RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-05169-RS
ADDRESS: 540 MELODY LANE

JULY 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. Tucker 5/7 CDH
M. TUCKER
DOE PROJECT ENGINEER

DATE 7/3/85

REA05169:REA-609

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-05169-RS, is a single-family residence located at 540 Melody Lane, 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, 36 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is $4,351. Remedial action on this property will take approximately 10 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 540 Melody Lane, Grand Junction, Colorado

Zoning: Residential (RSF-8)

Lot Size: Approximately 12,118 sf (0.3 acre)

Legal Description: N 10 Ft. of Lot 11, All Lot 12 + S 8 Ft. of Lot 13 Blk 2, Parkerson Sub., City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 3 miles northeast 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:	Single-family residence
South:	Single-family residence
East:	Single-family residence
West:	Melody Lane

2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence with attached carport
Size:	Approximately 1,654 sf
Construction Date:	1959
Construction:	Wood-frame
Foundation:	Concrete stemwall on spread footing
Footing Depth:	Approximately 24" to bottom of footing from grade
Basement:	None
Crawl Space:	Yes - under entire living area
Condition:	Good

Other Structures:

Type:	Shed 2
Size:	Approximately 89 sf
Construction:	Prefabricated metal
Foundation:	Concrete slab-on-grade
Condition:	Fair

Type:	Shed 1/carport
Size:	Approximately 300 sf
Construction:	Wood-frame
Foundation:	Wood sill on asphalt
Condition:	Fair

General Remarks:

Access to the rear (east) yard is limited. Structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is not over 50 years old. Therefore, it does not meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-05169-RS on May 23, 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 in the east and southeast property, and along the north fence.

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: 16 to 17 uR/h
Highest Outside Gamma Reading (HOG): 59 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. Appendix Figure 3.2 shows 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 3.2 and 3.3.

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

3.4 Radon/Radon Daughter Concentration (RDC)

Determined by CDH: 0.018 gross working level (WL). No additional RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figures 3.4a and 3.4b 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) *Deleted (see note below)

(AREA B) Contamination along the north property line is 12 inches deep (approximately 120 sf).

(AREA C) A deposit under the 2-inch-thick asphalt driveway, northwest of the primary structure, is 7 inches deep. The total depth of contamination is 9 inches (approximately 192 sf).

(AREA D) Contamination north of Shed 1 extends to a depth of 15 inches (approximately 108 sf).

(AREA E) Contamination east of Shed 1 extends to a depth of 12 inches (approximately 165 sf).

(AREA F) A deposit in the lawn east of the primary structure extends to a depth of 9 inches (approximately 40 sf).

(AREA G) The soil under the lawn east of the primary structure is contaminated to a depth of 9 inches (approximately 143 sf).

(AREA H) The soil on the south and east sides of Shed 2 is, contaminated to a depth of 9 inches (approximately 201 sf).

(AREA I) Contamination east of Area G extends to a depth of 6 inches (approximately 56 sf).

(AREA J) A deposit in the east lawn is 9 inches deep (approximately 60 sf).

*(Note) During the time of the Radiologic Survey, shed 2 was partially removed from a concrete slab; it was assessed as having contamination in the interior of the shed. The shed has been placed back on the uncontaminated concrete slab. Area A is now included as part of Area H.

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-05169-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.4b) 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 $4,351.

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
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Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Interior Gamma Exposure Rates and Sample Locations
Figure 3.3	Exterior Sample Locations
Figure 3.4a	Interior Estimated Extent of Contamination
Figure 3.4b	Exterior Estimated Extent of Contamination

Official Survey Report
Exterior Gamma Scan Field Map
Team Leader Notes
Deconvolution Graphs (Apparent Radium-226 Concentration)

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	In Situ Ra-226 (pCi/g) Spectr.	Chem Ra-226 (pCi/g)	Comments
3	145296	00	DS	1.6		*	Northwest property
		06	DS	5.5		*	
		12	DS	1.8		*	DC = 12 inches
4	150240	00	DS	1.5		*	Background
		00	GS		1.4	*	West property
		03	TC	3.0		*	
		06	BH	3.3	1.2	*	DC = 0 inches
		09	TC	3.6		*	
		12	TC	3.8		*	
		15	TC	4.0		*	
		18	BH	4.0	1.4	*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	BH	3.8	1.2	*	
5	155270	00	DS	3.3		*	West property
		03	TC	4.9		*	
		06	BH	5.1	3.1	*	DC = 9 inches
		09	TC	4.6		*	Based on the
		12	TC	4.2		*	deconvolution graph
		15	TC	3.9		*	
		18	BH	3.9	1.6	*	
		21	TC	3.8		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	BH	3.8	1.5	*	
		33	TC	3.7		*	
		36	TC	3.7		*	
6	163277	00	DS	2.5		*	Driveway
		03	TC	4.7		*	
		06	TC	5.0		*	DC = 9 inches
		09	TC	4.4		*	Based on the
		12	TC	4.1		*	deconvolution graph
		15	TC	3.8		*	
		18	TC	3.7		*	
		21	TC	3.6		*	
		24	TC	3.6		*	
		27	TC	3.6		*	
		30	TC	3.6		*	
		33	TC	3.8		*	
		36	TC	3.8		*	

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	In Situ Ra-226 (pCi/g) Spectr.	Chem Ra-226 (pCi/g)	Comments
7	169231	00	DS	1.3		*	Gas line
		03	TC	3.1		*	
		06	BH	3.3	1.0	*	DC = 0 inches
		09	TC	3.5		*	
		12	TC	3.6		*	
		15	TC	3.6		*	
		18	BH	3.6	1.1	*	
		21	TC	3.6		*	
		24	TC	3.6		*	
		27	TC	3.6		*	
		30	BH	3.6	<1.0	*	
		33	TC	3.4		*	
		36	TC	3.4		*	
8	169264	00	DS	1.7		*	West foundation
		06	DS	1.7		*	
		12	DS	1.3		*	
9	181278	00	DS	1.4		*	Water line
		03	TC	3.0		*	
		06	BH	3.3	<1.0	*	DC = 0 inches
		09	TC	3.4		*	
		12	TC	3.6		*	
		15	TC	3.8		*	
		18	BH	3.9	1.4	*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	4.0		*	
		30	BH	4.0	1.0	*	
		33	TC	3.8		*	
		36	TC	3.9		*	
10	193296	00	DS	1.1		*	North of Shed 1
		03	TC	4.9		*	
		06	BH	6.2	4.0	*	DC = 15 inches
		09	TC	6.8		*	Based on the
		12	TC	6.0		*	deconvolution graph
		15	TC	4.7		*	
		18	BH	4.5	1.7	*	
		21	TC	4.4		*	
		24	TC	4.3		*	
		27	TC	4.2		*	
		30	BH	4.2	2.2	*	

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	In Situ Ra-226 (pCi/g) Spectr.	Chem Ra-226 (pCi/g)	Comments
11	200226	00	DS	1.4		*	South foundation
		03	TC	3.0		*	Sewer line
		06	BH	3.4	1.2	*	
		09	TC	3.6		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	3.8		*	
		18	BH	3.9	1.7	*	
		21	TC	3.9		*	
		24	TC	4.1		*	
		27	TC	3.9		*	
		30	BH	3.9	1.1	*	
		33	TC	3.8		*	
12	213296	00	DS	18.8		*	North fence
		06	DS	2.7		*	
		12	DS	1.0		*	DC = 12 inches
13	215250	[24]	DS	<1.0		*	On brick facing
		[24]	GS		1.5	*	
14	215263	00	DS	2.5		*	Sewer line
		06	DS	1.8		*	
		03	TC	3.2		*	DC = 0 inches
		06	BH	3.3	<1.0	*	
		09	TC	3.5		*	
		12	TC	3.5		*	
		15	TC	3.6		*	
		18	BH	3.6	1.1	*	
		21	TC	3.6		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	BH	3.7	2.1	*	
		33	TC	3.6		*	
15	232233	00	DS	12.3		*	East property
		03	TC	8.7		*	
		06	BH	7.4	4.8	*	DC = 9 inches
		09	TC	5.7		*	Based on the
		12	TC	4.8		*	deconvolution graph
		15	TC	4.1		*	
		18	BH	4.0	1.7	*	
		21	TC	3.8		*	
		24	TC	3.6		*	
		27	TC	3.6		*	

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	In Situ Ra-226 (pCi/g) Spectr.	Chem Ra-226 (pCi/g)	Comments
15	232233	30	BH	3.6	2.1	*	
		33	TC	3.5		*	
16	234231	00	DS	1.2		*	East yard
		06	DS	1.9		*	
		12	DS	1.6		*	
17	241231	00	DS	6.0		*	East yard
		03	TC	6.1		*	
		06	BH	5.2	2.7	*	DC = 9 inches
		09	TC	4.4		*	Based on the
		12	TC	4.1		*	deconvolution graph
		15	TC	4.0		*	
		18	BH	3.9	1.2	*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.8		*	
		30	BH	3.7	1.1	*	
18	245235	00	DS	3.2		*	East yard
		06	DS	3.4		*	
		12	DS	2.7		*	DC = 9 inches
		18	DS	1.9		*	Based on all
		03	TC	4.1		*	available data
		06	TC	4.4		*	
		09	TC	4.3		*	
		12	TC	4.2		*	
		15	TC	4.1		*	
		18	TC	4.2		*	
		21	TC	4.3		*	
		24	TC	4.3		*	
		27	TC	4.2		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		36	TC	3.9		*	
19	259229	00	DS	11.0		*	East yard
		03	TC	9.7		*	
		06	BH	8.2	4.1	*	DC = 9 inches
		09	TC	6.1		*	Based on the
		12	TC	4.9		*	deconvolution graph
		15	TC	4.2		*	
		18	BH	4.0	1.8	*	
		21	TC	3.8		*	

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	Spectr.	Chem Ra-226 (pCi/g)	Comments
19	259229	24	TC	3.7		*	
		27	TC	3.6		*	
		30	BH	3.7	1.5	*	
		33	TC	3.7		*	
20	260235	00	DS	4.1		*	East backyard
		06	DS	<1.0		*	DC = 6 inches
21	260256	00	DS	5.2		*	Southeast of Shed 2
		03	TC	5.6		*	
		06	BH	5.3	2.9	*	DC = 9 inches
		09	TC	4.6		*	Based on the
		12	TC	4.1		*	deconvolution graph
		15	TC	3.8		*	
		18	BH	3.7	1.7	*	
		21	TC	3.5		*	
		24	TC	3.5		*	
		27	TC	3.4		*	
		30	BH	3.3	<1.0	*	
		33	TC	3.3		*	
		36	TC	3.2		*	

Measurement Types:
GB = GAD-6 Borehole
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 = 05-23-85
Team Leader = JJ

RADRPT V85.1<850513.1530> Table 3.2

Radium Concentrations at Interior Locations

DOE ID #GJ-05169-RS 540 Melody Lane

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g) Tot. Ct	In Situ Ra-226 (pCi/g) Spectr.	Chem Ra-226 (pCi/g)	Comments
1		00	DS	4.9		*	In Shed 2
		06	DS	1.9		*	DC = 6 inches
2		00	DS	1.4		*	In Shed 2 on concrete

Measurement Types:
GB = GAD-6 Borehole
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 = 05-23-85
Team Leader = JJ

Table 3.3
Summary of Interior Gamma Exposure Rates
DOE ID #GJ-05169-RS 540 Melody Lane

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	*	*	*	*	15-17	*
SHED 1	05	16-18	17	05	16-17	16
SHED 2	05	16-17	16	05	16-20	17

* The historical data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan. These areas and the ranges of gamma measurements are shown in Appendix Figure 3.3. Exposure rates for the sheds are also shown in Appendix Figure 3.3.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-05169-RS

AREA	CALCULATIONS(ft)		SF		DEPTH(ft)		CF				CUBIC YARDS
EXTERIOR											
A	Deleted (included in Area H in this assessment)										
	Asphalt										
C	21 x 13	=	273	x	0.2	=	55				
	Volume of Asphalt					=	55	=	55/27	=	2
	Contaminated Fill										
B	40 x 3	=	120	x	1.0	=	120				
C	16 x 12	=	192	x	0.6	=	115				
D	27 x 4	=	108	x	1.3	=	140				
E	33 x 5	=	165	x	1.0	=	165				
F	10 x 4	=	40	x	0.8	=	32				
G	11 x 13	=	143	x	0.8	=	114				
H	5 x 9	=	45								
	12 x 13	=	156								
			201	x	0.8	=	161				
I	7 x 8	=	56	x	0.5	=	28				
J	6 x 10	=	60	x	0.8	=	48				
	Volume of Fill					=	923	=	923/27	=	34
	TOTAL VOLUME - EXTERIOR									=	36

See Appendix Figure 3.4b For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-05169-RS

EXTERIOR		
Remove/replace asphalt		
273 sf @ $2.60/sf	$	710
Remove identified residual radioactive material		
17 cy @ $14.50/cy (machine-open)		247
17 cy @ $44/cy (manual-open)		748
Replace areas with roadbase		
15 cy @ $11.50/cy		173
Replace areas with topsoil		
19 cy @ $9.50/cy		181
Replace areas with sod		
1,500 sf @ $.20/sf		300
Remove/replace bulb gardens		
60 sf @ $3/sf		180
Remove/reset wood fencing (concrete base)		
23 lf @ $6/lf		138
Cleanup		
Lump sum		100
TOTAL EXTERIOR	$	2,777
TOTAL INTERIOR		0
ACCESS CONTROL		250
SUBTOTAL	$	3,027
CONTINGENCY @ 15%		454
SUBTOTAL	$	3,481
CONTRACTOR OVERHEAD & PROFIT @ 25%		870
GRAND TOTAL	$	4,351

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REA05169/REA-609/LMR

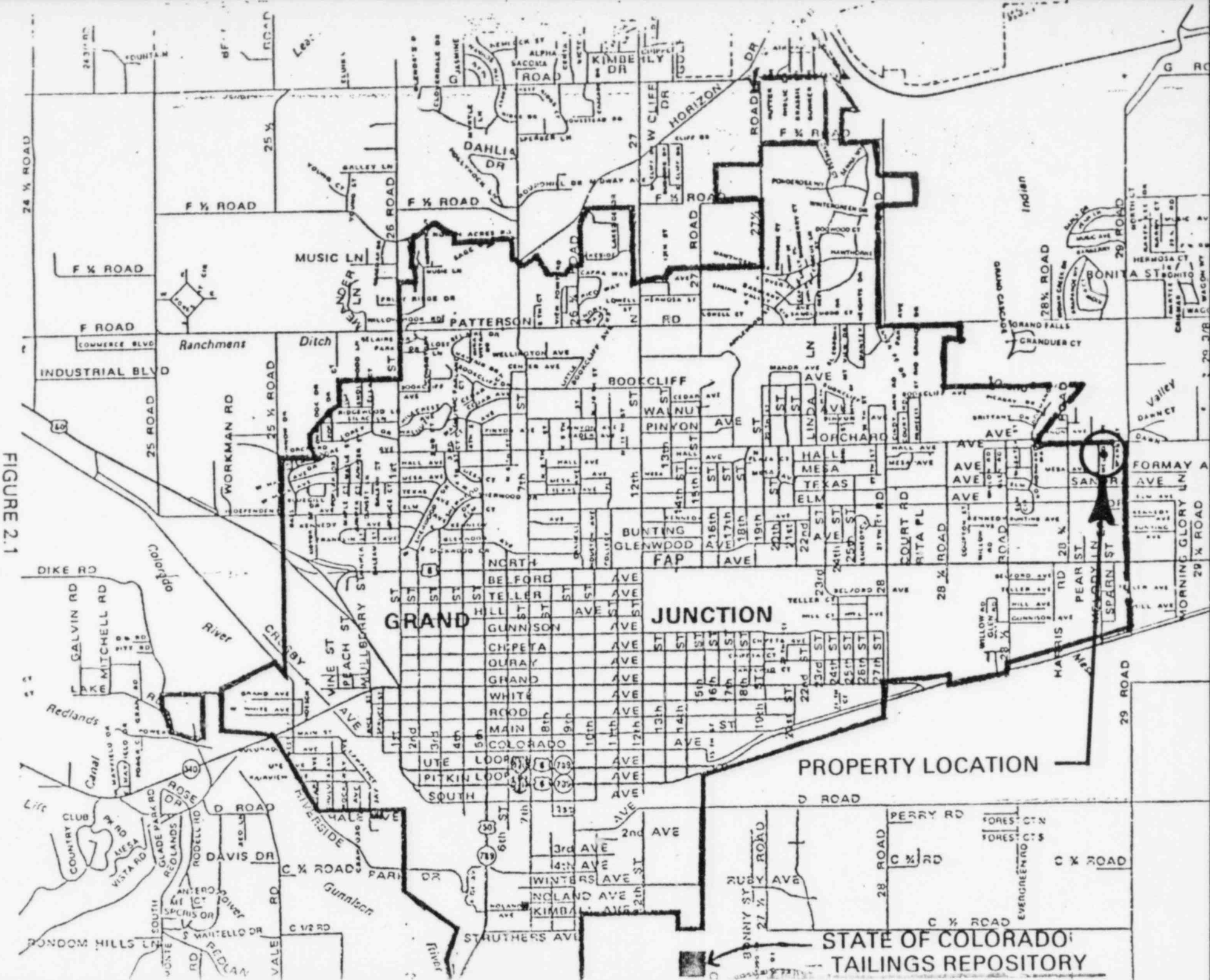
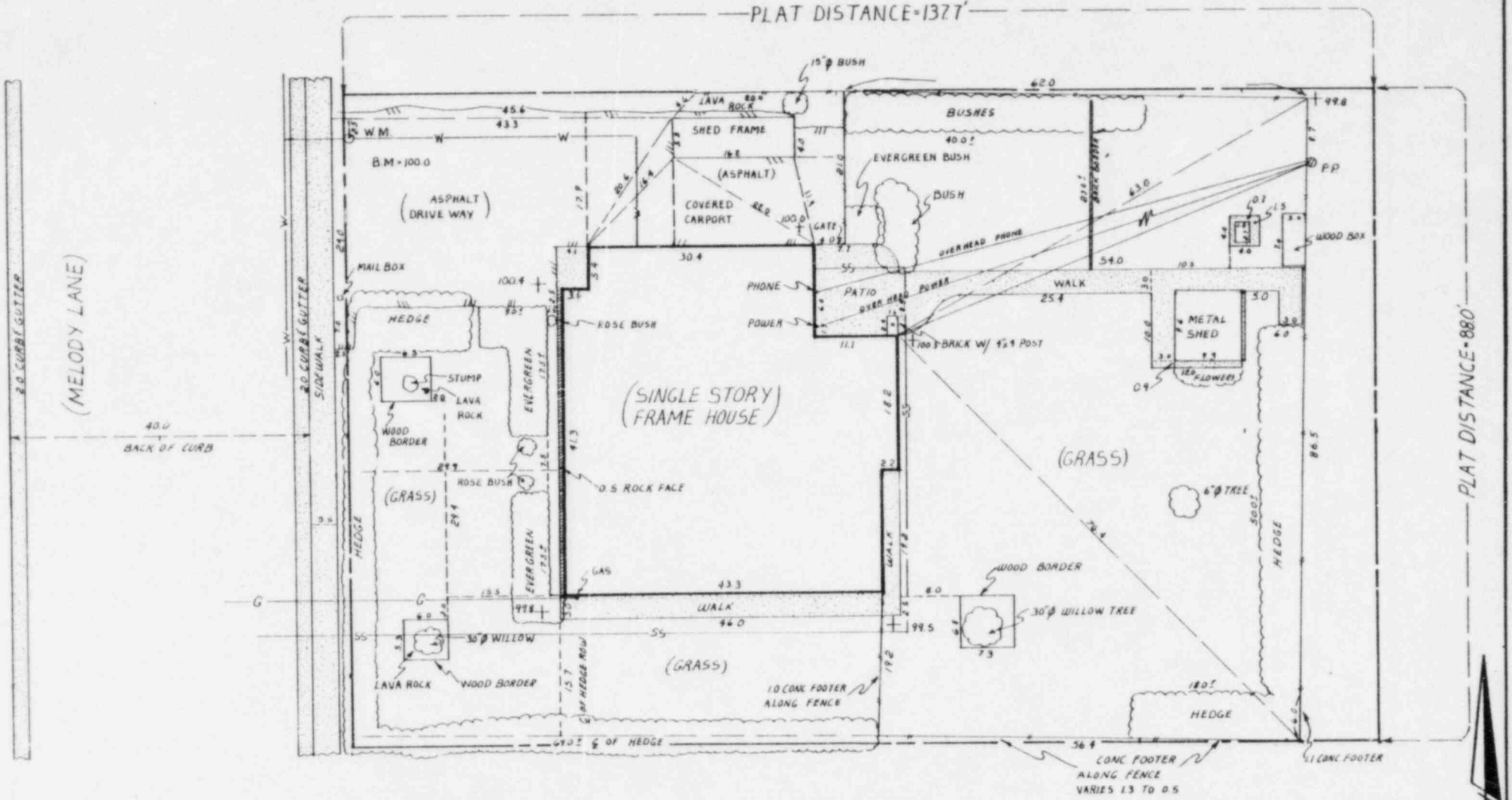


FIGURE 2.1
VICINITY MAP



N. 10 FT. OF LOT 11, ALL LOT 12 + S. 8 FT. OF LOT 13 BLK 2
PARKERSON SUB.
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

10' 5' 0 10' 20'
SCALE IN FEET

FIGURE 2.2 SITE PLAN

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECT OFFICE, COLORADO	DOE ID NO. GJ-05169-RS
ADDRESS 540 MELODY LANE GRAND JUNCTION, COLORADO	Bendix Field Engineering Corporation Grand Junction Operations
SURV RLB/5-10-85 DRAFT JRG/5-13-85	CK [illegible] 5-17-85
DRAWING NO 3-C-667-F1	SHEET 1 OF 1

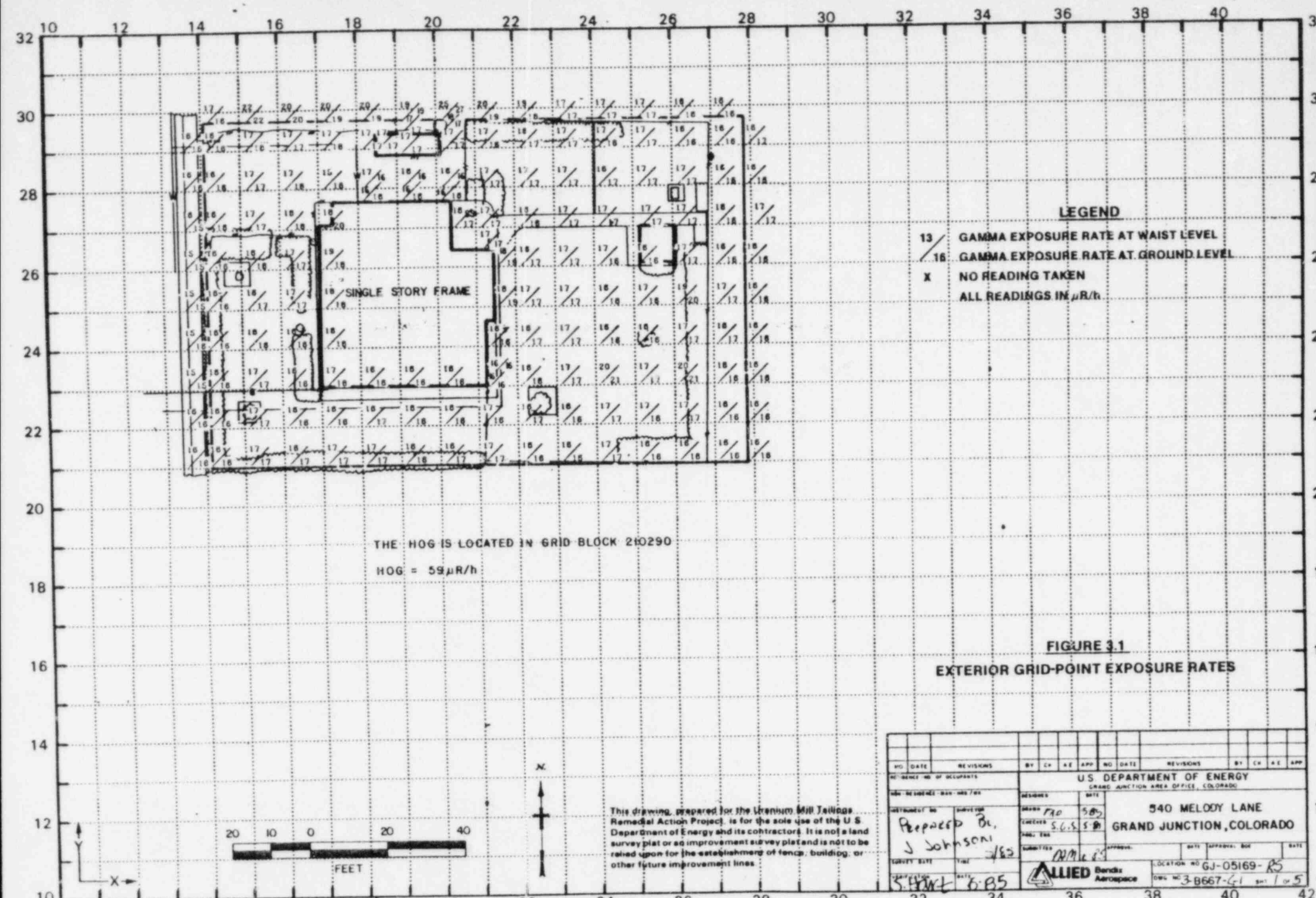


FIGURE 3.1

EXTERIOR GRID-POINT EXPOSURE RATES

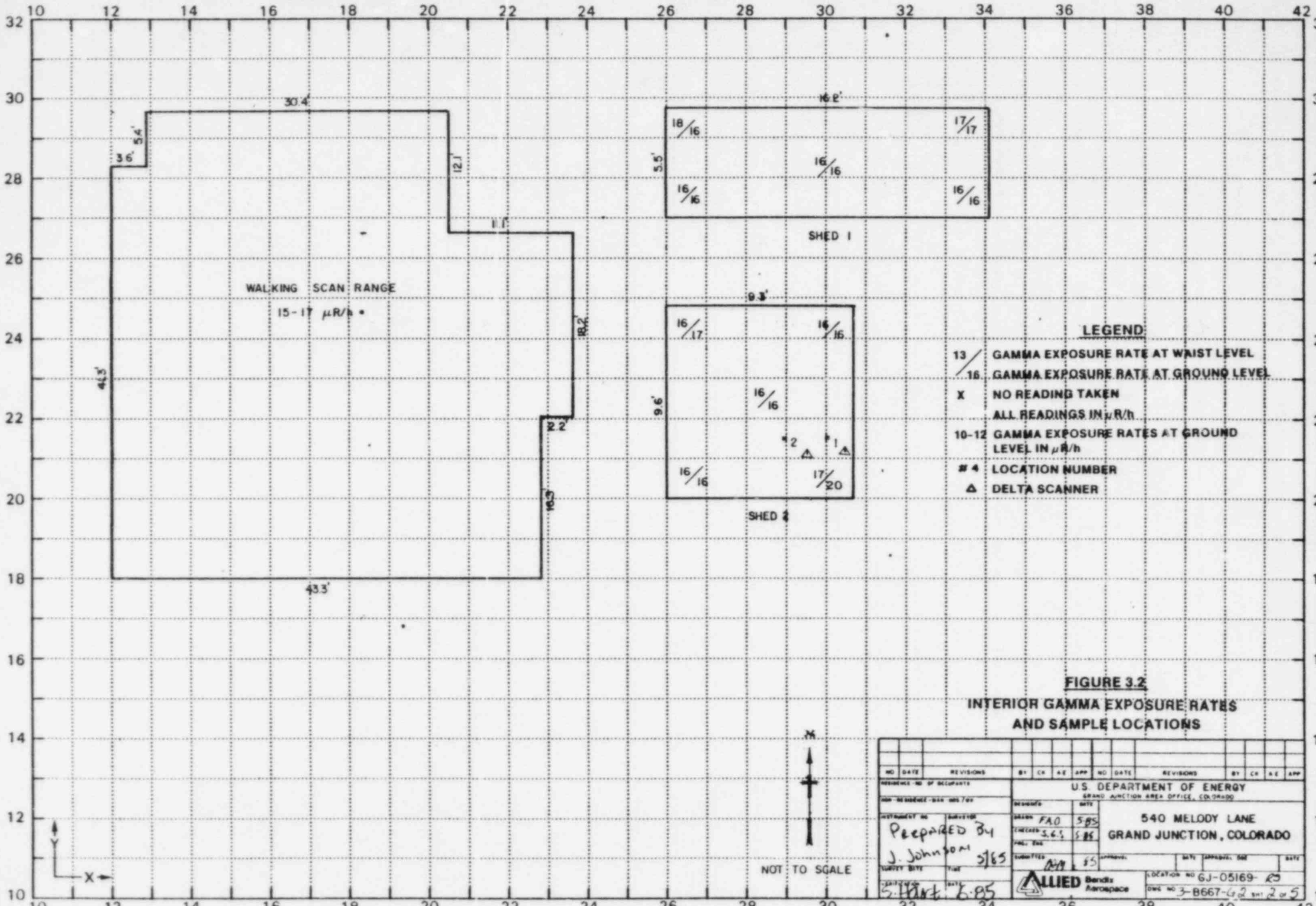
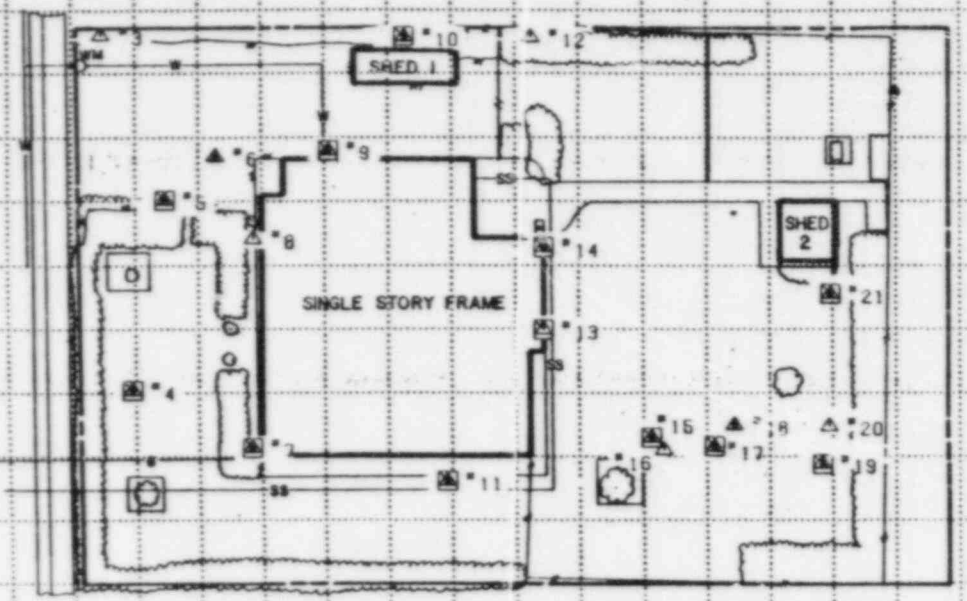


FIGURE 3.2

INTERIOR GAMMA EXPOSURE RATES AND SAMPLE LOCATIONS

U.S. DEPARTMENT OF ENERGY	GRAND JUNCTION AREA OFFICE, COLORADO
540 MELODY LANE	GRAND JUNCTION, COLORADO
ALLIED Bendix Aerospace	LOCATION NO GJ-05169-
Prepared By J. Johnson 5/85	DWG NO 3-8667-G2 SHT 2 OF 5



LEGEND

- ■ BOREHOLE
- □ SPECTROMETER
- △ DELTA SCANNER
- ○ SOIL SAMPLE
- #4 LOCATION NUMBER

FIGURE 3.3

EXTERIOR SAMPLE LOCATIONS

20 10 0 20 40

FEET

Y

X

N

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

NO	DATE	REVISIONS	BY	CH	A E	APP

NO	DATE	REVISIONS	BY	CH	A E	APP

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION AREA OFFICE, COLORADO

DESIGNED
DRAWN TAD 5/85
CHECKED S.L.S. 5/85
ENG. APP.
SUBMITTED 5/85
APPROVAL DATE
SURVEY DATE
APPROVED S. Hunt 6/85

Prepared by J. Johnson 5/85

ALLIED Bendix Aerospace

540 MELODY LANE
GRAND JUNCTION, COLORADO

LOCATION NO. GJ-05169-R5
DWG. NO. 3-B667-G3 SHT. 3 OF 5

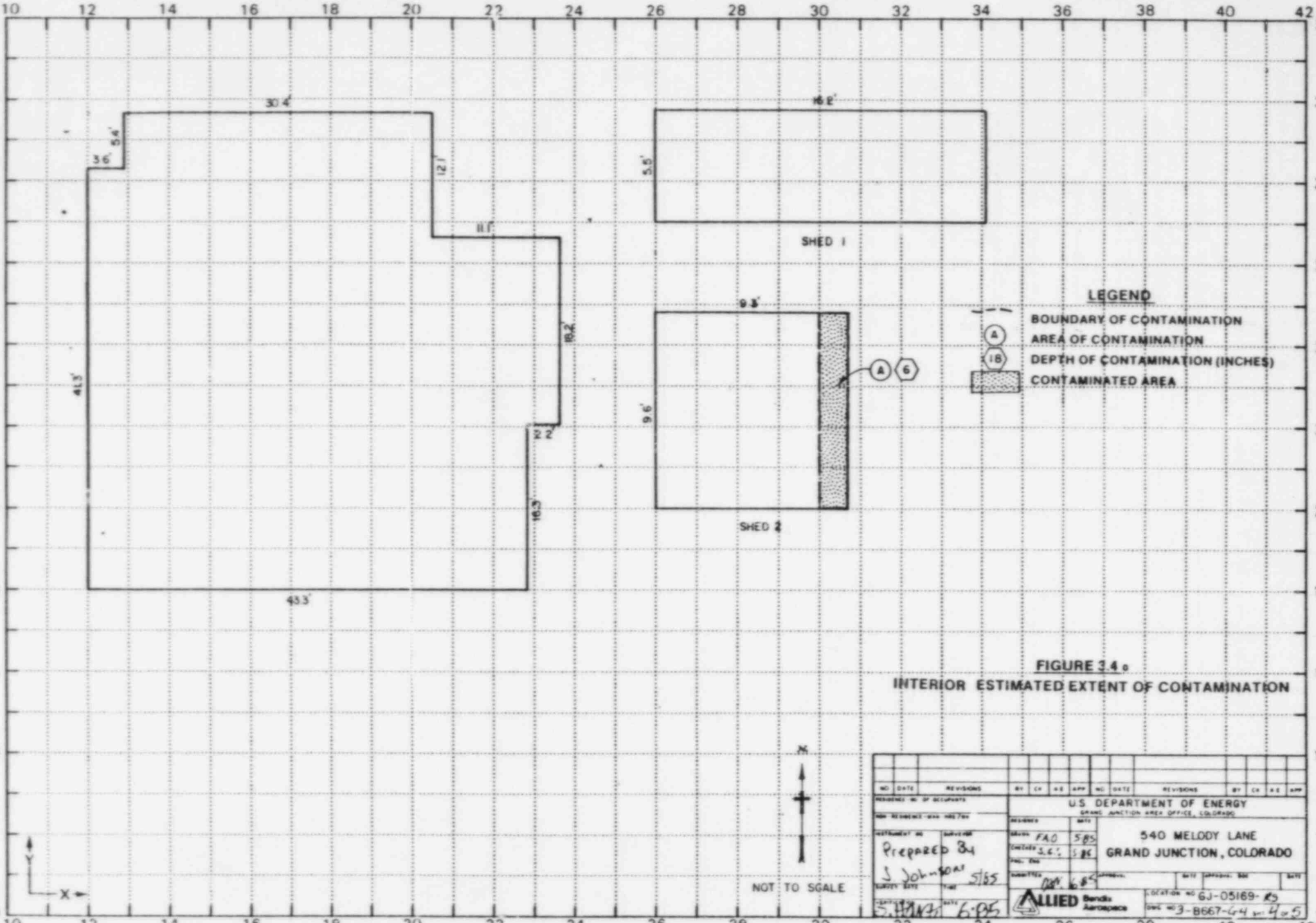


FIGURE 3.4.

INTERIOR ESTIMATED EXTENT OF CONTAMINATION

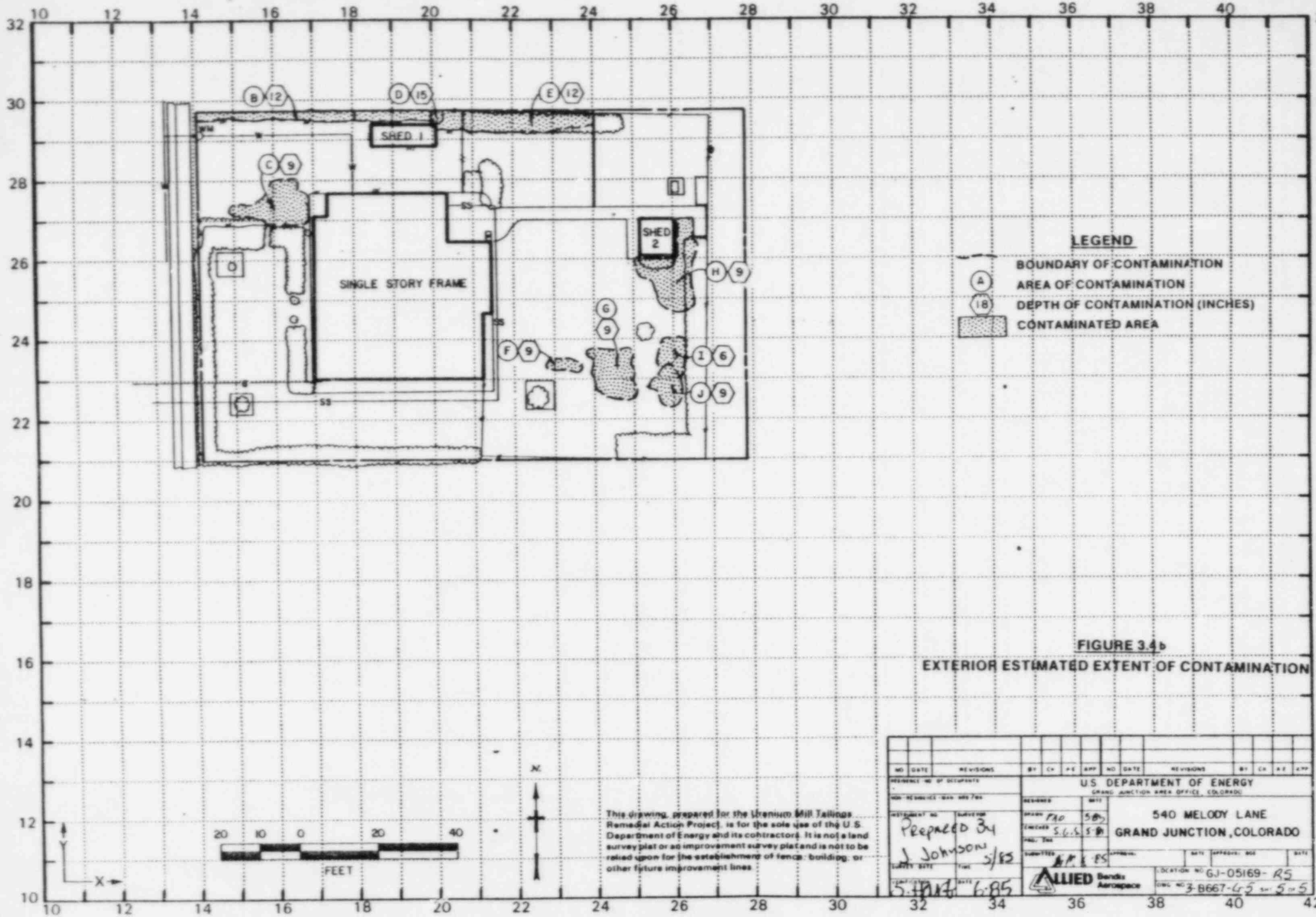


FIGURE 3.4b

EXTERIOR ESTIMATED EXTENT OF CONTAMINATION

3/85

DOE ID NO. GJ-05169-RS Date 05-29-85

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

Official Survey Report

Property Address 540 Melody Lane

Property Owner Leon and Flora Parkerson

Address of Owner (if different from above) 2910 Orchard Avenue

Report Prepared By Jay Johnson

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

[ ] No evidence of residual radioactive material on surveyed property.

[XX] Residual ractioactive materials found at the following locations:

- [XX] In open areas.
- [XX] Under or around exterior improvements.
- [XX] Under or around a typically nonoccupied structure.
- [XX] Under or around a typically occupied structure.

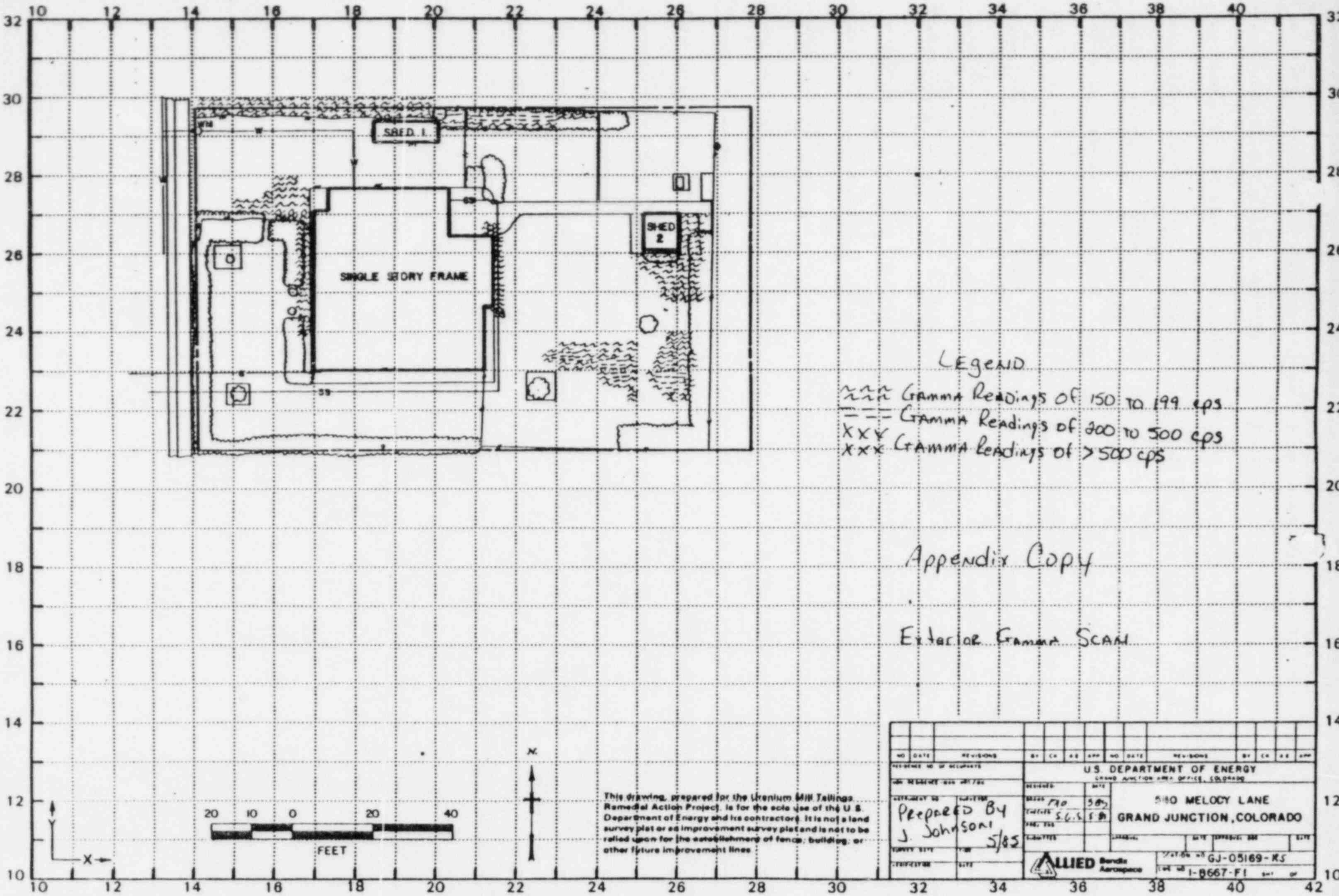
II. RESULTS OF RADIOLOGIC ASSESSMENT

[ ] 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.

[XX] 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 = 59 uR/h


SHED 1
SINGLE STORY FRAME
SHED 2
LEGEND
Gamma Readings of 150 to 199 cps
Gamma Readings of 200 to 500 cps
Gamma Readings of >500 cps
Appendix Copy
Exterior Gamma Scan
20 10 0 20 40
FEET
N
This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.
Prepared By J. Johnson 5/85
U.S. DEPARTMENT OF ENERGY
580 MELOCY LANE
GRAND JUNCTION, COLORADO
ALLIED Bendix Aerospace
GJ-05169-RS
1-B667-F1

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: May 23, 1985

To: Files

From: Jay Johnson

Subject: Team Leader Notes - GJ-05169-RS

Address: 540 Melody Lane

Owner:

Weather: Warm, sunny

Team Members

J. Johnson (Team Leader)
M. Duran
V. Young
P. Hardy
R. Schouten
R. Herman

Instruments

C-1196, C-1147, C-1024, C-3937, C-3943, C-3938, C-3957, C-3959, C-1024, C-1168, C-0498, C-1372, C-1127

This house is a one story frame home, which was vacant at the time of the survey.

The property is surrounded by large bushes.

Elevated readings were located in the southeast lawn, around the east shed, underneath the asphalt driveway, and along the north property line. The elevated readings along the east and west foundations are from the brick facing on the house. All areas of elevated readings were investigated.

All utility lines and the foundation of the house were checked.

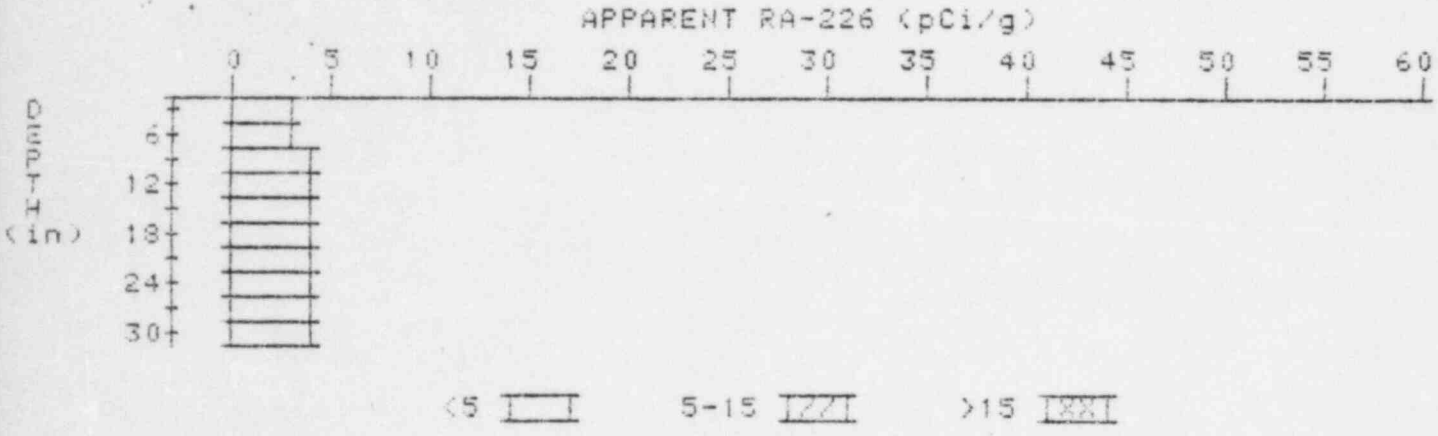
Elevated readings were located in Shed 2, which is a metal prefab building on a concrete slab, but is not secured down. The east side of the shed is off the concrete and is over the grade level. This area was investigated with delta readings.

All personnel were frisked before leaving the property.

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 4
LOCATION: 150240

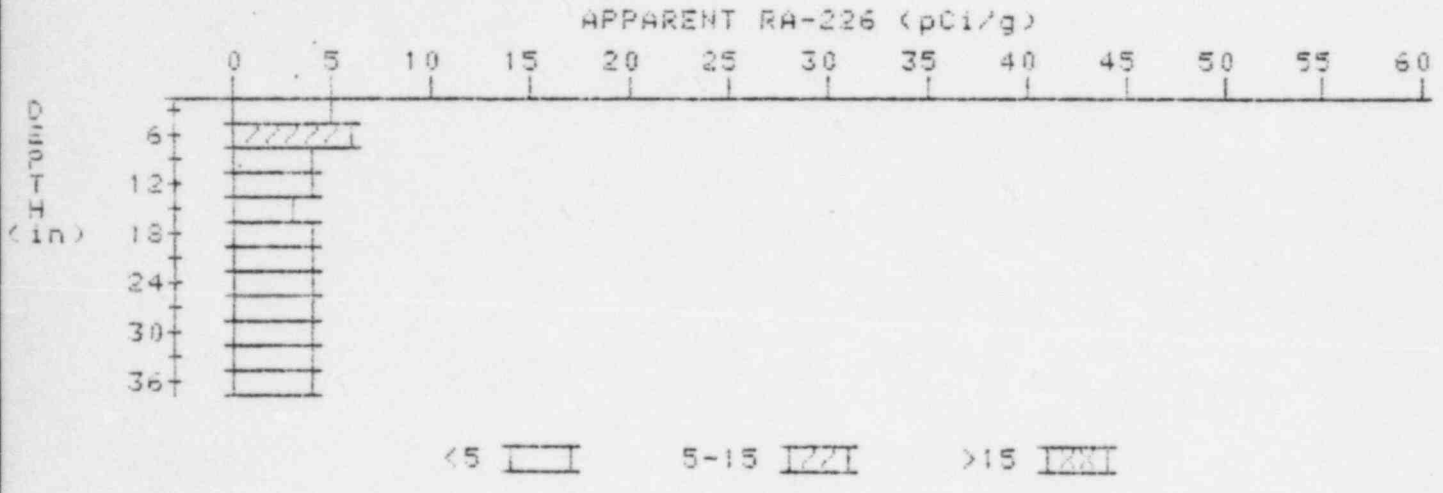


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.3	3.3
9	3.6	3.8
12	3.8	3.8
15	4.0	4.4
18	4.0	4.2
21	3.9	3.7
24	3.9	3.9
27	3.9	4.1
30	3.8	3.8

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 5

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 5
LOCATION: 155270

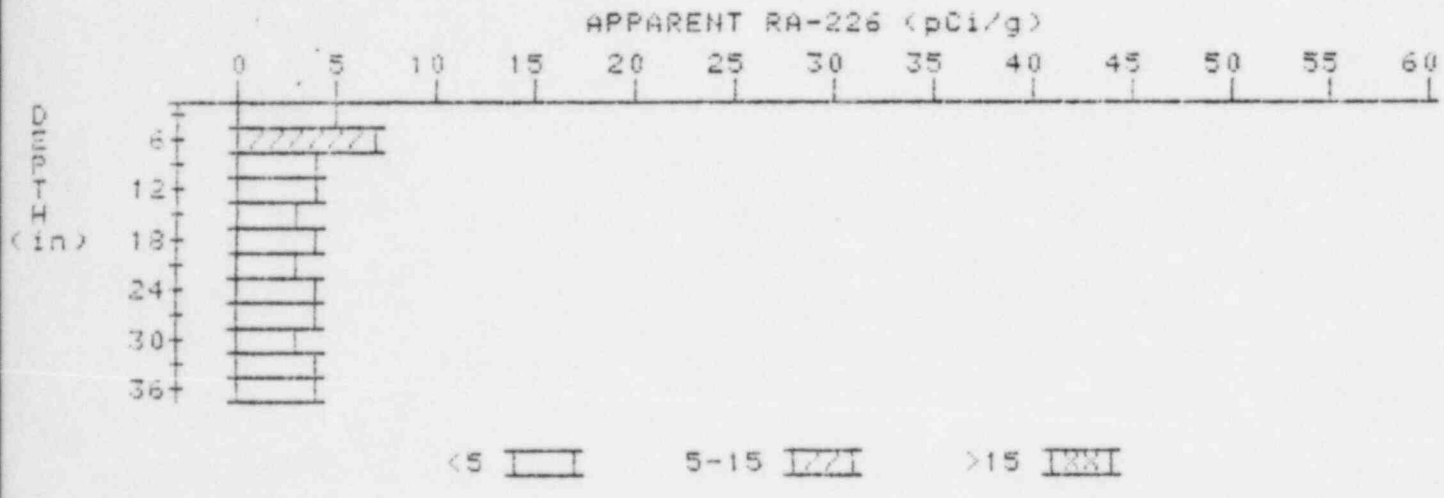


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.9	4.9
6	5.1	6.3
9	4.6	4.4
12	4.2	4.0
15	3.9	3.4
18	3.9	4.1
21	3.8	3.8
24	3.7	3.5
27	3.7	3.5
30	3.8	4.2
33	3.7	3.5
36	3.7	3.7

DECON V65.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 6

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 6
LOCATION: 163277

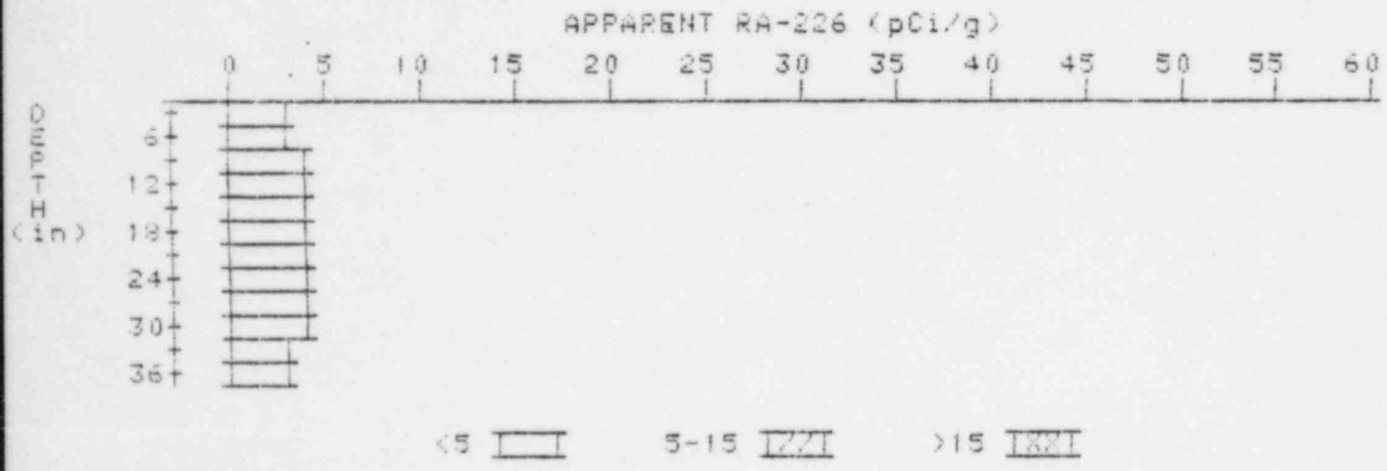


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.7	4.7
6	5.0	6.6
9	4.4	3.9
12	4.1	4.1
15	3.8	3.4
18	3.7	3.7
21	3.6	3.4
24	3.6	3.6
27	3.6	3.6
30	3.6	3.2
33	3.8	4.2
36	3.8	3.8

DECON V85.1<850524.0823>

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 7

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 7
LOCATION: 169231

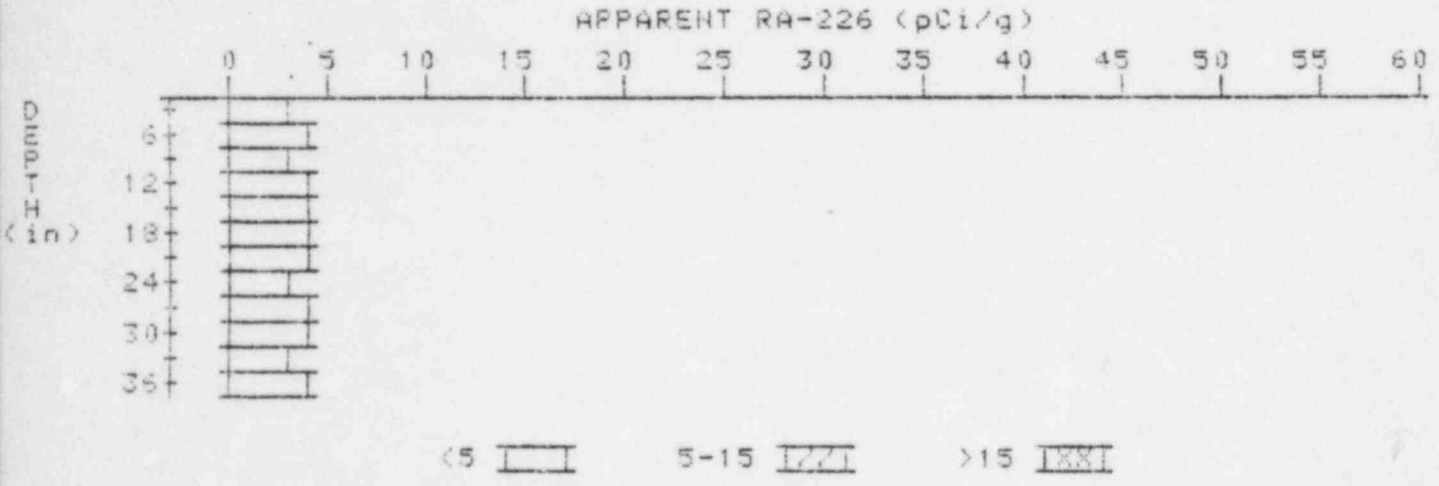


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.3	3.3
9	3.5	3.7
12	3.6	3.8
15	3.6	3.6
18	3.6	3.6
21	3.6	3.6
24	3.6	3.6
27	3.6	3.6
30	3.6	4.0
33	3.4	3.0
36	3.4	3.4

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 9
LOCATION: 181278

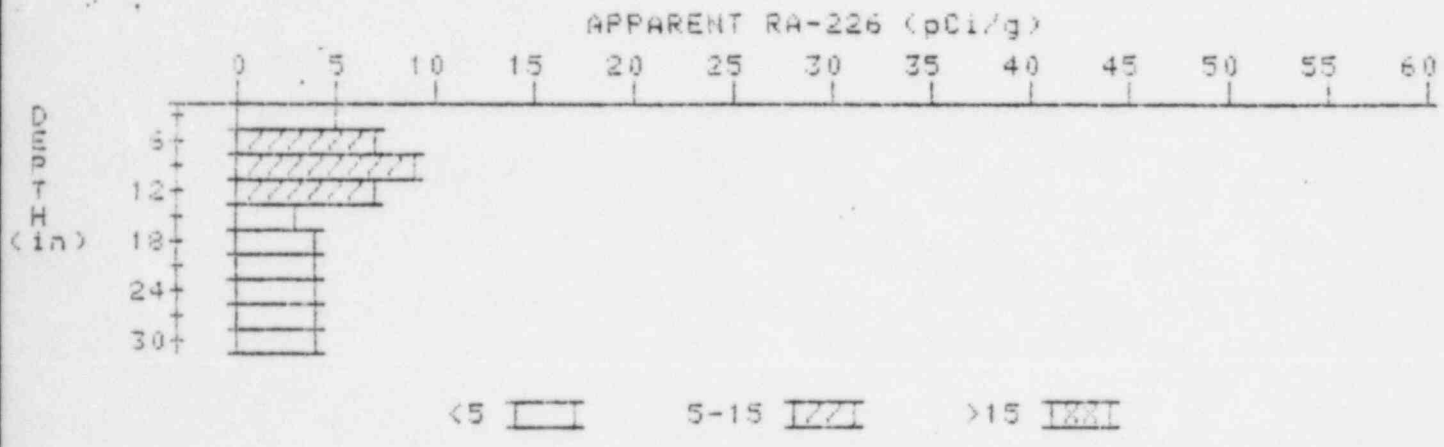


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.3	3.7
9	3.4	3.2
12	3.6	3.6
15	3.8	4.0
18	3.9	4.3
21	3.8	3.6
24	3.8	3.4
27	4.0	4.4
30	4.0	4.4
33	3.8	3.3
36	3.9	3.9

DECON V85.1<850524.0823>

APPARENT RADIUM-226 CONCENTRATION 10
DECONVOLUTION GRAPH

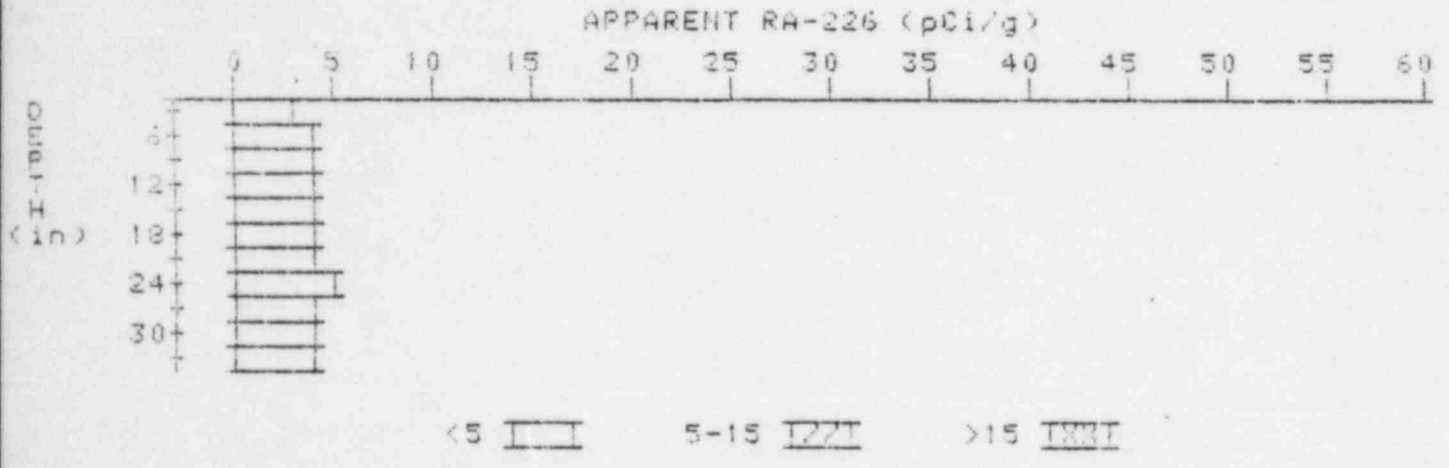
PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 10
LOCATION: 193296



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.9	4.9
6	6.2	7.4
9	6.8	9.3
12	6.0	6.9
15	4.7	2.7
18	4.5	4.3
21	4.4	4.4
24	4.3	4.3
27	4.2	4.0
30	4.2	4.2

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-H5169-RS
HOLE NUMBER: 11
LOCATION: 200226

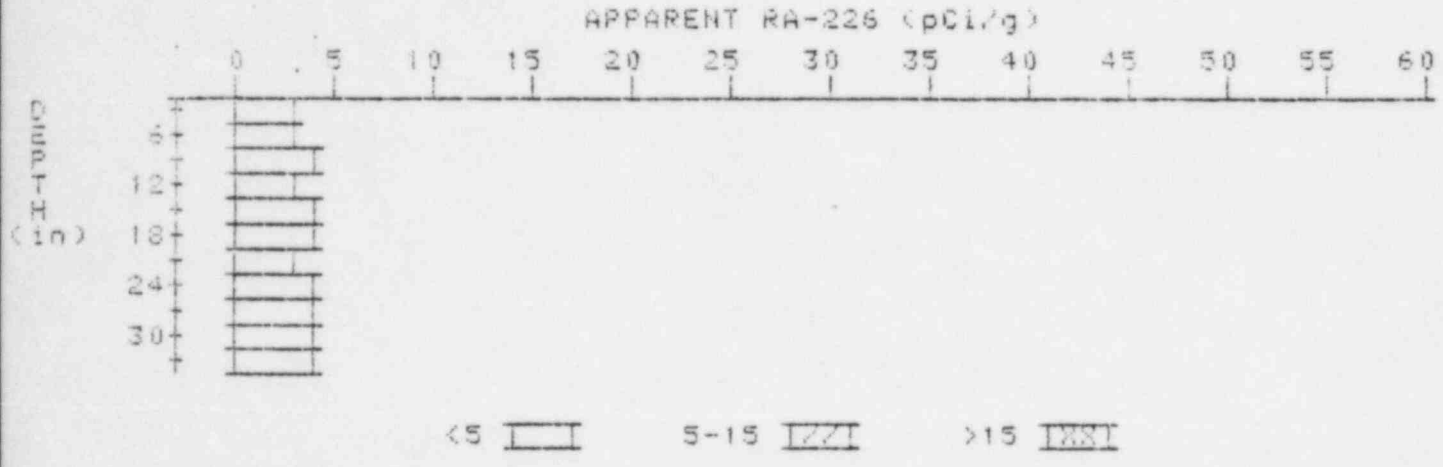


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.4	3.8
9	3.6	3.6
12	3.8	4.2
15	3.8	3.6
18	3.9	4.1
21	3.9	3.5
24	4.1	4.8
27	3.9	3.5
30	3.9	4.1
33	3.8	3.8

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 14

PROPERTY NUMBER: GJ-03169-RS
HOLE NUMBER: 14
LOCATION: 215263

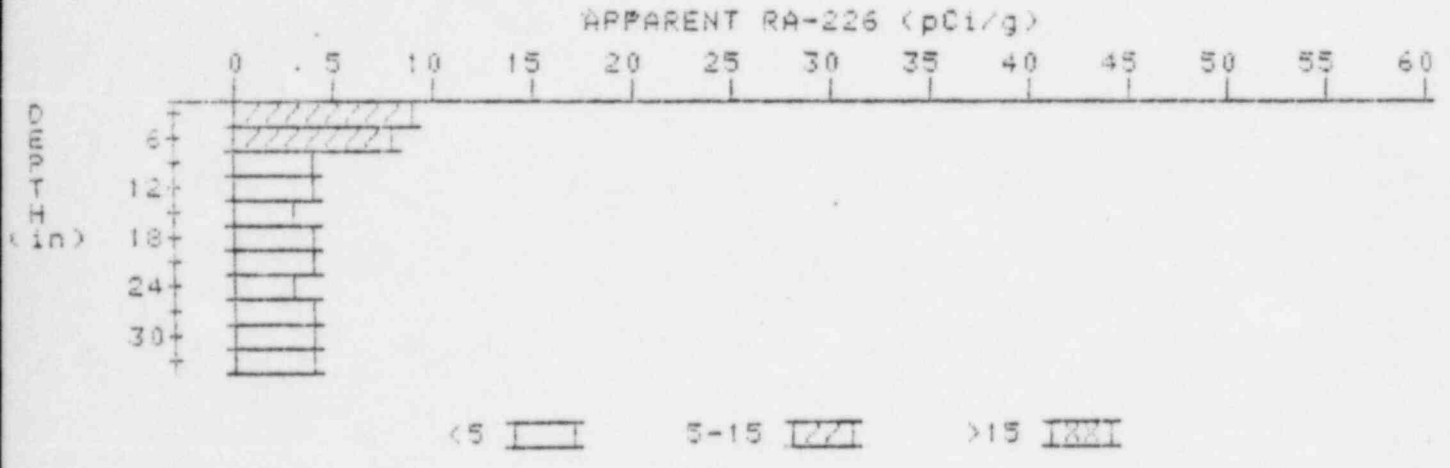


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.3	3.1
9	3.5	3.9
12	3.5	3.3
15	3.6	3.8
18	3.6	3.6
21	3.6	3.4
24	3.7	3.9
27	3.7	3.7
30	3.7	3.9
33	3.6	3.6

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION 15
DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 15
LOCATION: 232233

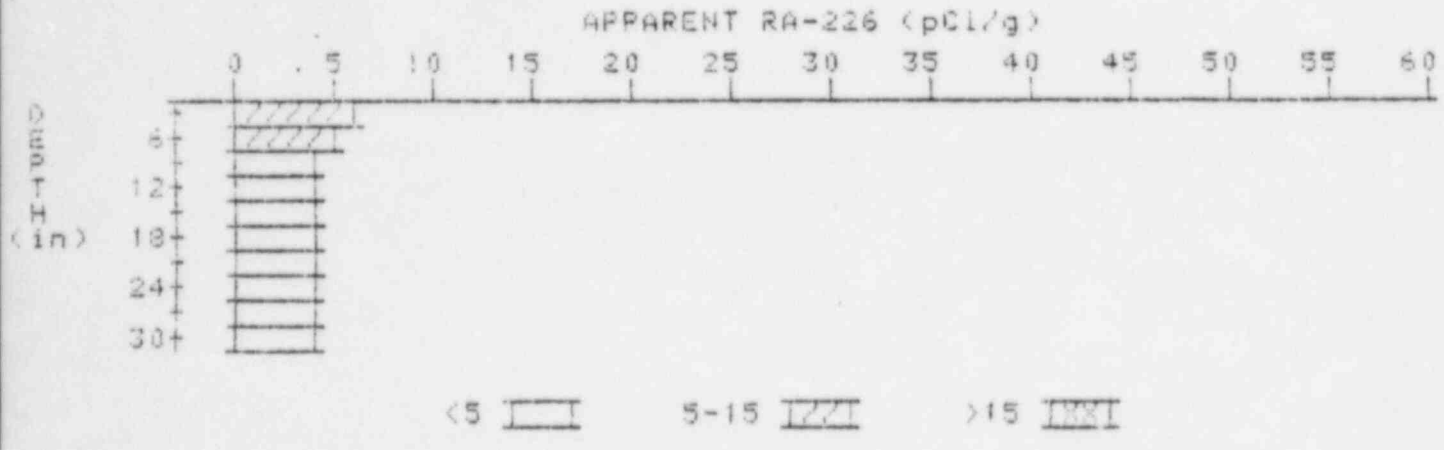


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.7	8.7
6	7.4	8.1
9	5.7	4.3
12	4.8	4.4
15	4.1	3.0
18	4.0	4.2
21	3.8	3.8
24	3.6	3.2
27	3.6	3.6
30	3.6	3.8
33	3.5	3.5

DECON V85.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION 17
DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 17
LOCATION: 24123)

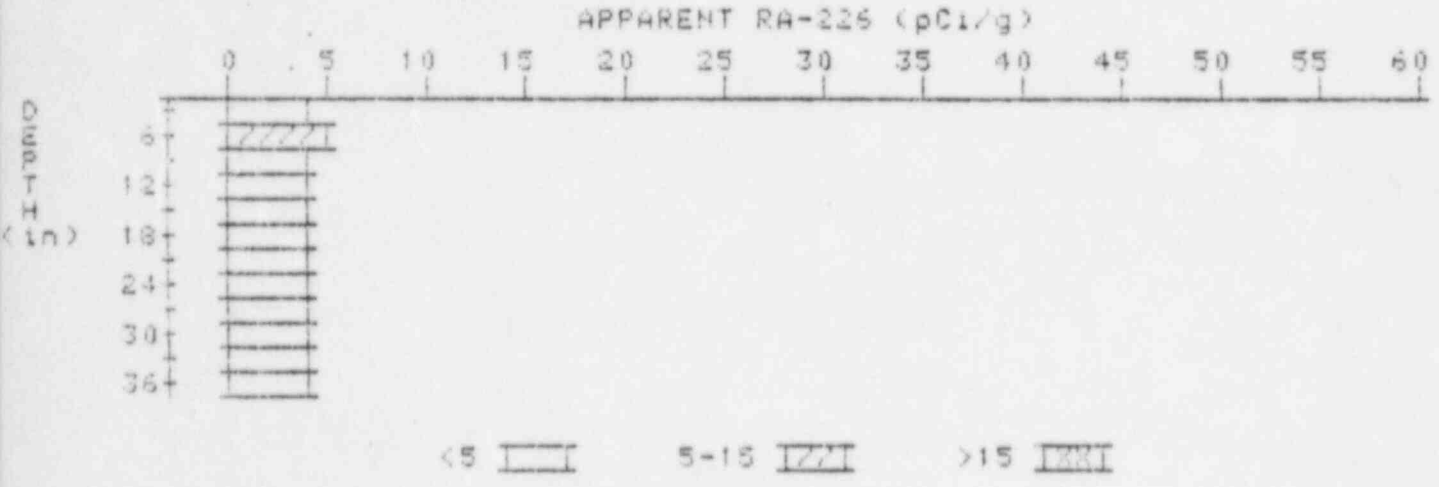


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.1	6.1
6	5.2	3.0
9	4.4	3.5
12	4.1	3.7
15	4.0	4.0
18	3.9	3.9
21	3.8	3.6
24	3.8	3.8
27	3.8	4.0
30	3.7	3.7

DECON VA5.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 18

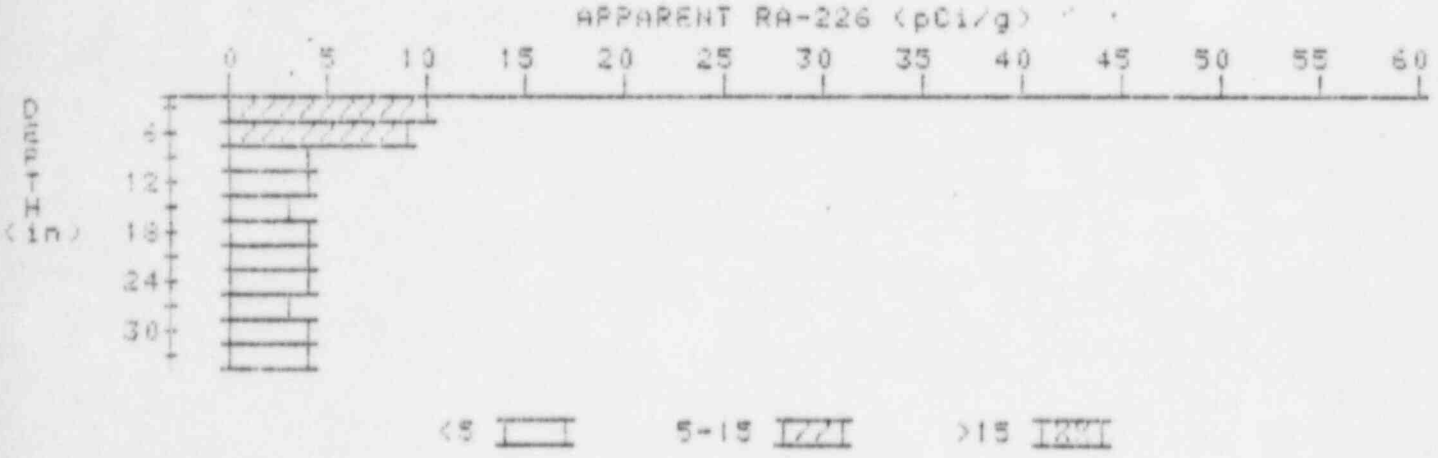
PROPERTY NUMBER: GJ-03169-R3
HOLE NUMBER: 18
LOCATION: 245235



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.1	4.1
6	4.4	5.1
9	4.3	4.3
12	4.2	4.2
15	4.1	3.7
18	4.2	4.2
21	4.3	4.5
24	4.3	4.5
27	4.2	4.2
30	4.1	4.1
33	4.0	4.0
36	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH 19

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 19
LOCATION: 259229

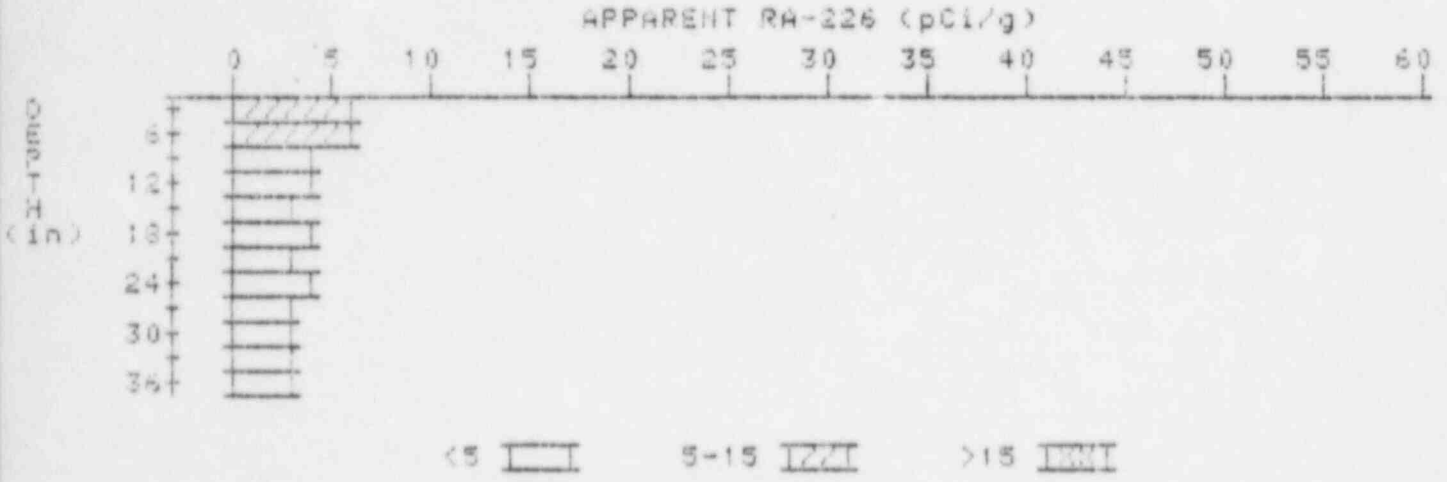


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.7	9.7
6	8.2	9.3
9	6.1	4.5
12	4.9	4.0
15	4.2	3.3
18	4.0	4.0
21	3.8	3.6
24	3.7	3.7
27	3.6	3.2
30	3.7	3.9
33	3.7	3.7

DECON V03.1(850524.0823)

APPARENT RADIUM-226 CONCENTRATION 21
DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05169-RS
HOLE NUMBER: 21
LOCATION: 260256



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.6	5.6
6	5.3	6.0
9	4.6	4.2
12	4.1	3.7
15	3.8	3.4
18	3.7	3.9
21	3.5	3.1
24	3.5	3.7
27	3.4	3.4
30	3.3	3.1
33	3.3	3.5
36	3.2	3.2