Bringing Earth's Resources to Life

J.R. Simplot Company's mining operations have helped convert raw materials into life-sustaining nutrients for decades

By Mark Mendiola

Accidentally applying too much phosphate fertilizer on 40 to 80 acres of red potatoes in rural Southern Idaho during the 1930s, J.R. "Jack" Simplot stumbled upon a discovery that decades later would turn his humble potato and onion operation into a multi-billion-dollar agribusiness conglomerate and one of the world's most ambitious, innovative mining enterprises.

The company that bears his name has grown to own the largest quantity of high-grade phosphate ore reserves in the western United States. It also has reclaimed thousands of acres of land where phosphate and precious minerals have been extracted, restoring the landscape to its original appearance as part of the company's emphasis on environmental stewardship.

During the Great Depression, J.R. Simplot bought a load of crude fertilizer from a wholesale distributor in California to put on a field near Declo, a small farming community southeast of Burley in Idaho's Magic Valley. "I didn't know what it was. I didn't know anything about phosphate or potassium," he recalled.

Simplot unloaded the fertilizer off a rail car, but ended up putting much more than he wanted on the ground when he couldn't get applicator equipment geared down enough. "I didn't have anything else to do so I said, 'Let's finish it up,' and I plowed up the fertilizer." As it turned out, potato yields were distinctly higher where the fertilizer was applied as opposed to where it wasn't put on the soil.

"That's how dumb I was with fertilizer, but that sold me on fertilizer," Simplot said. "I grew the damndest crop of red potatoes that had ever been grown in Idaho, I believe."

His conviction that phosphate fertilizer helped grow better crops led him to later invest millions of dollars in phosphate mines and processing plants throughout the Intermountain West, making him one of the most successful, wealthiest industrialists in America.

Not bad for a dirt-poor school dropout who had to rely on his own wits, gambling instincts, hard work and resourcefulness to survive, as well as an innate ability to surround himself with the most qualified experts in their respective fields.

"Most of those mining operations were really instigated right by J.R himself. He just loved that gamble. There was just something about that unknown he just loved," said Robert Lothrop, who retired in 1991 and helped make many of those Simplot operations succeed. "He had a great knack for getting involved in some of these things – some not so good, some very good. You don't win them all."

Simplot's Gay, Conda and Smoky Canyon phosphate mines in Eastern Idaho all introduced cost-saving, technological innovations that helped modernize mining techniques throughout the industry.

Inauspicious beginning

Born January 4, 1909, in Dubuque, Iowa, John Richard Simplot was the third of six children born to Charles Richard "Dick" and Dorothy Simplot. When he was barely a year old, the family moved to the western United States in the spring of 1910, settling in the newly organized town of Declo, created as a result of a federal Snake River reclamation project, which was offering cheap water to irrigate southern Idaho's desert and turn it into lush farm land.

Like other area homesteading pioneer families, they labored long and hard to turn semiarid property into productive crops. When he was 14, Jack dropped out of school and struck out on his own, but stayed in the Cassia County area, going into business in 1923.

Using substantial profits from selling 600 head of hogs, Simplot ventured into potato farming by buying a team of horses and farm machinery, and leasing 160 acres of neighboring farm land. In 1928, he jointly purchased an electric potato sorter. In 1929, he began to expand his sorting operation for local growers and established contacts with midwestern and eastern brokers.

By 1940, he had acquired and/or built 33 potato warehouses from Vale, Oregon, to Idaho Falls, Idaho. Volume grew from 560 rail cars of fresh potatoes shipped during his produce company's first season to more than 5,000 rail cars during the 1943-1944 season, more than any of his Idaho competitors.

During World War II, Simplot expanded by entering the lucrative food processing industry, selling millions of pounds of dehydrated onions and potatoes to the U.S. military. By 1945, more than 50 million pounds of potatoes were used by the military. Of 156 companies supplying dried food, Simplot controlled a third of the action, making him the largest shipper of dehydrated potatoes in the nation.

A need for fertilizer

During the war, Simplot decided to enter the fertilizer business as phosphate fertilizer supplies dwindled. Although commercial fertilizers were not widely used in the Intermountain West, Simplot urged the farmers who grew his potatoes and onions to use them because he was convinced they were essential for successful farming. The Anaconda Company of Montana was then Simplot's primary source of fertilizer.

In 1943, Anaconda informed him that war demands for phosphate prevented further deliveries, and he was encouraged to construct his own plant, using ore supplied by Anaconda. He acquired a 140-acre site outside Pocatello, near Eastern Idaho's vast phosphate beds, and organized the Simplot Fertilizer Company in 1944 to provide phosphate fertilizer to regional farm markets.

An attorney advised J.R. Simplot to construct the fertilizer plant in Power County instead of Bannock County to sharply reduce property taxes, Simplot said. The plant was built with financing from the federal Reconstruction Finance Corporation. Phosphate ore must react with sulfuric acid to make fertilizer. Simplot gave authorization to construct a sulfuric acid plant to the American Smelting & Refining Company (ASARC0) in Garfield, Utah, in exchange for a 20-year contract with ASARCO for sulfuric acid at little more than cost.

On December 10, 1944, Simplot's Pocatello plant produced its first ton of phosphate fertilizer. During its first years, the plant had a capacity of 50,000 to 80,000 tons a year.

"I'd take the acid for nothing, and I'd pay the freight up to Pocatello, Idaho, and I'd take this acid and mix it with rock, and I'd come out with a bin full of about 20 percent P205 (the equivalent amount of phosphorus pentoxide)," J.R. Simplot recounted. "It was the best deal I ever made in my life. … That's what I started with, just plumb sulfuric acid and rock, and it worked."

Single superphosphate contains between 15-21 percent P205 manufactured by reacting ground phosphate rock with 65-75 percent sulfuric acid. Triple superphosphate, which is made by reacting phosphate rock with phosphoric acid, contains more than 40 percent P205.

One ton of superphosphate fertilizer included 650 pounds of acid calcium phosphate, 370 pounds of phosphoric acid, 40 pounds of phosphate, 1,050 pounds of gypsum, 230 pounds of sulfur, and 20 pounds of minor elements, including carbon, iron, titanium, chromium, vanadium copper, cobalt, manganese, lead, barium, strontium, magnesium, boron, chlorine, iodine and aluminum.

The original Pocatello plant measured about 37,500 square feet and was to produce 120,000 tons of single superphosphate annually with Anaconda providing the phosphate ore for the plant and ASARCO supplying the sulfuric acid. With the plant ready to operate by December 1944, Anaconda informed Simplot it didn't have enough workers to mine sufficient quantities of phosphate for itself, let alone a potential competitor.

Huge phosphate reserves

Fossil shale containing skeletons of billions of marine creatures were laid down during the Permian period, the earliest period of the Paleozoic era, according to scientists, who say Cambrian seas covered a large part of Idaho and Utah. The microscopic shells formed tri-calcium phosphate. Over thousands of years, the waters receded and other seas were formed. They were teeming with microscopic life that supported more advanced forms of life.

The last large body of water was the inland Lake Bonneville, thought to be an arm of what is now the Pacific Ocean. At one time, Lake Bonneville was more than 1,000 feet deep, 325 miles long and 135 miles wide, covering much of the Intermountain West, scientists estimate, saying the Great Salt Lake in Utah and the Western Phosphate Field in the region are remnants of Lake Bonneville.

A combination of wave action, temperatures, topography and chemical reactions enhanced the deposit of billions of tons of phosphate ore, creating the Western Phosphate Field, which stretches from southwestern Montana to northeastern Utah through Idaho and Wyoming. Conditions were exactly right for depositing phosphate. Some scientists think the climate was cool and the atmosphere high in carbon dioxide.

The phosphate was deposited as a horizontal formation with fairly uniform thickness and grade on the ocean floor. It was then covered by marine sediment. The phosphate ore now runs in a maze of faults and folds because of land thrusts and erosion, making it difficult to locate geologically.

Some of the richest deposits are found within a 100-mile radius of Southeast Idaho's highlands. U.S. phosphate deposits also are found in Florida, Tennessee and North Carolina.

Southeast Idaho deposits are estimated at three billion tons of economically mineable rock or nearly half the U.S. total. By 1969, only 8,400 acres of Idaho's 53 million acres of phosphate had been mined. World reserves are estimated as high as 50 billion tons with perhaps 100 billion tons of low-grade phosphate rock. Phosphate shale is either reduced to elemental (pure) phosphorus or combined with chemicals to produce chemical fertilizers.

Phosphate, nitrogen and potassium are the three basic plant foods. Phosphate helps plants convert soil nutrients into energy and stays in the soil until used by crops, enhancing the growth of roots, blossoms, fruits and seed. It also accelerates plant maturity and boosts yields.

Phosphate ore is a plain brownish rock mined and processed to produce fertilizer and elemental phosphorus, a chemical used in a wide variety of commercial products, including fireworks, soft drinks, television screens, tires, toothpaste and matches. About half the phosphate mined in Southeast Idaho has been used for farm fertilizers. The rest has been used to produce elemental phosphorus.

An environmental impact statement issued by the U.S. Geological Survey, the U.S. Forest Service and Bureau of Land Management in August 1977 projected that annual Idaho production of phosphates would be 15 million tons by 2000, instead of 30 million tons originally anticipated.

Simplot was among eight companies originally proposing 16 mining plans for the area that would affect 15,761 acres. Five operating surface phosphate mines in Southeast Idaho produced about six million tons of phosphate in 1975, representing about 11 percent of total U.S. production. The United States had about 14 percent of the world's phosphate reserves, with Southeast Idaho holding about 40 percent of those reserves. At that time, 83 phosphate leases in the area covered 43,370 acres.

Phosphate industry history

Southeast Idaho phosphate mining through 1977 removed 84 million tons of ore – 38 millions tons from tribal lands, 31 million tons from federal leases, 15 million tons from private and state lands.

By February 1979, the Southeast Idaho phosphate industry employed 3,000 for a $50 million annual payroll while 2,700 also were employed in phosphate-related industries, representing 15 percent of the work force in Bannock, Power and Bingham counties. Phosphate royalties totaled nearly $3 million as 4.86 million tons were mined in the region or more than 90 percent of western phosphate tonnage. Total U.S. production was 52 million tons.

By January 1989, phosphate mining and processing operations contributed $260 million to $275 million annually in personal Idaho income. They represented 50 percent of Idaho's entire minerals industry. The phosphate sector saw a 90 percent increase in productivity from 1984 to 1989. Former Idaho Mining Association President Jack Peterson said it created 5,700 high-paying jobs in the region. For every $1 spent on

mining phosphate in Southeast Idaho, another $2 was spent to convert it into fertilizer or elemental phosphorus.

Early mining prospects

During the 1870s, disenchanted miners from California and northern Idaho spread throughout eastern Idaho in search of gold, which was discovered in the Caribou Basin in 1870. From 1871 to 1877, the first formal, scientific expedition visited southeastern Idaho. It included geologists, paleontologists, mineralogists, topographers, artists and photographers. This "Hayden Survey" established the basic geologic framework for the region, discovering some mineral deposits but failing to recognize the phosphate.

During the 1870s and 1880s, mining claims were staked throughout Southeast Idaho but not for phosphate, which was of little value to prospectors. Albert Richter, a Salt Lake City prospector, claims to have recognized phosphate deposits northeast of Ogden, Utah, as early as 1889. In 1897, the first specific documentation of phosphate rock was logged, but there was no rush to stake out the deposit.

It wasn't until 1903 that engineers proved the region's deposits could be developed economically. Idaho's oldest phosphate mining operation appears to have been San Francisco Chemical Company's Waterloo mine near Montpelier, an underground mine that produced phosphate ore from 1907 to 1929. The miners used hand-operated drills, shovels and tram cars to produce about 800 tons of ore a year.

The Waterloo mine was revived as a surface mining operation after World War II. When operations came to an end 15 years later, its total production was estimated at 1.25 million tons.

Charles Colcock Jones, a Los Angeles mining engineer, confirmed phosphate deposits in Montpelier, Hot Springs, Soda Springs, Bennington and Bloomington, Idaho; Cokeville and Sage Station, Wyoming, and other areas throughout Southeast Idaho, Southwest Wyoming and northern Utah.

Lack of a viable market and an economical way to ship phosphate ore to fertilizer manufacturers in the East or on the West Coast initially hampered development of the rich reserves in the Western Phosphate Field. Known phosphate deposits in Tennessee and the Carolinas were inexpensively shipped to eastern markets, making the Western Phosphate Field economically unfeasible until the latter 1940s, when J.R. Simplot became a driving force in the industry.

Most phosphate mining now occurs on public lands, but unlike gold and silver, phosphate claims must be leased from state or federal governments rather than claimed or patented, creating a partnership between mining companies and government agencies.

Until the 1940s, virtually all Idaho phosphate was mined by underground methods. J.R. Simplot pioneered the state's open pit phosphate mining, which is much more cost effective and now the industry's standard method. Since 1945, open pit mining has extracted most of the phosphate, dramatically increasing production. Phosphate ore usually lies in tilted blocks mined in long narrow pits within several hundred feet of the surface. Overburden is removed and placed nearby or returned to the pit to be reclaimed. Large scrapers, giant shovels and huge trucks remove the exposed rock.

Once the ore is mined, it must be shipped to processing plants via rail lines, trucks or slurry pipelines. It must be washed, crushed, heated and treated with sulfuric acid to produce phosphoric acid, the basis for all phosphate fertilizers.

The Gay Mine

After Anaconda informed him that it could not continue supplying ore, J.R. Simplot was forced to search for his own phosphate source during World War II to ensure he had enough fertilizer to meet farm demands. He was on the horns of a very pointed dilemma. He had just invested large sums of money and resourcefulness into his Pocatello processing plant, using creative financing to construct it. Now, he was faced with the daunting task of finding a new source of affordable, plentiful ore for his new plant. Otherwise, economic ruin was a very real prospect.

Simplot, company chemist Merrill Sharp and geologists found some of the western United States' best reserves on the Fort Hall Indian Reservation north of Pocatello, which was created by Congress on July 3, 1868. "Me and Merrill got into a pickup truck and went out lookin'," Simplot said. He later negotiated leases with the Shoshone-Bannock Tribes and the U.S. government to mine the ore.

"He didn't have any phosphate. He was getting it all from Anaconda. … J.R. was so instinctive in so many of these things. He would urge the guys to go ahead and get those leases. He wanted phosphate," said Lothrop, who was named Simplot's vice president of mining in 1975. In 1986, he moved to Boise and became corporate senior vice president and president of the Idaho Mining Association.

Mining began at the Gay Mine in 1946, and the ore was hauled by truck directly to the Pocatello plant before a rail loading area was built at the Fort Hall town site. The rock was trucked there and shipped to Pocatello by rail. An estimated 100 trucks a day traveled between Fort Hall and the Gay Mine. During the first year of mining, 53,000 tons of phosphate rock were sent to Pocatello for processing into superphosphate fertilizer.

Simplot was the first company to mine *and* process phosphate within Idaho. The government authorized Simplot to mine leased holdings in June 1946. The Gay Mine eventually consisted of about 7,000 acres of leased tribal and allotted lands within the Fort Hall Reservation. Of the 7,000 acres under lease, only 2,496 were actually mined.

During early operations, most of the Gay Mine's employees lived at the mine site but moved out during the winter, leaving only a skeleton crew. After a railroad was built and a better road to the mine constructed, they moved to Fort Hall, Blackfoot or Pocatello.

J.R. Simplot successfully negotiated the construction of a 21-mile, $1.3 million spur to Union Pacific Railroad's main line at Fort Hall from the company's phosphate reserves, creating a direct link from the open pit mine to the Simplot fertilizer plant.

Simplot, Union Pacific and Shoshone-Bannock officials met September 22, 1948, for a ceremony to dedicate the new spur by driving a silver spike into the rail. The Gay Mine on the reservation was named after Simplot's young daughter, Gay, who also attended the ceremony. A famous photo shows them at the ceremony with a Shoshone-Bannock chief in headdress.

Located about 16 miles east of Fort Hall, it was the first open pit mine in Southeast Idaho to extract federally owned phosphate. It also was the only phosphate mine in the Eastern Idaho phosphate field to be on Shoshone-Bannock tribal land.

"I made a deal through the government, and I wanted to mine every pound of phosphate rock on that reservation," J.R. Simplot said. "I got Union Pacific to build me a road up there. They built me a road, and we hauled ore for 50-some years out of those reserves."

Less than a year after the Pocatello plant's start, fertilizer demand exceeded expectations, but the plant seldom attained its 220 tons per day capacity because of an erratic supply of sulfuric acid and pulverized phosphate rock. World War II's end resolved the sulfuric acid shortage, but Simplot had to build his own phosphate crushing plant at Pocatello. It took several years for his fertilizer business to become profitable.

From February 1947 to May 1947, 134,581 tons of phosphate ore were shipped to post-war Japan from the Gay Mine. Corporate headquarters was established in Boise in 1947. Scott Simplot, J.R. Simplot's youngest son who later became chairman of the board, remembered when the company's mining department was based in Boise. "Maps were everywhere," he said.

Phosphate, gold, silica, clay, fluorspar, iron, gypsum, trona and coal all were targeted ores during the 1940s and 1950s. "That's an era when I was a little kid," he said, mentioning exploration geologists and mining engineers were directly engaged those early years.

Rich reservation reserves

The United States Geological and Geographical Survey of the Territories, under the charge of Ferdinand V. Hayden, systematically surveyed the eastern part of the Shoshone-Bannock reservation area in the late 1860s and early 1870s but failed to recognize the existence of phosphate deposits.

G.R. Mansfield surveyed the reservation area in 1913. He was the first to do detailed geologic mapping and report the area's phosphate deposits, excavating trenches and test pits. Based on Mansfield's work, Simplot Fertilizer Company started exploring for phosphate on the reservation in 1945. About a year later, the company negotiated and obtained its leases.

It also secured a tribal business lease authorizing it to start mining phosphate on February 4, 1946, and opened the Gay Mine that year. It ultimately became the longest operating open pit mine in Idaho. Its initial production marked the beginning of Idaho's phosphate mining and fertilizer industry.

"Sandy" Sandoval started working at the Gay Mine part-time in June 1957 as a college student studying geology. Upon graduating in 1959, he started full-time as a geologist and mine engineer.

Many of the original Gay Mine employees were still there, he recalled, including Carl Friedel who ran a crusher, Mine Manager John Kobe, Superintendent Ray Bowden, General Foreman Tom Hugues and Mine Engineer John Clouser. John Dahl was then president of the company.

"The people involved were all good, hard-working people. The original guys were all very loyal and honest. It was a good time to work with the company," Sandoval said.

“There were not many employees then.” In the early years, work at the Gay Mine was contracted out, he said.

“For me, it was real interesting. I was studying geology. It was an opportunity to actually work in a phosphate mine,” Sandoval said. “It was interesting learning the formations. A lot of fossils were found.”

Bill Schmitt started at the Gay Mine in 1958 and went to work as Conda mine superintendent before returning to the Gay Mine as superintendent and mine manager. He started with Simplot at its Centennial Mine near the Idaho/Montana border. The Centennial Mine was at Lakeview, Montana, a boom town about 30 miles east of Monida on the Continental Divide. Its phosphate ore was trucked to Monida, then shipped by rail to Medicine Hat, Canada.

Schmitt remembered Heath Fowler and George McHugh as two Gay Mine pioneers.

“The Gay Mine was probably one of the best phosphate mines because it wasn’t so steep. Overburden was not as hard. It was a lot easier to mine,” Schmitt said.

Schmitt reported to Larry Hinderager, vice president of mining and manufacturing, from 1986 until the mine’s closure in 1993. After the “South 40” opened, one of the first things they faced together was negotiating an agreement with FMC to assume control of the Gay Mine. J.R. Simplot had aggressively recruited FMC’s predecessor company to establish operations in Southeast Idaho during the 1940s. Simplot and FMC divided the Gay Mine ore for their respective needs – phosphate fertilizer for Simplot; elemental phosphorus for FMC, which later took all the ore from the Gay Mine until it shut down and FMC’s Dry Valley Mine opened in Caribou County.

A general drilling program was conducted at the Gay Mine in 1959 to determine ore reserves and other vital mining information. About 100,000 feet of drilling was done with pertinent information recorded and maps prepared from aerial photos. The information was used to plan each year’s operation and project costs. By 1969, seven million cubic yards of overburden were removed annually. About 15,000 tons of ore were shipped daily in two trains of 75 to 100 cars each or 24,000 car loads a season. To keep the ore moving, Union Pacific supplied more than 700 cars.

By the early 1960s, the Gay Mine was producing more than one million short tons of phosphate rock per year. Scrapers, bulldozers, seven-yard electric shovels and 35-ton trucks replaced the 1.5-yard and 2.5-yard shovels and 20- and 30-ton trucks.

From December 1962 to April 1963, the Gay Mine was shut down by a contract dispute with Operating Engineers Local 370. Prior to the shutdown, it was shipping more than 1.5 million tons of ore in a year. Meanwhile, the Pocatello plant continued to operate from ore stockpiles. Fifty-two operating engineers were recalled at the mine when the dispute ended.

In May 1969, Robert B. Hill was named general superintendent at the Gay Mine, and Thomas F. Hugues, production superintendent. A Shoshone-Bannock tribal member, Hugues started at the Gay Mine in 1946 as an operator. In 1951, he was promoted foreman and four years later transferred to a Simplot iron mine operation at Palisades, Nevada. He returned to the Gay Mine a year later. In 1963, he was advanced to general mine foreman.

Hugues retired in October 1980 as production superintendent at the Gay Mine, which by that time was a $12 million annual operation. When he started, 20 to 30 ore cars were shipped daily compared to 200 cars in eight hours when he retired.

Sandoval said about 125 tribal workers were employed at the mine. “They were good employees,” he said, citing Homer Preacher, Lee Broncho, Peter Poog and brothers Frank, Kesley and Lee Edmo as examples.

In 1975, the Gay Mine’s payroll totaled $2.77 million, and $925,000 of that was paid to tribal members. The Shoshone-Bannock Tribes collected an estimated $8 million the previous 30 years in mining royalties. In 1976, Hugues estimated more than 10 million cubic yards of earth were stripped and hauled out of the pits each year. After about three million yards were shipped out as useable ore, the rest was returned for backfill.

In 1979, Gay Mine Superintendent Robert Hill estimated 45 million tons of phosphate ore were shipped out of the mine during its first 30 years. About 1,158 acres were disturbed, but 800 of those acres were reclaimed and 168 acres replanted. More than $15 million was invested in heavy mining equipment, he said. More than two million gallons of diesel annually were burned there during its peak. Its annual payroll also reached $4 million.

About 14 Gay Mine workers were laid off in November 1989 as operations started to wind down, leaving 138 to work at the mine. In 1988, 67 percent of the Gay Mine’s total work force was Shoshone-Bannocks. The tribes received about $2.1 million annually in mining royalties that year. The mine accounted for about a third of the reservation’s economy.

By the time it closed in September 1993, an estimated 45 pits were mined at the site. Depths averaged 250 feet, but some pits were more than 300 feet deep. The pits generally averaged 15 to 20 acres, but several reached as much as 50 acres. At the mine’s start, stripping the overburden was done on a year-round basis while mining the ore beds was carried out only during spring and summer months. Mining later was done 12 months a year. The winter ore was stockpiled for loading and shipping during the summer.

Through 1974, Idaho’s phosphate production totaled 75 million short tons, including 34 million tons from Shoshone-Bannock tribal lands. About 28 million tons came from federal lease lands, and some 13 million tons came from private lands.

By February 1976, Gay Mine production hit two million tons per year, a remarkable surge in production from the 400,000 tons mined annually in the early 1950s. 120-ton tractor-trailer trucks hauled ore from surge stockpiles at the pits to the loading area. In 1974, the first seven-cubic-yard hydraulic shovel was successfully tested. From 1983 to 1985, the stripping fleet was converted from scrapers to 12-yard, faster, less expensive hydraulic shovels and 85-ton trucks, significantly increasing mine productivity and reducing mine operating costs.

In 1990 – a few years after Simplot opened the Smoky Canyon Mine and started shipping ore through a slurry pipeline to the Pocatello plant -- FMC bought the Gay Mine’s remaining high grade ore reserves and got all of the mine’s ore until its closure in 1993.

From its start in 1946 to its shutdown in 1993, 65.4 million tons of phosphate rock and shale were removed from the Gay Mine, totaling $42 million in gross royalty

payments, according to Bill Schmitt. Beginning in 1977, gross royalty payments were paid on dry ton basis.

When the mine started in 1946, 58,568 tons were extracted, including 53,129 tons of rock and 5,438 tons of shale. Peak production occurred in 1973, when 2.22 million tons of ore and shale were removed. At that time, 235 were employed at the Gay Mine, the most ever. During its last year, slightly more than one million tons of ore were removed.

The highest annual royalty payment was $2.39 million in 1989. Royalties were 30 cents a ton in 1946 and had increased to $1.56 a ton in August 1993. From 1946 to 1992, 203.24 million cubic yards of waste and waste shale had been removed from the Gay Mine. The most waste removed in a given year was 8.93 million cubic yards in 1979.

“There were 48 years of operation at the Gay Mine or half a century. That’s pretty good history for a mine,” Schmitt said.

Elemental phosphorus spinoff

Before 1956, Simplot owned the Gay Mine, and FMC bought its ore requirements from Simplot. In 1956, FMC acquired certain leases at the Gay Mine and later entered into joint ownership and operating agreements with Simplot. Simplot continued to operate the mine, but FMC got all of the lower, furnace-grade shale or 80 percent of total production. Simplot got the remaining, higher-grade main bed ore.

It had become apparent by August 1946 that the Fort Hall phosphate deposits contained large amounts of lower grade phosphate shale in addition to the main bed of ore. Simplot shipped 150 tons of the shale to Westvaco Chlorine Products Corporation in Tennessee to determine if it could be converted into elemental phosphorus. Tests proved successful.

Simplot had first approached Monsanto Chemical Company about developing an adjacent elemental phosphorus plant, but Monsanto declined.

“He went out and got FMC (formerly Westvaco) to Pocatello. You just cannot imagine the foresight that guy had,” Lothrop said. “He had to have 100 balls in the air per every minute of one day. It was an experience to work for him.”

In 1947, J.R. Simplot helped Westvaco obtain its own 2,500-acre lease of the Fort Hall phosphate beds and secure 500 acres for an electric furnace next to Simplot’s fertilizer plant. After a year of testing shale samples and negotiating, it was announced in December 1947 that Westvaco would build the furnace to process the shale into elemental phosphorus.

Simplot, who sat on Idaho Power’s board of directors, helped Westvaco negotiate a very favorable electricity rate for its furnaces.

In 1949, Westvaco constructed the first elemental phosphorus plant in Idaho at Pocatello. The Food Machinery and Chemical (FMC) Corporation bought the plant the same year. It was the world’s largest elemental phosphorus plant until it was completely shut down in December 2001. Its first production of elemental phosphorus was in August 1949 with Simplot furnishing its entire phosphate requirements.

“That worked fine until Pocatello needed more ore,” Lothrop said, noting the Gay Mine reserves were critical to the needs of FMC, which moved three times more tonnage out of the mine than Simplot.

J.R. Simplot also was influential in bringing Monsanto to Southeast Idaho in 1951, when Monsanto bought 15 federal phosphate leases from Simplot. A year later, Monsanto developed the Ballard mine and began to construct its elemental phosphorus plant north of Soda Springs. Lothrop said Simplot sold Monsanto its first properties in Eastern Idaho. “He’s been instrumental in the entire industry.”

The Conda Mine

In April 1959, Simplot’s Minerals & Chemical Division and the Anaconda Copper Mining Company negotiated to create a joint venture at the Conda Mine in Caribou County, about seven miles north of Soda Springs. It would be a source of supplemental phosphate for Simplot’s Pocatello fertilizer plant and enable it to produce a single superphosphate.

“The Conda Mine had more challenges (than the Gay Mine). Conda was a lot older. It didn’t produce as much as the Gay Mine,” said Bill Schmitt, former Conda mine superintendent.

Simplot took over the mine’s management and operation, supplying both partners with their ore requirements. In 1960, Anaconda decided to get out of fertilizer completely. The joint venture with Simplot was terminated, all of Anaconda’s fertilizer production units were sold outright to Simplot, and mines in Idaho were leased to Simplot on a long-term royalty basis.

A fertilizer plant at Anaconda, Montana, was dismantled and shipped to Pocatello, where it was reassembled and put back into operation by Simplot. On April 1, 1961, Simplot acquired 80 percent of the two federal leases held by Anaconda. In 1965, Simplot constructed a new mill at Conda to replace an old one. On August 1, 1965, two additional federal phosphate leases were issued in Conda’s vicinity to the Ruby Company, a Simplot subsidiary.

J.R. Simplot “could see the future way beyond anybody else. Twenty years was nothing,” Lothrop said. “So, through his insistence, they went out over there and got more leases.”

In February 1963, Simplot proposed doubling its Conda phosphate production to provide more ore for the Pocatello plant. In March 1963, it announced construction of a large calcining plant, grinding mills and extensive ore-handling equipment there.

In May 1964, Robert Truchot was named general superintendent of mining operations at Conda, and Ed Pothier was named director of mining operations. Truchot was born and reared at Fort Hall. He named Bob “Ruk” Rukavina as Conda’s equipment and maintenance superintendent over 75 pieces of heavy equipment and the work force to operate them.

“I’m a firm believer if you take care of people and treat them with respect, they will do you a good job,” Rukavina said, reflecting on his years with Simplot.

In January 1965, Simplot announced a new $1.5 million beneficiation plant at Conda to upgrade ore for Pocatello, requiring 25 more employees and another 25 in mining. A calciner was located there in April 1975 to burn organic matter from phosphate ore. In August 1982, it was announced that 43 Conda workers would be furloughed.

Surface mining was conducted on two of the four federal leases with open pit mining on one of the leases starting in 1955 and ending in April 1984, when the last

removable ore was taken. Mining started on the other lease in 1970, but the ore was depleted in 1972. By 1982, Conda's ore production was cut in half to one million tons a year. Overall mining at the Conda Mine stopped in January 1984, but much of the reserves on patented mining claims and two adjacent federal leases remain untouched and available for future mining.

From 1984 to 1987, when Conda operations were shut down, the town was vacated and eventually demolished. A sign outside the site greeted visitors by saying: "Welcome to Conda, Idaho's newest ghost town."

Lively history

Conda's closure was quite a contrast to the days when it was abuzz with mining activity decades earlier. In 1917, Anaconda Copper first expressed an interest in 23 mining claims patented in the area by Southern California Orange Grove Fertilizer Company, a growers cooperative created to explore and develop fertilizer sources. Anaconda was faced with an excess of sulfuric acid from its smelting operations in Montana. Fertilizer production was a logical use for the excess.

Anaconda investigated phosphate deposits in the region and built its phosphate fertilizer plant at Anaconda, Montana, and started buying phosphate ore from the Paris Canyon Mine in Idaho.

Anaconda then bought all of Southern California's 23 claims. The first deed for two claims costing $60,000 was dated October 1919. It bought the remaining 21 claims for $540,000 in February 1920. It started underground mining the following April, which lasted through 1957. In 1920, it also started to construct an eight-mile rail line from Soda Springs.

In late 1920 and early 1921, Anaconda started to build the town of Conda, and screening, crushing, washing and drying equipment. Eighty-two houses equipped with electric lights, running water and sewer connections were built for employees, who rented them for $12 a month, with utilities supplied at cost.

The mine superintendent's residence, bunkhouses, offices, a boarding house, a community store, a post office and a recreation hall also were added. The hall doubled for religious services, dances, community parties and motion pictures. In 1923, a two-room grade school was constructed.

In March 1921, the first Conda ore was shipped to the Anaconda, Montana, plant, where it was processed and sold as a concentrate of triple superphosphate fertilizer. Because of its high organic content, the Conda ore had to be calcined or refined in a furnace to remove moisture, carbonates and other compounds. The Conda plant was enlarged to keep pace with increasing volumes of phosphate. The underground mine eventually was developed and enlarged until 1952, when its operations started to be phased out and surface mining started. At one point, a main tunnel was drilled 8,000 feet to a station where a vertical shaft rose 300 feet, then to another 500-foot level. From those two levels, horizontal tunnels went deep into the mountain. Ore trains hauled the phosphate ore away from the mine.

On April 1, 1956, underground operations ceased permanently and all production came from Simplot's open pit mining. The underground mining at Conda produced about

three million tons of phosphate rock. Many Anaconda employees transferred to Butte, Mont., but some remained at Conda with Simplot.

A new washing plant also was added at the Conda plant. From 1952 to 1958, Anaconda subcontracted surface mining operations to the Morrison Knudsen Company. By the time it was acquired by Simplot, the Conda Mine had been operating for 40 years. Simplot doubled its capacity from 200,000 tons to 400,000 tons a year.

Smoky Canyon Mine

With phosphate ore reserves dwindling at the Gay Mine and the Conda Mine, Simplot had to explore developing other ore reserves in the region. The Smoky Canyon in Southeast Idaho near the Wyoming border met requirements and led to a remarkable engineering feat – the ultimate construction of an 87-mile underground slurry pipeline connecting a modern, efficient mine with Simplot's Pocatello fertilizer complex.

Simplot was getting desperate for more phosphate to meet the needs of its Pocatello complex as the Gay and Conda reserves were exhausted, Larry Hinderager said. The eight-inch line at that time was the longest phosphate slurry pipeline to be constructed and installed, introducing a technology that could unlock vast reserves in western fields.

The 2,200-acre Smoky Canyon site is about 25 miles southeast of the Conda operation. It presented serious logistical challenges. At nearly 7,500 feet elevation, the mill site was remote and lacked a suitable transportation system to move an estimated two million tons of phosphate ore per year.

Simplot's Ruby Company outbid three other competitors and was issued a Bureau of Land Management phosphate lease on Oct. 1, 1962, for property 24 miles east of Soda Springs, Idaho, and six miles west of Afton, Wyoming. It immediately started drilling 28 exploration holes, using a rotary air return drill. In early 1966, the Ruby Company's name changed to Simplot Industries, Inc., and it assigned its lease to the Bannock Chemical Company on June 1, 1966.

Simplot began work to develop a new ore source in 1972. Mine and reclamation proposals were submitted to the government in 1978. The deposit was estimated to hold 60 million tons readily accessible for open pit mining.

Exploration of the lease showed phosphate ore could be found outside the bounds of the existing lease. In September 1981, a 275-page environmental impact statement was ready for public review and comment. Public hearings were held in Afton and Soda Springs in November 1981. There was not one adverse comment against the project.

"We never did have any other problems setting that mine up," said Robert Lothrop, former vice president of Simplot's Minerals & Chemical Division.

On February 1, 1983, the lease was assigned to the J.R. Simplot Company, which applied for a fringe acreage lease to add more ore to its proposed mine. That lease was issued on September 1, 1989.

In June 1982, the U.S. Forest Service and Minerals Management Service gave Simplot final approval to begin construction of the Smoky Canyon phosphate mine. Project Manager Robert Kimball said reserves at the Conda Mine would be essentially depleted in 1986 when the Smoky Canyon Mine would go into full production. The $40

million Smoky Canyon Mine was designed for 30 years to produce two million tons of ore annually in full production.

It was the decision of Lothrop to go with the slurry pipeline. He had plenty of experience dealing with pipelines on other Simplot projects. Costs of building permanent roads or railroad tracks would have been prohibitive.

Lothrop also took the initiative to get mining industry officials to sit down with Forest Service, BLM and Idaho Fish & Game officials to agree to cooperate, cementing a mutually respectful working relationship between the public and private sector. Nothing was hidden.

"I told my people we're not going to fight these people. There's not going to be anymore 'them and us,'" he recalled. "'We're all professionals. You treat them like they are.'"

By 1985, Smoky was expected to cover about 1,300 acres on the Caribou National Forest with about 500 more acres impacted by power lines and tailing ponds. Its lease area was 2,520 acres, and surface mining was estimated to disturb about 1,300 acres during the mine's life. Of its 100 workers, 75 were to be transferred from the Conda Mine. Moving heavy equipment from Conda to Smoky also proved to be a major, expensive task. Bob Rukavina supervised about a dozen men to tear down the Conda operation, move it to Smoky Canyon within about three months and resume mining operations. Project Manager Robert Kimball said enough ore was stockpiled at Conda until Smoky began operating.

Construction of the Smoky Canyon Mine began in the summer of 1982. Its complex consists of an open pit mine, a tailings impoundment, an ore beneficiation plant, a phosphate concentrate slurry line, a tailings thickener and a tailings pipeline system. An existing county road was upgraded and four miles of new road was blasted out of massive limestone outcrops, costing $250,000. The mine came on line in the summer of 1984.

At Conda, nearly $8 million in new filtering and drying equipment was installed to convert the ore from slurry to dry form for rail transport. The ore was dried and part of it was calcined. The calcined ore was shipped by rail to a Simplot plant in California for further processing. The uncalcined ore was shipped to the Pocatello plant. The Conda calciner was shut down in 1985, and all ore was shipped by rail to the Pocatello plant.

The Simplot leases were explored throughout the 1980s. Six holes were drilled on the leases in 1985, six in 1986 and 16 in 1987. Simplot agreed with Alumet in 1987 to explore Alumet's lease, which was created in December 1975. Simplot reopened three trenches and resampled phosphate ore. Drilling continued on the Simplot leases with 14 holes in 1988 and 23 holes in 1990. That drilling led Simplot to apply for another fringe acreage lease in July 1990, and it was issued in August 1991.

First Idaho phosphate mine to slurry ore

In three months, construction of the first section of the eight-inch diameter pipeline was completed to Simplot's Conda site 27 miles away. The Smoky Canyon Mine was brought online in early 1984 as a truck/shovel operation using an electric shovel, 170-ton and 130-ton trucks for hauling ore and waste. The pipeline started that May.

In September 1989, the BLM and Forest Service gave right-of-way authorization for Simplot to construct a $30 million phosphate slurry pipeline nearly 60 miles from

Conda to Pocatello, crossing 10 miles of federal land. In 1984, it had completed 25 miles of pipeline from Smoky Canyon to Conda.

A mill complex washed the phosphate rock and ground it into a clay-like consistency so the ore could be pumped at six feet per second through the pipeline. Two 1,000 horsepower piston pumps literally push the slurry through the line, which climbs 900 feet then drops nearly half a mile as it crosses three mountains and four streams on its way to Conda.

Simplot uses hundreds of gallons of water per minute to flush 4,000 to 5,000 tons of pulverized ore through the pipeline each day. Annually, about 800 acre feet of water originally were expected to be required in the slurry process.

The pipeline, Conda pumping station and receiving terminal in Pocatello cost about $20 million alone, Hinderager said. That was in addition to a $20 million expansion under way at the same time at the plant. The pipeline eliminated a dry ore stockpile at the plant as a source of dust, significantly reducing wind-blown dust.

"It really has paid off. One of the things key in being able to do it and make it work was running the Pocatello plant without the calcining," Hinderager said, noting the phosphate slurry was so fine, it would go right through the calciners. "We had a horrible time calcining it."

Out of desperation, Simplot's research and development department developed a process in which uncalcined ore could be run through digesters. "Eventually, we learned how to operate with 100 percent uncalcined ore, which was really crucial to be able to run the pipeline," Hinderager said.

That also enabled the Pocatello plant to go from high-cost production to being one of the lowest-cost fertilizer producers in the world.

"Our division probably wouldn't have survived if we couldn't do those things," he said, crediting Steve Croxall, Dave Finkelnburg and Terry McLaughlin with resolving the calcining problem, along with Jerry Mead's R&D department.

In 1991, construction of the slurry pipeline's final phase was completed, taking 3½ months and extending from Conda to Simplot's Pocatello plant, making the pipeline a total 86 miles in length. Simplot employees also installed a large booster pump from The Netherlands at Conda. A Dutch factory representative said it was one of the best installations he had seen, Hinderager said.

A huge hydraulic shovel developed by Caterpillar was first tested at Smoky Canyon and linked by satellite to a company computer in Illinois. Using the high technology, an engineer in Peoria was able to detect an oil leak in it. By allowing Caterpillar to try it out at Smoky Canyon, Simplot was given a good opportunity to purchase it.

The pipeline route crossed a major elk calving and nursery area, and a mule deer and elk migration corridor. Impacts to streams and land were short-term. Deer and elk commonly could be seen in the area undisturbed by the activity.

"There were a couple of real crises learning how to operate it," Hinderager said, noting it plugged up for 10 days to two weeks on one occasion. There also was a power failure shortly after it started operating, but overall its operation has been nearly flawless.

"We found the reserves were not nearly as large as we thought they were, but they were still good," Hinderager said.

Simplot applied for a third fringe acreage lease in November 1993. That was issued in October 1995. On June 1, 1996, Simplot acquired the Alumet lease, giving Simplot control of all of the leases in the Smoky Canyon Mine's immediate vicinity.

Many people cannot conceive of the Smoky Canyon Mine's magnitude, said Pat Avery, a Simplot senior executive, noting that Smoky Canyon became Idaho's largest mining operation. The Smoky Canyon Mine annually yields 1.5 million tons of phosphate rock, making it the company's primary source of phosphate ore. "We literally move mountains," Mine Manager Dennis Facer said.

Millions of cubic yards of ore are mined in adverse conditions – rocky soils, steep grades and rigorous winters. Smoky Canyon phosphate fertilizer ends up in 25 western states, Canada and Mexico. The Smoky Canyon Mine has been on budget "for as many years as I can remember," both in terms of tonnage and revenues, Avery said. Simplot workers must remove up to nine million tons of overburden to extract three million tons of ore there.

Its slurry pipeline required very extensive capital investments up front, but it is a relatively low cost per ton moved and far more competitive than truck or rail, Avery said. About 22 million tons of phosphate were moved through the pipeline its first 20 years.

Employment at the mine averages 200. The mine also enables other segments of the company to turn a significant profit. The top priority at the operations is safety, Avery said. "It doesn't matter how good an operation is if people get hurt." About 80 percent of Simplot's fertilizer tonnage was moved by rail in the early years of the 21st century, and the rest was hauled by truck. "Simplot has done a really good job, and we're here for the long haul," Avery said.

Vernal, Utah mine

Simplot's crowning development of phosphate reserves in the Intermountain West came with its $64.5 million purchase in 2004 of Farmland Industries' interest in a phosphate fertilizer manufacturing plant, mine and connecting pipeline, ensuring Simplot's leadership in the phosphate mining and processing industry for decades out. Simplot and Farmland each owned half.

The manufacturing plant at Rock Springs, Wyoming, and the phosphate mine at Vernal, Utah, developed by Chevron in the 1980s, were owned and operated by SF Phosphates Limited Company, a joint venture of Simplot and Farmland since 1992. The state-of-the-art plant annually produced about 700,000 tons of finished fertilizer product. The mine had an estimated 100 years of proven reserves.

Farmland, a farmers cooperative based in Kansas City, Missouri, filed for Chapter 11 protection in May 2002. A federal bankruptcy judge approved Simplot's offer in November 2003 to purchase the remaining shares following months of negotiations regarding the sale of Farmland's interest in SF Phosphates, which was renamed Simplot Phosphates LLC.

Rock Springs products have been distributed in North America for a variety of crop uses. Phosphate ore has been supplied by the Vernal mine, an open pit operation. The ore has been crushed then piped through an underground line to Rock Springs. It, like the Smoky Canyon slurry line, reduced airborne dust and handling emissions by 95 percent and conserved fuel. Vernal's employment averaged 210; Rock Springs, 140, and Pocatello, 350.

In 1984, Chevron Corp. announced that it would begin construction of a $250 million phosphate fertilizer plant near Rock Springs, directly competing with Simplot's Pocatello plant. About $100 million of that was for the plant itself, with $150 million for the 95-mile slurry pipeline linking Vernal and Rock Springs, and the mine expansion. Construction of what would be the longest slurry pipeline in the world was scheduled to start in 1985.

Chevron's announcement spurred Simplot's major investments in its Pocatello fertilizer plant in the 1980s. Chevron's decision to build the Rock Springs plant came after joint venture discussions with Simplot dissolved. Simplot's investments gave the Pocatello plant nearly twice the capacity of Chevron's Wyoming plant and made it much more diversified.

Chevron bought Stauffer Chemical's phosphate operations in the Vernal, Utah area in 1981 for about $130 million. It already had a large plant at Fort Madison, Iowa. At that time, Simplot was buying sulfur from Chevron and Amoco operations in western Wyoming's Overthrust Belt.

Chevron's Rock Springs plant was completed in late 1986 to ensure the long-term operation of Chevron's Vernal phosphate mine, which was expanded. The plant's annual capacity was 350,000 tons of dry product. Super phosphoric acid also was manufactured.

By 1985, the mine's output went from 1.2 million to two million tons of ore and from 400,000 tons to 740,000 tons of concentrate under Chevron's management. About 30 to 50 feet of overburden was stripped by pushing it into the previously mined pit with bulldozers. Then the ore was loaded into 85-ton trucks with hydraulic shovels. Chevron said it was the largest phosphate deposit in the West, estimating it at 700 million tons.

It was Chevron's first venture into phosphate development. Sulfur was extracted from Chevron's nearby Carter Creek natural gas plant capable of producing 1,000 tons of sulfur for the Rock Springs fertilizer plant.

About $27 million was invested in that mine and mill operation, increasing its ore output from 1.5 million tons to 3.5 million tons a year, including 1.3 million tons for concentrate. The production still was half of what was originally planned in 1982 because of depressed farm markets.

About 225 workers were employed at the Rock Springs plant, including managers and consultants, for a $6 million annual payroll. Nearly 180 were employed at the Vernal mine, an increase of nearly 30 at the mine. About 400 contract workers were employed at the plant while between 100 and 160 construction workers were employed at the mine.

Chevron decided to sell the Rock Springs plant after five years of operation. Under the leadership of Dean Travis, Simplot set out to buy Chevron's plant, pipeline and mine independently, but the U.S. Justice Department rejected the transaction on antitrust grounds.

Travis, who succeeded Ben McCollum as Minerals & Chemical president, found a joint venture partner in Farmland Industries. Both sides agreed to evenly divide and independently market the fertilizer produced at Rock Springs.

Hinderager said there was "an open fraternity" throughout the production side of the mining industry with employees of competing companies cooperating to resolve mutual problems. It's not uncommon for them to call someone at another plant for answers regarding safety or maintenance problems, he said.

J.R. Simplot recognized the huge phosphate reserves in the Vernal, Utah region and pursued them early, Lothrop said. “It took someone like J.R. to do that.”

Pat Avery said the Rock Springs plant was streamlined, processing only three products. The Pocatello plant, however, flexibly supplied a wide variety of products. At one time, it produced 50 fertilizers, but that was trimmed to 25. Acquiring the Rock Springs plant in addition to the Pocatello plant was an exciting opportunity, he said.

Simplot has every intention of running the Smoky Canyon and Vernal mines 25 to 100 years, Avery said. “I think the United States ought to use the resources we have. We are convinced mining can be done in an environmentally sound manner that satisfies every reasonable person.”

Pocatello fertilizer plant

Prior to the Gay Mine’s opening, J.R. Simplot started to construct his fertilizer plant outside Pocatello in 1944. The “Don” plant – named for one of his sons -- did not go into full-scale production until the Gay Mine started producing phosphate ore in late 1946 when the U.S. Quartermaster’s Office contracted for a million tons of rock to be shipped to Japan to build that country’s soil as part of post-war reconstruction.

The Gay Mine provided about 25 percent of the contracted amount in 1947 and 1948, blending lower grade shale with phosphate rock. Simplot stockpiled the shale at the mine until a market could be developed.

The Pocatello fertilizer plant continued to struggle in the early 1950s, suffering high injury rates and rising insurance costs, but it exploded with growth in the 1960s and 1970s.

Efforts to convert the plant to production of triple superphosphate or fertilizer containing more than 40 percent phosphorus pentoxide initially were unsuccessful, and problems became so severe the plant had to be shut down for most of 1954 and early 1955. Because of increased competition, the division was losing money. After the plant reopened in February 1955, the company sold 21,000 tons of fertilizer that spring.

In 1955, Simplot turned the plant over to W. Grant Kilbourne, a Boise-based vice president who changed the division’s management by promoting A. Dale Dunn, a young chemical engineer to production manager. By 1958, Simplot employed more than 200 in mining and manufacturing phosphate fertilizers, shipping about one million tons of raw and processed phosphate to 14 western states and the Midwest.

Lothrop credits Dunn, Bill Hahn, Simplot’s Pocatello controller, and John Dahl, president, chief accountant and controller, for much of the company’s success -- in addition to J.R. Simplot. “Sometimes these guys who were taking care of the books knew a hell of a lot more than anybody else.”

Dunn started with Simplot in 1953 as a process engineer, working through the ranks, ultimately becoming president of the Minerals & Chemical Division. He moved to Boise in 1978 to become Simplot CEO. Dunn oversaw the replacement of antiquated equipment at the Pocatello plant with better controls and instrumentation.

Compared to other industries, phosphate mining and processing haven’t changed much although there have been some modifications made the last 15 to 20 years in how the ore is processed chemically and electrically, Dunn said. As vice resident of production, he was involved in developing the Gay and Conda mines.

Phosphate has been a keystone of the entire Simplot enterprise, Dunn said, but it has entailed large up-front capital investments that don't immediately accrue benefits. Mining requires a long-range vision and perspective, Dunn said.

In the early years when the plant was struggling to survive, only a few individuals called all the shots, and there was very little participative management, but it was the operating style needed at the time, said Larry Hinderager, who joined the company in 1964 as supervisor of the sulfuric acid and ammonia plants. In the early days, phosphate had to be pre-sold just to meet payroll, he said.

As the operation matured, it evolved into more of a team operation, and leadership was stressed throughout the entire organization, said Hinderager, who also was Pocatello plant manager from 1974 to 1985. He then became vice president of mining and manufacturing until January 1994, when he was named Minerals & Chemical president. He retired in August 1998.

Explosive growth

In 1959, it was announced a $2 million expansion at the Pocatello plant would include construction of a new 400-ton-a-day sulfuric acid plant and an addition that would increase the main plant's production by an estimated 65 percent to about 175,000 tons of high analysis fertilizer annually. Simplot previously had shipped in sulfuric acid from outside sources.

When the Minerals & Chemical Division started in 1944, its payroll was $300,000. By 1959, it had swollen to $2.25 million, with $1.6 million of that paid in the Pocatello area. That same year, it assumed operational management of Anaconda's phosphate mine at Conda. Employees numbered 435 in 1958 and 581 in 1959 for a 33 percent increase.

By January 1960, the Pocatello plant employed 279 workers and nearly $5.5 million had been invested in what Simplot officials would later consider the company's flagship operation. At that time, Simplot spent more than $1 million annually in the Pocatello area. By 1960, Simplot agreed to market Anaconda's ammonium phosphates while Anaconda would sell Simplot's triple superphosphate. By that time, it had acquired Anaconda's phosphate operations in Conda.

Robert W. Bernick, the Salt Lake Tribune's business editor, wrote on Jan. 3, 1960, that the phosphate industry had grown from production valued at a few million dollars annually in 1945 to production of elemental phosphorus, single and triple superphosphates, phosphoric acids and straight phosphate rock worth more than $130 million, which was attained in 1959 with the production of an estimated 2.5 million long tons of phosphate rock in Idaho, Utah, Wyoming and Montana. At the mine level alone, that ore was valued at $16.5 million. Bernick estimated between 2,500 and 3,000 were employed in the four states in the mining and processing of phosphate.

Simplot processed phosphate ore into fertilizer while FMC used it for elemental phosphorus. In 1960, FMC's four electric furnaces were capable of producing 600,000 tons of elemental phosphorus a year, and Monsanto's two furnaces near Soda Springs could process 46,000 tons of elemental phosphorus. About 1.5 million of the 2.5 million tons of mined phosphate went to elemental phosphorus production, and the rest to fertilizer output.

Simplot took over Anaconda's open pit operations at Conda in 1959, but continued to supply Anaconda with ore for its superphosphate operation at Butte,

Montana. Meanwhile, the Gay Mine was producing more than one million tons of phosphate annually or 15,000 rail cars.

It was announced in July 1960 that a $2 million expansion at the Pocatello plant would double production to 1,000 tons a day of total product and create 100 jobs, which W. Grant Kilbourne, Minerals & Chemical division vice president and general manager, said would make the Pocatello plant the largest phosphate fertilizer plant west of Florida. It was the largest expansion in the plant's history and included an ammonium phosphate plant.

By that time, Simplot bought Anaconda's fertilizer plant at Anaconda, Mont., and leased Anaconda's phosphate properties at Conda on a long-term basis, establishing Simplot as a major phosphate fertilizer producer. Anaconda continued to operate the phosphoric acid and ammonia phosphate units at Anaconda for Simplot, but Simplot marketed the products.

In December 1960, another major expansion was announced that would double capacity again by December 1961, creating another 50 to 70 new jobs. It also was disclosed that Anaconda's entire 300-ton-a-day ammonium phosphate fertilizer plant would be dismantled and shipped 250 miles south to Pocatello from Montana. That occurred from the summer of 1961 to late 1962.

Then-Plant Manager Dale Dunn said the phosphoric acid plant's output would be doubled and up to 70 percent of new production would go into the manufacture of ammonium phosphate – created when ammonia and concentrated solutions of phosphoric acid were mixed. Simplot bought sulfuric acid from Anaconda that equaled the output of Simplot's sulfuric acid plant. In 1960, Simplot bought 24,000 tons of ammonium phosphate from Canada. The plant was processing 300,000 tons from the Gay and Conda mines.

By August 1961, 35 to 40 rail cars of raw material were arriving at the Pocatello plant and 25 car loads of fertilizer were shipped out each day to every state west of the Mississippi River. A new phosphorus acid plant, large warehouse and new technical building were under construction. That same month, Simplot and FMC signed a five-year contract with Intermountain Gas Company for up to five billion cubic feet of natural gas a year, making Pocatello the largest user of natural gas in the utility's entire system. The natural gas was needed to produce ammonia-based fertilizers

By July 1969, Idaho Power Company had invested $4.3 million into the Don Plant substation that included 20 large transformers, providing electricity to the Simplot and FMC plants. The region's relatively inexpensive hydroelectricity was a major factor in Westvaco's decision to start construction of its large electric furnaces in 1948.

During 1961, employment at the Pocatello plant, Gay Mine and Conda Mine increased from 375 in 1960 to 447, up 110 percent from the 1958 total of 218. In February 1963, Simplot proposed doubling its Conda phosphate production and a major increase in the output of treble superphosphate and phosphoric acid, using a wet acid process.

In March 1963, Simplot announced it would build a $1.75 million sulfuric acid plant in the first phase of a major expansion program. It would be fully automated and produce 700 tons a day as opposed to 400 tons from an existing sulfuric acid plant.

Later that month, Simplot also announced a $10 million expansion that would add 100 jobs at the Pocatello plant and double its capacity to 2,000 tons a day. In addition to

the new sulfuric acid plant, bagging and bulk shipping would increase from 2,000 to 4,000 tons a day and more than one million tons of phosphate ore would be required annually.

In August 1963, Simplot announced plans to build a $5 million anhydrous ammonia plant and an additional $1 million ammonium phosphate plant at its Pocatello complex, more than doubling its natural gas and electricity requirements. The ammonia plant would be capable of producing more than 150 tons a day of NH3 from natural gas. It would include large ammonia storage tanks and add 50 employees to a payroll of 330. Ten years later, the ammonia capacity was doubled by building a second plant, which was a twin to the first one and started up in 1974.

The plant would make Simplot a producer of all three of its raw material requirements – phosphorus, nitrogen and sulfuric acid – and rapidly increase its use of combined nitrogen and phosphate fertilizers.

From October 1962 to April 1964, Simplot doubled its operation and increased it by 10 times the previous eight years, investing more than $25 million in its plants. The sulfuric acid and ammonium phosphate plants were completed by April 1964.

“Sandy” Sandoval was safety director at the plant from 1964 to 1966. “We initiated some processes that eventually saved the company a lot of money and injuries,” he said.

In January 1965, Simplot announced $9 million in expansion with $7 million targeted for the Pocatello plant – its third major expansion in less than two years. It would increase employee facilities, streamline working procedures and add locker rooms supervisor offices, outside steam cleaning, parts and equipment rooms. Pelletizing equipment in a triple superphosphate building would be revamped, and a $250,000 fluorine recovery system added.

More than $500,000 would be invested in pollution control equipment, costing more than $10,000 a month to operate. A new sulfuric acid plant would have capacity of 1,200 tons a day. Also planned were doubling phosphoric acid capacity, additional rock handling, grinding and storage, water recycling, tailings disposal, effluent neutralizing and phosphoric acid storage.

When completed, the complex would have a manufacturing capacity of 4,000 tons of chemicals and fertilizers a day. By January 1965, the Minerals & Chemical Division had 1,000 employees, including nearly 600 at the Pocatello plant and Gay Mine. It produced 12 kinds of fertilizer. In 1949, the division employed only 100, manufactured only one kind of fertilizer and produced only 48,000 tons a year.

In July 1965, W. Grant Kilbourne was named president of the M&C Division; A. Dale Dunn, vice president of production; O.E. Pothier, vice president of mining, and Ben McCollum, vice president of sales. In August 1965, Larry Hinderager was named assistant plant superintendent after previously serving as ammonia plant superintendent. In December 1965, O.C. Finkelnburg was named plant manager, succeeding Dunn. Finkelnburg retired in 1974.

A third sulfuric acid plant was completed in February 1966, ending a three-year multi-million-dollar construction program, the largest in 20 years. Construction of a third flosolids reactor and a cooling tower were announced that same month. The reactor – the second built in three years and as large as the other two combined – would burn organic

materials to condition phosphate ore for processing into phosphoric acid. The tower would cool recycled water from a phosphoric acid plant.

Pollution control

In 1967, Simplot spent $1 million on air pollution control equipment, including two bag houses, 42 scrubbers and a $150,000 electrostatic precipitator to help eliminate fluoride effluent. That year, phosphate plants in Pocatello and Soda Springs employed 1,600 workers on annual payrolls that totaled $14 million.

Another round of expansion occurred from 1972 to 1974. Major improvements and advances in equipment and techniques boosted overall productivity and efficiency.

In October 1972, Simplot announced plans to enlarge its ammonia plant and double its 150 tons-a-day anhydrous ammonia capacity. By January 1974, Simplot officials said they were working to double the entire Pocatello plant's daily production to two million tons a day, quite a leap from original plans calling for 100,000 tons of phosphate daily.

In September 1974, major promotions were announced in the M&C division. C.E. "Bill" Brissenden was named vice president of administrative services; Larry Hinderager, Pocatello plant manager; Jack Smith, manager of planning and development, and Robert Lothrop, administrative mining assistant.

A 65-day strike by an Oil, Chemical and Atomic Workers union that disrupted operations ended in mid-January 1977, costing an estimated 200,000 man hours and $1.25 million in lost wages.

In October 1983, Ben McCollum, president of Simplot's Minerals & Chemical Division, announced Simplot planned to spend up to $50 million to expand and upgrade its Pocatello fertilizer plant by adding sulfuric acid, phosphoric acid and superphosphoric acid plants.

Two of three existing sulfuric acid plants would be closed down in lieu of the new one, which would have a 2,000-ton-a-day capacity. Sulfuric acid dissolves phosphorus from phosphate ore and "steals" calcium from the phosphorus, creating gypsum. The phosphoric acid plant's capacity would be 650 tons a day.

At that time, Simplot employed 600 workers at the plant and another 300 in the immediate area, including division offices in Pocatello and at the Gay Mine. McCollum said the expansion ensured Simplot would remain a major participant in the western phosphate fertilizer market.

It also was announced in November 1983 that construction projects totaling more than $4 million would begin at Simplot's Pocatello fertilizer manufacturing plant. The new projects included a $1.1 million concrete dome capable of storing 52,000 tons of phosphate ore, $1.3 million construction of three 155-foot high concrete silos to store 20,000 tons of calcined phosphate ore and $1.6 million improvement of the plant's ore transport system.

Hinderager, then-vice president of manufacturing for Simplot's Minerals & Chemical Division, said the projects would improve the plant's operating efficiency and significantly reduce potential for wind-blown dust. They were completed in August 1984.

The $50 million modernization of the Pocatello plant was completed in 1985 after starting in April 1984. State-of-the-art technology reduced sulfur dioxide emissions dramatically. Construction employment peaked at 300 with multiple contractors participating.

Control systems from all the plants within the Pocatello complex, except for the ammonia plant, were centralized in one control room, greatly improving efficiencies, Hinderager said. “It looked like a NASA space center,” he said.

There was an unprecedented two-month shutdown of the Pocatello plant in 1986 because of an industry-wide slump in fertilizer sales, forcing Simplot to lay off 430 of its 540 Pocatello employees and 78 Smoky Canyon workers, curtailing 600 to 650 rail car shipments. By 1990, the J.R. Simplot Company employed nearly 1,000 people in the greater Pocatello area, including 500 at the plant, making it one of the region’s largest employers.

During the 1980s, Simplot invested more than $100 million into its Pocatello operations, expanding and modernizing its Pocatello plant and developing the Smoky Canyon Mine. A 35 percent increase in phosphoric acid production, major environmental upgrades, a new sulfuric acid plant and a 15-megawatt cogeneration system resulted. It also led to a 15 percent increase in capacity and a $50 million increase in sales.

In January 1990, Simplot spokesman Fred Zerza said the improvements made the Pocatello plant the largest, most efficient phosphate fertilizer operation in the West. Construction projects totaling $40 million modified the plant and extended the pipeline that pumped pulverized phosphate in slurry form nearly 60 miles from Conda to Pocatello.

A five-year, $2 million technology investment eliminated calciners, which had been at the plant since it opened in 1944. The pipeline and elimination of the calciners virtually eradicated the plant’s fugitive dust, cutting it by as much as 90 percent. Prior to 1970, Simplot spent more than $5 million on abating air and water pollution. In January 1970, it was spending $350,000 annually on water abatement and $130,000 on air pollution control.

Developing the technology to eliminate calcining and reduce an entire step in the production process was one of the most significant changes introduced at the plant, Hinderager said. Scrubbers and changes in granulation plants also significantly improved air quality.

The 1980s also saw significant reductions in air and water emissions. The company completely eliminated discharges into the Portneuf River in 1980. It impounded wastewater to be applied on 600 acres of farm land north of Pocatello. Sulfur dioxide emissions were cut 75 percent to a third of state and federal standards.

Dry and liquid phosphate, nitrogen and sulfate fertilizers as well as anhydrous ammonia, phosphoric acid and sulfuric acid are manufactured at the 1,200-acre plant, which needs phosphate, sulfur and ammonia to make its fertilizers. Sulfur has been shipped by rail from Wyoming oil fields, and natural gas – needed for ammonia production – was delivered by pipeline.

Simplot ended ammonia production at its Pocatello plant in August 2002 because of volatile natural gas prices, global competition and a subdued farm economy, opting instead to import about three 80-ton rail cars of ammonia each day to meet the plant’s needs. The plant consumed about 3.5 billion cubic feet of natural gas a year for its ammonia production.

During the past 30-plus years, more than $51 million has been invested at the Pocatello plant to reduce air emissions and keep the plant in compliance with increasing state and federal regulations. Scrubbers have removed up to 90 percent of contaminants.

Between 1973 and 1977, Simplot and FMC spent an estimated $22 million for pollution controls in Pocatello.

The Pocatello plant has an annual production capacity of more than one million tons of finished fertilizer products and industrial chemicals. The Don Plant can load more than 300 trucks per day or more than 9,000 tons.

Other fertilizer plants

In addition to its Pocatello and Rock Springs plants, Simplot also has fertilizer plants in Lathrop and Helm, California, and Brandon, Manitoba. The Lathrop plant, near Stockton, gets phosphoric acid by rail from the Pocatello plant and combines it with ammonia to make phosphate fertilizers and livestock feed formulas. It also produces sulfuric acid, ammonium hydroxide and ammonium sulfate.

The Helm plant, near Fresno, converts ammonia to nitric acid for nitrogen fertilizers. It also produces industrial grade nitric acids for the computer, aircraft, construction and dairy industries.

The Simplot Canada Ltd. Operation based in Brandon, Manitoba, annually produces more than 480,000 tons of anhydrous ammonia. The plant also turns out 380,000 tons of liquid nitrogen products and 150,000 tons of granular urea annually. During the 1980s, $35 million was spent to double it. Another major expansion was completed in 1999.

Simplot announced in April 1965 construction of a $30 million chemical fertilizer complex in Manitoba that would employ 300 and produce nitrogen, anhydrous ammonia, nitric acid, urea and ammonium phosphate. That year, the Brandon plant brought Simplot's investment within its Minerals & Chemical Division to $70 million.

Altogether, Simplot's fertilizer mining, manufacturing and marketing operations employ more than 1,300 people in the western United States and Canada. Its Agribusiness Group is the largest producer of phosphate fertilizers in the western United States. Between its Smoky Canyon and Vernal, Utah, operations, Simplot produces about three million tons of phosphate ore.

Phosphate fertilizers have been the mainstay of Simplot's agribusiness for decades, said Pat Avery, senior executive.

"Since the late 1940s, phosphate has been the backbone. We've had a steady supply of ore from Conda, Gay and Smoky. Ever since Mr. Simplot's times, we've had to be basic in fertilizer to grow our product sales."

Avery estimated there are 80 years of phosphate ore reserves between the Smoky Canyon and Vernal mines. All of Vernal's ore reserves are on private ground. Meanwhile, Smoky Canyon sits on Forest Service land, where the BLM governs minerals extraction.

A Manning Creek lease tentatively will be developed in 2010, and a Deer Creek lease in 2013 to 2015 south of the existing mine. BLM permits allow them to be developed, but environmental impact statements must be written first.

"A lot of people take the governance of federal land very seriously. It's under a lot of scrutiny."

The Rock Springs and Pocatello phosphate plants are the lowest cost phosphate plants in North America, he said. The synergy between them gives opportunity to leverage raw minerals, energy purchases, mining equipment and parts.

"Both are great facilities individually. Collectively, they are both stronger. They will share a number of programs and processes," Avery said. "We probably have the best ore reserves and plant locations in the western United States. We plan to optimize that the next 25 to 50 years."

J.R. Simplot's vision, perseverance, resourcefulness, willingness to take risks and ability to hire the most qualified individuals, trusting and motivating them to excel, contributed to the remarkable growth of his mining operations as well as other corporate divisions. Perhaps no single individual has had a greater impact on Idaho's economy than J.R. Simplot. His mining operations have played an extremely significant role in the employment of thousands of Idahoans and others in the West for many decades.