

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-06139-RS
ADDRESS: 925 NORTH 2nd STREET

AUGUST 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION
P.O. Box 1569
Grand Junction, Colorado 81502

APPROVED BY

Michael H. Tucker
M. TUCKER
DOE PROJECT ENGINEER

DATE

August 20, 1985

REA06139:REA-AB009

8509100461 850821
PDR WASTE
WM-54 PDR

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-06139-RS, is two single-family residences located at 925 North 2nd Street, Grand Junction, Colorado.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property. This assessment includes recommended remedial action, estimated volume of material to be removed, and estimated cost of the proposed action.

1.2 Evaluation and Recommendation

The action recommended is the removal of contaminated material and restoration of the property to its original condition. The identified residual radioactive material found on this property is tailings; the estimated volume is: exterior, 20 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$2,271. Remedial action on this property will take approximately 10 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 925 North 2nd Street, Grand Junction, Colorado

Zoning: Residential (RMF-32)

Lot Size: Approximately 9,375 sf (0.22 acres)

Legal Description: South 1/2 of Lots 7, 8, 9, 10, 11, and 12, Block 12, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 miles northwest of the State of Colorado Tailings Repository. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utility locations are shown in Appendix Figure 2.2.

Electrical:	Overhead
Gas:	Underground
Telephone:	Overhead
Sewer:	Underground
Water:	Underground
Cable TV:	Overhead (primary structure)

Bordering Properties:

North:	Residence
South:	Alley
East:	North 2nd Street
West:	Residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 945 sf
Construction Date:	1927
Construction:	Wood-frame
Foundation:	Not investigated. Remedial action will not involve the structure.
Footing Depth:	Not investigated. Remedial action will not involve the structure.
Basement:	No
Crawl Space:	Yes
Condition:	Fair

Other Structures:

Type:	Single-family residence
Size:	Approximately 481 sf
Construction:	Wood-frame
Foundation:	Concrete slab-on-grade
Condition:	Fair
Type:	Sheds (2)
Size:	Approximately 51 and 29 sf
Construction:	Wood and prefabricated metal, respectively
Foundation:	None
Condition:	Fair

General Remarks:

Structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is over 50 years old. Therefore, it does meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

Alterations to Structure: None known

Architectural Significance: None known

Historical Significance: None known

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-06139-RS on May 19, 1985. Data collection methods were performed in accordance with procedures fully described in the Radiologic Support Operations Procedures Manual GJ-07(84) (Bendix Field Engineering Corporation, 1984). These data were evaluated to determine the areal and vertical extent of uranium mill tailings contamination at this property as well as any other contaminated material that may have originated from the millsite.

A review of historical information from the files of the Colorado Department of Health (CDH) and the inclusion data from Oak Ridge National Laboratory (ORNL) was conducted. These records indicate contamination associated with the sidewalk which runs north and south along North 2nd Street.

The Bendix radiologic survey was designed to investigate the entire property, with emphasis on previously identified areas of contamination. Conclusions based upon data analyses are discussed in Section 3.5, Extent of Contamination. Photocopies of the Official Survey Report, team leader notes, deconvolution graphs, and Exterior Gamma Scan map are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 15 to 17 uR/h
Highest Outside Gamma Reading (HOG): 53 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1.

3.2.2 Interior Findings

Background Readings: 14 to 17 uR/h
Highest Inside Gamma Reading (HIG): 17 uR/h

Interior radium-concentration measurements are presented in Appendix Table 3.2. Interior gamma exposure-rate measurements are summarized in Appendix Table 3.3.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figure 3.2. Data from these investigations are included in Appendix Table 3.1.

3.4 Radon/Radon Daughter Concentration (RDC)

The working level was not assessed by CDH. No RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figure 3.3 shows identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in this figure, areas recommended for remedial action that contain identified residual radioactive materials are:

- (AREA A) Contamination in the west yard extends to a depth of 6 inches (approximately 91 sf).
- (AREA B) A small deposit in the alley southwest of the primary structure is contaminated to a depth of 6 inches (approximately 15 sf).
- (AREA C) Contamination in the bushes along the north property line is 6 inches deep (approximately 119 sf).
- (AREA D) A deposit under the 4-inch-thick uncontaminated concrete sidewalk extends to a depth of 11 inches. The total depth of contamination is 15 inches (approximately 222 sf).
- (AREA E) The lawn south of the sidewalk is contaminated to a depth of 6 inches (approximately 27 sf).
- (AREA F) Contamination in the lawn north and east of the sidewalk extends to a depth of 12 inches (approximately 72 sf).
- (AREA G) A deposit east of the sidewalk is 12 inches deep (approximately 60 sf).

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-06139-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.3) and transport of removed material to the disposal site.

After remedial action is completed, the areas involved will be restored to original condition in accordance with the Bendix drawings, Vicinity Properties General Construction Specification (Bendix Field Engineering Corporation, 1984), and Statement of Work for Construction Subcontractor.

Dislocation of the occupants will not be required for this remedial action.

4.2 Evaluation of Recommended Remedial Action

Volume calculations of the areas included for remedial action are presented in Appendix Table 4.1. Cost estimates are presented in Appendix Table 4.2.

Estimated cost of remedial action is \$2,271.

This remedial action will result in removal of the identified residual radioactive materials.

There is no owner preference with respect to remedial action and no legal or other complications are foreseen at this time.

5.0 REFERENCES

ARIX, A Professional Corporation, Procedures Manual for the Grand Junction Remedial Action Program, for Colorado Department of Health, Radiation Control Division, and the U.S. Department of Energy, 1983.

Bendix Field Engineering Corporation, Procedures Manual Radiologic Support Operations Grand Junction Vicinity Properties, (GJ-07), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Engineering, Construction, and Land Support Manual Grand Junction Vicinity Properties Project, (GJ-08), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Grand Junction Vicinity Properties Operating Manual, (GJ-16) for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Vicinity Properties General Construction Specification, for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Environmental Assessment of Preliminary Cleanup Activities at Offsite Properties Contaminated by Tailings from the Grand Junction Inactive Uranium Millsite, (GJ-04), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations, Albuquerque, New Mexico, 1983.

U.S. Department of Energy, Programmatic Memorandum of Agreement (DOE No. DE-GM04-84AL28460) between the U.S. Department of Energy, the Advisory Council on Historic Preservation, and the Colorado State Historic Preservation Officer, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Department of Energy, Vicinity Properties Management and Implementation Manual, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Environmental Protection Agency, Standards for Remedial Action at Inactive Uranium Processing Sites (40 CFR Part 192), Washington, D.C., 1983.

6.0 APPENDIX

This Appendix contains the following:

Appendix Tables:

Table 3.1	Radium Concentrations at Exterior Locations
Table 3.2	Radium Concentrations at Interior Locations
Table 3.3	Summary of Interior Gamma Exposure Rates
Table 4.1	Area and Volume Calculations
Table 4.2	Estimated Cost of Decontamination and Restoration

Appendix Figures:

Figure 2.1	Vicinity Map
Figure 2.2	Site Plan
Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Exterior Sample Locations
Figure 3.3	Estimated Extent of Contamination

Official Survey Report

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Exterior Gamma Scan

Radium Concentrations at Exterior Locations

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 1 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
3	177256	00	DS	1.3		*	
		06	DS	1.5		*	
4	180264	00	DS	2.7		*	
		06	DS	1.5		*	
5	182260	00	DS	5.0		*	
		06	DS	1.7		*	
6	186257	00	DS	1.7		*	
		06	DS	1.2		*	
7	215227	00	DS	2.5		*	
		06	DS	1.4		*	
8	219255	03	TC	3.1		*	Sewer line South of secondary structure DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.6		*	
		12	TC	3.7		*	
		15	TC	3.7		*	
		18	TC	3.8		*	
		21	TC	4.0		*	
		24	TC	4.2		*	
		27	TC	4.1		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
		36	TC	4.1		*	
		39	TC	4.1		*	
		42	TC	4.2		*	
		45	TC	4.2		*	
		48	TC	4.2		*	
		51	TC	4.2		*	
9	227260	00	DS	1.2		*	Gas line South of secondary structure
		24	DS	1.6		*	
10	238275	03	TC	3.7		*	Water line East side of secondary structure DC = 0 inches
		06	BH	4.0	2.3	*	
		09	TC	4.5		*	
		12	TC	4.9		*	
		15	TC	5.3		*	
		18	BH	5.3	2.7	*	
		21	TC	5.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 2 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
10	238275	24	BH	4.7	2.6	*	
		27	TC	4.6		*	
		30	TC	4.8		*	
11	242229	00	DS	<1.0		*	Gas line
		09	DS	<1.0		*	
12	250287	00	DS	2.5		*	North property line
		06	DS	2.4		*	
		12	DS	1.9		*	
13	263288	00	DS	4.9		*	North property line
		06	DS	1.7		*	
14	264266	00	DS	1.5	1.7	*	Background DC = 0 inches
		03	TC	3.0		*	
		06	BH	3.4		*	
		09	TC	3.6		*	
		12	BH	3.7		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.7		*	
		24	BH	3.6		*	
15	270255	03	TC	3.1		*	Water line East side of primary structure DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.6		*	
		12	TC	3.8		*	
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	3.9		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
		33	TC	4.2		*	
		36	TC	4.3		*	
16	270289	03	TC	4.4		*	North property line DC = 0 inches
		06	TC	4.5		*	
		09	TC	4.4		*	
		12	TC	4.3		*	
		15	TC	4.0		*	
		18	TC	4.1		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 3 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
16	270289	21	TC	4.1		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	4.2		*	
		33	TC	4.4		*	
		36	TC	4.3		*	
17	277289	00	DS	3.4		*	
		06	DS	2.1		*	
18	279237	00	DS	1.4		*	
		06	DS	1.7		*	
19	279254	00	DS	1.6		*	
		06	DS	1.4		*	
20	283233	03	TC	24.9		*	Core in sidewalk DC = 15 inches Based on the deconvolution graph
		06	BH	41.0	13.1	*	
		09	TC	39.5		*	
		12	BH	25.3	5.7	*	
		15	TC	13.6		*	
		18	TC	9.5		*	
		21	TC	7.1		*	
		24	BH	6.4	2.5	*	
		27	TC	5.6		*	
		30	TC	5.3		*	
		33	TC	5.0		*	
		36	BH	4.9	2.4	*	
		39	TC	4.8		*	
		42	TC	4.6		*	
		45	TC	4.3		*	
		48	TC	4.2		*	
21	285235	00	DS	5.1		*	Off the sidewalk
		06	DS	2.6		*	
		12	DS	1.6		*	
22	285255	00	DS	4.9		*	Off the sidewalk
		06	DS	4.3		*	
		12	DS	1.7		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 4 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
23	290245	00	DS	4.4		*	Off of front
		06	DS	2.6		*	sidewalk
		06	DS	17.0		*	Horizontal
		09	DS	<1.0		*	
		09	DS	20.0		*	Horizontal
24	295243	00	DS	7.1		*	On sidewalk
		06	DS	11.6		*	Horizontal
		06	DS	1.4		*	
25	296248	00	DS	1.2		*	Gas line/east
		26	DS	<1.0		*	

Measurement GB = GAD-6 Borehole
 Types: GS = GAD-6 Surface
 DS = Delta Scintillometer
 TC = Total Count Borehole
 SS = Soil Sample
 BH = Combined GAD-6 and
 Total Count Borehole

Notes: DC = Depth of Contamination
 * = No Soil Sample Taken
 [n] = Reading Taken n-Inches
 Above Floor or Ground
 Date of Survey = 05-20-85
 Team Leader = PT

Radium Concentrations at Interior Locations

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 1 of 1

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1		00	DS	1.5		*	South wall of basement
2		00	DS	<1.0		*	North wall of basement

Measurement GB = GAD-6 Borehole
Types: GS = GAD-6 Surface
DS = Delta Scintillometer
TC = Total Count Borehole
SS = Soil Sample
BH = Combined GAD-6 and
Total Count Borehole

Notes: DC = Depth of Contamination
* = No Soil Sample Taken
[n] = Reading Taken n-Inches
Above Floor or Ground
Date of Survey = 05-20-85
Team Leader = PT

Table 3.3

Summary of Interior Gamma Exposure Rates

DOE ID #GJ-06139-RS

925 North 2nd Street

Page 1 of 1

Location *	Number of Readings Taken at Waist Level	Range at Waist Level (uR/h)	Mean at Waist Level (uR/h)	Number of Readings Taken at Surface	Range at Surface (uR/h)	Mean Surface (uR/h)
PRIMARY STRUCTURE BASEMENT	*	*	*	*	15-17	*
SECONDARY STRUCTURE GROUND FLOOR	*	*	*	*	14-16	*
SHED I	*	*	*	*	15-16	*
SHED II	*	*	*	*	15-16	*

* The historical data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-06139-RS

Page 1 of 1

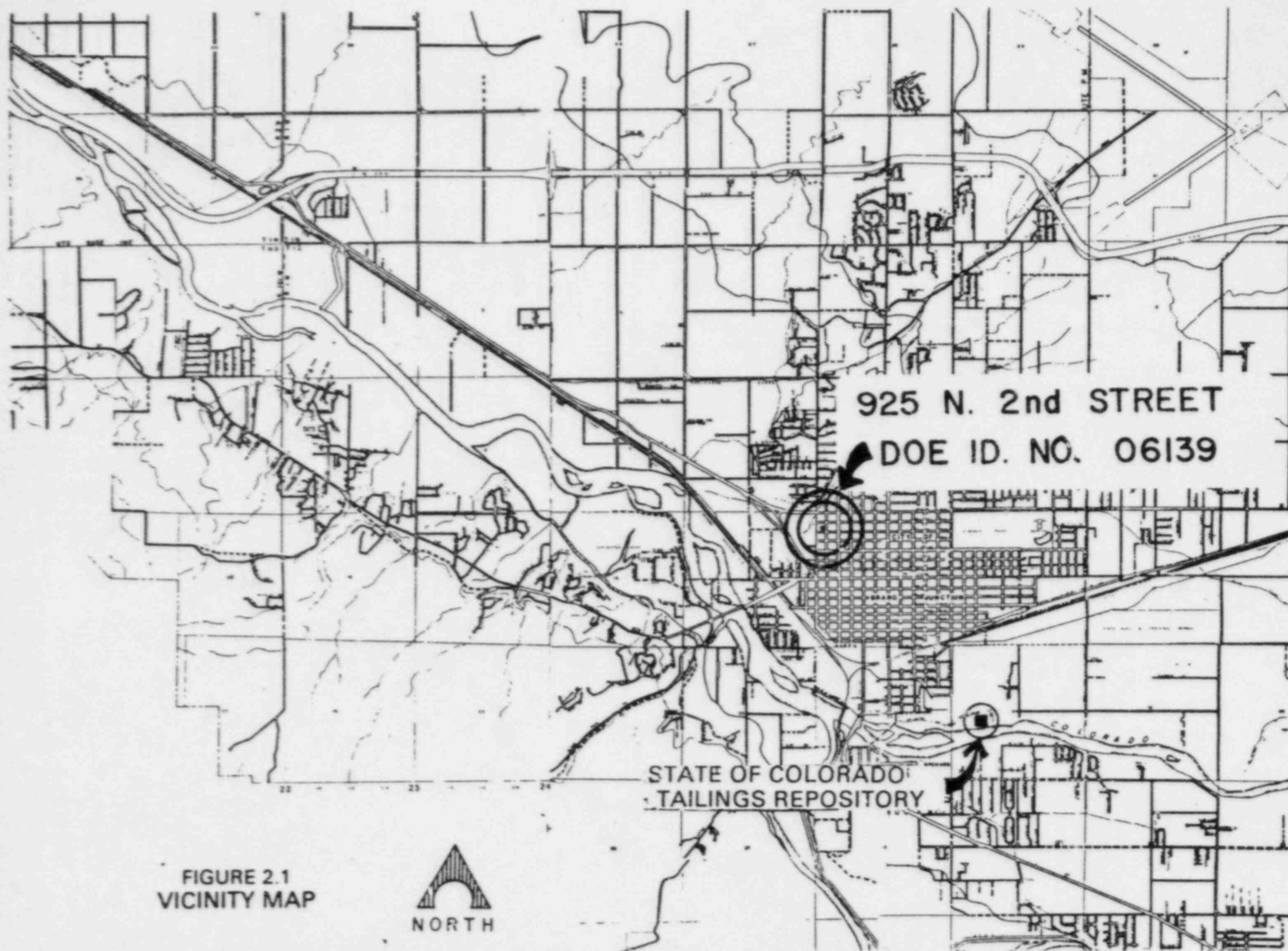
<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
EXTERIOR					
Concrete					
D	5 x 40 =	200			
	2 x 11 =	22			
		<u>222</u>	x 0.3 =	67	
Volume of Concrete				= <u>67</u>	= 67/27 = 2
Contaminated Fill					
A	7 x 13 =	91	x 0.5 =	46	
B	5 x 3 =	15	x 0.5 =	8	
C	2 x 4 =	8			
	3 x 37 =	111			
		<u>119</u>	x 0.5 =	60	
D	5 x 40 =	200			
	2 x 11 =	22			
		<u>222</u>	x 1.0 =	222	
E	9 x 3 =	27	x 0.5 =	14	
F	3 x 16 =	48			
	8 x 3 =	24			
		<u>72</u>	x 1.0 =	72	
G	3 x 20 =	60	x 1.0 =	60	
Volume of Fill				= <u>482</u>	= 482/27 = 18
TOTAL VOLUME - EXTERIOR					= <u>20</u>

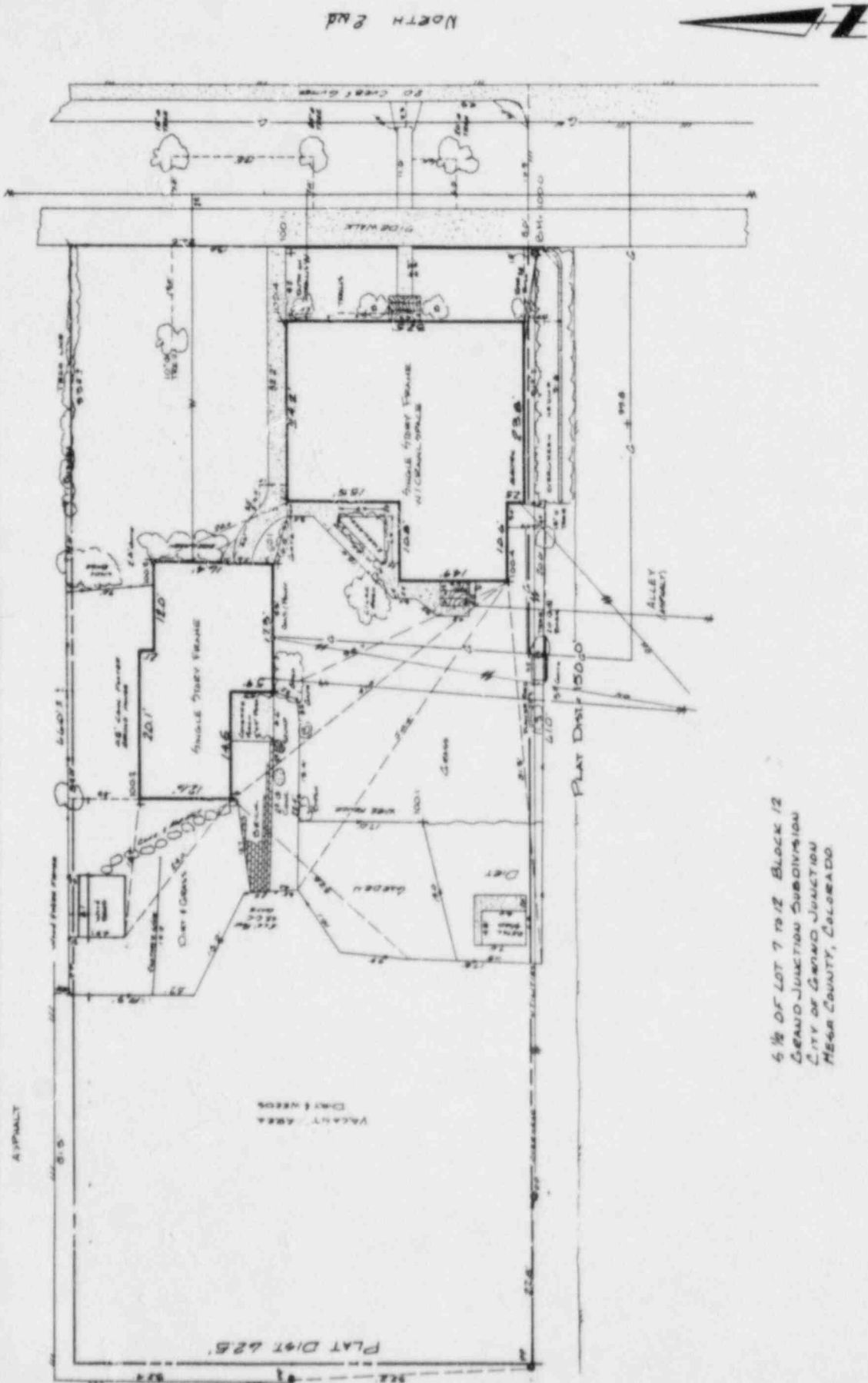
See Appendix Figure 3.3 For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-06139-RS Page 1 of 1

Sawcut sidewalk (4" deep) 8 lf @ \$0.63/lf x depth of sidewalk	\$ 20
Remove and replace concrete flatwork 222 sf @ \$2.98/sf	662
Remove identified residual radioactive material 15 cy @ \$14.50/cy (machine - open)	218
3 cy @ \$44/cy (manual - open)	132
Replace areas with topsoil 9 cy @ \$9.50/cy	86
Replace areas with roadbase 9 cy @ \$11.50/cy	104
Replace sod 293 sf @ \$0.25/sf	73
<hr/>	
TOTAL EXTERIOR	\$ 1,295
TOTAL INTERIOR	0
ACCESS CONTROL	250
<hr/>	
SUBTOTAL	\$ 1,545
CONTINGENCY @ 5%	77
<hr/>	
SUBTOTAL	\$ 1,622
CONTRACTOR OVERHEAD & PROFIT @ 40%	649
<hr/>	
GRAND TOTAL	\$ 2,271

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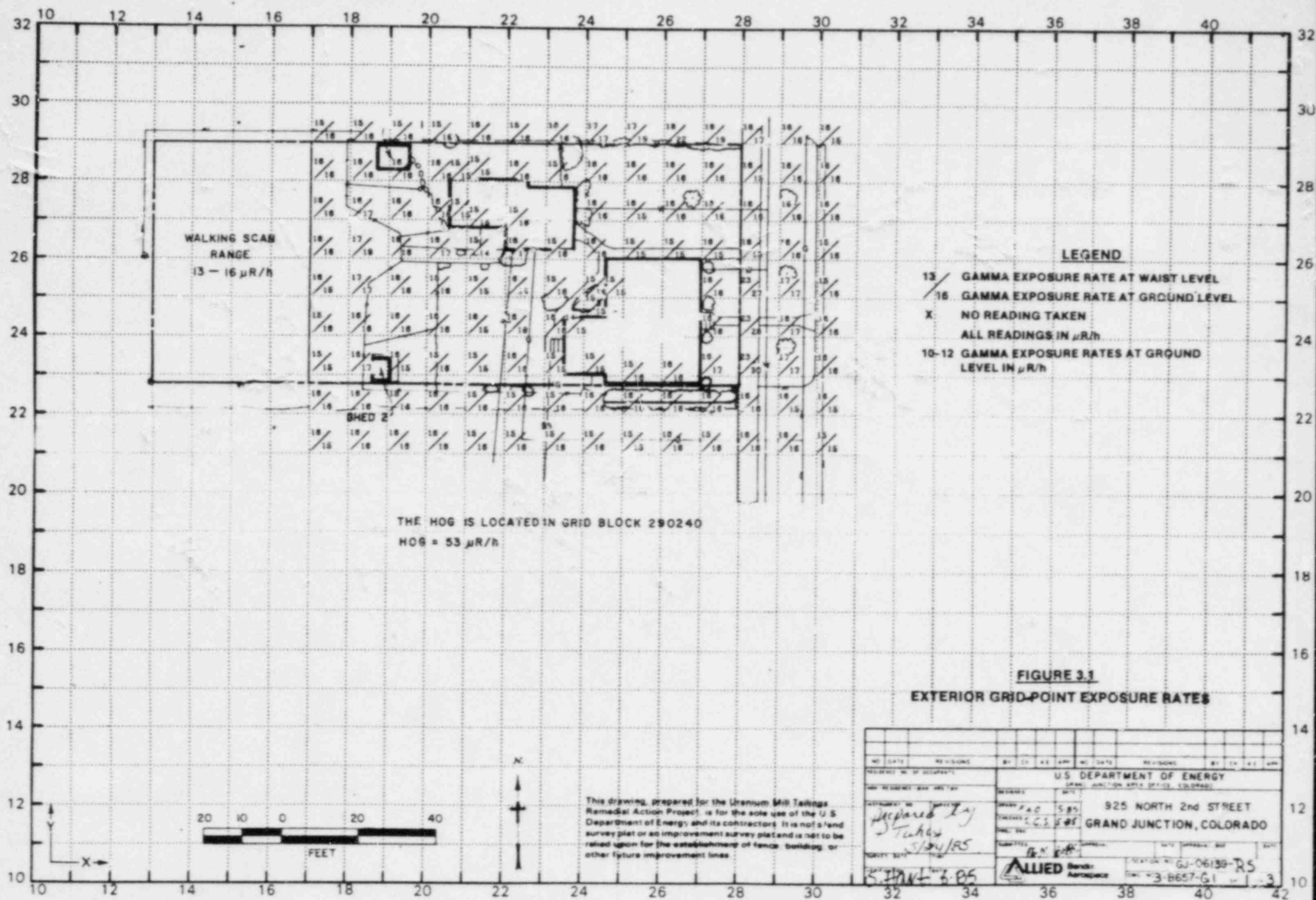
6 1/2 OF LOT 7 IN BLOCK 12
 GRAND JUNCTION SUBDIVISION
 CITY OF GRAND JUNCTION
 MESA COUNTY, COLORADO

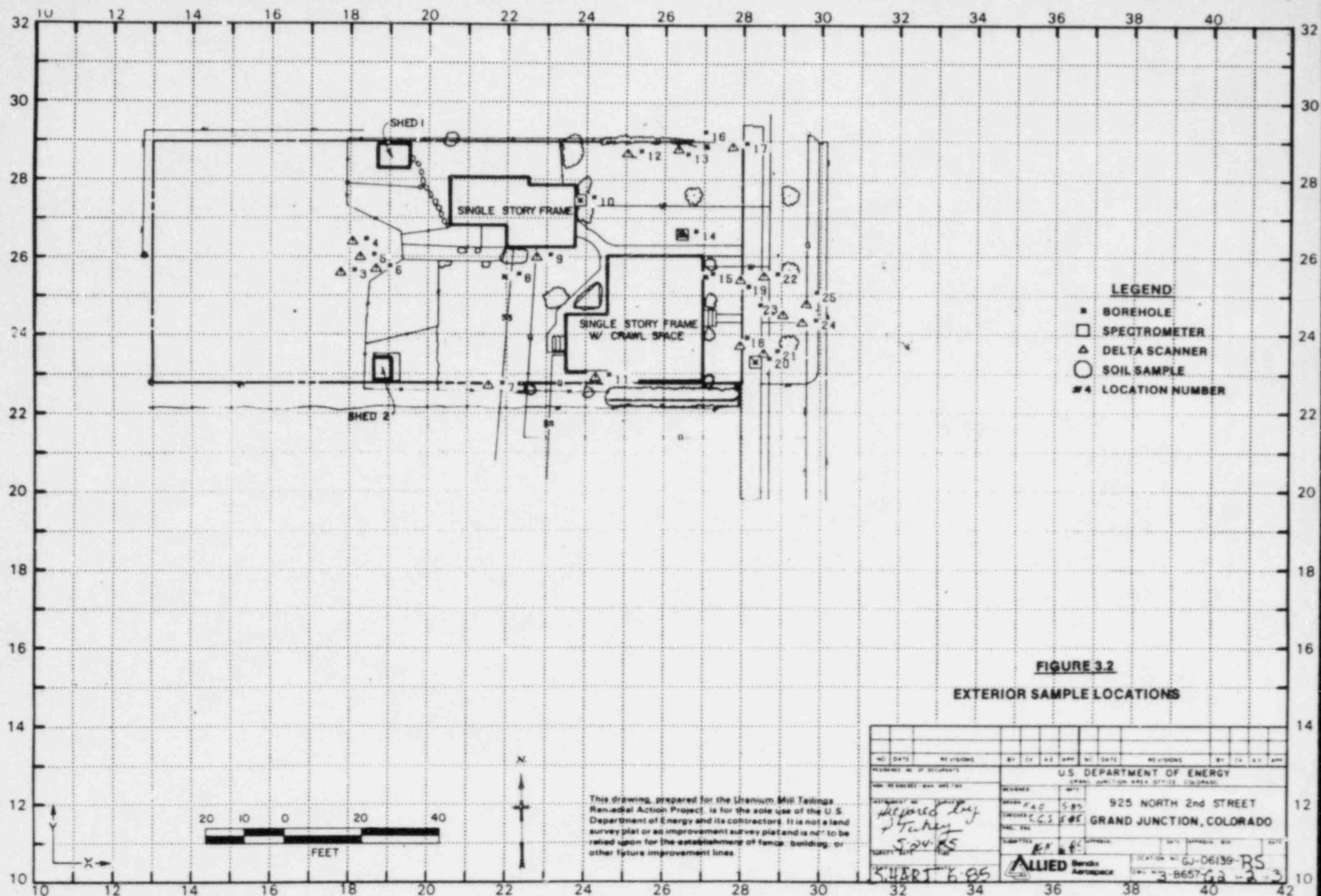
FIGURE 2.2 SITE PLAN

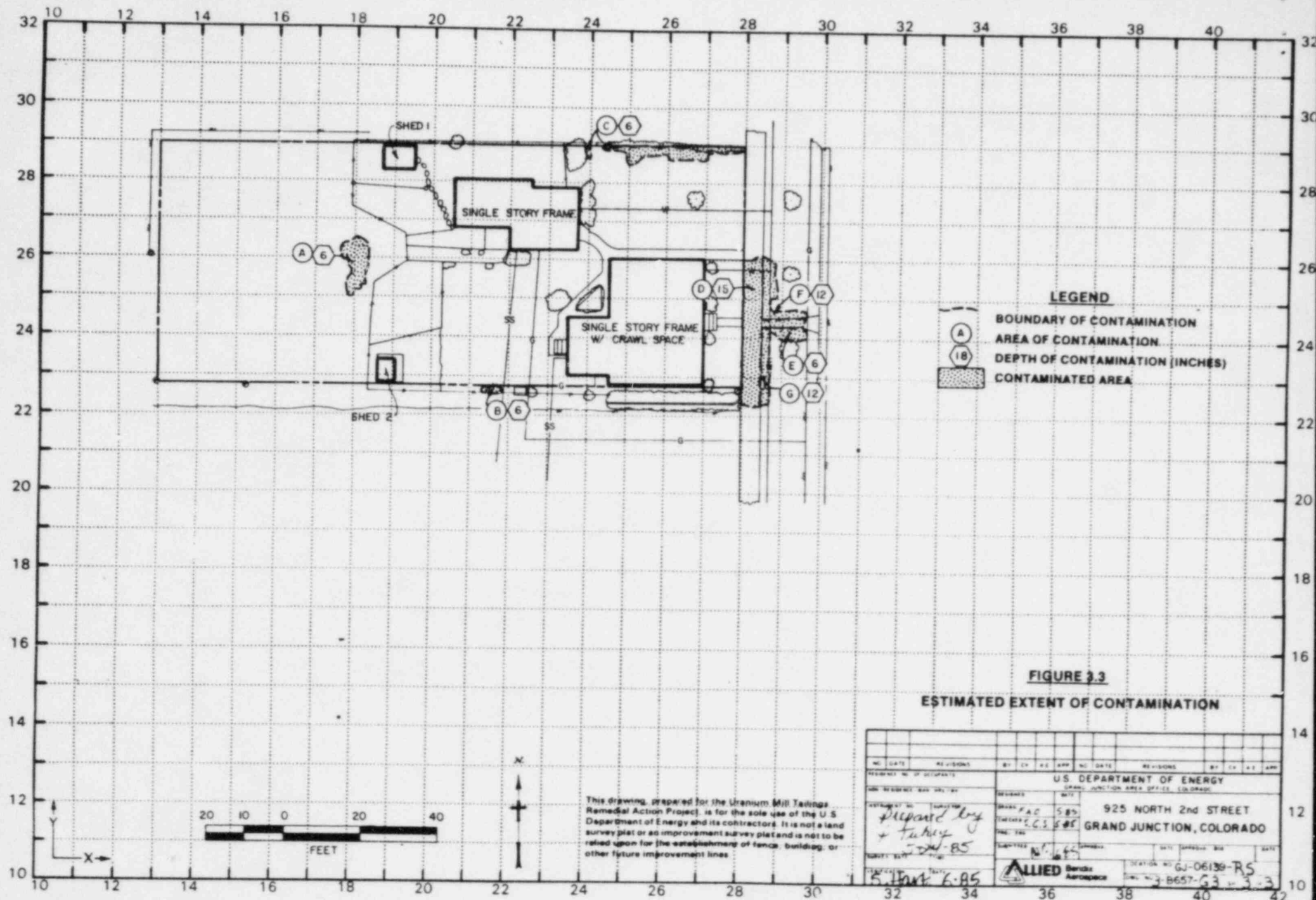


This drawing, prepared for the University of Colorado, is for the use of the U.S. Department of Energy and its contractors. It is not a legal survey plan or an improvement survey plan and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

U.S. DEPARTMENT OF ENERGY	CON. NO.
GRAND JUNCTION PROJECT OFFICE, COLORADO	206139 R4
ADDRESS	925 NORTH 2ND STREET
	GRAND JUNCTION, COLORADO
SURV. NO.	206139 R4
DRAWING NO.	3-C-657 F1
	DRAFT
	3/1/5
	SHEET 1 OF 1







3/85

DOE ID NO. GJ-06139-RS

Date May 24, 1985

U.S. DEPARTMENT OF ENERGY
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT
GRAND JUNCTION VICINITY PROPERTIES

Official Survey Report

Property Address 925 North 2nd Street

Property Owner Thomas L. Gartner

Address of Owner (if different from above) _____

Report Prepared By Penny Tuhey

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

1 1 No evidence of residual radioactive material on surveyed property.

1 XX 1 Residual radioactive materials found at the following locations:

1 XX 1 In open areas.

1 1 Under or around exterior improvements.

1 1 Under or around a typically nonoccupied structure.

1 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

1 1 Levels of radiation from residual radioactive materials, if any, do not exceed EPA Standards and no action is required under the Uranium Mill Tailings Remedial Action Project.

1 XX 1 Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 17 uR/h
HOG = 53 uR/h

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: May 20, 1985

To: Files

From: Penny Tuhey

Subject: Team Leader Notes - GJ-06139-RS

Address: 925 North 2nd Street

Owner: Thomas L. Gartner

Team Members

P. Tuhey (Team Leader)
H. Mattison
R. Herman
P. Hardy

M. Duran
M. Dexter
B. Wilkins

Instruments

C-1208, C-1205, C-1196, C-1127, C-3940, C-3935, C-3573, C-3958
C-0498

A point source was found in grid block 220220. After being investigated, the point source was removed.

After the survey was finished, all team members were frisked before leaving the property (12:35 P.M.)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

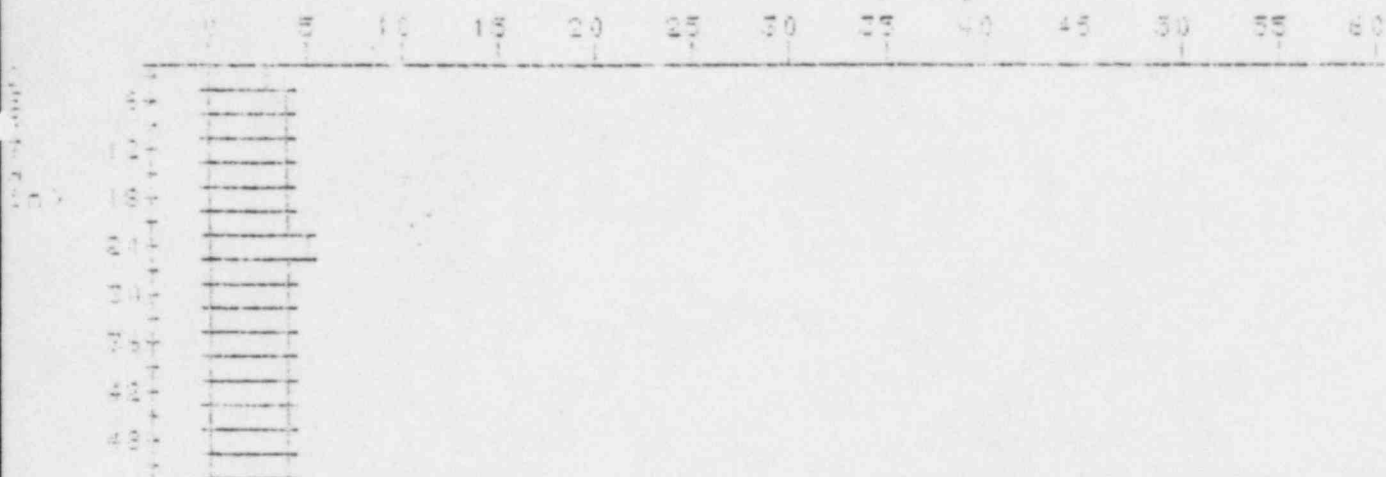
8

PROPERTY NUMBER: GU-06109-RS

HOLE NUMBER: 8

LOCATION: 219235

APPARENT RA-226 (pCi/g)



<5

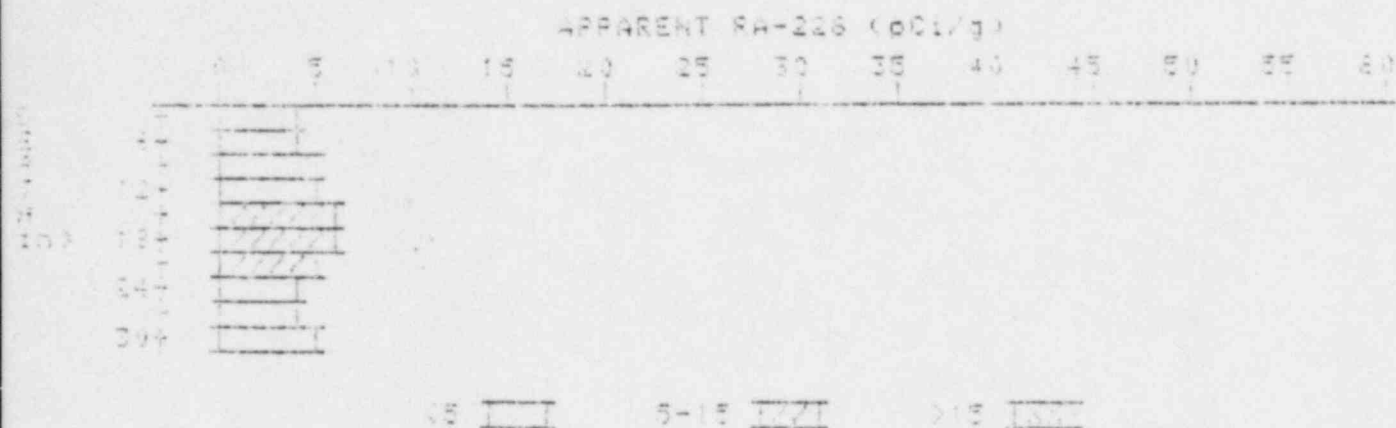
5-15

>15

Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.4	3.6
9	3.6	3.8
12	3.7	3.9
15	3.7	3.9
18	3.8	3.9
21	4.0	4.0
24	4.2	4.4
27	4.1	4.1
30	4.0	3.9
33	4.0	3.8
36	4.1	4.0
39	4.1	4.0
42	4.2	4.1
45	4.2	4.1
48	4.2	4.1

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

PROPERTY NUMBER: 2J-06133-R3
HOLE NUMBER: 10-
LOCATION: 233075



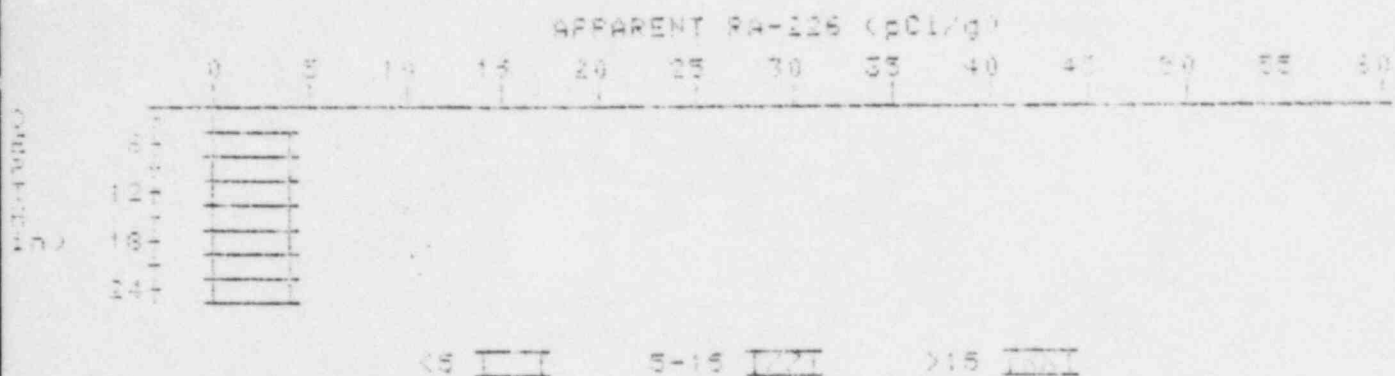
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.7	3.7
6	4.0	3.6
9	4.8	4.7
12	4.9	4.9
15	5.3	5.0
18	5.0	4.7
21	5.1	5.6
24	4.7	4.9
27	4.6	4.7
30	4.6	4.6

APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-06139-R3

HOLE NUMBER: 14

LOCATION: 264266



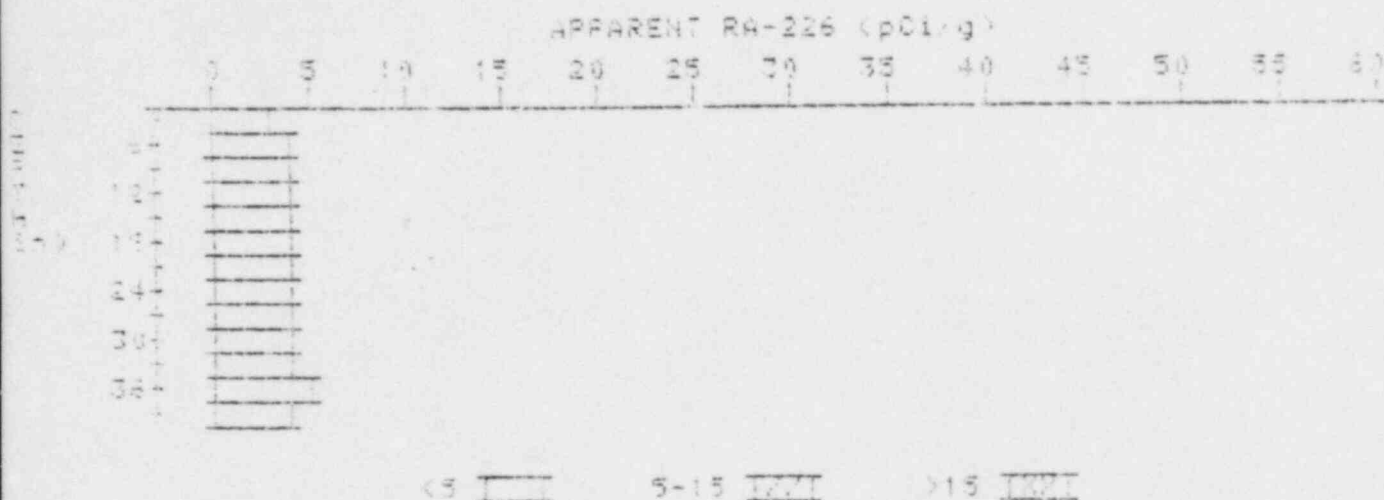
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.4	3.8
9	3.6	3.8
12	3.7	3.7
15	3.8	4.0
18	3.8	4.0
21	3.7	3.7
24	3.6	3.6

APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: 20-00139-R3

HOLE NUMBER: 15

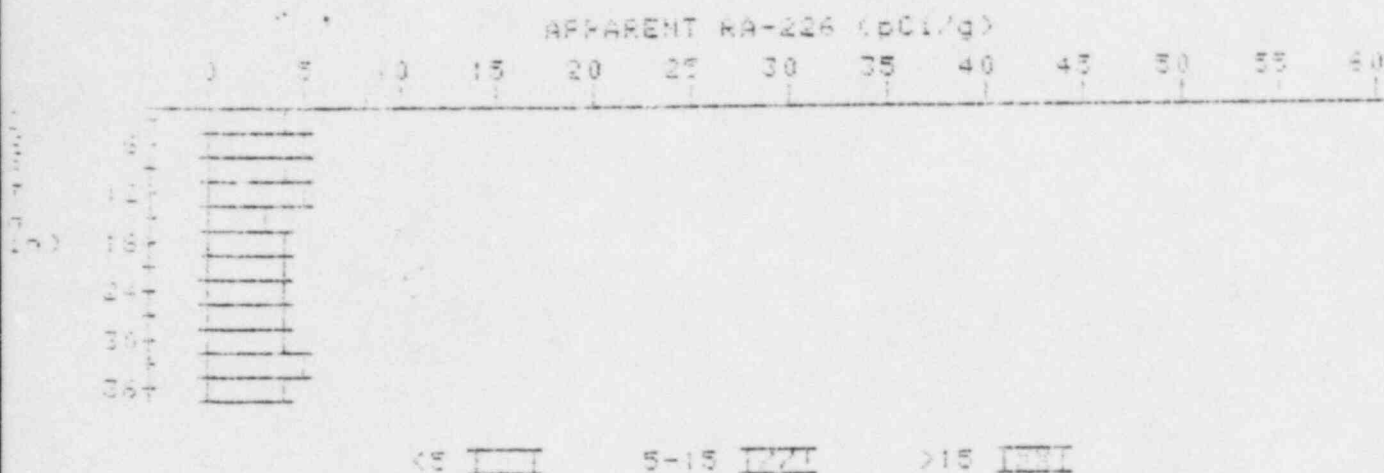
LOCATION: 270255



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.4	3.6
9	3.6	3.6
12	3.8	4.0
15	3.9	4.1
18	3.9	3.9
21	3.9	3.7
24	4.0	4.0
27	4.1	4.2
30	4.1	3.9
33	4.2	4.2
36	4.3	4.7
39	4.3	4.2

APPARENT RADIUM-226 CONCENTRATION 16 DECONVOLUTION GRAPH

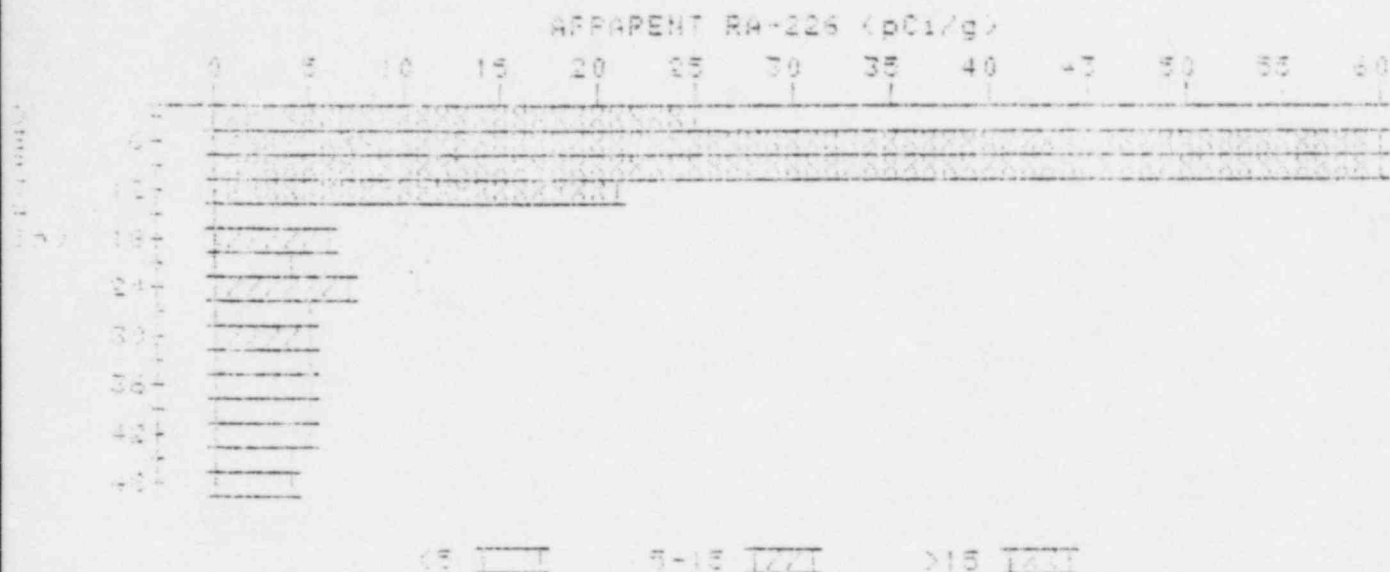
PROPERTY NUMBER: GU-06139-RS
HOLE NUMBER: 1A
LOCATION: 270389



Depth (in)	Apparent Radium-226 (pCi/g) Underconvolved	Apparent Radium-226 (pCi/g) Deconvolved
0	4.4	4.4
6	4.5	4.9
9	4.4	4.4
12	4.3	4.7
18	4.0	5.3
18	4.1	4.3
21	4.1	4.3
24	4.0	5.0
24	4.0	5.0
30	4.2	4.5
33	4.4	4.5
36	4.3	4.4

APPARENT RADIUM-226 CONCENTRATION 20 DECONVOLUTION GRAPH

PROPERTY NUMBER: CU-96139-R0
HOLE NUMBER: 20
LOCATION: 293233



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	24.9	24.9
6	41.0	72.3
9	39.5	62.1
12	25.3	20.9
15	13.6	.1
18	9.5	4.5
21	7.1	4.1
24	6.4	4.6
27	5.6	4.7
30	5.3	5.3
33	5.0	4.6
36	4.9	4.9
39	4.6	5.0
42	4.6	4.9
45	4.3	5.9
48	4.2	4.2

