# RIFLE'S BLAST FROM THE PAST


## RIFLE HERITAGE CENTER

P.O. Box 1882, Rifle, CO 81650 ISSUE 26 March 2016
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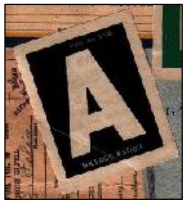
The date was December 7, 1941 and the United States was about to be changed forever. As Franklin D. Roosevelt put it "a date which will live in infamy", the date that the Japanese Armed forces attacked the U.S. Navy Base in Pearl Harbor, Hawaii. The United States was at war and needed all of her resources directed toward the war effort. Roosevelt asked in early 1942 for citizens to voluntarily reduce their usage of gasoline, but that was not enough, and mandatory gasoline rationing started.

You got an "A" sticker if you had a normal usage automobile which allowed you four gallons of gasoline per week. You got a "B" sticker if you had usage that was essential to the war effort. A "C" sticker was issued to physician, minister, mail carrier, or railroad worker. An "R" sticker was for farm tractors and other non-highway vehicles. "T" stickers were for trucks hauling essential supplies for the war effort. If you were a member of congress or other certified VIP, you received an "X" sticker. The maximum speed limit nationwide was 35 miles an hour. This all helped, but it was soon apparent to congress that more was needed. On April 5, 1944 Congress passed the Synthetic Liquid Fuels Act.



Gasoline Rationing Sticker

The title of the law reads: "An act authorizing the construction and operation of demonstration plants to produce synthetic liquid fuels from coal, oil shale, agricultural and forestry products, and other substances in order to aid the prosecution of the war, to conserve and increase the oil resources of the Nation, and for other purposes."

Congress authorized $30,000,000 for a 5-year program and directed the Bureau of Mines to carry it out. Surveys were done in the fall and winter of 1944, and core drilling samples were taken. These showed the potential of some 9 billion barrels of oil in the shale of Naval Reserve No. 1. This compared to 1.7 billion barrels produced in the United States in 1946. Driven by the war, the second oil shale boom was on. The boom in the U.S. was not the only one driven by war. In Manchuria, the Japanese had already constructed and put in operation the largest oil shale facility in the world to supply liquid fuels for their military.


Anvil Points on the Roan Cliffs

By the spring of 1945, the Bureau of Mines settled on the location of Anvil Points six miles west of the town of Rifle. This 2500-foot vertical cliff offered the best access to the Mahogany layer of oil shale, which holds shale that contains up to 55 gallons of oil per ton of shale rock. The portion of the Synthetic Liquid Fuels Act which pertained to oil shale would become known as the "Bureau of Mines Oil-Shale Project, Rifle Colorado", locally known as the Anvil Points Project. Some 18 million dollars would be spent in development of this demonstration plant.

In his 1947, Report of Investigations, United States Department of the Interior- Bureau of Mines, E.D. Gardner put in his introduction the following statement:

> The American petroleum industry is supplying the present domestic demand for liquid fuels. Known reserves of petroleum in the ground, however, are limited, and the cost per barrel of finding new oil pools is increasing. Any deficiencies of domestic production in the near future doubtlessly could be made up by imports. Dependence upon foreign oil for part of our industrial requirements is not necessarily cause for alarm, but in time of war an adequate, dependable, domestic source of liquid fuels is vital to the defense of the country. As a national defense measure, it would appear logical to take steps now to develop methods for producing petroleum substitutes within our own borders.

This is exactly what he and others set out to do. The first step to start the project was to build a road up the mountain, so an application for a mine access road was submitted to the Bureau of Public Roads. Construction started in midsummer of 1945. By September, a pioneer grade was reached at the mine site, but it was not until seventy years ago in 1946 that the road bed was finished. The road is about fourteen feet wide and for the most part has a 10% grade, with some areas having a 14% grade. The sharpest switch back curves have a radius of 40 feet and there are intervisible turnouts provided since the road is only wide enough for traffic one way up or down. The road is five and half miles long and rises some 2500 vertical feet from the plant site at the base of the cliff to the mine site.

View of Upper Road

The next step was to build a flat area at the mine site to provide room for building and mine yards. This required that 72,617 cubic yards of material, including 17,148 yards of solid rock, be removed from the site to provide a flat area once acre in size. Most of the rock was dumped on the east side of the ridge away from the road, traveling some 1,500 feet down the mountain before coming to rest.

Remains of pump house on top of the mesa

The mine then had to secure a water supply. This was developed on the mesa above the mine site and water was brought down through one of the diamond-drill holes originally done for sampling the rock strata. The minimum flow was 500 gallons per minute, which was the required amount for the mine to run drilling tools and to water down mined shale to minimize dust. The pipes on the surface and in the entrance of the mines were buried in trenches below the frost line.

To operate the three-yard electric shovel and other mining equipment, power had to be run to the mine. Lines were constructed to transmit some 13,800 volts of power to two 500-KV primary transformers. Five outlets each at 2,400 volts

were provided, one for the two electric compressors, one for the electric shovel, and three for secondary transformers. These secondary transformers reduced the voltage to 480 volts of three phase power. Numerous small transformers reduced this voltage to 120 and single phase for lighting and other yard uses. A telephone line was also needed and was run from the plant switchboard to the mine site some 2500 feet up the side of the cliff. Extensions were installed in the mine office, the warehouse, and the mine shop.

It was first thought that all the mine building should be built inside the mine, but after careful consideration of the danger of fire and the possibility of the oil shale catching on fire, it was decided that all mine buildings would be built outside of the mine. The buildings were constructed of fire-resistant materials. A warehouse and mine office were in one building, a second contained the change-house, and the third the air compressor and mine shops. A chain link fence was installed on the cliff above the mine and buildings to help prevent rocks from falling off the cliff on to the working areas. Also special attention was paid in the winter to icicles, and it was the job of the miners to shoot down any large icicles with a 30/30 with each changing shift.

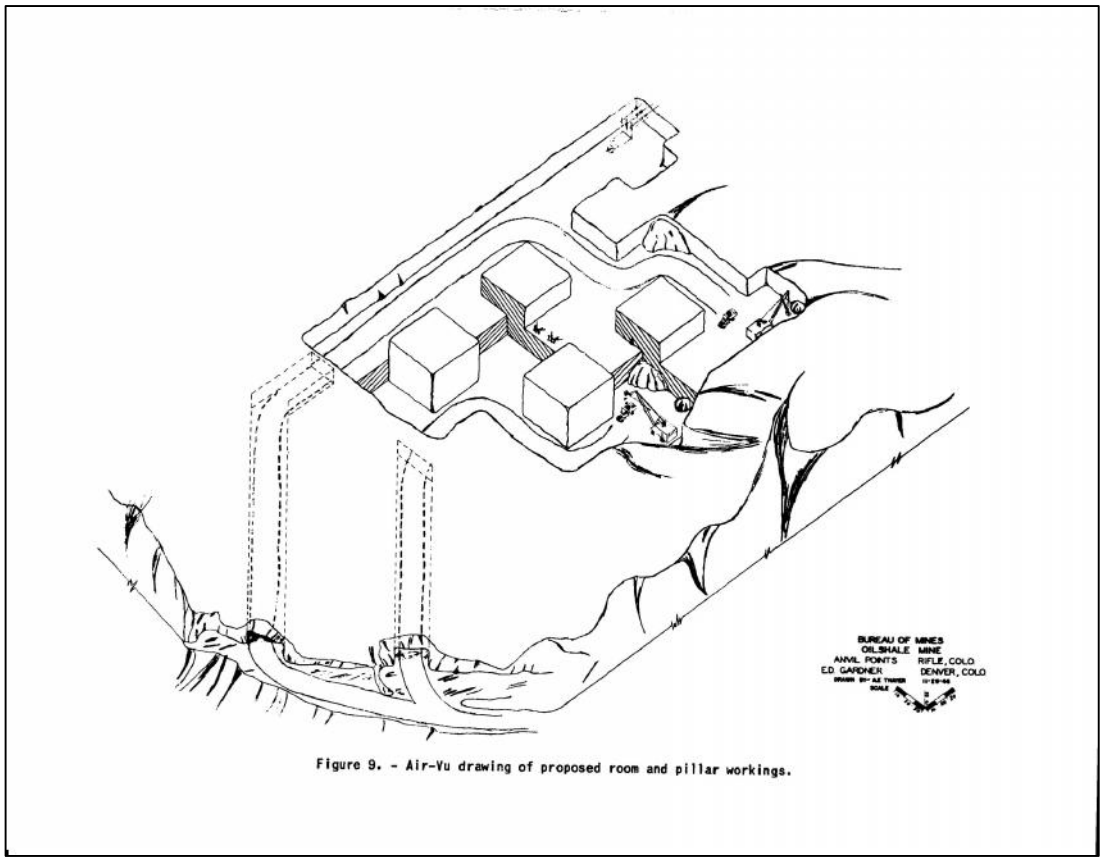


Figure 9. - Air-Vu drawing of proposed room and pillar workings.

A great deal of consideration was given to the type of mine this would be. The oil shale layer is some 70-foot-thick and varies in richness as to the amount of oil contained per ton of rock. The layer is also on a four percent grade as it goes back into the mountain side. After much study, it was decided to use a room-and-pillar mining method found in many limestone mines and at the time was also being used at the vanadium mines in Rifle Creek. The decision was made to mine from the top down so that once the roof was created it was not necessary to create another. This was done for safety considerations. More studies were done to determine the best method of removing the mined oil shale out of the mining area. Many mines use conveyor belts or rail cars to move the ore to the surface. Since oil shale tends to break off in large pieces of rock when blasted, it was determined that the most efficient method of removing the ore would be by large 15-ton capacity trucks. This decision required that all tunnels and rooms had the size to allow for access by these large vehicles. The mine workings were started and blasting out of the rooms and access tunnels were well on the way to completion by the end of 1947.

Closed off mine entrance that has a bat gate for bat entry/exit.

The mine was now ready to deliver ore to the retort for processing. President Harry Truman had signed Proclamation 2714 declaring an end to all hostilities in World War II on December 31, 1946. The war was not officially over, but rationing and the need for fuel to win the war were greatly diminished. The official end to the war would not be until October 19, 1951.

The work at Anvil Points continued, but that is another story.

**PLEASE MARK YOUR CALENDAR FOR FRIDAY WORK DAYS IN APRIL!**