

# UNC MINING AND MILLING

Report #48



Division of United Nuclear Corporation  
A **UNC RESOURCES** Company

P.O. Box 3951  
Albuquerque, New Mexico 87190

4801 Indian School Road, N.E.  
Albuquerque, New Mexico 87110  
Telephone 505/265-4421

January 25, 1981

Mr. Thomas E. Baca, Director  
New Mexico Environmental Improvement Division  
P. O. Box 968  
Santa Fe, New Mexico 87503

Dear Mr. Baca:

In the continuing program to identify and collect groundwater contamination related to UNC's tailings operation, we recommended drilling the 500 series wells. The wells were drilled into the selected hydrologic units in order to identify the existence or absence of contamination. The location of the wells were discussed with EID personnel to assure all areas of interest were tested.

Accompanying this letter is "Drilling For Seepage Control System, 500 Series Wells", as well as drill logs and a map showing the location of the wells; reported by Billings & Associates. Other subsequent studies and/or reports referred to in the foregoing report, are in progress.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Thomas M. Hill".

Thomas M. Hill  
Director, Tailings Management

TMH/m

Attachments

54/2

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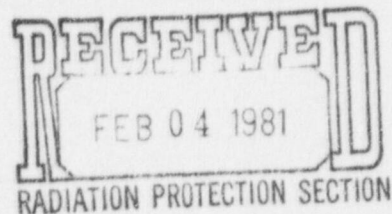
4801 Indian School Road, N.E.  
Albuquerque, New Mexico 87110

3737 Princeton, N.E.  
Albuquerque, NM 87107

Telephone 505/265-4421

505/884-1869

February 3, 1981



Gerald W. Stewart  
Program Manager  
NM Environmental Improvement Division  
P. O. Box 968  
Santa Fe, NM 87503

Dear Mr. Stewart:

In response to the question raised in your item 5 of the January 29, 1981 letter, I had instructed Mr. Richard Volpe to transmit the subject drawings directly to you to save time. However, in the future all correspondence from our consultants will be forwarded to you through this office.

The information transmitted to you from Mr. Volpe has our approval. (Letter of January 22, 1981)

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas M. Hill".

Thomas M. Hill  
Director, Tailings Management

TMH:jb

cc: T. F. Bailey  
R. L. Volpe

Missing or Insufficient Water Quality Data from UNC Wells.

(6) Water quality data from the UNC wells are necessary to completely characterize, to the maximum, the extent of the contamination at the Church Rock Site. The following includes a listing of wells for which water quality data was never submitted or for which complete water quality data (as submitted in the UNC Ground Water Discharge Plan) is more than six months old. A submittal of these missing or insufficient data should be forthcoming from UNC as soon as possible. Analysis should be performed for the following: pH, Total Dissolved Solids (TDS),  $\text{SO}_4^{=}$ ,  $\text{Cl}^-$ ,  $\text{F}^-$ , Al, As, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, Se, V, Zn, total uranium, total carbonate, and conductance.

Wells For Which Full Analysis  
Were Never Submitted

TWQ-11D  
TWQ-12D  
TWQ-13D  
TWQ-14D  
TWQ-15D  
TWQ-36D  
TWQ-37D  
TWQ-99A  
TWQ-100A  
TWQ-107D  
TWQ-108D  
TWQ-113D  
TWQ-135  
TWQ-146  
TWQ-156

Hydrofrac - 1  
" - 2

Wells For Which Last Full Analysis  
Submitted More Than Six Months Ago

TWQ-2D  
TWQ-3D  
TWQ-4D  
TWQ-5D  
TWQ-7D  
TWQ-8D (TDS, pH, Sulfate only)  
TWQ-9D  
TWQ-10D  
TWQ-101A  
TWQ-102A  
TWQ-103A  
TWQ-104A  
TWQ-105A  
TWQ-106D  
TWQ-110D  
TWQ-111D  
TWQ-116D  
TWQ-117D  
TWQ-119D  
TWQ-120D  
TWQ-121D  
TWQ-123  
CH-3  
GWD-1



# RADIATION PROTECTION BUREAU

February 9, 1981

Salaries and Employee Total Program Expenses for Licensing (other than uranium) benefits based on FY 68 expenditures and 15% inflation rate:

## EMPLOYEE BENEFITS

FICA, Insurance  
Workmens Compensation, etc.

Salaries for 3 professionals

|                             |               |
|-----------------------------|---------------|
| Environmental Manager       | 27,432        |
| Program Manager             | 26,148        |
| Environmental Scientist III | <u>16,824</u> |
| <br>TOTAL                   | <br>70,404    |

Employee Benefits equal to 25% of salary

$$70,404 \times 1.25 = 88,005 + 15\% \text{ inflation} = 101,205$$

Salaries for 2 Secretaries

|               |              |
|---------------|--------------|
| Secretary III | 13,560       |
| Secretary II  | <u>9,600</u> |
| <br>TOTAL     | <br>22,740   |

Employee benefits equal to 25% of Salary

$$22,740 \times 1.25 = 28,425 + 15\% \text{ inflation} = 32,688$$

Administrative costs for the licensing program based on FY 68 costs + 15% inflation rate: Administrative costs include Rent, Office and Field Supplies, Postage, Telephone and Maintenance (Capital Outlay excluded)

|                      |        |
|----------------------|--------|
| Administrative Costs | 19,700 |
|----------------------|--------|

Travel costs for the licensing program based on FY 68 costs + 15% inflation rate increase for three professionals, including per diem and car costs

|              |       |
|--------------|-------|
| Travel Costs | 8,300 |
|--------------|-------|

Total budget projection based on time allocations to the licensing (other than uranium) program

|                         |      |
|-------------------------|------|
| Environmental Manager   | 33%  |
| Program Manager         | 75%  |
| Environmental Scientist | 100% |

|                 |               |
|-----------------|---------------|
| 27,432 x .33 =  | 9,052         |
| 26,148 x .75 =  | 19,611        |
| 16,824 x 1.00 = | <u>16,824</u> |

|       |        |        |
|-------|--------|--------|
| TOTAL | 45,487 | 45,487 |
|-------|--------|--------|

|          |          |        |
|----------|----------|--------|
| Benefits | x 1.25 = | 56,859 |
|----------|----------|--------|

|           |          |        |
|-----------|----------|--------|
| Inflation | x 1.15 = | 65,388 |
|-----------|----------|--------|

|           |                          |        |
|-----------|--------------------------|--------|
| Secretary | ' person (32,688 x .5) = | 16,344 |
|-----------|--------------------------|--------|

|                |  |        |
|----------------|--|--------|
| Administration |  | 19,700 |
|----------------|--|--------|

|              |  |              |
|--------------|--|--------------|
| Travel Costs |  | <u>8,300</u> |
|--------------|--|--------------|

|       |  |         |
|-------|--|---------|
| TOTAL |  | 109,732 |
|-------|--|---------|

This provides 1,880 hrs/yr x 2.08 = 3,910 professional hrs/yr

Cost = 28.00/professional hour

Round off to 28.00/professional hour

#### FUNCTION FOR BOTH URANIUM AND NON-URANIUM LICENSING

- A. Initial issuance - Provide prelicense information; licensing guide; accept license application; request additional information; conduct pre-licensing inspection; analyze application; if indicated, write analysis and arrange for public hearing; draft license; proof and sign license; file; add to rosters; keep statistics; etc.; provide license and appropriate regulations and forms to licensee. Licenses are normally issued for five years.
- B. Renewal - Elements of A. above as necessary for changes in activity of licensee. Renewals are normally issued for five years.
- C. Amendment - Recognition of a requested change in a licensee's activity. Amendments vary in scope from minor to major. Amendments normally do not alter the expiration date.
- D. Inspection - An on-site review of a licensee's activity. Involves review of files, assembly of necessary equipment, reporting forms, etc. transportation to site, entrance interview with management, interview with key personnel and selected personnel, visual inspection of facilities, measurements with instrumentation, review of records, availability to hear complaints, collection of samples, completion of inspection forms, exit interview with management, proofing, signatures and dispatch of letter, receipt and analysis of corrective action, close of inspection file.



URANIUM LICENSING SECTION

SALARIES AND EXPENSES

|   |              |
|---|--------------|
| Environmental Manager 1/3 x 27,432 =              | 9,144        |
| Environmental Program Manager                     | 20,500       |
| Environmental Scientist III (Step 1) 2 x 16,476 = | 32,952       |
| Environmental Scientist III (Step 6)              | 19,500       |
| Environmental Engineering Specialist I            | 21,500       |
| Environmental Engineering Specialist I            | 20,500       |
| Secretary III 1/3 x 13,560 =                      | 4,520        |
| Secretary II 1/3 x 6,400 =                        | <u>6,400</u> |

TOTAL 135,016

Employee Benefits x 25% = 33,754

TOTAL 168,770

IPA Assignee 25,000

TOTAL 193,770

x 15% inflation = 29,065

TOTAL 222,835

ADMINISTRATIVE COSTS

67,597\* x 8 1/3/19 = 29,647

TRAVEL COSTS

26,284 x 7 1/3/17 = 11,338

TOTAL 40,985

x 15% inflation = 6,148

TOTAL 47,133 47,133

269,968

TOTAL ANNUAL COST 270,000

Man hours available 2,080 hrs/yr

Leave time  $\frac{336}{1,744}$

1,744 x 7 1/3 = 12,789

\$21.11 per hr

\$22.00 per hr professional

32,400 per man-year

\*Includes \$6,000 Eberline Contract

D R A F T

URANIUM LICENSING COSTS FOR EACH URANIUM LICENSING FUNCTION

EFFORT MAN-MONTHS

|   | A                | B                 | C                    | D                         |
|---|------------------|-------------------|----------------------|---------------------------|
|   | INITIAL ISSUANCE | RENEWAL           | AMENDMENTS           | INSPECTIONS<br>(PER YEAR) |
| I. Uranium<br>Mill                      | 68500            | 68500*<br>34250** | 1-6<br>3800 to 22800 | 3800                      |
| II. Commercial<br>Rad-Waste<br>Disposal | 45650            | 22800             | 1-6                  | 3800                      |
| III. Commercial<br>In-Situ              | 45650            | 22800             | 1-6                  | 3800                      |
| IV. Commercial<br>Heap<br>Leach         | 34250            | 11400             | 1-6                  | 1900                      |
| V. Pilot<br>In-Situ                     | 22800            | -                 | 1-3<br>3800 to 11400 | 1900                      |
| VI. Experimental<br>Heap Leach          | 22800            | -                 | 1-3                  | 1/2 1900                  |
| VII. Backfilling                        | 45650            | 22800             | 1-3                  | 1/2 1900                  |
| VIII. Storage<br>Misc.                  | 11400            | 950               | 1/4 950              | 1/4 950                   |

\* Without Prior Environmental Report

\*\* With Prior Environmental Report

|   |               |         |
|---|---------------|---------|
| 173 man-hours/month x \$22 per man-hour | man-month     | 3,806   |
|   | 1/2 \$1,900   | 1/4 950 |
|   | 3 man-months  | 11,418  |
|   | 6 man-months  | 22,836  |
|   | 9 man-months  | 34,254  |
|   | 12 man-months | 45,648  |
|   | 18 man-months | 68,508  |



EXPENSE APPLIED TO A CONVENTIONAL MILL

URANIUM MILL LICENSE (NEW)

Initial License 68,500

Inspection Annual Fee 3,800 per year

Total License Fee

Initial 68,500

5 x Annual Inspection 19,000

87,500

Renewal Fees (Depends on with or without 34,250 to 68,500  
prior Environmental Report)

## ENVIRONMENTAL SURVEILLANCE SECTION

### EMPLOYEE SALARIES

|  |               |
|--|---------------|
| Environmental Program Manager          | 20,000        |
| Environmental Scientist III (Santa Fe) | 32,000        |
| Environmental Scientist III (Grants)   | 15,000        |
| Environmental Technician III           | 12,000        |
| Secretary II (1/3)                     | 3,200         |
| Secretary III (1/3)                    | 4,500         |
| TOTAL                                  | <u>86,700</u> |
| Employee Benefits (25%)                | 21,675        |

### TRAVEL COSTS

|                               |              |
|-------------------------------|--------------|
| \$26,284 (4/17 professionals) | <u>6,185</u> |
| TOTAL                         | 114,560      |

### MONITORING COSTS

|                              |                |
|------------------------------|----------------|
| Computer Costs               | 5,000          |
| Radiochemistry               | 50,000         |
| Equipment Repair             | 3,000          |
| New Equipment & Replacements | <u>10,000</u>  |
|                              | 68,000         |
|                              | <u>114,560</u> |
|                              | 182,560        |
| 15% Inflation                | <u>27,384</u>  |
| TOTAL COST                   | 209,944        |

209,944 = \$27.90/professional hour  
(4 professionals)  
(18.80 h/y) 28.00 professional hour

# ESTIMATE OF NEW MEXICO STATE COSTS

## IN SUPPORT OF

### UNC TAILINGS DAM BREACH

|  | As of<br>Nov 19, 1979 | Nov 20, 1979<br>to<br>Dec 31, 1980 |
|--|-----------------------|------------------------------------|
| ENVIRONMENTAL IMPROVEMENT DIVISION   |                       |                                    |
| RADIATION PROTECTION SECTION   |                       |                                    |
| Personnel - Professional   |                       |                                    |
| 3 full time  | 22,500                | (4 pt-tm)35,880                    |
| 2 part time  | 7,600                 |                                    |
| Travel   | 5,000                 | 3,000                              |
| Per Diem   | 2,500                 | 2,400                              |
| Personnel - Technician   |                       |                                    |
| 2 part time  | 5,320                 | 9,940                              |
| Personnel - Secretarial  |                       |                                    |
| 2 part time  | 4,560                 | 2,320                              |
| Overtime - Professional  |                       |                                    |
| 2  | 4,500                 | 3,480                              |
| Sample Analyses  |                       |                                    |
| State Lab  | 8,000                 | 8,000                              |
| Eberline - Contract  | 10,000                | 15,800                             |
|  | <u>68,010</u>         |                                    |
| Overhead   | 13,602                |                                    |
| Computer   |                       | 2,000                              |
|  | 81,612                | 82,820                             |
|  |                       | 16,564                             |
|  |                       | 99,384                             |
| NOT INCLUDED   |                       | NM TOTL                            |
| Water Pollution Control  |                       | RPB                                |
| District Office  |                       |                                    |
| State Engineer's Office  |                       |                                    |
| NUCLEAR REGULATORY COMMISSION  |                       |                                    |
| Technical Consultants  | 2,000                 |                                    |
| Travel   | 4,000                 |                                    |
| Sampling and Lab Analyses  | 5,000                 |                                    |
| Mobil Lab - 2 months   | 100,000               |                                    |
| ARMS Flight  | 50,000                |                                    |
|  | <u>161,000</u>        |                                    |
| ENVIRONMENTAL PROTECTION AGENCY  |                       |                                    |
| Photo Mission  | 25,000                |                                    |
| Lab Analyses   | 5,000                 |                                    |
|  | <u>30,000</u>         |                                    |
| No allowance for EPA, CDC, NRC, DOE and BRH<br>overhead and headquarters staff |                       |                                    |
| Federal Total  | 191,000               |                                    |