PDR 40-8697

ROCKY MOUNTAIN ENERGY COMPANY

July 31, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSION
Fuel Processing & Fabrication Branch
Division of Fuel Cycle & Material Safety
Washington, D. C. 20555

ATTN: William Crow

Dear Sir:

RE: Quarterly Report, License No. SUA-1338,
Docket No. 40-8697

Pursuant to License Condition No. 29, the Rocky Mountain Energy Company's Reno Creek In-Situ Test Facility is submitting the Quarterly Report covering the period of April through June, 1980.

Restoration continued on Pattern I during the quarter. Results obtained from the production well during the restoration period beginning in January, 1980, are shown in Table I.

As mentioned in the previous Quarterly Report, a water treatment circuit was installed to neutralize excess acid and produce a near neutral pH water for reinjection. The water treatment circuit removes most of the heavy metals and radionuclides, producing a relatively clean solution with a pH of 7.5 to 8.5. The underflow containing the majority of the contaminants was discharged into the lined evaporation reservoir for eventual disposition.

Results during the groundwater sweep, prior to the installation of the treatment circuit, show that groundwater quality underwent dramatic improvement during this early stage of water removal. Free acid levels dropped to 331 mg/l, while pH levels rose to 3.17. Sulfates, conductivity, uranium (as uranium oxide), iron, calcium, and vanadium dropped to 1701 mg/l, 3300 micromhos/cm, 4.1 mg/l, 63 mg/l, 150 mg/l, and 0.3 mg/l, respectively.

Data obtained during the chemical injection phase of restoration indicate a less dramatic improvement in water quality; however a recent significant decrease in the concentration of free acid in the groundwater suggests that chemical breakthrough may be imminent. We expect to see additional significant improvement in groundwater quality when this occurs.

FEE EXEMPT 16980

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P.O. BOX 3710 CASPER, WYOMING 82602 (307) 237-8325 Add'l info

To summarize, significant restoration progress has been accomplished in Pattern I at the Reno Creek site (see Table 2). The most recent values of 140 mg/l, 100 mg/l, and 85 mg/l indicate a downward trend in free acid concentrations, and a continued improvement in groundwater conditions as a result of the current restoration activities.

Work continues on modification of the plant for the Pattern II carbonate leach test. Expected startup date for the new test pattern is mid-August. Verbal approval of the Carbonate License Amendment Request was received July 30, 1980.

Air quality data and groundwater surveillance for the second quarter demonstrate that operations have not caused an environmental impact to the area. The attached tables summarize second quarter operations.

Very truly yours,

Pat Spieles

Patrick Spieles
Environmental Supervisor
ISL Operations

PS/ph/J

cc: USNRC, C/O Document Management Branch
USNRC, Region IV
WDEQ, Land Quality Division (Permit 479)
WDEQ, District IV Office
D. Gardner
R. Hynes
M. Neumann
R. Iwanicki
J. Rothfleisch
K. Loest
D. Murphy

TABLE I

RESTORATION RESULTS FOR PATTERN I, RENO CREEK PROJECT

Parameter*	1/1/80	2/1/80	3/1/80	4/1/80	5/1/80	6/1/80	6/30/80	7/5/80	7/12/80	7/16/80
Free Acid	319	466	331	114	219	112	151	140	100	85
pH	3.21	3.19	3.17	4.30	3.17	4.11	4.33	4.30	4.30	4.40
SO_4	2470	2435	1701	1614	1669	1771	1794	1822	1828	1635
Conductivity	3300	4100	3300	2000	2300	1900	2200	2200	2000	2000
U_3O_8	8.9	5.7	4.1	3.8	2.8	2.8	4.2	4.2	3.9	4.3
Fe	159	133	63	65	30	76	67	84	83	84
Ca	371	308	150	173	230	245	268	246	231	249
V	3.0	1.0	0.3	1.0	0.2	<0.1	1.1	---	0.9	0.8

* All parameters listed are given in milligrams per liter, except pH (standard units) and conductivity (micromhos/cm).

TABLE II

SUMMARY OF RESTORATION PROGRESS

PATTERN I

RENO CREEK PROJECT

Parameter[1]	Baseline Condition[2] (5/15/78 through 9/20/78)	Water Quality During Mining (10/3/80)	Current Restoration Values (7/16/80)
Free Acid	-	626	85
pH	9.1 ± 1	2.33	4.40
SO_4	806 ± 93	3202	1635
Conductivity	1516 ± 116	5800	2000
U_3O_8	0.64 ± 0.4	15.9	4.3
Fe	1.6 ± 1.7	286	84
Ca	90 ± 6.7	399	249
V	2.03 ± 3	7.9	0.8

[1] All parameters listed are given in milligrams per liter, except pH (standard units) and conductivity (micromhos/cm).

[2] Mean plus or minus one standard deviation.

TABLE III

RENO CREEK

MAXIMUM AIRBORNE PARTICULATES (1)

April - June 1980

Sample Station	TSP (3)	Ra^{226} (2)	Th^{230} (2)	Uranium (2)
Upwind Control (#12)	70	0.03	0.02	0.18
Upwind Restricted Area Boundary (#8)	64	0.03	0.01	0.18
Downwind Restricted Area Boundary (#10)	79	0.08	0.07	0.31

(1) Sample collected with a high volume air sampler

(2) Concentrations in microcuries per ml $\times 10^{-16}$

(3) Total suspended particulates in micrograms per cubic meter

TABLE IV

RENO CREEK

MAXIMUM OBSERVED RADON GAS CONCENTRATION

April - June 1980

Sample Station	Rn-222 in $\mu Ci/ml$
Upwind Control (#12)	0.44×10^{-9}
Upwind Restricted Area Boundary (#8)	0.39×10^{-9}
Downwind Restricted Area Boundary (#10)	0.23×10^{-9}

TABLE V

RENO CREEK

PATTERN I MONITOR WELLS

MAXIMUM OBSERVED VALUE APRIL - JUNE VS. (CONTROL LIMIT)

	MONITOR WELLS (1)					
	M-1	M-2	M-3	M-4	USM-1 (2)	LSM-1 (3)
pH	(6.5)	(6.5)	(6.5)	(6.5)	(6.5)	(6.5)
	7.8	7.8	8.3	8.2	7.7	11.2
Conductivity	(1980)	(1952)	(2200)	(2090)	(781)	(3080)
(μmhos/cm)	1770	1715	1785	2050	745	2300
U_3O_8	(0.61)	(0.99)	(1.21)	(2.20)	(1.20)	(2.20)
(mg/l)	0.038	0.021	0.107	0.505	0.011	0.013
Calcium	(200)	(131)	(124)	(128)	(26)	(223)
(mg/l)	96	101	100	117	19	127
Sulfate	(825)	(946)	(998)	(1048)	(165)	(675)
(mg/l)	814	916	891	804	160	26

(1) Perimeter monitor wells located in each cardinal direction and in the same aquifer were sampled monthly

(2) Located in aquifer above leaching zone

(3) Located in aquifer below leaching zone

TABLE VI

MASS BALANCE SUMMARY

April - June 1980

Month	Pregnant Solution Produced	Lixiviant Solution Injected	Net Produced (1)	Waste (2) to Pond
April	889533	621136	268397	269522
May	730750	574096	156654	157423
June	455742	368620	87122	88421

(1) Net Produced = Pregnant minus lixiviant

(2) Waste = Net produced plus plant waste