APPENDIX C

Survey of Materials Buried in Borrow Pit #2

Table 1 and Figure 1	1991
Table 2 and Figure 2	1992

Reference Survey Number from Table to Number on Figure

TABLE 1 1991

Survey of Materials Buried in Borrow Pit #2

SURVEY #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1.	76764.14	60567.57	6961.84	Edge of road
2.	73769.34	60610.15	6953.98	Start of scrap showing by road
3.	73825.38	60671.69	6954.59	Edge of scrap from CCD building surrounding area
4.	73887.77	60698.85	6953.84	Edge of scrap from CCD building and surrounding area
5.	73947.71	60709.82	6952.28	Edge of scrap from CCD building and surrounding area
6.	74023.68	60718.47	6951.99	Edge of scrap from CCD building and surrounding area
7.	74083.45	60679.83	6954.41	Point of scrap from CCD building and surrounding area
8.	74012.12	60651.38	6951.83	East edge of west road and scrap
9.	73915.29	60612.21	6951.23	East edge of west road and scrap
10.	73880.25	60602.43	6951.42	Edge of cover, scrap and road
11.	73785.36	60556.80	6956.50	Edge of fill and original grade
12.	73569.60	60771.49	6954.80	South side of barrels corner. Pit extends 14' to the north
13.	73574.39	60789.37	6954.80	Southeast corner of barrels
14.	73678.35	60782.50	6953.79	Yellow cake dryer - 14' wide to the north
15.	73675.96	60748.76	6954.91	Yellow cake dryer - 14' wide to the north
16.	73581.16	60854.65	6954.11	Edge of perimeter (silt and cover)
17.	73648.40	60850.28	6950.73	Rebar scrap - mill building
18.	73729.37	60842.87	6955.46	Insulation, metal scrap, something blue, metal and wood staves

Survey #	Northing	Easting	Elevation	Description
19.	73823.93	60830.67	6957.78	6" I beams, sheet metal and steel bands
20.	73874.22	60806.05	6956.22	Flanges, wood staves, conduit, channel, sheet metal and blocks of concrete
21.	73812.14	60854.10	6955.97	Sheet metal, crushed pipe, and wood staves
22.	73966.90	60860.46	6954.73	Dirt from scale gate area with scrap
23.	74016.28	60837.49	6953.92	Dirt from scale gate area with scrap
24.	74078.96	60791.02	6954.66	Dirt from scale gate area with scrap
25.	73908.00	60770.41	6954.31	Area mill building material buried
26.	73800.49	60761.91	6954.41	Area mill building material buried
27.	73631.59	60769.05	6955.55	Surface area between dryer and barrels
28.	73583.85	60648.16	6960.24	Surface start of cover over steel mill building material
29.	73757.64	60645.91	6955.72	Surface over mill building material
30.	73942.13	60668.60	6953.62	Surface over mill building material
31.	74017.08	60681.53	6954.25	Surface over mill building material
32.	74080.96	60669.34	6955.27	West edge of B.P. #2 cover of CCD building material area
33.	73922.88	60610.15	6954.16	West edge of B.P. #2 cover of CCD building material area
34.	73790.92	60564.35	6958.45	West edge of B.P. #2 cover of CCD building material area
35.	73723.61	60538.76	6958.97	West side of B.P. #2 cover of CCD building material area
36.	73510.30	60502.27	6964.50	Burnt wood 30'x30' area
37.	73497.36	60557.37	6963.59	Burnt wood 40'x40' area
38.	73514.56	60605.58	6962.93	Wood burnt in a line 50' east x 10 wide
39.	73482.19	60597.13	6964.12	Burnt wood (refer to sketch on map)
40.	73542.87	60659.44	6960.85	Burnt wood (refer to sketch on map)
41.	73462.07	60650.98	6965.47	Burnt wood (refer to sketch on map)
42.	73407.60	60888.51	6978.94	Resin barrels

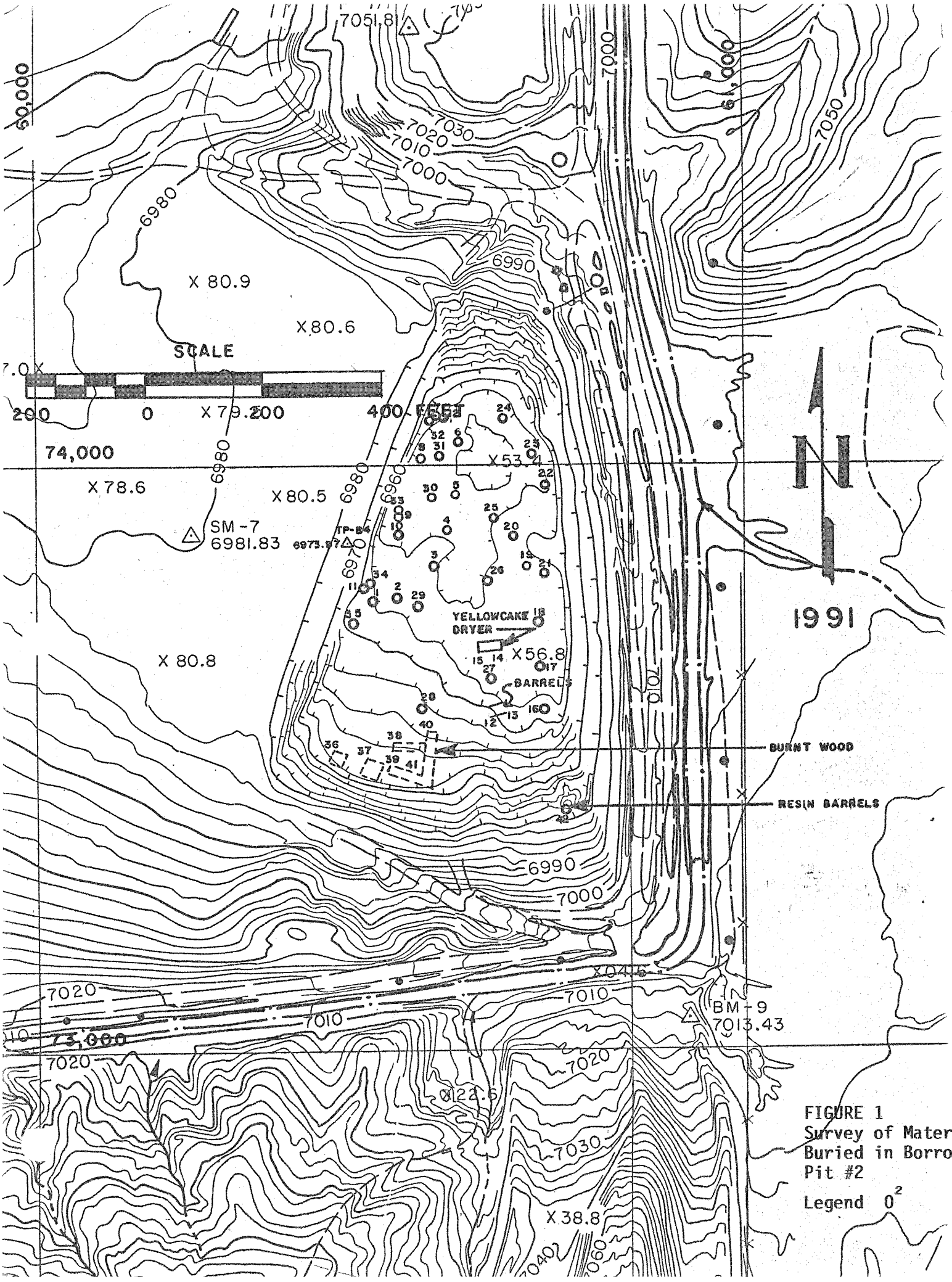

FIGURE 1
Survey of Material Buried in Borrow Pit #2

Legend 0²

Table 2 1992

Survey of Materials Buried in Borrow Pit #2

SURVEY #	NORTHING	EASTING	ELEVATION	DESCRIPTION
TP 84	73863.8851	60529.4280	6973.9720	Survey Station
#1	73475.00	60535.00	6967.7	Concrete, timber, metal debris
#2	73470.00	60565.00	6967.7	Concrete, timber, metal debris
#3	73460.00	60595.00	6967.7	Concrete, timber, metal debris
#4	73475.00	60800.00	6966.5	Brush pile
#5	73480.00	60825.00	6966.0	Staves sawdust pile
#6	73547.2602	60747.6536	6956.7626	SX, organic scrubber sump
Area A (pink area on Figure 2)	73820.00	60820.00	6957.5	Foundation material (concrete/rebar)
Area B (yellow area on Figure 2)	73730.00	60550.00	6968.00	Excavated material from mill east perimeter fence line

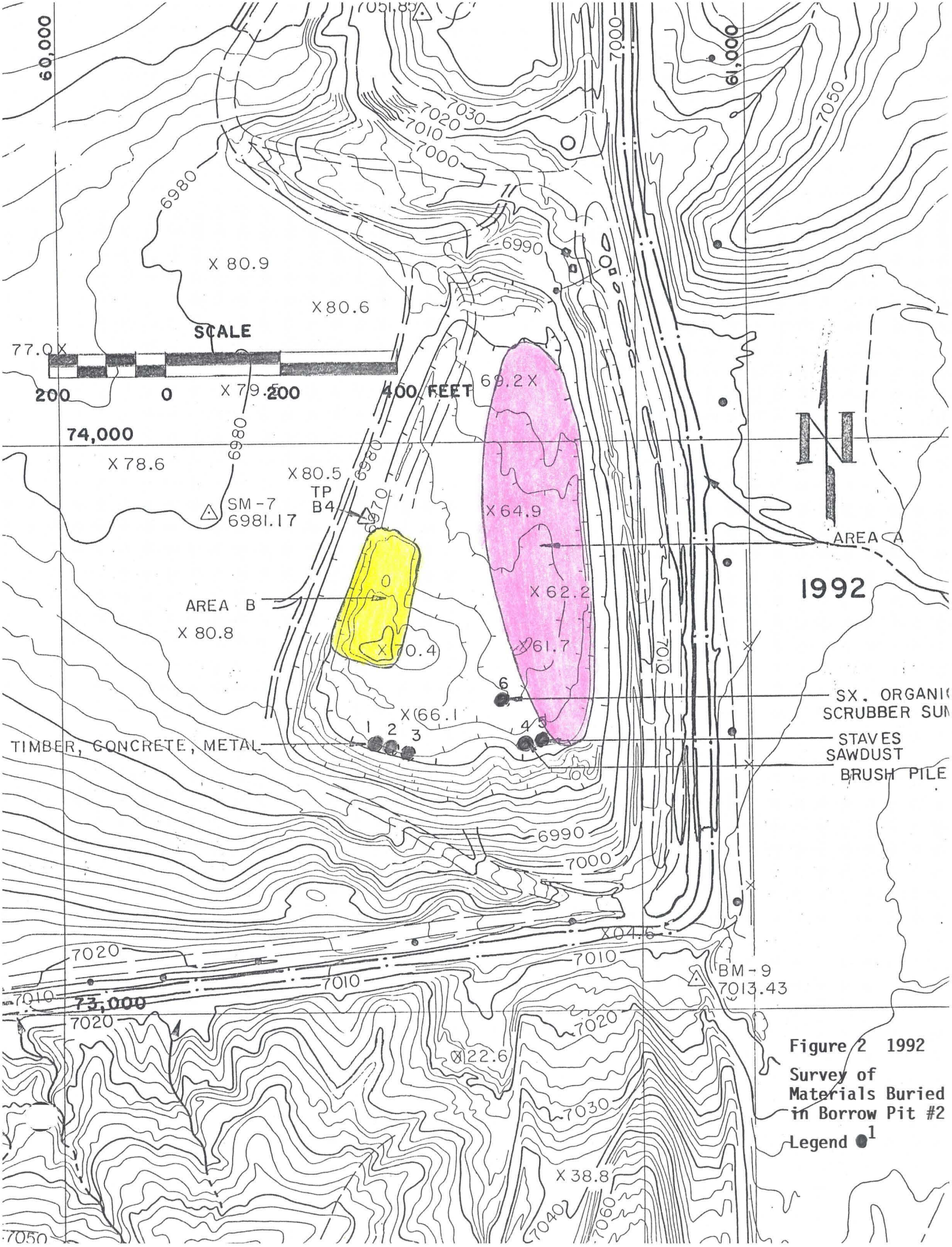

Figure 2 1992 Survey of Materials Buried in Borrow Pit #2

Legend ●[1]

APPENDIX D

- Contractor's Core Drilling Report
- Core Radiological Data
- Soil Analysis Report
- Concrete Surface Radiological Data

CONTRACTOR'S CORE DRILLING REPORT

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

REVIEW OF JOBSITE CONDITIONS

Client: United Nuclear Corporation
P.O. Drawer QQ
Gallup, NM 87301

30992

Job No.
Lab/Invoice No. 31420172
Date of Report 05/04/92
Reviewed By L. Waredock

Project: C.C.D. Circuit Foundation Evaluation
Location: Church Rock, New Mexico
Prime Contractor: UNC
Subject: Coring C.C.D. Circuit Foundations

Report By: J. Collard/WT & R. Sanchez/WT
Date: 4/27-5/01/92
Superintendent: Ed Morales/Client

The following locations were cored on the dates indicated below.

Date	Location	Length Cored
04/27/92	Thicker Pad #1-Northwest Section	8-1/4"
	Thicker Pad #2-Northeast Section	11-1/2"
	Thicker Pad #2-North Section	9"
04/28/92	Thicker Pad #2-West Section	6-3/4"
	Thicker Pad #3-North Section	9-1/2"
	Thicker Pad #3-South Section	6-1/2"
	Thicker Pad #4-West Section	10-1/2"
	Thicker Pad #4-East Section	5-1/2"
	Thicker Pad #5-East Section	7"
	Thicker Pad #5-South Section	8-3/4"
	Thicker Pad #6-East Section	8"
	Thicker Pad #6-Northeast Section	12"
	Thicker Pad #6-15'S. of Cone Section	7-1/4"
04/29/92	#6 Tunnel	17-1/2"
	#6 Tunnel Base	18-1/2"
	#5 Tunnel	20"
	#5 Tunnel Base	17"
	C.C.D. Sump-South Section	17"

Copies to: Client (3)
/sr

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
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LABORATORY REPORT

REVIEW OF JOBSITE CONDITIONS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No.
Lab/Invoice No. 31420172
Date of Report 05/04/92
Reviewed By L. Wiesbrock

Project: C.C.D. Circuit Foundation Evaluation
Location: Church Rock, New Mexico
Report By: J. Collard/WT & R. Sanchez/WT
Date: 04/27-05/01
Prime Contractor: UNC
Superintendent: Ed Morales/Client
Subject: Coring C.C.D. Circuit Foundations (con't)

Date	Location	Length Cored
04/30/92	#4 Tunnel	19"
	#3 Tunnel	18"
	#2 Tunnel	15-1/4"
	#1 Tunnel	17"
	NE corner C.C.D. Basement	14-1/2"
	NW corner C.C.D. Basement	7-1/4"
05/01/92	Grizzly Basement-3'S. of N. wall	32"
	Grizzly Conveyor-Tunnel Midsection	11-1/2"

Copies to: Client (3)
/sr

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LABORATORY REPORT

REVIEW OF JOBSITE CONDITIONS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No.
Lab/Invoice No. 31420134
Date of Report 04/14/92
Reviewed By L. Wansbrough

Project: C.C.D. Circuit Foundation Evaluation
Location: Church Rock, NM
Report By: H. Kuebler/WT
Date: 04/06-04/08/9
Prime Contractor: U.N.C.
Superintendent: Ed Morales/Client
Subject: Coring C.C.D. Circuit Foundations

The following locations were cored on the dates indicated below.

Date	Locations		Concrete Thickness
04/06/92	#1 Thicker Pad	S.E. Section	11-3/4"
	#1 Thicker Pad	S.W. Section	9-1/2"
	#1 Thicker Pad	Cone Floor	17"
	#2 Thicker Pad	S.E. Section	7"
	#2 Thicker Pad	N.E. Section	9-1/2"
	#2 Thicker Pad	Cone Floor	19"
	#3 Thicker Pad	S.E. Section	10"
04/07/92	#3 Thicker Pad	S.W. Section	11"
	#3 Thicker Pad	Cone Floor	17-1/2"
	#4 Thicker Pad	Cone Floor	17-1/2"
	#4 Thicker Pad	S.W. Section	12"
	#4 Thicker Pad	N.E. Section	5-1/4"
	#5 Thicker Pad	N.W. Section	9"
	#5 Thicker Pad	S.W. Section	8"
	#5 Thicker Pad	Cone Floor	18-1/4"
04/08/92	#6 Thicker Pad	N.E. Section	5-1/2"
	#6 Thicker Pad	S.W. Section	7-1/4"
	#6 Thicker Pad	Cone Floor	19-1/2"
	C.C.D. Basement Floor	S.E. Section	21"
	C.C.D. Basement Floor	N. Section	6-1/2"
	C.C.D. Basement Floor	Sump Area	6"
	C.C.D. Basement Floor	S.W. Section	9"

Copies to: Client (3)
/mja

CORE RADIOLOGICAL DATA

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LUD/2/7370 W/44-6/8820
(OPEN WINDOW)

COMPUTATIONS

SUBJECT RAD SURVEY ON SURFACE CONCRETE CORE, DRILL HOLE AND SOIL SAMPLE ANALYZES FOR THE CCD CIRCUIT FOUNDATIONS.

Sheet No. 1 of 4
Made By MC Date 5-26-92
Chkd. By _____ Date _____

DATE	DRILL HOLE / CONCRETE CORE ID	CONCRETE THICKNESS	LOCATION OF READING-CORE	ALPHA (CPM) & (DPM)-CORE CPM	ALPHA (CPM) & (DPM)-CORE DPM	GAMMA (MR/HR)-CORE	BETA (MR/HR)-CORE	GAMMA-BETA (MR/HR)-DRILL-HOLE @ DEPTH	URANIUM (PCI/GM) SOIL ANALYSIS	RA-226 (PCI/GM) SOIL ANALYSIS	COMMENTS: FOR CORE: F-FRACTURE, SF-SLIGHT FRACTURE, HF-HORIZONTAL FRACTURE, VF-VERTICAL FRACTURE
4-8-92	CCD-BASEMENT FLOOR-N	6 1/2"	A-TOP			10-12		.03 @ 6"	22.9	1.2	FOR BOREHOLE-H_2O IN HOLE & DRILLED ON FLOOR UPHEAVAL
			B-SIDE	33	244						
			C-BOTTOM	25	185						
4-8-92	CCD-BASEMENT FLOOR SW CORNER	9.0"	A-AS			10-12		IN H_2O	26.6	0.6	HF
			B-ABOVE	17	126						
			C-	17-27	163						
4-8-92	CCD-BASEMENT FLOOR-SE CORNER	21.0"	A			10-12		IN H_2O	3.5	1.2	
			B	25	185						
			C	20	148						
4-30-92	CCD-BASEMENT FLOOR-NE CORNER	14 1/2"	A	245	1811	10-12	.03	IN H_2O	8.4	0.8	3 PIECES (8", 5", 1/2")-HF
			B	18	133						
			C	13	96						
4-30-92	CCD-BASEMENT FLOOR-NW CORNER	7 1/4"	A	1642	12,136	9-11	.13	.03 @ 6"	6.4	1.3	SHF. FOR BOREHOLE-SOME H_2O IN HOLE
			B	17	126						
			C	112	828		.09				
4-8-92	CCD-BASEMENT FLOOR-SUMP	6.0"	A	67	495	10-11			10.2	1.1	
			B	12	89						
			C	11	81						
4-30-92	CCD-SUMP, S. SIDE	16 1/2"	A	488	3,607	10-11	.05		1.9	1.1	2 PIECES (7", 9 1/2")-HF
			B	18	133						
			C	8-16	163						
4-6-92	#1-THICKNER PAD-SW	9 1/2"	A			10-12		.03 @ 13" CONTACT	8.5	0.6	FOR BOREHOLE-DRILLER 4" FROM CONST. JOINT
			B	22	163						
			C	28	207						
4-6-92	#1-THICKNER PAD-CONE F.	17.0"	A			10-12		.04 @ 24"	0.9	0.6	
			B	24	177						
			C	23	170						
4-6-92	#1-THICKNER PAD-SE	11 3/4"	A			10-12		.03 @ 16" CONTACT	5.6	0.5	FOR BOREHOLE-DRILLED ON CONSTRUCTION JOINT
			B	24	177						
			C	24-36	222		.03				
4-22-92	#1-THICKNER PAD-NE	11 1/2"	A	26	192	10-12		.04 @ 15" CONTACT	9.6	0.5	FOR BOREHOLE-DRILLED 9" FROM CONST. JOINT
			B	09	67						
			C	09	67		.03				
4-27-92	#1-THICKNER PAD-NW	8 1/4"	A	25	185	9-11		.04 @ 10" CONTACT	7.6	0.8	FOR BOREHOLE-DRILLED 2" FROM CONST. JOINT
			B	16	118						
			C	11	81		.03				
4-30-92	#1-THICKNER TUNNLE-MIDDLE	18"	A	302	2,232	9-11	.05	.03 @ 6"	3.2	1.0	2 PIECES (13", 5") HF FOR BOREHOLE-H_2O IN HOLE-DRILLED ON CONC. FRACTURE
			B	07	52						
			C	8	59						

NOTE: FOR YOUR INFORMATION THE LOCATION A-TOP ALPHA (CPM) & (DPM)-CORE READING IS BEFORE DECONTAMINATION.

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COMPUTATIONS

SUBJECT: RAD SURVEY ON SURFACE CONCRETE CORE, DRILL HOLE AND SOIL SAMPLE ANALYZES FOR THE CCD CIRCUIT FOUNDATIONS.

Sheet No. 2 of 4
Made By: M Date: 5-26-92
Chkd. By: Date:

DATE	DRILL HOLE / CONCRETE CORE ID	CONCRETE THICKNESS	LOCATION OF READING - CORE	ALPHA (CPM) & (DPM) - CORE CPM	ALPHA (CPM) & (DPM) - CORE DPM	GAMMA (MR/HR) CORE	BETA (MR/HR) - CORE	GAMMA-BETA (MR/HR) - DRILL-HOLE @ DEPTH	URANIUM (PCI/GM) SOIL ANALYSIS	RA-226 (PCI/GM) SOIL ANALYSIS	COMMENTS - FOR CORE: F - FRACTURE, SF - SLIGHT FRACTURE, HF - HORIZONTAL FRACTURE, VF - VERTICAL FRACTURE
4-6-92	#2 - THICKNER PAD - NE	9 1/2"	A - TOP			10-12		.03 @ 13" CONTACT	8.3	1.1	FOR BOREHOLE - DRILLED ON CONSTRUCTION JOINT
			B - SIDE	27	200						
			C - BOTTOM	29	214						
4-6-92	#2 THICKNER PAD - SE	7.0"	A - AS			10-12		.03 @ 12" CONTACT	1.0	0.5	FOR BOREHOLE - DRILLED 12" FROM CONST. JOINT
			B - ABOVE	23	170						
			C	12-23	129						
4-6-92	#2 THICKNER PAD - CONE F.	19.0"	A			10-12		.03 @ 9"	0.8	0.6	FOR BORE HOLE - H_2O IN HOLE
			B	30	222						
			C	28	207						
4-29-92	#2 THICKNER PAD - N	9.0"	A	42	310	9-11	.05	.03 @ 2" CONTACT	10.2	0.6	2 PIECES FOR BOREHOLE - DRILLED 6" FROM CONST. JOINT
			B	19	140						
			C	08	59						
4-28-92	#2 THICKNER PAD - W	6 3/4"	A	21	155	9-11		.03 @ 10" CONTACT	1.0	0.5	FOR BOREHOLE - DRILLED 16" FROM CONST. JOINT
			B	16	118						
			C	10	74		.03				
4-30-92	#2 THICKNER TUNNEL - MIDDLE	15.0"	A	30	222	10-12	.03	.03 @ 19"	8.6	1.0	2 PIECES (13", 2") - SVF, HF FOR BOREHOLE - DRILLED ON SLIGHT CONC. FRACTURE
			B	15-27	155						
			C	11	81						
4-6-92	#3 THICKNER PAD - SW	11.0"	A			10-12		.03 @ 14" CONTACT	16.9	0.9	FOR BOREHOLE - DRILLED 18" FROM CONST. JOINT
			B	19	140						
			C	21	155						
4-6-92	#3 THICKNER PAD - SE	10.0"	A			10-12		.03 @ 14" CONTACT	0.7	0.8	FOR BOREHOLE - DRILLED 17" FROM CONST. JOINT
			B	21	155						
			C	16	118						
4-28-92	#3 THICKNER PAD - S.	6 1/2"	A	49	362	10-12	.03	.03 @ 10" CONTACT	4.2	0.7	FOR BOREHOLE - DRILLED 23" FROM CONST. JOINT
			B	11	81						
			C	15	111						
4-30-92	#3 THICKNER TUNNEL - MIDDLE	18.0"	A	263	1,944	9-11	.05	.03 @ 22"	1.7	0.7	2 PIECES (10", 8") HF
			B	07	52						
			C	15	111						
4-28-92	#3 THICKNER PAD - N	9.0"	A	35	259	9-11	.03	.03 @ 13" CONTACT	17.2	5.8	FOR BORE HOLE - DRILLED 19" FROM CONST. JOINT
			B	47	347						
			C	30	222						
4-6-92	#3 THICKNER PAD - CONE F.	17 1/2"	A			10-12		.03 @ 12"	0.6	0.4	FOR BOREHOLE - H_2O IN HOLE
			B	27	200						
			C	19	140						
4-6-92	#4 THICKNER PAD - CONE F.	17 1/2"	A			10-12		.03 @ 14"	1.1	0.6	FOR BOREHOLE - H_2O IN HOLE
			B	22	163						
			C	28	207						

NOTE: THE LOCATION A - TOP ALPHA (CPM) & (DPM) - CORE READING IS BEFORE DECONTAMINATION

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COMPUTATIONS

SUBJECT RAD SURVEY ON SURFACE CONCRETE CORE, MILL HOLE AND SOIL SAMPLE ANALYZES FOR THE MILL CD CIRCUIT FOUNDATIONS.

Sheet No. 3 of 4
Made By MC Date 5-26-92
Chkd. By _____ Date _____

DATE	DRILL HOLE / CONCRETE CORE ID	CONCRETE THICKNESS	LOCATION OF READING - CORE	ALPHA (CPM) & (DPM) - CORE CPM	DPM	GAMMA (MR/HR) CORE	BETA (MR/HR) - CORE	GAMMA - BETA (MR/HR) - DRILL HOLE @ DEPTH	URANIUM (pCi/gm) SOIL ANALYSIS	RA-226 (pCi/gm) SOIL ANALYSIS	COMMENTS - FOR CORE: F - FRACTURE, SF - SLIGHT FRACTURE, HF - HORIZONTAL FRACTURE, VF - VERTICAL FRACTURE
4-7-92	#4 THICKNER PAD - SW	12.0"	A - TOP			10-12		.03 @ 14½" CONTACT	29.7	0.7	FOR BOREHOLE - DRILLED 14" FROM CONST. JOINT
			B - SIDE	22-59	299						
			C - BOTTOM	25	185						
4-28-92	#4 THICKNER PAD - E	5½"	A - AS	44	325	9-11		.03 @ 19½" CONTACT	4.7	0.8	FOR BOREHOLE - DRILLED 22" FROM CONST. JOINT
			B - ABOVE	10	74						
			C	12	89		.03				
4-30-92	#4 THICKNER TUNNEL - MIDDLE	19.0"	A	486	3592	9-11	.05	.03 @ 23" CONTACT	1.0	0.7	3 pieces (5", 1", 3") - HF
			B	25	185						
			C	09	67						
4-28-92	#4 THICKNER PAD W.	10½"	A	08	59	10-11		.04 @ 14" CONTACT	6.3	0.6	FOR BOREHOLE - DRILLED ON CONST. JOINT
			B	10	74						
			C	15	111		.05				
4-7-92	#4 THICKNER PAD - N.E.	5¼"	A			10-12		.03 @ 10" CONTACT	1.1	0.5	HV - SPLIT CORE FOR BOREHOLE - DRILLED ON CONCRETE FRACTURE
			B	20+ 26	170						
			C	20	148						
4-7-92	#5 THICKNER PAD - N.W.	9.0"	A			10-12		.03 @ 10"	1.8	0.8	FOR BOREHOLE - H_2O IN HOLE AND DRILLED 10" FROM CONSTRUCTION JOINT
			B	15	111						
			C	24	177						
4-7-92	#5 THICKNER PAD - S.W.	8.0"	A			10-12		.03 @ 12½" CONTACT	2.1	0.6	FOR BOREHOLE - DRILLED 8" FROM CONST. JOINT
			B	22	163						
			C	25	185						
4-28-92	#5 THICKNER PAD - E.	6½"	A	52	384	9-11		.04 @ 9½"	1.2	1.3	2 pieces (4", 2½") - HF FOR BOREHOLE - H_2O IN HOLE, DRILLED 18" FROM CONST. JOINT
			B	07	52						
			C	18	137		.03				
4-30-92	#5 THICKNER TUNNEL - MIDDLE	19½"	A	507	3762	10-12		.05 @ 24" CONTACT	2.7	1.3	2 pieces (13½", 6") VF IN MIDDLE & HF FOR BOREHOLE - DRILLED ON CONC. FRACTURE
			B	07-87	347		.06				
			C	41	303		.06				
4-30-92	#5 THICKNER TUNNEL BASE	17.0"	A	1291	9542	10-12	.09	.03 @ 22" CONTACT	1.5	0.7	2 pieces - VF IN MIDDLE & HF FOR BOREHOLE - DRILLED ON CONC. FRACTURE
			B	17	126						
			C	15	111						
4-7-92	#5 THICKNER PAD - CONC F.	18¼"	A			10-12		.03 @ 7"	0.5	1.0	FOR BOREHOLE - H_2O IN HOLE
			B	26	192						
			C	21	155						
4-28-92	#5 THICKNER PAD - S.	8½"	A	64	472	10-1	.05	.03 @ 10"	3.6	0.9	FOR BOREHOLE - H_2O IN HOLE & DRILLED 10" FROM CONST. JOINT.
			B	17	126						
			C	10	74						
4-7-92	#6 THICKNER PAD - N.E.	5½"	A			10-12		.03 @ 9" CONTACT	3.3	0.5	VF FOR BOREHOLE - DRILLED ON CONCRETE FRACTURE.
			B	15	111						
			C	25	185						

NOTE: THE LOCATION A - TOP ALPHA (CPM) & (DPM) - CORE READING IS BEFORE DECONTAMINATION.

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COMPUTATIONS

SUBJECT RAD SURVEY ON SURFACE CONCRETE CORE, DRILL HOLE AND SOIL SAMPLE ANALYZES FOR THE MILL CCD CIRCUIT FOUNDATIONS. Sheet No. 4 of 4 Made By MZ Date 5-26-92 Chkd. By _____ Date _____

DATE	DRILL HOLE / CONCRETE CORE ID	CONCRETE THICKNESS	LOCATION OF READING - CORE	ALPHA (CPM) & (DPM) - CORE CPM	DPM	GAMMA (MR/HR) CORE	BETA (MR/HR) CORE	GAMMA-BETA (MR/HR) - DRILL-HOLE @ DEPTH	URANIUM (PCI/GM) SOIL ANALYSIS	RA-226 (PCI/GM) SOIL ANALYSIS	COMMENTS - FOR CORE: F - FRACTURE, SF - SLIMY FRACTURE, HF - HORIZONTAL FRACTURE, VF - VERTICAL FRACTURE
4-7-92	#6 THICKNER PAD - CONE F.	19 1/2"	A - TOP			10-12		.03 @ 6"	0.4	0.6	FOR BOREHOLE - H2O IN HOLE
			B - SIDE	24	177						
			C - BOTTOM	25	185						
4-7-92	#6 THICKNER PAD - S.W.	7 1/4"	A - AS			10-12		.04 @ 9 1/2"	2.9	0.7	VF - SPLIT CORE FOR BOREHOLE - H2O IN HOLE, DRILLED ON CONCRETE FRACTURE
			B - ABOVE	20-201	817						
			C -	26	192						
4-28-92	#6 THICKNER PAD - N.E.	12.0"	A	77	569	10-12	.03	.05 @ 18" CONTACT	3.1	0.8	FOR BOREHOLE - DRILLED 6" FROM CONC. FRACTURE
			B	09	67						
			C	17	126						
4-28-92	#6 THICKNER PAD - E.	8.0"	A	55	407	9-11	.05	.03 @ 10"	2.1	0.6	FOR BOREHOLE - H2O IN HOLE - DRILLED 6" FROM CONC. FRACTURE
			B	17	126						
			C	11	81						
4-30-92	#6 THICKNER TUNNEL - MIDDLE	17 1/2"	A	985	7280	10-12	.05	.03 @ 21"	17.2	0.7	2 PIECES (13 1/2", 4") - SVF & HF
			B	13	96						
			C	07	52						
4-30-92	#6 THICKNER TUNNEL - BASE	18 1/2"	A	146	1079	10-12	.09	.03 @ 3"	3.6	0.7	2 PIECES (14", 4 1/2") - SVF & HF FOR BOREHOLE - H2O IN HOLE, DRILLED ON CONC. FRACTURE
			B	25	185		.08				
			C	06	44						
4-28-92	#6 THICKNER 15'S. OF CONE	7"	A	119	880	10-11	.03	.03 @ 5"	3.4	1.0	SVF FOR BOREHOLE + H2O IN HOLE, DRILLED ON CONC. FRACTURE
			B	14	103						
			C	08	59						
5-1-92	GRIZZLY TUNNEL - MIDDLE	12 1/2"	A	153	1131	9-11	.09	.03 @ 9"	1.1	0.8	2 PIECES (10 1/2", 2") - SVF & HF FOR BOREHOLE - H2O IN HOLE
			B	03	22						
			C	04	30						

IMPORTANT NOTE: FOR YOUR INFORMATION THE LOCATION A-TOP ALPHA (CPM) & (DPM) - CORE READING IS BEFORE DECONTAMINATION.

SOIL ANALYSIS REPORT

ENERGY LABORATORIES
P.O. BOX 3258 • CASPER, WY 82602 • PHONE (307) 235-0515
254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock
UNC Submittal #:	EW-1-4-92	EW-1-4-92
Sample I.D.:	#2 Cone	#1 SE
Sample Date:	04-06-92	04-06-92
Report Date:	04-22-92	04-22-92
Sample Number:	92-8133	92-8134
RADIOMETRIC pCi/gm:		
U	0.8	5.6
Ra226	0.6	0.5
Ra Prec. +/-	0.1	0.1

Q.A. MANAGER: R.A. Leahing
Energy Laboratories, Inc.
Casper, Wyoming 82602

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #1 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 1 of 8
Made By M
Date 7-10-92
Chkd. By
Date

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#1	TUNNEL		FLOOR	-	TF)	TRW-9	9-11	10	36-48	42	310.4	
TF-1	9-11	10.0	18-18	18	133.0	10	9-11	10	33-50	42	310.4	NOTE:
2	8-12	10.0	12-66	39	288.3	(#1 CONE		FLOOR		- CF)		THE DIRECTION OF
3	8-10	9.0	3-6	5	37.0	CF-1	8-10	9	6-24	15	110.9	INCREMENTAL READING
4	7-11	9.0	98-126	112	827.8	2	8-10	9	18-120	69	510.0	IS FROM SOUTH EXIT-
5	8-10	9.0	42-48	45	332.6	3	10-12	11	18-48	33	243.9	CCD BSMT. TO NORTH
6	8-11	10.0	60-123	92	680.0	4	10-12	11	18-78	48	354.8	ENTRY - CONE AND
7	8-11	10.0	36-66	51	377.0	(#1 CONE		CEILING		- CC)		ALL SURVEYS IS DONE
8	9-11	10.0	30-120	75	554.3	CC-1	8-10	9	30-48	39	288.3	ON APPROXIMATED 10'
9	9-11	10.0	18-30	24	177.4	2	8-10	9	36-54	45	332.6	X 10' GRID AREAS
10	9-11	10.0	16-25	21	155.2	3	10-12	11	18-54	36	266.1	AFTER ALL DECON-
(#1	TUNNEL		CEILING		- TC)	4	10-12	11	12-72	42	310.4	TAMINATION BY
TC-1	9-11	10	3-24	14	103.5	(#1	CONE	LEFT WALL		- CLW)		PRESSURIZE SAND-
2	8-12	10	3-3	3	22.2	CLW-1	8-10	9	6-48	27	199.6	BLASTING W/WATER
3	8-10	9	3-12	8	59.1	2	8-10	9	12-48	30	221.7	IS DONE.
4	7-11	9	6-18	12	88.7	(#1 CONE		RIGHT WALL		- CRW)		(FOR ALL SURVEYS
5	8-10	9	6-12	9	66.5	CRW-3	10-12	11	24-24	24	177.4	SEE SHEET 7 OF 8
6	8-11	10	30-36	33	243.9	4	10-12	11	12-42	32	236.5	AND 8 OF 8 DIAGRAMS
7	8-11	10	6-54	30	221.7	(#1 CONE		END WALL		- CEW)		FOR AREA ID LOCATIONS)
8	9-11	10	30-54	42	310.4	CEW-2	8-10	9	6-6	6	44.3	
9	9-11	10	24-60	42	310.4	3	10-12	11	12-24	18	133.0	
10	9-11	10	20-55	35	258.7	(#1 CONE		TUNNEL WALL		- CTW)		
(#1	TUNNEL		LEFT WALL		- TLW)	CTW-1	8-10	9	36-60	48	354.8	
TLW-1	9-11	10	12-54	33	243.9							
2	8-12	10	12-60	36	266.1							
3	8-10	9	3-66	35	258.7							
4	7-11	9	72-72	72	532.2							
5	8-10	9	30-42	36	266.1							
6	8-11	10	6-78	42	310.4							
7	8-11	10	96-102	99	731.7							
8	9-11	10	30-90	60	443.5							
9	9-11	10	9-12	11	81.3							
10	9-11	10	8-10	9	66.5							
(#1	TUNNEL		RIGHT WALL		- TRW)							
TRW-1	9-11	10	24-30	27	199.6							
2	8-12	10	12-72	42	310.4							
3	8-10	9	30-86	48	354.8							
4	7-11	9	42-78	60	443.5							
5	8-10	9	54-66	60	443.5							
6	8-11	10	72-84	78	576.5							
7	8-11	10	90-96	93	687.4							
8	9-11	10	84-102	93	687.4							

N/A

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) =23.0% EFF.
LVD/19/9180. (Cs137/1524) = 230-240 UR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD#2 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 2 of 8
Made By mc, Date 6-30, 7-1-92
Chkd. By _____ Date _____

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#2 TUNNEL FLOOR - TF)						TRW-6	9-11	10	6-30	18	133.0	
TF-1	10-12	11	9-120	65	480.4	7	8-10	9	12-30	21	155.2	NOTE:
2	8-10	9	6-9	8	59.1	8	9-11	10	16-21	19	140.4	THE DIRECTION OF
3	8-10	9	9-18	14	103.5	9	9-12	11	24-102	63	465.7	INCREMENTAL READING
4	8-10	9	18-21	20	147.8	10	8-12	10	15-27	21	155.2	IS FROM SOUTH EXIT-
5	8-10	9	9-15	12	88.7	11	9-12	11	4-21	13	96.1	CCD BSMT. TO NORTH
6	9-11	10	78-99	89	657.8	(#2 CONE FLOOR - CF)						ENTRY-CONE AND ALL
7	8-10	9	27-36	32	332.6	CF-1	9-12	11	12-18	15	110.9	SURVEYS ARE DONE
8	9-11	10	27-93	60	443.5	2	12-13	13	3-12	8	59.1	ON APPROXIMATELY 10'
9	9-12	11	117-117	117	864.8	3	8-12	10	6-21	14	103.5	X 10' GRID AREAS
10	8-12	10	30-78	54	687.4	4	11-13	12	3-6	5	37.0	AFTER ALL DECON-
11	9-12	11	24-33	29	214.3	(#2 CONE CEILING - CC)						TAMINATION BY
(#2 TUNNEL CEILING - TC)						CC-1	9-12	11	4-18	11	81.3	PRESSURIZED SAND-
TC-1	10-12	11	3-114	59	436.1	2	12-13	13	6-14	10	73.9	BLASTING W/WATER
2	8-10	9	3-6	5	37.0	3	8-12	10	6-8	7	51.7	IS DONE.
3	8-10	9	3-4	4	30.0	4	11-13	12	10-12	11	81.3	
4	8-10	9	3-12	8	59.1	(#2 CONE LEFT WALL - CLW)						
5	8-10	9	24-27	26	192.2	CLW-1	9-12	11	2-11	7	51.7	
6	9-11	10	9-15	12	88.7	2	12-13	13	6-12	9	66.5	
7	8-10	9	3-18	11	81.3	(#2 CONE RIGHT WALL - CRW)						
8	9-11	10	21-102	62	458.3	CRW-3	8-12	10	4-5	5	37.0	
9	9-12	11	0-69	35	258.7	4	11-13	12	5-18	12	88.7	
10	8-12	10	24-24	24	177.4	(#2 CONE END WALL - CEW)						
11	9-12	11	12-27	20	147.8	CEW-2	12-13	13	6-9	8	59.1	
(#2 TUNNEL LEFT WALL - TLW)						3	8-12	10	2-8	5	37.0	
TLW-1	10-12	11	9-33	21	155.2	(#2 CONE TUNNEL WALL - CTW)						
2	8-10	9	15-75	45	332.6	CTW-1	9-12	11	7-12	9	66.5	
3	8-10	9	21-30	26	192.2							
4	8-10	9	105-108	107	790.9							
5	8-10	9	33-81	57	421.3							
6	9-11	10	69-87	78	576.5							
7	8-10	9	36-66	51	377.0							
8	9-11	10	62-108	85	628.3							
9	9-12	11	42-54	48	354.8				N/A			
10	8-12	10	3-24	14	103.5							
11	9-12	11	12-30	21	155.2							
(#2 TUNNEL RIGHT WALL - TRW)												
TRW-1	10-12	11	12-18	15	110.9							
2	8-10	9	48-71	60	443.5							
3	8-10	9	12-21	17	125.7							
4	8-10	9	21-42	32	236.5							
5	8-10	9	12-24	18	133.0							

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INSTRUMENTATION

EBER LINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
L.00/19/9180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #3 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 3 of 8
Made By [illegible]
Date 6-25-92, 6-30-92
Chkd. By
Date

AREA ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM 100CM²	AREA ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM 100CM²	COMMENTS
(#3 TUNNEL FLOOR - TF)						TRW-9	8-11	10	18-39	29	214.3	
TF-1	9-13	11	21-42	27	199.6	↓10	8-11	10	30-119	75	554.3	NOTE:
2	9-11	10	39-45	42	310.4	(#3 CONE FLOOR - CF)						THE DIRECTION OF
3	9-11	10	30-99	65	480.4	CF-1	10-12	11	5-13	9	66.5	INCREMENTAL READING
4	9-11	10	15-45	30	221.7	2	10-12	11	4-15	10	73.9	IS FROM EAST EXIT-
5	9-12	11	39-63	51	377.0	3	8-11	10	36-99	68	502.6	CCD BSMT, TO WEST
6	9-12	11	42-111	77	569.1	↓4	10-12	11	21-66	44	325.2	ENTRY-CONE AND ALL
7	9-13	11	42-75	59	436.1	(#3 CONE CEILING - CC)						SURVEYS ARE DONE ON
8	10-12	11	42-90	66	487.8	CC-1	9-12	11	12-18	15	110.9	APPROXIMATED 10'x10'
9	10-13	12	39-90	65	480.4	2	9-10	10	36-78	57	421.3	GRID AREAS AFTER ALL
↓10	10-13	12	36-96	66	487.8	3	9-11	10	42-54	48	354.8	DECONTAMINATION BY
(#3 TUNNEL CEILING - TC)						↓4	9-11	10	45-60	53	391.7	PRESSURIZED SAND-
TC-1	10-11	11	4-4	4	29.6	(#3 CONE LEFT WALL - CLW)						BLASTING w/ WATER
2	9-11	10	15-82	49	362.2	CLW-1	9-11	10	49-58	54	399.1	IS DONE.
3	7-11	9	0-135	68	502.6	↓2	10-12	11	6-63	35	258.7	
4	9-11	10	27-45	36	266.1	(#3 CONE RIGHT WALL - CRW)						CF-1, CF-2 &
5	10-12	11	60-95	78	576.5	CRW-3	9-11	10	33-114	74	547.0	CLW-1: AREAS RE-
6	10-11	11	18-48	33	243.9	↓4	9-12	11	30-102	66	487.8	SANDBLASTED ON
7	9-10	10	0-54	27	199.6	(#3 CONE END WALL - CEW)						6-30-92. PRIOR
8	9-11	10	0-30	15	110.9	CEW-2	8-11	10	30-57	44	325.2	READINGS $\bar{C}$ = 383cpm
9	9-11	10	45-78	62	458.3	↓3	9-11	10	24-27	26	192.2	= 2,831 DPM.
↓10	9-11	10	47-70	59	436.1	(#3 CONE TUNNEL WALL - CTW)						
(#3 TUNNEL LEFT WALL - TLW)						CTW-1	9-11	10	27-30	29	214.3	
TLW-1	9-13	11	18-27	23	170.0							
2	8-10	9	3-18	11	81.3							
3	8-12	10	9-33	21	155.2							
4	8-10	9	36-54	45	332.6							
5	8-12	10	24-33	29	214.3							
6	8-12	10	36-120	78	576.5							
7	8-11	10	18-30	24	177.4							
8	8-11	10	48-105	77	569.1							
9	8-11	10	24-127	76	561.7				N/A			
↓10	8-11	10	30-119	75	554.3							
(#3 TUNNEL RIGHT WALL - TRW)												
TRW-1	8-14	11	0-9	5	37.0							
2	9-12	11	18-42	30	221.7							
3	9-12	11	39-57	48	354.8							
4	8-14	11	0-21	11	81.3							
5	8-9	9	30-48	39	288.3							
6	8-11	10	9-24	17	125.7							
7	8-11	10	3-42	23	170.0							
↓8	8-11	10	42-57	50	369.6							

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INSTRUMENTATION

UNC

EBERLINE PS-2/285 W/AC-3/714209. (Th 230/11093) = 28.0% EFF.

LUD/19/4180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #4 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 4 of 8

Made By [illegible] Date 6-26, 6-30-92

Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#4 TUNNEL FLOOR - TF)						TRW-9	8-12	10	57-69	63	465.7	
TF-1	9-10	10	6-9	8	59.1	↓ 10	8-12	10	61-75	68	502.6	NOTE:
2	8-10	9	120-131	126	931.3	(#4 CONE FLOOR - CF)						THE DIRECTION OF
3	8-10	9	57-69	63	465.7	CF-1	9-11	10	54-120	87	643.0	INCREMENTAL READING
4	7-11	9	15-21	18	133.0	2	9-11	10	51-130	91	672.6	IS FROM NORTH EXIT-
5	10-11	11	9-51	30	221.7	3	9-11	10	6-18	12	88.7	CCD BSMT. TO SOUTH
6	8-11	10	12-42	27	199.6	↓ 4	9-13	11	9-63	36	266.1	ENTRY-CONE AND ALL
7	8-10	9	42-66	54	399.1	(#4 CONE CEILING - CC)						SURVEYS ARE DONE ON
8	7-11	9	60-105	83	613.5	CC-1	9-11	10	3-60	32	236.5	APPROXIMATED 10'x10'
9	8-12	10	54-132	93	687.4	2	9-11	10	24-48	36	266.1	GRID AREAS AFTER ALL
↓ 10	8-12	10	52-134	93	687.4	3	9-11	10	18-66	39	288.3	DECONTAMINATION BY
(#4 TUNNEL CEILING - TC)						↓ 4	9-13	11	15-45	30	221.7	PRESSURIZED SAND-
TC-1	9-10	10	0-3	2	14.8	(#4 CONE LEFT WALL - CLW)						BLASTING W/WATER
2	8-10	9	3-3	3	22.2	CLW-1	9-11	10	6-12	9	66.5	IS DONE.
3	8-10	9	3-69	36	266.1	↓ 2	9-11	10	6-6	6	44.3	
4	7-11	9	18-51	35	258.7	(#4 CONE RIGHT WALL - CRW)						TF-1: AREA RE-
5	10-11	11	0-21	11	81.3	CRW-3	9-11	10	3-6	5	37.0	SAND BLASTED ON
6	8-11	10	6-9	8	59.1	↓ 4	9-13	11	12-66	39	288.3	6-30-92. PRIOR
7	8-10	9	0-0	0	< BKGD	(#4 CONE END WALL - CEW)						READING = 1440 CPM =
8	7-11	9	9-30	20	147.8	CEW-2	9-11	10	6-12	9	66.5	10,348 DPM
9	8-12	10	14-60	37	273.5	↓ 3	9-11	10	1-15	8	59.1	
↓ 10	8-12	10	14-65	40	295.7	(#4 CONE TUNNEL WALL - CTW)						
(#4 TUNNEL LEFT WALL - TLW)						CTW-1	9-11	10	6-18	12	88.7	
TLW-1	9-10	10	24-39	32	236.5							
2	8-10	9	18-21	20	147.8							
3	8-10	9	18-30	24	177.4							
4	7-11	9	27-33	30	221.7							
5	10-11	11	66-66	66	487.8							
6	8-11	10	63-126	95	702.2							
7	8-10	9	18-90	54	399.1							
8	7-11	9	27-51	39	288.3							
9	8-12	10	27-30	29	214.3				N/A			
↓ 10	8-12	10	30-33	32	236.5							
(#4 TUNNEL RIGHT WALL - TRW)												
TRW-1	9-10	10	24-42	33	243.9							
2	8-10	9	33-39	36	266.1							
3	8-10	9	30-60	45	332.6							
4	7-11	9	18-108	58	428.7							
5	10-11	11	18-66	47	347.4							
6	8-11	10	24-72	48	354.8							
7	8-10	9	12-87	50	369.6							
↓ 8	7-11	11	0-6	3	22.2							

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EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180. (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #5 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 5 of 6
Made By MC, Date 6-26, 6-30-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²
(#5 TUNNEL FLOOR — TF)					
TF-1	10-13	12	9-12	11	81.3
2	8-10	9	24-30	27	199.6
3	8-10	9	6-24	15	110.9
4	8-11	10	30-30	30	221.7
5	8-10	9	63-135	99	731.7
6	8-10	9	42-96	69	510.0
7	8-10	10	48-108	78	576.5
8	8-10	10	54-57	56	413.9
9	8-12	10	6-30	18	133.0
10	8-10	9	6-18	12	88.7
11	9-10	10	6-30	18	133.0
(#5 TUNNEL CEILING — TC)					
TC-1	10-13	12	48-99	74	547.0
2	8-10	9	9-12	11	81.3
3	8-10	9	12-12	12	88.7
4	8-11	10	42-57	50	369.6
5	8-10	9	9-24	17	125.7
6	8-10	9	18-134	76	561.7
7	8-10	9	0-3	2	14.8
8	8-10	9	3-3	3	22.2
9	8-12	10	0-36	18	133.0
10	8-10	9	0-36	18	133.0
11	9-10	10	60-69	65	480.4
(#5 TUNNEL LEFT WALL — TLW)					
TLW-1	10-13	12	0-18	9	66.5
2	8-10	9	18-54	36	266.1
3	8-10	9	24-132	78	576.5
4	8-11	10	24-72	48	354.8
5	8-10	9	12-18	15	110.9
6	8-10	9	18-78	48	354.8
7	8-10	9	3-18	11	81.3
8	8-10	9	6-6	6	44.3
9	8-12	10	3-36	20	147.8
10	8-10	9	0-3	2	14.8
11	9-10	10	0-6	3	22.2
(#5 TUNNEL RIGHT WALL — TRW)					
TRW-1	10-13	12	3-6	5	37.0
2	8-10	9	18-36	27	199.6
3	8-10	9	0-6	3	22.2
4	8-11	10	12-22	17	125.7
5	8-10	9	12-66	39	288.3
TRW-6	8-10	9	12-96	54	399.1
7	8-10	9	24-42	33	243.9
8	8-10	9	12-54	33	243.9
9	8-12	10	20-72	46	340.0
10	8-10	9	0-66	33	243.9
11	9-10	10	6-18	12	88.7
(#5 CONE FLOOR — CF)					
CF-1	9-11	10	18-21	20	147.8
2	9-10	10	12-12	12	88.7
3	9-11	10	36-36	36	266.1
4	9-13	11	18-24	21	155.2
(#5 CONE CEILING — CC)					
CC-1	9-11	10	0-3	2	14.8
2	9-10	10	27-51	39	288.3
3	9-11	10	12-30	21	155.2
4	9-13	11	0-12	6	44.3
(#5 CONE LEFT WALL — CLW)					
CLW-1	9-11	10	9-12	11	81.3
2	9-10	10	9-33	21	155.2
(#5 CONE RIGHT WALL — CRW)					
CRW-3	9-11	10	0-3	2	14.8
4	9-13	11	6-6	6	44.3
(#5 CONE END WALL — CEW)					
CEW-2	9-10	10	12-21	17	125.7
3	9-11	10	3-12	8	59.1
(#5 CONE TUNNEL WALL — CTW)					
CTW-1	9-11	10	0-18	9	66.5

N/A

COMMENTS

NOTE: THE DIRECTION OF INCREMENTAL READING IS FROM NORTH EXIT-CCD BSMT. TO SOUTH ENTRY-CONE AND ALL SURVEYS ARE DONE ON APPROXIMATED 10' X 10' GRID AREAS AFTER ALL DECONTAMINATION BY PRESSURIZED SAND BLASTING W/WATER IS DONE.

TF-1: AREA RE-SAND BLASTED ON 6-30-92. PRIOR READING = 1820 CPM = 13,452 DPM.

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INSTRUMENTATION

UNC

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUO/19/9180. (C5127/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #6 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 6 of 8
Made By [illegible]
Date 9-8-92
Chkd. By
Date

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²
(#6 TUNNEL FLOOR - TF)					
TF-1	8-10	9	3-6	5	37.0
2	10-12	11	18-24	21	155.2
3	8-12	10	6-78	42	310.4
4	10-12	11	18-30	24	177.4
5	10-12	11	108-126	117	864.8
6	9-11	10	72-102	87	643.0
7	12-15	14	66-78	69	510.0
8	8-11	10	36-78	57	421.3
9	8-12	10	60-102	81	598.7
10	8-12	10	65-110	88	650.4
(#6 TUNNEL CEILING - TC)					
TC-1	8-10	9	3-60	32	236.5
2	10-12	11	3-3	3	22.2
3	8-12	10	3-9	6	44.3
4	10-12	11	60-78	69	510.0
5	10-12	11	6-60	33	243.9
6	9-11	10	6-12	9	66.5
7	12-15	14	12-36	24	177.4
8	8-11	10	12-48	30	221.7
9	8-12	10	48-66	57	421.3
10	8-12	10	53-68	61	450.9
(#6 TUNNEL LEFT WALL - TLW)					
TLW-1	8-10	9	3-24	14	103.5
2	10-12	11	6-9	8	59.1
3	8-12	10	6-54	30	221.7
4	10-12	11	42-126	84	620.9
5	10-12	11	24-84	54	399.1
6	9-11	10	24-24	24	177.4
7	12-15	14	18-18	18	133.0
8	8-11	10	18-36	27	199.6
9	8-12	10	6-24	15	110.9
10	8-12	10	7-28	18	133.0
(#6 TUNNEL RIGHT WALL - TRW)					
TRW-1	8-10	9	90-102	96	709.6
2	10-12	11	60-66	63	465.7
3	8-12	10	6-54	30	221.7
4	10-12	11	30-90	60	443.5
5	10-12	11	102-109	106	783.5
6	9-11	10	66-102	84	620.9
7	12-15	14	12-60	36	266.1
8	8-11	10	3-66	35	258.7

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²
TRW-9	8-12	10	24-102	72	532.2
10	8-12	10	17-111	64	473.0
(#6 CONE FLOOR - CF)					
CF-1	8-10	9	12-60	36	266.1
2	12-18	15	6-30	18	133.0
3	9-11	10	18-60	39	288.3
4	10-12	11	36-66	51	377.0
(#6 CONE CEILING - CC)					
CC-1	8-10	9	18-78	48	354.8
2	12-18	15	18-36	27	199.6
3	9-11	10	24-84	54	399.1
4	10-12	11	30-36	33	243.9
(#6 CONE LEFT WALL - CLW)					
CLW-1	8-10	9	36-96	66	487.8
2	12-18	15	18-78	48	354.8
(#6 CONE RIGHT WALL - CRW)					
CRW-3	9-11	10	36-36	36	266.1
4	10-12	11	12-36	24	177.4
(#6 CONE END WALL - CEW)					
CEW-2	12-18	15	18-30	24	177.4
3	9-11	10	42-66	54	399.1
(#6 CONE TUNNEL WALL - CTW)					
CTW-1	8-10	9	3-42	23	170.0

N/A

COMMENTS

NOTE: THE DIRECTION OF INCREMENTAL READING IS FROM WEST EXIT - CCD BSMT. TO SOUTH ENTRY - CONE AND ALL SURVEYS ARE DONE ON APPROXIMATED 10'X10' GRID AREAS AFTER ALL DECONTAMINATION BY PRESSURIZED SAND-BLASTING W/WATER IS DONE.

TF 5-7: DECON AFTER FURTHER SANDBLASTING INCLUDING ACID WASH ON 7-13-92. PRIOR READING-C̄ = 859 CPM = 6,345 DPM.

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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD-THICKNER TUNNEL CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

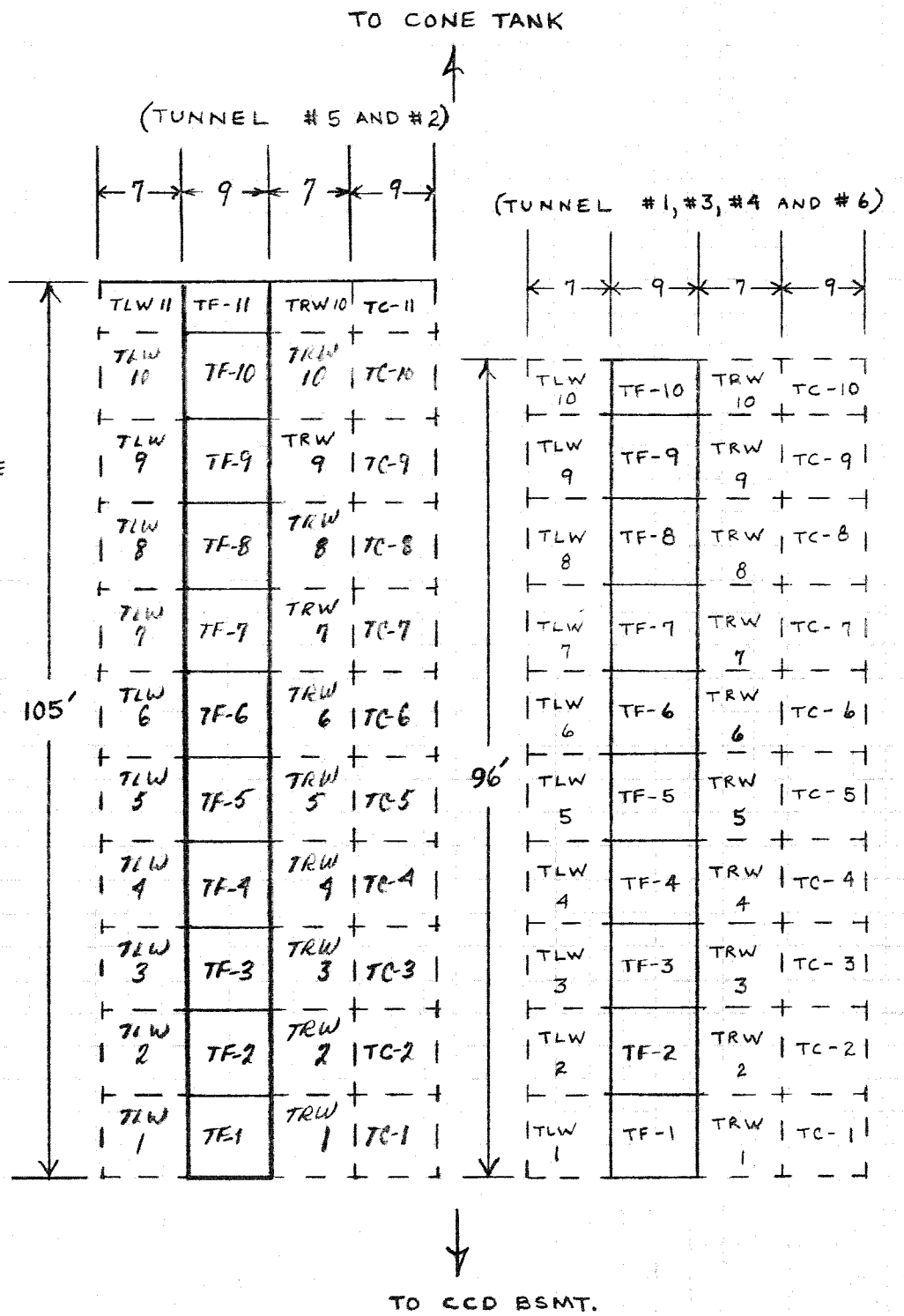
Sheet No. 7 of 8
Made By MC, Date 7-6-92
Chkd. By _____ Date _____

L – LEFT
R – RIGHT
W – WALL
F – FLOOR
C – CEILING
T – TUNNEL

NOT TO SCALE

GRID AT 10' CENTERS

DOTTED LINES INDICATE WALL AND CEILING



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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD-THICKNER CONE TANK COMPARTMENT CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

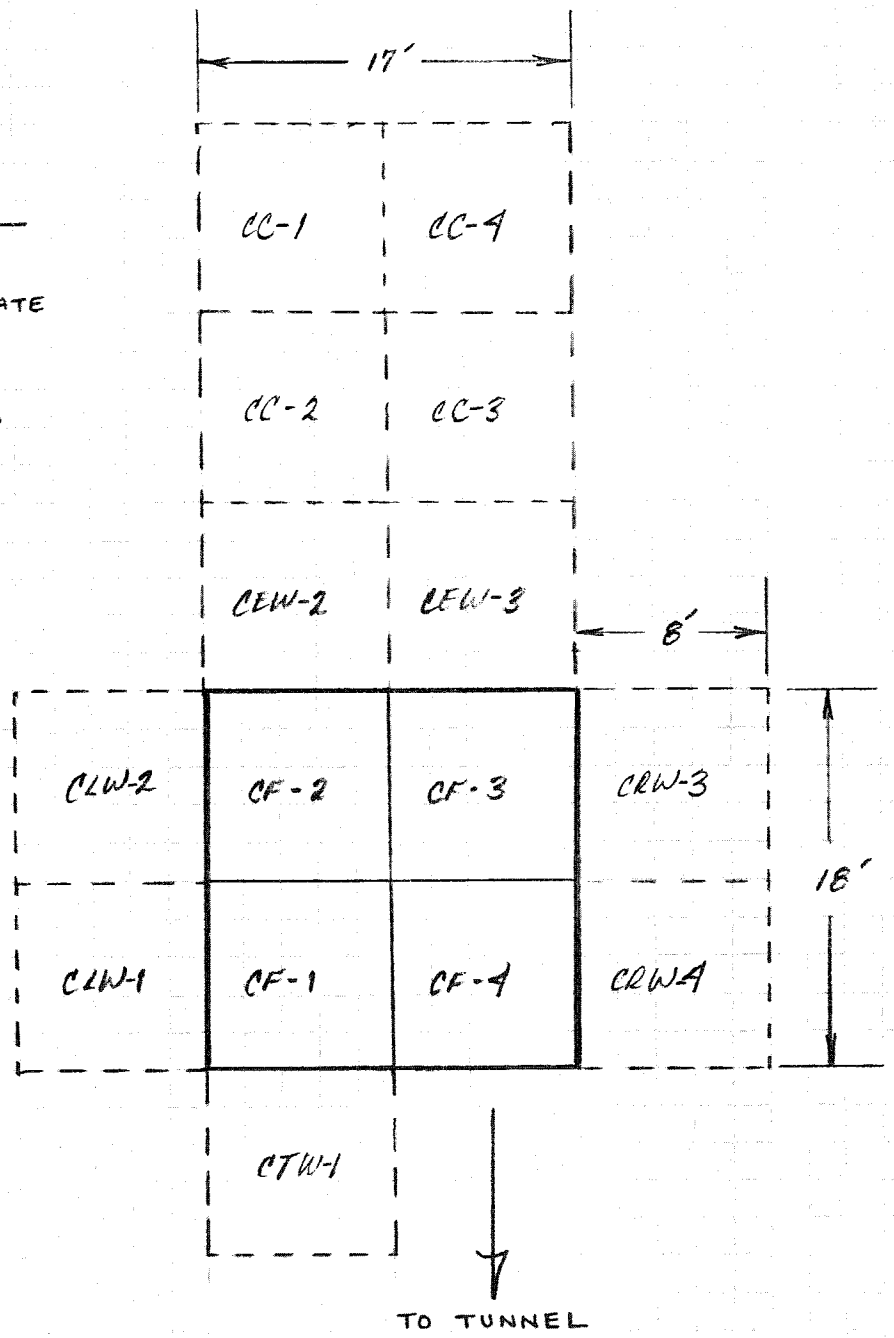
Sheet No. 8 of 8
Made By MC, Date 7-6-92
Chkd. By _____ Date _____

CC - CONE / CEILING
E - END
T - TUNNEL
L - LEFT
R - RIGHT
W - WALL
F - FLOOR
C - CONE

— NOT TO SCALE —

DASHED LINES INDICATE WALL AND CEILING

GRID ≅ 10' CENTERS



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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92
Sample I.D.:	Basement N	Basement SW Corner	#2 NE	#4 NE	#3 SW
Sample Date:	04-08-92	04-08-92	04-06-92	04-07-92	04-06-92
Report Date:	04-22-92	04-22-92	04-22-92	04-22-92	04-22-92
Sample Number:	92-8113	92-8114	92-8115	92-8116	92-8117
RADIOMETRIC pCi/gm:					
U	22.9	26.6	8.3	1.1	16.9
Ra226	1.2	0.6	1.1	0.5	0.9
Ra Prec. +/-	0.1	0.1	0.1	0.1	0.1

Project:	Churchrock	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92
Sample I.D.:	#5 Cone	#6 Cone	#3 SE	#3 Cone	#4 Cone
Sample Date:	04-07-92	04-07-92	04-06-92	04-06-92	04-06-92
Report Date:	04-22-92	04-22-92	04-22-92	04-22-92	04-22-92
Sample Number:	92-8118	92-8119	92-8120	92-8121	92-8122
RADIOMETRIC pCi/gm:					
U	0.5	0.4	0.7	0.6	1.1
Ra226	1.0	0.6	0.8	0.4	0.6
Ra Prec. +/-	0.1	0.1	0.1	0.1	0.1

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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92
Sample I.D.:	#5 NW	#2 SE	#5 SW	#6 NE	#1 SW
Sample Date:	04-07-92	04-06-92	04-07-92	04-07-92	04-06-92
Report Date:	04-22-92	04-22-92	04-22-92	04-22-92	04-22-92
Sample Number:	92-8123	92-8124	92-8125	92-8126	92-8127
RADIOMETRIC pCi/gm:					
U	1.8	1.0	2.1	3.3	8.5
Ra226	0.8	0.5	0.6	0.5	0.6
Ra Prec. +/-	0.1	0.1	0.1	0.1	0.1

Project:	Churchrock	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92	EW-1-4-92
Sample I.D.:	Basement SE Corner	#1 Cone	Basement Sump	#6 SW	#4 SW
Sample Date:	04-08-92	04-06-92	04-08-92	04-07-92	04-07-92
Report Date:	04-22-92	04-22-92	04-22-92	04-22-92	04-22-92
Sample Number:	92-8128	92-8129	92-8130	92-8131	92-8132
RADIOMETRIC pCi/gm:					
U	3.5	0.9	10.2	2.9	29.7
Ra226	1.2	0.6	1.1	0.7	0.6
Ra Prec. +/-	0.1	0.1	0.1	0.1	0.1

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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	#5 East	#5 South	#5 Tunnel Middle	#3 South
Sample Date:	04-28-92	04-28-92	04-30-92	04-28-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13898	92-13899	92-13900	92-13901
RADIOMETRIC pCi/gm:				
U	1.2	3.6	2.7	4.2
Ra226	1.3	0.9	1.3	0.7
Ra Prec. +/-	0.4	0.1	0.1	0.1

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	#6 Northeast	#4 East	#3 Tunnel Middle	#4 Tunnel Middle
Sample Date:	04-28-92	04-28-92	04-30-92	04-30-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13902	92-13903	92-13904	92-13905
RADIOMETRIC pCi/gm:				
U	3.1	4.7	1.7	1.0
Ra226	0.8	0.8	0.7	0.7
Ra Prec. +/-	0.1	0.1	0.1	0.1

Q.A. MANAGER: R.A. Starling
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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	#1 Northeast	#3 North	#6 East	#2 North
Sample Date:	04-22-92	04-28-92	04-28-92	04-27-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13906	92-13907	92-13908	92-13909
RADIOMETRIC pCi/gm:				
U	9.6	17.2	2.1	10.3
Ra226	0.5	5.8	0.6	0.6
Ra Prec. +/-	0.1	0.2	0.1	0.1

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	#1 Northwest	South Side CCD Pump	#2 West	#4 West
Sample Date:	04-27-92	04-30-92	04-28-92	04-28-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13910	92-13911	92-13912	92-13913
RADIOMETRIC pCi/gm:				
U	7.6	1.9	1.0	6.3
Ra226	0.8	1.1	0.5	0.6
Ra Prec. +/-	0.1	0.1	0.1	0.1

Q.A. MANAGER: R.A. Lueling
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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	#5 Tunnel Base	#6 Tunnel Base	#1 Tunnel Middle	#2 Tunnel Middle
Sample Date:	04-30-92	04-30-92	04-30-92	04-30-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13914	92-13915	92-13916	92-13917
RADIOMETRIC pCi/gm:				
U	1.5	3.6	3.2	8.6
Ra226	0.7	0.7	1.0	1.0
Ra Prec. +/-	0.1	0.1	0.1	0.1

Project:	Churchrock	Churchrock	Churchrock	Churchrock
UNC Submittal #:	EW-9-5-92	EW-9-5-92	EW-9-5-92	EW-9-5-92
Sample I.D.:	CCD Basement NE Corner	#6 Tunnel Middle	#6 - 15' South Side of Cone	Grizzly Tunn Middle
Sample Date:	04-30-92	04-30-92	04-28-92	05-01-92
Report Date:	06-01-92	06-01-92	06-01-92	06-01-92
Sample Number:	92-13918	92-13919	92-13920	92-13921
RADIOMETRIC pCi/gm:				
U	8.4	17.2	3.4	1.1
Ra226	0.8	0.7	1.0	0.8
Ra Prec. +/-	0.1	0.1	0.1	0.1

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SOIL ANALYSIS REPORT - UNC MINING & MILLING, INC.

Project:	Churchrock
UNC Submittal #:	EW-9-5-92
Sample I.D.:	CCD Basement NW Corner
Sample Date:	04-30-92
Report Date:	06-01-92
Sample Number:	92-13922
RADIOMETRIC pCi/gm:	
U	6.4
Ra226	1.3
Ra Prec. +/-	0.1

Q.A. MANAGER: R.O. Gerling
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CONCRETE SURFACE RADIOLOGICAL DATA

- CCD Basement Surface
  CCD Basement Potable Water, Drain and Conduit Pipe Outlets
  Electrical (Vault) Manhole Surface
- CCD Thickner Floor
- Grizzly Tunnel and Basement Surfaces
- CCD Thickner Tunnel and Tunnel Cone Area Surface

Radiological Data

for

CCD Basement Surface

CCD Basement Potable Water, Drain and Conduit Pipe Outlets

Electrical (Vault) Manhole Surface

Refer Area ID in Field Data Sheet to Diagram to Locate Data Points

UNC MINING AND MILLING

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INSTRUMENTATION

UNC EBERLINE PS-2/285 W/AC-3/714209. (Th230/U093) = 23.0% EFF.
LVD/19/9180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD CEMENT BASEMENT AND OTHER MATERIAL SURFACE AREAS. Sheet No. 1 of 3 Made By AC, Date 7-9-92 Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(F	LOOR	—	—	—	F)	SW-26	10-14	12	24-30	27	199.6	
F-1	11-14	12	1-2	2	14.8	35	10-14	12	24-30	27	199.6	NOTE:
2	10-13	12	4-14	9	66.5	(SOUTH	TOP	WALL	—	STW)		ALL SURVEYS ARE
3	10-12	11	1-42	22	162.6	STW-5	10-14	12	18-30	24	177.4	DONE ON APPROXIMAT-
4	9-14	12	8-14	11	81.3	6	10-14	12	18-24	21	155.2	ED 10'x10' GRID
5	10-14	12	4-6	5	37.0	15	10-14	12	12-36	24	177.4	AREAS AFTER ALL
6	10-14	12	40-42	41	303.0	16	10-14	12	18-30	24	177.4	DECONTAMINATION BY
7	9-14	12	4-6	5	37.0	25	10-14	12	3-12	8	59.1	PRESSURIZED SAND-
8	10-12	11	1-4	3	22.2	26	10-14	12	3-12	8	59.1	BLASTING W/WATER
9	10-13	12	2-4	3	22.2	35	10-14	12	12-48	30	221.7	IS DONE.
10	11-14	12	0-4	2	14.8	(NORTH	WALL	—	NW)			(SEE SHEET 3 OF 3
11	11-14	12	1-30	16	118.3	NW-1	10-11	11	6-12	9	66.5	DIAGRAM FOR AREA
12	10-13	12	8-20	14	103.5	10	10-12	11	3-42	23	170.3	ID LOCATION)
13	10-12	11	12-36	24	177.4	11	10-12	11	3-12	8	59.1	
14	9-14	12	3-12	8	59.1	20	11-14	13	6-24	15	110.9	
15	10-14	12	2-8	5	37.0	21	14-16	15	15-39	27	199.6	
16	10-14	12	6-8	8	59.1	30	10-13	12	11-15	13	96.1	
17	9-14	12	3-8	6	44.3	31	10-13	12	0-27	14	103.5	
18	10-12	11	1-30	16	118.3	(NORTH	TOP	WALL	—	NTW)		
19	10-13	12	1-38	20	147.8	NTW-1	10-11	11	6-12	9	66.5	
20	11-14	12	10-15	13	96.1	10	10-12	11	3-12	8	59.1	
21	11-14	12	12-20	16	118.3	11	10-12	11	6-6	6	44.3	
22	10-13	12	2-28	15	110.9	20	11-14	13	14-21	18	133.0	
23	10-12	11	2-6	4	29.6	21	14-16	15	15-30	23	170.0	
24	9-14	12	1-2	2	14.8	30	10-13	12	3-15	9	66.5	
25	10-14	12	2-20	11	81.3	31	10-13	12	6-18	12	88.7	
26	10-14	12	4-20	12	88.7	(EAST	WALL	—	EW)			
27	9-14	12	1-6	4	29.6	EW-1	10-11	11	3-18	11	81.3	
28	10-12	11	12-26	19	140.4	2	10-11	11	12-24	18	133.0	
29	10-13	12	4-30	17	125.7	3	10-11	11	12-24	18	133.0	
30	11-14	12	0-6	3	22.2	4	10-11	11	6-42	24	177.4	
31	11-14	12	18-23	21	155.2	5	10-11	11	6-12	9	66.5	
32	10-13	12	6-10	8	59.1	(EAST	TOP	WALL	-ETW)			
33	10-12	11	6-18	12	88.7	ETW-1	10-11	11	3-18	11	81.3	
34	9-14	12	6-6	6	44.3	2	10-11	11	12-18	15	110.9	
35	10-14	12	1-2	2	14.8	3	10-11	11	12-18	15	110.9	
(S	OUTH	WALL	—	SW)		4	10-11	11	12-12	12	88.7	
SW-5	10-14	12	36-42	39	288.3	5	10-11	11	12-12	12	88.7	
6	10-14	12	18-30	24	177.4							
15	10-14	12	3-12	8	59.1			N				
16	10-14	12	3-12	8	59.1			A				
25	10-14	12	36-36	36	266.1							

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 28.0% EFF.
LUD/19/9180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD CEMENT BASEMENT AND OTHER MATERIAL SURFACE AREAS

Sheet No. 2 of 3
Made By mc Date 7-9-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(WEST WALL — WW)						(PRECIP MANHOLE FLOOR — PMF)						PRECIP MANHOLE IS LOCATED NORTH OF MILL BLDG. AREA.
WW-31	10-14	12	6-6	6	44.3	PMF	8-10	9	5-15	10	73.9	
32	8-12	10	9-18	14	103.5	(PRECIP MANHOLE SOUTH WALL-PMSW)						
33	11-14	13	6-15	11	81.3	PMSW	8-10	9	6-6	6	44.3	
34	10-13	12	12-48	30	221.7	(PRECIP MANHOLE NORTH WALL-PMNW)						
35	10-12	11	6-36	21	155.2	PMNW	8-10	9	4-6	5	37.0	
(WEST WALL TOP — WWT)						(PRECIP MANHOLE EAST WALL-PMEW)						
WWT-31	10-14	12	15-18	17	125.7	PMEW	8-10	9	2-8	5	37.0	
32	8-12	10	3-12	8	59.1	(PRECIP MANHOLE WEST WALL-PMWW)						
33	11-14	13	0-9	5	37.0	PMWW	8-10	9	10-18	14	103.5	
34	10-13	12	12-24	18	133.0							
35	10-12	11	12-13	13	96.1							SURVEY DONE ON ALL SIDES OF PILLAR
(WEST PILLAR BOTTOM — WPB)												
WPB	10-12	11	3-6	5	37.0							
(WEST PILLAR TOP — WPT)												CONTAMINATED STAIRWAY IS TAKEN OUT & BURIED IN BP#2
WPT	10-12	11	3-12	8	59.1							
(EAST PILLAR BOTTOM — EPB)												
EPB	8-12	10	3-24	14	103.5							READING C̄ = 152 CPM = 1,123.5 DPM
(EAST PILLAR TOP — EPT)												
EPT	8-12	10	3-6	5	37.0							
(4-6" x 6" DRAIN PIPES — DP-1)												SURVEY DONE ON THE INTERIOR AREAS OF DRAIN PIPES WHICH ARE LOCATED ON WALL AREAS.
DP-1	8-10	9	10-20	15	110.9							
(2-8" x 8" DRAIN PIPES — DP-2)												
DP-2	8-10	9	5-20	13	96.1							
(1-3' x 3' DRAIN PIPE — DP-3)									N/A			DP-3: ALL SOIL SETTLEMENT @ BOTTOM OF PIPE IS REMOVED BY WATER PRESSURE PRIOR TO CAPPING.
DP-3	14-15	15	47-113	80	591.3							
(5-3" x 3" CONDUITS — C)												
C	8-10	9	5-50	28	207.0							
			N/A									NOTE: SEE SHEET 3 OF 3 DIAGRAM FOR AREA ID LOCATION.

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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD - BASEMENT CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

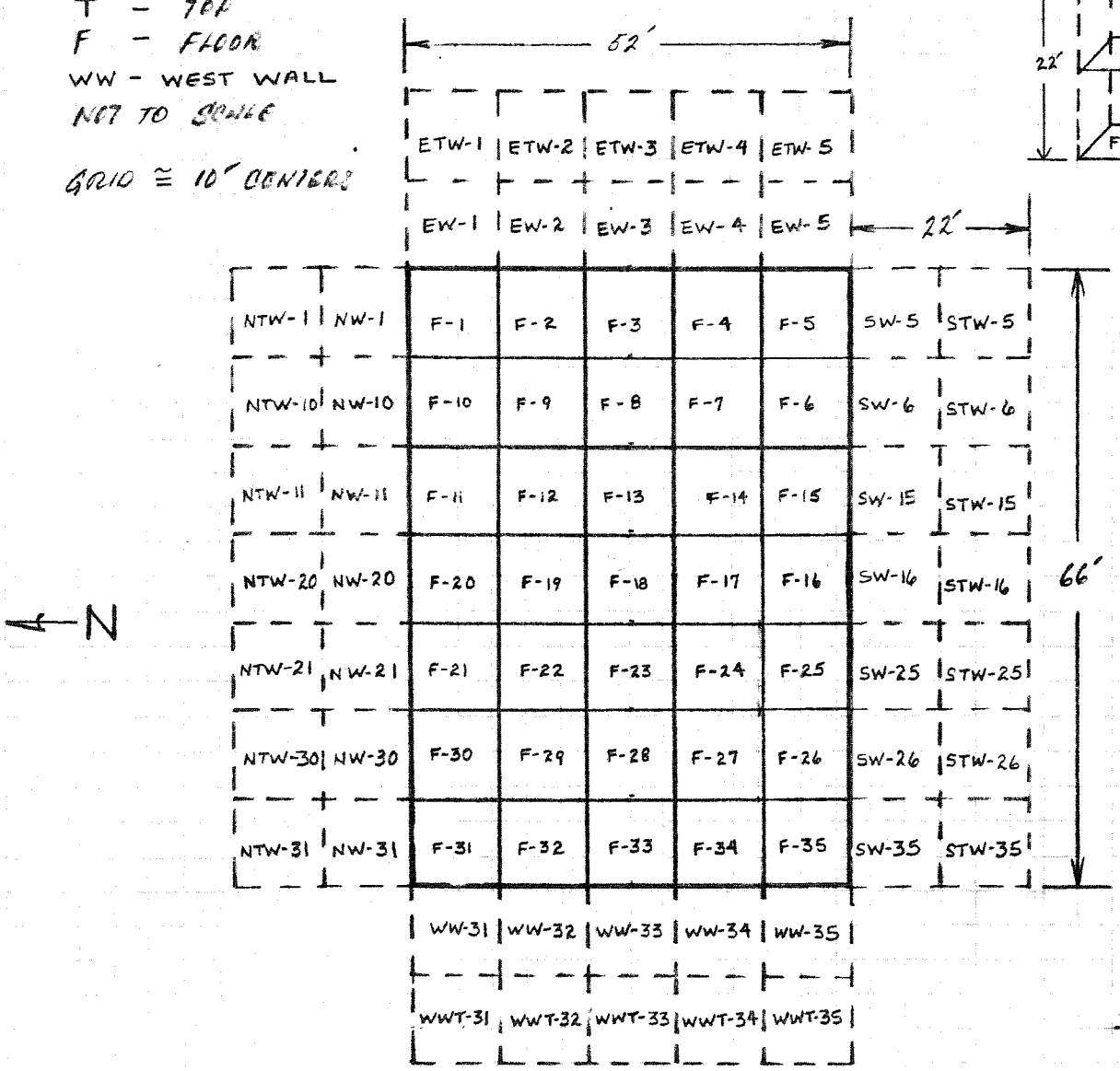
Sheet No. 3 of 3
Made By mc, Date 7-9-92
Chkd. By _____ Date _____

N - NORTH
S - SOUTH
E - EAST
W - WALL
T - TOP
F - FLOOR
WW - WEST WALL
NOT TO SCALE

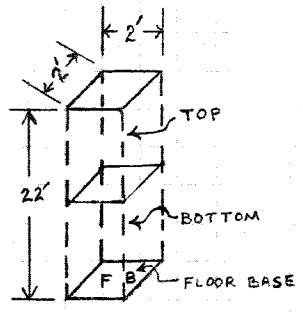
GRID ≅ 10' CENTERS

BROKEN LINES INDICATE WALLS

CCD BASEMENT

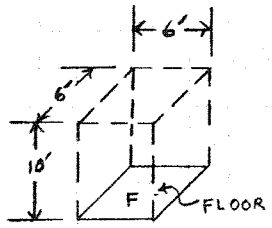


CCD PILLAR



NOTE: PILLARS ARE LOCATED ON F-9 AND F-29 AREA.

Elect. MANHOLE



Radiological Data

for

CCD Thickner Floor Surface

Refer Area ID in Field Data Sheet to Diagram to Locate Data Points

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INSTRUMENTATION

EBERLINE PS-2/285 W/AC-3/714 209. (Th 230/11093) = 28.0% EFF.
LVP/19/9180 (Cs 137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #1 THICKNER SURFACE AREA, AFTER CLEANUP

Sheet No. 1 of 10
Made By MC, Date 6-28-92
Chkd. By _____ Date _____

AREA # ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM / 100CM²	AREA ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM / 100CM²	COMMENTS
ITS-1	5-9	7.0	15-63	39	288.3	ITS-43	6-9	7.5	33-57	45	332.6	ITS-#1 THICKNER SURFACE
2	5-9	7.0	9-69	39	288.3	44	6-9	7.5	24-126	75	554.3	
3	5-9	7.0	15-18	17	125.7	45	6-9	7.5	30-60	45	332.6	NOTE: FOR ITS -
4	6-9	7.5	15-69	42	310.4	46	6-9	7.5	36-42	39	288.3	ALL SURVEYS ARE
5	6-9	7.5	21-63	42	310.4	47	6-9	7.5	12-30	21	155.2	DONE ON APPROXIM-
6	6-9	7.5	9-69	39	288.3	48	6-9	7.5	9-51	30	221.7	ATED 10'X10' GRID
7	6-9	7.5	30-60	45	332.6	49	6-9	7.5	89-120	104	768.7	AREAS & AFTER 2
8	6-9	7.5	15-15	15	110.9	50	6-9	7.5	45-114	80	591.3	HOT SPOTS (1'X1')
9	6-9	7.5	9-18	14	103.5	51	6-9	7.5	21-30	26	192.2	ARE DECONTAMINATED
10	6-9	7.5	9-9	9	66.5	52	6-9	7.5	9-9	9	66.5	BY PRESSURIZED SAND
11	5-9	7.5	18-27	23	170.0	53	6-9	7.5	36-39	38	280.9	BLASTING W/WATER.
12	5-9	7.5	4-21	13	96.1	54	6-9	7.5	9-24	17	125.7	(SEE DIAGRAM ON SHEET
13	5-9	7.5	12-15	14	103.5	55	5-9	7.0	9-12	11	81.3	#10 OF 10 FOR LOCATION
14	5-9	7.5	60-108	84	620.9	56	5-9	7.0	27-96	62	458.3	OF AREA ID GRID),
15	5-9	7.5	15-21	18	133.0	57	5-9	7.0	39-54	47	347.4	ITS-56: CEMENT TO CONE BSMT. AREA
16	5-9	7.5	15-75	45	332.6	58	5-9	7.0	6-12	9	66.5	
17	5-9	7.5	24-57	41	303.0	59	5-9	7.0	6-15	11	81.3	* SEE DIAGRAM ON
18	5-9	7.5	24-42	33	243.9	60	5-9	7.0	9-27	18	133.0	SHEET #10 OF 10 FOR
19	5-9	7.5	21-27	24	177.4	61	5-9	7.0	1-18	10	73.9	LOCATION OF AREA ID.
20	5-9	7.5	9-15	12	88.7	62	5-9	7.0	36-114	75	554.3	ITS- STAINED OUTER RIM
21	6-9	7.5	6-15	11	81.3	63	5-9	7.0	30-120	75	554.3	EDGES = 55 CPM - 220 CPM
22	6-9	7.5	9-24	17	125.7	64	5-9	7.0	15-33	24	177.4	ON 7-21-92 & AFTER
23	6-9	7.5	6-18	12	88.7	65	5-9	7.0	12-27	20	147.8	FURTHER HAMMERING
24	6-9	7.5	51-114	83	613.5	66	5-9	7.0	21-117	69	510.0	05-30 CPM = 37-222 DPM
25	6-9	7.5	42-60	51	377.0	67	6-9	7.5	30-108	69	510.0	ITS-66: SLIGHT STAIN
26	6-9	7.5	9-27	18	133.0	68	6-9	7.5	48-129	89	657.8	ITS-68: COVER MATERIAL NEAR CONE BSMT.
27	6-9	7.5	33-39	36	266.1	69	6-9	7.5	60-123	92	680.0	ITS-27: TOP COVER MATERIAL
28	6-9	7.5	15-33	24	177.4	70	6-9	7.5	15-54	35	258.7	
29	6-9	7.5	9-39	24	177.4	71	6-9	7.5	30-36	33	243.9	
30	6-9	7.5	6-72	39	288.3	72	6-9	7.5	9-12	11	81.3	ITS-30: ON CEMENT
31	5-9	7.0	30-90	60	443.5	73	6-9	7.5	9-18	14	103.5	
32	5-9	7.0	15-42	29	214.3	74	6-9	7.5	39-66	53	391.7	
33	5-9	7.0	42-96	69	510.0	75	6-9	7.5	6-24	15	110.9	
34	5-9	7.0	24-51	38	280.9	76	6-9	7.5	3-18	11	81.3	
35	5-9	7.0	45-90	68	502.6	77	6-9	7.5	12-36	24	177.4	
36	5-9	7.0	27-96	62	458.3	78	6-9	7.5	36-129	83	613.5	ITS-78: SLIGHT DISCOLORATION
37	5-9	7.0	52-111	82	606.1	79	5-9	7.0	18-48	33	243.9	
38	5-9	7.0	27-75	51	377.0	80	5-9	7.0	12-81	47	347.4	
39	5-9	7.0	21-69	45	332.6	81	5-9	7.0	24-132	78	576.5	
40	5-9	7.0	9-75	42	310.4	82	5-9	7.0	60-66	63	465.6	
41	5-9	7.0	51-87	69	510.0	83	5-9	7.0	24-36	30	221.7	
42	5-9	7.0	42-129	86	635.7	84	5-9	7.0	57-126	92	680.0	

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UNC EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180. (CS137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD - #1 AND #2 THICKNER CEMENT FLOOR SURFACE AREAS.

Sheet No. 2 of 10
Made By MC Date 6-8, 6-28-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
1TS-85	5-9	7	18-51	35	258.7	2TS-6	5-9	7	6-84	45	332.6	
86	5-9	7	9-27	18	133.0	7	5-9	7	30-120	75	554.3	NOTE: FOR 2TS -
87	5-9	7	21-39	30	221.7	8	5-9	7	15-36	26	192.2	ALL SURVEYS ARE
88	5-9	7	27-72	50	369.6	9	5-9	7	18-45	32	236.5	DONE ON APPROXIMATED
89	5-9	7	30-48	39	288.3	10	5-9	7	20-99	60	443.5	10'X10' GRID AREAS &
90	5-9	7	6-36	21	155.2	11	5-7	6	15-90	53	391.7	AFTER 1 HOT SPOT
91	6-9	7.5	12-33	23	170.0	12	5-7	6	18-66	42	310.4	(1'X6') IS DECONTAMIN-
92	6-9	7.5	30-33	32	236.5	13	5-7	6	15-36	26	192.2	ATED BY PRESSURIZED
93	6-9	7.5	18-66	42	310.4	14	5-7	6	15-63	39	288.3	SANDBLAST W/WATER
94	6-9	7.5	36-96	66	487.8	15	5-7	6	27-45	36	266.1	
95	6-9	7.5	24-114	69	510.0	16	5-7	6	24-36	30	221.7	
96	6-9	7.5	21-48	35	258.7	17	5-7	6	9-42	26	192.2	
97	6-9	7.5	9-12	11	81.3	18	5-7	6	24-27	26	192.2	
98	6-9	7.5	18-34	29	214.3	19	5-7	6	18-36	27	199.6	
99	6-9	7.5	6-42	24	177.4	20	5-7	6	12-66	39	288.3	2TS-20: EXPOSED CEMENT
100	6-9	7.5	33-39	36	266.1	21	5-9	7	18-60	39	288.3	UNDERNEATH COVER
101	6-9	7.5	6-48	27	199.6	22	5-9	7	9-39	24	177.4	2TS-22: TOP COVER
102	5-9	7	9-99	54	399.1	23	5-9	7	36-42	39	288.3	
103	5-9	7	9-114	62	458.3	24	5-9	7	30-42	36	226.1	
104	5-9	7	3-27	15	110.9	25	5-9	7	36-39	38	280.9	
105	5-9	7	12-36	24	177.4	26	5-9	7	30-42	36	226.1	
106	5-9	7	6-24	15	110.9	27	5-9	7	24-42	33	243.9	
107	5-9	7	36-96	66	487.8	28	5-9	7	21-30	26	192.2	
108	5-9	7	15-45	30	221.7	29	5-9	7	18-24	21	155.2	2TS-29: DK. ORANGE
109	5-9	7	9-36	23	170.0	30	5-9	7	18-36	27	199.6	STAIN
110	5-9	7	30-36	33	243.9	31	5-7	6	12-36	24	177.4	2TS-31: BLK. ASPHALT
111	6-9	7.5	36-96	66	487.8	32	5-7	6	36-39	38	280.9	
112	6-9	7.5	18-114	66	487.8	33	5-7	6	33-42	38	280.9	2TS - STAINED OUTER
113	6-9	7.5	18-36	27	199.6	34	5-7	6	18-30	24	177.4	RIM EDGES = 55-
114	6-9	7.5	9-42	26	192.2	35	5-7	6	36-36	36	226.1	220 CPM ON 7-21-92
115	6-9	7.5	18-78	48	354.8	36	5-7	6	24-30	27	199.6	& AFTER FURTHER
116	6-9	7.5	12-66	39	288.3	37	5-7	6	9-15	12	88.7	HAMMERING TO
117	6-9	7.5	9-33	21	155.2	38	5-7	6	18-21	20	147.8	REMOVE = 05-30 CPM
118	6-9	7.5	6-39	23	170.0	39	5-7	6	36-36	36	226.1	= 37-222 DPM
119	6-9	7.5	48-57	53	391.7	40	5-7	6	30-39	38	280.9	
120	6-9	7.5	33-69	51	377.0	41	5-7	6	24-39	32	236.5	
(#2	THICKN	ER	SURF	ACE	- 2TS)	42	5-7	6	39-45	42	310.4	
2TS-1	5-7	6	6-12	9	66.5	43	5-9	7	24-30	27	199.6	
2	5-7	6	6-75	41	303.0	44	5-9	7	30-36	33	243.9	
3	5-7	6	9-60	35	258.7	45	5-9	7	18-27	23	170.0	
4	5-9	7	12-36	24	177.4	46	5-9	7	24-30	30	221.7	
5	5-9	7	12-39	26	192.2	47	5-9	7	21-27	24	177.4	

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INSTRUMENTATION

UNC

EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) = 23.0% EFF.

LVO/19/9180. (Cs137/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD-#2 AND #3 THICKNER CEMENT FLOOR SURFACE AREAS.

Sheet No. 3 of 10

Made By MC Date 6/8, 28/92

Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
2 TS-48	5-9	7	9-12	11	81.3	2 TS-90	5-7	6	36-42	39	288.3	2TS- #2 THICKNER SURFACE
49	5-9	7	36-48	42	310.4	91	5-7	6	33-48	41	303.0	
50	5-9	7	30-33	32	236.5	92	5-7	6	30-60	45	332.6	
51	5-9	7	24-36	30	221.7	93	5-7	6	6-24	15	110.9	
52	5-9	7	30-36	33	243.9	94	5-7	6	24-60	42	310.4	
53	5-9	7	24-30	27	199.6	95	5-7	6	33-120	77	569.1	2TS-95: ORANGE STAIN
54	5-9	7	39-39	39	288.3	96	5-7	6	18-42	30	221.7	
55	5-7	6	21-39	30	221.7	97	5-7	6	6-30	18	133.0	
56	5-7	6	30-36	33	243.9	98	5-7	6	24-30	27	199.6	
57	5-7	6	6-24	15	110.9	99	5-7	6	33-36	35	258.7	
58	5-7	6	18-21	20	147.8	100	5-7	6	6-42	24	177.4	
59	5-7	6	36-87	62	458.3	101	5-7	6	27-42	35	258.7	
60	5-7	6	24-60	42	310.4	102	5-7	6	9-24	17	125.7	
61	5-7	6	33-39	36	266.1	103	5-7	6	30-36	33	243.9	
62	5-7	6	21-42	32	236.5	104	5-7	6	9-21	15	110.9	
63	5-7	6	18-21	20	147.8	105	5-7	6	06-60	33	243.9	
64	5-7	6	21-39	30	221.7	106	5-7	6	24-45	35	258.7	
65	5-7	6	12-39	26	192.2	107	5-7	6	18-33	26	192.2	
66	5-7	6	39-39	39	288.3	108	5-7	6	18-39	29	214.3	
67	5-7	6	15-45	30	221.7	109	5-7	6	15-39	27	199.6	
68	5-7	6	33-36	35	258.7	110	5-7	6	9-45	27	199.6	
69	5-7	6	30-36	33	243.9	111	5-7	6	36-57	47	347.4	
70	5-7	6	18-27	23	170.0	112	5-7	6	9-24	17	125.7	
71	5-7	6	12-60	36	266.1	113	5-7	6	18-27	23	170.0	
72	5-7	6	30-48	39	288.3	114	5-7	6	42-108	75	554.3	
73	5-7	6	18-54	36	266.1	115	5-7	6	18-36	27	199.6	NOTE: FOR 3TS- ALL SURVEYS ARE DONE
74	5-7	6	36-39	38	280.9	116	5-7	6	15-42	29	214.3	ON APPROXIMATED
75	5-7	6	39-39	39	288.3	117	5-7	6	36-39	38	280.9	10'x10' GRID AREAS &
76	5-7	6	9-24	17	125.7	118	5-7	6	15-45	30	221.7	AFTER 2 HOT SPOTS
77	5-7	6	6-27	17	125.7	119	5-7	6	30-48	39	288.3	(16'x3', 3'x2') ARE
78	5-7	6	12-18	15	110.9	120	5-7	6	9-30	20	147.8	DECONTAMINATED BY
79	5-7	6	12-27	20	147.8	(#3 THICKNER SURFACE-3TS)						PRESSURIZED SAND-
80	5-7	6	21-21	21	155.2	3TS-1	4-7	5.5	6-9	8	59.1	BLAST W/WATER.
81	5-7	6	9-36	23	170.0	2	4-7	5.5	0-9	5	37.0	
82	5-7	6	12-18	15	110.9	3	4-7	5.5	3-6	5	37.0	
83	5-7	6	9-21	15	110.9	4	4-7	5.5	2-9	6	44.3	
84	5-7	6	9-24	17	125.7	5	4-7	5.5	6-6	6	44.3	
85	5-7	6	18-24	21	155.2	6	4-7	5.5	3-15	9	66.5	
86	5-7	6	18-33	26	192.2	7	4-7	5.5	3-6	5	37.0	
87	5-7	6	12-39	26	192.2	8	4-7	5.5	3-9	6	44.3	
88	5-7	6	6-36	21	155.2	9	4-7	5.5	25-75	50	369.6	
89	5-7	6	6-36	21	155.2	10	4-7	5.5	6-12	8	59.1	

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INSTRUMENTATION

EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) =23.0% EFF.
LUD/19/9180. (Cs137/1524) =230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD - #3 THICKNER CEMENT FLOOR SURFACE AREAS. Sheet No. 4 of 10 Made By MC Date 6-28-92 Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
3TS-11	4-7	5.5	9-27	18	133.0	3TS-53	4-7	5.5	9-60	35	258.7	3TS- #3 THICKNER SURFACE
12	4-7	5.5	3-15	9	66.5	54	4-7	5.5	15-33	24	177.4	
13	4-7	5.5	6-9	7	51.7	55	4-7	5.5	6-42	24	177.4	
14	4-7	5.5	12-15	14	103.5	56	4-7	5.5	9-33	21	155.2	
15	4-7	5.5	3-9	6	44.3	57	4-7	5.5	12-18	15	110.9	
16	4-7	5.5	9-9	9	66.5	58	4-7	5.5	6-24	15	110.9	3TS- STAINED OUTER
17	4-7	5.5	9-12	11	81.3	59	4-7	5.5	15-15	15	110.9	RIM EDGES =55-220CPM
18	4-7	5.5	12-15	14	103.5	60	4-7	5.5	4-15	10	73.9	ON 7-21-92 & AFTER
19	4-7	5.5	9-15	12	88.7	61	4-7	5.5	15-66	41	303.0	FURTHER HAMMERING
20	4-7	5.5	0-9	5	37.0	62	4-7	5.5	18-24	21	155.2	TO REMOVED = 05-
21	4-7	5.5	6-9	7	51.7	63	4-7	5.5	3-12	8	59.1	20 CPM = 37-148 DPM
22	4-7	5.5	9-15	12	88.7	64	4-7	5.5	9-33	21	155.2	
23	4-7	5.5	6-36	21	155.2	65	4-7	5.5	9-27	18	133.0	
24	4-7	5.5	3-9	6	44.3	66	4-7	5.5	6-15	11	81.3	
25	4-7	5.5	2-15	9	66.5	67	4-7	5.5	3-93	48	354.8	
26	4-7	5.5	12-15	14	103.5	68	4-7	5.5	6-33	20	147.8	
27	4-7	5.5	12-12	12	88.7	69	4-7	5.5	9-24	17	125.7	
28	4-7	5.5	6-15	11	81.3	70	4-7	5.5	3-18	11	81.3	
29	4-7	5.5	3-12	7	51.7	71	4-7	5.5	9-12	11	81.3	
30	4-7	5.5	9-15	12	88.7	72	4-7	5.5	12-54	33	243.9	
31	4-7	5.5	0-18	9	66.5	73	4-7	5.5	6-30	18	133.0	
32	4-7	5.5	1-15	8	59.1	74	4-7	5.5	9-24	17	125.7	
33	4-7	5.5	3-12	7	51.7	75	4-7	5.5	6-15	11	81.3	
34	4-7	5.5	6-15	11	81.3	76	4-7	5.5	9-84	47	347.4	
35	4-7	5.5	3-15	9	66.5	77	4-7	5.5	6-27	17	125.7	
36	4-7	5.5	9-18	14	103.5	78	4-7	5.5	21-24	23	170.0	
37	4-7	5.5	0-3	2	14.8	79	4-7	5.5	15-120	68	502.6	3TS-79: AFTER
38	4-7	5.5	3-9	6	44.3	80	4-7	5.5	12-30	21	155.2	FURTHER DECON
39	4-7	5.5	0-15	8	59.1	81	4-7	5.5	27-90	59	436.1	
40	4-7	5.5	12-15	14	103.5	82	4-7	5.5	12-33	23	170.0	
41	4-7	5.5	0-6	3	22.2	83	4-7	5.5	9-48	29	214.3	
42	4-7	5.5	15-60	38	280.9	84	4-7	5.5	30-123	77	569.1	
43	4-7	5.5	12-30	21	155.2	85	4-7	5.5	12-33	23	170.0	
44	4-7	5.5	15-27	21	155.2	86	4-7	5.5	9-30	20	147.8	
45	4-7	5.5	15-54	35	258.7	87	4-7	5.5	27-81	54	399.1	
46	4-7	5.5	21-117	69	510.0	88	4-7	5.5	15-120	68	502.6	
47	4-7	5.5	24-99	62	458.3	89	4-7	5.5	15-30	23	170.0	
48	4-7	5.5	30-93	62	458.3	90	4-7	5.5	9-57	33	243.9	
49	4-7	5.5	21-27	24	177.4	91	4-6	5.0	12-48	30	221.7	
50	4-7	5.5	33-78	56	413.9	92	4-6	5.0	12-33	23	170.0	
51	4-7	5.5	18-30	24	177.4	93	4-6	5.0	0-15	8	59.1	
52	4-7	5.5	15-90	53	391.7	94	4-6	5.0	6-27	17	125.7	

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11043) =23.0% EFF.
LUD/19/9180. (Cs137/1584) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD- #3 AND #4 THICKNER CEMENT FLOOR SURFACE AREAS.

Sheet No. 5 of 10
Made By MC Date 6/27-28/92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
3TS-95	4-6	5.0	12-18	15	110.9	4TS-16	4-6	5.0	3-3	3	22.2	3TS-#3 THICKNER SURFACE
96	4-6	5.0	12-15	14	103.5	17	4-6	5.0	3-12	8	59.1	
97	4-6	5.0	21-27	24	177.4	18	4-6	5.0	6-12	9	66.5	
98	4-6	5.0	9-15	12	88.7	19	4-6	5.0	6-6	6	44.3	
99	4-6	5.0	3-18	11	81.3	20	4-6	5.0	3-9	6	44.3	
100	4-6	5.0	30-75	53	391.7	21	5-7	6.0	0-9	5	37.0	
101	4-6	5.0	18-27	23	170.0	22	5-7	6.0	3-12	8	59.1	
102	4-6	5.0	9-15	12	88.7	23	5-7	6.0	0-3	2	14.8	
103	4-6	5.0	15-63	39	288.3	24	5-7	6.0	6-27	17	125.7	
104	4-6	5.0	69-111	90	665.2	25	5-7	6.0	6-30	5	37.0	
105	4-6	5.0	18-33	26	192.2	26	5-7	6.0	3-27	15	110.9	
106	4-6	5.0	24-69	47	347.4	27	5-7	6.0	9-33	21	155.2	
107	4-6	5.0	30-84	57	421.3	28	5-7	6.0	15-30	23	170.0	
108	4-6	5.0	27-33	30	221.7	29	5-7	6.0	6-9	8	59.1	
109	4-6	5.0	69-120	95	702.2	30	5-7	6.0	3-12	08	59.1	
110	4-6	5.0	12-30	21	155.2	31	4-6	5.0	3-15	9	66.5	
111	4-6	5.0	12-15	14	103.5	32	4-6	5.0	3-6	5	37.0	
112	4-6	5.0	12-12	12	88.7	33	4-6	5.0	0-9	5	37.0	
113	4-6	5.0	3-9	6	44.3	34	4-6	5.0	3-9	6	44.3	
114	4-6	5.0	3-9	6	44.3	35	4-6	5.0	3-6	5	37.0	
115	4-6	5.0	6-15	11	81.3	36	4-6	5.0	3-12	8	59.1	
116	4-6	5.0	12-15	14	103.5	37	4-6	5.0	9-9	9	66.5	
117	4-6	5.0	0-6	3	22.2	38	4-6	5.0	6-9	8	59.1	
118	4-6	5.0	9-18	14	103.5	39	4-6	5.0	9-9	9	66.5	
119	4-6	5.0	3-12	8	59.1	40	4-6	5.0	3-6	5	37.0	
120	4-6	5.0	9-12	11	81.3	41	4-6	5.0	3-12	8	59.1	
(#4 THICKNER SURFACE — 4TS)						42	4-6	5.0	0-15	8	59.1	NOTE: FOR 4TS-ALL SURVEYS ARE DONE ON APPROXIMATED 10'X 10' GRID AREAS & NO HOT SPOT FOUND DURING PRELIMINARY SURVEY.
4TS-1	4-6	5.0	3-16	10	73.9	43	5-7	6.0	12-51	32	236.5	
2	4-6	5.0	6-12	9	66.5	44	5-7	6.0	3-21	12	88.7	
3	4-6	5.0	6-12	9	66.5	45	5-7	6.0	6-6	6	44.3	
4	5-7	6.0	0-6	3	22.2	46	5-7	6.0	3-12	8	59.1	
5	5-7	6.0	6-6	6	44.3	47	5-7	6.0	9-12	11	81.3	
6	5-7	6.0	0-3	2	14.8	48	5-7	6.0	0-9	5	37.0	
7	5-7	6.0	12-15	14	103.5	49	5-7	6.0	6-9	8	59.1	
8	5-7	6.0	9-15	12	88.7	50	5-7	6.0	6-18	12	88.7	
9	5-7	6.0	27-45	36	266.1	51	5-7	6.0	3-12	8	59.1	
10	5-7	6.0	3-6	5	37.0	52	5-7	6.0	0-9	5	37.0	
11	4-6	5.0	3-3	3	22.2	53	5-7	6.0	0-6	3	22.2	
12	4-6	5.0	3-6	5	37.0	54	5-7	6.0	3-6	5	37.0	
13	4-6	5.0	3-12	8	59.1	55	4-6	5.0	0-3	2	14.8	
14	4-6	5.0	3-6	5	37.0	56	4-6	5.0	3-9	6	44.3	
15	4-6	5.0	0-3	2	14.8	57	4-6	5.0	9-9	9	66.5	

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INSTRUMENTATION

EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) =23.0% EFF.
LUD/19/9180. (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD - #4 AND #5 THICKNER CEMENT FLOOR SURFACE AREAS.

Sheet No. 6 of 10
Made By AC Date 6-27-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
4TS-58	4-6	5.0	0-3	2	14.8	4TS-100	4-6	5.0	9-27	18	133.0	4TS-#4 THICKNER SURFACE
59	4-6	5.0	0-9	5	37.0	101	4-6	5.0	3-18	11	81.3	
60	4-6	5.0	3-3	3	22.2	102	4-7	5.5	9-18	14	103.5	
61	4-7	5.5	3-6	5	37.0	103	4-7	5.5	3-15	9	66.5	
62	4-7	5.5	0-12	6	44.3	104	4-7	5.5	0-12	6	44.3	
63	4-7	5.5	0-3	2	14.8	105	4-7	5.5	0-15	8	59.1	
64	4-7	5.5	3-9	6	44.3	106	4-7	5.5	3-3	3	22.2	
65	4-7	5.5	12-120	66	487.8	107	4-7	5.5	3-33	18	133.0	
66	4-7	5.5	9-33	21	155.2	108	4-7	5.5	9-27	18	133.0	
67	4-6	5.0	3-21	12	88.7	109	4-7	5.5	15-27	21	155.2	
68	4-6	5.0	3-42	23	170.0	110	4-7	5.5	6-24	15	110.9	
69	4-6	5.0	6-57	32	236.5	111	4-6	5.0	9-15	12	88.7	
70	4-6	5.0	12-36	24	177.4	112	4-6	5.0	6-36	21	155.2	
71	4-6	5.0	6-48	27	199.6	113	4-6	5.0	6-6	6	44.3	
72	4-6	5.0	6-6	6	44.3	114	4-6	5.0	0-9	5	37.0	
73	4-6	5.0	3-51	27	199.6	115	4-6	5.0	0-6	3	22.2	
74	4-6	5.0	9-57	33	243.9	116	4-6	5.0	6-9	8	59.1	
75	4-6	5.0	6-15	11	81.3	117	4-6	5.0	12-18	15	110.9	
76	4-6	5.0	3-9	12	88.7	118	4-7	5.5	12-30	16	118.3	
77	4-6	5.0	15-18	16	118.3	119	4-7	5.5	15-30	23	170.0	
78	4-6	5.0	3-12	8	59.1	120	4-7	5.5	6-33	20	147.8	
79	4-7	5.5	6-27	17	125.7	(#5 THICKNER SURFACE - 5TS)						NOTE: FOR 5TS-ALL SURVEYS ARE DONE ON APPROXIMATED 10'x10' GRID AREAS & AFTER 85-90% OF FLOOR AREAS ARE DECONTAMINATED BY PRESSURIZED SAND-BLAST W/WATER.
80	4-7	5.5	12-15	14	103.5	5TS-1	5-7	6.0	6-9	8	59.1	
81	4-7	5.5	0-12	6	44.3	2	5-7	6.0	21-24	23	170.0	
82	4-7	5.5	0-3	2	14.8	3	5-7	6.0	6-57	32	236.5	
83	4-7	5.5	0-9	5	37.0	4	5-7	6.0	6-9	8	59.1	
84	4-7	5.5	9-18	14	103.5	5	5-7	6.0	33-78	56	413.9	
85	4-7	5.5	6-24	15	110.9	6	5-7	6.0	6-13	10	73.9	
86	4-7	5.5	0-15	8	59.1	7	5-7	6.0	30-99	65	480.4	
87	4-7	5.5	3-18	11	81.3	8	5-7	6.0	27-54	41	303.0	
88	4-7	5.5	0-12	6	44.3	9	5-7	6.0	33-42	19	140.4	
89	4-7	5.5	9-9	9	66.5	10	5-7	6.0	15-18	17	125.7	
90	4-7	5.5	9-87	48	354.8	11	5-7	6.0	30-39	35	258.7	
91	4-6	5.0	6-12	9	66.5	12	5-7	6.0	21-36	29	214.3	
92	4-6	5.0	15-36	26	192.2	13	5-7	6.0	24-27	26	192.2	
93	4-6	5.0	3-30	17	125.7	14	5-7	6.0	6-33	20	147.8	
94	4-6	5.0	12-15	14	103.5	15	5-7	6.0	39-42	41	303.0	
95	4-6	5.0	6-54	30	221.7	16	5-7	6.0	9-93	51	377.0	
96	4-6	5.0	15-21	18	133.0	17	5-7	6.0	24-42	33	243.9	
97	4-6	5.0	12-18	15	110.9	18	5-7	6.0	18-21	20	147.8	
98	4-6	5.0	15-30	23	170.0	19	5-7	6.0	12-54	33	243.9	
99	4-6	5.0	15-18	17	125.7	20	5-7	6.0	63-99	81	598.7	

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INSTRUMENTATION

UNC

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
LVO/19/4180. (Cs137/1524) = 230-240 mR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCO-#5 THICKNER CEMENT FLOOR SURFACE AREAS.

Sheet No. 7 of 10
Made By mc Date 6-27-92
Chkd. By _____ Date _____

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
STS-21	5-7	6.0	66-114	90	665.2	STS-63	4-7	5.5	54-60	57	421.3	STS-#5 THICKNER
22	5-7	6.0	27-84	56	413.9	64	4-7	5.5	21-30	26	192.2	SURFACE
23	5-7	6.0	48-69	59	436.1	65	4-7	5.5	21-27	24	177.4	
24	5-7	6.0	9-57	33	243.9	66	4-7	5.5	78-93	86	635.7	
25	5-7	6.0	21-39	30	221.7	67	4-7	5.5	9-120	65	480.4	
26	5-7	6.0	42-45	44	325.2	68	4-7	5.5	6-15	11	81.3	
27	5-7	6.0	57-75	66	487.8	69	4-7	5.5	6-45	26	192.2	
28	5-7	6.0	15-21	18	133.0	70	4-7	5.5	6-12	9	66.5	
29	5-7	6.0	33-42	38	280.9	71	4-7	5.5	6-15	11	81.3	
30	5-7	6.0	27-36	32	236.5	72	4-7	5.5	6-9	8	59.1	
31	5-7	6.0	24-39	32	236.5	73	4-7	5.5	3-36	20	147.8	
32	5-7	6.0	15-24	20	147.8	74	4-7	5.5	6-36	21	155.2	
33	5-7	6.0	9-18	14	103.5	75	4-7	5.5	15-18	17	125.7	
34	5-7	6.0	12-24	18	133.0	76	4-7	5.5	21-84	53	391.7	
35	5-7	6.0	30-36	33	243.9	77	4-7	5.5	3-15	9	66.5	
36	5-7	6.0	27-30	29	214.3	78	4-7	5.5	12-30	21	155.2	
37	5-7	6.0	15-60	38	280.9	79	4-7	5.5	27-33	30	221.7	
38	5-7	6.0	36-45	41	303.0	80	4-7	5.5	39-93	66	487.8	
39	5-7	6.0	9-12	11	81.3	81	4-7	5.5	33-63	48	354.8	
40	5-7	6.0	6-9	8	59.1	82	4-7	5.5	9-42	26	192.2	
41	5-7	6.0	36-45	41	303.0	83	4-7	5.5	12-15	14	103.5	
42	5-7	6.0	48-134	91	672.6	84	4-7	5.5	24-87	56	413.9	
43	5-7	6.0	24-33	29	214.3	85	4-7	5.5	27-81	54	399.1	
44	5-7	6.0	9-27	18	133.0	86	4-7	5.5	15-72	44	325.2	
45	5-7	6.0	6-33	20	147.8	87	4-7	5.5	24-30	27	199.6	
46	5-7	6.0	9-42	26	192.2	88	4-7	5.5	15-45	30	221.7	
47	5-7	6.0	6-48	26	192.2	89	4-7	5.5	9-12	11	81.3	
48	5-7	6.0	9-18	14	103.5	90	4-7	5.5	6-9	8	59.1	
49	5-7	6.0	9-12	14	103.5	91	4-7	5.5	63-120	92	680.0	
50	5-7	6.0	39-45	42	310.4	92	4-7	5.5	6-42	24	177.4	
51	5-7	6.0	9-15	12	88.7	93	4-7	5.5	6-57	32	236.5	
52	5-7	6.0	21-57	39	288.3	94	4-7	5.5	6-8	7	51.7	
53	5-7	6.0	12-39	26	192.2	95	4-7	5.5	9-18	14	103.5	
54	5-7	6.0	12-111	62	458.3	96	4-7	5.5	9-102	56	413.9	
55	5-7	6.0	42-120	81	598.7	97	4-7	5.5	15-63	39	288.3	
56	5-7	6.0	24-33	29	214.3	98	4-7	5.5	24-123	74	547.0	
57	5-7	6.0	21-87	54	399.1	99	4-7	5.5	12-87	50	369.6	
58	5-7	6.0	27-102	65	480.4	100	4-7	5.5	30-78	54	399.1	
59	5-7	6.0	48-57	53	391.7	101	4-7	5.5	3-45	24	177.4	
60	5-7	6.0	6-63	35	258.7	102	4-7	5.5	6-87	47	347.4	
61	4-7	5.5	9-81	45	332.6	103	4-7	5.5	9-18	14	103.5	
62	4-7	5.5	114-123	119	879.6	104	4-7	5.5	33-69	51	377.0	

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INSTRUMENTATION

EBERLINE PS-2/2RS W/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180. (CS137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD - #5 AND #6 THICKNER CEMENT FLOOR SURFACE AREAS

Sheet No. 8 of 10
Made By mc Date 6-27/7-1-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM 100CM²	AREA ID	γ (μR/HR) LO - HI	μR/HR $\bar{C}$	α (CPM) LO - HI	CPM $\bar{C}$	DPM 100CM²	COMMENTS
STS-105	4-7	5.5	18-57	38	280.9	6TS-26	6-8	7.0	12-22	17	125.7	STS-#5 THICKNER SURFACE
106	4-7	5.5	6-9	8	59.1	27	6-8	7.0	15-112	64	473.0	
107	4-7	5.5	12-36	24	177.4	28	6-8	7.0	9-28	19	140.4	
108	4-7	5.5	6-12	9	66.5	29	6-8	7.0	6-37	22	162.6	
109	4-7	5.5	3-72	38	280.9	30	6-8	7.0	30-85	58	428.7	
110	4-7	5.5	9-36	23	170.0	31	5-7	6.0	42-82	62	458.3	
111	4-7	5.5	6-81	44	325.2	32	5-7	6.0	24-70	47	347.4	
112	4-7	5.5	27-39	33	243.9	33	5-7	6.0	12-13	13	96.1	
113	4-7	5.5	18-90	54	399.1	34	5-7	6.0	52-70	61	450.9	
114	4-7	5.5	6-72	39	288.3	35	5-7	6.0	27-31	29	214.3	6TS-36 & 37
115	4-7	5.5	15-78	47	347.4	36	5-7	6.0	21-49	35	258.7	ON LINER
116	4-7	5.5	39-69	54	399.1	37	5-7	6.0	9-85	47	347.4	
117	4-7	5.5	33-72	53	391.7	38	5-7	6.0	9-10	10	73.9	
118	4-7	5.5	15-78	47	347.4	39	5-7	6.0	1-6	4	29.6	
119	4-7	5.5	21-114	68	502.6	40	5-7	6.0	12-58	35	258.7	
120	4-7	5.5	15-18	17	125.7	41	5-7	6.0	24-40	32	236.5	
(#6	THICKN	ER	SURFA	CE —	6TS)	42	5-7	6.0	24-103	64	473.0	
6TS-1	5-7	6.0	9-85	47	347.4	43	6-8	7.0	12-58	35	258.7	6TS - #6 THICKNER SURFACE
2	5-7	6.0	18-34	26	192.2	44	6-8	7.0	9-16	8	59.1	
3	5-7	6.0	3-22	13	96.1	45	6-8	7.0	3-25	14	103.5	ALL READINGS ARE
4	6-8	7.0	15-28	22	162.6	46	6-8	7.0	6-12	9	66.5	ON EXPOSED CEMENT
5	6-8	7.0	15-37	26	192.2	47	6-8	7.0	24-40	32	236.5	EXCEPT WHERE
6	6-8	7.0	9-13	11	81.3	48	6-8	7.0	30-64	47	347.4	INDICATED
7	6-8	7.0	6-58	32	236.5	49	6-8	7.0	18-22	20	147.8	
8	6-8	7.0	6-7	7	51.7	50	6-8	7.0	33-40	37	273.5	NOTE: FOR 6TS-ALL
9	6-8	7.0	12-16	14	103.5	51	6-8	7.0	42-94	68	502.6	SURVEYS ARE DONE
10	6-8	7.0	18-64	41	303.0	52	6-8	7.0	12-28	20	147.8	ON APPROXIMATED
11	5-7	6.0	9-46	28	207.0	53	6-8	7.0	9-46	28	207.0	10'x10' GRID AREAS
12	5-7	6.0	18-61	40	295.7	54	6-8	7.0	21-40	31	229.1	& AFTER 85-90%
13	5-7	6.0	12-118	65	480.4	55	5-7	6.0	9-46	28	207.0	OF FLOOR AREAS ARE
14	5-7	6.0	60-125	93	687.4	56	5-7	6.0	36-52	44	325.2	DECONTAMINATED BY
15	5-7	6.0	12-13	13	96.1	57	5-7	6.0	9-16	13	96.1	PRESSURIZED SAND-
16	5-7	6.0	15-19	17	125.7	58	5-7	6.0	3-4	4	29.6	BLAST W/WATER.
17	5-7	6.0	24-61	43	317.8	59	5-7	6.0	0-1	1	7.4	
18	5-7	6.0	21-118	70	517.4	60	5-7	6.0	0-1	1	7.4	
19	5-7	6.0	9-67	38	280.9	61	5-8	6.5	38-70	54	399.1	
20	5-7	6.0	6-34	20	147.8	62	5-8	6.5	3-4	4	29.6	
21	6-8	7.0	9-25	17	125.7	63	5-8	6.5	6-46	26	192.2	
22	6-8	7.0	6-37	22	162.6	64	5-8	6.5	4-34	19	140.4	
23	6-8	7.0	51-85	68	502.6	65	5-8	6.5	0-28	14	103.5	
24	6-8	7.0	42-94	68	502.6	66	5-8	6.5	3-4	4	29.6	
25	6-8	7.0	9-25	17	125.7	67	5-8	6.5	15-28	22	162.6	

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INSTRUMENTATION

UNC EBERLINE PS-2/285 W/AC-3/714209. (Th230/HDP3 = 23.6% eff.
LUD/19/9180. (Cs137/1524) = 230-240 mR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD-#6 THICKNER CEMENT FLOOR SURFACE AREAS

Sheet No. 9 of 10
Made By MC, Date 7-1-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO - HI	μR/HR C̄	α (CPM) LO - HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO - HI	μR/HR C̄	α (CPM) LO - HI	CPM C̄	DPM 100CM²	COMMENTS
6TS-68	5-8	6.5	0-1	1	7.4	6TS-110	5-8	6.5	3-16	9	66.5	6TS-#6 THICKNER SURFACE
69	5-8	6.5	0-4	2	14.8	111	5-8	6.5	24-58	42	310.4	
70	5-8	6.5	21-22	22	162.6	112	5-8	6.5	33-130	82	606.1	
71	5-8	6.5	15-34	25	184.8	113	5-8	6.5	3-4	4	29.6	CLOSING NOTE: THICKNER
72	5-8	6.5	30-58	44	325.2	114	5-8	6.5	36-118	77	569.1	#1 THRU #6 HAD MIN-
73	5-8	6.5	9-46	28	207.0	115	5-8	6.5	24-82	53	391.7	IUMAL SPOTS OF SUS-
74	5-8	6.5	6-76	41	303.0	116	5-8	6.5	18-88	53	391.7	PECTED CONTAMINATION
75	5-8	6.5	3-70	37	273.5	117	5-8	6.5	9-10	10	73.9	(e.g. ORANGE/YELLOWISH
76	5-8	6.5	39-94	67	495.2	118	5-8	6.5	9-22	16	118.3	STAIN DISCOLORATION)
77	5-8	6.5	3-10	7	51.7	119	5-8	6.5	18-46	32	236.5	ON THE OUTSIDE CEM-
78	5-8	6.5	48-64	56	413.9	120	5-8	6.5	33-58	46	340.0	ENT RIM EDGES/SIDES.
79	5-8	6.5	12-16	14	103.5							THESE AREAS ARE
80	5-8	6.5	3-10	7	51.7							MARKED AND REMOVED
81	5-8	6.5	3-4	4	29.6							BY EQUIPMENT HAMM-
82	5-8	6.5	12-16	14	103.5							ERING AND THE RESULT-
83	5-8	6.5	3-4	7	51.7							ANT DEBRIS WERE
84	5-8	6.5	6-88	47	347.4							PICKED UP & HAULED
85	5-8	6.5	75-130	103	761.3							OFF TO B.P.#2.
86	5-8	6.5	9-10	10	73.9							
87	5-8	6.5	3-4	7	51.7							
88	5-8	6.5	0-1	1	7.4							
89	5-8	6.5	3-16	10	73.9							
90	5-8	6.5	3-4	4	29.6							
91	5-8	6.5	30-52	41	303.0							
92	5-8	6.5	24-58	41	303.0							
93	5-8	6.5	18-58	38	280.9							
94	5-8	6.5	45-124	85	628.3			N				
95	5-8	6.5	21-34	28	207.0				A			
96	5-8	6.5	9-58	34	251.3							
97	5-8	6.5	6-28	17	125.7							
98	5-8	6.5	6-28	17	125.7							
99	5-8	6.5	12-34	23	170.0							
100	5-8	6.5	3-4	4	29.6							
101	5-8	6.5	0-4	2	14.8							
102	5-8	6.5	30-58	44	325.2							
103	5-8	6.5	28-34	31	229.1							
104	5-8	6.5	12-22	17	125.7							
105	5-8	6.5	9-16	13	96.1							
106	5-8	6.5	1-1	1	7.4							
107	5-8	6.5	3-16	10	73.9							
108	5-8	6.5	9-16	13	96.1							
109	5-8	6.5	3-10	7	51.7							

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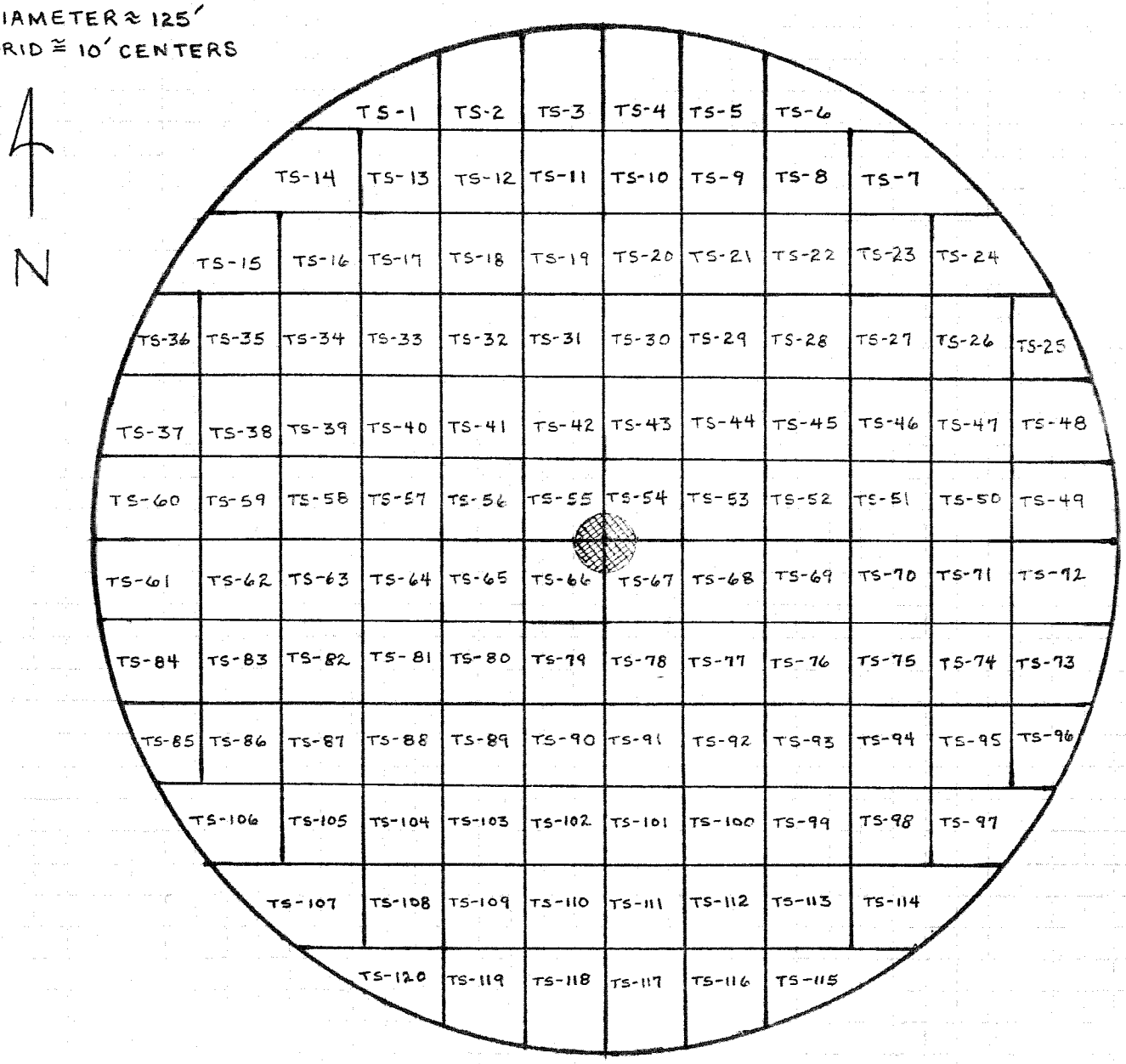
COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD - THICKNER CEMENT FLOOR SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

Sheet No. 10 of 10
Made By MC, Date 7-2-92
Chkd. By _____ Date _____

TS - THICKNER SURFACE
CONE CENTERHOLE DIAMETER ≈ 8'
DIAMETER ≈ 125'
GRID ≅ 10' CENTERS



Radiological Data

for

GrizzlY Tunnel and Basement Surfaces

Refer Area ID in Field Data Sheet to Diagram to Locate Data Points

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209, (Th230/11093) = 23.0% EFF.
LVO/19/9180 (Cs137/1524) = 230-240 uR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF GRIZZLY TUNNEL CEMENT SURFACE AREAS.

Sheet No. 1 of 4
Made By AC, Date 7-2-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(FLOOR					F)	(NORTH WALL - NW)						
F-1	14-15	15	18-24	21	155.2	NW-1	14-15	15	12-30	21	155.2	NOTE:
2	13-15	14	30-36	33	243.9	2	13-15	14	12-18	15	110.9	ALL SURVEYS ARE
3	11-13	12	6-18	12	88.7	3	11-13	12	18-18	18	133.0	DONE ON APPROXIM-
4	9-13	11	30-42	36	266.1	4	9-13	11	6-16	11	81.3	ATED 10'x 10' GRID
5	12-14	13	12-42	27	199.6	5	12-14	13	36-48	42	310.4	AREAS AFTER ALL
6	11-14	13	36-48	42	310.4	6	11-14	13	18-66	42	310.4	DECONTAMINATION BY
7	12-14	13	48-78	60	443.5	7	12-14	13	30-90	60	443.5	PRESSURIZED SAND-
8	11-14	13	48-54	51	377.0	8	11-14	13	12-20	16	118.3	BLASTING W/WATER
9	10-14	12	12-45	30	221.7	9	10-14	12	0-12	6	44.3	IS DONE.
10	12-14	13	0-72	36	266.1	10	12-14	13	30-66	48	354.8	(SEE SHEET 3 OF 4
11	13-15	14	78-90	84	620.9	11	13-15	14	36-90	63	465.7	DIAGRAM FOR AREA ID
12	14-15	15	6-132	69	510.0	12	14-15	15	30-36	33	243.9	LOCATIONS).
13	13-15	14	60-120	90	665.2	13	13-15	14	60-102	81	598.7	
(CEILING					C)							
C-1	14-15	15	6-30	18	133.0							
2	13-15	14	0-12	6	44.3							
3	11-13	12	0-6	3	22.2							
4	9-13	11	0-3	2	14.8							
5	12-14	13	0-3	2	14.8							
6	11-14	13	0-3	2	14.8							
7	12-14	13	0-6	3	22.2							
8	11-14	13	0-3	2	14.8							
9	10-14	12	0-6	3	22.2							
10	12-14	13	0-3	2	14.8							
11	13-15	14	0-6	3	22.2							
12	14-15	15	0-6	3	22.2				N/A			
13	13-15	14	30-90	60	443.5							
(SOUTH WALL - SW)												
SW-1	14-15	15	9-12	11	81.3							
2	13-15	14	12-30	21	155.2							
3	11-13	12	0-36	18	133.0							
4	9-13	11	22-24	23	170.0							
5	12-14	13	18-72	45	332.6							
6	11-14	13	30-30	30	221.7							
7	12-14	13	0-24	12	88.7							
8	11-14	13	30-36	33	243.9							
9	10-14	12	24-30	27	199.6							
10	12-14	13	12-38	25	184.8							
11	13-15	14	18-54	36	266.1							
12	14-15	15	24-42	33	243.9							
13	13-15	14	0-12	6	44.3							

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INSTRUMENTATION

EBERLINE PS-2/285 W/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180 (Cs137/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF GRIZZLY CEMENT BASEMENT AND OTHER MATERIAL SURFACE AREAS

Sheet No. 2 of 4
Made By [illegible] Date 7-19-92
Chkd. By _____ Date _____

AREA ID	γ (MR/HR) LO-HI	MR/HR $\bar{c}$	α (CPM) LO-HI	CPM $\bar{c}$	DPM 100CM²	AREA ID	γ (MR/HR) LO-HI	MR/HR $\bar{c}$	α (CPM) LO-HI	CPM $\bar{c}$	DPM 100CM²	COMMENTS
(FLOOR					F)	WW-2	10-16	13	54-96	75	554.3	
F-1	4-16	10	66-72	69	510.0	(WEST WALL MIDDLE - WWM)						NOTE:
2	4-16	10	60-72	66	487.8	WWM-1	10-16	13	0-48	24	177.4	ALL SURVEYS ARE
3	4-16	10	18-77	48	354.8	2	10-16	13	6-102	54	399.1	DONE ON APPROXIM-
4	4-16	10	52-66	59	436.1	(WEST WALL TOP — WWT)						ATED 10'x10' GRID
5	4-16	10	24-66	45	332.6	WWT-1	10-16	13	12-12	12	88.7	AREAS AFTER ALL
6	4-16	10	36-52	44	325.2	2	10-16	13	54-99	77	569.1	DECONTAMINATION BY
(SOUTH WALL - SW)						(DRAIN PIPE — DP)						PRESSURIZED SAND-
SW-1	10-16	13	18-54	36	266.1	DP	14-18	16	05-30	18	133.0	BLASTING W/WATER
4	10-16	13	6-12	9	66.5							IS DONE.
5	10-16	13	6-120	63	465.7							
(SOUTH MIDDLE WALL - SMW)												DP SURVEYED INSIDE
SMW-1	10-16	13	0-54	27	199.6							6"x6" LOCATED @
4	10-16	13	18-42	30	221.7							SW-4 EMBEDDED
5	10-16	13	6-24	15	110.9							IN CEMENT,
(SOUTH TOP WALL - STW)												CONTAMINATED STAIR-
STW-1	10-16	13	18-24	21	155.2							WAY IS TAKEN OUT
4	10-16	13	6-18	12	88.7							AND BURIED IN EP
5	10-16	13	6-42	24	177.4							#2. READING $\bar{c}$ = 140 CPM
(NORTH WALL - NW)												= 1,035 DPM
NW-2	10-16	13	42-90	66	487.8							
3	10-16	13	18-108	63	465.7							(SEE SHEET 4 OF 4
6	10-16	13	18-48	33	243.9							DIAGRAM FOR AREA ID
(NORTH MIDDLE WALL - NMW)												LOCATIONS)
NMW-2	10-16	13	60-72	66	487.8							
3	10-16	13	24-78	51	377.0							
6	10-16	13	18-60	39	288.3							
(NORTH TOP WALL - NTW)												
NTW-2	10-16	13	30-48	39	288.3							
3	10-16	13	12-96	54	399.1							
6	10-16	13	15-55	35	258.7							
(EAST WALL - EW)												
EW-5	10-16	13	36-90	63	465.7							
6	10-16	13	42-78	60	443.5							
(EAST MIDDLE WALL - EMW)												
EMW-5	10-16	13	24-60	32	236.5							
6	10-16	13	3-42	23	170.0							
(EAST TOP WALL - ETW)												
ETW-5	10-16	13	18-24	21	155.2							
6	10-16	13	24-60	52	384.3							
(WEST WALL - WW)												
WW-1	10-16	13	60-90	75	554.3							

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COMPUTATIONS

SUBJECT DIAGRAM OF AREA 1D GRID ON THE GRIZZLY TUNNEL CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

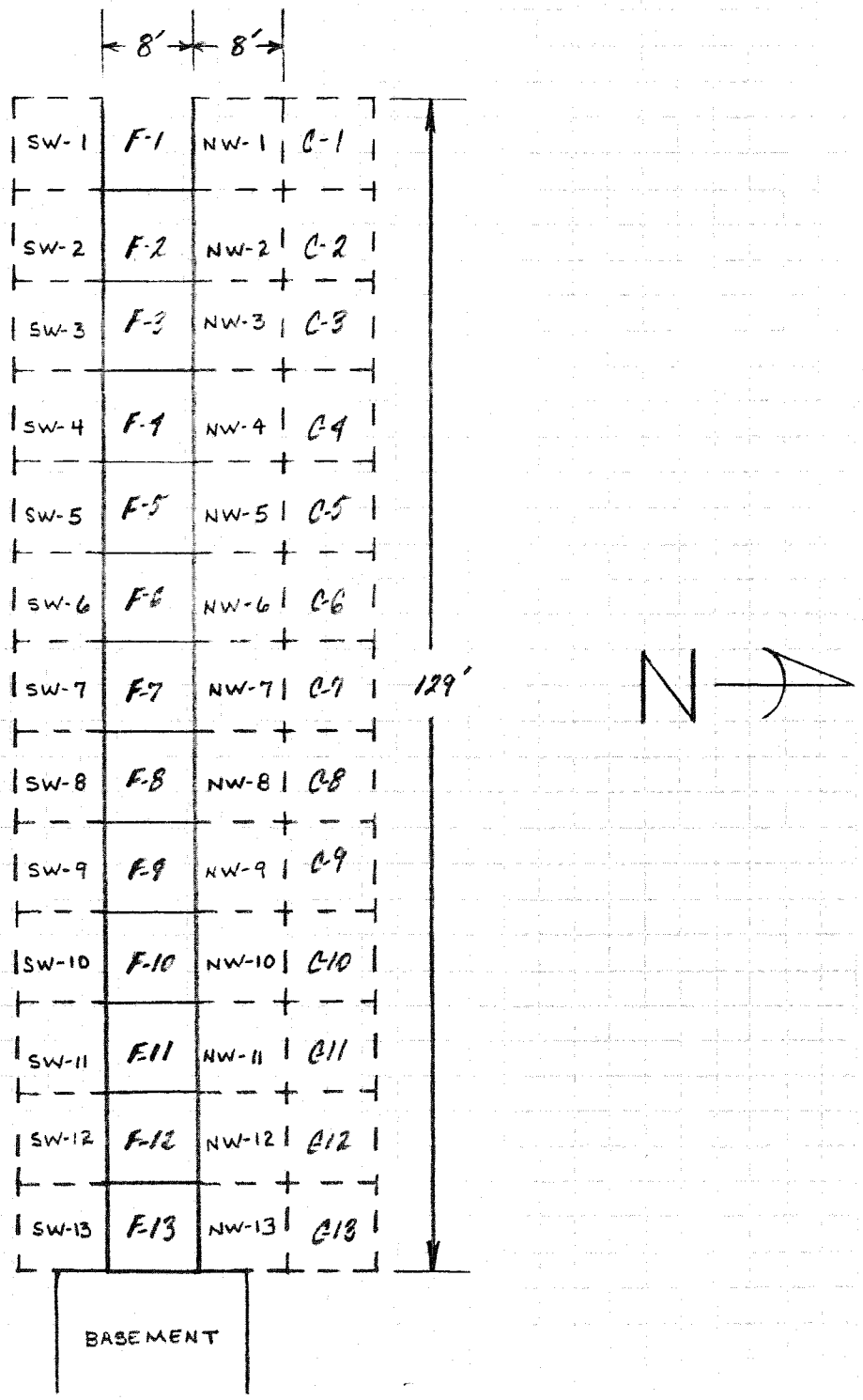
Sheet No. 3 of 4
Made By MC Date 7-2-92
Chkd. By [illegible] Date [illegible]

F - FLOOR
N - NORTH
S - SOUTH
C - CEILING
W - WALL

NOT TO SCALE

GRID ≅ 10' CENTERS

Broken LINES INDICATE WALLS AND CEILING



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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE GRIZZLY BASEMENT CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

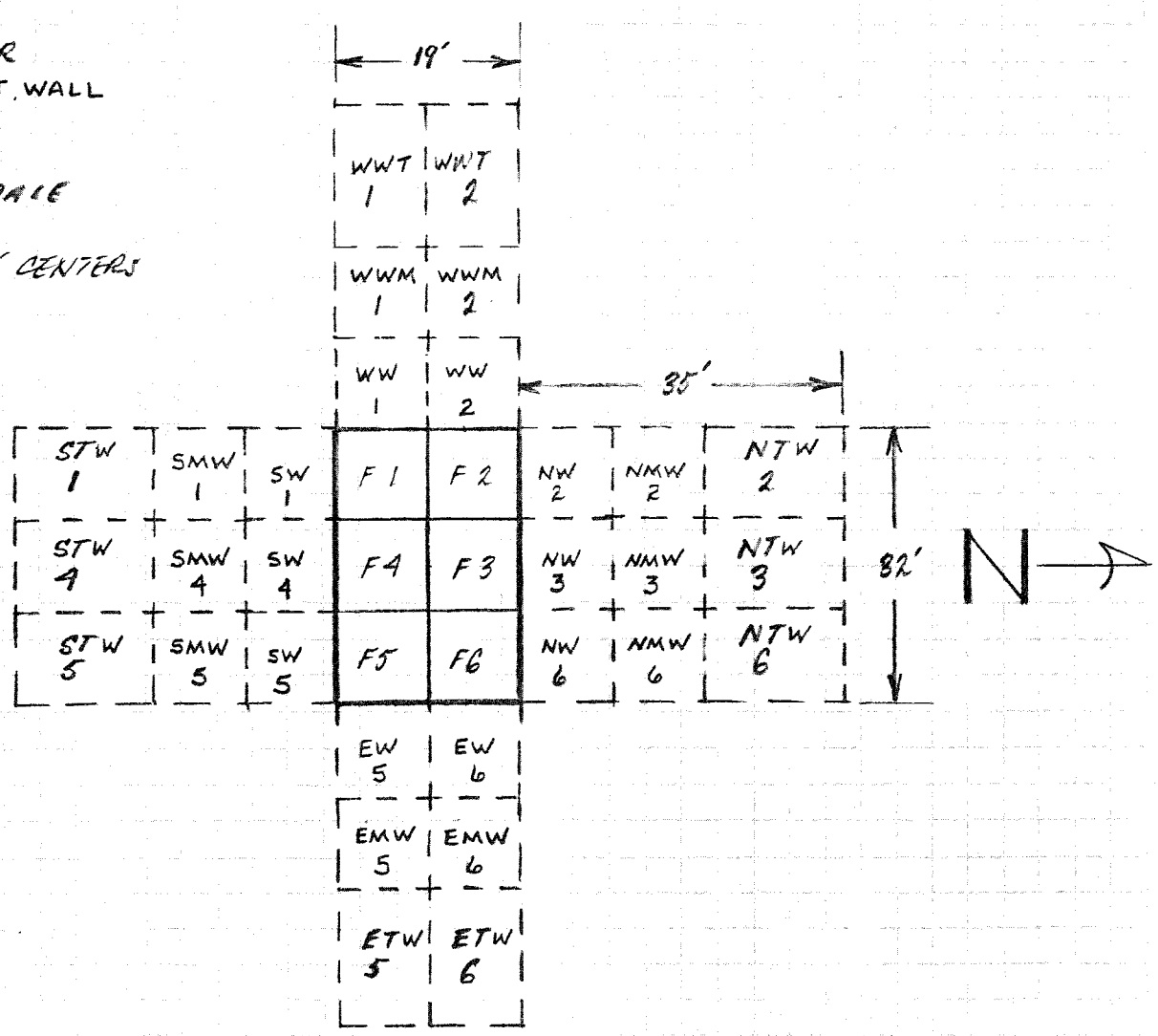
Sheet No. 4 of 4
Made By mc, Date 7-19-92
Chkd. By [illegible] Date 3-20-93

N - NORTH
S - SOUTH
E - EAST
W - WALL
M - MIDDLE
T - TOP
F - FLOOR
WW - WEST WALL

NOT TO SCALE

GRID ≅ 10' CENTERS

Broken LINES INDICATE WALLS



Radiological Data

for

CCD Thickner Tunnel and Tunnel Cone Area Surfaces

Reference Area ID in Field Data Sheet to Diagram to Locate Data Points

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180 (Cs137/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD#1 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 1 of 8
Made By MC, Date 7-10-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#1 TUNNEL FLOOR - TF)						TRW-9	9-11	10	36-48	42	310.4	
TF-1	9-11	10.0	18-18	18	133.0	10	9-11	10	33-50	42	310.4	NOTE:
2	8-12	10.0	12-66	39	288.3	(#1 CONE FLOOR - CF)						THE DIRECTION OF
3	8-10	9.0	3-6	5	37.0	CF-1	8-10	9	6-24	15	110.9	INCREMENTAL READING
4	7-11	9.0	98-126	112	827.8	2	8-10	9	18-120	69	510.0	IS FROM SOUTH EXIT-
5	8-10	9.0	42-48	45	332.6	3	10-12	11	18-48	33	243.9	CCD BSMT. TO NORTH
6	8-11	10.0	60-123	92	680.0	4	10-12	11	18-78	48	354.8	ENTRY - CONE AND
7	8-11	10.0	36-66	51	377.0	(#1 CONE CEILING - CC)						ALL SURVEYS IS DONE
8	9-11	10.0	30-120	75	554.3	CC-1	8-10	9	30-48	39	288.3	ON APPROXIMATED 10'
9	9-11	10.0	18-30	24	177.4	2	8-10	9	36-54	45	332.6	X 10' GRID AREAS
10	9-11	10.0	16-25	21	155.2	3	10-12	11	18-54	36	266.1	AFTER ALL DECON-
(#1 TUNNEL CEILING - TC)						4	10-12	11	12-72	42	310.4	TAMINATION BY
TC-1	9-11	10	3-24	14	103.5	(#1 CONE LEFT WALL - CLW)						PRESSURIZE SAND-
2	8-12	10	3-3	3	22.2	CLW-1	8-10	9	6-48	27	199.6	BLASTING W/WATER
3	8-10	9	3-12	8	59.1	2	8-10	9	12-48	30	221.7	IS DONE.
4	7-11	9	6-18	12	88.7	(#1 CONE RIGHT WALL - CRW)						(FOR ALL SURVEYS
5	8-10	9	6-12	9	66.5	CRW-3	10-12	11	24-24	24	177.4	SEE SHEET 7 OF 8
6	8-11	10	30-36	33	243.9	4	10-12	11	12-42	32	236.5	AND 8 OF 8 DIAGRAMS
7	8-11	10	6-54	30	221.7	(#1 CONE END WALL - CEW)						FOR AREA ID LOCATIONS)
8	9-11	10	30-54	42	310.4	CEW-2	8-10	9	6-6	6	44.3	
9	9-11	10	24-60	42	310.4	3	10-12	11	12-24	18	133.0	
10	9-11	10	20-55	35	258.7	(#1 CONE TUNNEL WALL - CTW)						
(#1 TUNNEL LEFT WALL - TLW)						CTW-1	8-10	9	36-60	48	354.8	
TLW-1	9-11	10	12-54	33	243.9							
2	8-12	10	12-60	36	266.1							
3	8-10	9	3-66	35	258.7							
4	7-11	9	72-72	72	532.2							
5	8-10	9	30-42	36	266.1							
6	8-11	10	6-78	42	310.4							
7	8-11	10	96-102	99	731.7							
8	9-11	10	30-90	60	443.5							
9	9-11	10	9-12	11	81.3				N/A			
10	9-11	10	8-10	9	66.5							
(#1 TUNNEL RIGHT WALL - TRW)												
TRW-1	9-11	10	24-30	27	199.6							
2	8-12	10	12-72	42	310.4							
3	8-10	9	30-86	48	354.8							
4	7-11	9	42-78	60	443.5							
5	8-10	9	54-66	60	443.5							
6	8-11	10	72-84	78	576.5							
7	8-11	10	90-96	93	687.4							
8	9-11	10	84-102	93	687.4							

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11043) =23.0% EFF.
LUD/19/9180. (Cs137/1524) = 230-240 UR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD#2 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 2 of 8
Made By mc, Date 6-30, 7-1-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#2	TUNNEL	FLOOR		—	TF)	TRW-6	9-11	10	6-30	18	133.0	
TF-1	10-12	11	9-120	65	480.4	7	8-10	9	12-30	21	155.2	NOTE:
2	8-10	9	6-9	8	59.1	8	9-11	10	16-21	19	140.4	THE DIRECTION OF
3	8-10	9	9-18	14	103.5	9	9-12	11	24-102	63	465.7	INCREMENTAL READING
4	8-10	9	18-21	20	147.8	10	8-12	10	15-27	21	155.2	IS FROM SOUTH EXIT-
5	8-10	9	9-15	12	88.7	11	9-12	11	4-21	13	96.1	CCD BSMT. TO NORTH
6	9-11	10	78-99	89	657.8	(#2	CONE	FLOOR		—	CF)	ENTRY-CONE AND ALL
7	8-10	9	27-36	32	332.6	CF-1	9-12	11	12-18	15	110.9	SURVEYS ARE DONE
8	9-11	10	27-93	60	443.5	2	12-13	13	3-12	8	59.1	ON APPROXIMATED 10'
9	9-12	11	117-117	117	864.8	3	8-12	10	6-21	14	103.5	X 10' GRID AREAS
10	8-12	10	30-78	54	687.4	4	11-13	12	3-6	5	37.0	AFTER ALL DECON-
11	9-12	11	24-33	29	214.3	(#2	CONE	CEILING		—	CC)	TAMINATION BY
(#2	TUNNEL	CEILING		—	TC)	CC-1	9-12	11	4-18	11	81.3	PRESSURIZED SAND-
TC-1	10-12	11	3-114	59	436.1	2	12-13	13	6-14	10	73.9	BLASTING W/WATER
2	8-10	9	3-6	5	37.0	3	8-12	10	6-8	7	51.7	IS DONE.
3	8-10	9	3-4	4	30.0	4	11-13	12	10-12	11	81.3	
4	8-10	9	3-12	8	59.1	(#2	CONE	LEFT WALL			-CLW)	
5	8-10	9	24-27	26	192.2	CLW-1	9-12	11	2-11	7	51.7	
6	9-11	10	9-15	12	88.7	2	12-13	13	6-12	9	66.5	
7	8-10	9	3-18	11	81.3	(#2	CONE	RIGHT WALL			-CRW)	
8	9-11	10	21-102	62	458.3	CRW-3	8-12	10	4-5	5	37.0	
9	9-12	11	0-69	35	258.7	4	11-13	12	5-18	12	88.7	
10	8-12	10	24-24	24	177.4	(#2	CONE	END WALL			-CEW)	
11	9-12	11	12-27	20	147.8	CEW-2	12-13	13	6-9	8	59.1	
(#2	TUNNEL	LEFT WALL			-TLW)	3	8-12	10	2-8	5	37.0	
TLW-1	10-12	11	9-33	21	155.2	(#2	CONE	TUNNEL WALL			-CTW)	
2	8-10	9	15-75	45	332.6	CTW-1	9-12	11	7-12	9	66.5	
3	8-10	9	21-30	26	192.2							
4	8-10	9	105-108	107	790.9							
5	8-10	9	33-81	57	421.3							
6	9-11	10	69-87	78	576.5							
7	8-10	9	36-66	51	377.0							
8	9-11	10	62-108	85	628.3							
9	9-12	11	42-54	48	354.8				N			
10	8-12	10	3-24	14	103.5				A			
11	9-12	11	12-30	21	155.2							
(#2	TUNNEL	RIGHT WALL			-TRW)							
TRW-1	10-12	11	12-18	15	110.9							
2	8-10	9	48-71	60	443.5							
3	8-10	9	12-21	17	125.7							
4	8-10	9	21-42	32	236.5							
5	8-10	9	12-24	18	133.0							

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INSTRUMENTATION

EBER LINE PS-2/285 w/AC-3/714209. (Th 230/11093) = 23.0% EFF.
L.00/19/9180 (Cs 137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #3 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 3 of 8
Made By [illegible] Date 6-25-92, 6-30-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100cm²	AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100cm²	COMMENTS
(#3	TUNN	EL	FLOO	R -	TF)	TRW-9	8-11	10	18-39	29	214.3	
TF-1	9-13	11	21-42	27	199.6	10	8-11	10	30-119	75	554.3	NOTE:
2	9-11	10	39-45	42	310.4	(#3	CONE	FLO	OR -	C	F)	THE DIRECTION OF
3	9-11	10	30-99	65	480.4	CF-1	10-12	11	5-13	9	66.5	INCREMENTAL READING
4	9-11	10	15-45	30	221.7	2	10-12	11	4-15	10	73.9	IS FROM EAST EXIT-
5	9-12	11	39-63	51	377.0	3	8-11	10	36-99	68	502.6	CCD BSMT, TO WEST
6	9-12	11	42-111	77	569.1	4	10-12	11	21-66	44	325.2	ENTRY-CONE AND ALL
7	9-13	11	42-75	59	436.1	(#3	CONE	C	EILIN	G -	CC)	SURVEYS ARE DONE ON
8	10-12	11	42-90	66	487.8	CC-1	9-12	11	12-18	15	110.9	APPROXIMATED 10'X10'
9	10-13	12	39-90	65	480.4	2	9-10	10	36-78	57	421.3	GRID AREAS AFTER ALL
10	10-13	12	36-96	66	487.8	3	9-11	10	42-54	48	354.8	DECONTAMINATION BY
(#3	TUNN	EL	CEIL	ING	-TC)	4	9-11	10	45-60	53	391.7	PRESSURIZED SAND-
TC-1	10-11	11	4-4	4	29.6	(#3	CONE	LEFT	WALL	-	CLW)	BLASTING w/ WATER
2	9-11	10	15-82	49	362.2	CLW-1	9-11	10	49-58	54	399.1	IS DONE.
3	7-11	9	0-135	68	502.6	2	10-12	11	6-63	35	258.7	
4	9-11	10	27-45	36	266.1	(#3	CONE	RIGH	T WA	LL -	CRW)	CF-1, CF-2 &
5	10-12	11	60-95	78	576.5	CRW-3	9-11	10	33-114	74	547.0	CLW-1: AREAS RE-
6	10-11	11	18-48	33	243.9	4	9-12	11	30-102	66	487.8	SANDBLASTED ON
7	9-10	10	0-54	27	199.6	(#3	CONE	END	WAL	L -	CEW)	6-30-92. PRIOR
8	9-11	10	0-30	15	110.9	CEW-2	8-11	10	30-57	44	325.2	READINGS C̄ = 383cpm
9	9-11	10	45-78	62	458.3	3	9-11	10	24-27	26	192.2	= 2,831 DPM.
10	9-11	10	47-70	59	436.1	(#3	CONE	TUNN	EL	WALL	-CTW)	
(#3	TUNNE	L	LEFT	WALL	-TLW)	CTW-1	9-11	10	27-30	29	214.3	
TLW-1	9-13	11	18-27	23	170.0							
2	8-10	9	3-18	11	81.3							
3	8-12	10	9-33	21	155.2							
4	8-10	9	36-54	45	332.6							
5	8-12	10	24-33	29	214.3							
6	8-12	10	36-120	78	576.5							
7	8-11	10	18-30	24	177.4							
8	8-11	10	48-105	77	569.1							
9	8-11	10	24-127	76	561.7				N/A			
10	8-11	10	30-119	75	554.3							
(#3	TUNNE	L	RIGHT	WALL	-TRW)							
TRW-1	8-14	11	0-9	5	37.0							
2	9-12	11	18-42	30	221.7							
3	9-12	11	39-57	48	354.8							
4	8-14	11	0-21	11	81.3							
5	8-9	9	30-48	39	288.3							
6	8-11	10	9-24	17	125.7							
7	8-11	10	3-42	23	170.0							
8	8-11	10	42-57	50	369.6							

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th 230/11093) =23.0% EFF.
LUD/19/4180 (Cs137/1524) = 230-240 μR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #4 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS

Sheet No. 4 of 8
Made By [illegible] Date 6-26, 6-30-92
Chkd. By _____ Date _____

AREA ID	γ (μR/HR) LO-HI	μR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²
(#4 TUNNEL FLOOR - TF)					
TF-1	9-10	10	6-9	8	59.1
2	8-10	9	120-131	126	931.3
3	8-10	9	57-69	63	465.7
4	7-11	9	15-21	18	133.0
5	10-11	11	9-51	30	221.7
6	8-11	10	12-42	27	199.6
7	8-10	9	42-66	54	399.1
8	7-11	9	60-105	83	613.5
9	8-12	10	54-132	93	687.4
10	8-12	10	52-134	93	687.4
(#4 TUNNEL CEILING - TC)					
TC-1	9-10	10	0-3	2	14.8
2	8-10	9	3-3	3	22.2
3	8-10	9	3-69	36	266.1
4	7-11	9	18-51	35	258.7
5	10-11	11	0-21	11	81.3
6	8-11	10	6-9	8	59.1
7	8-10	9	0-0	0	<BKGD
8	7-11	9	9-30	20	147.8
9	8-12	10	14-60	37	273.5
10	8-12	10	14-65	40	295.7
(#4 TUNNEL LEFT WALL - TLW)					
TLW-1	9-10	10	24-39	32	236.5
2	8-10	9	18-21	20	147.8
3	8-10	9	18-30	24	177.4
4	7-11	9	27-33	30	221.7
5	10-11	11	66-66	66	487.8
6	8-11	10	63-126	95	702.2
7	8-10	9	18-90	54	399.1
8	7-11	9	27-51	39	288.3
9	8-12	10	27-30	29	214.3
10	8-12	10	30-33	32	236.5
(#4 TUNNEL RIGHT WALL - TRW)					
TRW-1	9-10	10	24-42	33	243.9
2	8-10	9	33-39	36	266.1
3	8-10	9	30-60	45	332.6
4	7-11	9	18-108	58	428.7
5	10-11	11	18-66	47	347.4
6	8-11	10	24-72	48	354.8
7	8-10	9	12-87	50	369.6
8	7-11	11	0-6	3	22.2
TRW-9	8-12	10	57-69	63	465.7
10	8-12	10	61-75	68	502.6
(#4 CONE FLOOR - CF)					
CF-1	9-11	10	54-120	87	643.0
2	9-11	10	51-130	91	672.6
3	9-11	10	6-18	12	88.7
4	9-13	11	9-63	36	266.1
(#4 CONE CEILING - CC)					
CC-1	9-11	10	3-60	32	236.5
2	9-11	10	24-48	36	266.1
3	9-11	10	18-66	39	288.3
4	9-13	11	15-45	30	221.7
(#4 CONE LEFT WALL - CLW)					
CLW-1	9-11	10	6-12	9	66.5
2	9-11	10	6-6	6	44.3
(#4 CONE RIGHT WALL - CRW)					
CRW-3	9-11	10	3-6	5	37.0
4	9-13	11	12-66	39	288.3
(#4 CONE END WALL - CEW)					
CEW-2	9-11	10	6-12	9	66.5
3	9-11	10	1-15	8	59.1
(#4 CONE TUNNEL WALL - CTW)					
CTW-1	9-11	10	6-18	12	88.7

N/A

COMMENTS

NOTE: THE DIRECTION OF INCREMENTAL READING IS FROM NORTH EXIT - CCD BSMT. TO SOUTH ENTRY - CONE AND ALL SURVEYS ARE DONE ON APPROXIMATED 10'x10' GRID AREAS AFTER ALL DECONTAMINATION BY PRESSURIZED SAND - BLASTING w/WATER IS DONE.

TF-1: AREA RE-SAND BLASTED ON 6-30-92. PRIOR READING = 1400 CPM = 10,348 DPM

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
LUD/19/9180. (Cs137/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #5 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 5 of 8
Made By MC, Date 6-26, 6-30-92
Chkd. By _____ Date _____

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#5	TUNNE	L	FLOOR	—	TF)	TRW-6	8-10	9	12-96	54	399.1	
TF-1	10-13	12	9-12	11	81.3	7	8-10	9	24-42	33	243.9	NOTE:
2	8-10	9	24-30	27	199.6	8	8-10	9	12-54	33	243.9	THE DIRECTION OF
3	8-10	9	6-24	15	110.9	9	8-12	10	20-72	46	340.0	INCREMENTAL READING
4	8-11	10	30-30	30	221.7	10	8-10	9	0-66	33	243.9	IS FROM NORTH EXIT-
5	8-10	9	63-135	99	731.7	11	9-10	10	6-18	12	88.7	CCD BSMT. TO SOUTH
6	8-10	9	42-96	69	510.0	(#5	CONE	FLO	OR —		CF)	ENTRY-CONE AND ALL
7	8-10	10	48-108	78	576.5	CF-1	9-11	10	18-21	20	147.8	SURVEYS ARE DONE
8	8-10	10	54-57	56	413.9	2	9-10	10	12-12	12	88.7	ON APPROXIMATED 10'
9	8-12	10	6-30	18	133.0	3	9-11	10	36-36	36	266.1	X 10' GRID AREAS
10	8-10	9	6-18	12	88.7	4	9-13	11	18-24	21	155.2	AFTER ALL DECONTAMIN-
11	9-10	10	6-30	18	133.0	(#5	CONE	CEI	LING	—	CC)	ATION BY PRESSURIZED
(#5	TUNN	EL	CEILING	-	TC)	CC-1	9-11	10	0-3	2	14.8	SAND BLASTING W/WATER
TC-1	10-13	12	48-99	74	547.0	2	9-10	10	27-51	39	288.3	IS DONE.
2	8-10	9	9-12	11	81.3	3	9-11	10	12-30	21	155.2	
3	8-10	9	12-12	12	88.7	4	9-13	11	0-12	6	44.3	TF-1; AREA RE-
4	8-11	10	42-57	50	369.6	(#5	CONE	LEF	T WAL	L -	CLW)	SAND BLASTED ON
5	8-10	9	9-24	17	125.7	CLW-1	9-11	10	9-12	11	81.3	6-30-92. PRIOR
6	8-10	9	18-134	76	561.7	2	9-10	10	9-33	21	155.2	READING = 1830 CPM =
7	8-10	9	0-3	2	14.8	(#5	CONE	RIGH	T WA	LL -	CRW)	13,452 DPM.
8	8-10	9	3-3	3	22.2	CRW-3	9-11	10	0-3	2	14.8	
9	8-12	10	0-36	18	133.0	4	9-13	11	6-6	6	44.3	
10	8-10	9	0-36	18	133.0	(#5 C	ONE	END	WALL	—	CEW)	
11	9-10	10	60-69	65	480.4	CEW-2	9-10	10	12-21	17	125.7	
(#5	TUNNE	L	LEFT WA	LL -	TLW)	3	9-11	10	3-12	8	59.1	
TLW-1	10-13	12	0-18	9	66.5	(#5	CONE	TUNN	EL WA	LL -	CTW)	
2	8-10	9	18-54	36	266.1	CTW-1	9-11	10	0-18	9	66.5	
3	8-10	9	24-132	78	576.5							
4	8-11	10	24-72	48	354.8							
5	8-10	9	12-18	15	110.9							
6	8-10	9	18-78	48	354.8							
7	8-10	9	3-18	11	81.3							
8	8-10	9	6-6	6	44.3							
9	8-12	10	3-36	20	147.8				N/A			
10	8-10	9	0-3	2	14.8							
11	9-10	10	0-6	3	22.2							
(#5	TUNNE	L	RIGHT	WALL	- TRW)							
TRW-1	10-13	12	3-6	5	37.0							
2	8-10	9	18-36	27	199.6							
3	8-10	9	0-6	3	22.2							
4	8-11	10	12-22	17	125.7							
5	8-10	9	12-66	39	288.3							

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INSTRUMENTATION

EBERLINE PS-2/285 w/AC-3/714209. (Th230/11093) = 23.0% EFF.
600/19/9180. (Cs137/1524) = 230-240 MR/HR.

COMPUTATIONS

SUBJECT MILL DECOMMISSIONING - ALPHA AND GAMMA VERIFICATION SURVEY FIELD DATA SHEET OF CCD #6 THICKNER TUNNEL AND TANK CONE CEMENT SURFACE AREAS.

Sheet No. 6 of 8
Made By mc
Date 7-8-92
Chkd. By
Date

AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	AREA ID	γ (MR/HR) LO-HI	MR/HR C̄	α (CPM) LO-HI	CPM C̄	DPM 100CM²	COMMENTS
(#6	TUNN	EL	FLOOR	—	TF)	TRW-9	8-12	10	24-102	72	532.2	
TF-1	8-10	9	3-6	5	37.0	↓10	8-12	10	17-111	64	473.0	NOTE:
2	10-12	11	18-24	21	155.2	(#6	CONE	FLO	OR	—	CF)	THE DIRECTION OF
3	8-12	10	6-78	42	310.4	CF-1	8-10	9	12-60	36	266.1	INCREMENTAL READING
4	10-12	11	18-30	24	177.4	2	12-18	15	6-30	18	133.0	IS FROM WEST EXIT-
5	10-12	11	108-126	117	864.8	3	9-11	10	18-60	39	288.3	CCD BEMT. TO SOUTH
6	9-11	10	72-102	87	643.0	↓4	10-12	11	36-66	51	377.0	ENTRY-CONE AND ALL
7	12-15	14	60-78	69	510.0	(#6	CONE	CE	ILING	—	CC)	SURVEYS ARE DONE ON
8	8-11	10	36-78	57	421.3	CC-1	8-10	9	18-78	48	354.8	APPROXIMATED 10'x10'
9	8-12	10	60-102	81	598.7	2	12-18	15	18-36	27	199.6	GRID AREAS AFTER ALL
↓10	8-12	10	65-110	88	650.4	3	9-11	10	24-84	54	399.1	DECONTAMINATION BY
(#6	TUNN	EL	CEIL	ING	-TC)	↓4	10-12	11	30-36	33	243.9	PRESSURIZED SAND-
TC-1	8-10	9	3-60	32	236.5	(#6	CONE	LEF	T WA	LL	-CLW)	BLASTING W/WATER
2	10-12	11	3-3	3	22.2	CLW-1	8-10	9	36-96	66	487.8	IS DONE.
3	8-12	10	3-9	6	44.3	↓2	12-18	15	18-78	48	354.8	
4	10-12	11	60-78	69	510.0	(#6	CONE	RIGH	T WA	LL	-CRW)	TF 5-7: DECON AFTER
5	10-12	11	6-60	33	243.9	CRW-3	9-11	10	36-36	36	266.1	FURTHER SANDBLAST-
6	9-11	10	6-12	9	66.5	↓4	10-12	11	12-36	24	177.4	ING INCLUDING ACID
7	12-15	14	12-36	24	177.4	(#6	CONE	END	WALL	—	CEW)	WASH ON 7-13-92.
8	8-11	10	12-48	30	221.7	CEW-2	12-18	15	18-30	24	177.4	PRIOR READING-C̄ =
9	8-12	10	48-66	57	421.3	↓3	9-11	10	42-66	54	399.1	859 CPM = 6,345 DPM.
↓10	8-12	10	53-68	61	450.9	(#6	CONE	TUNN	EL WA	LL-	CTW)	
(#6	TUNNE	L	LEFT	WALL	-TLW)	CTW-1	8-10	9	3-42	23	170.0	
TLW-1	8-10	9	3-24	14	103.5							
2	10-12	11	6-9	8	59.1							
3	8-12	10	6-54	30	221.7							
4	10-12	11	42-126	84	620.9							
5	10-12	11	24-84	54	399.1							
6	9-11	10	24-24	24	177.4							
7	12-15	14	18-18	18	133.0							
8	8-11	10	18-36	27	199.6							
9	8-12	10	6-24	15	110.9				N/A			
↓10	8-12	10	7-28	18	133.0							
(#6	TUNNE	L	RIGHT	WALL	-TRW)							
TRW-1	8-10	9	90-102	96	709.6							
2	10-12	11	60-66	63	465.7							
3	8-12	10	6-54	30	221.7							
4	10-12	11	30-90	60	443.5							
5	10-12	11	102-109	106	783.5							
6	9-11	10	66-102	84	620.9							
7	12-15	14	12-60	36	266.1							
↓8	8-11	10	3-66	35	258.7							

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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD-THICKNER TUNNEL CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY.

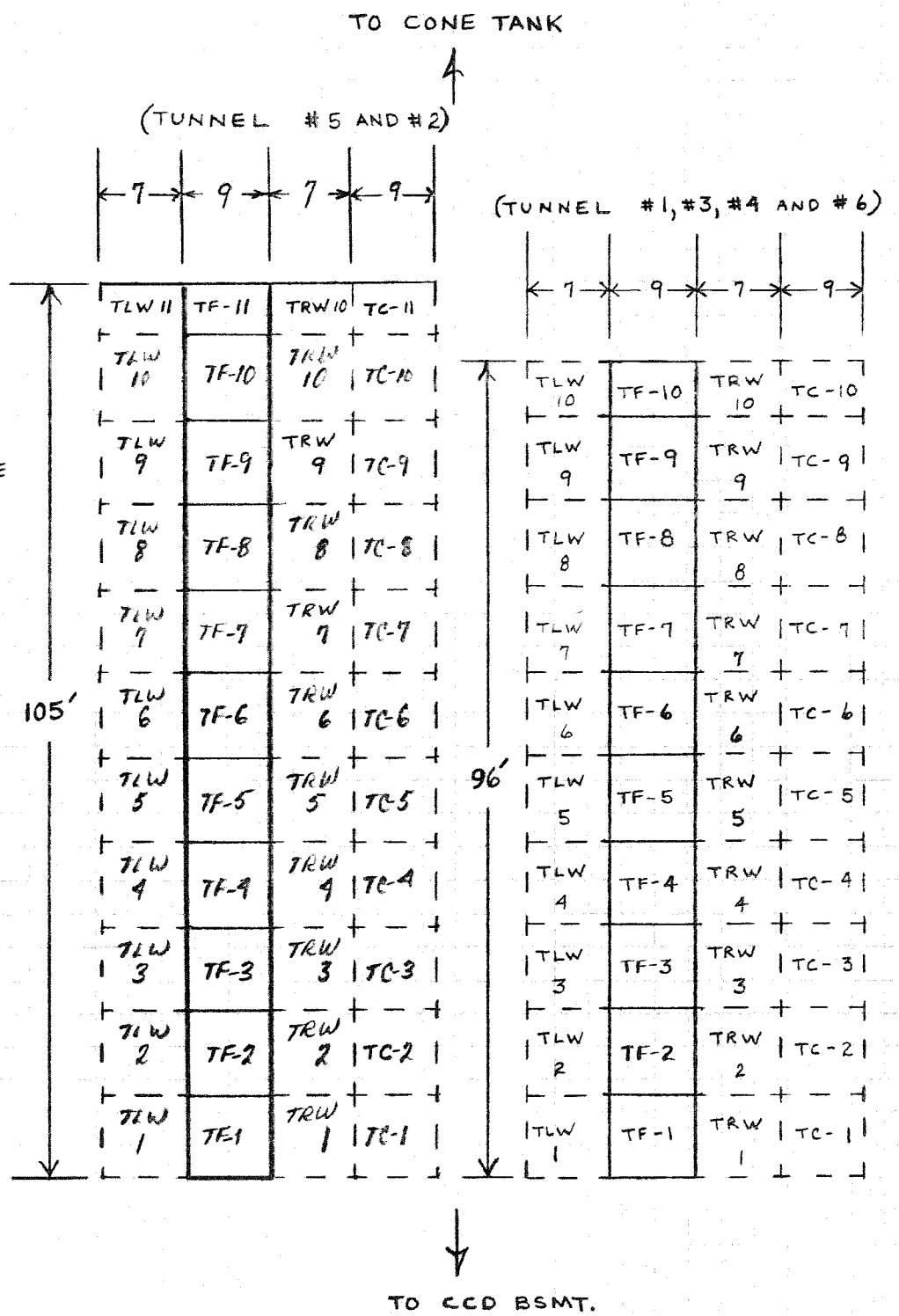
Sheet No. 7 of 8
Made By MC, Date 7-6-92
Chkd. By _____ Date _____

L - LEFT
R - RIGHT
W - WALL
F - FLOOR
C - CEILING
T - TUNNEL

NOT TO SCALE

GRID AT 10' CENTERS

DOTTED LINES INDICATE WALL AND CEILING



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COMPUTATIONS

SUBJECT DIAGRAM OF AREA ID GRID ON THE CCD-THICKNER CONE TANK COMPARTMENT CEMENT SURFACE AREAS FOR RADIOLOGICAL VERIFICATION FIELD SURVEY,

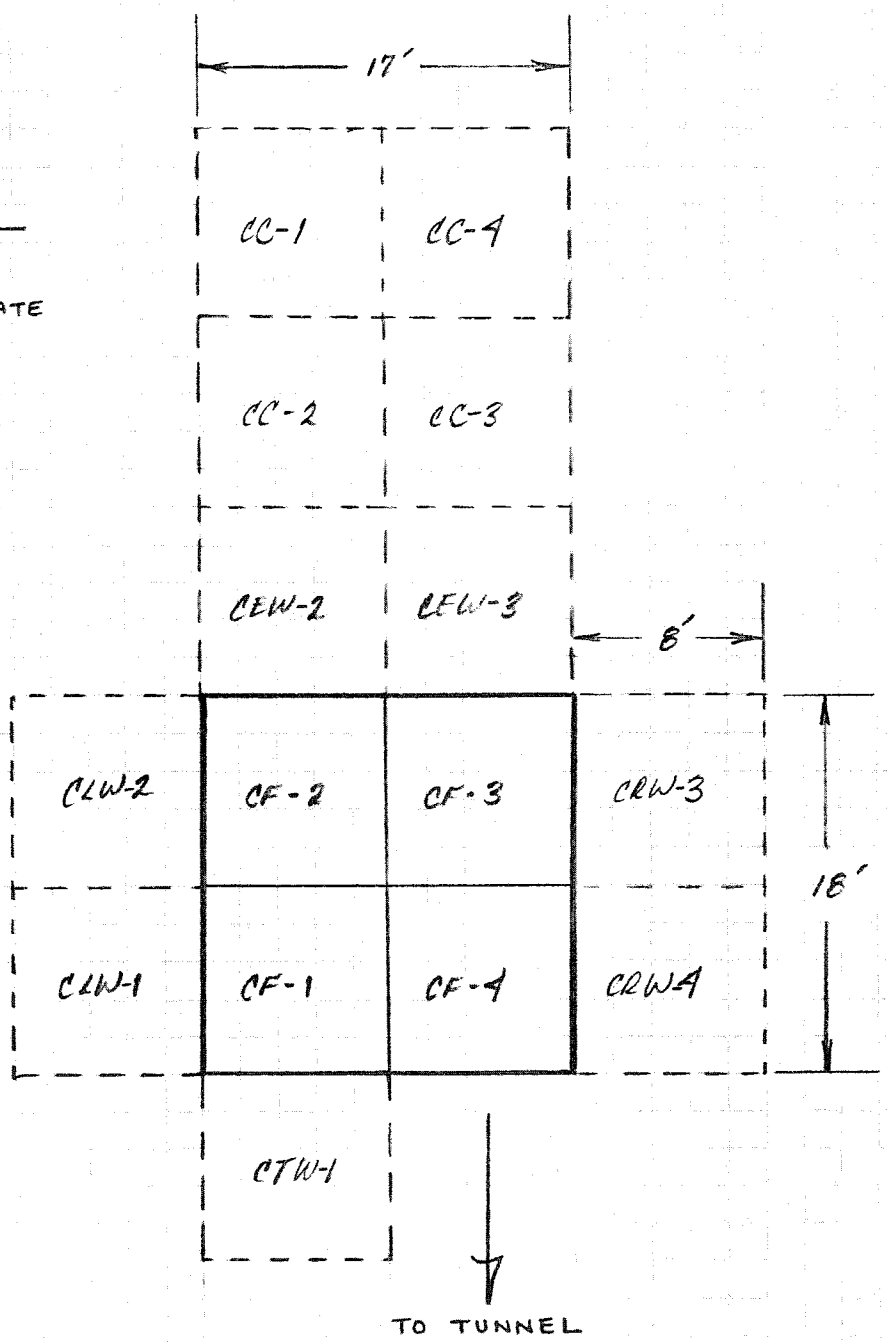
Sheet No. 8 of 8
Made By MC, Date 7-6-92
Chkd. By _____ Date _____

CC - CONE / CEILING
E - END
T - TUNNEL
L - LEFT
R - RIGHT
W - WALL
F - FLOOR
C - CONE

— NOT TO SCALE —

DASHED LINES INDICATE WALL AND CEILING

GRID ≅ 10' CENTERS



APPENDIX E

Radiological Data
for

° Ore Pad	Table 1
° Grizzly	Table 2
° Precipitation	Table 3
° Precipitation Area Drainage Pond	Table 3
° Solvent Extraction (SX)	Table 4
° Solvent Extraction Emergency Catch Basin	Table 5
° CCD Pump House (CCD Building)	Table 6
° Inactive Basin	Table 7
° Sewage Plant	Table 7
° Leach	Table 8
° Clair Floc, Raffinate Tank Areas	Table 9
° Sodium Chlorate Storage (Chemical Building)	Table 9
° Borrow Soil Area	Table 10
° North (1), and South (2) Catch Basins	Fig. C
° Thickner Floor Stem Wall Area	Fig. D
° Underground Piping Area	Fig. E

All Tables should be reference to Fig. A and B for actual Survey and Sampling Points.

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INSTRUMENTATION:
LUD/19/9180, Cs137/1524 220-230 μR/
LUD/125/9073

TABLE 1

COMPUTATIONS

SUBJECT TABLE FOR THE ORE PAD OUTDOOR RADIOLOGICAL DATA, (H-1)

Sheet No. 1 of

Made By [illegible] Date 3-15-93

Chkd. By CMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
BLE+00, 00R	8	9			BLB+66, 00R	14	13		
BLE+00, 33L	13	14			BLB+66, 33L	11	12		
BLD+00, 33R	8	9	2.8		BLA+66, 33R	9	10	2.6	
BLD+00, 00R	10	11			BLA+66, 00R	12	11		
BLD+00, 33L	8	9			BLA+66, 33L	9	8		
BLC+00, 33R	10	11			BLA+66, 66L	13	15		
BLC+00, 00R	11	12			E1+00, 00R	8	9	1.6	
BLC+00, 33L	14	19			E1+00, 33L	12	13		
BLB+00, 33R	14	15			D1+00, 33R	10	13		
BLB+00, 00R	15	16			D1+00, 00R	8	9		
BLB+00, 33L	13	16			D1+00, 33L	9	11		
BLA+00, 33R	12	11			C1+00, 33R	9	11	3.7	
BLA+00, 00R	9	11			C1+00, 00R	11	12		
BLA+00, 33L	11	10			C1+00, 33L	12	14		
BLA+00, 66L	9	10			B1+00, 33R	9	10	2.7	
BLE+33, 00R	11	12			B1+00, 00R		9		
BLE+33, 33L	9	10			B1+00, 33L	10	9		
BLD+33, 33R	8	9			A1+00, 33R	12	13		
BLD+33, 00R	12	13			A1+00, 00R	12	13		
BLD+33, 33L	8	10			A1+00, 33L	10	11	2.7	
BLC+33, 33R	10	11			A1+00, 66L	14	15		
BLC+33, 00R	13	14	3.7		E1+33, 00R	13	17		
BLC+33, 33L	13	14			E1+33, 33L	12	14		
BLB+33, 33R	12	13			D1+33, 33R	7	9	1.9	
BLB+33, 00R	13	14	4.9		D1+33, 00R	10	11		
BLB+33, 33L	10	13			D1+33, 33L	11	12		
BLA+33, 33R	11	12			C1+33, 33R	10	12		
BLA+33, 00R	12	13			C1+33, 00R	11	12		
BLA+33, 33L	12	13	2.3		C1+33, 33L	11	13		
BLA+33, 66L	11	13			B1+33, 33R	12	12		
BLE+66, 00R	9	11			B1+33, 00R	11	12		
BLE+66, 33L	10	11			B1+33, 33L	10	11	2.3	
BLD+66, 33R	13	12			A1+33, 33R	9	10	3.5	
BLD+66, 00R	9	10	2.6		A1+33, 00R	12	13		
BLD+66, 33L	11	12			A1+33, 33L	9	10		
BLC+66, 33R	10	12			A1+33, 66L	13	14		
BLC+66, 00R	8	10			E1+66, 33R	12	16		
BLC+66, 33L	11	12			E1+66, 00R	13	16		
BLB+66, 33R	12	13			E1+66, 33L	13	12		

REMARKS:

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TABLE 1 PAGE 2

COMPUTATIONS

SUBJECT TABLE FOR THE ORE PAD OUTDOOR RADIOLOGICAL DATA

Sheet No. 2 of

Made By MC Date 3-15-93

Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
D1+66, 33R	15	14			B2+33, 33L	12	11		
D1+00, 00R	13	18			A2+33, 33R	12	13		
D1+00, 33L	11	15			A2+33, 00R	14	15		
C1+66, 33R	12	14	4.8		A2+33, 33L	11	12		
C1+66, 00R	11	14			E2+66, 33R	13	10		
C1+66, 33L	11	12	4.5		E2+66, 00R	10	11		
B1+66, 33R	12	15			E2+66, 33L	9	10		
B1+66, 00R	11	12			D2+66, 33R	13	14		
B1+66, 33L	13	14			D2+66, 00R	11	10		
A1+66, 33R	10	11			D2+66, 33L	9	8		
A1+66, 00R	11	12			C2+66, 33R	10	11		
A1+66, 33L	10	12			C2+66, 00R	11	10	4.0	
A1+66, 66L	13	14			C2+66, 33L	7	8		
E2+00, 33R	9	10			B2+66, 33R	8	9		
E2+00, 00R	10	11	2.4		B2+66, 00R	9	10		
E2+00, 33L	11	10			B2+66, 33L	9	10		
D2+00, 33R	9	10			A2+66, 33R	13	14		
D2+00, 00R	15	19	7.2		A2+66, 00R	13	15	4.6	
D2+00, 33L	8	12			E3+00, 33R	9	8		
C2+00, 33R	10	11			E3+00, 00R	9	8	2.6	
C2+00, 00R	8	10			E3+00, 33L	10	12		
C2+00, 33L	11	13			D3+00, 33R	12	13		
B2+00, 33R	14	15			D3+00, 00R	10	11		
B2+00, 00R	8	9	2.0		D3+00, 33L	11	12		
B2+00, 33L	13	14			C3+00, 33R	10	9	3.2	
A2+00, 33R	10	11			C3+00, 00R	13	12		
A2+00, 00R	9	10	2.6	1.6	C3+00, 33L	8	9		
A2+00, 33L	12	13			B3+00, 33R	9	8		
E2+33, 33R	9	10			B3+00, 00R	9	10	1.4	
E2+33, 00R	9	10			B3+00, 33L	9	10		
E2+33, 33L	11	14			A3+00, 33R	10	9		
D2+33, 33R	11	10			A3+00, 00R	12	13		
D2+33, 00R	9	10			E3+33, 66R	7	8	1.3	0.6
D2+33, 33L	8	12			E3+33, 33R	10	12		
C2+33, 33R	8	9			E3+33, 00R	10	10		
C2+33, 00R	10	11			E3+33, 33L	10	12		
C2+33, 33L	8	9			D3+33, 33R	13	14		
B2+33, 33R	11	12	5.0		D3+33, 00R	11	12	4.1	
B2+33, 00R	10	11			D3+33, 33L	15	16		

REMARKS:

UNC MINING AND MILLING

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TABLE 1 PAGE 3

COMPUTATIONS

SUBJECT TABLE FOR THE ORE PAD OUTDOOR RADIOLOGICAL DATA. Sheet No. 3 of

Made By [illegible] Date 3-15-93

Chkd. By [illegible] Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
C3+33, 33R	15	16		
C3+33, 00R	12	11	21.1	
C3+33, 33L	12	11		
B3+33, 33R	12	13		
B3+33, 00R	13	14		
B3+33, 33L	13	14		
A3+33, 33R	12	11		
A3+33, 00R	12	13		
A3+33, 33L	15	16	11.4	
E3+66, 66R	12	11		
E3+66, 33R	13	14		
E3+66, 00R	10	11		
E3+66, 33L	11	12		
D3+66, 33R	11	14		
D3+66, 00R	10	11		
D3+66, 33L	8	10		
C3+66, 33R	8	9		
C3+66, 00R	11	10		
C3+66, 33L	10	11		
B3+66, 33R	11	10		
B3+66, 00R	13	14	10.0	
B3+66, 33L	11	12		
A3+66, 33R	10	11		
A3+66, 00R	6	8		
A3+66, 33L	13	15		
E4+00, 00R	12	13		
E4+00, 66R	12	13		
E4+00, 33R	11	12	3.9	2.3
E4+00, 00R	12	13		
E4+00, 33L	10	12		
D4+00, 33R	10	11	3.4	
D4+00, 00R	12	13		
D4+00, 33L	8	9		
C4+00, 33R	7	10	2.3	
C4+00, 00R	11	10		
B4+00, 66R	9	8	2.8	
B4+00, 33R	13	16		
B4+00, 00R	15	14		
B4+00, 33L	13	14		

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
A4+00, 33R	12	13	5.7	
A4+00, 00R	11	12		
A4+00, 33L	13	15		
F4+33, 00R	8	11		
F4+33, 33L	9	11		
E4+33, 33R	9	11		
E4+33, 00R	9	11		
E4+33, 33L	11	12		
D4+33, 33R	11	12		
D4+33, 00R	9	11		
D4+33, 33L	8	9		
C4+33, 33R	9	8		
C4+33, 00R	9	8		
C4+33, 33L	9	10		
B4+33, 33R	13	14		
B4+33, 00R	15	16		
B4+33, 33L	9	10		
A4+33, 33R	11	12		
A4+33, 00R	12	14		
A4+33, 33L	14	18		
F4+66, 00R	8	13		
F4+66, 33L	11	12		
E4+66, 33R	12	10	3.5	
E4+66, 00R	12	14		
E4+66, 33L	15	14		
D4+66, 33R	12	13		
D4+66, 00R	11	12		
D4+66, 33L	8	9		
C4+66, 33R	8	10	3.5	
C4+66, 00R	9	10		
C4+66, 33L	10	13	3.2	
B4+66, 33R	11	12		
B4+66, 00R	15	17	4.1	6.0
B4+66, 33L	15	16		
B4+66, 66L	15	16	5.6	
E5+00, 00R	12	15	7.5	7.5
E5+00, 33L	11	13		

REMARKS:

UNC MINING AND MILLING

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TABLE 1 PAGE 4

COMPUTATIONS

SUBJECT TABLE FOR THE ORE PAD OUTDOOR RADIOLOGICAL DATA

Sheet No. 4 of

Made By [illegible] Date 3-15-93

Chkd. By [illegible] Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gM by γ SPEC.	Ra-226 IN pCi/gM by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gM by γ SPEC.	Ra-226 IN pCi/gM by CHEM. ANAL
D5+00, 33R	9	10							
D5+00, 00R	11	12							
D5+00, 33L	7	9							
C5+00, 33R	7	8							
C5+00, 00R	13	14							
C5+00, 33L	11	13							
B5+00, 33R	13	14							
B5+00, 00R	11	15							
B5+00, 33L	6	13							
C5+33, 33R	12	14							
C5+33, 00R	11	10	1.6						
C5+33, 33L	13	14							
B5+33, 33R	9	10	2.4						
B5+33, 00R	15	19							

REMARKS:

UNC MINING AND MILLING

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INSTRUMENTATION
LW/125/9073, Cs137/1521
LW/19/9180 220-23 mR/HR

TABLE 2

COMPUTATIONS

SUBJECT TABLE FOR THE GRIZZLY TUNNEL AND BASEMENT SURFACE AREAS OUTDOOR RADIOLOGICAL DATA (A-2)

Sheet No. _____ of _____
Made By MC Date 3-15-93
Chkd. By CMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
D2+33, 00R	9	10							
D2+33, 33R	11	10							
D2+33, 33L	8	12							
D2+33, 66L	8	9							
D2+66, 00R	11	10							
D2+66, 33L	9	8							
D2+66, 66L	10	11							
D2+66, 33R	13	14							
D3+00, 00R	10	11							
D3+00, 33L	11	12							
D3+00, 66L	10	9							
C2+33, 00R	10	11							
C2+66, 00R	11	10	4.0						
C3+00, 00R	13	12							

REMARKS:

UNC MINING AND MILLING

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LUD/19/9180 . Cs137/1524
LUD/125/9073 220-230 Ra.

TABLE 3

COMPUTATIONS

SUBJECT TABLE FOR THE PRECIP AND PRECIP DRAINAGE POND OUT DOOR RADIOLOGICAL DATA (A-3 & A-4)

Sheet No. ____ of ____
Made By MC Date 3-15-93
Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
H1+33,00R	7	8							
H1+66,00R	9	10							
H2+00,00R	8	7							
H2+33,00R	8	7							
H2+66,00R	8	9							
H2+66,33L	7	8	2.1						
H2+33,33L	8	7							
H2+33,66L	10	12							
H2+00,33L	8	9							
H2+00,66L	9	10							
H1+66,33L	9	10							
H1+66,66L	11	12							
H1+33,33L	10	15							
H1+33,33R	10	11							
H1+66,33R	7	8							
H1+66,66R	11	12							
H2+00,33R	7	8							
H2+00,66R	12	13							
I2+00,00R	12	11							
I2+33,00R	10	11							
I2+33,33L	13	14							
I2+33,66L	8	9							
I2+66,00R	12	11							
I2+66,33L	12	13							
I2+66,66L	8	9							
I3+00,00R	11	10							
I3+00,33L	8	9							
I3+00,66L	12	14							
DRAINAGE	POND								
BLG+00,00R	14	15							
BLG+00,33R	7	8							
BLG+66,00R	14	16							
BLG+33,33R	9	10							

REMARKS:

UNC MINING AND MILLING

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UNC

LUD/19/9180, C3137/1524
LUD/125/9073, 220-231 μR/HR.

TABLE 4

COMPUTATIONS

SUBJECT TABLE FOR THE SOLVENT EXTRACTION OUTDOOR RADIOLOGICAL DATA (A-5)

Sheet No. _____ of _____
Made By RC Date 3-15-93
Chkd. By CMM Date 8/12/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
BLJ+66, 00R	9	8			K3+33, 66L	6	7		
BLJ+66, 33L	8	9			J3+33, 00R	6	8		
BLJ+66, 66L	6	7			J3+33, 33L	7	8		
J1+00, 00R	9	10			J3+66, 00R	7	9		
J1+00, 33L	8	9							
J1+00, 66L	7	8							
J1+33, 00R	9	7							
J1+33, 33R	7	9							
J1+33, 66R	7	8							
J1+33, 33L	8	9	2.1						
J1+33, 66L	7	8							
J1+66, 00R	9	8							
J1+66, 33R	9	8							
J1+66, 66R	7	8							
J1+66, 33L	7	8							
J1+66, 66L	6	8							
J2+00, 00R	8	9							
J2+00, 33R	8	9							
J2+00, 66R	8	7							
J2+00, 33L	6	8							
J2+00, 66L	7	8							
J2+33, 00R	9	6	3.7						
J2+33, 33R	9	8							
J2+33, 66R	6	7							
J2+33, 33L	6	5							
J2+33, 66L	10	9							
J2+66, 00R	5	7							
J2+66, 33R	11	10							
J2+66, 66R	8	6							
K2+66, 00R	6	8							
K2+66, 33R	7	7							
J2+66, 33L	9	8							
J3+00, 00R	6	9	1.7						
J3+00, 33L	6	8							
J3+00, 33R	8	9							
J3+00, 66R	6	7							
K3+00, 00R	7	6							
K3+33, 00R	6	7							
K3+33, 33L	5	6							

REMARKS: _____

UNC MINING AND MILLING

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UNC

LW/19/9180. Cs137/1524
LU0/125/9073. 220-230 μR/HR

TABLE 5

COMPUTATIONS

SUBJECT TABLE FOR THE SOLVENT EXTRACTION - CATCH BASIN AND KEROSENE TANK AREA OUTDOOR RADIOLOGICAL DATA. (A-6)

Sheet No. _____ of _____

Made By MC Date 3-15-93

Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
SECB									
K1+00, 33R	13	14							
K1+33, 33L	10	12							
K1+33, 66L	9	10							
L1+33, 00R	8	7							
L1+66, 00R	10	11							
L1+66, 33L	8	10	5.3						
L1+66, 66L	13	14							
L2+00, 33L	7	7							
L2+00, 66L	5	6							
KEROSENE TK									
BLK+66, 00R	9	10							
BLK+66, 33L	8	9							
K1+00, 00R	7	8							
K1+00, 33L	6	9							

REMARKS: ESDP L1+66, 33L IS ALSO K1+66, 66R

UNC MINING AND MILLING

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LW0/125/9073, Cs137/1524
LW/19/9180 220-230 mR/HR

TABLE 6

COMPUTATIONS

SUBJECT TABLE FOR THE CCD PUMP HOUSE OUTDOOR RADIOLOGICAL DATA (A-9)

Sheet No. _____ of _____

Made By mc Date 3-15-93

Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
G5+66, 00R	11	12							
G5+66, 33R	7	8							
G5+66, 66R	8	9							
H5+66, 00R	8	9							
H6+00, 00R	8	9							
H6+00, 33L	8	10							
H6+00, 66L	10	11							
G6+00, 00R	8	9							
G6+00, 33L	9	8							
G6+33, 00R	9	12	7.1	5.5					
G6+33, 33L	9	10							
G6+33, 33R	9	10	4.5						
G6+33, 66L	8	9							
H6+33, 00R	8	9							
H6+66, 00R	7	8							
H6+66, 33L	12	14							
H6+66, 00R	9	10							
H6+66, 33R	8	10							

REMARKS: _____

UNC MINING AND MILLING

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INSTRUMENTATION:
LUD/19/9180. CS137/1524
LUD/125/9073 220-230 cpm/μR.

TABLE 7

COMPUTATIONS

SUBJECT TABLE FOR THE INACTIVATED BASIN AND SEWAGE TREATMENT PLANT OUTDOOR RADIOLOGICAL DATA (A-10 & A-11)

Sheet No. ____ of ____
Made By mc Date 3-15-93
Chkd. By [illegible] Date 3/22/95

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
H10+00,00R	8	9							
H10+00,33R	9	10							
H10+00,66R	7	8							
I10+00,00R	7	8							
I10+33,00R	7	8							
I10+33,33L	7	8							
I10+33,66L	9	10							
H10+33,00R	7	8							
H10+33,33L	8	9							
H10+66,00R	7	8							
H10+66,33R	7	8							
IN+00,00R	6	7							
I11+00,33L	13	12							
I11+00,66L	9	10							
I11+33,33L	5	6							
I11+33,66L	6	7							
H11+00,00R	8	9							
H11+33,33R	9	8							
SEWAGE TREATMENT PLANT									
D6+33,00R	15	16							
D6+66,00R	15	18	2.7						

REMARKS:

UNC MINING AND MILLING

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LWO/120/9073. CS177/1569
LWI/19/9180 220-230 μR/hr

TABLE 8

COMPUTATIONS

SUBJECT TABLE FOR THE LEACH OUTDOOR RADIOLOGICAL DATA, (A-12)

Sheet No. _____ of _____

Made By MC Date 3-15-93

Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL
F2+33,00R	9	10							
F2+33,33R	7	8							
F2+33,66R	9	10							
F2+66,00R	9	10							
F2+66,33R	10	11							
F2+66,66R	10	11							
F3+00,00R	9	10							
F3+00,33R	10	11							
F3+00,66R	11	12	2.7						
G3+00,00R	8	9							
G3+33,00R	8	7							
G3+66,00R	10	12							
G4+00,00R	7	8							
G4+33,33L	8	9							
G4+00,33L	8	9							
F3+66,33R	14	15							
G3+66,33L	10	12							
F3+33,33R	13	14	4.2						
G3+33,33L	9	8							

REMARKS:

UNC MINING AND MILLING

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UNC

LUD/19/9180. Cs137/1524
LUD/125/9073 220-230 μR/HR

TABLE 9

COMPUTATIONS

SUBJECT TABLE FOR THE CLARIFLOC, RAFFINATE AND SODIUM CHLORATE STORAGE OUTDOOR RADIOLOGICAL DATA. (A-7, A-8 & A-13)

Sheet No. _____ of _____
Made By MC Date 3-15-92
Chkd. By EMM Date 3/22/93

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
CLARIFLOC									
I3+33, 00R	10	11							
I3+33, 33L	9	10							
I3+66, 00R	8	9							
I3+66, 33L	7	8	1.2						
I3+66, 66L	7	8							
I4+00, 00R	7	8							
I4+00, 33L	9	10							
I4+00, 66L	9	10							
RAFFINATE									
I4+33, 00R	9	10							
I4+33, 33L	9	10							
I4+66, 00R	8	7	1.3						
I4+66, 33R	7	8							
I4+66, 33L	6	8							
I5+00, 00R	7	8							
I5+00, 33L	7	8							
SODIUM CHLORATE STORAGE BLDG.									
H3+66, 00R	13	11							
H3+66, 33L	12	11							

REMARKS:

UNC MINING AND MILLING

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TABLE 10

COMPUTATIONS

SUBJECT TABLE FOR BORROW MATERIAL RADIOLOGICAL DATA

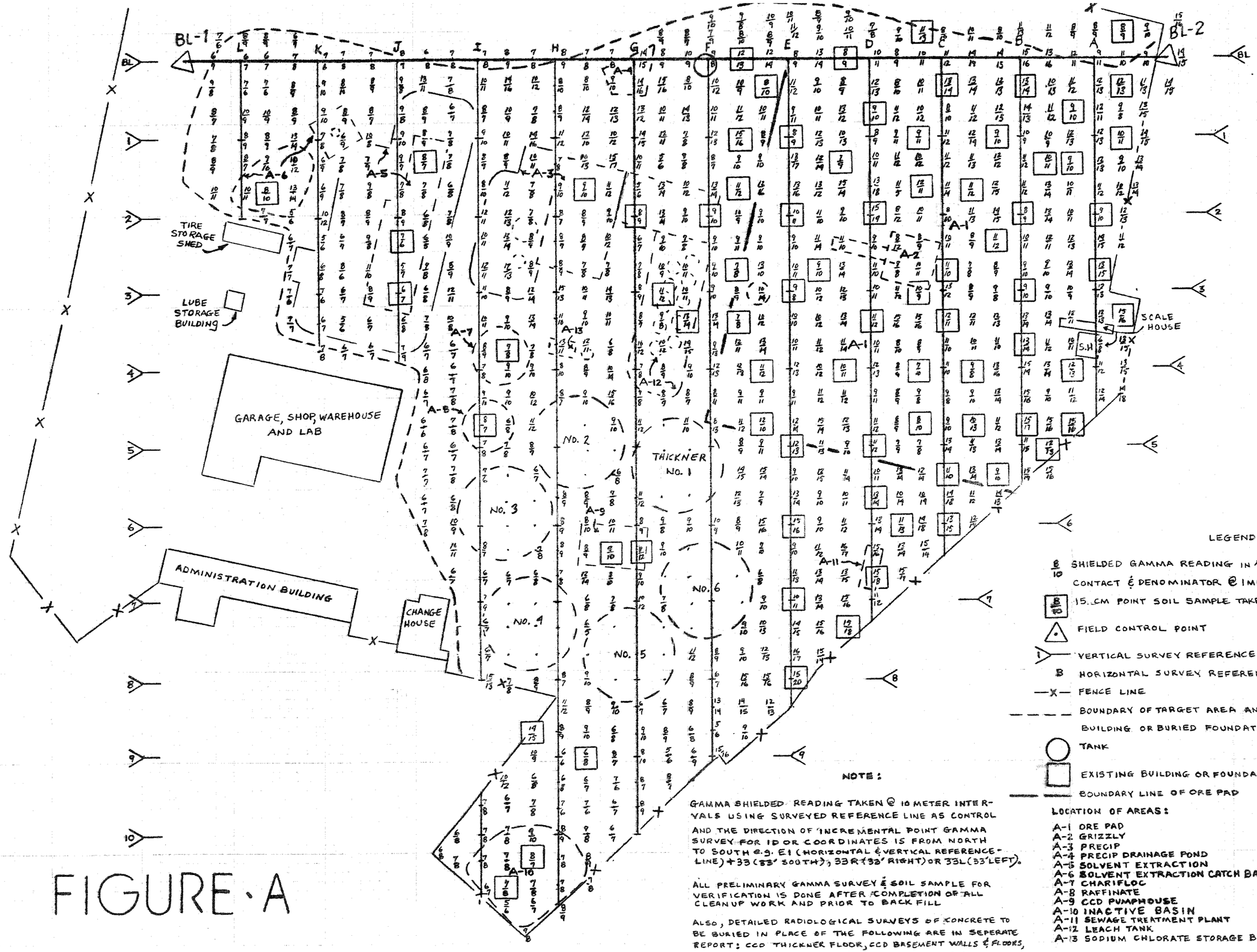
Sheet No. _____ of _____

Made By AC Date 3-15-93

Chkd. By _____ Date _____

POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL	POINT ID OR COORDINATES	CONTACT γ μR/HR READING	1 METER γ μR/HR READING	Ra-226 IN pCi/gm by γ SPEC.	Ra-226 IN pCi/gm by CHEM. ANAL.
BL3+200, -190	7	8	1.8						
BL3+200, -250	7	8	2.1						
BL3+350, -150	7	8	0.5						
BL3+350, -250	7	8	1.0						
BL250, -190	7	8	0.7						
BL250, -100	7	8	1.2						
BL3+300, -150	7	8	0.4						
BL3+300, -250	7	8	1.9	0.6					
BL250, -300	7	8							
BL3+50, -150	5	7							
BL3+100, -163	7	8							
BL3+150, -175	5	6							
BL3+200, -180	7	8							
BL3+400, -163	7	8							
BL3+450, -178	7	8							

REMARKS: _____



FIGURE·A

NOTE:

GAMMA SHIELDED READING TAKEN @ 10 METER INTERVALS USING SURVEYED REFERENCE LINE AS CONTROL AND THE DIRECTION OF INCREMENTAL POINT GAMMA SURVEY FOR ID OR COORDINATES IS FROM NORTH TO SOUTH e.g. E1 (HORIZONTAL & VERTICAL REFERENCE LINE) +33 (33' SOUTH), 33R (33' RIGHT) OR 33L (33' LEFT).

ALL PRELIMINARY GAMMA SURVEY & SOIL SAMPLE FOR VERIFICATION IS DONE AFTER COMPLETION OF ALL CLEANUP WORK AND PRIOR TO BACK FILL

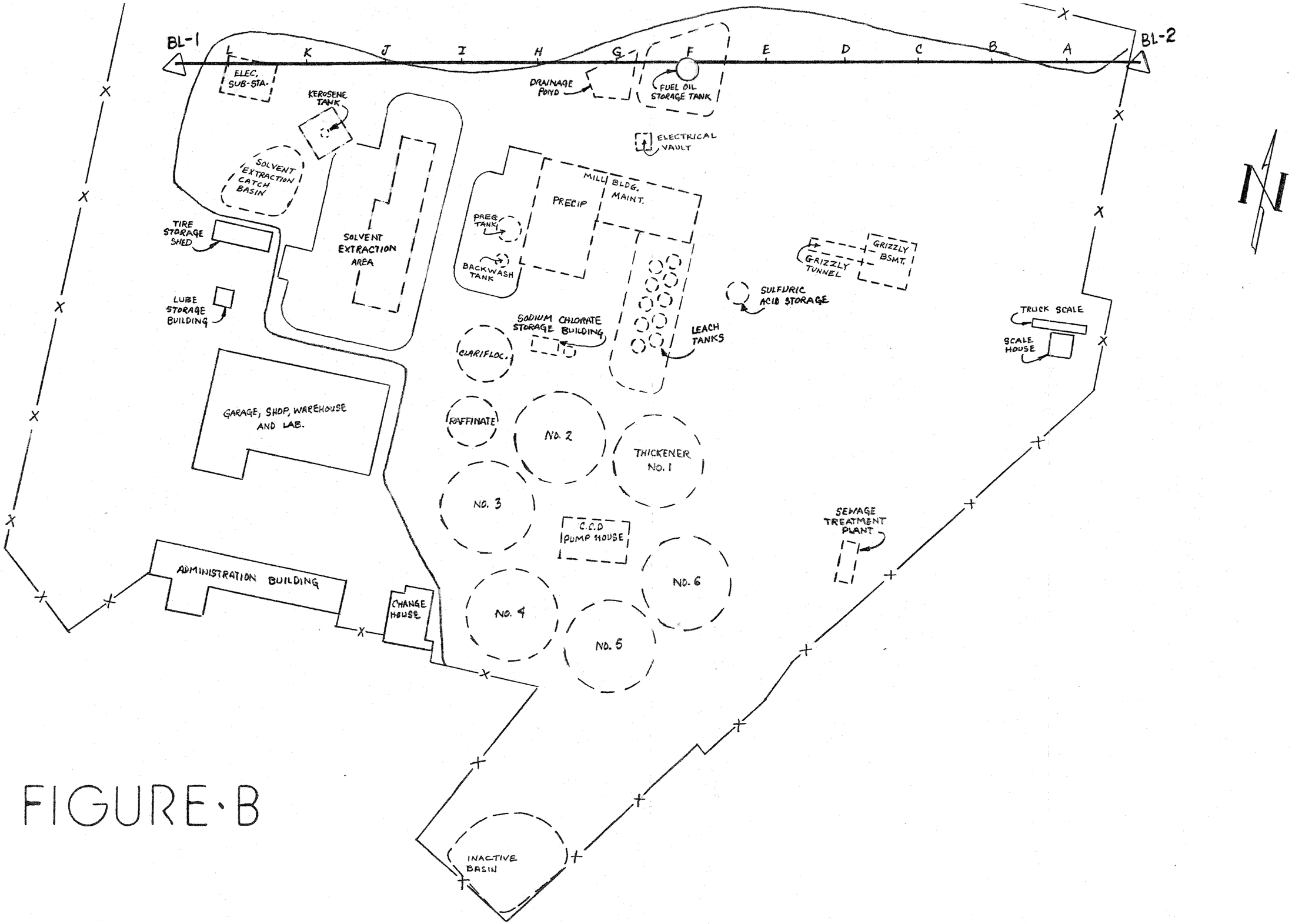
ALSO, DETAILED RADIOLOGICAL SURVEYS OF CONCRETE TO BE BURIED IN PLACE OF THE FOLLOWING ARE IN SEPERATE REPORT: CCD THICKNER FLOOR, CCD BASEMENT WALLS & FLOORS, CCD TUNNEL FLOORS, WALLS & CEILINGS AND THE GRIZZLY

LEGEND:

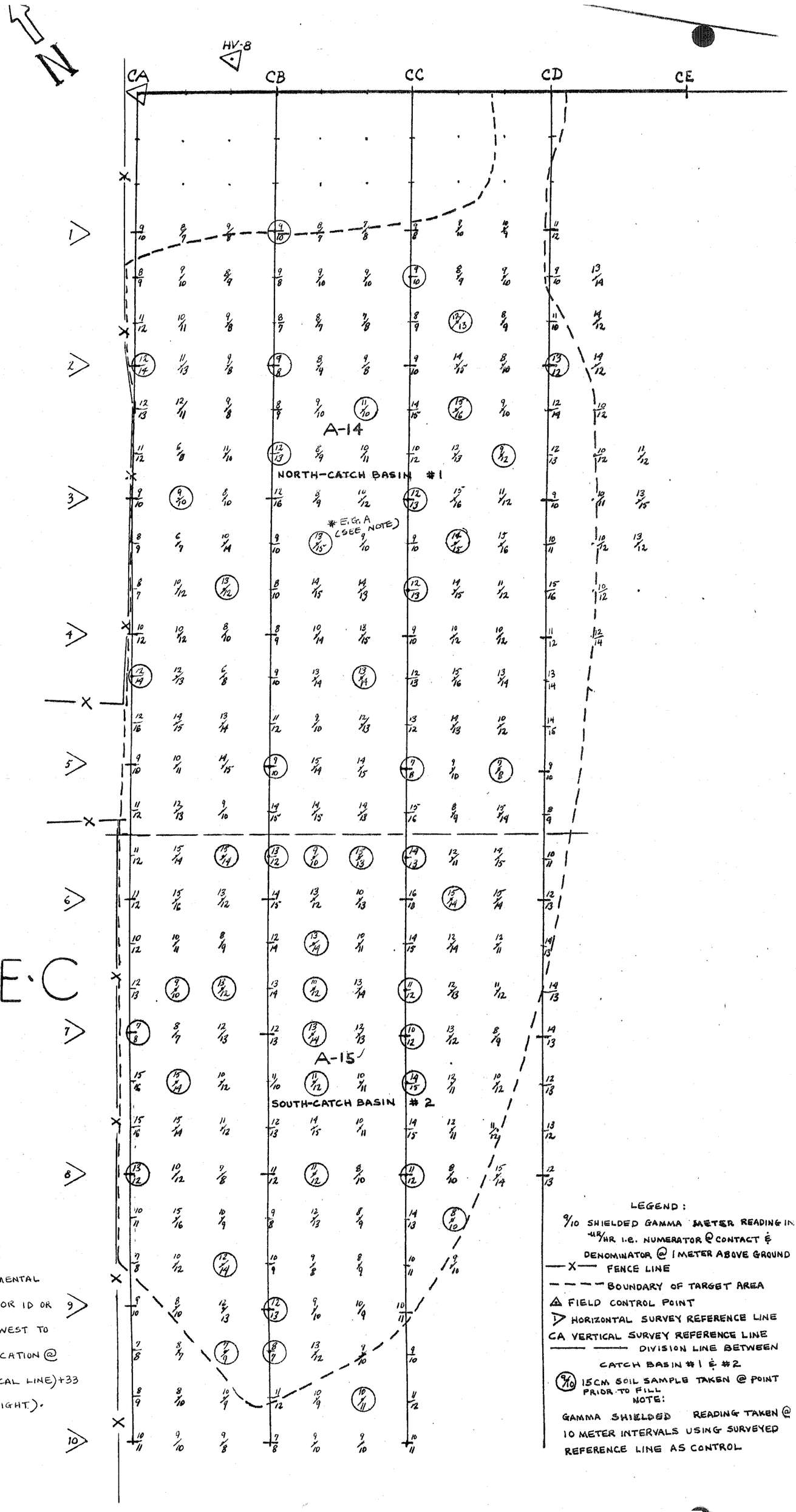
- 8/10 SHIELDED GAMMA READING IN MR/HR i.e NUMERATOR @ GROUND CONTACT & DENOMINATOR @ 1 METER ABOVE GROUND LEVEL.
- 8/10 15 CM POINT SOIL SAMPLE TAKEN @ GAMMA READING.
- FIELD CONTROL POINT
- VERTICAL SURVEY REFERENCE LINE
- B HORIZONTAL SURVEY REFERENCE LINE
- —X— FENCE LINE
- BOUNDARY OF TARGET AREA AND OUTLINE OF DEMOLISHED BUILDING OR BURIED FOUNDATION, TANK AND POND
- TANK
- EXISTING BUILDING OR FOUNDATION
- BOUNDARY LINE OF ORE PAD

LOCATION OF AREAS:

A-1 ORE PAD
A-2 GRIZZLY
A-3 PRECIP
A-4 PRECIP DRAINAGE POND
A-5 SOLVENT EXTRACTION
A-6 SOLVENT EXTRACTION CATCH BASIN AND KEROSENE TANK
A-7 CHARIFLOC
A-8 RAFFINATE
A-9 CCD PUMPHOUSE
A-10 INACTIVE BASIN
A-11 SEWAGE TREATMENT PLANT
A-12 LEACH TANK
A-13 SODIUM CHLORATE STORAGE BUILDING


BL-1
BL-2
L
K
J
I
H
G
F
E
D
C
B
A
ELEC. SUB-STA.
KEROSENE TANK
DRAINAGE POND
FUEL OIL STORAGE TANK
ELECTRICAL VAULT
SOLVENT EXTRACTION CATCH BASIN
TIRE STORAGE SHED
SOLVENT EXTRACTION AREA
MILL BLDG.
PRECIP
MAINT.
PREG. TANK
BACKWASH TANK
GRIZZLY
GRIZZLY BSMT.
GRIZZLY TUNNEL
SULFURIC ACID STORAGE
LUBE STORAGE BUILDING
SODIUM CHLORATE STORAGE BUILDING
LEACH TANKS
TRUCK SCALE
SCALE HOUSE
CLARIFLOC.
GARAGE, SHOP, WAREHOUSE AND LAB.
RAFFINATE
NO. 2
THICKENER NO. 1
NO. 3
C.C.D PUMP HOUSE
SEWAGE TREATMENT PLANT
ADMINISTRATION BUILDING
CHANGE HOUSE
NO. 4
NO. 5
NO. 6
INACTIVE BASIN
N

FIGURE·B



FIGURE·C

NOTE ALSO:

THE DIRECTION OF INCREMENTAL POINT GAMMA SURVEY FOR ID OR COORIDINATES IS FROM WEST TO EAST *E.G. A IS 13/15 LOCATION @ CB (HORIZONTAL & VERTICAL LINE) +33 (33' EAST), 33 R (33' RIGHT).

LEGEND:

9/10 SHIELDED GAMMA METER READING IN μR/HR i.e. NUMERATOR @ CONTACT & DENOMINATOR @ 1 METER ABOVE GROUND

—X— FENCE LINE

- - - - BOUNDARY OF TARGET AREA

△ FIELD CONTROL POINT

▷ HORIZONTAL SURVEY REFERENCE LINE

CA VERTICAL SURVEY REFERENCE LINE

——— DIVISION LINE BETWEEN CATCH BASIN #1 & #2

9/10 15CM SOIL SAMPLE TAKEN @ POINT PRIOR TO FILL

NOTE:

GAMMA SHIELDED READING TAKEN @ 10 METER INTERVALS USING SURVEYED REFERENCE LINE AS CONTROL

UNC MINING AND MILLING

CHURCHROCK MINE
P.O. BOX QQ
GALLUP, NEWMEXICO
(505) 722-6651

P.O. BOX 3951
ALBUQUERQUE, NEW MEXICO 87190
(505) 265-4421

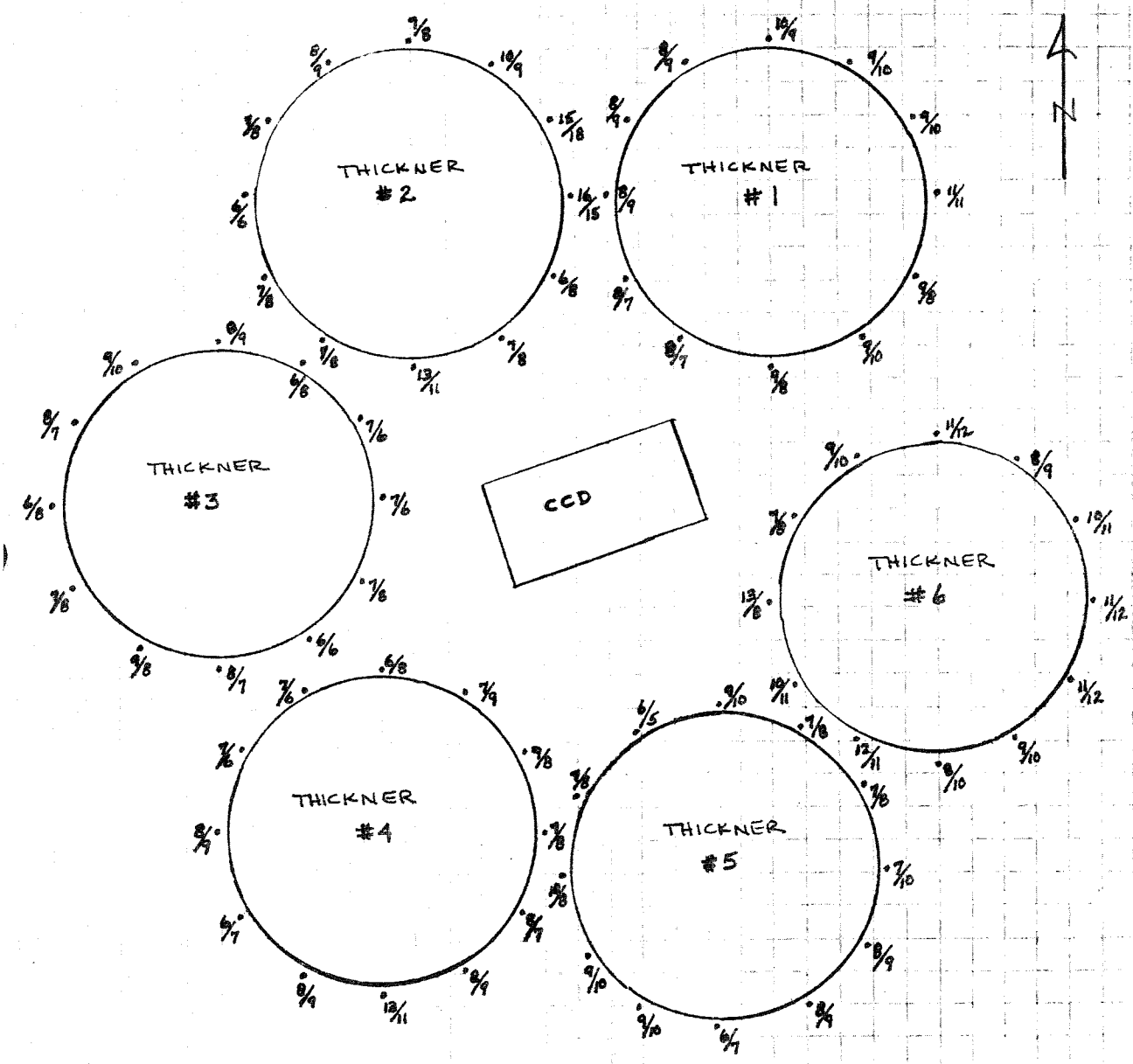
EBERLINE PS-2/285 w/AC-3/714209. Th230/ =23% EFF. 11093
LUD/19/9180. Cs137/1524 220-230 μR/HR.
LUD/125/9073

FIG. D

COMPUTATIONS

SUBJECT GAMMA SURVEY FOR VERIFICATION AFTER CLEANUP @ BOTTOM OF TRENCH AREAS BEFORE FILL ALONGSIDE EDGE OF THICKNERS. READINGS TAKEN EVERY 33' AROUND THE THICKNERS.

Sheet No. 1 of 1
Made By [illegible] Date 8-2, 8-5-92
Chkd. By [illegible] Date 3/20/93



NOTE:

NOT TO SCALE
FINAL ALPHA READINGS ON OUTER RIM CEMENT AREAS = 37.0 - 370 DPM FOR ALL THICKNERS

LEGEND:

9/10 SHIELDED GAMMA EXPOSURE READING IN μR/HR i.e. NUMERATOR @ CONTACT & DENOMINATOR @ 1 METER ABOVE GROUND.

LUD/125/9073. CS137/1524
LUD/19/9180. 220-230 μR/HR.

UNC MINING AND MILLING

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GALLUP, NEWMEXICO
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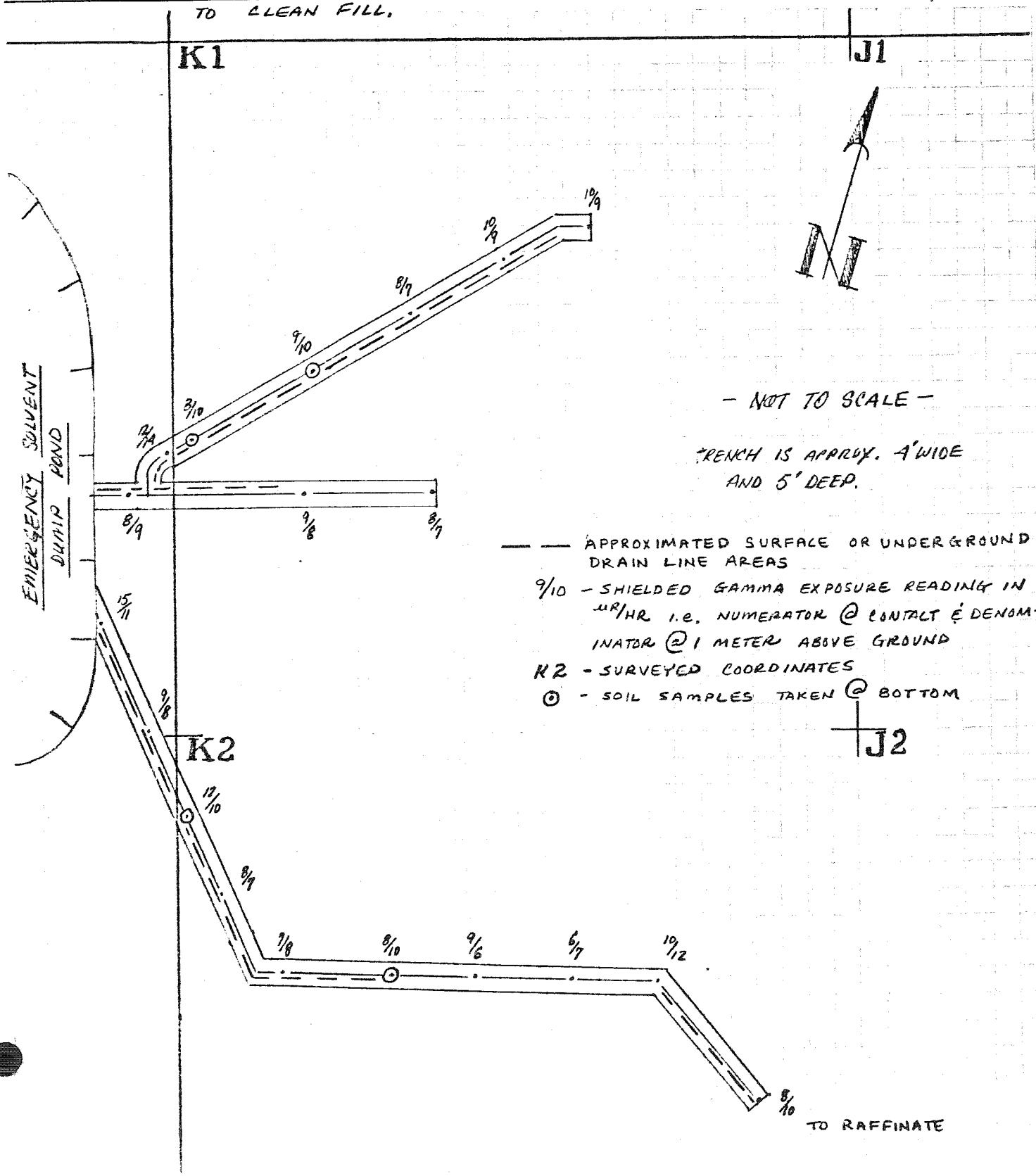
ALBUQUERQUE, NEW MEXICO 87190
(505) 265-4421

FIG. E

COMPUTATIONS

SUBJECT BOTTOM OF TRENCH AFTER EXCAVATION OF DRAIN PIPE FROM S-X CIRCUIT TO EMERGENCY SOLVENT DUMP POND PRIOR TO CLEAN FILL.

Sheet No. 1 of 1
Made By MC Date 7-28-92
Chkd. By EMM Date 3/20/93



APPENDIX F

- Graph Showing Correlation of ur/hr gamma vs. pci/gm Ra226
- Laboratory Report of Soil Sample Analysis Used in Correlation
- Tables with Compiled Radiological Data to Produce Correlation Graph

GAMMA SPECTROSCOPY ANALYSES FOR Ra-226 SOIL CONTENT ACTIVITY IN PCI/gM

5. OUTDOOR FIELD SURVEY FOR GAMMA RAY EXPOSURE RATE IN μR/HR

NOTE: • GROUND CONTACT SHIELDED METER GAMMA READING

⊙ 1 METER ABOVE GROUND SHIELDED METER GAMMA READING

——— LINEAR RELATIONSHIP LINE FOR THE ABOVE •

FINDINGS FOR RELATIONSHIP CORRELATION:

• 6-15 μR/HR RANGE

CORRELATION COEFFICIENT (r) = 0.4295

SLOPE = 0.4716, Y-INTERCEPT = −1.65, 6 pci/gM = 16.22 μR/HR

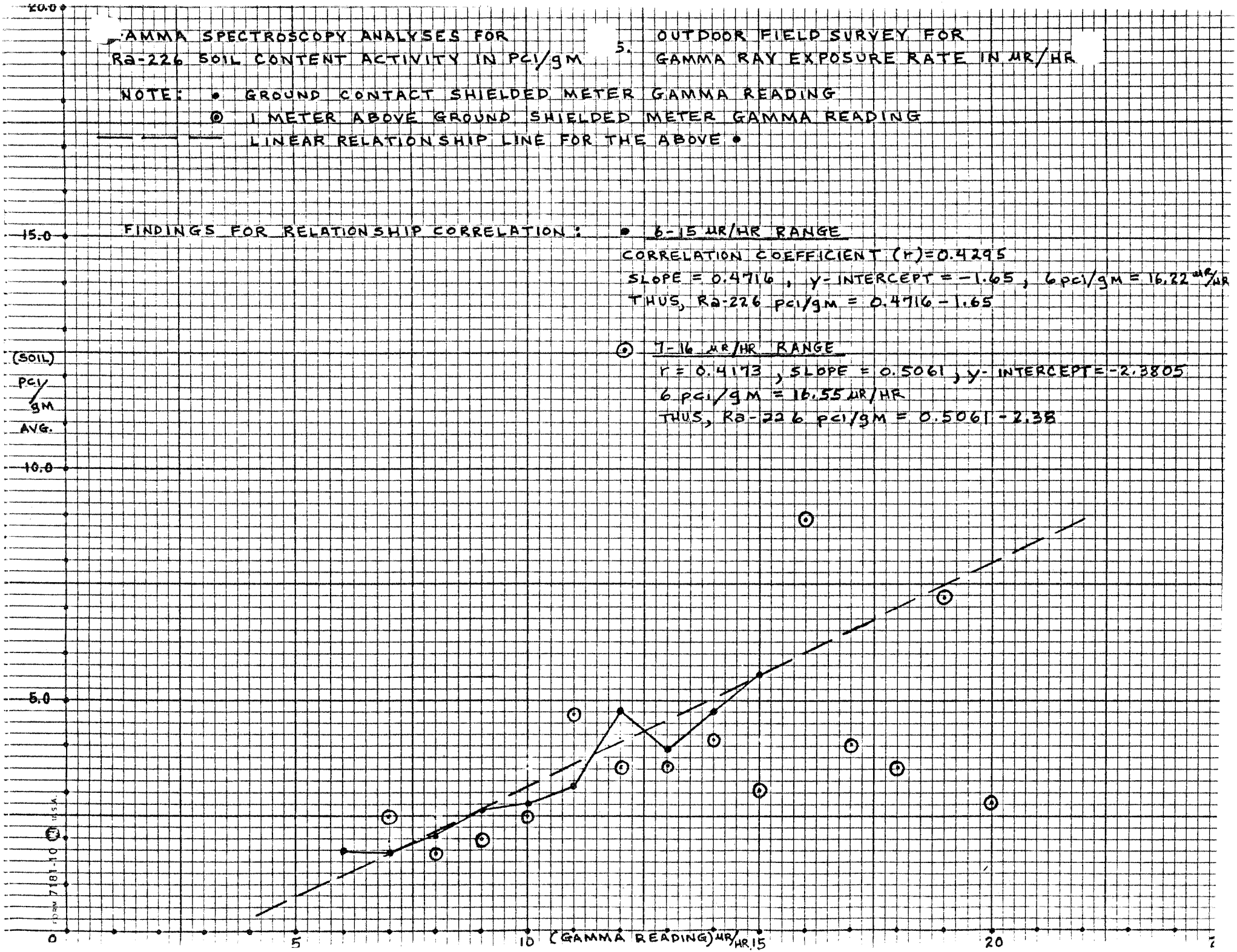
THUS, Ra-226 pci/gM = 0.4716 − 1.65

⊙ 7-16 μR/HR RANGE

r = 0.4173, SLOPE = 0.5061, Y-INTERCEPT = −2.3805

6 pci/gM = 16.55 μR/HR

THUS, Ra-226 pci/gM = 0.5061 − 2.38



ENERGY LABORATORIES, INC.
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254 NORTH CENTER, SUITE 100 • CASPER, WY 82601 • FAX (307) 234-1639

UNITED NUCLEAR CORPORATION
SOIL ANALYSIS REPORT

P.O. # EW-42-9-92

Report Date: 10-27-92

ELI #	Sample ID		Sample Date	Gamma Ra226	Ra226 Prec. +/-
92- 35603	E4+00, 33R		08-25-92	3.9	0.6
92- 35604	BLE+33, 33R		08-25-92	1.6	0.3
92- 35605	BLD+00, 33R		08-25-92	2.8	0.4
92- 35606	BLE+00, 66R		08-25-92	4.8	0.6
92- 35607	E2+00, 00R		08-25-92	2.4	0.4
92- 35608	E1+00, 66R		08-25-92	4.3	0.6
92- 35609	D3+33, 00R		08-25-92	4.1	0.6
92- 35610	BLD+66, 00R		08-25-92	2.6	0.4
92- 35611	C4+00, 33R		08-25-92	2.3	0.4
92- 35612	D1+33, 33R		08-25-92	1.9	0.3
92- 35613	E5+00, 00R		08-25-92	7.5	0.9
92- 35614	E4+66, 33R		08-25-92	3.5	0.5
92- 35615	D2+00, 00R		08-25-92	7.2	0.9
92- 35616	D5+00, 00R		08-25-92	4.8	0.6
92- 35617	E3+00, 00R	ORE PAD AREAS	08-25-92	2.6	0.4
92- 35618	D4+00, 33R		08-25-92	3.4	0.5
92- 35619	E1+00, 00R		08-25-92	1.6	0.3
92- 35620	E2+66, 33L		08-25-92	2.3	0.4
92- 35621	A1+33, 33R		08-26-92	3.5	0.5
92- 35622	B1+33, 33L		08-26-92	2.3	0.4
92- 35623	A2+00, 00R		08-26-92	2.6	0.4
92- 35624	CI+66, 33L		08-26-92	4.5	0.6
92- 35625	A1+00, 33L		08-26-92	2.7	0.4
92- 35626	BLB+33, 00R		08-26-92	4.9	0.7
92- 35627	B2+00, 00R		08-26-92	2.0	0.3
92- 35628	C4+66, 33R		08-26-92	3.5	0.5
92- 35629	BLA+33, 33L		08-26-92	2.3	0.4
92- 35630	BLA-33, 33L		08-26-92	5.2	0.7
92- 35631	B1+00, 33R		08-26-92	2.7	0.4
92- 35632	BLC-33, 33R		08-26-92	3.8	0.5
92- 35633	E3+33, 66R		08-26-92	1.3	0.2
92- 35634	C1+00, 33R		08-26-92	3.7	0.5
92- 35635	BLC+33, 00R		08-26-92	3.7	0.5
92- 35636	C3+33, 00R		08-26-92	21.1	1.6
92- 35637	D5+66, 00R		08-26-92	4.0	0.6
92- 35638	C5+33, 00R		08-26-92	1.6	0.3
92- 35639	E1+66, 66R		08-26-92	2.9	0.4
92- 35640	C3+00, 00R		08-26-92	3.2	0.5
92- 35641	C1+66, 33R		08-26-92	4.8	0.6
92- 35642	E2+66, 66R		08-26-92	1.5	0.2
92- 35643	A3+33, 33L		08-27-92	11.4	1.1

ELI

Page Two
United Nuclear Corporation
Soil Analysis Report
10-27-92

ELI #	Sample ID		Sample Date	Gamma Ra226	Ra226 Prec. +/-
92- 35644	C2+66, 00R		08-27-92	4.0	0.5
92- 35645	B3+00, 00R		08-27-92	1.4	0.2
92- 35646	A2+66, 00R		08-27-92	4.6	0.6
92- 35647	A4+00, 33R		08-27-92	5.7	0.7
92- 35648	BLA+66, 33R		08-27-92	2.6	0.4
92- 35649	B3+66, 00R		08-27-92	10.0	1.0
92- 35650	B2+33, 33R		08-27-92	5.0	0.7
92- 35651	B4+00, 66R		08-27-92	2.8	0.4
92- 35652	C6+00, 33R		09-01-92	2.4	0.4
92- 35653	E8+00, 00R		09-01-92	2.8	0.4
92- 35654	E7+00, 00R	ORE PAD AREAS	09-01-92	1.3	0.2
92- 35655	C6+00, 00R		09-01-92	1.5	0.2
92- 35656	B5+33, 33R		09-01-92	2.4	0.4
92- 35657	E6+00, 00R		09-01-92	18.9	1.5
92- 35658	D6+66, 00R		09-01-92	2.7	0.4
92- 35659	E7+33, 66L		09-01-92	2.4	0.4
92- 35660	C4+66, 33L		09-01-92	3.2	0.5
92- 35661	B4+66, 66L		09-01-92	5.6	0.7
92- 35662	B5+00, 33L		09-01-92	1.1	0.2
92- 35663	B4+66, 00R		09-01-92	4.1	0.6
92- 35664	H9+00, 33L		09-03-92	1.7	0.3
92- 35665	HB+66, 33R		09-03-92	7.6	0.8
92- 35666	BL3+200,-100		08-14-92	1.8	0.3
92- 35667	BL3+200,-250		08-14-92	2.1	0.3
92- 35668	BL3+350,-150		08-14-92	0.5	0.1
92- 35669	BL3+350,-250	BORROW/BACKGROUND MATERIAL AREAS	08-14-92	1.0	0.2
92- 35670	BL250,-190		08-20-92	0.7	0.1
92- 35671	BL250,-100		08-20-92	1.2	0.2
92- 35672	BL3+300,-150		08-10-92	0.4	0.1
92- 35673	BL3+300,-250		08-10-92	1.9	0.3
92- 35674	SX SW TRENCH BOTTOM		07-27-92	3.0	0.4
92- 35675	SX MID TRENCH BOTTOM		07-27-92	0.9	0.2
92- 35676	SX N. TRENCH BOTTOM	SOLVENT EXTRACTION AREAS	07-27-92	1.8	0.3
92- 35677	SX S. TRENCH BOTTOM		07-27-92	1.6	0.3
92- 35678	SX J3+00, 00R		07-28-92	1.7	0.3
92- 35679	SX J2+33, 00R		07-28-92	3.7	0.5
92- 35680	SX J1+33, 33L		07-28-92	2.1	0.3
92- 35681	ESDP K1+66, 66R	SOLVENT EXTRACTION CATCH BASIN	07-28-92	5.3	0.7
92- 35682	PRECHP H2+33, 33R	PRECIP MILL BUILDING AREAS	08-03-92	2.1	0.3
92- 35683	PRECHP G2+00, 00R		08-03-92	0.0	0.0
92- 35684	PRECHP F2+00, 00R		08-03-92	1.9	0.3
92- 35685	LEACH F3+33, 33R	LEACH TANK AREAS	08-03-92	4.2	0.6
92- 35686	LEACH F3+00, 66R		08-03-92	2.7	0.4
92- 35687	CLARIFLOC I3+66, 33L	CLARIFLOC TANK AREAS	08-03-92	1.2	0.2

ELI

Page Three
United Nuclear Corporation
Soil Analysis Report
10-27-92

ELI #	Sample ID	Sample Date	Gamma Ra226	Ra226 Prec. +/-
92- 35688	RAFFINATE I4+66, 00R (RAFFINATE TK. AREA)	08-03-92	1.3	0.2
92- 35689	THICKNER #2 S. TRENCH BOTTOM	08-04-92	2.2	0.3
92- 35690	THICKNER #3 S. TRENCH BOTTOM	08-10-92	0.9	0.2
92- 35691	THICKNER #5 S. TRENCH BOTTOM	08-04-92	0.6	0.1
92- 35692	THICKNER #5 E. TRENCH BOTTOM	08-10-92	1.0	0.2
92- 35693	THICKNER #5 N. TRENCH BOTTOM	08-10-92	1.1	0.2
92- 35694	THICKNER #6 S. TRENCH BOTTOM	08-10-92	2.1	0.3
92- 35695	THICKNER #6 W. TRENCH BOTTOM	08-10-92 (AROUND THICKNERS)	1.3	0.2
92- 35696	THICKNER #6 N. TRENCH BOTTOM	08-10-92	2.4	0.4
92- 35697	THICKNER #4 E. TRENCH BOTTOM	08-10-92	1.3	0.2
92- 35698	THICKNER #4 S. TRENCH BOTTOM	08-10-92	1.9	0.3
92- 35699	THICKNER #4 N. TRENCH BOTTOM	08-10-92	1.6	0.3
92- 35700	THICKNER #1 S. TRENCH BOTTOM	08-10-92	1.8	0.3
92- 35701	THICKNER #1 N. TRENCH BOTTOM	08-10-92	1.8	0.3
92- 35702	THICKNER #1 E. TRENCH BOTTOM	08-04-92	2.1	0.3
92- 35703	CCD G6+33, 00R (CCD PUMP HOUSE AREA)	08-10-92	7.1	0.8
92- 35704	CCD G6+33, 33R	08-10-92	4.5	0.6
92- 35705	S. CATCH BASIN CA8+66, 66R	08-20-92	4.8	0.6
92- 35706	S. CATCH BASIN CB9+00, 00R	08-20-92	6.5	0.8
92- 35707	S. CATCH BASIN CB7+33, 33L	08-20-92	2.4	0.4
92- 35708	S. CATCH BASIN CB9+00, 33R	08-20-92	4.3	0.6
92- 35709	S. CATCH BASIN CB9+66, 66R	08-20-92	3.4	0.5
92- 35710	S. CATCH BASIN CB7+33, 00R	08-20-92	4.5	0.6
92- 35711	S. CATCH BASIN CC8+33, 33R	08-20-92	2.0	0.3
92- 35712	S. CATCH BASIN CA9+66, 33R	08-20-92	2.1	0.3
92- 35713	S. CATCH BASIN CB6+33, 33L	08-20-92	1.7	0.3
92- 35714	S. CATCH BASIN CB6+00, 33L	08-20-92	2.8	0.4
92- 35715	S. CATCH BASIN CA6+66, 33L	08-20-92	2.8	0.4
92- 35716	S. CATCH BASIN CC8+00, 00R	08-20-92	1.6	0.3
92- 35717	S. CATCH BASIN CC7+00, 33L	08-20-92	2.7	0.4
92- 35718	S. CATCH BASIN CC7+00, 00R	08-20-92	3.2	0.5
92- 35719	S. CATCH BASIN CC5+66, 00R	08-20-92	1.5	0.2
92- 35720	S. CATCH BASIN CA8+00, 00R	08-20-92	3.4	0.5
92- 35721	S. CATCH BASIN CB7+33, 33R	08-20-92	2.0	0.3
92- 35722	S. CATCH BASIN CC6+00, 33L	08-20-92	3.4	0.5
92- 35723	S. CATCH BASIN CA7+33, 33R	08-20-92	7.0	0.8
92- 35724	S. CATCH BASIN CC6+33, 00R	08-20-92	1.7	0.3
92- 35725	S. CATCH BASIN CB8+33, 00R	08-20-92	2.8	0.4
92- 35726	S. CATCH BASIN CA7+00, 00R	08-20-92	1.9	0.3

ELI

Page Four
United Nuclear Corporation
Soil Analysis Report
10-27-92

ELI #	Sample ID	Sample Date	Gamma Ra226	Ra226 Prec. +/-
92- 35727	S. CATCH BASIN CB7+33, 66L	08-20-92	2.4	0.4
92- 35728	S. CATCH BASIN CB5+66, 66R	08-20-92	1.8	0.3
92- 35729	S. CATCH BASIN CA7+66, 33L	08-20-92	6.7	0.8
92- 35730	S. CATCH BASIN CA7+33, 33L	08-20-92	2.0	0.3
92- 35731	S. CATCH BASIN CC7+00, 33R	08-20-92	4.1	0.6
92- 35732	N. CATCH BASIN CC3+66, 33L	08-27-92	2.0	0.3
92- 35733	N. CATCH BASIN CB5+66, 66L	08-27-92	1.7	0.3
92- 35734	N. CATCH BASIN CA4+66, 33L	08-27-92	2.4	0.4
92- 35735	N. CATCH BASIN CA2+00, 00R	08-27-92	4.7	0.6
92- 35736	N. CATCH BASIN CC2+33, 33R	08-27-92	6.0	0.8
92- 35737	N. CATCH BASIN CB1+00, 00R	08-27-92	2.0	0.3
92- 35738	N. CATCH BASIN CB2+66, 33R	08-27-92	2.7	0.4
92- 35739	N. CATCH BASIN CD2+00, 00R	08-27-92	5.2	0.7
92- 35740	N. CATCH BASIN CC1+00, 33R	08-27-92	1.4	0.2
92- 35741	N. CATCH BASIN CC3+33, 33R	08-27-92	3.4	0.5
92- 35742	N. CATCH BASIN CB3+00, 33L	08-27-92	2.1	0.3
92- 35743	N. CATCH BASIN CC5+00, 00R	08-27-92	1.7	0.3
92- 35744	N. CATCH BASIN CC4+00, 33L	08-27-92	3.1	0.5
92- 35745	N. CATCH BASIN CC2+33, 33L	08-27-92	1.6	0.3
92- 35746	N. CATCH BASIN CB2+00, 00R	08-27-92	2.3	0.4
92- 35747	N. CATCH BASIN CB5+00, 00R	08-27-92	2.3	0.4
92- 35748	N. CATCH BASIN CA4+00, 33R	08-27-92	1.8	0.3
92- 35749	N. CATCH BASIN CB3+33, 33R	08-27-92	1.4	0.2
92- 35750	N. CATCH BASIN CA3+33, 00R	08-27-92	5.5	0.7
92- 35751	N. CATCH BASIN CC3+00, 00R	08-27-92	4.4	0.6

ELI

Page Five
United Nuclear Corporation
Soil Analysis Report
10-27-92

ELI #	Sample ID	Sample Date	"Chemical" Ra226	Ra226 Prec. +/-
92- 35603	E4+00, 33R	08-25-92	2.3	0.1
92- 35613	E5+00, 00R	08-25-92	7.5	0.2
92- 35623	A2+00, 00R	08-26-92	1.6	0.1
92- 35633	E3+33, 66R	08-26-92	0.6	0.1
92- 35643	A3+33, 33L	08-27-92	10.9	0.2
92- 35653	E8+00, 00R	09-01-92	1.9	0.1
92- 35663	B4+66, 00R	09-01-92	6.0	0.2
92- 35673	BL3+300,-250	08-10-92	0.6	0.1
92- 35683	PRECHP G2+00, 00R	08-03-92	0.6	0.1
92- 35693	THICKNER #5 N. TRENCH BOTTOM	08-10-92	0.7	0.1
92- 35703	CCD G6+33, 00R	08-10-92	5.5	0.2
92- 35713	S. CATCH BASIN CB6+33, 33L	08-20-92	1.0	0.1
92- 35723	S. CATCH BASIN CA7+33, 33R	08-20-92	9.0	0.2
92- 35733	N. CATCH BASIN CB5+66, 66L	08-27-92	4.7	0.2
92- 35743	N. CATCH BASIN CC5+00, 00R	08-27-92	0.9	0.1
92- 35628	C4+66, 33R	08-26-92	1.2	0.1
92- 35648	BLA+66, 33R	08-27-92	1.7	0.1
92- 35668	BL3+350,-150	08-14-92	0.4	0.1
92- 35688	RAFFINATE I4+66, 00R	08-03-92	0.9	0.1
92- 35708	S. CATCH BASIN CB9+00, 33R	08-20-92	3.8	0.1

ELI

Page Six
United Nuclear Corporation
Soil Analysis Report
10-27-92

"Quality Assurance Report"

ELI #	Sample ID	Sample Date	Gamma Ra226 Duplicates	% Recovery
92- 35610	BLD+66, 00R	08-25-92	2.8	91
92- 35620	E2+66, 33L	08-25-92	2.8	82
92- 35630	BLA-33, 33L	08-26-92	5.5	94
92- 35640	C3+00, 00R	08-26-92	4.3	76
92- 35650	B2+33, 33R	08-27-92	5.8	86
92- 35660	C4+66, 33L	09-01-92	4.1	77
92- 35670	BL250,-190	08-20-92	1.7	45
92- 35680	SX J1+33, 33L	07-28-92	2.4	88
92- 35690	THICKNER #3 S. TRENCH BOTTOM	08-10-92	1.1	85
92- 35700	THICKNER #1 S. TRENCH BOTTOM	08-10-92	2.0	90
92- 35710	S. CATCH BASIN CB7+33, 00R	08-20-92	3.6	125
92- 35720	S. CATCH BASIN CA8+00, 00R	08-20-92	2.7	129
92- 35730	S. CATCH BASIN CA7+33, 33L	08-20-92	3.2	63
92- 35740	N. CATCH BASIN CC1+00, 33R	08-27-92	1.1	134

Report Approved By: R.A. Harling

kmp

UNC MINING AND MILLING

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COMPUTATIONS

SUBJECT TABLE FOR Ra-226 CORRELATION GRAPH (i.e. SOIL ACTIVITY ANALYSIS (PCI/gm) VS. CONTACT AND 1 METER SHIELDED GAMMA RAY EXPOSURE READING (μR/HR) ON THE 1992 MILL DECOMMISSIONING

Sheet No. 1 of 4
Made By MC Date 3-4-93
Chkd. By _____ Date _____

GAMMA RAY EXPOSURE READING (μR/HR)	• - CONTACT	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
	⊙ - @ 1 METER	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0
(COORDINATES) →	E4+00, 33R						3.9	3.9							
	BLE+33, 33R				1.6										
	BLD+00, 33R			2.8	2.8										
	BLE+00, 66R							4.8	4.8						
	E2+00, 00R					2.4	2.4								
	E1+00, 66R										4.3	4.3			
	D3+33, 00R						4.1	4.1							
	BLD+66, 00R				2.6	2.6									
	C4+00, 33R			2.3	2.3										
	D1+33, 33R			1.9											
	E5+00, 00R							7.5	7.5						
	E4+66, 33R				3.5				3.5						
	D2+00, 00R											7.2		7.2	
	D5+00, 00R						4.8	4.8							
Ra-226 SOIL	E3+00, 00R		2.6			2.6									
CONTENT (PCI/gm)	D4+00, 33R					3.4	3.4								
@ COORDINATES	E1+00, 00R			1.6	1.6										
	E2+66, 33L				2.3	2.3									
	A1+33, 33R				3.5	3.5									
	B1+33, 33L					2.3	2.3								
	A2+00, 00R				2.6	2.6									
	C1+66, 33L						4.5	4.5							
	A1+00, 33L					2.7	2.7								
	BLB+33, 00R								4.9	4.9					
	B2+00, 00R			2.0	2.0										
	C4+66, 33R				3.5										
	BLA+33, 33L							2.3	2.3						
	BLA-33, 33L			5.2	5.2										
	B1+00, 33R				2.7	2.7									
	BLC-33, 33R							3.8							
	E3+33, 66R		1.3	1.3											
	C1+00, 33R					3.7									
	BLC+33, 00R								3.7	3.7					
	C3+33, 00R					21.1			21.1						
	D5+66, 00R								4.0	4.0					
	C5+33, 00R				1.6			1.6							
	E1+66, 66R						2.9	2.9							
	C3+00, 33R			3.2			3.2								
	C1+66, 33R					4.8			4.8						
	E2+66, 66R		1.5	1.5											
	A3+33, 33L										11.4	11.4			
	C2+66, 00R				4.0			4.0							

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SUBJECT TABLE FOR Ra-226 CORRELATION GRAPH (i.e. SOIL ACTIVITY ANALYSIS (PCI/gm) VS. CONTACT AND 1 METER SHIELDED GAMMA RAY EXPOSURE READING (μR/HR) ON THE 1992 MILL DECOMMISSIONING

Sheet No. 2 of 4
Made By MC Date 3-4-93
Chkd. By _____ Date _____

GAMMA RAY EXPOSURE READING (μR/HR)	• - CONTACT	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
	⊙ - @ 1 METER	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0
(COORDINATES) →	B3+00, 00R				1.4	1.4									
	A2+66, 00R									4.6					
	A4+00, 33R							5.7	5.7						
	B1A+66, 33R				2.6	2.6									
	B3+66, 00R								10.0	10.0					
	B2+33, 33R						5.0	5.0							
	B4+00, 66R				2.8	2.8									
	D6+00, 33R							2.4							
	E8+00, 00R											2.8			2.8
	E7+00, 00R					1.3	1.3								
	C6+00, 00R									1.5					
	B5+33, 33R				2.4	2.4									
	E6+00, 00R										18.9	18.9			
	D6+66, 00R											2.7	2.7		
Ra-226 SOIL	E7+33, 66L											2.4	2.4		
CONTENT (PCI/gm)	C4+66, 33L						3.2	3.2							
@ COORDINATES	B4+66, 66L											5.6	5.6		
	B5+00, 33L							1.1	1.1						
	B4+66, 00R											4.1			
	H9+00, 33L		1.7												
	H8+66, 33R (ESDP)										7.6				
	K1+66, 66R (PRECIP)										5.3				
	H2-33, 33L (PRECIP)				2.1	2.1									
	G2+00, 00R (PRECIP)			0.0	0.0										
	F2+00, 00R (LEACH)				1.9	1.9									
	F3+33, 33R (LEACH)								4.2	4.2					
	F3+00, 66R (CLARIFLOC)						2.7	2.7							
	13+66, 33L (RAFFINATE)		1.2	1.2											
	14+66, 00R	1.3			1.3										
	THICKNER #2 STB					2.2			2.2						
	THICKNER #3 STB		0.9	0.9											
	THICKNER #5 STB			0.6	0.6										
	THICKNER #5 ETB				1.0	1.0									
	THICKNER #5 NTB				1.1	1.1									
	THICKNER #6 STB						2.1	2.1							
	THICKNER #6 WTB			1.3	1.3										
	THICKNER #6 NTB				2.4	2.4									
	THICKNER #4 ETB			1.3	1.3										
	THICKNER #4 STB			1.9	1.9										
	THICKNER #4 NTB		1.6	1.6											
	THICKNER #1 STB	1.8	1.8												
	THICKNER #1 NTB		1.8	1.8											

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UBJECT TABLE FOR Ra-226 CORRELATION GRAPH (i.e. SOIL ACTIVITY ANALYSIS (PCI/gm) VS. CONTACT AND 1 METER SHIELDED GAMMA RAY EXPOSURE READING (μR/HR) ON THE 1992 MILL DECOMMISSIONING

Sheet No. 4 of 4
Made By MC Date 3-4-93
Chkd. By _____ Date _____

GAMMA RAY EXPOSURE READING (μR/HR)	• - CONTACT	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0			
	⊙ - @ 1 METER	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0
(COORDINATES) →	(NCB) CC4+00, 33L							⊙ 3.1	• 3.1						
	" CC2+33, 33L							⊙ 1.6	• 1.6						
	" CB2+00, 00R		⊙ 2.3			• 2.3									
	" CB5+00, 00R				⊙ 2.5	• 2.5									
	" CA4+00, 33R								• ⊙ 1.8						
	" CB3+33, 33R									• ⊙ 1.4					
	" CA3+33, 00R				⊙ 5.5	• 5.5									
	" CC3+00, 00R							⊙ 4.4	• 4.4						
AVERAGE PCI/gm by GAMMA SPEC.															
• - CONTACT			1.75	1.68	2.10	2.64	2.75	3.15	4.32	3.96	4.76	5.62			
⊙ - @ 1 METER		2.47	1.70	1.99	2.49	4.73	3.54	3.58	4.16	3.00	8.92	4.10	3.57	7.20	2.80
Ra-226 SOIL CONTENT (PCI/gm) @ COORDINATES															