Geologist strives to find energy

By JIM KADERA
of The Oregonian staff

CHEMUL — Joe LaFleur picked up a piece of green-gray rock drilled from almost 1,000 feet underground and held it closely to the hand-held lens in front of his eye.

The senior exploration geologist for California Energy Co. Inc. pored for clues about the subsurface, where a high-pressure drill with diamond bit probes for hot water under the Winema National Forest a half mile outside Crater Lake National Park.

The rock was from a natural fracture that excites LaFleur about the possibilities of finding enough geothermal energy to develop a plant to generate electricity. But LaFleur was not prepared to throw his hard hat in the air and celebrate.

“We’ve just begun to drill,” he said. “This hole is far too shallow to make any statement. What we’ve seen so far is mildly encouraging.”

LaFleur oversees the work of Longyear Core Drilling Co., which has a contract with California Energy to drill the test hole 4 inches in diameter up to 4,000 feet underground. The project was scheduled to begin last summer but was postponed until this fall by financing delays.

Except for breakdowns, the wildcat drilling is non-stop as Longyear rotates three 3-man crews around the clock. Indian summer weather has helped, but the site is at 6,050 feet elevation and winter is just around the corner.

“The drilling could take another 30 days or more. Weather could be a problem to us. It’s not unusual for 10 feet of snow to fall up here,” LaFleur said.

The U.S. Department of Energy is sharing the estimated drilling cost of $550,000 to test the geothermal potential of dormant volcanoes of the Cascade Range, he said.

California Energy, based in Santa Rosa, Calif., is spending about $1.5 million on three such explorations in Oregon, including two near Newberry Crater in Deschutes County.

Geothermal Resources International of San Mateo, Calif., also has been test drilling at Newberry Crater. The company operates a steam power plant at The Geysers in Northern California, and California Energy is constructing one in Southern California near the China Lake Naval Weapons Testing Center.

If the first test hole is successful, others will be drilled nearby in the national forest in 1987 or later under the company’s geothermal permit with the U.S. Bureau of Land Management, LaFleur indicated.

If those so-called ‘slim’ holes also are successful, further drilling would be needed to develop a field of 10 to 20 wells to supply a power plant in the area, he said.

LaFleur, a native Oregonian, says a geothermal operation would be more labor-intensive than a nuclear power plant and would boost county revenues through lease fees shared by the federal government.

The worldwide oil glut has discouraged energy development, LaFleur conceded. “We ask investors how long they expect the oil glut to last. This project could take seven years before a plant was on line, and I don’t see how one can expect oil prices to be the same by then.”

The BLM, U.S. Forest Service and the National Park Service, which manages the Crater Lake park, all have interest in avoiding any environmental problems. If a power plant was built, “We would take such a small fraction of a huge heat source we would not affect anything,” the geologist said.

“Being the new guy on the block, we get scrutinized the most. I’m sure the Park Service has not taken noise tests on chainsaws operating near the park or on snowmobiles that are used in the park during the winter.”

“That’s a red herring,” Robert Benton, park superintendent, said of the reference to noise. “I don’t know what the decibel levels of chainsaws or snowmobiles are, but they don’t operate 24 hours a day.”

For now, Benton said, “Cal-Energy is doing everything to see that park concerns

Geologist Joe LaFleur studies a core sample of rock from a geothermal test hole near Crater Lake National Park.

STUART WOOLLEY
A drilling rig probing for hot water under the Winema National Forest operates around the clock not visible to persons inside nearby Crater Lake National Park.

are met. That does not mean we know there will not be a problem in the future.”

If the company applied for a permit to develop a geothermal field outside the park, an environmental impact study would be required, the federal agencies say.
Study assesses geologic potential

NW wilderness lands believed rich in resources

By JAMES C. FLANIGAN
of The Oregonian staff

WASHINGTON — A federal study that took 20 years to compile concludes there may be vast untapped geothermal resources in Oregon wilderness areas and possible mineral riches on protected lands in both Oregon and Washington.

The assessment of Pacific Northwest energy and mineral resources is part of a 1,183-page report evaluating wilderness and wilderness study areas throughout the United States.

Federal officials say the report probably only touches the surface of potential in the areas, and it emphasizes that further study would be needed to determine the potential of individual sites. But at least one congressman and a representative of a leading environmental group favor caution in evaluating the findings.

Spokesmen for the U.S. Geological Survey and U.S. Bureau of Mines said their bulky report shows two-thirds of 332 areas investigated nationwide, including dozens of sites in Oregon and Washington, have favorable conditions for minerals or other energy resources.

Charles F. Lamman, assistant chief of the Bureau of Mines' Office of Technical Information in Washington, said the study was first mandated by Congress in the Wilderness Act of 1964. It represents an assessment of potential mineral content on national forest lands.

"It only goes so far," Lamman said. "If one went all the way, it would require drilling to come up with any final conclusions. This is a starting point rather than an ending point."

Even if drilling tests were made, opinion would vary among professional geologists and mining engineers on the significance of those findings, Lamman said.

The report incorporates available knowledge about Forest Service and Interior Department lands from the last 20 years and is to help decision makers make final determinations on wilderness issues, he said.

"The ultimate meaning of this work is whatever action is done or not done by Congress," he said.

Dallas L. Peck, director of the U.S. Geological Survey, also emphasized the assessments are designed to provide partial information to help congressmen and federal administrators decide critical land-use issues.

Other congressional directives since the wilderness act was passed tripled the amount of land that the two Interior agencies studied. The result was a two-volume final report of 1,183 pages covering 45 million acres. It was released in late December.

Charles T. Hoyt, a public affairs specialist for the Bureau of Land Management in Portland, said the report will provide important information as the BLM wraps up an environmental impact study of its lands in Oregon, scheduled for completion late in 1984.

"Our people have not seen the study yet, but it will help us understand the tradeoffs when Congress gets down to deciding what's wilderness and what isn't wilderness," Hoyt said.

A spokesman for Rep. James Weaver, D-Cre., chairman of the House Sub-committee on Mining, Forest Management and Bonneville Power Administration, said the congressman supports development of geothermal resources, which the study considers. However, Weaver is concerned that other areas be tapped before wilderness areas are, said Joe Rutledge, administrative assistant to Weaver.

"There is a tremendous potential for geothermal resources in areas not designated as wilderness, and he thinks we should start there first," Rutledge said of Weaver.

Jerry J. Gray, an economic geologist with the Oregon Department of Geology and Mineral Industries, said the mineral potential outlined in the new study may underestimate the real wealth because Interior Department agencies use conservative measuring techniques.

An 18-month state study on 800,000 acres in Eastern Oregon found gold deposits in roadless areas around the Owyhee Reservoir and in the Pueblos and the Steens mountains, Gray said.

"I feel personally that wilderness and mining can be compatible because mining takes up such a small portion of it when you consider the amount of wealth that can be generated for the state of Oregon," Gray said.

Pete M. Emerson, national director of economic policy for The Wilderness Society, was skeptical, however. The group has just completed evaluation of the Interior Department mineral-resources report, as it did earlier with a government study on oil and gas resources, Emerson said.

"There are a lot of question marks," Emerson said. He cited challenges to mineral assessment procedures used by federal agencies and the fact that the report may be only a summary of previously known data.

"Just in the case of geothermal, it is not a question of how much geothermal is there, but it is a question of just how much is economically producible," he said.

HIDDEN TREASURE? — Central Oregon's Deschutes River winds through eroded canyonlands that could hold untapped resources, according to federal study of wilderness areas and protected lands in Northwest. The U.S. Geological Survey was 20 years in the making.
Washington — A broad area around the South Sister volcanic peak is “among the most favorable targets” for underground heat flow in the Cascade Range, according to a recently released report by the U.S. Geological Survey.

The report cautions that further studies would be needed before that and other energy and mineral potential in the Northwest could be verified.

It cites the Wild Rogue Wilderness in southwestern Oregon as a target for further studies of how the geologic formations there relate to potential wealth. Surveys conducted of minerals and quartzes in the Wild Rogue Wilderness counted nearly 800 mining claims, of which 168 are placer gold. These are placer gold deposits are either in or just adjacent to the protected area.

Here is a breakdown of the report’s findings for the Northwest:

Oregon

Deschutes Canyon Roadless Area — There is little promise for valuable minerals, but there are large diatomite deposits at the Oregon Mine just two miles north of the protected area. Near Bend, 20 miles to the north, is the known diatomite deposit there is sufficient data to prove it.

Eagle Cap Wilderness — A decade-old mineral survey showed the probability for minerals in five areas in the region. The mineral resources are likely to be in the volcanic rocks adjacent to intrusive granite rocks that could contain copper and small amounts of other metals. A large-scale mapping of the older solidary and volcanic rocks might improve geologic knowledge.

Hells Canyon Study Area — Federal studies conducted in the region within the past several years determined that 18 separate mineral deposits, probably have base and precious metals, molybdenum and tungsten. Most of these probable mineral locations are in the southern portion of the study area. Nine of the locations at some distance from the roadless area.

Hickman Wilderness — This area has some promise for minerals, but the resource is not well known. There are a few known mineral deposits in the region. This area is a known geologic resource area.

Mount Jefferson Primitive Area — Extending 25 miles along the Cascade Range, this area doesn’t offer much potential for minerals. There are a few known mineral deposits in the region. This area is a known geologic resource area.

Mount Hood Wilderness — There is little promise for major mineral deposits, but the potential for mineral developments in geothermal energy may increase the potential for that resource. A 1980 survey substantiated two areas with weak mineralization. On the north side of Zigzag Mountain, there are tilting lead, zinc and silver deposits. The south side offers geologic signs associated with copper, gold, silver, lead and zinc. Part of the wilderness is classified as a known geologic resource area.

Mount Rainier — Extending 25 miles along the Cascade Range, this area doesn’t offer much potential for minerals. There are a few known mineral deposits in the region. This area is a known geologic resource area.

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