

# CIMARRON FACILITY BOUNDARY SURVEY

SUB-AREA 'E'  
SWP - 940001

DATE: 2/15/95

[illegible]

**INSTRUMENTS:**

## RESULTS IN

## BACKGROUND/MDA

## LUDLUM MICRO 'R' METER - MODEL 19

 $\mu R/hr$ 

7-10 / <2

LUDLUM 2220, UNSHIELDED 3" X 1/2" NaI DETECTOR

CPM

8850 AVG / 500

REVIEWED BY: William J. Rhodes 7-28-95

**FILE: FTU5SS95**

**FINAL STATUS SURVEY - PHASE I  
CIMARRON FACILITY  
BOUNDARY SURVEY**

SUB-AREA 'E'  
SWP - 940001

DATE: 2/15/95

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
80W - 70N	8254	7	8
80W - 80N	8952	8	9
80W - 90N	9162	8	9
80W - 100N	8984	9	8
80W - 110N	9260	8	9
80W - 120N	8890	8	9
80W - 130N	9478	9	8
80W - 140N	9384	9	9
80W - 150N	9444	8	9
80W - 160N	9752	8	9
80W - 170N	9638	9	9
80W - 180N	9638	9	10
80W - 190N	9656	9	9
80W - 200N	9854	9	10
80W - 210N	9784	10	9
80W - 220N	9442	9	9
80W - 230N	9720	9	9
80W - 240N	9314	9	9
80W - 250N	8768	8	9
80W - 260N	8120	8	8
80W - 270N	8028	8	8
80W - 280N	8024	7	8
80W - 290N	7658	7	8

INSTRUMENTS:

RESULTS IN BACKGROUND/MDA

LUDLUM MICRO 'R' METER - MODEL 19

μR/hr

7-10 / <2

LUDLUM 2220, UNSHIELDED 3" X 1/2" NaI DETECTOR

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SUB-AREA 'E'  
SWP - 940001

[illegible]

## RESULTS IN BACKGROUND/MDA

7-10 / <2

8850 AVG / 500

REVIEWED BY: Elizabeth J. Rhodes 7-28-95

**FINAL STATUS SURVEY - PHASE I  
CIMARRON FACILITY  
BOUNDARY SURVEY**

SUB-AREA 'E'  
SWP - 940001

DATE: 2/15/95

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
0E - 290N	8292	9	9
0E - 300N	9904	9	9
0E - 310N	9590	9	9
0E - 320N	9818	9	9
0E - 330N	10532	9	10
0E - 340N	10602	9	10
0E - 350N	10596	10	10
0E - 360N	10392	10	11
0E - 370N	10452	9	10
0E - 380N	10340	9	10
0E - 390N	10250	10	10
0E - 400N	10770	10	9
0E - 410N	9050	8	9
0E - 420N	8344	8	9
0E - 430N	7036	6	7
0E - 440N	8854	9	9
0E - 450N	9618	9	9
0E - 460N	9652	9	10
0E - 470N	9912	9	9
0E - 480N	9928	9	10
0E - 490N	9950	10	9

INSTRUMENTS:

RESULTS IN

BACKGROUND/MDA

LUDLUM MICRO 'R' METER - MODEL 19

μR/hr

7-10 / <2

LUDLUM 2220, UNSHIELDED 3" X 1/2" NaI DETECTOR

CPM

8850 AVG / 500

REVIEWED BY: *William J. Rhodes* 7-28-95

FILE: FIU5SS95



SUB-AREA 'E'  
SWP - 940001

[illegible]

## RESULTS IN BACKGROUND/MDA

 $\mu R/hr$ 

CPM

REVIEWED BY: William J. Rhodes 7-28-95

II E-21

**FINAL STATUS SURVEY - PHASE I  
CIMARRON FACILITY  
BOUNDARY SURVEY**

SUB-AREA 'E'  
SWP - 940001

DATE: 2/15/95

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
20E - 810N	6204	6	7
22E - 800N	6270	6	7
24E - 790N	7306	7	8
26E - 780N	8114	8	8
28E - 770N	8334	8	8
30E - 760N	8614	8	9
31E - 750N	9146	9	9
32E - 740N	9166	9	8
34E - 730N	8830	9	8
36E - 720N	9384	9	9
38E - 710N	9556	9	9
40E - 700N	9960	10	10
41E - 690N	9978	9	10
42E - 680N	9456	9	10
44E - 670N	9292	9	9
46E - 660N	9734	9	10
48E - 650N	10180	9	9
50E - 640N	10390	9	10
51E - 630N	10196	9	10
52E - 620N	10396	10	11
54E - 610N	10060	9	10
56E - 600N	9776	9	10
57E - 590N	8870	9	9
58E - 580N	9086	9	8
60E - 570N	9436	9	9
62E - 560N	9470	9	9
64E - 550N	9556	9	8
66E - 540N	9152	9	8
68E - 530N	9008	9	9
70E - 520N	9122	9	9
72E - 510N	9502	9	9

INSTRUMENTS:

RESULTS IN BACKGROUND/MDA

LUDLUM MICRO 'R' METER - MODEL 19

$\mu$ R/hr

7-10 / <2

LUDLUM 2220, UNSHIELDED 3" X 1/2" NaI DETECTOR

CPM

8850 AVG / 500

REVIEWED BY: William J. Rhodes 7-28-95

FILE: FTU5SS95

SUB-AREA 'E'  
SWP - 940001

[illegible]

## RESULTS IN BACKGROUND/MDA

 $\mu R/hr$ 

7-10 / <2

CPM

8850 AVG / 500

REVIEWED BY: William T. Rhodes 7-28-95

II E-23

**FINAL STATUS SURVEY - PHASE I  
CIMARRON FACILITY  
BOUNDARY SURVEY**

SUB-AREA 'E'  
SWP - 940001

DATE: 2/15/95

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
2W - 940N	6622	6	7
4W - 950N	6260	6	7
5W - 960N	6226	6	7
7W - 970N	6026	6	7
9W - 980N	5980	6	6
10W - 990N	5986	6	7
11W - 1000N	6294	6	7
13W - 1010N	5862	6	6
15W - 1020N	5956	6	6
17W - 1030N	6072	5	6
19W - 1040N	6030	5	6
20W - 1050N	6022	6	6
22W - 1060N	6140	6	7
24W - 1070N	6362	5	6
26W - 1080N	6850	6	7
28W - 1090N	7482	7	7
30W - 1100N	7926	7	8
32W - 1110N	7162	7	7
34W - 1120N	7050	6	7
36W - 1130N	7080	7	8
38W - 1140N	7400	7	7
40W - 1150N	6944	6	7

INSTRUMENTS:

RESULTS IN BACKGROUND/MDA

LUDLUM MICRO 'R' METER - MODEL 19

μR/hr

7-10 / <2

LUDLUM 2220, UNSHIELDED 3" X 1/2" NaI DETECTOR

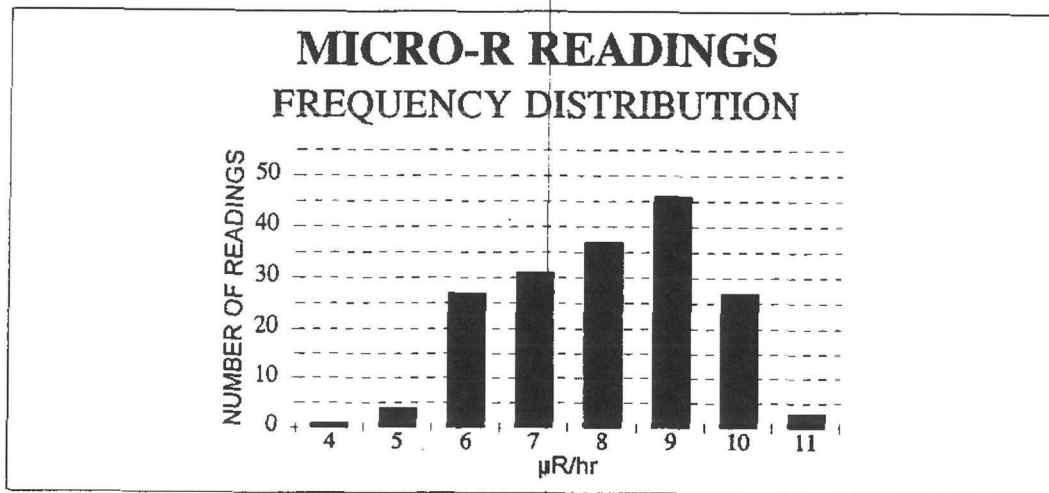
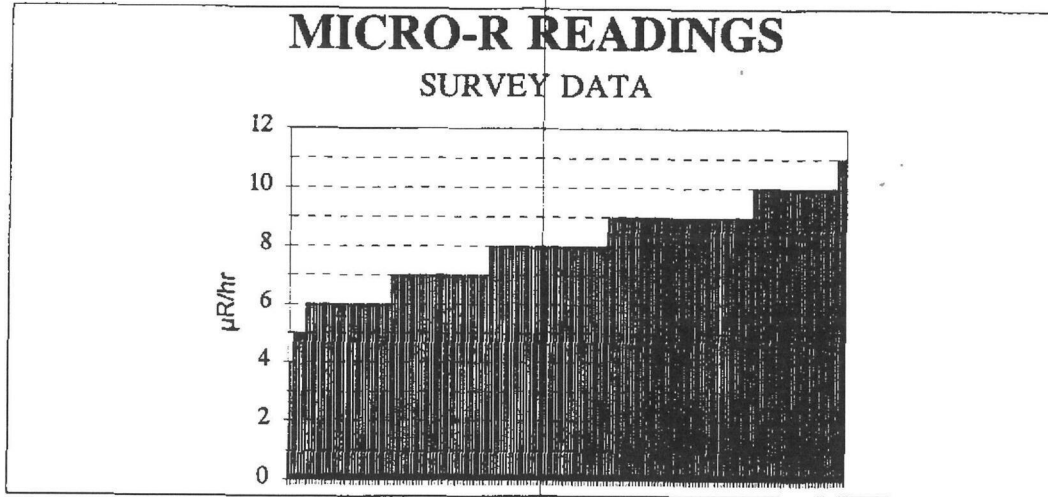
CPM

8850 AVG / 500

REVIEWED BY: Elizabeth J. Rhodes 7-28-95

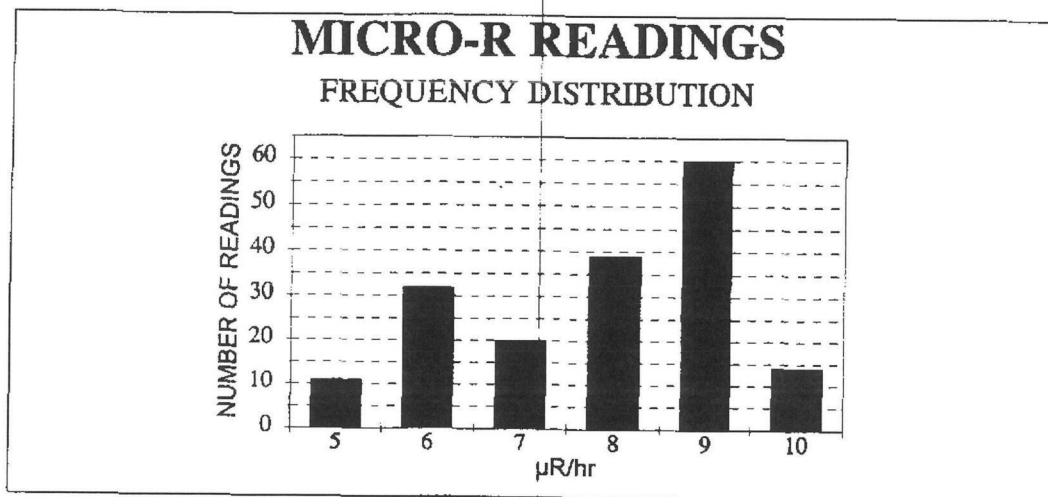
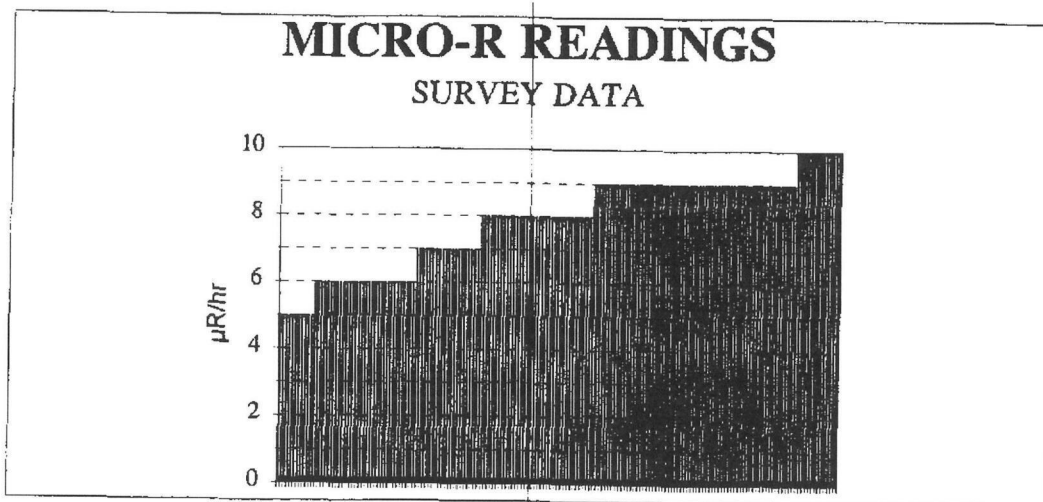
FILE: FIU5SS95

**FINAL STATUS SURVEY REPORT - PHASE I**  
**SUB-AREA 'E' (BOUNDARY SURVEY READINGS)**  
**MICRO-R METER READINGS AT SURFACE**  
**LUDLUM MODEL 19 S/N 111299**  
**RESULTS IN  $\mu\text{R/hr}$**   
**BACKGROUND 7-10  $\mu\text{R/hr}$**   
**JANUARY, 1995**



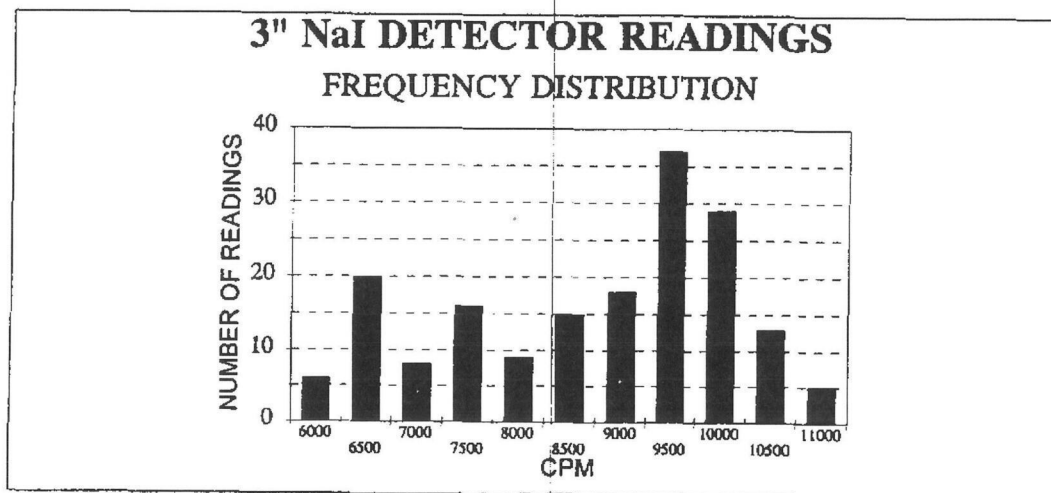
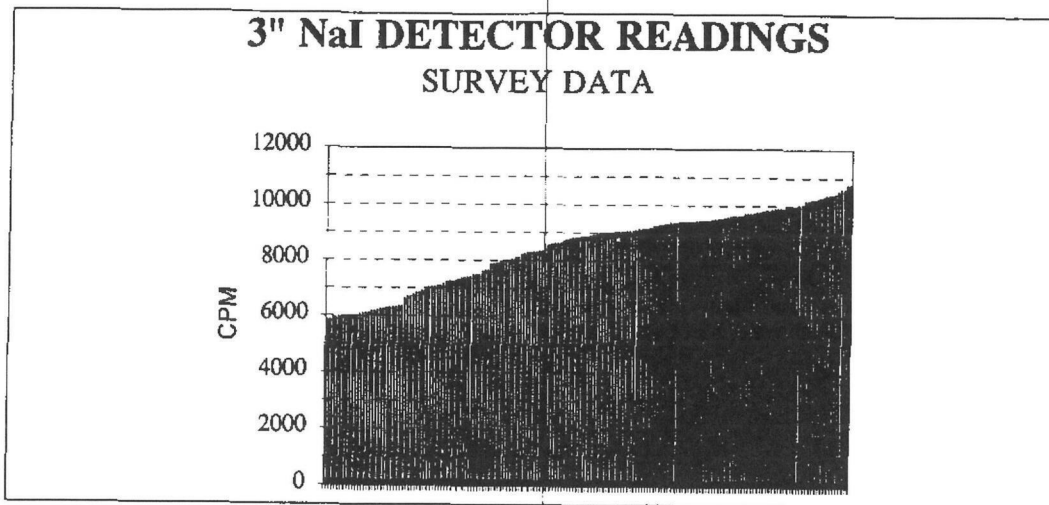
NUMBER OF READINGS	176
AVERAGE READING	8
MINIMUM READING	4
MAXIMUM READING	11
STANDARD DEVIATION	1

**FINAL STATUS SURVEY REPORT - PHASE I**  
**SUB-AREA 'E' (BOUNDARY SURVEY READINGS)**  
**MICRO-R METER READINGS AT ONE METER ABOVE SURFACE**  
**LUDLUM MODEL 19 S/N 111299**  
**RESULTS IN  $\mu\text{R/hr}$**   
**BACKGROUND 7-10  $\mu\text{R/hr}$**   
**JANUARY, 1995**



NUMBER OF READINGS	176
AVERAGE READING	8
MINIMUM READING	5
MAXIMUM READING	10
STANDARD DEVIATION	1

**FINAL STATUS SURVEY REPORT - PHASE I**  
**SUB-AREA 'E (BOUNDARY SURVEY READINGS)**  
**GROSS GAMMA READINGS IN CPM**  
**LUDLUM MODEL 2220 S/N 48395**  
**UNSHIELDED 3" X 1/2" NaI DETECTOR**  
**BACKGROUND AVERAGE: 8850 CPM**  
**JANUARY, 1995**



NUMBER OF READINGS	176
AVERAGE READING	8482
MINIMUM READING	5862
MAXIMUM READING	10778
STANDARD DEVIATION	1383



## **Sub Area E**

### **Soil Sample Statistical Evaluation of Data**

FINAL STATUS SURVEY REPORT - (PHASE I)  
 CIMARRON CORPORATION STATISTICAL EVALUATION OF DATA FOR SUB AREA - E (pCi/gU)  
 CALCULATIONS FROM *MANUAL FOR CONDUCTING RADIOLOGICAL SURVEYS IN SUPPORT  
 OF LICENSE TERMINATION NUREG/CR-5849, DRAFT REPORT FOR COMMENTS*

NO. OF SAMPLES (n): 66

SAMPLE MEAN ( $\bar{x}$ ) = 4.8  
 EQUATION 8-12

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

STANDARD DEVIATION 1.6  
 EQUATION 8-13

$$s_x = \sqrt{\frac{\sum_{i=1}^n (\bar{x} - x_i)^2}{n-1}}$$

DEGREES OF FREEDOM (df) = n-1

DATA LISTED ON TABLE B-1

$t_{1-\alpha, df} =$  1.670

95% CONFIDENCE LEVEL

AREA'S AVERAGE LEVEL  
 EQUATION 8-11

$$\mu_a = \bar{x} + t_{1-\alpha, df} \frac{s_x}{\sqrt{n}}$$

$\mu_a =$  5.1 pCi/gU

ACCEPTABLE LEVEL = 11.5 pCi/gU

TABLE B - 1

FACTORS FOR COMPARISON OF SURVEY DATA WITH GUIDELINES					
(df)	95%	97.5%	(df)	95%	97.5%
1	6.314	12.706	19	1.729	2.093
2	2.92	4.303	20	1.725	2.086
3	2.353	3.182	21	1.721	2.08
4	2.132	2.776	22	1.717	2.074
5	2.015	2.571	23	1.714	2.069
6	1.943	2.447	24	1.711	2.064
7	1.895	2.365	25	1.708	2.06
8	1.86	2.306	26	1.706	2.056
9	1.833	2.262	27	1.703	2.052
10	1.812	2.228	28	1.701	2.048
11	1.796	2.201	29	1.699	2.045
12	1.782	2.179	30	1.697	2.042
13	1.771	2.16	40	1.684	2.021
14	1.761	2.145	60	1.671	2
15	1.753	2.131	120	1.658	1.98
16	1.746	2.12	400	1.649	1.966
17	1.74	2.11	INFINITE	1.645	1.96
18	1.734	2.101			

FINAL STATUS SURVEY REPORT - (PHASE I)  
 CIMARRON CORPORATION STATISTICAL EVALUATION OF DATA FOR SUB AREA - E (pCi/gU)  
 CALCULATIONS FROM *MANUAL FOR CONDUCTING RADIOLOGICAL SURVEYS IN SUPPORT  
 OF LICENSE TERMINATION NUREG/CR-5849, DRAFT REPORT FOR COMMENTS*

NUMBER	$\bar{x}$	$\bar{x} - x_i$	$(\bar{x} - x_i)^2$
1	10.4	5.6	31.8
2	6.8	2.0	4.2
3	7.9	3.1	9.8
4	6.6	1.8	3.4
5	4	-0.8	0.6
6	7.8	3.0	9.2
7	6.4	1.6	2.7
8	6.2	1.4	2.1
9	4	-0.8	0.6
10	4.6	-0.2	0.0
11	2.3	-2.5	6.1
12	8.3	3.5	12.5
13	8.1	3.3	11.1
14	6.7	1.9	3.8
15	5.5	0.7	0.5
16	5.1	0.3	0.1
17	4.1	-0.7	0.4
18	4.9	0.1	0.0
19	3.6	-1.2	1.4
20	4.5	-0.3	0.1
21	4.5	-0.3	0.1
22	4.2	-0.6	0.3
23	5.7	0.9	0.9
24	4.9	0.1	0.0
25	3.6	-1.2	1.4
26	6.3	1.5	2.4
27	3.5	-1.3	1.6
28	4.7	-0.1	0.0
29	5.8	1.0	1.1
30	5.1	0.3	0.1
31	3.3	-1.5	2.1
32	5	0.2	0.1
33	3.7	-1.1	1.1
34	4.4	-0.4	0.1
35	3.0	-1.8	3.1
36	6.1	1.3	1.8
37	2.3	-2.5	6.1
38	4.6	-0.2	0.0
39	5	0.2	0.1
40	6.2	1.4	2.1
41	5.6	0.8	0.7
42	2.5	-2.3	5.1
43	2.3	-2.5	6.1
44	4.8	0.0	0.0
45	5.7	0.9	0.9
46	5.6	0.8	0.7
47	2.7	-2.1	4.3
48	4.8	0.0	0.0
49	3.3	-1.5	2.1
50	3.1	-1.7	2.8
	250.1		147.30689
	Sum (x)		Sum $(\bar{x} - x_i)^2$

NUMBER	$\bar{x}$	$\bar{x} - x_i$	$(\bar{x} - x_i)^2$
51	4.6	-0.2	0.0
52	4.2	-0.6	0.3
53	4	-0.8	0.6
54	6.2	1.4	2.1
55	3.1	-1.7	2.8
56	4.5	-0.3	0.1
57	4.2	-0.6	0.3
58	3	-1.8	3.1
59	2.9	-1.9	3.5
60	4.5	-0.3	0.1
61	4.4	-0.4	0.1
62	2.8	-2.0	3.8
63	5.5	0.7	0.5
64	5.3	0.5	0.3
65	3	-1.8	3.1
66	2	-2.8	7.6
67			
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99			
100			
	314.3		175.6353
	Sum (x)		Sum $(\bar{x} - x_i)^2$

FINAL STATUS SURVEY REPORT - (PHASE I)  
 CIMARRON CORPORATION STATISTICAL EVALUATION OF DATA FOR SUB AREA - E (pCi/gTh)  
 CALCULATIONS FROM MANUAL FOR CONDUCTING RADIOLOGICAL SURVEYS IN SUPPORT  
 OF LICENSE TERMINATION NUREG/CR-5849, DRAFT REPORT FOR COMMENTS

NO. OF SAMPLES (n): 66

SAMPLE MEAN ( $\bar{x}$ ) = 1.2  
 EQUATION 8-12

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

STANDARD DEVIATION 0.5  
 EQUATION 8-13

$$s_x = \sqrt{\frac{\sum_{i=1}^n (\bar{x} - x_i)^2}{n-1}}$$

DEGREES OF FREEDOM (df) = n-1

DATA LISTED ON TABLE B-1

$t_{1-\alpha, df} =$  1.670

95% CONFIDENCE LEVEL

AREA'S AVERAGE LEVEL  
 EQUATION 8-11

$$\mu_a = \bar{x} + t_{1-\alpha, df} \frac{s_x}{\sqrt{n}}$$

$\mu_a =$  1.3 pCi/gTh

ACCEPTABLE LEVEL = 4.0 pCi/gTh

TABLE B - 1

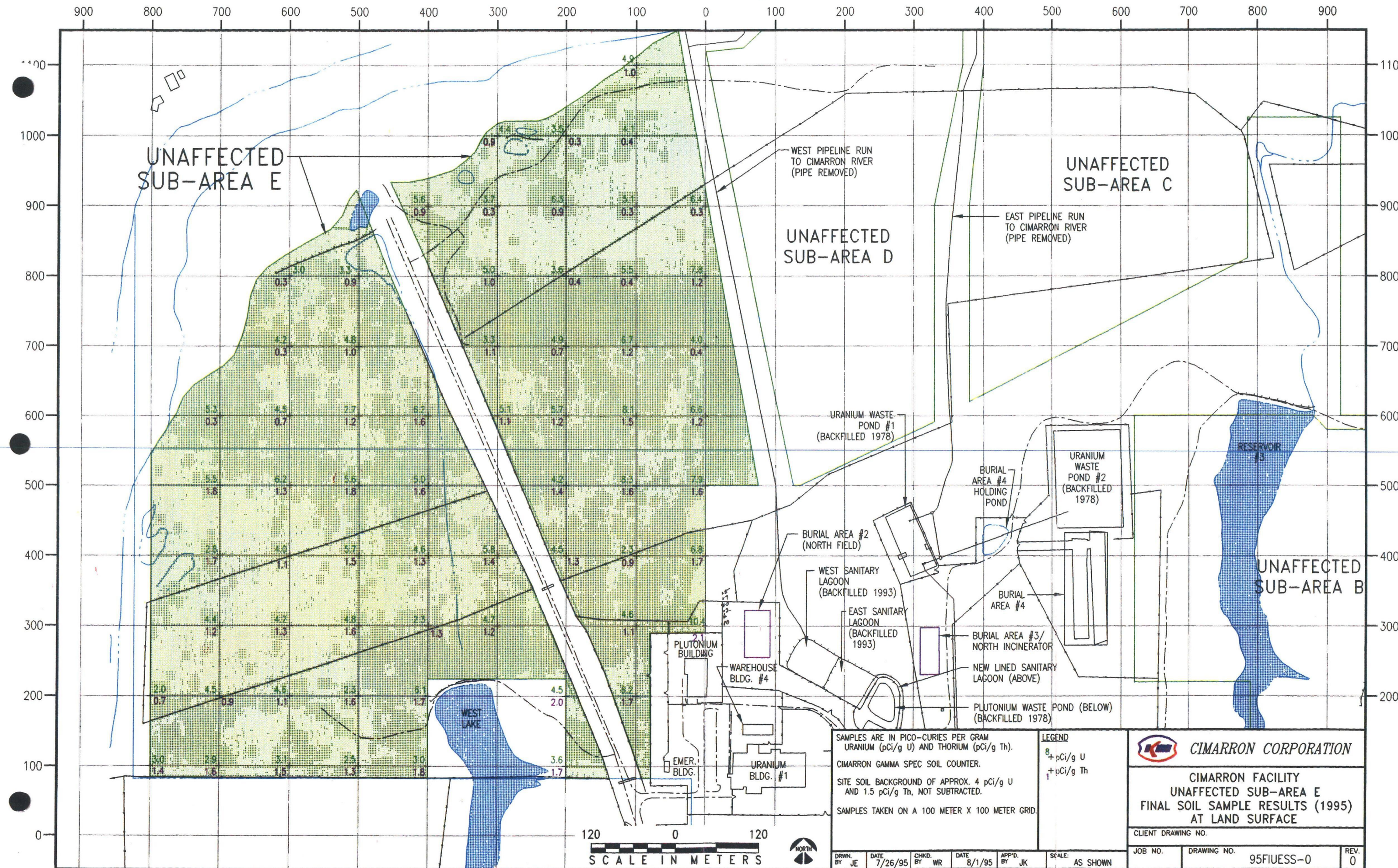
FACTORS FOR COMPARISON OF SURVEY DATA WITH GUIDELINES						
(df)	95%	97.5%		(df)	95%	97.5%
1	6.314	12.706		19	1.729	2.093
2	2.92	4.303		20	1.725	2.086
3	2.353	3.182		21	1.721	2.08
4	2.132	2.776		22	1.717	2.074
5	2.015	2.571		23	1.714	2.069
6	1.943	2.447		24	1.711	2.064
7	1.895	2.365		25	1.708	2.06
8	1.86	2.306		26	1.706	2.056
9	1.833	2.262		27	1.703	2.052
10	1.812	2.228		28	1.701	2.048
11	1.796	2.201		29	1.699	2.045
12	1.782	2.179		30	1.697	2.042
13	1.771	2.16		40	1.684	2.021
14	1.761	2.145		60	1.671	2
15	1.753	2.131		120	1.658	1.98
16	1.746	2.12		400	1.649	1.966
17	1.74	2.11		INFINITE	1.645	1.96
18	1.734	2.101				

FINAL STATUS SURVEY REPORT - (PHASE I)  
 CIMARRON CORPORATION STATISTICAL EVALUATION OF DATA FOR SUB AREA - E (pCi/gTh)  
 CALCULATIONS FROM MANUAL FOR CONDUCTING RADIOLOGICAL SURVEYS IN SUPPORT  
 OF LICENSE TERMINATION NUREG/CR-5849, DRAFT REPORT FOR COMMENTS

NUMBER	$\bar{x}$	$\bar{x} - x_i$	$(\bar{x} - x_i)^2$
1	2.1	0.9	0.9
2	1.7	0.5	0.3
3	1.6	0.4	0.2
4	1.2	0.0	0.0
5	0.4	-0.8	0.6
6	1.2	0.0	0.0
7	0.3	-0.9	0.7
8	1.7	0.5	0.3
9	2	0.8	0.7
10	1.1	-0.1	0.0
11	0.9	-0.3	0.1
12	1.6	0.4	0.2
13	1.5	0.3	0.1
14	1.2	0.0	0.0
15	0.4	-0.8	0.6
16	0.3	-0.9	0.7
17	0.4	-0.8	0.6
18	1	-0.2	0.0
19	1.7	0.5	0.3
20	2	0.8	0.7
21	1.3	0.1	0.0
22	1.4	0.2	0.1
23	1.2	0.0	0.0
24	0.7	-0.5	0.2
25	0.4	-0.8	0.6
26	0.9	-0.3	0.1
27	0.3	-0.9	0.7
28	1.2	0.0	0.0
29	1.4	0.2	0.1
30	1.1	-0.1	0.0
31	1.1	-0.1	0.0
32	1	-0.2	0.0
33	0.3	-0.9	0.7
34	0.9	-0.3	0.1
35	1.8	0.6	0.4
36	1.7	0.5	0.3
37	1.3	0.1	0.0
38	1.3	0.1	0.0
39	1.6	0.4	0.2
40	1.6	0.4	0.2
41	0.9	-0.3	0.1
42	1.3	0.1	0.0
43	1.6	0.4	0.2
44	1.6	0.4	0.2
45	1.5	0.3	0.1
46	1.8	0.6	0.4
47	1.2	0.0	0.0
48	1	-0.2	0.0
49	0.9	-0.3	0.1
50	1.5	0.3	0.1
	60.1		11.895473
	Sum (x)		Sum ( $\bar{x} - x_i$ ) <sup>2</sup>

NUMBER	$\bar{x}$	$\bar{x} - x_i$	$(\bar{x} - x_i)^2$
51	1.1	-0.1	0.0
52	1.3	0.1	0.0
53	1.1	-0.1	0.0
54	1.3	0.1	0.0
55	0.8	-0.4	0.1
56	0.7	-0.5	0.2
57	0.3	-0.9	0.7
58	0.3	-0.9	0.7
59	1.6	0.4	0.2
60	0.9	-0.3	0.1
61	1.2	0.0	0.0
62	1.7	0.5	0.3
63	1.8	0.6	0.4
64	0.3	-0.9	0.7
65	1.4	0.2	0.1
66	0.7	-0.5	0.2
67			
68			
69			
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93			
94			
95			
96			
97			
98			
99			
100			
	76.6		15.73758
	Sum (x)		Sum ( $\bar{x} - x_i$ ) <sup>2</sup>







UNAFECTED  
SUB-AREA E

UNAFECTED  
SUB-AREA C

UNAFECTED  
SUB-AREA D

UNAFECTED  
SUB-AREA B

WEST PIPELINE RUN  
TO CIMARRON RIVER  
(PIPE REMOVED)

EAST PIPELINE RUN  
TO CIMARRON RIVER  
(PIPE REMOVED)

URANIUM WASTE  
POND #1  
(BACKFILLED 1978)

URANIUM  
WASTE  
POND #2  
(BACKFILLED  
1978)

BURIAL  
AREA #4  
HOLDING POND

BURIAL AREA #2  
(NORTH FIELD)

WEST SANITARY  
LAGOON  
(BACKFILLED 1993)

EAST SANITARY  
LAGOON  
(BACKFILLED 1993)

BURIAL AREA #4

BURIAL AREA #3/  
NORTH INCINERATOR

NEW LINED SANITARY  
LAGOON (ABOVE)

PLUTONIUM WASTE POND (BELOW)  
(BACKFILLED 1978)

PLUTONIUM BUILDING

WAREHOUSE  
BLDG. #4

EMER.  
BLDG.

URANIUM  
BLDG. #1

WEST LAKE

RESERVOIR #3

INSTRUMENT: LUDLUM 2220  
UNSHIELDED 3" X 1/2" NaI DETECTOR.

BACKGROUND: 8850 CPM AVERAGE

READINGS TAKEN ON A 100 METER X 100 METER GRID.

 **CIMARRON CORPORATION**

**CIMARRON FACILITY  
UNAFECTED SUB-AREA E  
FINAL 3" DET. IN CPM (1995)  
AT LAND SURFACE**

CLIENT DRAWING NO.

JOB NO.

DRAWING NO.

95FUE3D-0

REV.  
0

120 0 120  
SCALE IN METERS



DRWN. BY JE	DATE 7/26/95	CHKD. BY WR	DATE 8/1/95	APP'D. BY JK	SCALE: AS SHOWN
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READINGS ARE IN MICRO-R/HR ( $\mu$ R/HR)

INSTRUMENT: LUDLUM MICRO-R METER  
MODEL NO: 19  
BACKGROUND RANGE: 7 - 10  $\mu$ R/HR.

READINGS TAKEN ON A 100 METER X 100 METER GRID.

**CIMARRON CORPORATION**

CIMARRON FACILITY  
UNAFFECTED SUB-AREA E  
FINAL MICRO-R SURVEY (1995)  
AT LAND SURFACE

CLIENT DRAWING NO.	
JOB NO.	DRAWING NO.
	95FIEUR-0
REV.	0

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DRWN. BY	DATE	CHKD. BY	DATE	APP'D. BY	SCALE
JE	7/26/95	WR	8/1/95	JK	AS SHOWN



UNAFECTED  
SUB-AREA E

UNAFECTED  
SUB-AREA D

UNAFECTED  
SUB-AREA C

UNAFECTED  
SUB-AREA B

WEST PIPELINE RUN  
TO CIMARRON RIVER  
(PIPE REMOVED)

EAST PIPELINE RUN  
TO CIMARRON RIVER  
(PIPE REMOVED)

URANIUM WASTE  
POND #1  
(BACKFILLED 1978)

BURIAL  
AREA #4  
HOLDING  
POND

URANIUM  
WASTE  
POND #2  
(BACKFILLED  
1978)

BURIAL AREA #2  
(NORTH FIELD)

WEST SANITARY  
LAGOON  
(BACKFILLED 1993)

EAST SANITARY  
LAGOON  
(BACKFILLED  
1993)

BURIAL AREA #4

BURIAL AREA #3/  
NORTH INCINERATOR

NEW LINED SANITARY  
LAGOON (ABOVE)

PLUTONIUM WASTE POND (BELOW)  
(BACKFILLED 1978)

PLUTONIUM  
BUILDING

WAREHOUSE  
BLDG. #4

EMER.  
BLDG.

URANIUM  
BLDG. #1

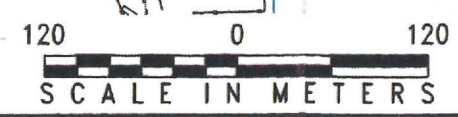
WEST  
LAKE

RESERVOIR

READINGS ARE IN MICRO-R/HR ( $\mu$ R/HR)

INSTRUMENT: LUDLUM MICRO-R METER  
MODEL NO: 19  
BACKGROUND RANGE: 7 - 10  $\mu$ R/HR.

READINGS TAKEN ON A 100 METER X 100 METER GRID.



CIMARRON CORPORATION

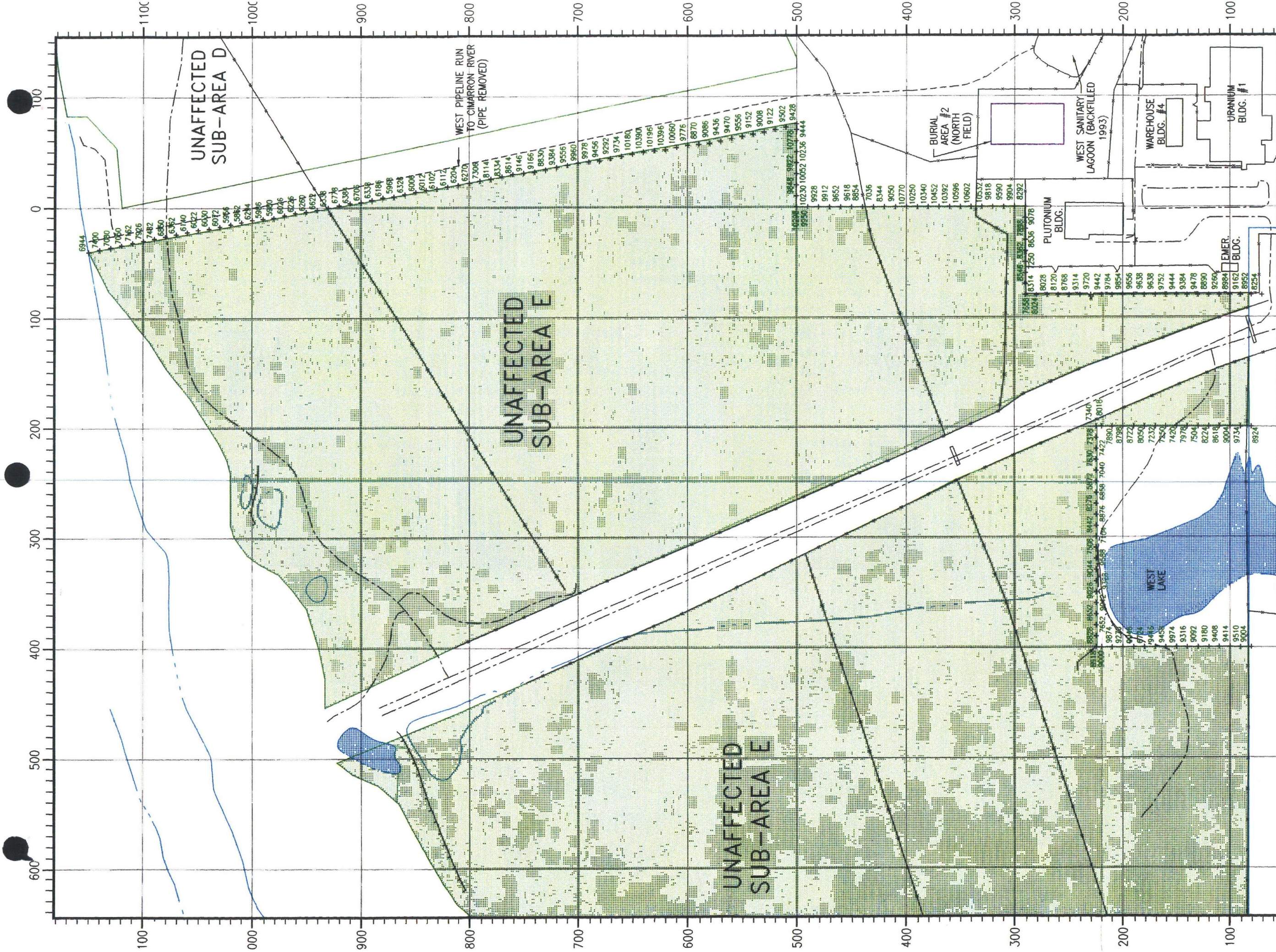
CIMARRON FACILITY  
UNAFECTED SUB-AREA E  
FINAL MICRO-R SURVEY (1995)  
AT ONE METER ABOVE SURFACE

CLIENT DRAWING NO.

JOB NO.	DRAWING NO.	REV.
	95FUEUR-1	0

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INSTRUMENT: LUDLUM 2220  
UNSHIELDED 3" X 1/2" NaI DETECTOR.

BACKGROUND: 8850 CPM AVERAGE



CIMARRON CORPORATION

CIMARRON FACILITY  
UNAFECTED SUB-AREA E BOUNDARY  
FINAL 3" DET. IN CPM (1995)  
AT LAND SURFACE

CLIENT DRAWING NO.

JOB NO.

DRAWING NO.

95FIU53D-0

REV.

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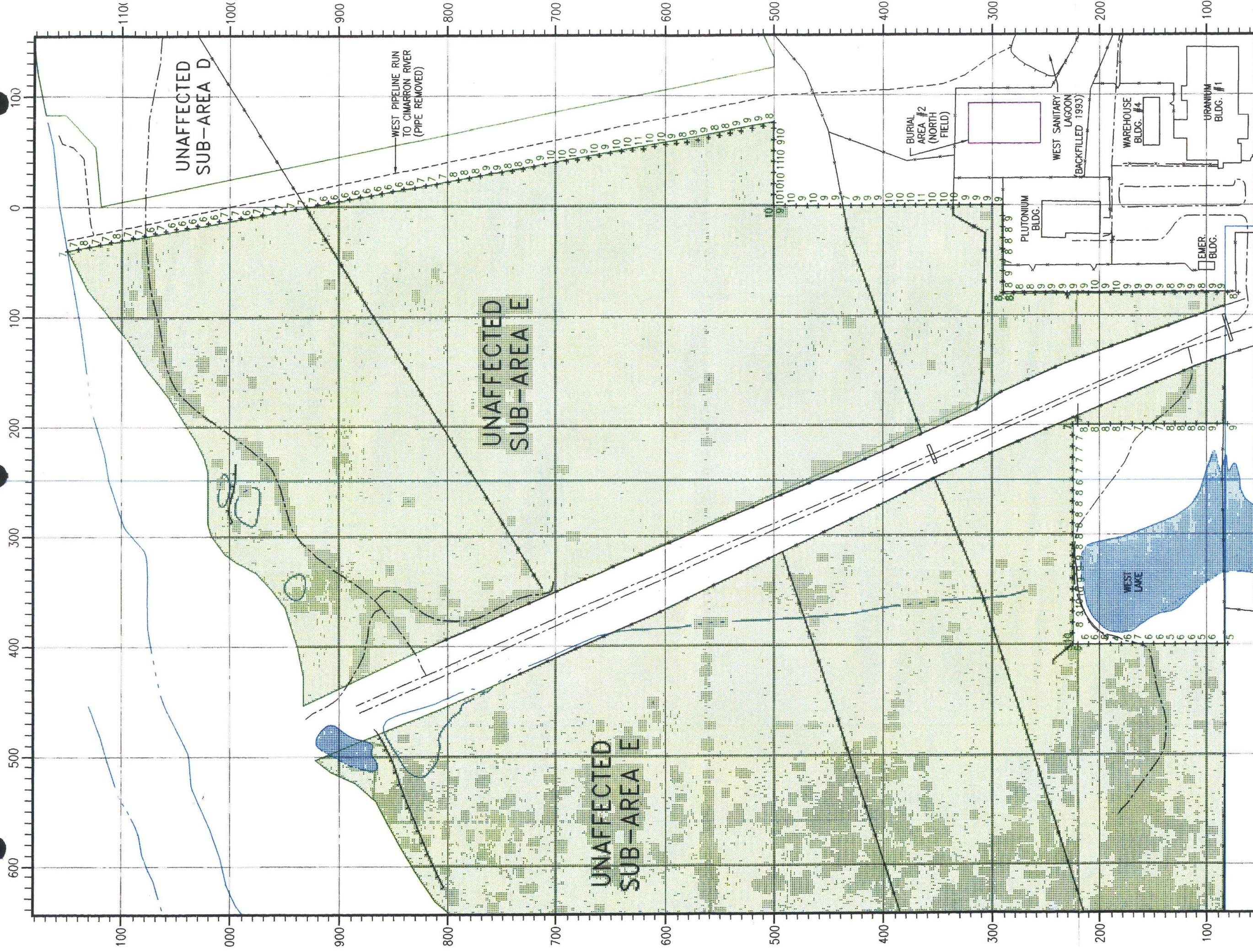
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80 0 80

SCALE IN METERS





READINGS ARE IN MICRO-R/HR ( $\mu$ R/HR)

INSTRUMENT: LUDLUM MICRO-R METER  
MODEL NO: 19  
BACKGROUND RANGE: 7 - 10  $\mu$ R/HR.



CIMARRON CORPORATION

CIMARRON FACILITY  
UNAFECTED SUB-AREA E BOUNDARY  
FINAL MICRO-R SURVEY (1995)  
AT LAND SURFACE

CLIENT DRAWING NO.

JOB NO.

DRAWING NO.

95FIU5UR-0

REV.

0

SCALE: AS SHOWN

APP'D. BY JK

DATE 8/1/95

CHK'D. BY WR

DATE 7/21/95

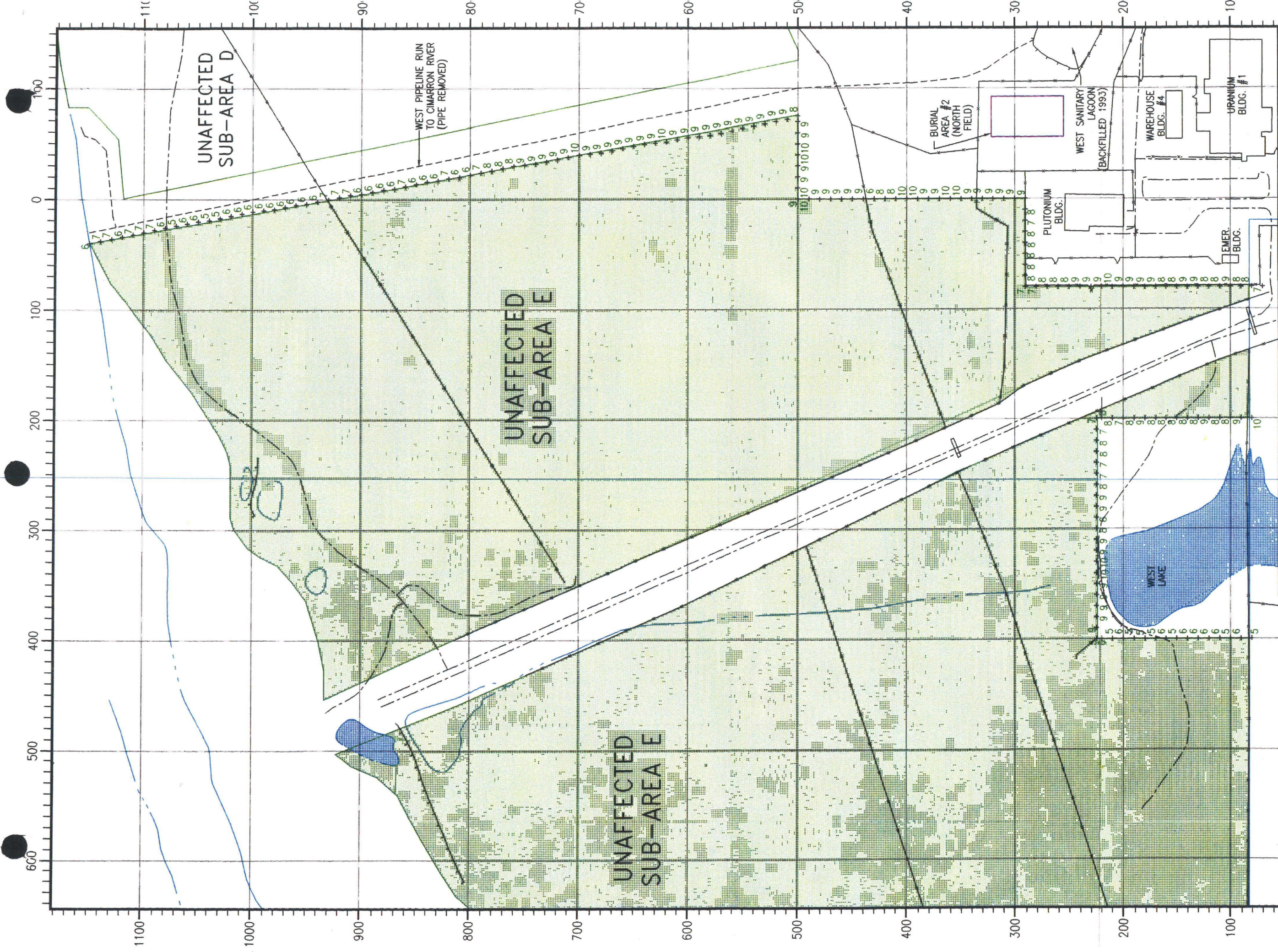
DRWN. BY JE



80 0 80

SCALE IN METERS





READINGS ARE IN MICRO-R/HR ( $\mu$ R/HR)

INSTRUMENT: LUDDUM MICRO-R METER  
MODEL NO: 19  
BACKGROUND RANGE: 7 - 10  $\mu$ R/HR.



CIMARRON CORPORATION

CIMARRON FACILITY  
UNAFECTED SUB-AREA E BOUNDARY  
FINAL MICRO-R SURVEY (1995)  
AT ONE METER ABOVE SURFACE

CLIENT DRAWING NO.

JOB NO.

DRAWING NO.

95FIU5UR-1

REV. 0

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SCALE IN METERS

