

04008064140E
EXXON MINERALS COMPANY

POST OFFICE BOX 3020 • CASPER, WYOMING 82602



40-8064
PDR - Return
396-SS

Highland Uranium Operations

July 23, 1982



U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. J. J. Linehan, Section Leader
Operating Facilities, Section I
Uranium Recovery Licensing Branch
Division of Waste Management

Docket No. 40-8064
NRC 1982 Second Quarter Report
Uranium Solution Mining
Pilot Program
Converse County, Wyoming

Gentlemen:

This report is submitted in accordance with license condition 16 of Source Material License No. SUA-1064 issued June 30, 1982.

Restoration of the Expanded R&D Pilot (second) well field at Highland continued through the second quarter of 1982. Fluids were produced from the original production wells and passed through ion exchange columns for incidental uranium recovery. The fluids are then treated by reverse osmosis (RO) to reduce elemental concentrations and then returned to the well field for injection into the produced aquifer via the original injection wells. Bi-weekly sampling of the observation and monitor wells continued through the report period.

The layout of the Expanded R&D Pilot well field and tables of monitoring well sample analytical results are attached as per Condition No. 30.

The uranium content of the composite produced fluid decreased from approximately 11 mg/l in April 1982 to 9 mg/l in June 1982.

The total volume of liquid wastes discharged from the two pilot solution mining activities to the Highland mill tailings basin during the report period was 1226.4 k gallons.

OFFICIAL DOCKET COPY

FEE EXEMPT
20635
info only

A DIVISION OF EXXON CORPORATION

8209210341 820723
PDR ADOCK 04008064
C PDR

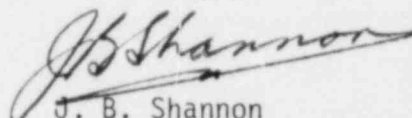
04008064140E

J. J. Linehan
July 23, 1982
Page 2

Condition No. 25 of the renewed Source Material License requires monthly monitoring of the observation wells in the original R&D Pilot. Since this license was not received at Highland until early in the third quarter, second quarter data is not available.

Should there be any questions about the R&D Pilot Solution Mine program which you would like to discuss, please call Mr. Dave Clark at (307) 265-7600.

Very truly yours,



J. B. Shannon
Mine Manager

JBS:clr
Attachments

c: U. S. Nuclear Regulatory Commission, Region IV
Office of Inspection and Enforcement
611 Ryan Plaza, Suite 1000
Arlington, Texas 76011
Attention: Mr. G. D. Brown

U. S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D.C. 20555

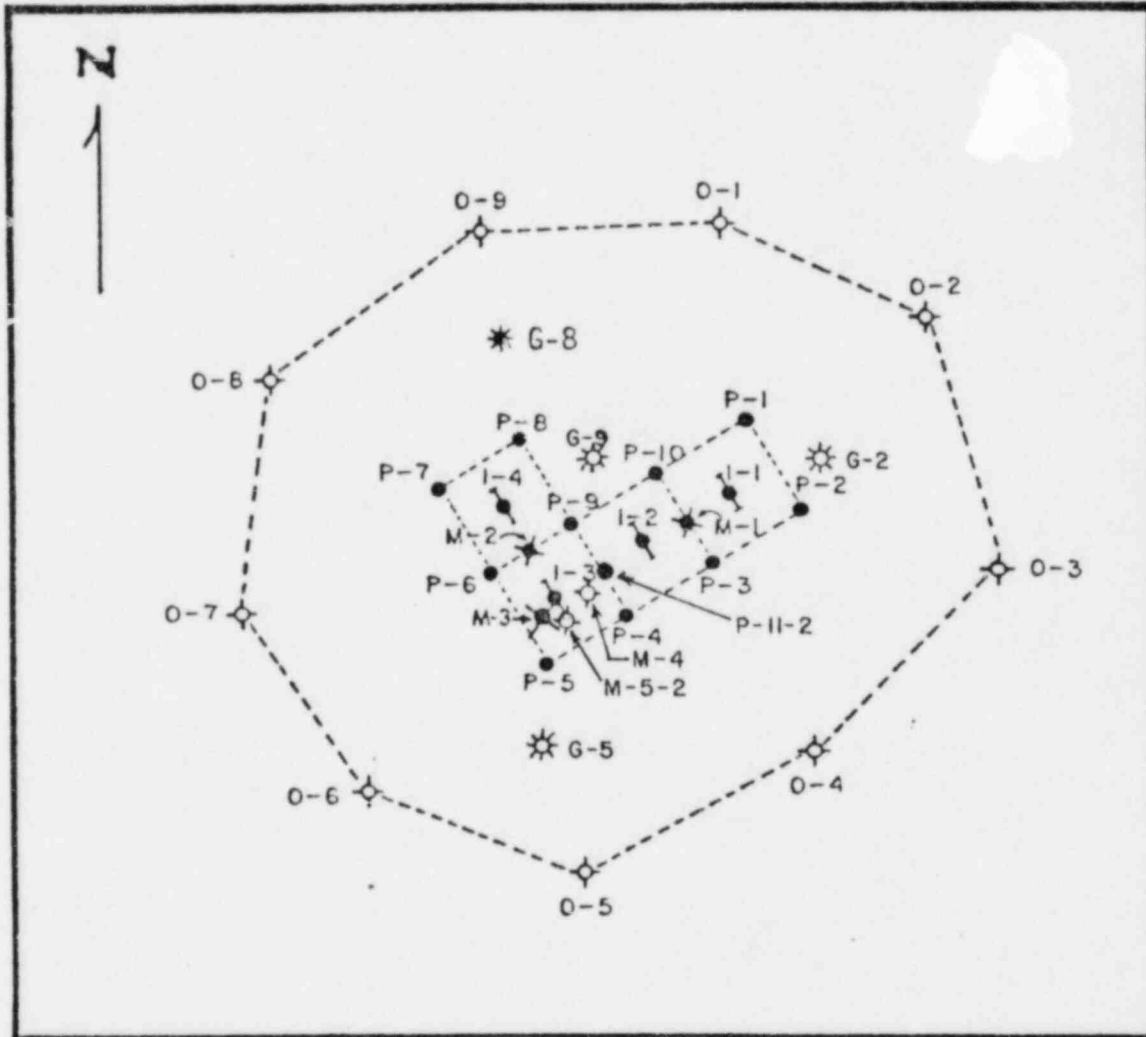
Wyoming Department of Environmental Quality
Land Quality Division
Equality State Bank Building
401 West 19th
Cheyenne, Wyoming 82002
Attention: Cathleen McCarty

OFFICIAL DOCKET COPY





20635

04008064140E

SOLUTION MINE WELL PATTERN
HIGHLAND R&D PROGRAM
CONVERSE COUNTY, WYOMING



LEGEND

-  GUARD WELL
-  PRODUCTION WELL
-  INJECTION WELL
-  MONITOR WELL

Sample Date 04008064140E
 Carbonate (mg/l) Bicarbonate (mg/l) Uranium (mg/l) Chloride (mg/l) Conductivity (umhos) pH (Units) SO4 (mg/l)

WELL 0-1

UCL	44	221	5	24	-	-	139
4/14	<1	208	<1	5	620	7.2	102
4/30	<1	202	<1	2	NA	7.5	116
5/7	<1	202	<1	2	300	7.4	101
5/25	<1	204	<1	12	NA	8.2	119
6/7	<1	200	<1	4	340	6.8	104
6/17	<1	204	<1	8	400	6.8	96

WELL 0-2

UCL	32	240	5	40	-	-	256
4/14	<1	211	<1	8	510	7.8	108
4/30	<1	200	<1	1	NA	7.6	123
5/7	<1	207	<1	3	270	7.7	102
5/25	<1	200	<1	12	NA	8.0	117
6/7	<1	204	<1	7	340	7.6	105
6/17	<1	205	<1	5	410	7.6	102

WELL 0-3

UCL	44	224	5	26	-	-	258
4/14	<1	193	<1	10	520	8.0	118
4/30	<1	193	<1	3	NA	7.6	118
5/7	<1	196	<1	5	120	7.8	100
5/25	<1	198	<1	11	NA	7.6	109
6/7	<1	198	<1	11	440	7.6	100
6/17	<1	200	<1	5	360	7.5	93

04008064140E

<u>Sample Date</u>	<u>Carbonate (mg/l)</u>	<u>Bicarbonate (mg/l)</u>	<u>Uranium (mg/l)</u>	<u>Chloride (mg/l)</u>	<u>Conductivity (umhos)</u>	<u>pH (Units)</u>	<u>SO4 (mg/l)</u>
WELL 0-4							
UCL	38	221	5	18	-	-	127
4/14	<1	209	4	10	410	8.0	128
4/30	<1	202	5	4	NA	7.6	118
5/7	<1	205	3	8	280	7.8	112
5/25	<1	154	3	15	NA	7.2	115
6/7	<1	206	2	6	425	7.5	84
6/16	<1	198	<1	9	410	7.7	87
WELL 0-5							
UCL	56	191	5	30	-	-	252
4/14	<1	207	<1	6	510	7.8	186
4/30	<1	178	<1	4	NA	7.7	188
5/7	<1	176	<1	3	100	7.7	200
5/25	<1	177	<1	12	NA	7.7	191
6/4	<1	178	<1	9	410	7.5	172
6/16	<1	178	<1	7	490	7.3	173
WELL 0-6							
UCL	44	227	5	28	-	-	200
4/14	<1	184	<1	8	475	7.8	180
4/30	<1	177	<1	5	NA	7.8	189
5/7	<1	176	<1	7	190	7.7	72
5/25	<1	178	<1	15	NA	7.8	103
6/4	<1	190	<1	11	410	7.6	100
6/16	<1	181	<1	8	490	7.5	104

OFFICIAL DOCKET COPY

20635

Sample Date	04008064140E Carbonate (mg/l)	Bicarbonate (mg/l)	Uranium (mg/l)	Chloride (mg/l)	Conductivity (umhos)	pH (Units)	SO ₄ (mg/l)
WELL 0-7							
UCL	44	240	5	90	-	-	122
4/14	<1	96	<1	20	320	7.6	156
4/27	5	82	<1	25		8.8	124
4/28	<1	199	<1	64		7.6	128
4/29	<1	212	<1	71		8.0	129
4/30	<1	189	<1	57		8.2	130
5/7	2	92	<1	29	350	8.6	127
5/25	7	4	<1	32	NA	9.2	132
6/4	17	41	<1	22	400	8.8	114
6/16	2	31	<1	18	290	8.8	110
WELL 0-8							
UCL	44	252	5	20	-	-	101
4/14	<1	220	<1	6	400	8.0	99
4/30	<1	215	<1	12	NA	7.9	118
5/7	<1	215	<1	14	300	7.8	98
5/25	<1	215	<1	18	NA	8.0	110
6/7	<1	207	<1	16	350	7.8	100
6/16	<1	212	<1	12	440	7.6	102
WELL 0-9							
UCL	68	238	5	128	-	-	115
4/14	<1	179	<1	6	400	7.5	110
4/30	<1	171	<1	5	NA	7.3	124
5/7	<1	185	<1	4	100	7.4	114
5/25	<1	171	<1	13	NA	7.6	117
6/7	<1	181	<1	12	310	7.5	104
6/16	<1	180	<1	9	420	7.3	98

04008064145E

Sample Date	Carbonate (mg/l)	Bicarbonate (mg/l)	Uranium (mg/l)	Chloride (mg/l)	Conductivity (umhos)	pH (Units)	SO4 (mg/l)
WELL M-1							
UCL	44	227	5	22	-	-	269
4/14	<1	187	<1	9	520	7.8	236
4/30	<1	176	<1	4	NA	7.8	240
5/7	<1	185	<1	3	320	7.8	227
5/25	<1	183	<1	16	NA	7.8	234
6/4	<1	183	<1	11	350	7.9	186
6/17	<1	161	<1	9	360	7.1	224
WELL M-2							
UCL	56	190	5	36	-	-	137
4/14	<1	110	<1	19	410	7.0	85
4/30	<1	123	<1	11	NA	7.0	86
5/7	<1	142	<1	13	200	7.1	94
5/25	<1	149	<1	24	NA	7.2	39
6/4	<1	139	<1	14	340	7.2	59
6/17	<1	183	<1	8	250	7.4	44