

Docket 40-874  
PDR

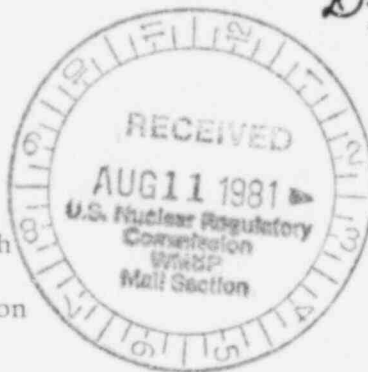
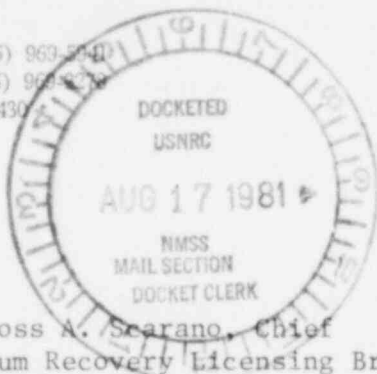
OGLE PETROLEUM INC.

August 7, 1981

Return to  
D. Cramer  
396-55

P.O. Box 5549  
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SANTA BARBARA, CALIFORNIA 93108

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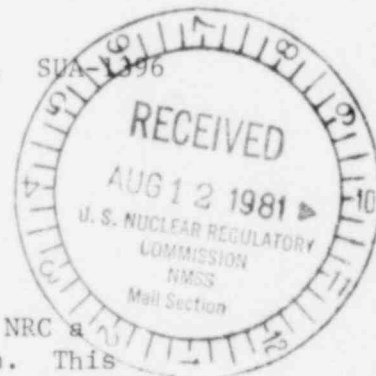
PLEASE DIRECT REPLY TO:

150 North Nichols Avenue  
Casper, Wyoming 82601  
(307) 266-6456

Mr. Ross A. Scarano, Chief  
Uranium Recovery Licensing Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: Bison Basin Project  
Docket No. 40-8745  
Source Material Lic. SWA-396

SUBJECT: Minor Environmental Amendment Request  
pertaining to Leak Detection System  
for Evaporation Ponds



Dear Mr. Scarano:

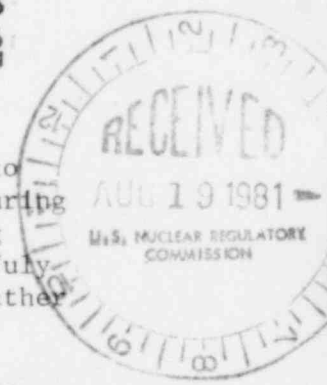
On June 30, 1981 Ogle Petroleum Inc. (OPI) submitted to the NRC a Quality Assurance (QA) program for evaporation ponds construction. This QA program was subsequently approved by the NRC in the form of an amendment to the license (Amendment No. 1 modifying license condition No. 65). Part c. of Amendment No. 1 is restated below for convenience:

"The leak detection system for each pond shall consist of a 4-inch bedding layer of sand and/or gravel directly beneath the pond liner. An inspection tube connected to the system shall extend up the southeast slope of each pond. Prior to liner placement, the leak detection system shall be tested as described in the licensee's June 30, 1981 submittal."

At the time OPI submitted the QA program it was felt that enough course sand material would be encountered during excavation of the ponds to provide the 4" bedding layer specified above. The plan was to segregate and stockpile the coarse sands and any gravel encountered during pond excavation and then use this material to construct the 4" bedding (filter) layer. During excavation of OPI's first commercial pond in July no significant quantities of course sand or gravel were encountered rather fine sands and silty sands predominated the soil type.

The nearest available gravel to the project site is in Jeffrey City, Wyoming some 50 road miles away. The cost of purchasing enough gravel to cover the first pond bottom to a depth of 4" (1440 cubic yards) and transporting it from Jeffrey City to the mine is approximately \$45,000.

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RECEIVED



Applicant.....  
Check No. 3433.....  
Amount/Fee Category 260-20.....  
Type of Fee minor safety.....  
Date Check Rec'd. 8/12/81.....  
Received By.....

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PDR ADQCK 04008745  
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DENVER

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This cost represents about 1/3 (33%) of the total cost of the first pond including stripping, excavation, embankment constructing, hypalon liner, and liner installation. In view of this relative high cost OPI seeks a modification to Amendment 1 (and to item 9 of OPI's QA program) that will allow for a more cost effective leak detection system but still provide the desired environmental protection.

In order to achieve the above stated objectives, OPI proposes the following modification to the leak detection system. A check in the amount of \$760 to cover the minor environmental request fee is enclosed. First, the 3 rows of 4" perforated PVC piping spread approximately 120 feet apart would be replaced by 1" perforated pipe in a grid pattern using 40 feet spacing (see enclosed drawing). Under the old arrangement, leaking pond water could have to travel 60 feet (or even as much as 240 feet for a small leak that travelled down gradient and did not spread out). Under the new proposal, leaking water would only have to travel a maximum of 20 feet before reaching a perforated collection pipe. Second, the 1" perforated pipe would be placed in a small, shallow approximately 3" by 3" trench and surrounded by properly sized gravel that would keep the perforations in the pipe from becoming clogged with fine sands and silt (see enclosed drawing). The shallow trench would act as a mini-sump collecting leaking water from the pond and insuring that it enters the perforated pipe. The hypalon liner would then be placed over the pond bottom. Visual inspection of the soil in the bottom of OPI's first commercial pond on August 4, 1981 (Mr. Dan Gillen of your staff was present) indicated that there was sufficient clay in the soil to provide the relative low permeability needed for the leak detection system proposed above to work.

The permeability tests of the pond bottom specified in the licensee's QA program (item 10) were performed on August 5, 1981. A total of four tests were performed using samples taken from each pond quadrant at representative locations selected by the engineer-in-charge from the Inberg-Miller Engineering Company. The results of the permeability tests are as follows:

<u>Test No.</u>	<u>Location</u>	<u>Permeability (Units: cm/sec )</u>
1	NE Quadrant	$5.2 \times 10^{-5}$
2	NW Quadrant	$2.9 \times 10^{-5}$
3	SWSW Quadrant	$1.0 \times 10^{-4}$
4	SW (Remaining) Quadrant	$3.8 \times 10^{-5}$
5	SE Quadrant	$1.0 \times 10^{-5}$

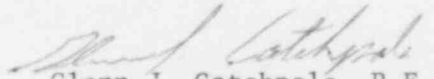
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The above values of permeability are of such a low relative value (clayrange) that it is reasonable to assume that the modification to the leak detection system proposed in this letter would function satisfactorily. OPI would of course still perform (and must pass) the test of the leak detection system specified in item 11 of the QA program.

The review of this modification proposal, and the subsequent installation and testing of the final approved leak detection system will extend the completion date of the first pond beyond our projected start up date of August 10, 1981. OPI therefore requests a temporary waiver or suspension of License Condition No. 46\* for 45 days to allow commencement of mining operations utilizing only the R & D evaporation pond. This pond which has been the only pond at the site for the past 3 years has not experienced any problems. Neither the leak detection system nor the pond monitor well have had any indication of pond leakage (see quarterly reports for data from pond monitor well sampling). OPI will not exceed the minimum freeboard limitation.

Please get in touch with me at OPI's Casper office if you or your staff have any questions concerning this proposal to modify the evaporation ponds leak detection system.

Sincerely,  
OGLE PETROLEUM INC.

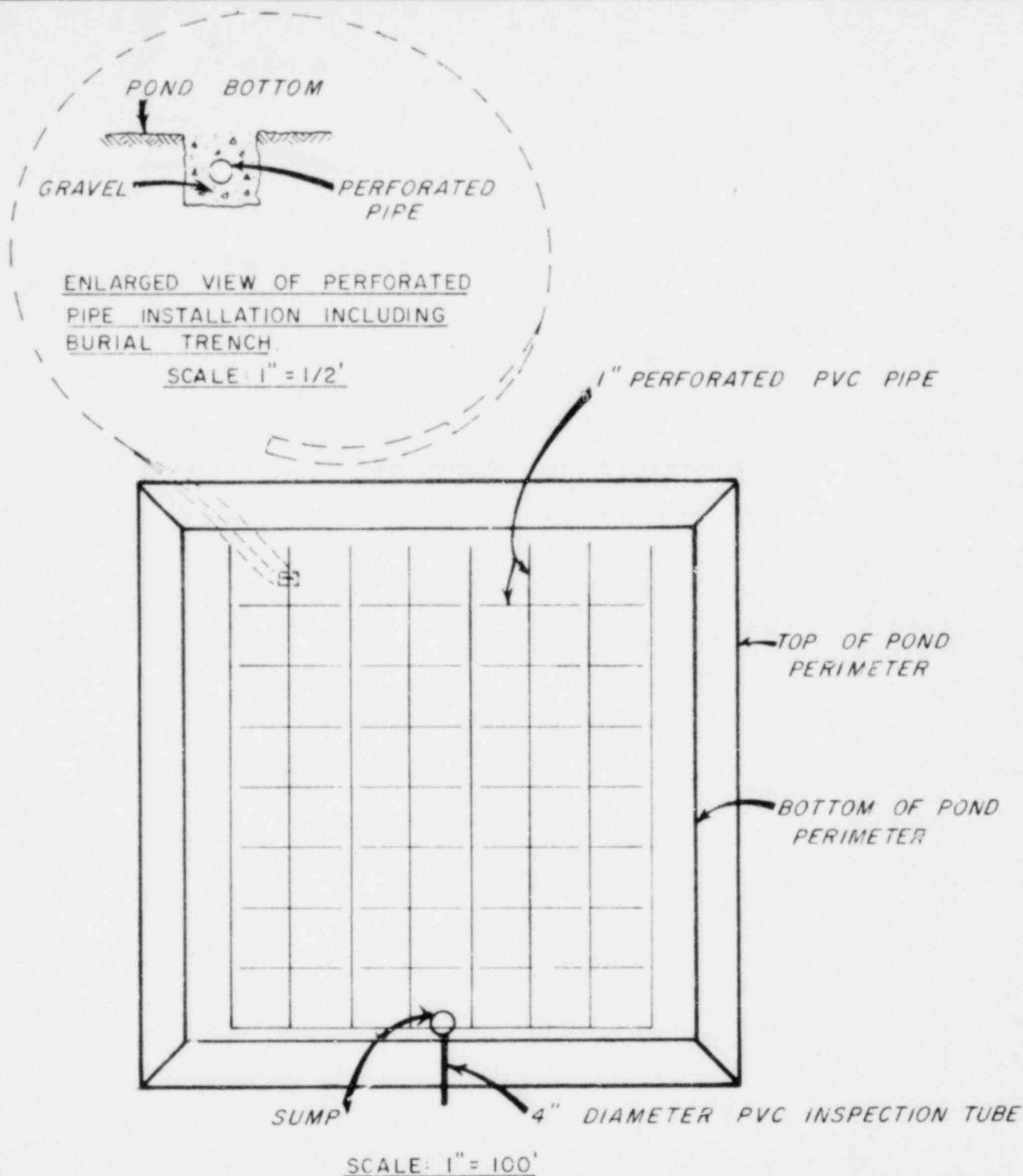
  
Glenn J. Catchpole, P.E.  
Vice President and  
Uranium Project Manager

Enclosures

cc: Document Management Branch

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\* The licensee shall continuously maintain sufficient reserve capacity within the evaporation pond system so as to be able to transfer the complete contents of any pond to other ponds without violating minimum freeboard requirements.



NOTES

- 1) POND BOTTOM SLOPES TOWARDS SUMP.
- 2) GRID SPACING OF PERFORATED PIPE IS 40' X 40'.

**OGLE PETROLEUM INC.**

BISON BASIN PROJECT  
BISON BASIN MINE

**EVAPORATION PONDS**

**LEAK DETECTION SYSTEM  
DESIGN**

**10276**

DATE: AUGUST, 1981

FIGURE: