originally from plant matter, coal contains carbon, sulfur, hydrogen, oxygen and nitrogen. It is primarily used to fuel the electric utility industry. Since the first commercial sale of coal in Illinois in 1810, it has played an important role in our state's economy and in the lives of many families including my own. Since both of my grandfathers were coal miners, I know the great importance that the coal industry has in our state.

In 1810 the first commercial sale was made from coal mined from the bluffs of the Big Muddy River in Jackson County. With the discovery of huge coal deposits in the 1860s, a coal boom began. Mines were sunk by many companies, and "coal towns" sprang up around the mines. Life was extremely difficult for the miners and their families. The underground work was dangerous and dirty. Ceilings in the underground tunnels were low and secured only with lumber. Often huge rocks would fall, trapping, injuring, or killing them. Miners breathed stale dusty air, and many developed breathing problems. Miners also complained about the coal companies cheating them on their wages. To try to correct these problems, the miners formed unions. Progress was slow with several tragic disasters happening at mines throughout the state.

In the 1970s, advances in mining technology enabled mines to increase production and become safer places to work. The coal industry was fast becoming a billion dollar business producing millions of tons of coal each year. Things were definitely looking up for the coal industry, that is until the Clean Air Act was established. Since Illinois coal has a high sulfur concentration and using it would mean installing expensive scrubbers, many users turned from using it as a fuel and began buying coal from mines in western states. This caused many mines to close and leave thousands of miners out of work. In 1978, there were 71 coal mines operating in Illinois and by 1996 there were only 25. The loss of these mines weighed heavily on the communities. Many small communities and school districts depended greatly on the revenue from tax money generated off of the coal.

What does the future hold for Illinois coal? We know that to meet our energy demands for decades to come, we must find many different solutions. The energy challenges facing our nation are wonderful opportunities for Illinois. Illinois coal is in plentiful supply. The United States Geological Survey research shows that the energy stored in the known deposits of coal in Illinois is greater than the energy stored in the oil reserves in Saudi Arabia. We need to find ways to make our coal cleaner and more marketable. This would stimulate our economy with jobs and tax revenue and put the coal industry back on its feet.