

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-01293-MR
ADDRESS: 2236 TEXAS AVENUE

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

M. K. Tucker *CDH*

M. TUCKER
DOE PROJECT ENGINEER

DATE

August 5, 1985

REA01293:REA-GE006

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PDR WASTE
WM-54 PDR

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-01293-MR, is a single-family residence located at 2236 Texas Avenue, 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, 8 cu. yd.; interior, 3 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$3,662. Remedial action on this property will take approximately 21 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 2236 Texas Avenue, Grand Junction, Colorado

Zoning: Residential (RSF-8)

Lot Size: Approximately 7,620 sf (0.18 acre)

Legal Description: Lot 3, Block 2 of Wilcox and Bixby Subdivision, City of Grand Junction, County of Mesa, State of Colorado

Point of Reference: This property is located approximately 3 miles north 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

Bordering Properties:

North:	Alley
South:	Texas Street
East:	Single-family residence
West:	Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-family residence
Size:	Approximately 1,185 sf
Construction Date:	1905
Construction:	Wood-frame
Foundation:	Concrete footing, concrete masonry unit stem wall
Footing Depth:	Approximately 24" to bottom of footing from grade
Basement:	None
Crawl Space:	Full under entire house
Condition:	Fair

Other Structures:

Type:	Enclosed carport (garage)
Size:	Approximately 286 sf
Construction:	Wood-frame
Foundation:	Slab-on-grade
Condition:	Fair

Type:	Shed
Size:	Approximately 62 sf
Construction:	Metal
Foundation:	Slab-on-grade
Condition:	Fair

Type:	Doll house
Size:	20 sf
Construction:	Wood-frame
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: Two known - porch and family room

Architectural Significance: Minimal

Historical Significance: None known

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-01293-MR on April 10, 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 along the east, north, and west property lines. The concrete sidewalk north of the shed also appeared to be contaminated.

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, Memo of Understanding, team leader notes, and deconvolution graphs are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 15 to 16 uR/h
Highest Outside Gamma Reading (HOG): 56 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1. Appendix Figure 3.2 presents the ranges of elevated gamma readings and indicates areas of possible contamination.

3.2.2 Interior Findings

Background Readings: 14 to 15 uR/h
Highest Inside Gamma Reading (HIG): 15 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. Appendix Figures 3.3a and 3.3b show interior exposure rates and locations of these measurements.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figures 3.3b and 3.4.

Data from these investigations are included in Appendix Tables 3.1 and 3.2.

3.4 Radon/Radon Daughter Concentration (RDC)

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

3.5 Extent of Contamination

Appendix Figures 3.5a and 3.5b show identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in these figures, areas recommended for remedial action that contain identified residual radioactive materials are:

- (AREA A) The 3-inch-thick concrete slab in the southern portion of the garage is contaminated (approximately 198 sf).
- (AREA B) Under the wood floor of the doll house, contamination extends to a depth of 12 inches, measured from ground level (approximately 20 sf).
- (AREA C) Northeast of the primary structure, contamination extends to a depth of 6 inches (approximately 391 sf).
- (AREA D) North of the primary structure, four of five 4-inch-thick concrete slabs are contaminated (approximately 68 sf).
- (AREA E) The three-inch-thick concrete sidewalk north of the shed is contaminated (approximately 36 sf).

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-01293-MR, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figures 3.5a and 3.5b) 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 \$3,662.

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 Gamma Scan
Figure 3.3a	Interior Gamma Exposure Rates
Figure 3.3b	Interior Gamma Exposure Rates and Sample Locations
Figure 3.4	Exterior Sample Locations
Figure 3.5a	Interior Estimated Extent of Contamination
Figure 3.5b	Exterior Estimated Extent of Contamination

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Radium Concentrations at Exterior Locations

DOE ID #GJ-01293-MR

2236 Texas Avenue

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
5	121265	00	DS	<1.0		*	On concrete slab
6	123265	00	DS	6.8		*	On concrete slab
7	123267	00	DS	1.7		*	Next to concrete slab
8	132244	00	DS	1.6		*	On top of hill
		00-06	SS			2.2	
9	136238	00	DS	<1.0		*	Bottom of hill
10	137294	00	DS	3.7		*	Northeast corner of
		06	DS	1.9		*	backyard
11	142237	00	DS	1.9		*	Along west fence
12	145245	00	DS	<1.0		*	Northeast corner of property
13	145295	00	DS	1.9		*	Next to east fence
14	148237	00	DS	2.3		*	Along west fence line
		06	DS	<1.0		*	
15	150270	03	TC	2.9		*	In leach field
		06	TC	3.2		*	
		09	TC	3.4		*	DC = 0 inches
		12	TC	3.4		*	
		15	TC	3.5		*	
		18	TC	3.6		*	
		21	TC	3.5		*	
		24	TC	3.5		*	
		27	TC	3.7		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.8		*	
		39	TC	3.7		*	
		42	TC	3.7		*	
		45	TC	3.6		*	
		48	TC	3.6		*	
		51	TC	3.6		*	
		54	TC	3.6		*	
		57	TC	3.5		*	
		60	TC	3.6		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01293-MR

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
15	150270	63	TC	3.6		*	
		66	TC	3.6		*	
		69	TC	3.7		*	
		72	TC	3.7		*	
16	153293	00	DS	2.3		*	Backyard
		06	DS	1.2		*	
17	155284	00	DS	2.0		*	Backyard
		06	DS	1.3		*	
18	174285	00	DS	1.8		*	North of metal shed
		06	DS	<1.0		*	
19	176237	00	DS	1.5		*	Along west fence
20	176284	00	DS	5.9		*	On concrete sidewalk
		00-03	SS	11.5		*	Concrete core
		03-09	SS	2.0		*	Soil under core
		03	TC	4.2		*	
		06	TC	4.0		*	DC = 3 inches
		09	TC	3.8		*	Based on soil
		12	TC	3.8		*	sample analysis
		15	TC	3.7		*	
		18	TC	3.7		*	
		21	TC	3.6		*	
		24	TC	3.6		*	
		27	TC	3.5		*	
		30	TC	3.5		*	
		33	TC	3.5		*	
		36	TC	3.6		*	
21	198274	00	DS	<1.0		*	Over sewer line
		03	TC	3.3		*	Next to sewer line
		06	TC	3.7		*	
		09	TC	3.8		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	3.6		*	
		18	TC	3.5		*	
		21	TC	3.5		*	
		24	TC	3.5		*	
		27	TC	3.5		*	
		30	TC	3.5		*	
		33	TC	3.4		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-01293-MR

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot.	Ct Spectr.		
21	198274	36	TC	3.4		*	
		39	TC	3.4		*	
22	208274	00	DS	1.7		*	Next to water line
		03	TC	3.6		*	
		06	TC	3.8		*	DC = 0 inches
		09	TC	3.8		*	
		12	TC	3.7		*	
		15	TC	3.6		*	
		18	TC	3.5		*	
		21	TC	3.5		*	
		24	TC	3.4		*	
		27	TC	3.4		*	
		30	TC	3.5		*	
		33	TC	3.4		*	
		36	TC	3.4		*	
23	213274	00	DS	1.3		*	On top of gas line
		06	DS	1.1		*	
		24	DS	<1.0		*	
24	240260	00	DS	<1.0		*	Background
		00-06	SS	1.8			
		03	TC	3.4		*	DC = 0 inches
		06	TC	3.5		*	
		09	TC	3.7		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.7		*	

Measurement Types: DS = Delta Scintillometer Notes:
 TC = Total Count Borehole
 SS = Soil Sample
 BH = CombinCount Borehole
 SS = Soil Sample

DC = Depth of Contamination
 * = No Soil Sample Taken
 [n] = Reading Taken n-Inches
 Above Floor or Ground
 Date of Survey = 04-10-85
 Team Leader = SM

Radium Concentrations at Interior Locations

DOE ID #GJ-01293-MR

2236 Texas Avenue

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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	6.6		*	Middle of garage
		00-03	SS			10.7	Concrete core
		03-09	SS			1.5	Soil under core
		03	TC	5.3		*	
		06	TC	4.8		*	DC = 3 inches
		09	TC	4.4		*	Based on soil
		12	TC	4.1		*	sample analysis
		15	TC	4.0		*	
		18	TC	3.8		*	
		21	TC	3.6		*	
		24	TC	3.5		*	
		27	TC	3.5		*	
		30	TC	3.4		*	
		33	TC	3.4		*	
		36	TC	3.5		*	
2		00	DS	7.1		*	South end of garage
		00-03	SS			12.7	Concrete core
		03-09	SS			1.7	Soil under core
		03	TC	5.4		*	
		06	TC	5.0		*	DC = 3 inches
		09	TC	4.5		*	Based on soil
		12	TC	4.3		*	sample analysis
		15	TC	4.1		*	
		18	TC	4.0		*	
		21	TC	3.8		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.6		*	
		33	TC	3.6		*	
		36	TC	3.6		*	
		39	TC	3.6		*	
3		00	DS	<1.0		*	North room of garage

Radium Concentrations at Interior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
4		[06]	DS	6.3		*	Floor of doll house
		00	DS	8.3		*	
		06	DS	3.1		*	DC = 12 inches
		12	DS	1.3		*	

Measurement CB = GAD-6 Borehole
Types: GS = GAD-6 Surface
 DS = Delta Scintillometer
 TC = Total Count Borehole
 SS = Soil Sample

Notes: DC = Depth of Contamination
 * = No Soil Sample Taken
 [n] = Reading Taken n-Inches
 Above Floor or Ground
 Date of Survey = 04-10-85
 Team Leader = SM

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	*	*	*	*	14-15	*
DOLLHOUSE	01	17-17	17	01	24-24	24
SHED	02	15-15	15	02	15-16	16
GARAGE	10	15-19	16	09	15-26	21

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* The CDH and ORNL data indicate the absence of interior contamination in the primary structure. This information was investigated by performing a walking gamma scan. These areas and the ranges of gamma measurements are shown in Appendix Figure 3.3a. Exposure rates in the garage, doll house, and shed are shown in Appendix Figure 3.3b.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-01293-MR

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<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
INTERIOR					
Concrete					
A	11 x 18	= 198	x 0.3	= 59	
Volume of Concrete =				59	= 59/27 = 2
Contaminated Fill					
B	4 x 5	= 20	x 1.0	= 20	
Volume of Contaminated Fill =				20	= 20/27 = 1
TOTAL VOLUME - INTERIOR					= 3
EXTERIOR					
Concrete					
D	4 x 17	= 68	x 0.3	= 20	
E	3 x 12	= 36	x 0.3	= 11	
Volume of Concrete =				31	= 31/27 = 1
Contaminated Fill					
C	23 x 17	= 391	x 0.5	= 196	
Volume of Contaminated =				196	= 196/27 = 7
TOTAL VOLUME - EXTERIOR					= 8

See Appendix Figures 3.5a and 3.5b For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-01293-MR

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INTERIOR

Remove, store, and return to original location, miscellaneous items in enclosed carport	
Lump Sum	\$ 350
Remove and replace concrete slab	
198 sf @ \$4/sf	792
Relocate and return doll house	
Lump Sum	50
Remove contaminated fill	
1 cy @ \$44/cy	44
Backfill with compacted topsoil	
1 cy @ \$9.50/cy	10
	<hr/>
TOTAL INTERIOR	\$ 1,246

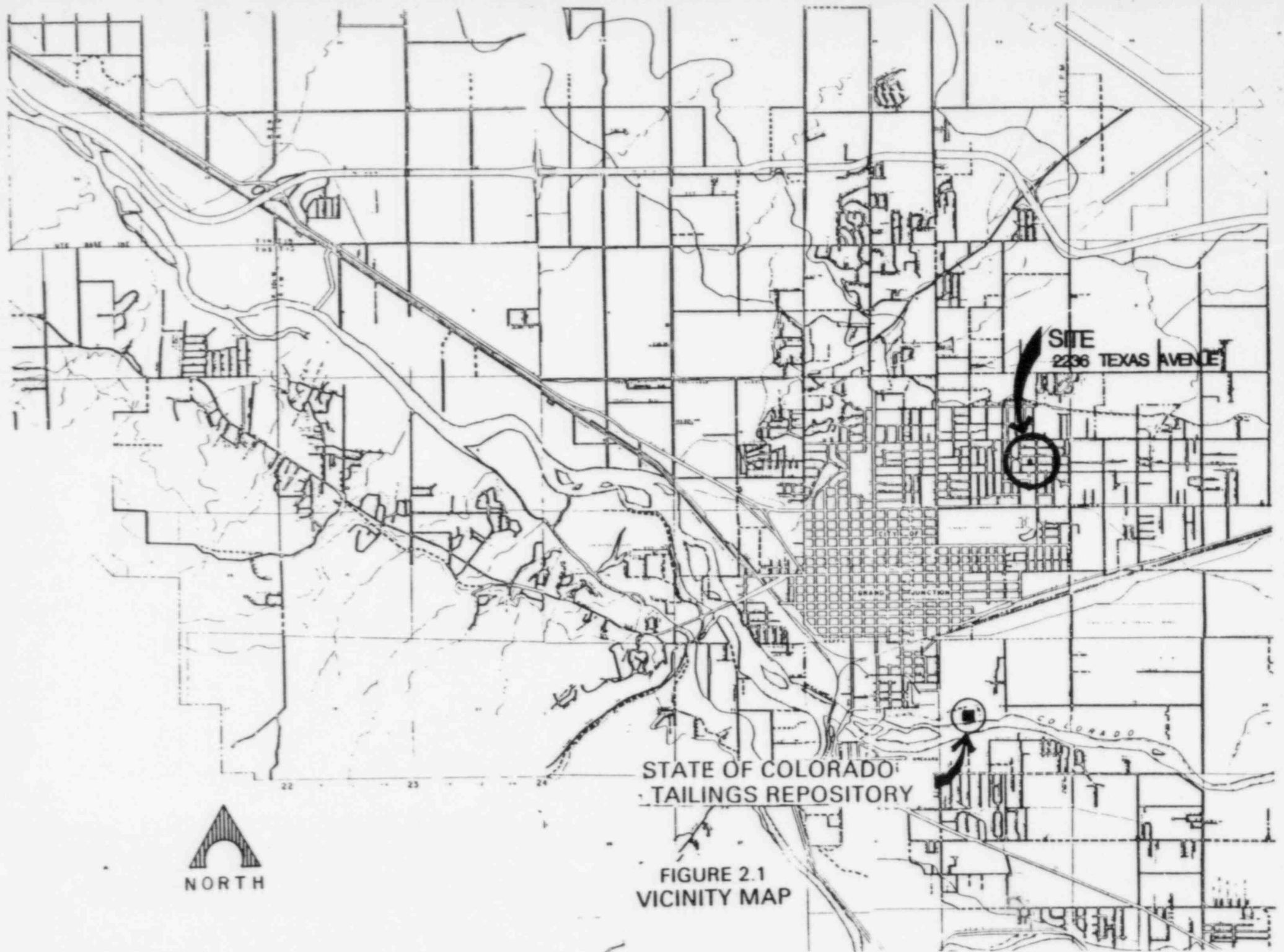
EXTERIOR

Remove concrete slab	
104 sf @ \$1.50/sf	\$ 156
* Replace concrete slab	
68 sf @ \$1.50/sf	102
Remove contaminated fill	
7 cy @ \$44/cy	308
Backfill with topsoil	
7 cy @ \$9.50/cy	67
Resod	
427 sf @ \$0.35/sf	149
Clean-up allowance	
Lump Sum	150
	<hr/>
TOTAL EXTERIOR	\$ 932

* Area E will have concrete removed but not replaced.

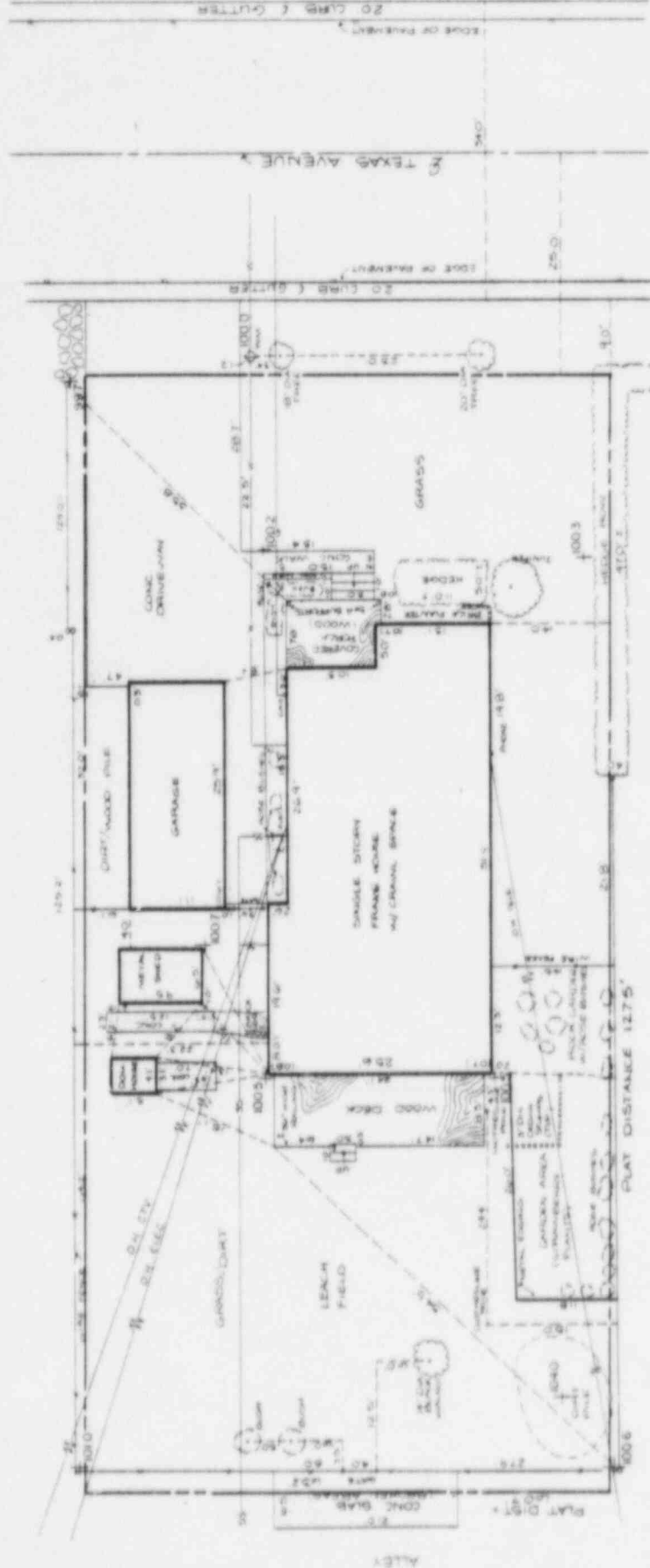
TOTAL EXTERIOR	\$	932
TOTAL INTERIOR		1,246
ACCESS CONTROL		200
		<hr/>
SUBTOTAL	\$	2,378
CONTINGENCY @ 10%		238
		<hr/>
SUBTOTAL	\$	2,616
CONTRACTOR OVERHEAD & PROFIT @ 40%		1,046
		<hr/>
GRAND TOTAL	\$	3,662

FHW080185
REA01293/REA-CE006/LMR



STATE OF COLORADO
TAILINGS REPOSITORY

FIGURE 2.1
VICINITY MAP



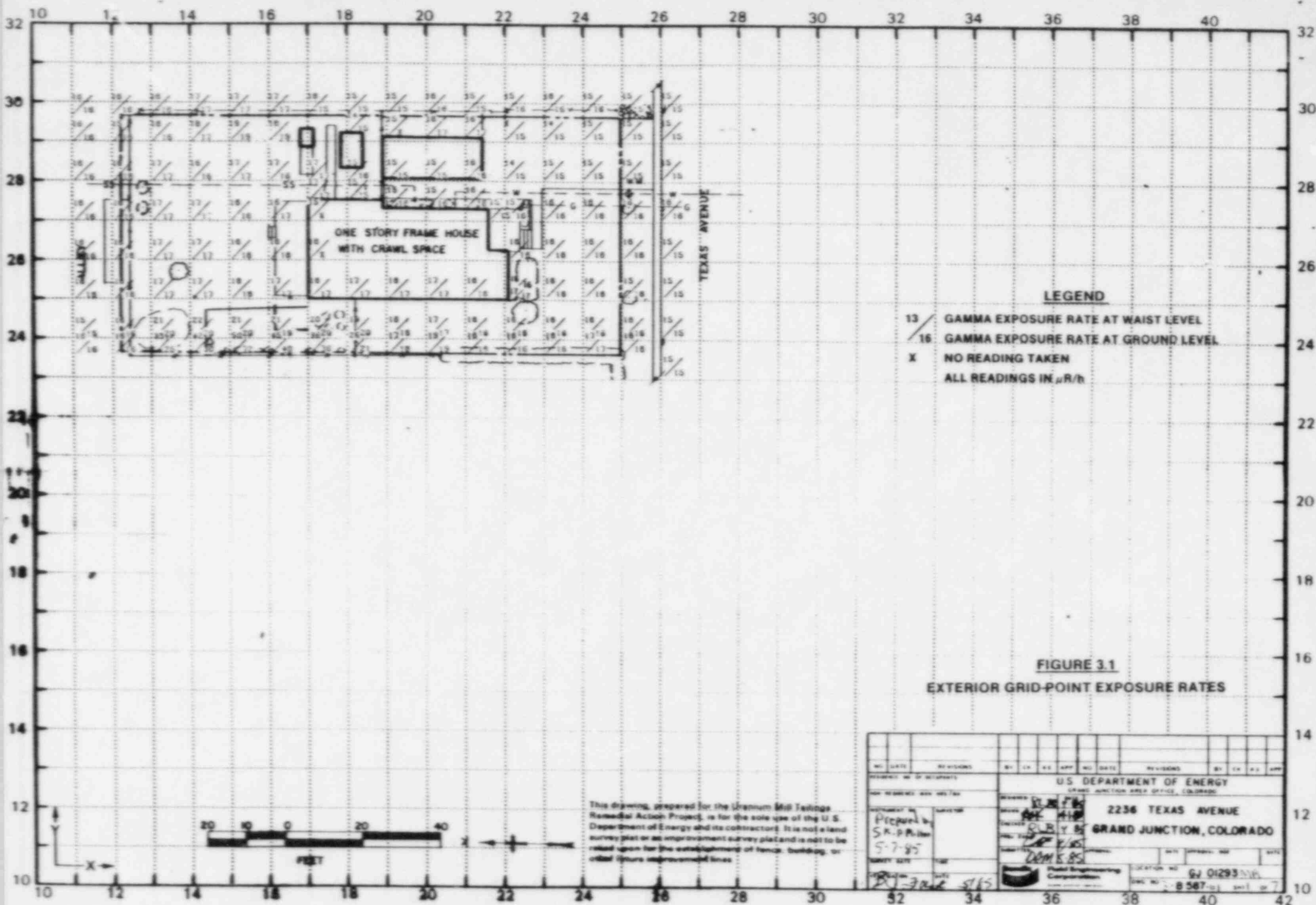
LOT 3, BLOCK 2 OF WILCOX AND
BIXBY SUBDIVISION
CITY OF GRAND JUNCTION,
MESA COUNTY, COLORADO

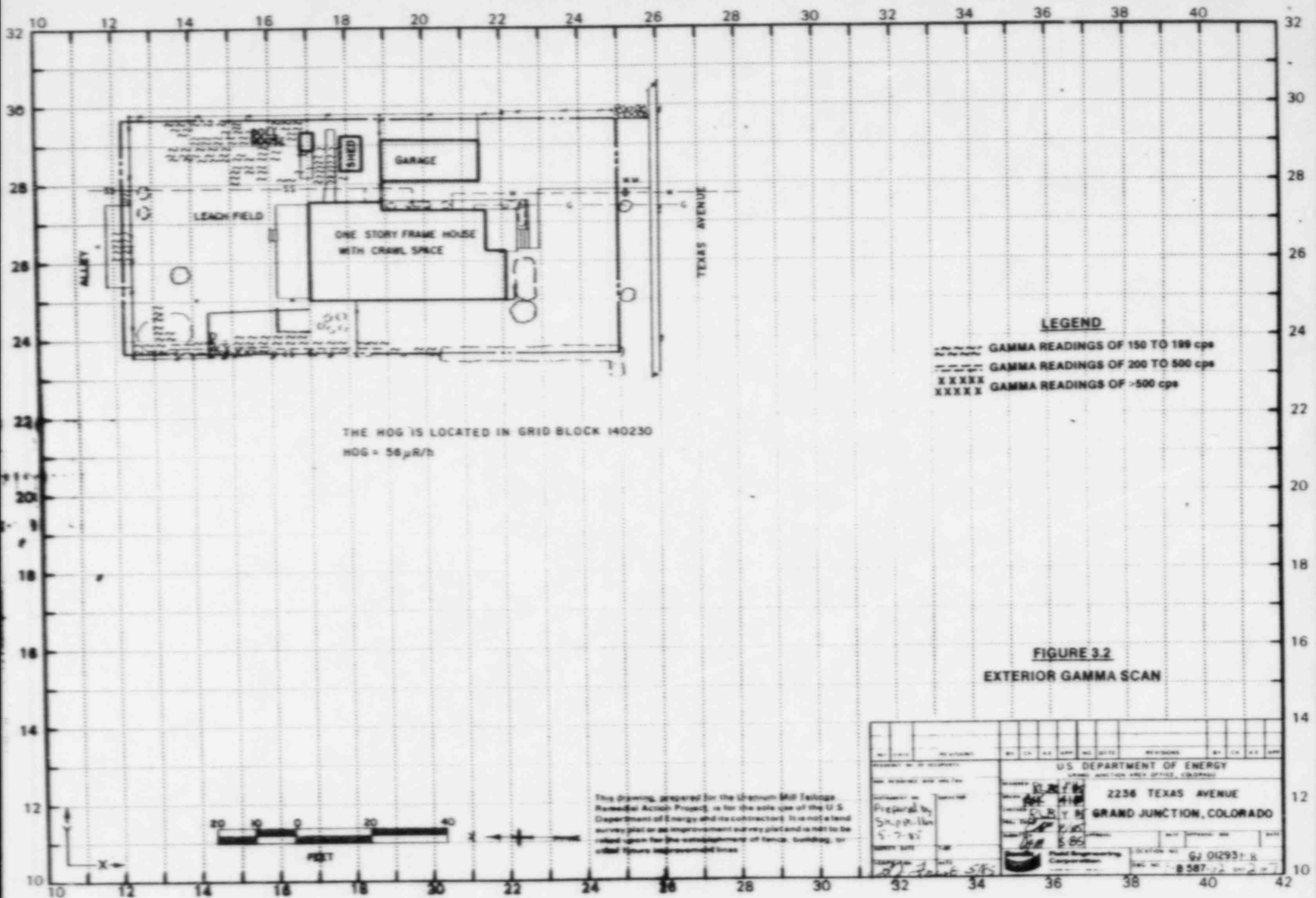


This drawing, prepared for the Ute Indian Reservation, is for the site use of the U.S. Department of Energy and its contractors and is not to be used for any other purpose without the written consent of the U.S. Department of Energy. It is not to be used for the establishment of fence, building or other future improvement lines.

U.S. DEPARTMENT OF ENERGY	DATE: 01/01/00
GRAND JUNCTION PROJECT OFFICE, COLORADO	PROJECT NO: GJ-012935-MR
ADDRESS: 2236 TEXAS AVENUE	PROJECT NAME: Grand Junction, Colorado
GRAND JUNCTION, COLORADO	PROJECT NO: GJ-012935-MR
SUB: ALB/5-15-85	DRAFT NO: 1-1
DRAWING NO: 5 - C-1587-F1	SHEET 1 OF 1

FIGURE 2.2 SITE PLAN





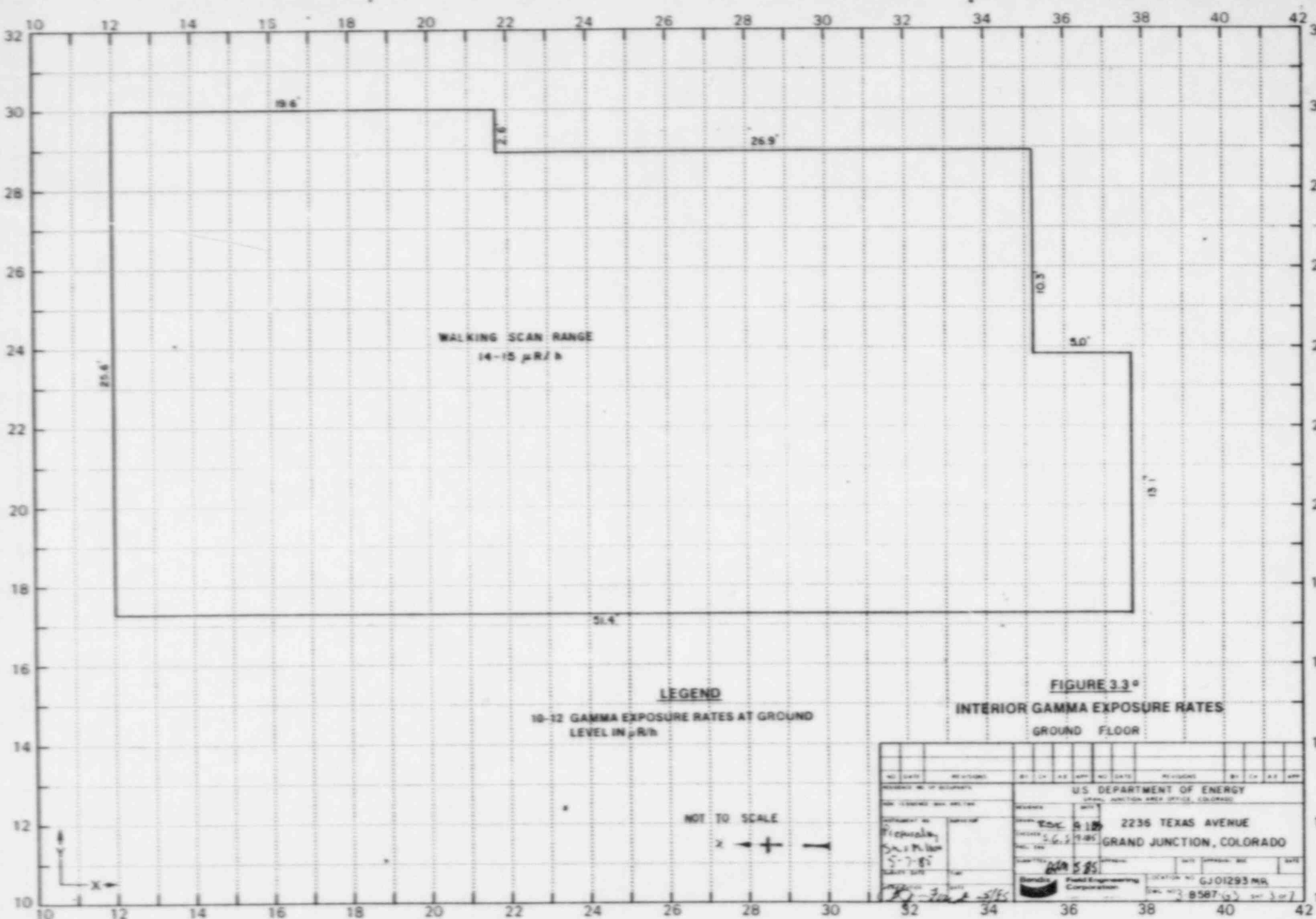
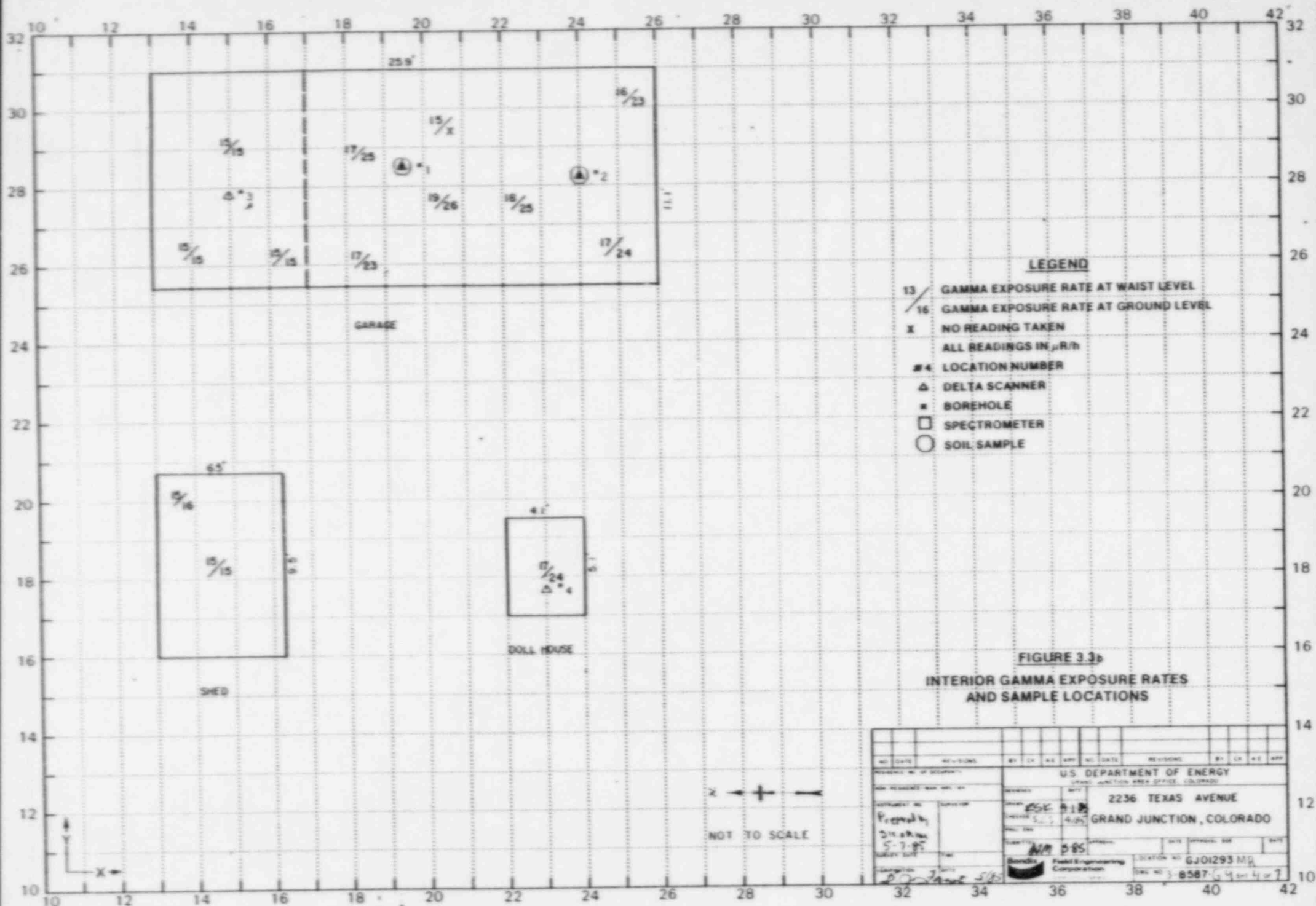
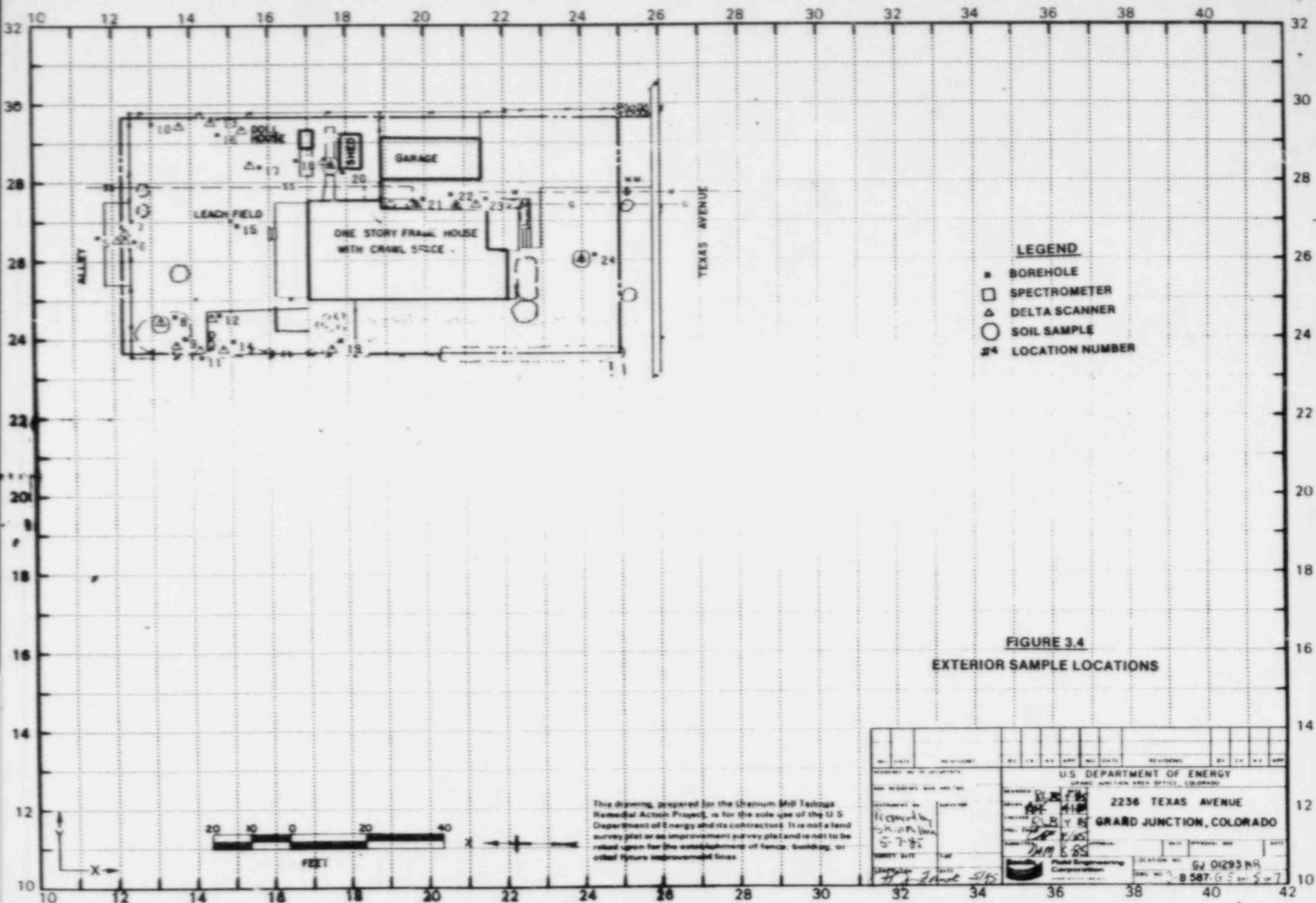


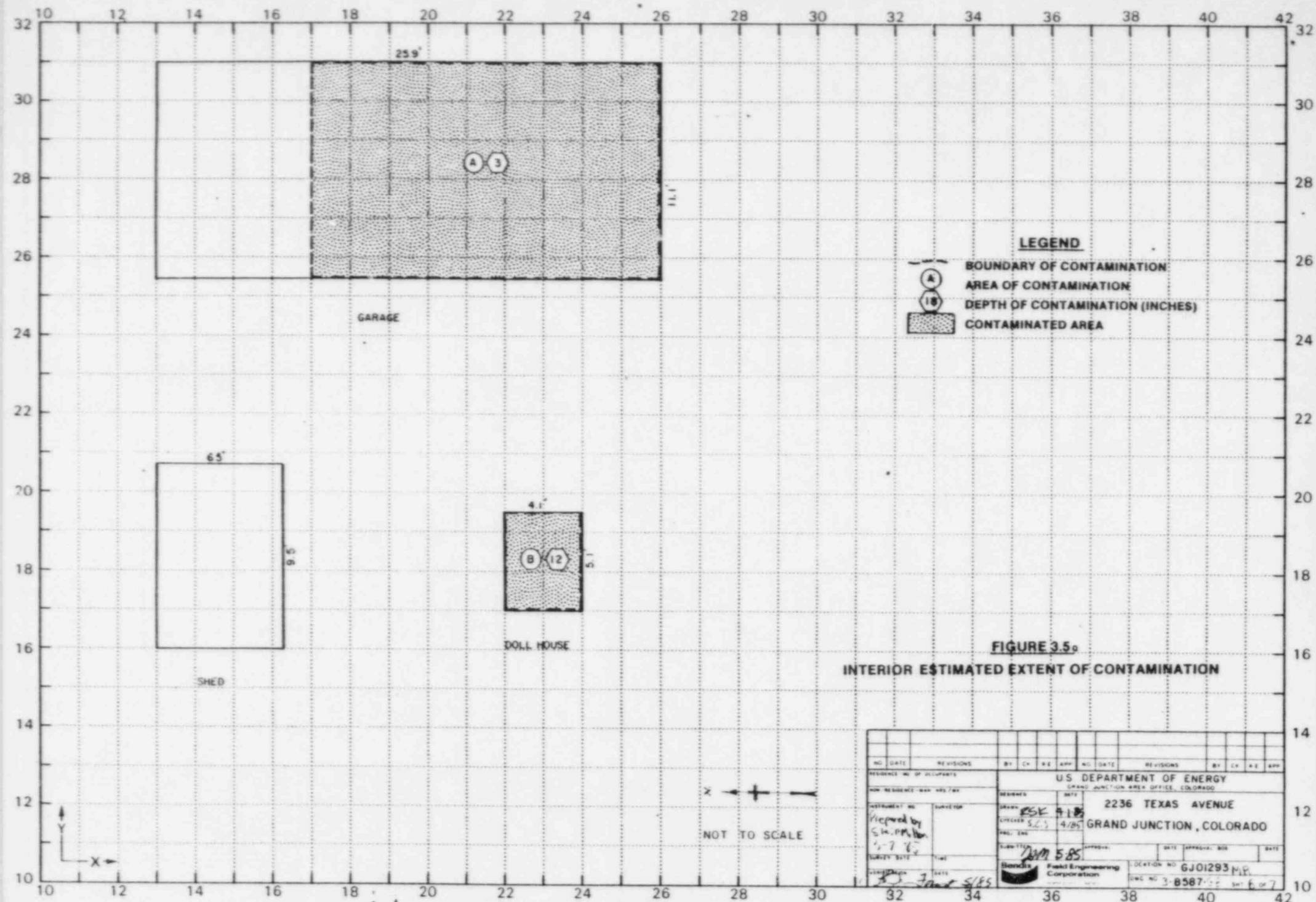
FIGURE 3.3°
INTERIOR GAMMA EXPOSURE RATES
GROUND FLOOR

NO. DATE		REVISIONS		BY		CH		A.E.		APP.		NO. DATE		REVISIONS		BY		CH		A.E.		APP.	
REVISIONS																							
PREPARED BY: <i>W. J. M. M.</i> CHECKED BY: <i>W. J. M. M.</i> DATE: <i>5-7-85</i> PROJECT: <i>3-2-85</i>												U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO 2236 TEXAS AVENUE GRAND JUNCTION, COLORADO DRAWING NO. <i>812</i> SCALE: <i>1"=40'</i> SHEET: <i>585</i> FIELD ENGINEERING CORPORATION LOCATION NO. <i>GJ01293 MR</i> DRAWING NO. <i>8587</i> (S) SHEET <i>3 OF 7</i>											

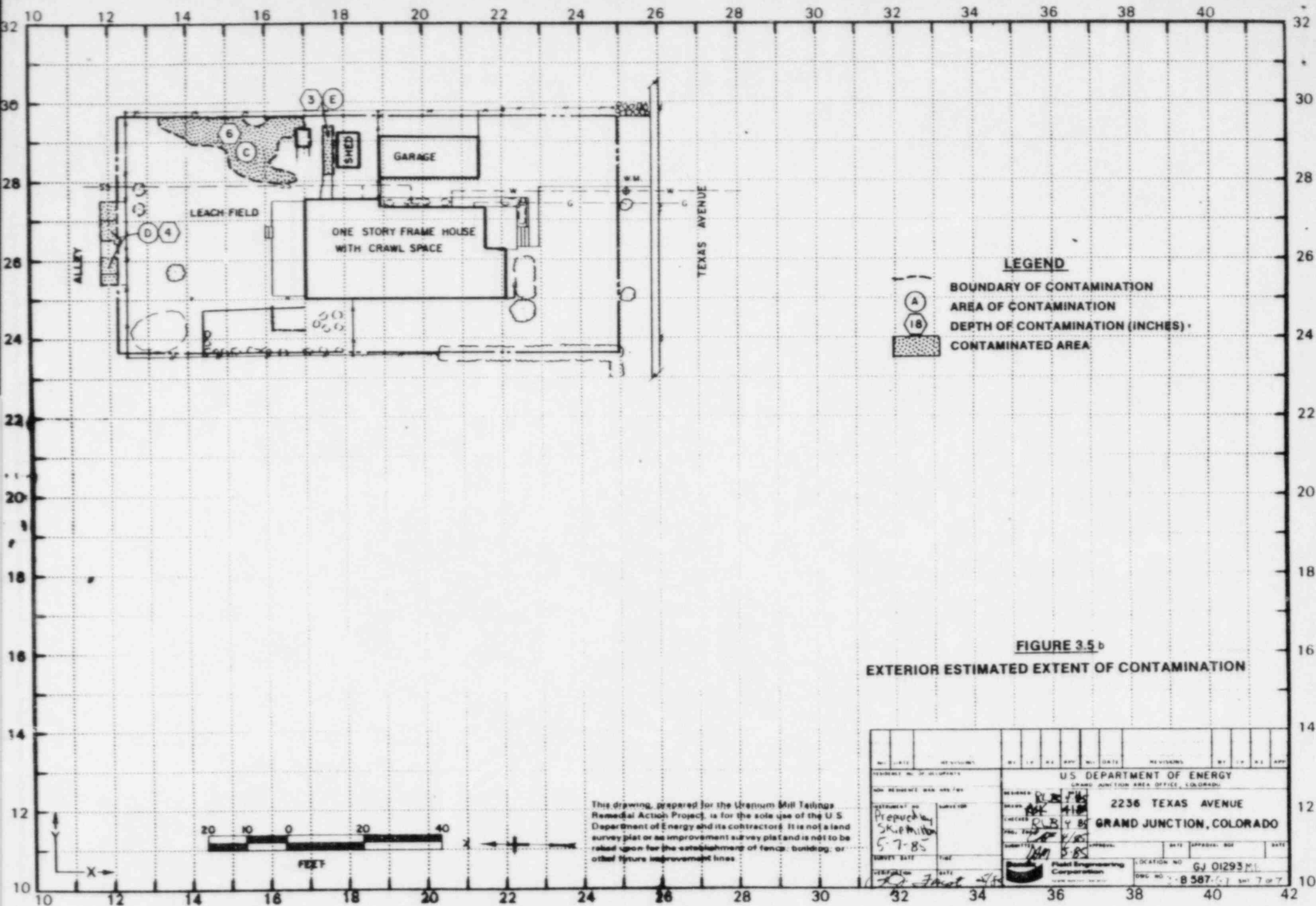


NO.	DATE	REVISIONS	BY	CHK	APP	NO.	DATE	REVISIONS	BY	CHK	APP
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO 2236 TEXAS AVENUE GRAND JUNCTION, COLORADO											
PREPARED BY 5-7-85 5-7-85						CHECKED BY 5-7-85 5-7-85					
DRAWN BY 5-7-85 5-7-85						APPROVED BY 5-7-85 5-7-85					
PROJECT NO. 5-7-85 5-7-85						DRAWING NO. GJO1293 MB 5-7-85					





NO.	DATE	REVISIONS	BY	CHK	RE	APP	NO.	DATE	REVISIONS	BY	CHK	RE	APP
RESIDENCE NO. OF OCCUPANTS													
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO													
2236 TEXAS AVENUE GRAND JUNCTION, COLORADO													
INSTRUMENT NO.		SURVEYOR		DRAWN		DATE		CHECKED		DATE		PAG. ENG.	
Viewed by S.W. Miller				RSE		4/1/85		S.C.S.		4/85			
SURVEY DATE		TIME		SUBMITTED		DATE		APPROVAL		DATE		APPROVAL	
4-7-85				7/20/85				Field Engineering Corporation					
LOCATION		DATE		SHEET		NO.		LOCATION NO.		DATE		SHEET	
3-8587		5/85		1		6		6J01293		M.P.		6 of 7	



3/85

DOE ID NO. GJ-01293

Date 5/7/85

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

Official Survey Report

Property Address 2236 Texas Avenue

Property Owner Dennis Bell

Address of Owner (if different from above)

Report Prepared By Skip Milton

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

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

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

1 XXX 1 In open areas.

1 XXX 1 Under or around exterior improvements.

1 XXX 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 yyy 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 = 15 uR/h
HOG = 56 uR/h

May 6, 1985

Colorado Department of Health
222 South 6th Street
Grand Junction, Colorado 81501

ATTN: Coleen Campbell

SUBJECT: GJ-01293-RS ⁹⁸
 MR

Dear Coleen:

The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-01293-RS (Texas Avenue).
 MR

1. A surface delta in the northeast corner of the garden showed negative results. Also, deltas at 0- to 6-inches in depth showed negative results along the west fence line.
2. The interior extent of contamination maps are with you now.
3. A delta at location 145295 shows an "Island" of uncontaminated material. There is no contamination between the doll house and Area "B", to the north.

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 433.

Sincerely,

Skip Milton
RSD Survey Team

SM:pr

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: April 10, 1985

To: Files

From: Skip Milton

Subject: Team Leader Notes - GJ-01293-RS ^{MR} 90

Address: 2236 Texas Avenue

Owner: Dennis L. Bell

Weather: Sunny, warm

Team Members

S. Milton (Team Leader)	L. Kula
N. Wallace	A. Quintana
B. Wilkins	B. Beltz
V. Rothman	J. Dickerson
R. Schouten	

Instruments

Scintillometers - C-1042, C-1247, C-1196, C-3510, C-3502
Total Count - C-3959
Delta Scintillometer - C-3942

An appearance by Health and Safety was made.

Elevated readings were observed while performing an interior survey of the garage. Elevated readings were also observed during a survey of the dollhouse, which was located north of the garage. A pile of dirt approximately 4-feet high located in the backyard showed elevated readings.

Team members obtained two cores in the garage.

Deltas along the gas line revealed no apparent contamination.

Team Leader Notes
Skip Milton
GJ-01293-RS
April 10, 1985
Page 2

Contamination appears to spill over onto the residential property to the west. A spillover consent form was signed by the occupant at 2226 Texas Avenue. These elevated readings were recorded on the grid point exposure rate field map.

In the backyard, the concrete was poured in five different slabs. The concrete between the shed and the dollhouse has elevated readings. A core was taken. The dollhouse had been moved and a delta was taken directly beneath it. The results of the reading was positive.

The interior survey of the primary structure showed no elevated readings.

The concrete slabs in the back alley showed elevated readings. When deltas on the concrete slabs were taken they showed positive results, while deltas taken off to the side showed negative results.

The elevated gamma scan of the west property line showed negative delta measurements. It is believed the elevated readings are due to "shine" from the adjacent property.

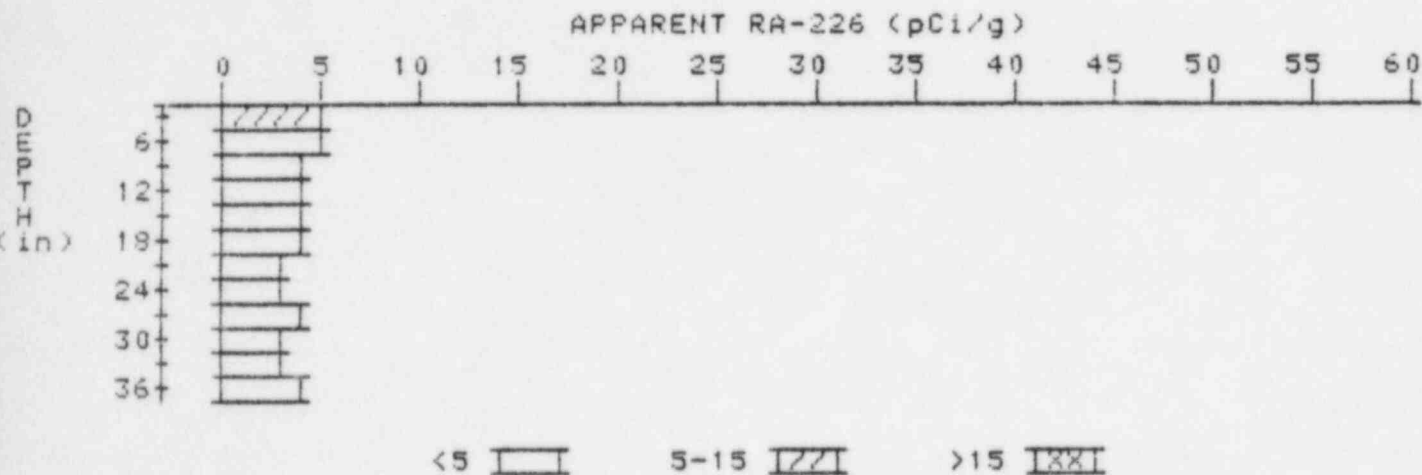
All utility lines were investigated.

The crawl space was too small for an interior survey to be performed. The background information does not indicate interior contamination.

All team members retrieved the equipment, frisked themselves, and returned to the facility.

APPARENT RADIUM-226 CONCENTRATION 1 DECONVOLUTION GRAPH

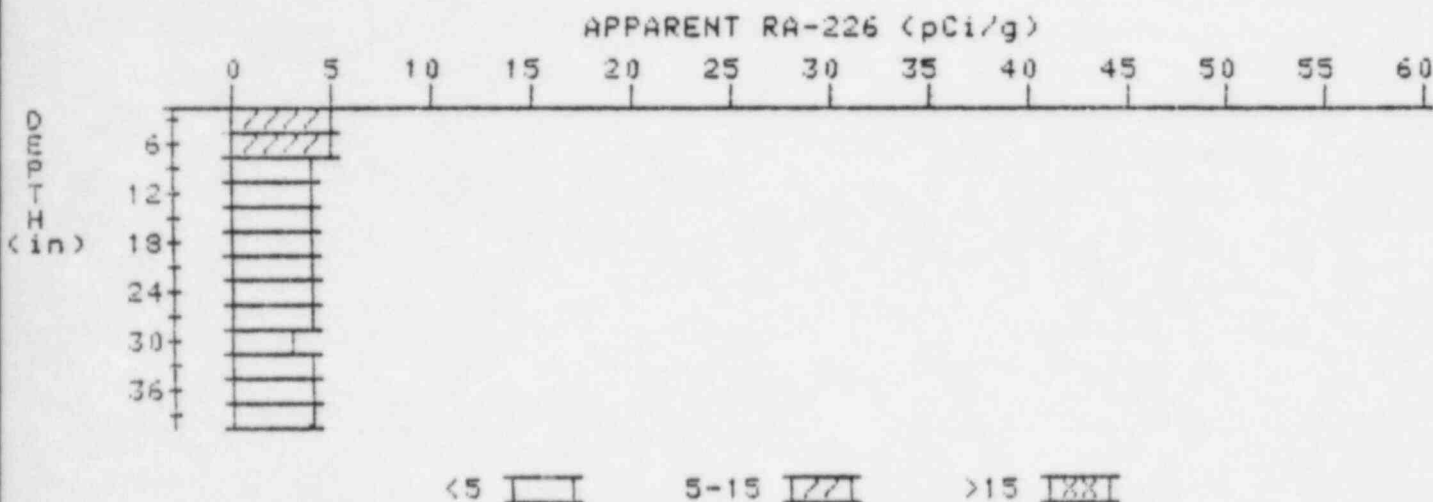
PROPERTY NUMBER: GJ-01293-RS
 HOLE NUMBER: 1
 LOCATION:



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.3	5.3
6	4.8	4.6
9	4.4	4.2
12	4.1	3.7
15	4.0	4.2
18	3.8	3.8
21	3.6	3.4
24	3.5	3.3
27	3.5	3.7
30	3.4	3.2
33	3.4	3.2
36	3.5	3.5

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 2

PROPERTY NUMBER: GJ-01293-RS
HOLE NUMBER: 2
LOCATION:

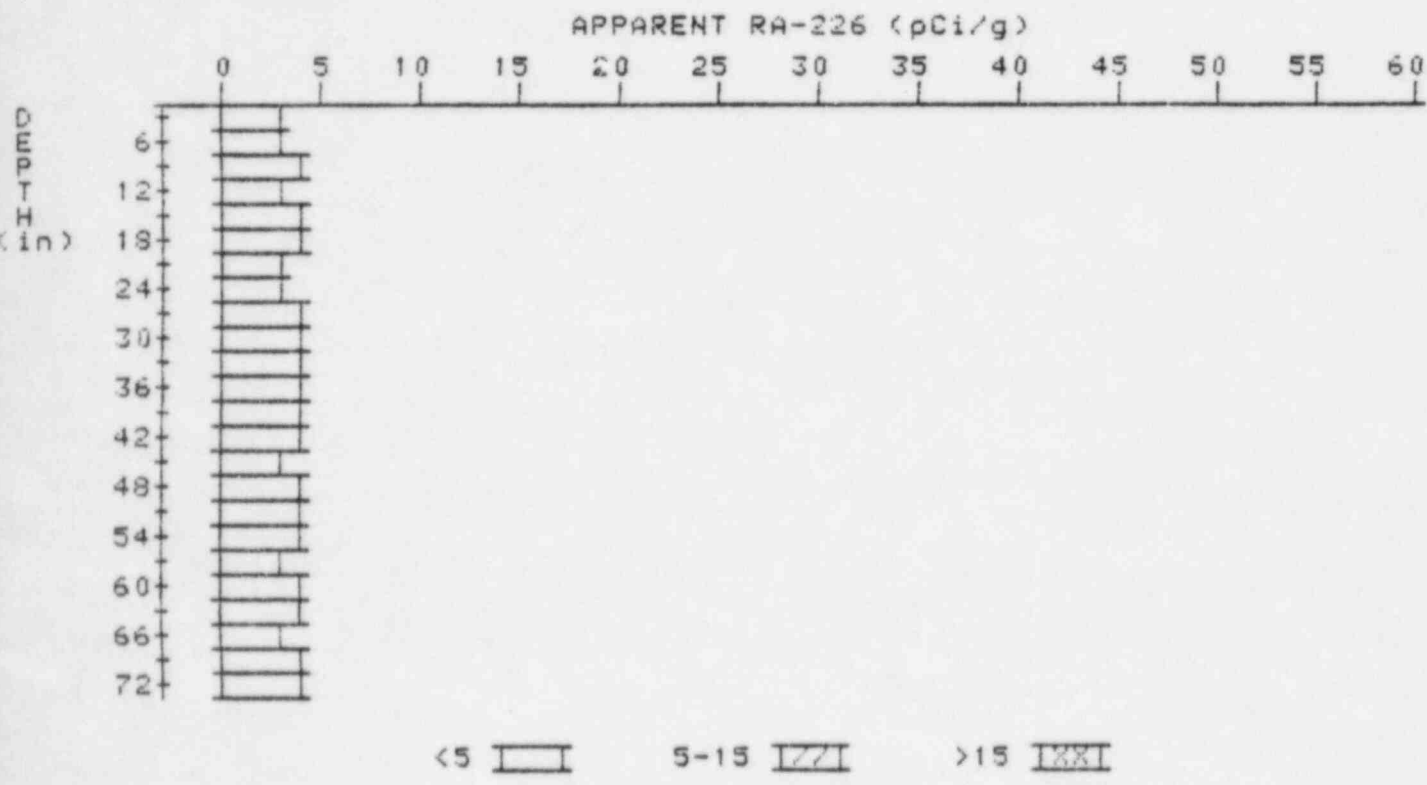


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.4	5.4
6	5.0	5.2
9	4.5	4.0
12	4.3	4.3
15	4.1	3.9
18	4.0	4.2
21	3.8	3.6
24	3.7	3.5
27	3.7	3.9
30	3.6	3.4
33	3.6	3.6
36	3.6	3.6
39	3.6	3.6

APPARENT RADIUM-226 CONCENTRATION 15

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01293-RS
HOLE NUMBER: 15
LOCATION: 150270



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.2	3.4
9	3.4	3.8
12	3.4	3.2
15	3.5	3.5
18	3.6	4.0
21	3.5	3.3
24	3.5	3.1
27	3.7	3.9
30	3.8	4.0
33	3.8	3.8
36	3.8	4.0
39	3.7	3.5
42	3.7	3.9
45	3.6	3.4

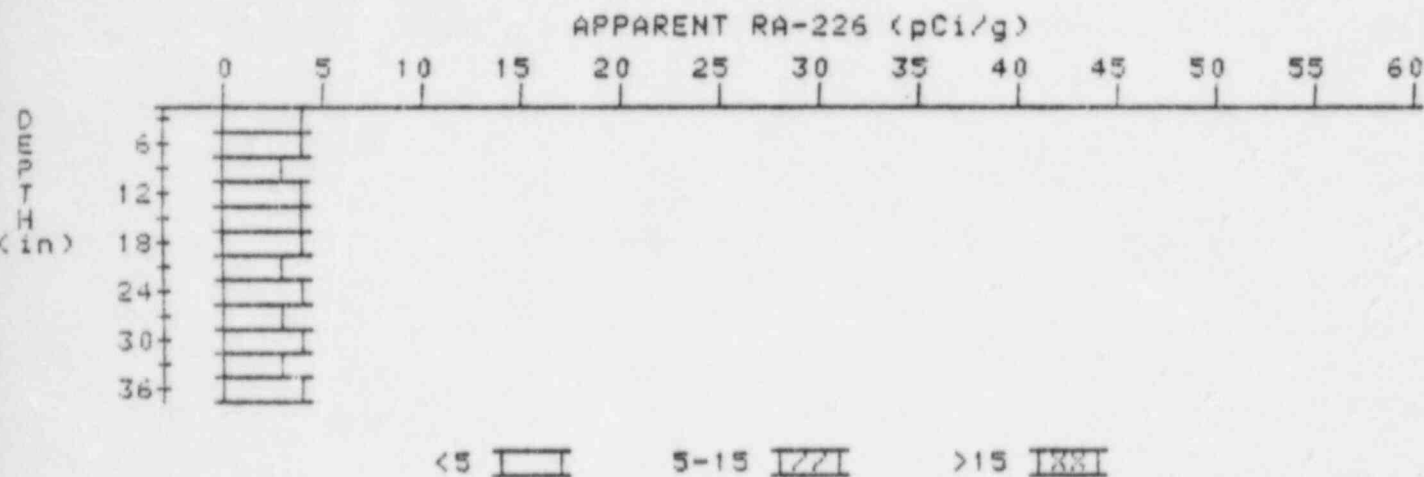
48
51
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60
63
66
69
72

3.6
3.6
3.6
3.5
3.6
3.6
3.6
3.7
3.7

3.6
3.6
3.8
3.1
3.8
3.6
3.4
3.9
3.7

APPARENT RADIUM-226 CONCENTRATION 20 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01293-RS
HOLE NUMBER: 20
LOCATION: 176284



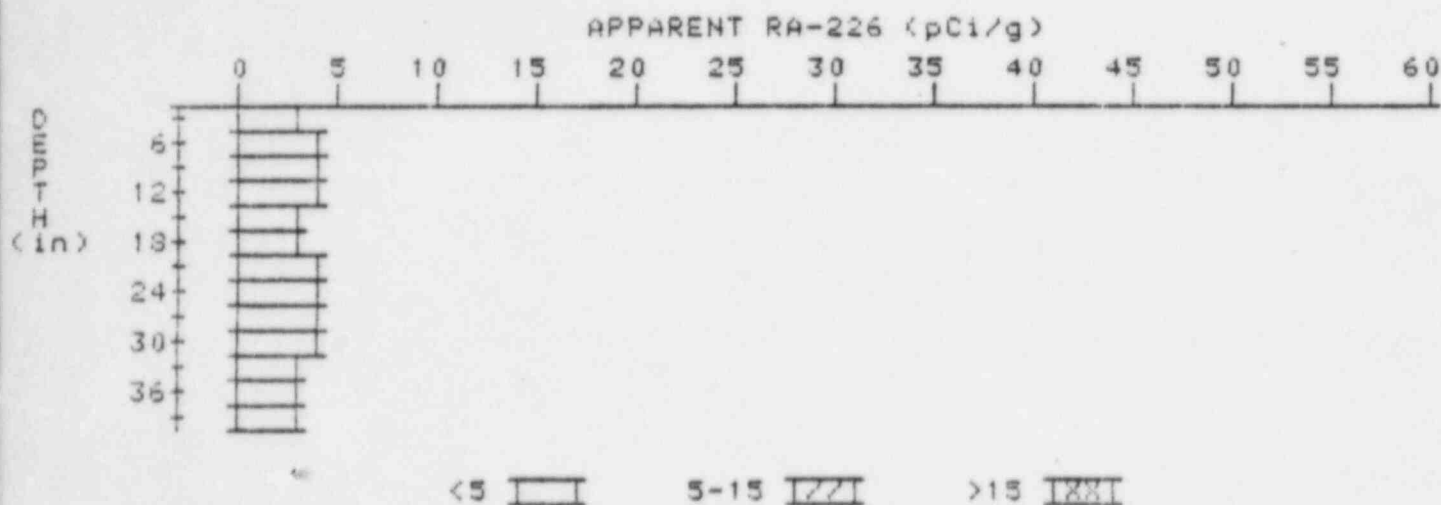
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.2	4.2
6	4.0	4.0
9	3.8	3.4
12	3.8	4.0
15	3.7	3.5
18	3.7	3.9
21	3.6	3.4
24	3.6	3.6
27	3.5	3.3
30	3.5	3.5
33	3.5	3.3
36	3.6	3.6

APPARENT RADIUM-226 CONCENTRATION 21 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01293-RS

HOLE NUMBER: 21

LOCATION: 198274

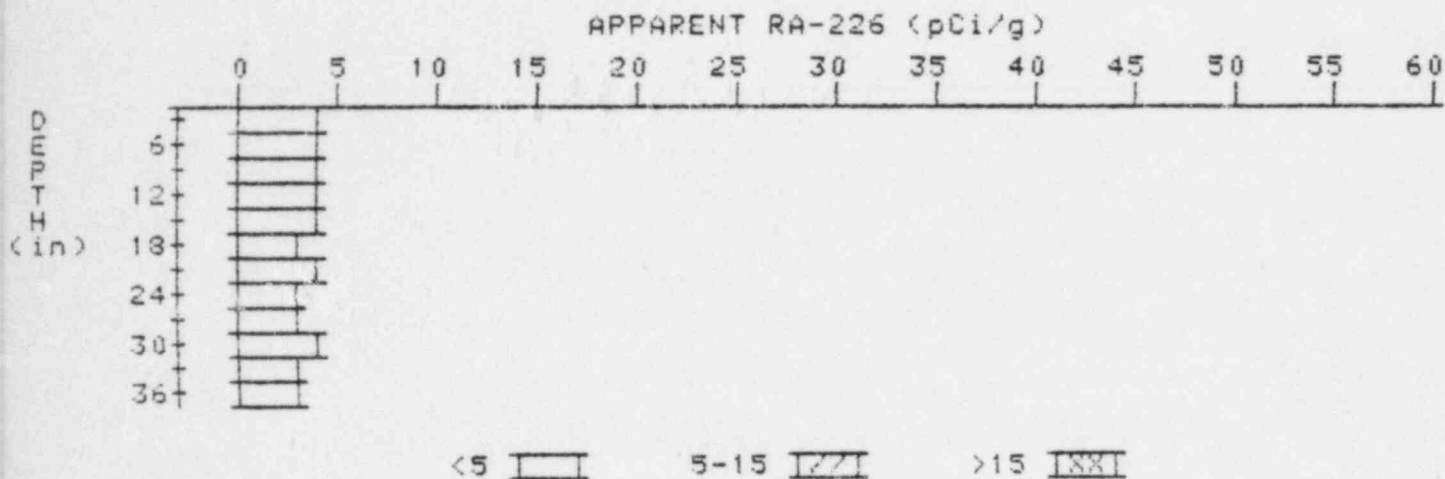


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.7	4.2
9	3.8	4.0
12	3.8	4.2
15	3.6	3.4
18	3.5	3.3
21	3.5	3.5
24	3.5	3.5
27	3.5	3.5
30	3.5	3.7
33	3.4	3.2
36	3.4	3.4
39	3.4	3.4

APPARENT RADIUM-226 CONCENTRATION 22

DECONVOLUTION GRAPH

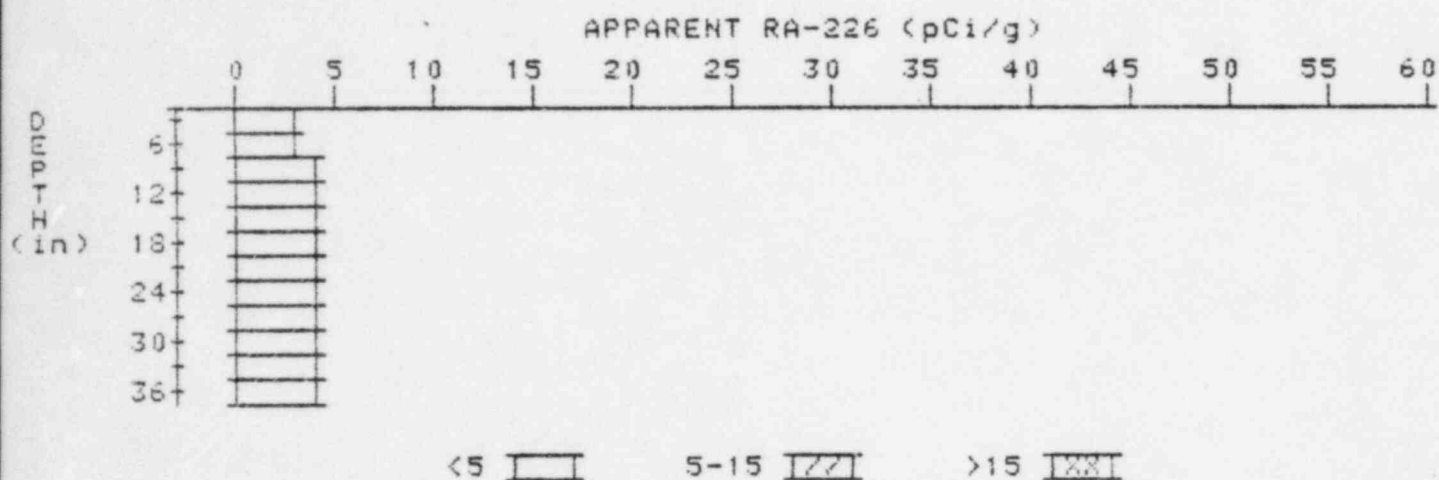
PROPERTY NUMBER: GJ-01293-RS
HOLE NUMBER: 22
LOCATION: 208274



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.6	3.6
6	3.8	4.2
9	3.8	4.0
12	3.7	3.7
15	3.6	3.6
18	3.5	3.3
21	3.5	3.7
24	3.4	3.2
27	3.4	3.2
30	3.5	3.9
33	3.4	3.2
36	3.4	3.4

APPARENT RADIUM-226 CONCENTRATION 24 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-01293-RS
HOLE NUMBER: 24
LOCATION: 240260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.4	3.4
6	3.5	3.3
9	3.7	4.1
12	3.7	3.5
15	3.8	4.0
18	3.8	3.6
21	3.9	4.3
24	3.8	3.6
27	3.8	3.8
30	3.8	3.8
33	3.8	4.0
36	3.7	3.7