

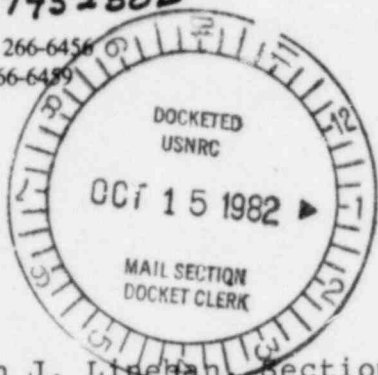
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PDR

OGLE PETROLEUM INC.

040087452305

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October 5, 1982



John J. Linehan, Section Leader
Operating Facility Section I
Uranium Recovery Licensing Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Source Material License
SUA-1396
Docket No. 40-8745

Subject: Mining Unit No. 2
Aquifer Pump Test

Dear Mr. Linehan:

Ogle Petroleum Inc. (OPI) is in receipt of your letter dated September 10, 1982 which presents the NRC views on the aquifer pump test conducted in Mining Unit No. 2. Your letter states "we have determined that the Mining Unit No. 2 aquifer pump test did not adequately demonstrate the degree of confinement of the ore zone aquifer with respect to the lower sandstone unit". It is OPI's understanding based on your letter, that the issue of confinement between the ore zone aquifer and the lower sandstone unit is preventing the NRC from authorizing the start-up of Mining Unit No. 2.

OPI has reevaluated all of the Mining Unit No. 2 aquifer test data and has determined that there is no significant hydraulic connection between the ore zone aquifer and the lower sandstone unit, and that the mudstone sequence separating these two sandstone units does serve as an effective barrier to the movement of water from the ore zone aquifer to the lower sandstone unit. The pump test drawdown data and pre-test water level data for the lower sandstone unit observation wells provide the basis for the above determination. If there had been any significant hydraulic connection between the units in question, then there would have been definite observable drawdown in the lower unit observation wells - such was not the case. It should be pointed out that the pump test was performed as specified in OPI's pump test design approved by the NRC in a letter dated April 12, 1982.

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to fee case.

The OPI staff has also reviewed the data from Mining Unit No. 1 operations which started over a year ago and have determined that there has been no adverse impact on the water quality in the lower sandstone unit. A copy of the water quality data from the Mining Unit No. 1 lower sandstone unit monitor well (well no. M-19) is enclosed. We have also reexamined the site geology to see if there is any significant differences in geology between Mining Unit No. 1 and No. 2. These two mining units are only some 100 feet from each other at the closest point. It is our determination that the lithology of the two mining units is the same for all practical purposes and that there is no technical basis for determining that the mudstone is any less of a barrier in Mining Unit No. 2 as compared to Mining Unit No. 1. Rechecking the core data from the underlying mudstone unit in Mining Unit No. 1 (permeability of 1.7×10^{-6} cm/sec) that was previously furnished to the NRC, we find that the mudstone is over 2000 times less permeable than the ore zone aquifer.

OPI can find no basis for concluding that the mudstone in Unit No. 2 is different than Unit No. 1. The issuance of a source material license to OPI by the NRC was contingent upon demonstrating adequate confinement between the ore zone aquifer and the lower sandstone unit. This was done using essentially the same test procedures as was used in Mining Unit No. 2 except that in Unit No. 2 we pumped for 72 hours and in Unit No. 1 we only pumped for 24 hours. The conclusion of the NRC after the completion of the Mining Unit No. 1 tests (see License Amendment No. 6) was that adequate confinement had been demonstrated but that to be on the safe side (impossible to prove that a vertical excursion will never occur) more lower sandstone unit monitor wells would have to be installed. This was an acceptable solution to OPI and is the solution the DEQ has taken in connection with their approval to allow mining in Unit No. 2 subject to the installment of additional lower aquifer monitor wells. Incidentally, it would be convenient for OPI to get a core of the mudstone separating the two sandstone units when we install the two additional monitor wells required by the DEQ. Permeability could be obtained and reported to the NRC just the same as the NRC required for Mining Unit No. 1.

The possibility of vertical migration of lixiviant exists at all uranium solution mines including OPI's and that is the reason monitor wells in upper and lower sandstone units are required. Likewise, if a vertical excursion does take place, the operator must restore (clean-up) the affected aquifer(s). OPI is committed through its NRC license (see Condition No. 45) to restore any aquifer affected by a vertical excursion, and we have previously demonstrated our capability to restore an aquifer affected by leaching solutions. It should be kept in mind that the lower sandstone unit in question is thin and discontinuous, and not at all likely for development now or in the future because of its low yield and poor water quality, and because there are much

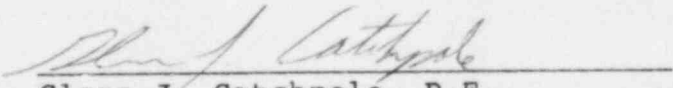
better yielding aquifers above this lower sandstone unit. Therefore, no risk to public health or safety from a vertical excursion into the lower sandstone unit exists and again, OPI must restore the water if an excursion does occur. An NRC position of requiring a good monitoring program followed by groundwater clean-up in the event of contamination seems reasonable to OPI and it is our understanding that such a policy is consistent with the NRC's program of monitoring the actual leakage from some conventional uranium mill tailings ponds.

OPI is of the opinion that the data from another pump test utilizing an observation well in the mudstone (not required in the approved pump test design) will be no more conclusive than the data presently available. The additional pump test will also further delay the start-up of Mining Unit No. 2 and result in the unnecessary expenditure of a considerable sum of money. Additionally, the type of pump test being requested by the NRC belongs in the scientific community performing basic hydrogeologic research and is not appropriate from a practical standpoint for application to operating uranium solution mining facilities. For example, what would be acceptable test result parameters for demonstrating adequate confinement?

In summary, OPI reaffirms its position that an adequate degree of confinement between the two units in question has been demonstrated using an NRC approved pump test design, and that additional pump testing using a new procedure is not necessary. We therefore request authorization to commence mining in Unit No. 2 subject only to the additional monitor well requirements specified by the DEQ. Your immediate consideration of this matter is requested as the delay in receiving NRC approval to start-up Unit No. 2 has forced OPI to stop mining operations and lay-off 60% of its personnel as a cost savings measure. Sufficient bleed is being maintained in Mining Unit No. 1 to prevent excursion of lixiviant and all required environmental and radiation safety monitoring continues to take place.

Please direct all correspondence regarding this matter to my attention as Mr. Lawson, our former Environmental Engineer, is one of the unfortunate victims of the lay-off.

Sincerely,
OGLE PETROLEUM INC.


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

GJC:me
Enclosure
cc: Document Management Branch, NRC
Mr. James Asselstine, NRC Commissioner

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BISON BASIN PROJECT
MONITOR WELL DATA

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Monitor Well No. M-19 (LOWER)

Mining Unit No. 1

| SAMPLE DATE | CONDUCTIVITY (mmhos/cm) | CARBONATE PLUS BICARBONATE (mg/l) | CHLORIDE (mg/l) | SODIUM (mg/l) | SULFATE (mg/l) | URANIUM (mg/l) | WATER LEVEL (FEET) |
|-----------------|----------------------------|--|--------------------|------------------|-------------------|-------------------|--------------------------|
| Baseline | 1880 | 127 | 53 | 390 | 616 | 0.010 | N/A |
| UCL | 2256 | 152 | 64 | 468 | 739 | 1.010 | N/A |
| UCL Plus 20% | 2707 | 182 | 77 | 562 | 887 | 1.212 | N/A |
| 08/12/81 | 1810 | 107 | 47 | 337 | 615 | 0.011 | 113.50 |
| 09/03/81 | 1760 | 119 | 43 | 342 | 580 | 0.017 | 115.00 |
| 09/11/81 | 1820 | 122 | 40 | 353 | 545 | 0.007 | 115.10 |
| 09/16/81 | 1660 | 122 | 40 | 359 | 533 | -.005 | 113.50 |
| 09/23/81 | 1770 | 124 | 40 | 345 | 450 | -.005 | 118.50 |
| 10/01/81 | 1750 | 129 | 38 | 332 | 490 | -.005 | 119.80 |
| 10/14/81 | 1750 | 129 | 40 | 334 | 660 | 0.009 | 120.50 |
| 10/29/81 | 2000 | 122 | 36 | 353 | 604 | 0.011 | 116.50 |
| 11/11/81 | 1990 | 129 | 40 | 327 | 530 | -.005 | 121.50 |
| 11/25/81 | 1900 | 124 | 40 | 354 | 586 | 0.016 | 120.00 |
| 12/03/81 | 1700 | 122 | 40 | 381 | 535 | 0.015 | 121.80 |
| 12/09/81 | 1770 | 127 | 39 | 357 | 590 | 0.017 | 124.00 |
| 12/14/81 | 1920 | 129 | 41 | 386 | 660 | 0.014 | 124.50 |
| 12/23/81 | 1750 | 122 | 41 | 334 | 602 | 0.016 | 122.30 |
| 01/08/82 | 1475 | 124 | 20 | 342 | 660 | -.001 | 125.70 |

NOTE: "-" Before number means not detected at level indicated. Water level is the distance from top of well casing to the water surface. N/A means not applicable. Baseline means high baseline. UCL means upper control limit. "0" means unable to collect sample due to pump or other problems.

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OGLE PETROLEUM INC.
BISON BASIN PROJECT
MONITOR WELL DATA

Monitor Well No. M-19(LOWER)

Mining Unit No. 1

| SAMPLE DATE | CONDUCTIVITY (mmhos/cm) | CARBONATE PLUS BICARBONATE (mg/l) | CHLORIDE (mg/l) | SODIUM (mg/l) | SULFATE (mg/l) | URANIUM (mg/l) | WATER LEVEL (FEET) |
|-----------------|----------------------------|--|--------------------|------------------|-------------------|-------------------|--------------------------|
| Baseline | 1880 | 127 | 53 | 390 | 616 | 0.010 | N/A |
| UCL | 2256 | 152 | 64 | 468 | 739 | 1.010 | N/A |
| UCL Plus 20% | 2707 | 182 | 77 | 562 | 887 | 1.212 | N/A |
| 01/13/82 | 1525 | 134 | 40 | 356 | 700 | -.001 | 123.00 |
| 01/21/82 | 1550 | 120 | 41 | 360 | 520 | -.005 | 125.60 |
| 01/28/82 | 1550 | 121 | 39 | 383 | 605 | -.005 | 126.30 |
| 02/04/82 | 1550 | 122 | 41 | 364 | 565 | -.005 | 126.30 |
| 02/18/82 | 1550 | 122 | 41 | 370 | 595 | -.005 | 127.70 |
| 03/30/82 | 1580 | 117 | 40 | 343 | 545 | -.005 | 134.20 |
| 04/27/82 | 1750 | 119 | 40 | 365 | 600 | -.005 | 134.00 |
| 06/02/82 | 1560 | 124 | 40 | 331 | 600 | -.005 | 122.40 |
| 06/17/82 | 1550 | 132 | 41 | 306 | 580 | -.005 | 128.30 |
| 07/01/82 | 1500 | 122 | 41 | 344 | 540 | -.005 | 127.50 |
| 07/16/82 | 1500 | 122 | 41 | 345 | 660 | -.005 | 127.50 |
| 07/28/82 | 1500 | 125 | 40 | 322 | 600 | 0.036 | 127.10 |

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OGLE PETROLEUM INC.
BISON BASIN PROJECT
MONITOR WELL DATA

Monitor Well No. M-19(LOWER)

Mining Unit No. 1

| SAMPLE DATE | CONDUCTIVITY (mmhos/cm) | CARBONATE PLUS BICARBONATE (mg/l) | CHLORIDE (mg/l) | SODIUM (mg/l) | SULFATE (mg/l) | URANIUM (mg/l) | WATER LEVEL (FEET) |
|-----------------|----------------------------|--|--------------------|------------------|-------------------|-------------------|--------------------------|
| Baseline | 1880 | 127 | 53 | 390 | 616 | 0.010 | N/A |
| UCL | 2256 | 152 | 64 | 468 | 739 | 1.010 | N/A |
| UCL Plus 20% | 2707 | 182 | 77 | 562 | 887 | 1.212 | N/A |
| 08/12/82 | 1500 | 122 | 42 | 335 | 578 | -.005 | 127.30 |
| 08/26/82 | 1500 | 131 | 37 | 352 | 605 | 0.008 | 125.60 |
| 09/07/82 | 1650 | 124 | 42 | 335 | 612 | -.100 | 127.50 |
| 09/22/82 | 1650 | 122 | 48 | 329 | 624 | -.100 | 128.80 |

NOTE: "-" Before number means not detected at level indicated. Water level is the distance from top of well casing to the water surface. N/A means not applicable. Baseline means high baseline. UCL means upper control limit. "0" means unable to collect sample due to pump or other problems.

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