



YEAR 1982*

RADON - 222
Air Samples (pCi/m³)

LOCATION	Jan	Feb	March	April	May	June	July
Shadow Hills GC	2300	600	830	<10	540	<10	10
West Side	2370	700	150	9700	260	<10	<10
South Side	2390	1400	100	110	40	13	800
East Side	1430	500	560	270	<10	<10	<10
North Side	2420	1300	420	130	250	<10	<10
1406 Pine	2870	500	830	<10	<10	<10	1100
241 Dozier	2410	500	150	170	170	<10	<10
OV-1	1320	800	420	80	420	<10	700
OV-2	510	700	40	<10	80	<10	700
OV-3	680	700	420	30	<10	<10	1100

LOCATION	August	September	October	November	December
Shadow Hills GC					
West Side					
South Side					
East Side					
North Side					
1408 Pine					
241 Dozier					
OV-1					
OV-2					
OV-3					

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B211050216 B20917
PDR WASTE
WM-22
PDR

MPC = 3000 pCi/m³

FSD-61



August 23, 1982

Cotter Corp.
P.O. Box 751
Canon City, CO 81212

ATTN: Jim Cain

Re: TLD Chip analysis

Dear Mr. Cain:

Enclosed is the data requested on TLD Chips for February through August. The subcontractor we have been using for TLD analysis has calibrated his instrument by first calibrating an Eberline RGM-1 with an NBS supplied radium 226 standard. Six perms and the RGM-1 were then placed in a chamber containing ten pounds of uranium mill tailings. After a week the chips were removed and the reading in nanocoulombs was reduced to a factor relating this to the average reading in pCi/l. This procedure was repeated several times to arrive at an average factor. The relative deviation of 36% is intended to reflect errors occurring as much from inconsistent chip handling procedures as from actual laboratory variations in reading the chip.

Chips have been transported by mail. All chips in stock and ones you are currently using are being checked to determine if they are LiF₂ instead of CaF₂. Only CaF₂ chips are being returned to you. LIF

Our laboratory is currently calibrating its chip reader and we expect to start reading chips within a few weeks.

Sincerely yours,

EDA Instruments Inc.

A handwritten signature in cursive script, appearing to read 'Jerry P. McJunkin', is written over the typed name.

Jerry P. McJunkin
Laboratory Manager

Enclosure

JPM/cc

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RECEIVED:
COTTER CORP.
Radiation Safety Dept.

Date: AUG 26 1982
Distribution

A handwritten signature is written over two horizontal lines. Below these lines are two more horizontal lines, likely for routing or tracking purposes.

ECA CHIPS 8/12/82

#	$\alpha + \text{Bkgd}$	Bkgd	exp. time (Hrs)	cf	$R_N^{222} \text{ pCi/L}$
129 F 3110-1	0) 3.459	2) 3.391	744	.0128	0.007 ± 0.00
* - 2	3) 4.285	4) 6.725			Bkgd > R_N
- 3	5) 8.568	6) 2.607			0.6 ± 0.2
- 4	7) 3.092	8) 6.164			Bkgd > R_N
- 5	9) 2.466	10) 7.656			↓
- 6	11) 2.096	12) 2.774			
- 7	13) 9.186	14) 1.646			0.8 ± 0.3
+ - 8	15)	16) 2.320			
- 9	17) 8.446	18) 3.283			0.5 ± 0.2
- 10	19) 10.3	20) 2.992			0.8 ± 0.3

APR 15 1982

EDA PERMS 4/12/82

EDA Denver

#	$\alpha + Bkg$	Bkg	exp. time (Hrs)	cf	R_N^{222}
2923-21	1) 11.8	2) 5.879	742 766	.0128	0.6 ± 0.2
22	3) 10.6	4) 6.695	741.5 766		0.4 ± 0.1
23	5) 6.356	6) 5.691	741.5 766		0.07 ± 0.03
24	7) 8.345 *	8) 5.454	742 766		0.3 ± 0.1
25	9) 6.312	10) 5.228	742 764		0.11 ± 0.04
26	11) 6.079	12) 4.995	742 764		0.11 ± 0.04
27	13) 12.0	14) 6.356	741.5 765.5		0.6 ± 0.2
28	15) 8.314	16) 5.618	742 766		0.3 ± 0.1
29	17) 5.213	18) 4.911	742 766		0.03 ± 0.0
30	19) 8.077	20) 5.390	741.5 765.5		0.3 ± 0.1

PERMS 3/16/82

#	$\alpha + Bkg$	Bkg	exp time (Hrs)	CF	$\mu\text{Ci/L } ^{222}\text{Rn}$
3-0800	17.2	11.8	672	.0128	0.6 ± 0.2
01	15.1	11.0	↓		0.5 ± 0.2
02	25.0	12.6			1.4 ± 0.5
03	22.8	11.8			1.3 ± 0.5
04	16.4	10.1			0.7 ± 0.3
05	14.8	10.5			0.5 ± 0.2
06	15.4	10.9			0.5 ± 0.2
0809	17.0	10.4			0.8 ± 0.2
10	17.3	11.0			0.7 ± 0.3
11	17.0	11.3			0.7 ± 0.2

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EDA PERMS 5/10/82

#	$\alpha + Bkqd$	Bkqd	exp time (hrs): 13.292	R_n^{222}
750-0800	1) 4.564	2) 4.763	696	.0128
01	3) 5.601	4) 3.998	↓	$Bkqd > R_n$ 0.18 ± 0.06
02	5) 5.147	6) 4.453		0.08 ± 0.03
03	7) 5.367	8) 4.581		0.09 ± 0.03
04	9) 67.6	10) 5.347		7.0 ± 2.5
05	11) 5.284	12) 4.246		0.12 ± 0.04
06	13) 4.293	14) 4.898		$Bkqd > R_n$
09	15) 5.086	16) 4.561		0.06 ± 0.02
0810	17) 4.226	18) 5.293		$Bkqd > R_n$
0811	19) 4.551	20) 4.339		0.024 ± 0.00

EDA PERM CHIPS 6/11/82

	$\alpha + Bkgd$	Bkgd	exp time (hrs)	cf	$R_N^{222} \text{ pCi/l}$
-1	1) 5.656	2) 1.923	744	0.0128	0.39 0.4 ± 0.14
-2	3) 3.144	4) 3.482	↓		Bkgd > R_N
-3	5) 1.649	6) 1.350			0.03 ± 0.01
4	7) 6.083	8) 4.321			0.18 ± 0.07
5	9) 4.309	10) 2.483			0.19 ± 0.07
6	11) 3.490	12) 2.318			0.12 ± 0.04
7	13) 2.365 *	14) 3.028			Bkgd > R_N
8	15) 6.425	16) 3.594			0.30 ± 0.11
9	17) 1.888	18) 1.310			0.06 ± 0.02
-10	19) 2.439	20) 4.988			Bkgd > R_N

EDA PERMS 7/16/82

#	$\alpha + \text{Bkgd}$	Bkgd	exposure time (hrs)	cf	R_N^{222} pCi/L
800	13) 2.538	14) 5.286	721	EDA Denver	Bkgd > R_N
801	15) 2.233	16) 6.911	722		Bkgd > R_N
802	17) 3.587	18) 3.506	722		0.009 ± 0.003
803	19) 1.935	20) 3.935	722		Bkgd > R_N
804	21) 7.370	22) 9.159	722		↓
805	23) 2.070	24) 2.770	721		
806	25) 1.697	26) 3.316	722		
809	27) 1.805	28) 2.266	723		
810	29) 1.591	30) 5.176	722		
811	31) 1.882	32) 6.904	720		✓



Cotter Corporation

Canon City Operations

0802 FREMONT COUNTY ROAD 08
CANON CITY, COLORADO 81212

August 23, 1982

Mr. Jerry McJunkin
EDA Instruments, Inc.
5151 Ward Road
Wheatridge, Colorado 80033

SUBJECT: RADON-222 GRAB SAMPLE
8-21-82 to 8-23-82
AT TAILINGS POND
SAMPLE SUBMITTAL #6534
RADON-222 GRAB SAMPLE
8-21-82 to 8-23-82 AT
AS-201 SAMPLE SUBMITTAL
#6535

Dear Jerry:

Enclosed are the two above captioned Radon gas grab samples. Please calculate these samples at the midpoint of collection. Please report activity in pCi/m^3 .

These samples are being sent to you by Purolator Courier Ticket No. 14754922.

Please furnish results within 30 days.

Sincerely,

COTTER CORPORATION

Jim Cain
Radiation Safety Officer

JC:pd

Enclosures

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