UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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JUL 30 1980

WMUR:JER
Docket No. 40-8697
SUA-1338, Amendment No. 1

Rocky Mountain Energy Company
ATTN: Mr. M. R. Neumann
Field Environmental Coordinator
P. O. Box 3719
Casper, Wyoming 82602

Gentlemen:

In accordance with your application dated April 23, 1980 and supplement dated June 19, 1980, and pursuant to Title 10 Code of Federal Regulations, Part 40, the indicated Conditions of Source Material License No. SUA-1338 are hereby amended to read as follows:

9. Authorized Place of Use: Reno Creek, Township 43 North, Range 73 West, Campbell County, Wyoming

10. Authorized Use: For uranium recovery from pregnant lixiviant in accordance with statements, representations, and conditions contained in (1) the licensee's application dated May 1, 1978 and supportive information attachments; (2) additional information transmittal dated July 21, 1978, which references specific sections of the licensee's Application for Permit to Mine to the State of Wyoming's Department of Environmental Quality Land Quality Division; (3) the licensee's amendment application dated April 1980 submitted with letter dated April 23, 1980; and (4) the amendment application supplements dated June 19 and July 25, 1980.

Notwithstanding the above, the following conditions shall override any conflicting statements contained in the licensee's applications and supplements.

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11. The uranium in situ solution mining and the recovery of uranium from the pregnant lixiviant shall be performed on a maximum well field area of less than (1) acre within a project site area of approximately forty (40) acres.

12. The test program is limited to the use of a sodium carbonate/sodium bicarbonate lixiviant with gaseous oxygen and/or liquid hydrogen peroxide added as an oxidant. Any variation from the carbonate leach procedure described in the April 1980 amendment application or the June 19, 1980 amendment application supplement shall require NRC approval through amendment of this license.

13. At least eight (8) wells including the two recovery wells, four perimeter monitoring wells located in the ore zone, one well in the aquifer above the ore zone and one well in the aquifer below the ore zone with the latter two wells situated inside the perimeter of the injection wells shall be used to establish the premining groundwater quality of the well field and to monitor for horizontal and vertical excursions. Pre-injection groundwater quality baseline for setting restoration goals and criteria shall be established for the production zone following the procedure described in the April 1980 amendment application submitted on April 23, 1980. Baseline values shall also be established for each of the six monitoring wells following the same procedure.

15. During normal mining operations, monitor wells shall be sampled every two (2) weeks and analyzed for pH, chloride, bicarbonate, uranium, vanadium, and conductivity with static water levels measured before each sample is taken. Every four weeks, these samples shall also be analyzed for radium-226, thorium-230, arsenic and selenium. On a quarterly basis, the full suite of thirty-two (32) water quality parameters tabulated on page 10 of the amendment request submitted on April 23, 1980 or an abbreviated listing as mutually agreed between the licensee and the Wyoming Department of Environmental Quality shall be determined on samples from each of the six monitor wells for Test Pattern II.

16. The upper control limits (UCL) for defining lixiviant excursions shall be determined for each of the six monitoring wells by taking the average value for each excursion parameter ($\bar{X}$), adding two standard deviations (S) then adding 10% of this total. Lower control limits (LCL) shall be determined by subtracting two standard deviations from the average of each parameter then subtracting 10% of the remainder or:

$$UCL = 1.1 (\bar{X} + 2S)$$
$$LCL = 0.9 (\bar{X} - 2S)$$

Excursion parameters are defined as pH, chloride, bicarbonate, uranium and conductivity.

17. When a monitor well analysis exceeds the control limit for any two or more of the excursion parameters, the licensee shall follow the procedures described on pages 10 and 11 of the April 1980 amendment request for verifying, reporting, and controlling the indicated excursion.

24. The uranium recovery plant for the carbonate lixiviant test shall be operated at a maximum nominal flow rate of up to fifty (50) gpm.

32. Grab samples of yellowcake, yellowcake decant, reverse osmosis brine and reverse osmosis product listed in table headed "Requested Sampling Amendments SUA-1338" in the April 1980 amendment request shall be analyzed for radium-226 on at least a monthly basis.

33. The goal for restoring the groundwater quality in Pattern II will be the return of all parameters to preinjection background levels. Criteria for groundwater restoration will be determined in accordance with Wyoming State requirements.

All other conditions shall remain the same.

These conditions have been discussed and agreed upon in telephone conversations between you and J. E. Rothfleisch of the NRC staff.

The overall effect of this amendment is to authorize the use of a carbonate/bicarbonate lixiviant in Test Pattern II as requested, subject to the conditions listed above.

FOR THE NUCLEAR REGULATORY COMMISSION

Ross A. Scarano, Chief
Uranium Recovery Licensing Branch
Division of Waste Management

cc: W. C. Ackerman, WY DEQ
D. Morrow, WY DEQ