Second Quarter Report 1982 - Uranerz U.S.A., Inc. Docket #40-8783/License SUA-1401 28 June 1982 Page 1 of 3

### INTRODUCTION

This second quarterly report 1982, will be (1) a status report on construction and (2) a report on additional data requested by the license stipulations or the NRC staff. The status report will be covered under separate topic headings, while the stipulations will be handled by individual number so that quick reference can be made back to the license document (SUA-1401).

The status of the amendments requested (stipulations #45 and #46) have been or are being completed at this time. The QA program was sent as a separate document (June 11, 1982); however, at this time review is pending in the NRC office. The Accident Plan has been prepared and is waiting management review and will be sent as a separate document.

### Construction Report

On October 21, 1981, construction began at the Ruth ISL site. At that time, limited construction started by stripping the topsoil for road construction and wellfield drilling. The second phase of construction has started and at this time proceeding on schedule. UUS has requested a pond construction inspection the week of July 19, 1982. Construction completion is tentative for late summer.

#### Data Report

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PDR

8207280273 820707 PDR ADOCK 04008783

As stated in the INTRODUCTION, each stipulation requiring comment has been handled separately.

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### Stipulation #13 - Additional Baseline Data Paragraph #2 - Baseline Data

Appendix A has additional baseline data from all "baseline" wells.

Paragraph #4 - Well Completion Data

Well completion, due to weather, has been postponed until late July or August. Data or status will appear in the next quarterly report.

### Stipulation #33 Radiological Pre-operational Baseline Data

Additional pre-operational data for the Ruth ISL site has been collected and submitted as Appendix A. Also, additionl ambient radon data has been included in Appendix B.

There were problems with the PRM's during the previously recorded period reported in the last guarter report. Maintenance and repairs of the probes caused some eratic readings, but, as the data will show, they are operational again.

Also, during the winter months it is difficult to get to the PRM's to change the clips. The regular change-out schedule of one per month is difficult to keep; hopefully, now with better understanding by the landowner and the ability to travel those roads while wet, UUS will be able to maintain a constant schedule.

The data submitted in Appendix B has the results of the PRM's after repairs were made. The months of March and April were not recorded due to vandalism at the PRM sites. This has been taken care of and data now will appear on a monthly schedule.

Prior to injection of lixiviant, another pre-operational data base will be collected from the wellfield as described in the QA program and Table .2.01.

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### Stipulation #36 Well Integrity Tests

No well integrity tests have been conducted at this time. Weather conditions postponed field work until late July or August.

Data will appear in the next guarterly report.

### Stipulation #45 Quality Assurance Program

This program was sent as a separate submission to the NRC June 11, 1982. Response from the NRC is pending at this time.

### Stipulation #46 Accident Plan

The accident plan has been rewritten completely to meet the standard format used in other license documents. This document is now waiting for approval of the Manager Solution Mining, who is returning from Germany. It will be submitted as a separate document for review as soon as possible.

Telephone communication with NRC's Project Leader, Ms. Cyndy Bryck, has been maintained as to the status of UUS's submittals.

APPENDIX A

1

BASELINE WELL DATA

### Table 6.9, p.1b Baseline Water Quality Data For 20-Sand Aquifer 1-M-20

Temperature C. Field	12.7			
pH. Units. Field	8.6			
pH. Units. Lab	8.5			
Conductvity, umhos, Field-Ambient	400			
Conductvity, umhos, Lab @ 68 F	480			
TDS, Evaporation at 180 C	322			
Sodium	108			
Potassium	2			
Calcium	8			
Magnesium	1			
Sulfate	97			
Chloride	4			
Carbonate	12			
Bicarbonate	176			
Hydroxide	NR			
Total Milliequivalent Major Cations	5.23			
Total Milliequivalent Major Anions	5.42			
Absolute Value, Charged, Balance	0.02			
Ammonia as N (0.10)	ND			
Nitrate as N	.08			
Fluoride (0.1)	.28			
Total Alkalinity as CaCO3	165			
Total Hardness as CaCO3	24			
Boron	. 16			
Aluminum (0.01)	ND			
Arsenic (0.01)	ND			
Barium (0.05)	ND			
Cadmium (0.01)	ND			
Chromium (0.05)	ND			
Copper (0.02)	ND			
Iron (0.03)	ND			
Lead (0.05)	ND			
Manganese (0.01)	.01	* 3 / L		
Mercury (0.001)	ND			
Nickel (0.04)	ND			
Selenium (0.01)	ND			
Zinc	.01			
Molybdenum (0.01)	ND			
Uranium, U308, (0.002)	.001			
Vanadium, V205, (0.05)	ND			
Radium 226, piC/L (0.06)	2.6			
Radium, Precision piC/L, +/-	.2			

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

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### Table 6.9, p.2b Baseline Water Quality Data For 20-Sand Aquifer 4-M-20

.1
4
.0
. 4
50
10
10
21
3
8
1
12
4
7
83
NR
82
68
01
ND
04
49
62
24
13
ND
06
ND
20
2

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

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### Table 6.9, p.3b Baseline Water Quality Data For 20-Sand Aquifer 5-M-20

512102	
14.5	
8.2	
8.3	
430	
510	
318	
111	
3	
9	
1	
120	
4	
0	
202	
NR	
5.44	
5.92	
0.04	
. 24	
ND	
. 64	
166	
27	
.15	
ND	
.01	
ND	사람이 많은 것은 것이 많은 것이 많은 것이 없다. 영화
ND	
ND	
ND	
ND	
.003	
ND	
. 7	
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	14.5 8.2 8.3 430 510 318 111 3 9 1 120 4 0 202 NR 5.44 5.92 0.04 .24 ND .64 166 27 .15 ND ND ND ND ND ND ND ND ND ND ND ND ND

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported

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### Table 6.9, p.4b

### Baseline Water Quality Data For 20-Sand Aquifer 7-M-20

	3/ 3/ 02	
Temperature, C, Field	13	
pH, Units, Field	8.5	
pII, Units, Lab	8.4	
Conductvity, umhos, Field-Ambient	400	
Conductvity, umhos, Lab @ 68 F	480	
TDS, Evaporation at 180 C	312	
Sodium	111	
Potassium	2	
Calcium	9	
Magnesium	1	
Sulfate	95	
Chloride	4	
Carbonate	12	
Bicarbonate	180	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.41	
Total Milliequivalent Major Anions	5.44	
Absolute Value, Charged, Balance	0.00	
Ammonia as N (0.10)	ND	
Nitrate as N	.08	
Fluoride (0.1)	.3	
Total Alkalinity as CaCO3	168	
Total Hardness as CaCO3	27	
Boron	.13	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.01	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	.006	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	13	
Radium, Precision piC/L, +/-	1	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

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### Table 6.9, p.5b Baseline Water Quality Data For 20-Sand Aquifer 4-L

Date Sampled	3/4/82		
Temperature, C, Field	10.3	 	
pH, Units, Field	8.2		
pH, Units, Lab	8.2		
Conductvity, umhos, Field-Ambient	390		
Conductvity, umhos, Lab @ 68 F	500		
TDS, Evaporation at 180 C	324		
Sodium	119		
Potassium	2		
Calcium	9		
Magnesium	1		
Sulfate	101		
Chloride	4		
Carbonate	0		
Bicarbonate	198		
Hydroxide	NR		
Total Milliequivalent Major Cations	5.76		
Total Milliequivalent Major Anions	5.46		
Absolute Value, Charged, Balance	0.03		
Ammonia as N (0.10)	ND		
Nitrate as N	.06		
Fluoride (0.1)	. 33		
Total Alkalinity as CaCO3	163		
Total Hardness as CaCO3	27		
Boron	.15		
Aluminum (0.01)	ND		
Arsenic (0.01)	ND		
Barium (0.05)	ND		
Cadmium (0.01)	ND		
Chromium (0.05)	ND		
Copper (0.02)	ND		
Iron (0.03)	ND		
Lead (0.05)	ND		
Manganese (0.01)	.02		
Mercury (0.001)	ND		
Nickel (0.04)	ND		
Selenium (0.01)	ND		
Zinc	ND		
Molybdenum (0.01)	ND		
Uranium, U308, (0.002)	.009		
Vanadium, V205, (0.05)	ND		
Radium 226, piC/L (0.06)	218		
Radium, Precision piC/L, +/-	3		

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

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### Table 6.9, p.6b Baseline Water Quality Data For 20-Sand Aquifer 8-L

Date Sampled	3/3/82	
Temperature, C, Field	11.8	1
pH, Units, Field	8.4	
pH, Units, Lab	8.3	
Conductvity, umhos, Field-Ambient	400	
Conductvity, umhos, Lab @ 68 F	480	
TDS, Evaporation at 180 C	326	
Sodium	110	
Potassium	2	
Calcium	9	
Magnesium	1	
Sulfate	103	
Chloride	4	
Carbonate	7	
Bicarbonate	178	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.37	
Total Milliequivalent Major Anions	5.41	
Absolute Value, Charged, Balance	0.00	
Ammonia as N (0.10)	ND	
Nitrate as N	.08	
Fluoride (0.1)	. 36	
Total Alkalinity as CaCO3	158	
Total Hardness as CaCO3	27	
Boron	.13	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.02	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	.011	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	193	
Radium, Precision piC/L, +/-	2	
		 -

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

The underlined data are considered as outliers and are not included in the calculations.

### Table 6.10, p. 1b Baseline Water Quality Data For 20-Sand Aquifer 1-M-30

Date Sampled	3/5/82	
Temperature C Field	13.5	
pH. Units Field	9.2	
pH, Units Lab	9.2	
Conductvity umbos Field-Ambient	510	
Conductivity, umbos, Lab @ 68 F	540	
TDS. Evaporation at 180 C	328	
Sodium	135	
Potassium	4	
Calcium	5	
Magnesium	1	
Sulfate	01	
Chloride	8	
Carbonate	38	
Bicarbonate	178	
Hydroxide	NR	
Total Milliequivalent Major Cations	6.31	
Total Milliequivalent Major Anions	6.31	
Absolute Value, Charged, Balance	0.00	
Ammonia as N (0,10)	. 12	
Nitrate as N	.07	
Fluoride (0,1)	1.07	
Total Alkalinity as CaCO3	210	
Total Hardness as CaCO3	17	
Boron	. 1	
Aluminum (0.01)	.1	
Arsenic (0.01)	ND	
Barium (0.05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.01	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	ND	
Vanadium, V205, (0.05)	- ND	
Radium 226, piC/L (0.06)	1.6	
Radium, Precision piC/L, +/-	. 2	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - Not Reported.

The underlined data are considered as outliers and are not included in the calculations.

### Table 6.11, p.1b Baseline Water Quality Data For 20-Sand Aquifer 1-W-51

Date Sampled	3/5/82	
Temperature, C, Field	11.1	
pH, Units, Field	8.4	
pH, Units, Lab	8.3	
Conductvity, umhos, Field-Ambient	360	
Conductvity, umhos, Lab @ 68 F	420	
TDS, Evaporation at 180 C	260	
Sodium	106	
Potassium	2	
Calcium	9	
Magnesium	2	
Sulfate	16	
Chloride	6	
Carbonate	0	
Bicarbonate	288	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.28	
Total Milliequivalent Major Anions	5.22	
Absolute Value, Charged Balance	0.01	
Ammonia as N (0,10)	ND	
Nitrate as N	.05	
Fluoride (0,1)	1.29	
Total Alkalinity as CaCO3	236	
Total Hardness as CaCO3	31	
Boron	ND	
Aluminum (0,01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	.05	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.01	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	ND	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	1.4	
Radium, Precision piC/L, +/-	. 3	

Analyses reported in milligrams per liter except where noted. ( ) detection limit. ND - not detected. NR - not reported.

The underlined data are considered as outliers and are not included in the calculations.

### Table 6.11, p.2b Baseline Water Quality Data For 20-Sand Aquifer 1-M-51

Date Sampled	3/5/82	
Temperature, C, Field	11.1	
pH, Units, Field	8.3	
pH, Units, Lab	8.1	
Conductvity, umhos, Field-Ambient	390	
Conductvity, umhos, Lab @ 68 F	470	
TDS, Evaporation at 180 C	286	
Sodium	109	
Potassium	2	
Calcium	11	
Magnesium	2	
Sulfate	16	
Chloride	6	
Carbonate	0	
Bicarbonate	320	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.51	
Total Milliequivalent Major Anions	5.75	
Absolute Value, Charged, Balance	0.02	
Ammonia as N (0.10)	.1	
Nitrate as N	.07	
Fluoride (0.1)	1.27	
Total Alkalinity as CaCO3	263	
Total Hardness as CaCO3	36	
Boron	ND	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	.06	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.02	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	.001	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	1.4	
Radium, Precision piC/L, +/-	.2	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - not reported.

The underlined data are considered as outliers and are not included in the calculations.

### Table 6.12, p.1b Baseline Water Quality Data For 20-Sand Aquifer 1-M-10

Date Sampled	3/9/82	
Temperature, C. Field	11.7	
pH, Units, Field	8.4	
pH. Units. Lab	8.6	
Conductvity, umhos, Field-Ambient	350	
Conductvity, umhos, Lab @ 68 F	420	
TDS, Evaporation at 180 C	278	
Sodium	110	
Potassium	2	
Calcium	7	
Magnesium	1	
Sulfate	28	
Chloride	2	
Carbonate	14	
Bicarbonate	249	
Hydroxide	1111	
Total Milliequivalent Major Cations	5.27	
Total Milliequivalent Major Anions	5.19	
Absolute Value, Charged, Balance	0.01	
Ammonia as N (0.10)	.17	
Nitrate as N	ND	
Fluoríde (0.1)	. 66	
Total Alkalinity as CaCO3	228	
Total Hardness as CaCO3	22	
Boron	ND	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0,05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	ND	
Lead (0.05)	ND	
Manganese (0.01)	.02	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Linc	ND	
Molybdenum (0.01)	ND	
Jranium, 0308, (0.002)	.001	
vanadium, V205, (0.05)	ND	
kadium 226, piC/L (0.06)	1.8	
xadium, Frecision piC/L, +/-	• 2	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - not reported.

### Table 6.13, p.1b Baseline Water Quality Data For 20-Sand Aquifer Moore South

Date Sampled	3/2/82	
Temperature C. Field	13.4	
pH. Units. Field	8.2	
pH Units Lab	8.4	
Conductvity umbos. Field-Ambient	450	
Conductivity, umbos, Lab @ 68 F	480	
TDS. Evaporation at 180 C	330	
Sodium	112	
Potassium	2	
Calcium	9	
Magnesium	1	
Sulfate	84	
Chloride	4	
Carbonate	12	
Bicarbonate	200	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.45	
Total Milliequivalent Major Anions	5.54	
Absolute Value, Charged, Balance	0.01	
Aumonia as N (0.10)	.1	
Nitrate as N	.1	
Fluoride (0.1)	.52	
Total Alkalinity as CaCO3	184	
Total Hardness as CaCO3	27	
Boron	.13	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	.04	
Lead (0.05)	ND	
Manganese (0.01)	.03	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	ND	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	. 2	
Radium, Precision piC/L, +/-	. 3	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

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ND - not detected. NR - not reported.

### Table 6.13, p.2b Baseline Water Quality Data For 20-Sand Aquifer Moore North

Date Sampled	3/2/82	
Temperature, C, Field	11.4	 
pH, Units, Field	8.3	
pH, Units, Lab	8.4	
Conductvity, umhos, Field-Ambient	400	
Conductvity, umhos, Lab @ 68 F	510	
TDS, Evaporation at 180 C	334	
Sodium	120	
Potassium	2	
Calcium	11	
Magnesium	1	
Sulfate	116	
Chloride	4	
Carbonate	12	
Bicarbonate	180	
Hydroxide	NR	
Total Milliequivalent Major Cations	5.90	
Total Milliequivalent Major Anions	5.88	
Absolute Value, Charged, Balance	0.00	
Amaonia as N (0.10)	ND	
Nitrate as N	.1	
Fluoride (0.1)	. 55	
Total Alkalinity as CaCO3	168	
Total Hardness as CaCO3	32	
Boron	ND	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Sarium (0.05)	ND	
Cadmium (0.01)	ND	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	.12	
Lead (0.05)	ND	
Manganese (0.01)	.02	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	ND	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	.002	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	. 8	
Radium, Precision piC/L, +/-	. 2	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - not reported.

The underlined data are considered as outliers and are not included in the calculations.

### Table 6.3b Baseline Water Quality Data For 20-Sand Aquifer Creek Downstream

Date Sampled	3/2/82	
Temperature, C, Field	4.5	
pH, Units, Field	6.6	
pH, Units, Lab	7.5	
Conductvity, umhos, Field-Ambient	2450	
Conductvity, umhos, Lab @ 68 F	3325	
TDS, Evaporation at 180 C	3406	
Sodium	500	
Potassium	10	
Calcium	351	
Magnesium	121	
Sulfate	2000	
Chloride	66	
Carbonate	0	
Bicarbonate	300	
Hydroxide	NR	
Total Milliequivalent Major Cations	49.63	
Total Milliequivalent Major Anions	48.44	
Absolute Value, Charged, Balance	0.01	
Ammonia as N (0.10)	ND	
Nitrate as N	.14	
Fluoride (0.1)	. 31	
Total Alkalinity as CaCO3	246	
Total Hardness as CaCO3	1373	
Boron	ND	
Aluminum (0.01)	ND	
Arsenic (0.01)	ND	
Barium (0.05)	ND	
Cadmium (0.01)	.01	
Chromium (0.05)	ND	
Copper (0.02)	ND	
Iron (0.03)	.04	
Lead (0.05)	ND	
Manganese (0.01)	3.03	
Mercury (0.001)	ND	
Nickel (0.04)	ND	
Selenium (0.01)	ND	
Zinc	.01	
Molybdenum (0.01)	ND	
Uranium, U308, (0.002)	.064	
Vanadium, V205, (0.05)	ND	
Radium 226, piC/L (0.06)	2.2	
Radium, Precision piC/L, +/-	.3	

Analyses reported in milligrams per liter except where noted.

( ) detection limit.

ND - not detected. NR - not reported.

The underlined data are considered as outliers and are not included in the calculations.

APPENDIX B

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ATMOSPHERIC RADON



### ATMOSPHERIC RADON

## Ruth ISL Site

Station	Monitoring Period	Radon Concentration pCi/l ± 2 sigmas
East	2/17 (0900) - 3/18 (1110)	0.35 ± 0.06
West	2/17 (0930) - 3/18 (1030)	0.34 ± 0.06

### ATMOSPHERIC RADON

### Ruth ISL Site

Y

Station
Monitoring Period
Radon Concentration

East
5/15 (0100) - 6/21 (1100)  $0.29 \pm 0.05$  

West
5/15 (0130) - 6/21 (1130)  $\checkmark 0.03*$ 

\*Theoretical lower limit of detection (LLD), although in actual field conditions the LLD of the PRMs is closer to 0.2 pCi/l. In actuality, no radon was detected at this site.

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