

PARAHO NEWS SERVICE

Paraho Oil Shale Demonstration, Inc.
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FOR IMMEDIATE RELEASE

Grand Junction, Colorado - Approval has been received from all seventeen participants in the Paraho Oil Shale Demonstration to immediately increase funding for the project to \$8.5 million.

"We are very pleased to obtain unanimous approval for this increase from our participants," Harry Pforzheimer, Program Director, said. "This extends the time for completion of the approved program being carried out at Anvil Points, near Rifle, Colorado, into May 1976."

Additional funding increases are also under study. If approved, these could result in a significant further expansion of Paraho's experimental project. Paraho has proposed a \$76 million program to construct and operate a single full-size retort and supporting mine. If financing is obtained this could extend the operating program to 1980.

Paraho's full-size module would be the prototype for commercial plants each requiring 10 or more such retorts. The proposed Paraho expansion would bring the elusive dream of a large scale oil shale industry a big step closer. Moreover, it would afford an opportunity to measure the environmental impact of full-size equipment before commercial plants are built.

"It is evident from our accomplishments at Anvil Points that Paraho has demonstrated its patented technology for oil shale retorting," John B. Jones, Jr. President of Development Engineering, Inc. and inventor of the process said. "Similar Paraho hardware has been used for calcining limestone commercially for several years. I believe we are ready to begin detailed engineering on Paraho's announced plans to construct and operate a full-size oil shale retort and supporting mine at Anvil Points," Jones commented.

According to Pforzheimer, who is also a Vice President of Sohio Petroleum Company and Manager of its Oil Shale and Tar Sand activities in Utah and Colorado, "The proposed Paraho module would eliminate some concerns about the ability to successfully scale-up the demonstrated Paraho technology to a commercial size operation. Accomplishment of this objective should accelerate the development of an oil shale industry at the current world price of crude oil provided U. S. politicians do not arbitrarily roll-back the price of domestic oil and thereby discourage all such efforts to increase U. S. energy production."

ADDITIONAL INFORMATION

The seventeen Paraho participants are Atlantic Richfield, Carter Oil (Exxon), Chevron Research (Standard of California), Cleveland-Cliffs Iron, Gulf Oil, Kerr-McGee, Marathon Oil, Arthur G. McKee, Mobil Research, Phillips Petroleum, Shell Development, Sohio Petroleum, Southern California Edison, Standard Oil Company (Indiana), Sun Oil, Texaco, and the Webb-Chambers-Gary-McLorraine Group.

The privately financed program to prove the Paraho process and hardware for retorting oil and gas from oil shale was launched in September, 1973 at the Anvil Points Oil Shale Experiment Station on the Naval Oil Shale Reserve under a lease from the U. S. Government (ERDA).

Two new Paraho retorts, a pilot plant and a semi-works size unit were installed and put into operation during 1974. A 56-day operability run was completed on the larger retort in March 1975. Following this run, 10,000 barrels of the shale oil produced were shipped to the Gary Western Refinery near Grand Junction, Colorado, where it was refined into seven military fuels for the U. S. Navy.

A nationwide testing program, which is still in progress, followed this first large scale conversion of shale oil into military products. A Cleveland-Cliffs Iron ore carrier has successfully tested Paraho Heavy Fuel Oil in a seven-day Great Lakes cruise. A U. S. Air Force T-39 jet aircraft has been flown from Wright-Patterson Air Force Base near Dayton, Ohio, to Carswell Air Force Base, Fort Worth, Texas powered only with Paraho JP-4 Jet Fuel. Paraho's 92-Octane unleaded Motor Gasoline and Diesel Fuel have been successfully tested by the U. S. Army and the Company's own fleet of vehicles. In addition, many stationary and operational tests of all seven military products and the high quality coke produced from Paraho shale oil during the first 10,000 barrel run have been accomplished or are under way in an extensive effort being coordinated by the U. S. Navy's Energy and Natural Resources Research and Development Office for the Department of Defense, the Energy Research and Development Administration (ERDA), The Department of Interior and other federal agencies.

Recently Paraho crude shale oil was successfully used to fuel a Southern California Edison electrical generating plant with encouraging results. This test indicates another potential use for shale oil, although it is not yet commercially competitive.

PROJECT OBJECTIVE

To demonstrate the reliability, operability and cost effectiveness of the Paraho processes, techniques and hardware for retorting oil shale at Anvil Points.

SOURCE OF FUNDING

The Paraho Oil Shale Project is privately financed by the 17 participants listed below. These participants have pledged a maximum of \$500,000 each to the 30 month, \$7.5 million project.

PARTICIPANTS

Atlantic Richfield
The Carter Oil Company
Chevron Research Company
The Cleveland-Cliffs Iron Co.
Gulf Oil Corporation
Kerr-McGee Corporation
Marathon Oil Company
Arthur G. McKee & Company
Mobil Research & Development Corporation
Phillips Petroleum Company
Shell Development Company
Sohio Petroleum Company
Southern California Edison Co.
Standard Oil Company (Indiana)
Sun Oil Company
Texaco Inc.
Webb-Chambers-Gary-McLoraine Group

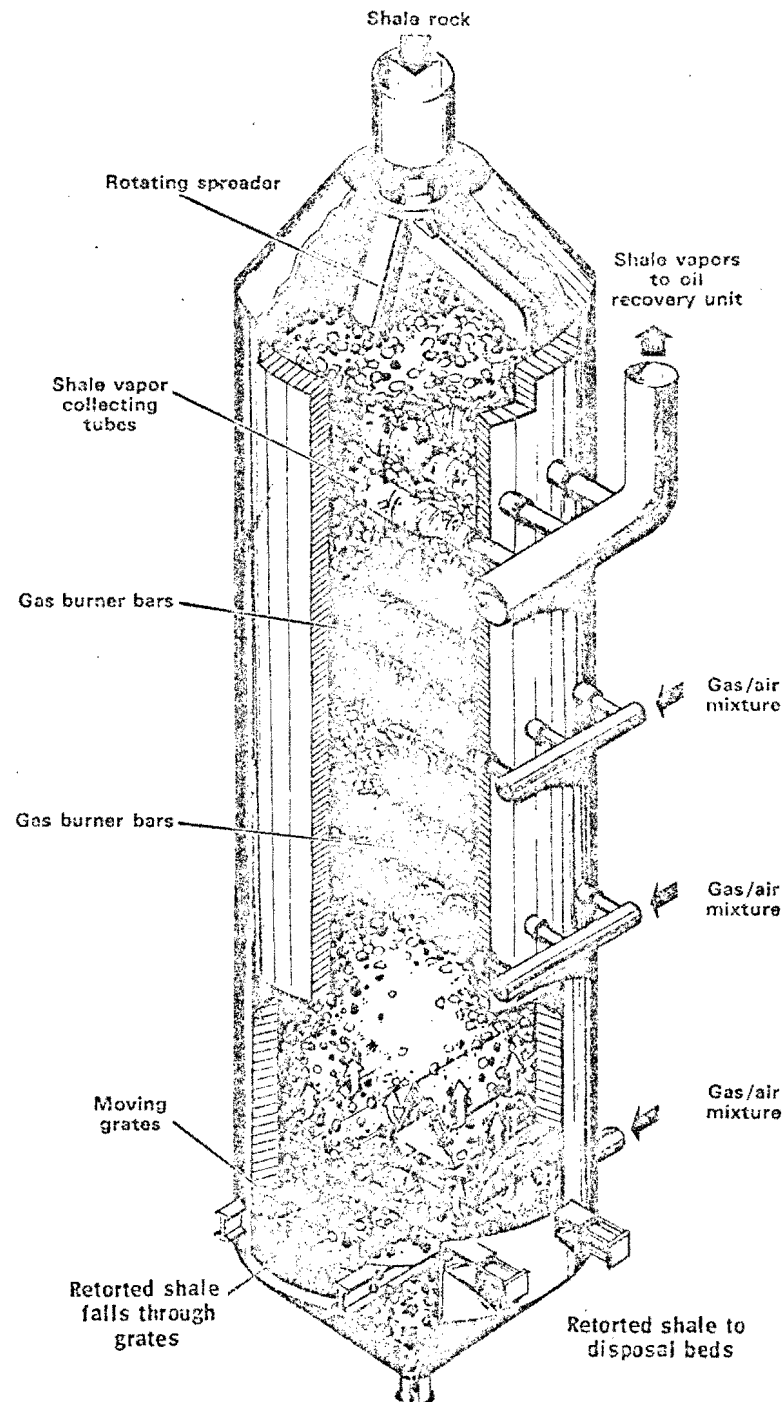
MANAGEMENT

The Management Committee, comprised of one representative from each of the participants, is under the chairmanship of Harry Pforzheimer, Vice President, Sohio Petroleum Company. He is Program Director of the Paraho Oil Shale Demonstration Inc., a wholly owned subsidiary of the Paraho Development Corporation.

OPERATIONS

Development Engineering, Inc. (DEI) is the operator at Anvil Points. John

THE PARAHO PROCESS



B. Jones, Jr., principal inventor and developer of the Paraho process, is President of DEI and its parent company, Paraho Development Corporation. Edwin M. Piper is Manager of Operations for the Anvil Points project.

ANVIL POINTS FACILITY

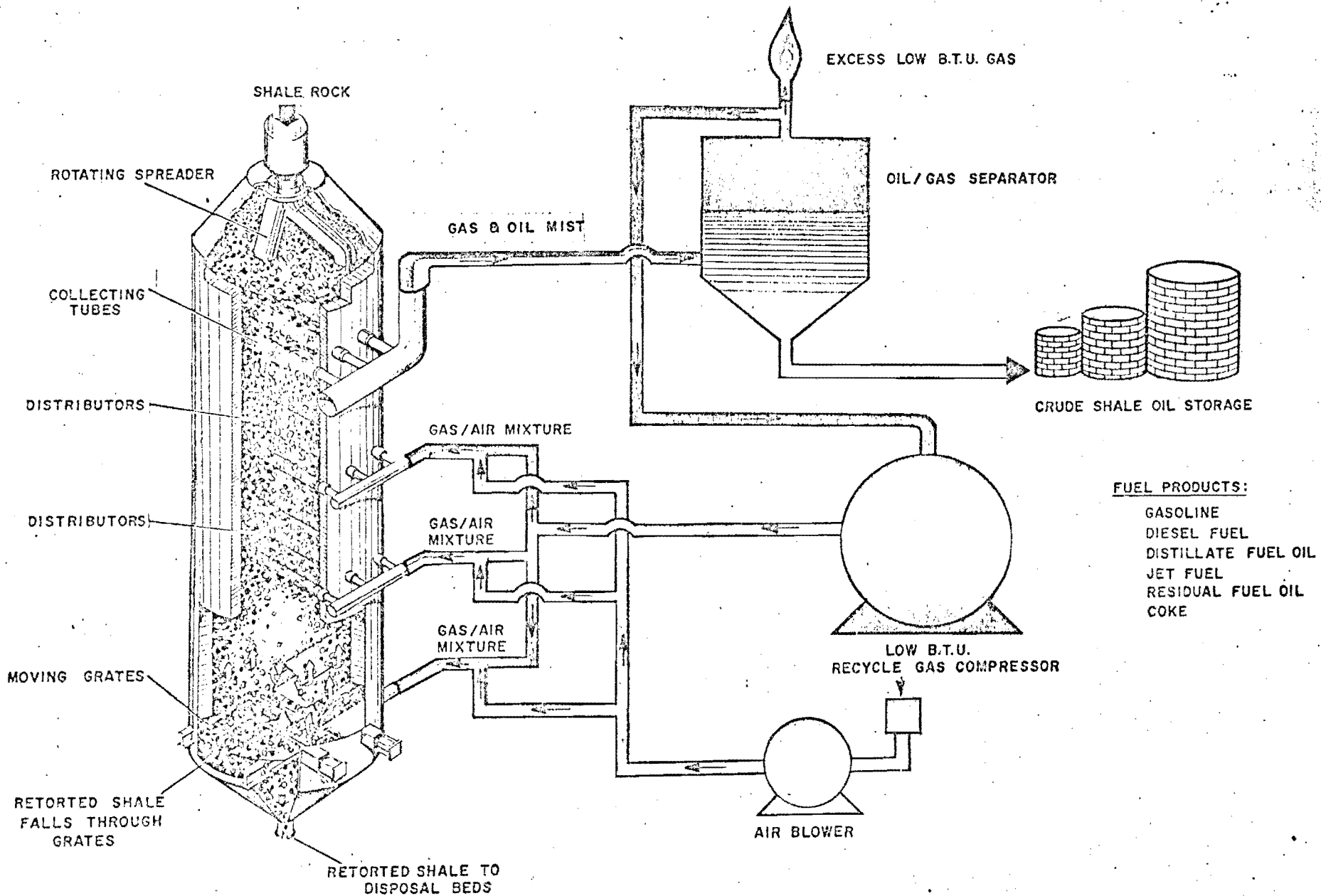
On May 11, 1972 Development Engineering, Inc. (DEI) leased the Anvil Points Oil Shale Experimental Demonstration Facilities from the U. S. Bureau of Mines. This facility is situated on the U. S. Naval shale oil reserves near Rifle, Colorado. The five year lease, with a five year renewable option, provides that DEI can utilize the government equipment and facilities at Anvil Points for their Research and Demonstration Project. A minimum of \$2,500,000 must be expended for research by DEI during the term of the lease.

PARAHO RETORTING PROCESSES

Some of the environmental, economic and operational characteristics of the Paraho retorting processes are:

1. Low process water requirements.
2. High thermal efficiencies.
3. Controlled shale/gas flow relationships.
4. Simplicity of design and operation.
 - Minimal mechanical hardware.
 - Minimal moving parts.
 - Common materials of construction
 - Minimum operating personnel.
 - Low operating costs.
5. Utilization of lump shale.
 - Low crushing costs.
 - Low water requirements for retorted shale.
 - Minimal environmental impact.
6. Minimal atmospheric disturbance.

SCHMATIC DIAGRAM
Oil SHALE RETORTING



- FUEL PRODUCTS:**
- GASOLINE
 - DIESEL FUEL
 - DISTILLATE FUEL OIL
 - JET FUEL
 - RESIDUAL FUEL OIL
 - COKE