

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-05189-RS
ADDRESS: 423 LAWRENCE AVENUE

AUGUST 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION
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APPROVED BY

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August 19, 1985

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-05189-RS, is a single-family residence located at 423 Lawrence 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, 16 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$975. Remedial action on this property will take approximately 4 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 423 Lawrence Avenue, Grand Junction, Colorado

Zoning: Industrial (I-2)

Lot Size: Approximately 4,687 sf (0.1 acres)

Legal Description: Lot 18 and the south 1/2 of Lot 19, Block 1, Crawford Subdivision Amended, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 mile(s) 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 |

Bordering Properties:

| | |
|--------|-------------------------|
| North: | Single-family residence |
| South: | Single-family residence |
| East: | Lawrence Avenue |
| West: | Crawford Avenue |

2.2 Existing Facilities and Structures

Primary Structure:

| | |
|--------------------|-------------------------|
| Type: | Single-story residence |
| Size: | Approximately 813 sf |
| Construction Date: | 1908 |
| Construction: | Wood-frame |
| Foundation: | Wood (mud sill) |
| Footing Depth: | Grade level |
| Basement: | None |
| Crawl Space: | Yes - under living area |
| Condition: | Fair to Good |

Other Structures:

| | |
|---------------|------------------------|
| Type: | Garage |
| Size: | Approximately 240 sf |
| Construction: | Wood-frame |
| Foundation: | Concrete slab-on-grade |
| 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: New siding on exterior

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-05189-RS on July 24, 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 to determine areas of potential contamination identified during previous radiologic assessments of this property.

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): 174 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Exterior exposure-rate 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 gamma exposure-rate measurements are summarized in Appendix Table 3.2.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; the locations and types of these investigations are shown in Appendix Figure 3.2. Data from these investigations is 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) Surface Material: Gravel
Direction From Primary Structure: West
Other Directions: Northwest of garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 48
- (Area B) Surface Material: Gravel
Direction From Primary Structure: West
Other Directions: North of garage
Total Depth of Contamination: 6 inches
Approximate Square Footage: 36
- (Area C) Surface Material: Soil
Direction From Primary Structure: West
Other Directions: Adjacent to Areas E and D
Total Depth of Contamination: 6 inches
Approximate Square Footage: 175
- (Area D) Surface Material: Soil
Direction From Primary Structure: Northwest
Other Directions: North of garage
Total Depth of Contamination: 12 inches
Comments: There are movable cinder blocks in this area.
Approximate Square Footage: 120
- (Area E) Surface Material: Soil
Direction From Primary Structure: West
Other Directions: Northeast corner of the garage
Total Depth of Contamination: 12 inches
Approximate Square Footage: 80
- (Area F) Surface Material: Soil
Direction From Primary Structure: West
Other Directions: Northeast of garage
Total Depth of Contamination: 9 inches
Approximate Square Footage: 110

(Area G) Surface Material: Asphalt
Direction From Primary Structure: Northeast
Other Directions: Adjacent to east property line
Total Depth of Contamination: 6 inches
Other (height or thickness): 2-inch-thick asphalt
Comments: This area is in the driveway.
Approximate Square Footage: 25

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-05189-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 \$975.

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 | 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 | Exterior Estimated Extent of Contamination |

Official Survey Report

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Exterior Gamma Scan Map

Radium Concentrations at Exterior 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. | | |
| 1 | 127261 | 00 | DS | 7.5 | | * | Northwest of garage |
| | | 03 | TC | 6.4 | | * | |
| | | 06 | TC | 5.3 | | * | DC = 6 inches |
| | | 09 | TC | 4.4 | | * | Based on the |
| | | 12 | TC | 3.9 | | * | deconvolution graph |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.6 | | * | |
| | | 21 | TC | 3.7 | | * | |
| | | 24 | TC | 3.7 | | * | |
| | | 27 | TC | 3.8 | | * | |
| | | 30 | TC | 4.0 | | * | |
| | | 33 | TC | 4.0 | | * | |
| | | 36 | TC | 4.1 | | * | |
| 2 | 130240 | 00 | DS | 1.9 | | * | West of garage |
| | | 03 | TC | 3.2 | | * | |
| | | 06 | TC | 3.3 | | * | DC = 0 inches |
| | | 09 | TC | 3.4 | | * | |
| | | 12 | TC | 3.5 | | * | |
| | | 15 | TC | 3.5 | | * | |
| | | 18 | TC | 3.5 | | * | |
| | | 21 | TC | 3.6 | | * | |
| | | 24 | TC | 3.6 | | * | |
| | | 27 | TC | 3.6 | | * | |
| | | 30 | TC | 3.7 | | * | |
| 3 | 136261 | 00 | DS | 3.5 | | * | |
| | | 03 | TC | 3.5 | | * | Asphalt surface |
| | | 06 | TC | 4.4 | | * | |
| | | 09 | TC | 4.5 | | * | DC = 6 inches |
| | | 12 | TC | 4.2 | | * | Based on all |
| | | 15 | TC | 4.0 | | * | available data |
| | | 18 | TC | 3.9 | | * | |
| | | 21 | TC | 3.8 | | * | |
| | | 24 | TC | 3.7 | | * | |
| | | 27 | TC | 3.7 | | * | |
| | | 30 | TC | 3.8 | | * | |
| | | 33 | TC | 3.9 | | * | |
| | | 36 | TC | 4.0 | | * | |
| | | 39 | TC | 4.1 | | * | |
| | | 42 | TC | 4.1 | | * | |
| 4 | 147266 | 00 | DS | 3.0 | | * | North of garage |
| | | 03 | TC | 4.1 | | * | North property line |

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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 | 147266 | 06 | TC | 4.4 | | * | DC = 6 inches |
| | | 09 | TC | 4.3 | | * | Based on all |
| | | 12 | TC | 4.1 | | * | available data |
| | | 15 | TC | 4.1 | | * | |
| | | 18 | TC | 3.8 | | * | |
| | | 21 | TC | 3.8 | | * | |
| | | 24 | TC | 3.9 | | * | |
| | | 27 | TC | 4.0 | | * | |
| | | 30 | TC | 4.0 | | * | |
| 5 | 151242 | 00 | DS | 1.2 | | * | East of garage |
| | | 06 | DS | 1.3 | | * | |
| 6 | 152248 | 00 | DS | 293.0 | | * | |
| | | 03 | TC | 67.0 | | * | Northwest corner |
| | | 06 | TC | 68.6 | | * | of garage |
| | | 09 | TC | 44.5 | | * | |
| | | 12 | TC | 24.4 | | * | DC = 12 inches |
| | | 15 | TC | 13.1 | | * | Based on the |
| | | 18 | TC | 8.2 | | * | deconvolution graph |
| | | 21 | TC | 5.7 | | * | |
| | | 24 | TC | 4.9 | | * | |
| | | 27 | TC | 4.4 | | * | |
| | | 30 | TC | 4.3 | | * | |
| | | 33 | TC | 4.3 | | * | |
| | | 36 | TC | 4.4 | | * | |
| | | 39 | TC | 4.7 | | * | |
| | | 42 | TC | 5.3 | | * | |
| | | 45 | TC | 5.0 | | * | |
| | | 48 | TC | 4.5 | | * | |
| 7 | 155255 | 00 | DS | 2.5 | | * | DC = 6 inches |
| | | 03 | TC | 3.4 | | * | Based on all |
| | | 06 | TC | 3.6 | | * | available data |
| | | 09 | TC | 3.6 | | * | |
| | | 12 | TC | 3.6 | | * | |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.5 | | * | |
| | | 21 | TC | 3.5 | | * | |
| | | 24 | TC | 3.6 | | * | |
| | | 27 | TC | 3.7 | | * | |

Radium Concentrations at Exterior 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. | | |
| 7 | 155255 | 30 | TC | 3.8 | | * | |
| | | 33 | TC | 3.9 | | * | |
| | | 36 | TC | 4.0 | | * | |
| 8 | 158262 | 00 | DS | 30.1 | | * | Northeast of garage |
| | | 03 | TC | 20.2 | | * | |
| | | 06 | TC | 23.8 | | * | DC = 12 inches |
| | | 09 | TC | 17.6 | | * | Based on the |
| | | 12 | TC | 11.7 | | * | deconvolution graph |
| | | 15 | TC | 7.9 | | * | |
| | | 18 | TC | 6.1 | | * | |
| | | 21 | TC | 5.0 | | * | |
| | | 24 | TC | 4.4 | | * | |
| | | 27 | TC | 4.1 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.2 | | * | |
| | | 36 | TC | 4.3 | | * | |
| | | 39 | TC | 4.4 | | * | |
| | | 42 | TC | 4.8 | | * | |
| | | 45 | TC | 4.8 | | * | |
| | | 48 | TC | 4.6 | | * | |
| | | 51 | TC | 4.4 | | * | |
| | | 54 | TC | 4.1 | | * | |
| 9 | 160250 | 00 | DS | 2.0 | | * | Northeast of garage |
| | | 03 | TC | 3.4 | | * | West of primary |
| | | 06 | TC | 3.6 | | * | structure |
| | | 09 | TC | 3.6 | | * | |
| | | 12 | TC | 3.5 | | * | DC = 0 inches |
| | | 15 | TC | 3.5 | | * | |
| | | 18 | TC | 3.5 | | * | |
| | | 21 | TC | 3.5 | | * | |
| | | 24 | TC | 3.6 | | * | |
| | | 27 | TC | 3.7 | | * | |
| | | 30 | TC | 3.9 | | * | |
| | | 33 | TC | 3.8 | | * | |
| | | 36 | TC | 4.0 | | * | |
| 10 | 163262 | 00 | DS | 5.9 | | * | Northeast of garage |
| | | 03 | TC | 6.4 | | * | |
| | | 06 | TC | 6.1 | | * | DC = 9 inches |
| | | 09 | TC | 5.2 | | * | Based on the |
| | | 12 | TC | 4.7 | | * | deconvolution graph |
| | | 15 | TC | 4.2 | | * | |

Radium Concentrations at Exterior 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. | | |
| 10 | 163262 | 18 | TC | 4.0 | | * | |
| | | 21 | TC | 4.0 | | * | |
| | | 24 | TC | 3.8 | | * | |
| | | 27 | TC | 4.0 | | * | |
| | | 30 | TC | 4.0 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| 11 | 171241 | 00 | DS | 1.4 | | * | Background |
| | | 03 | TC | 3.2 | | * | |
| | | 06 | TC | 3.5 | | * | DC = 0 inches |
| | | 09 | TC | 3.6 | | * | |
| | | 12 | TC | 3.7 | | * | |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.7 | | * | |
| | | 21 | TC | 3.6 | | * | |
| | | 24 | TC | 3.6 | | * | |
| | | 27 | TC | 3.5 | | * | |
| | | 30 | TC | 3.7 | | * | |
| | | 33 | TC | 3.7 | | * | |
| | | 36 | TC | 3.8 | | * | |
| | | 39 | TC | 4.0 | | * | |
| 12 | 180260 | 00 | DS | 1.9 | | * | Northeast of garage |
| | | 03 | TC | 3.5 | | * | West of primary structure |
| | | 06 | TC | 3.7 | | * | |
| | | 09 | TC | 3.6 | | * | |
| | | 12 | TC | 3.7 | | * | DC = 0 inches |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.7 | | * | |
| | | 21 | TC | 3.8 | | * | |
| | | 24 | TC | 3.9 | | * | |
| | | 27 | TC | 4.0 | | * | |
| | | 30 | TC | 4.2 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| | | 39 | TC | 4.1 | | * | |
| 13 | 199250 | 00 | DS | 1.2 | | * | West of primary structure |
| | | 03 | TC | 3.1 | | * | |
| | | 06 | TC | 3.2 | | * | |
| | | 09 | TC | 3.3 | | * | DC = 0 inches |
| | | 12 | TC | 3.3 | | * | |
| | | 15 | TC | 3.4 | | * | |

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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. | | |
| 13 | 199250 | 18 | TC | 3.3 | | * | |
| | | 21 | TC | 3.3 | | * | |
| | | 24 | TC | 3.3 | | * | |
| | | 27 | TC | 3.5 | | * | |
| | | 30 | TC | 3.6 | | * | |
| | | 33 | TC | 3.7 | | * | |
| | | 36 | TC | 3.9 | | * | |
| | | 39 | TC | 4.0 | | * | |
| | | 42 | TC | 4.1 | | * | |
| | | 45 | TC | 4.1 | | * | |
| | | 48 | TC | 4.2 | | * | |
| | | 51 | TC | 4.2 | | * | |
| | | 54 | TC | 4.3 | | * | |
| | | 57 | TC | 4.4 | | * | |
| | | 60 | TC | 4.5 | | * | |
| | | 63 | TC | 4.4 | | * | |
| | | 66 | TC | 4.5 | | * | |
| | | 69 | TC | 4.5 | | * | |
| | | 72 | TC | 4.5 | | * | |
| | | 75 | TC | 4.5 | | * | |
| | | 78 | TC | 4.4 | | * | |
| | | 81 | TC | 4.4 | | * | |
| | | 84 | TC | 4.4 | | * | |
| | | 87 | TC | 4.4 | | * | |
| | | 90 | TC | 4.5 | | * | |
| | | 93 | TC | 4.4 | | * | |
| | | 96 | TC | 4.3 | | * | |
| 14 | 212262 | 00 | DS | 1.8 | | * | Gas line |
| | | 06 | DS | 1.4 | | * | |
| | | 18 | DS | <1.0 | | * | On gas line |
| 15 | 220233 | 00 | DS | 1.6 | | * | Water line |
| 16 | 234259 | 00 | DS | 2.0 | | * | Sewer line |
| 17 | 241253 | 00 | DS | 1.5 | | * | Asphalt |
| | | 03 | TC | 3.1 | | * | East of primary |
| | | 06 | TC | 3.5 | | * | structure |
| | | 09 | TC | 3.7 | | * | |
| | | 12 | TC | 3.7 | | * | DC = 0 inches |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.7 | | * | |
| | | 21 | TC | 3.8 | | * | |

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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. | | |
| 17 | 241253 | 24 | TC | 3.7 | | * | |
| | | 27 | TC | 3.7 | | * | |
| | | 30 | TC | 3.6 | | * | |
| | | 33 | TC | 3.6 | | * | |
| | | 36 | TC | 3.7 | | * | |
| | | 39 | TC | 3.7 | | * | |
| | | 42 | TC | 3.6 | | * | |
| 18 | 245247 | 00 | DS | <1.0 | | * | On asphalt sidewalk |
| 19 | 256261 | 00 | DS | 2.4 | | * | Asphalt |
| | | 03 | TC | 3.6 | | * | East property line |
| | | 06 | TC | 3.8 | | * | |
| | | 09 | TC | 3.9 | | * | DC = 0 inches |
| | | 12 | TC | 3.8 | | * | |
| | | 15 | TC | 3.8 | | * | |
| | | 18 | TC | 3.6 | | * | |
| | | 21 | TC | 3.4 | | * | |
| | | 24 | TC | 3.4 | | * | |
| | | 27 | TC | 3.3 | | * | |
| | | 30 | TC | 3.3 | | * | |
| | | 33 | TC | 3.3 | | * | |
| | | 36 | TC | 3.3 | | * | |
| | | 39 | TC | 3.3 | | * | |
| 20 | 259268 | 00 | DS | 3.6 | | * | Asphalt |
| | | 03 | TC | 4.0 | | * | Northeast of |
| | | 06 | TC | 3.8 | | * | primary structure |
| | | 09 | TC | 3.7 | | * | |
| | | 12 | TC | 3.6 | | * | DC = 6 inches |
| | | 15 | TC | 3.5 | | * | Based on all |
| | | 18 | TC | 3.5 | | * | available data |
| | | 21 | TC | 3.4 | | * | |
| | | 24 | TC | 3.4 | | * | |
| | | 27 | TC | 3.4 | | * | |
| | | 30 | TC | 3.4 | | * | |

Radium Concentrations at Exterior Locations

DOE ID #GJ-05189-RS

423 Lawrence Avenue

Page 7 of 7

| In Situ Ra-226 | | | | | | | |
|----------------|----------|-------|-------|---------|---------|-------------|----------|
| Loc | Grid | Depth | Meas. | (pCi/g) | | Chem Ra-226 | Comments |
| # | Location | (in.) | Type | Tot. Ct | Spectr. | (pCi/g) | |
| ----- | | | | | | | |
| 20 | 259268 | 33 | TC | 3.5 | | * | |
| | | 36 | TC | 3.5 | | * | |
| | | 39 | TC | 3.5 | | * | |
| ----- | | | | | | | |

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 = 07-24-85
Team Leader = BMM

Table 3.2

Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-05189-RS

423 Lawrence Avenue

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) |
|-----------------|---|--------------------------------------|-------------------------------------|--|-------------------------------|---------------------------|
| Basement | * | * | * | * | 15-17 | * |
| Ground Floor | * | * | * | * | 14-17 | * |
| Garage | * | * | * | * | 12-14 | * |

* Walking gamma scans were performed to confirm the absence of interior contamination.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-05189-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 | | | | | |
| | Contaminated Fill | | | | |
| A | 6 x 8 = | 48 | x 0.5 = | 24 | |
| B | 6 x 6 = | 36 | x 0.5 = | 18 | |
| C | 5 x 15 = | 75 | | | |
| | 5 x 20 = | 100 | | | |
| | | <hr/> | | | |
| | | 175 | x 0.5 = | 88 | |
| D | 15 x 8 = | 120 | x 1.0 = | 120 | |
| E | 10 x 8 = | 80 | x 1.0 = | 80 | |
| F | 11 x 10 = | 110 | x 0.8 = | 88 | |
| G | 5 x 5 = | 25 | x 0.5 = | 13 | |
| | | | | <hr/> | |
| TOTAL VOLUME - EXTERIOR | | | | = 431 | = 431/27 = 16 |

See Appendix Figure 3.3 For Areas

=====

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-05189-RS

Page 1 of 1

EXTERIOR

| | | |
|--|----|-------|
| Remove/replace asphalt 25 sf @ \$3/sf | \$ | 75 |
| Remove identified residual radioactive material 16 cy @ \$14.50/cy (machine-open) | | 232 |
| Replace area with roadbase 16 cy @ \$11.50/cy | | 184 |
| | | <hr/> |
| TOTAL EXTERIOR | \$ | 491 |
| TOTAL INTERIOR | | 0 |
| ACCESS CONTROL | | 100 |
| | | <hr/> |
| SUBTOTAL | \$ | 591 |
| CONTINGENCY @ 10% | | 59 |
| | | <hr/> |
| SUBTOTAL | \$ | 650 |
| CONTRACTOR OVERHEAD & PROFIT @ 50% | | 325 |
| | | <hr/> |
| GRAND TOTAL | \$ | 975 |

RR081485
REA05189/REA-709/AP

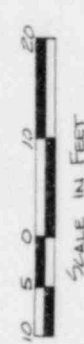
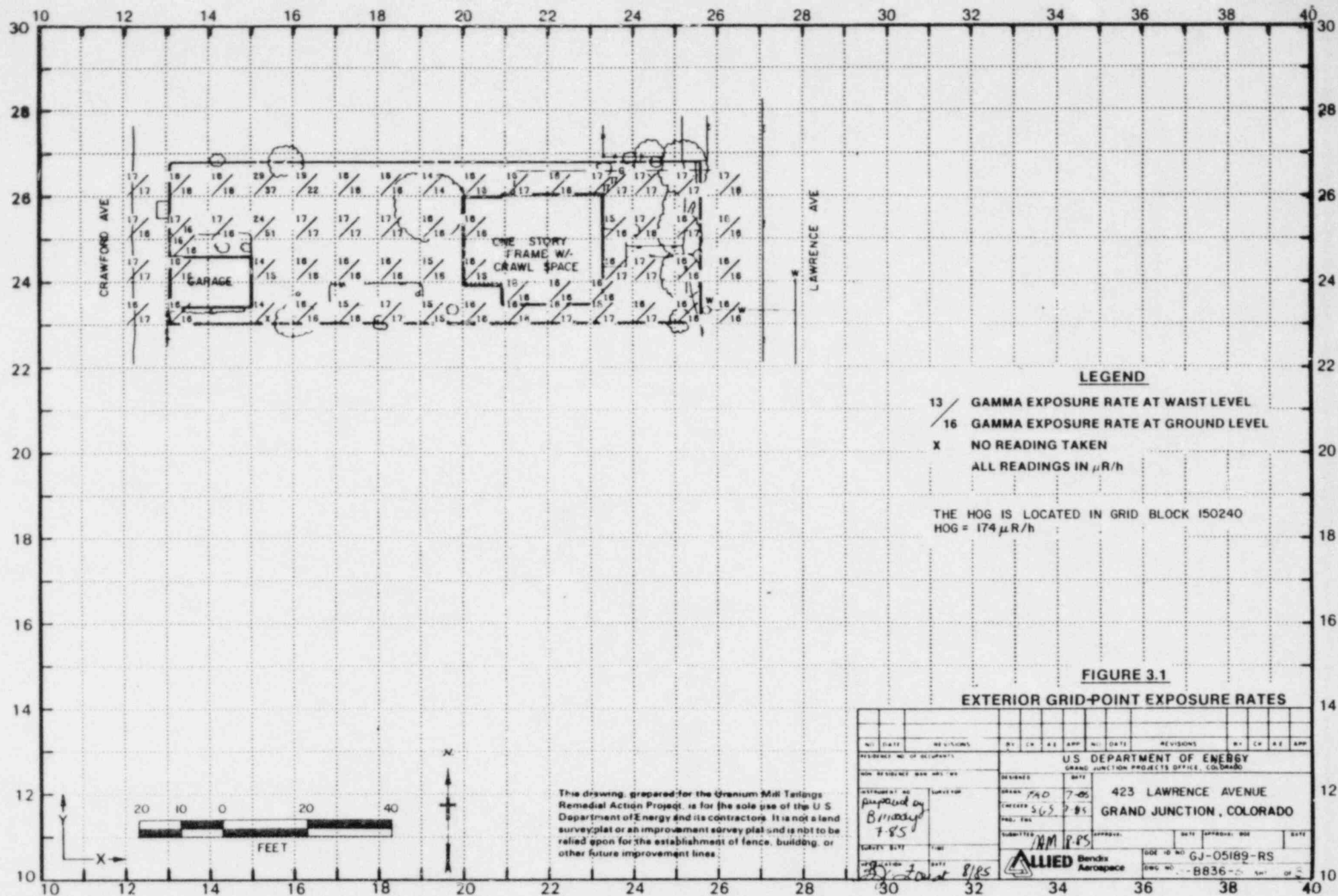
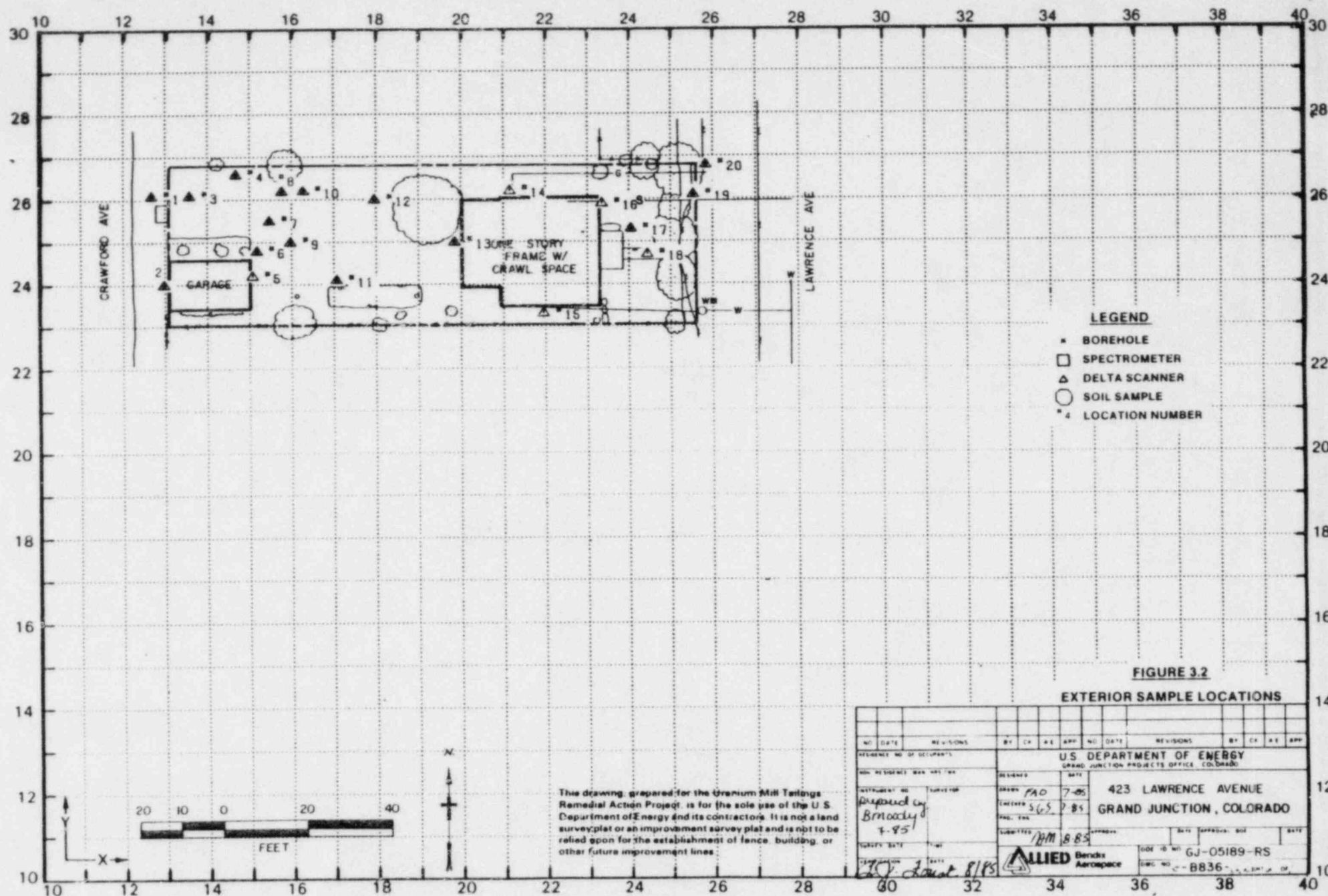


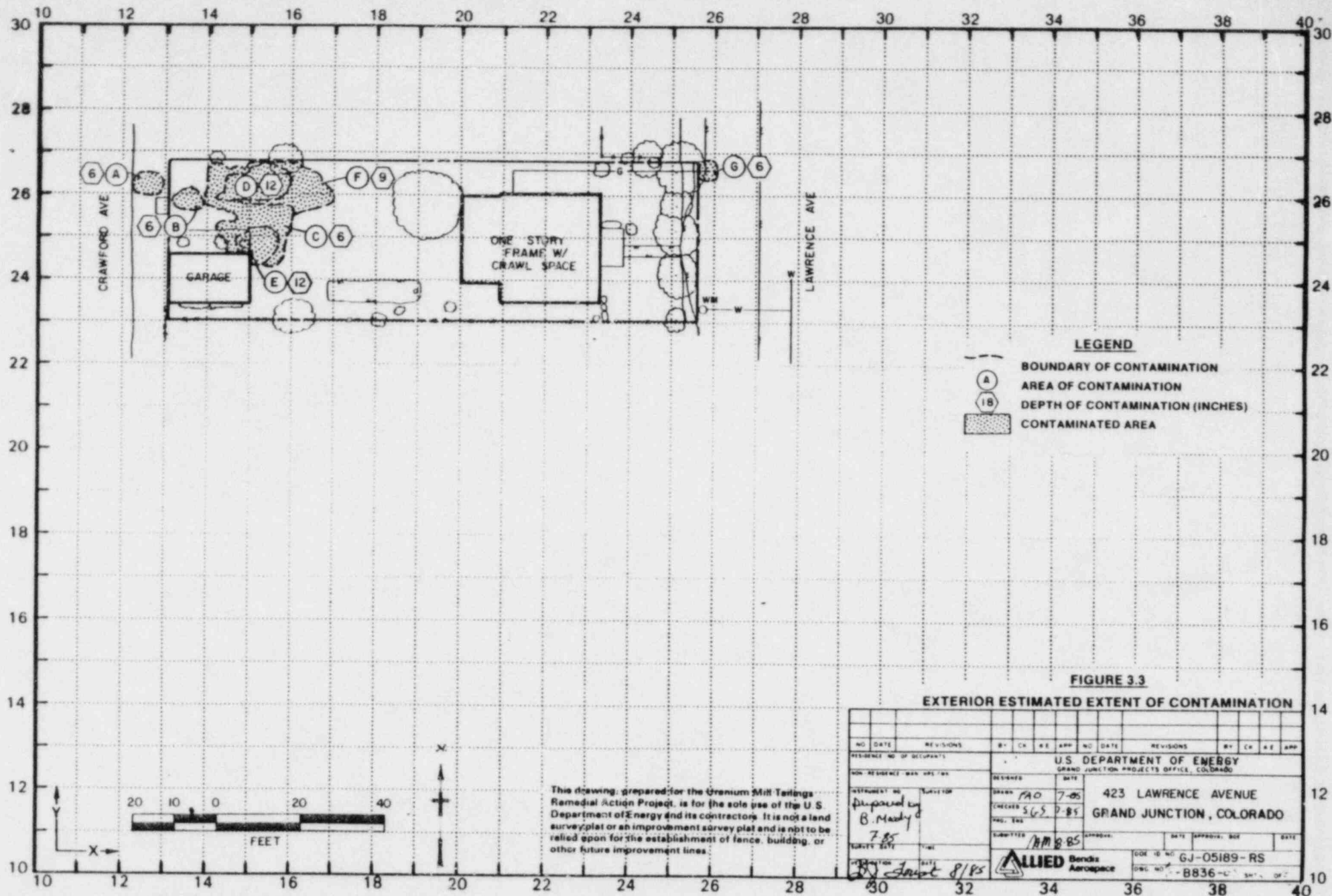
FIGURE 2.2 SITE PLAN

| | |
|---|--|
| TAX SCHEDULE No. 2945-154-29-002 | |
| U.S. DEPARTMENT OF ENERGY | DOE 10 NO |
| GRAND JUNCTION PROJECT OFFICE, COLORADO | GJ05189 DS |
| ADDRESS 423 LAWRENCE AVENUE | ALLIED INDUSTRIES |
| GRAND JUNCTION, COLORADO | Residential Engineering & Construction 1000 S. Durango Ave. Suite 200 |
| SURV RLB/17.05 DRAFT BSK/17.05 | CK / AS |
| DRAWING NO 3 C 836 F1 | SHEET 1 OF 1 |

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.







3/85

DOE ID NO. GJ-05189-RS

Date July 29, 1985

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

Official Survey Report

Property Address 423 Lawrence Avenue

Property Owner Gilbert Kelly

Address of Owner (if different from above) 2824 Hall Avenue Grand Jct. 81501

Report Prepared By Brenda Moody

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

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

1 XXXXX Residual radioactive materials found at the following locations:

1 XXXXX In open areas.

1 XXXXX Under or around exterior improvements.

1 XXX 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 XXXXX 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/CDR

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 17 uR/h
HOG = 174 uR/h

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: July 24, 1985

To: Files

From: Brenda Moody */Bmm*

Subject: Team Leader Notes - GJ-05189-RS

Address: 423 Lawrence Avenue

Owner: Gilbert Kelly

Occupancy: Two

Team Members

B. Moody (Team Leader)
M. Dexter
S. Larsen

L. Kula
M. Duran
V. Rothman

Instruments

See Operational Equipment Summary sheet

Oak Ridge National Laboratory (ORNL) and Colorado Department of Health (CDH) indicates contamination west of the primary structure, northwest of the garage, and a small deposit northeast of the garage.

A complete walking scan was conducted, elevated readings were investigated as shown on the Sample Locations map.

North of the garage is a stack of cinder blocks that run along the north property line approximately 3-feet wide by 15-feet in length.

A trailer is parked in Grid Blocks 130260 and 140260.

Team Leader Notes
Brenda Moody
GJ-05189-RS
July 24, 1985
Page 2

Surrounding the garage were many tires, drums, etc. The interior of the garage was very difficult to scan, due to the inventory of car parts and tin cans.

The interior had a partial dug out basement and a crawl space, which was inaccessible. Dave Diss, a representative from Health and Safety, confirmed the crawl space. The foundation is made of wood. A walking scan was conducted in the basement and on the ground floor.

All utility lines were investigated at Locations 212262 (gas line), 234259 (sewer line), and 220233 (water line).

The spillover was scanned thoroughly along the north property line. The highest reading noted was 140 counts per second (cps) along Grid Block 150260. Therefore, there is no spillover onto the adjacent property.

The water and sewer lines were investigated with a downhole scintillometer. The gas line appeared to run west as well as east on the property.

No injuries occurred while conducting the survey.

All team members were alpha scanned before leaving the property.

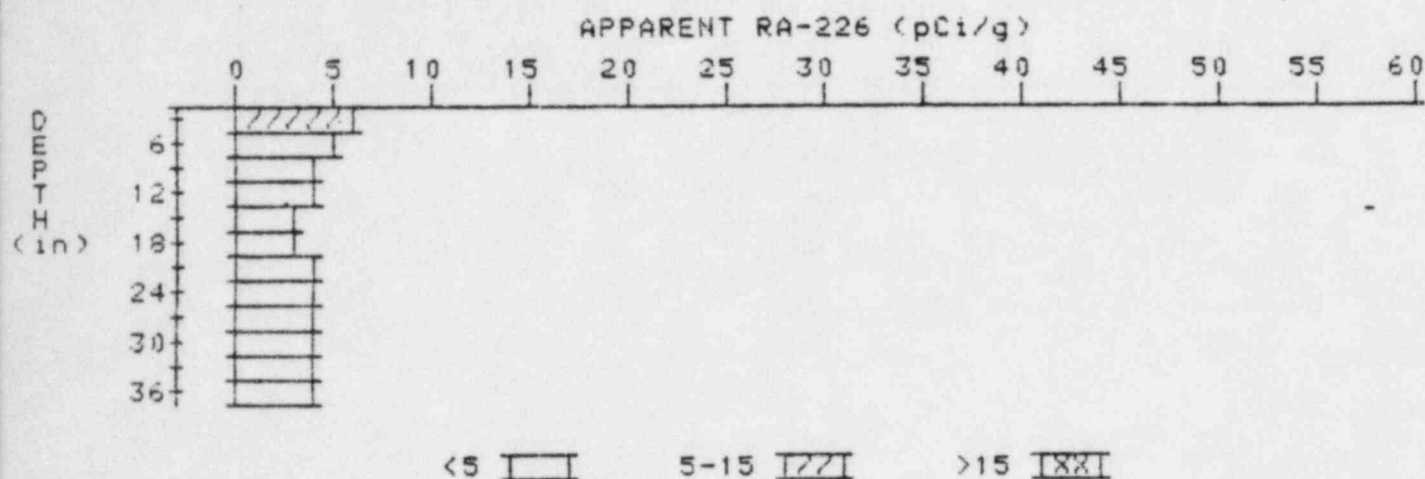
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-05189-RS

HOLE NUMBER: 1

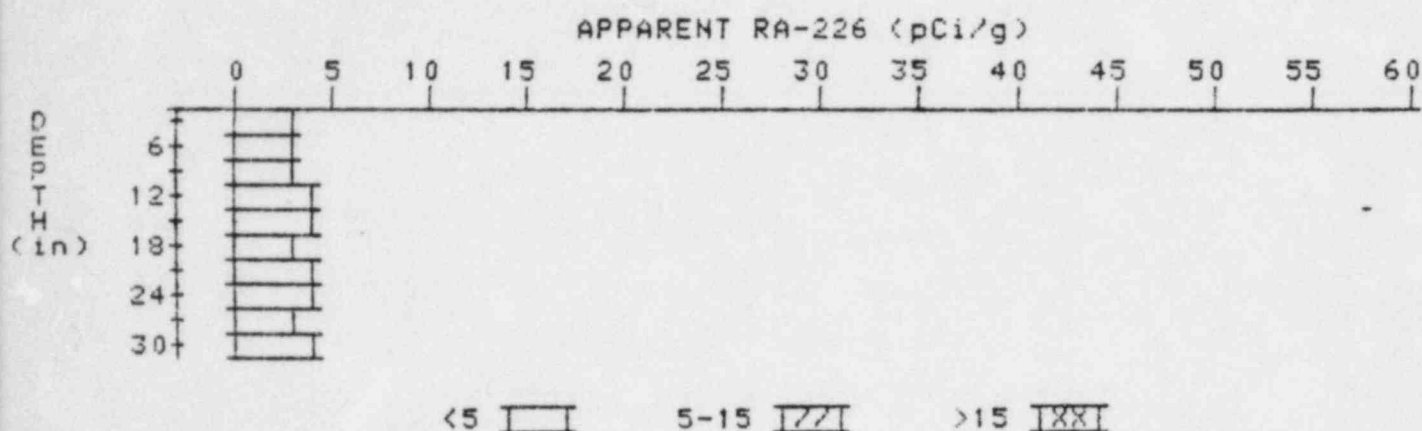
LOCATION: 127261



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 6.4 | 6.4 |
| 6 | 5.3 | 4.9 |
| 9 | 4.4 | 3.7 |
| 12 | 3.9 | 3.5 |
| 15 | 3.6 | 3.1 |
| 18 | 3.6 | 3.4 |
| 21 | 3.7 | 3.9 |
| 24 | 3.7 | 3.5 |
| 27 | 3.8 | 3.6 |
| 30 | 4.0 | 4.4 |
| 33 | 4.0 | 3.8 |
| 36 | 4.1 | 4.1 |

APPARENT RADIUM-226 CONCENTRATION 2 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05139-R3
HOLE NUMBER: 2
LOCATION: 130240



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

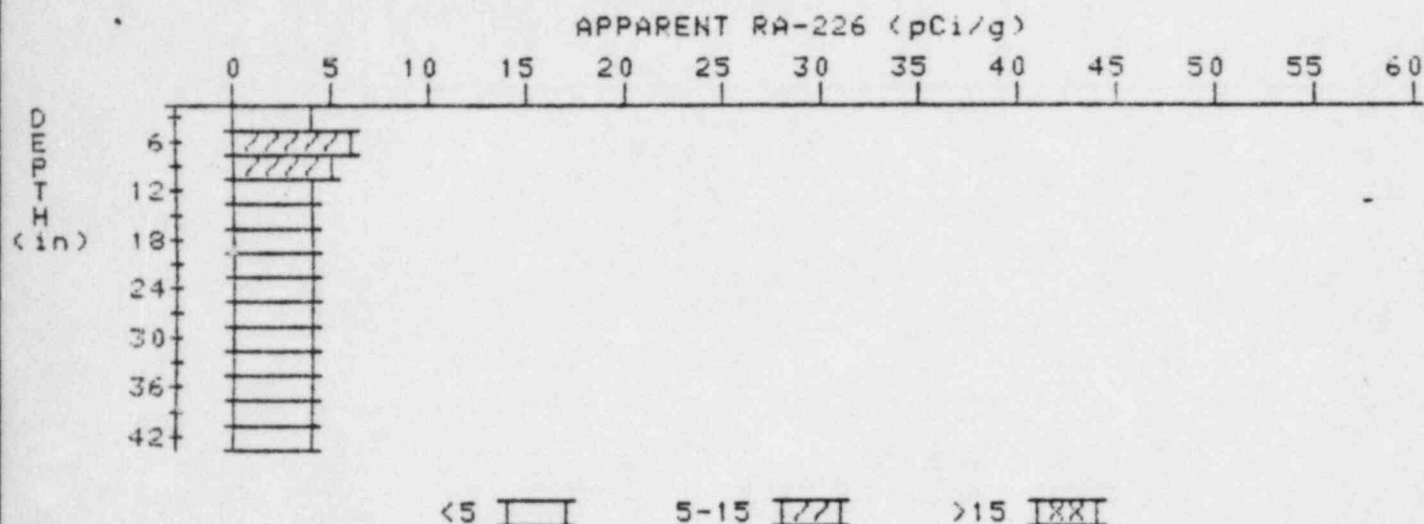
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

3

PROPERTY NUMBER: GJ-05189-RS

HOLE NUMBER: 3

LOCATION: 136261



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.5 | 3.5 |
| 6 | 4.4 | 5.8 |
| 9 | 4.5 | 5.2 |
| 12 | 4.2 | 4.0 |
| 15 | 4.0 | 3.8 |
| 18 | 3.9 | 3.9 |
| 21 | 3.8 | 3.8 |
| 24 | 3.7 | 3.5 |
| 27 | 3.7 | 3.5 |
| 30 | 3.8 | 3.8 |
| 33 | 3.9 | 3.9 |
| 36 | 4.0 | 4.0 |
| 39 | 4.1 | 4.3 |
| 42 | 4.1 | 4.1 |

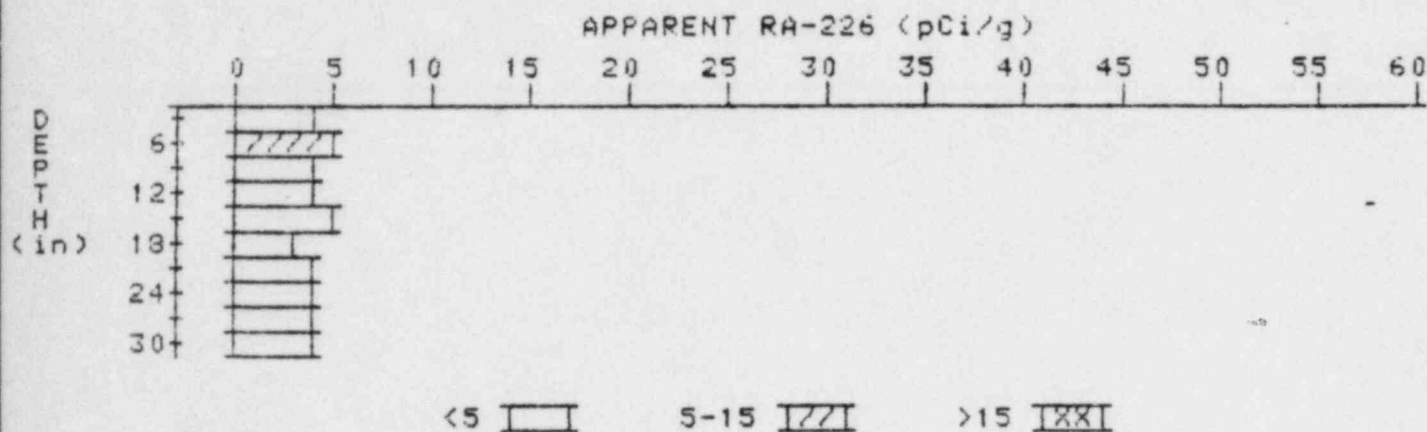
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

4

PROPERTY NUMBER: GJ-05189-RS

HOLE NUMBER: 4

LOCATION: 147266



| 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 | 4.5 |
| 12 | 4.1 | 3.7 |
| 15 | 4.1 | 4.6 |
| 18 | 3.8 | 3.3 |
| 21 | 3.8 | 3.6 |
| 24 | 3.9 | 3.9 |
| 27 | 4.0 | 4.2 |
| 30 | 4.0 | 4.0 |

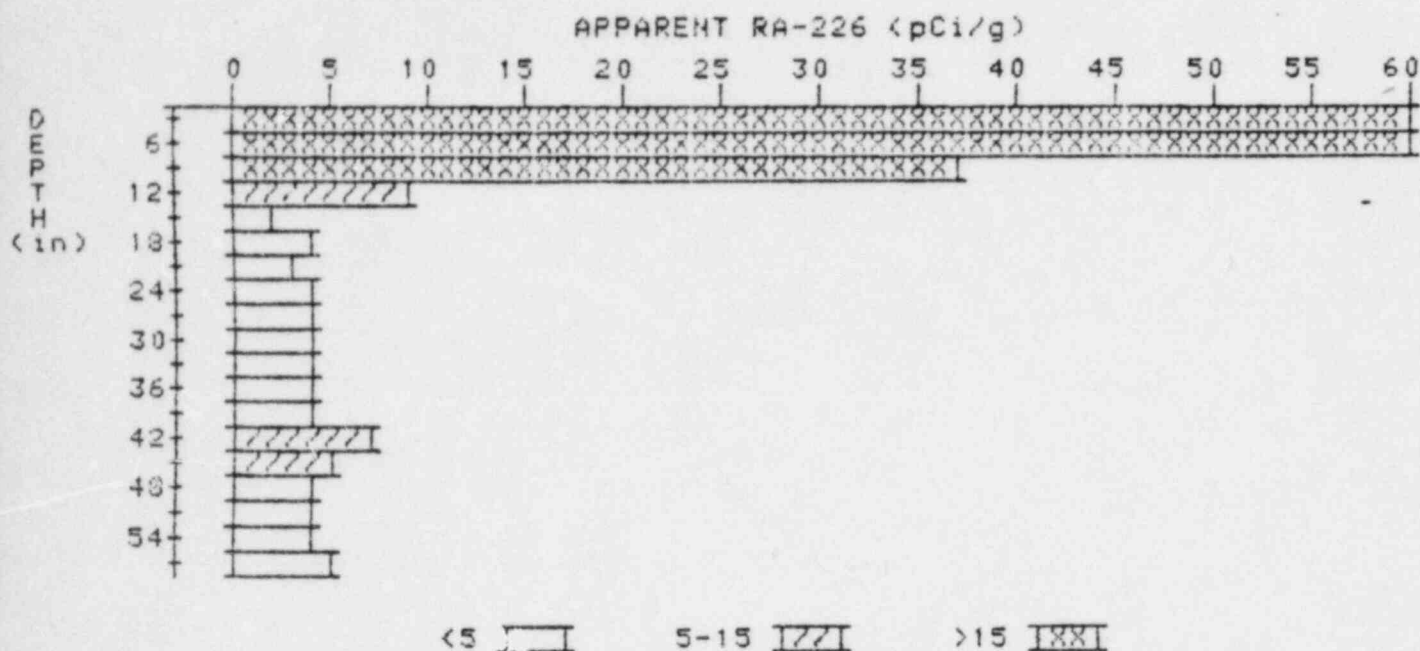
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-05189-RS

HOLE NUMBER: 6

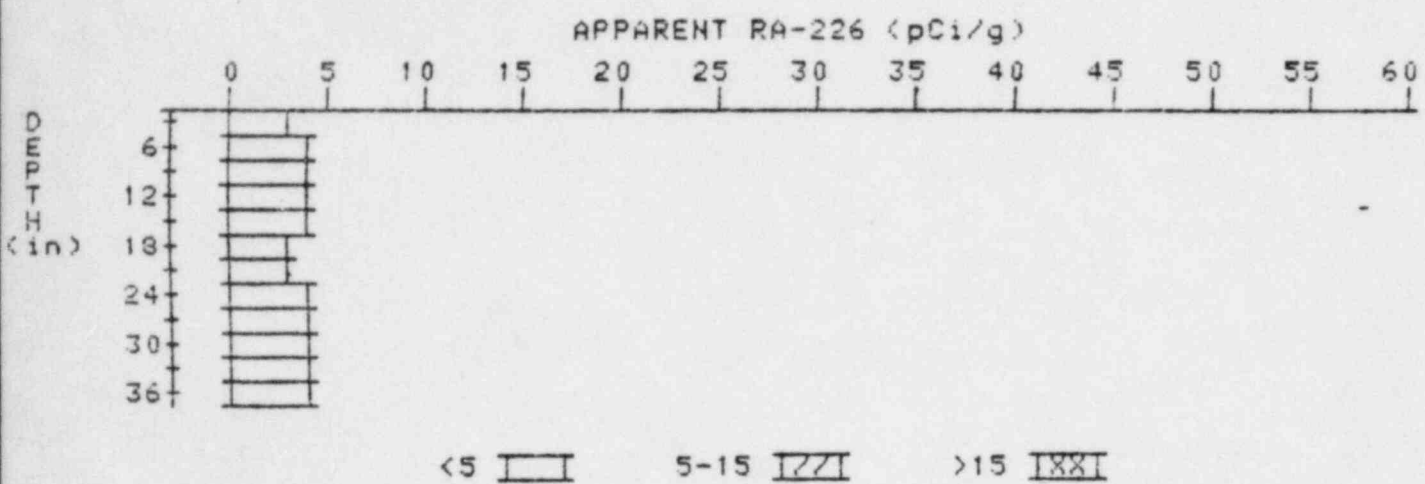
LOCATION: 152248



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 67.0 | 67.0 |
| 6 | 68.6 | 114.3 |
| 9 | 44.5 | 37.4 |
| 12 | 24.4 | 8.8 |
| 15 | 13.1 | 1.7 |
| 18 | 8.2 | 3.9 |
| 21 | 5.7 | 2.7 |
| 24 | 4.9 | 4.4 |
| 27 | 4.4 | 3.7 |
| 30 | 4.3 | 4.1 |
| 33 | 4.3 | 4.1 |
| 36 | 4.4 | 4.0 |
| 39 | 4.7 | 4.2 |
| 42 | 5.3 | 6.9 |
| 45 | 5.0 | 5.4 |
| 48 | 4.5 | 3.8 |
| 51 | 4.4 | 4.2 |
| 54 | 4.4 | 4.2 |

APPARENT RADIUM-226 CONCENTRATION 7 DECONVOLUTION GRAPH

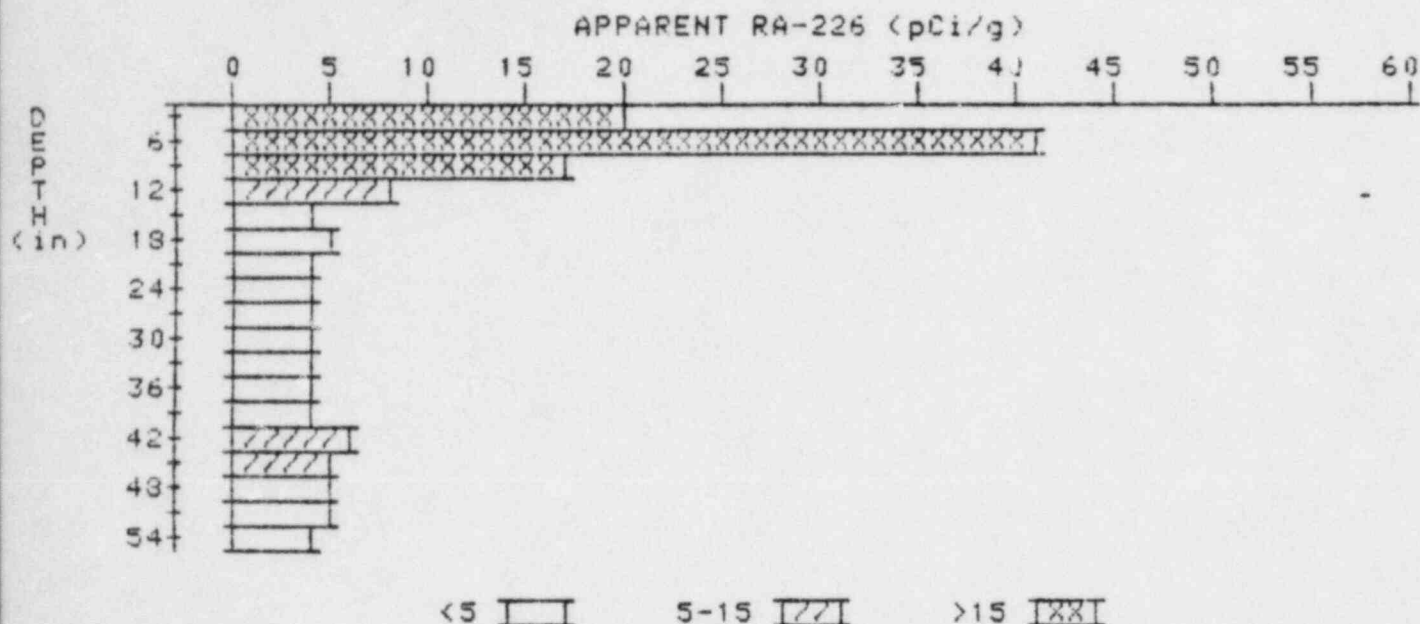
PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 7
LOCATION: 155255



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

APPARENT RADIUM-226 CONCENTRATION 8 DECONVOLUTION GRAPH

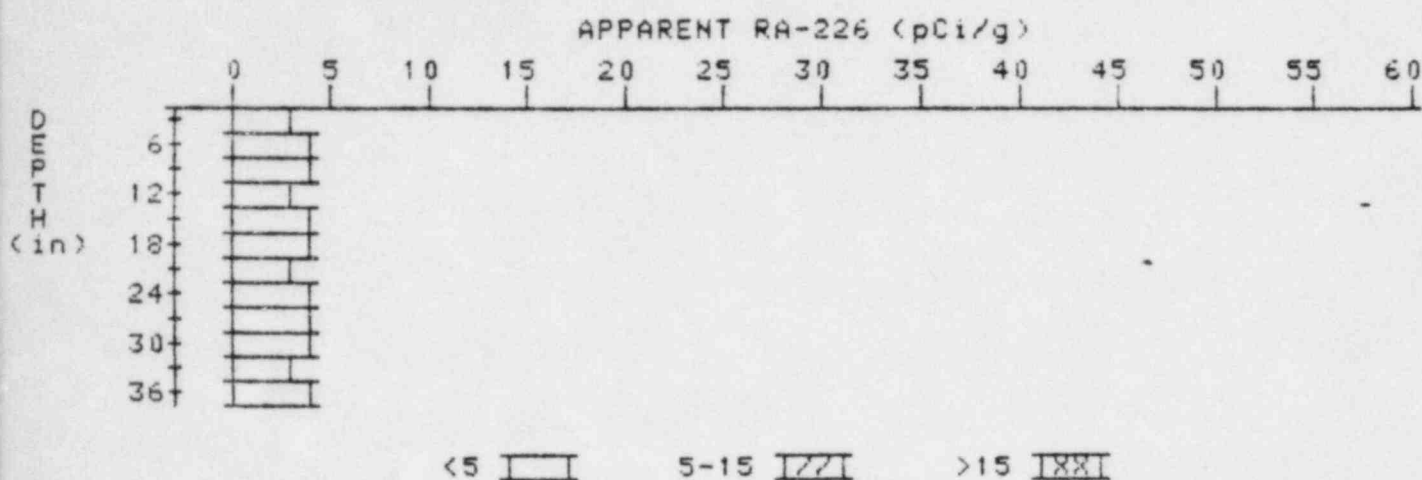
PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 8
LOCATION: 158262



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 20.2 | 20.2 |
| 6 | 23.8 | 41.2 |
| 9 | 17.6 | 17.1 |
| 12 | 11.7 | 8.0 |
| 15 | 7.9 | 4.3 |
| 18 | 6.1 | 4.9 |
| 21 | 5.0 | 4.1 |
| 24 | 4.4 | 3.9 |
| 27 | 4.1 | 3.6 |
| 30 | 4.1 | 3.9 |
| 33 | 4.2 | 4.2 |
| 36 | 4.3 | 4.3 |
| 39 | 4.4 | 3.9 |
| 42 | 4.8 | 5.5 |
| 45 | 4.8 | 5.2 |
| 48 | 4.6 | 4.6 |
| 51 | 4.4 | 4.6 |
| 54 | 4.1 | 4.1 |

APPARENT RADIUM-226 CONCENTRATION 9 DECONVOLUTION GRAPH

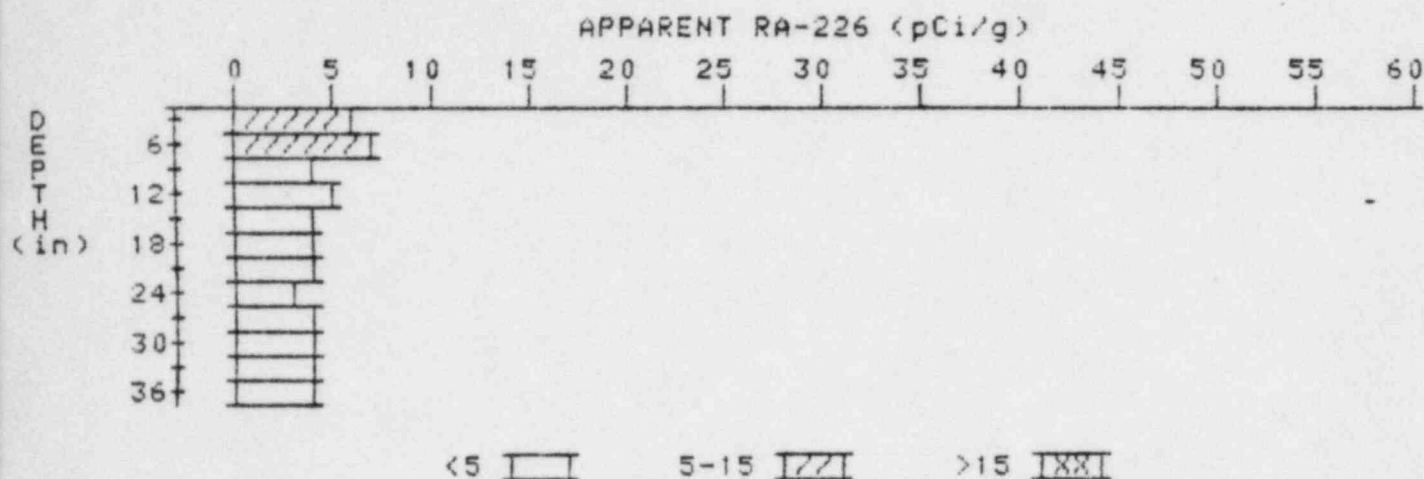
PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 9
LOCATION: 160250



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.4 | 3.4 |
| 6 | 3.6 | 4.0 |
| 9 | 3.6 | 3.8 |
| 12 | 3.5 | 3.3 |
| 15 | 3.5 | 3.5 |
| 18 | 3.5 | 3.5 |
| 21 | 3.5 | 3.3 |
| 24 | 3.6 | 3.6 |
| 27 | 3.7 | 3.5 |
| 30 | 3.9 | 4.4 |
| 33 | 3.8 | 3.3 |
| 36 | 4.0 | 4.0 |

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 10
LOCATION: 163262



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 6.4 | 6.4 |
| 6 | 6.1 | 7.2 |
| 9 | 5.2 | 4.5 |
| 12 | 4.7 | 4.7 |
| 15 | 4.2 | 3.7 |
| 18 | 4.0 | 3.6 |
| 21 | 4.0 | 4.4 |
| 24 | 3.8 | 3.1 |
| 27 | 4.0 | 4.4 |
| 30 | 4.0 | 3.8 |
| 33 | 4.1 | 4.3 |
| 36 | 4.1 | 4.1 |

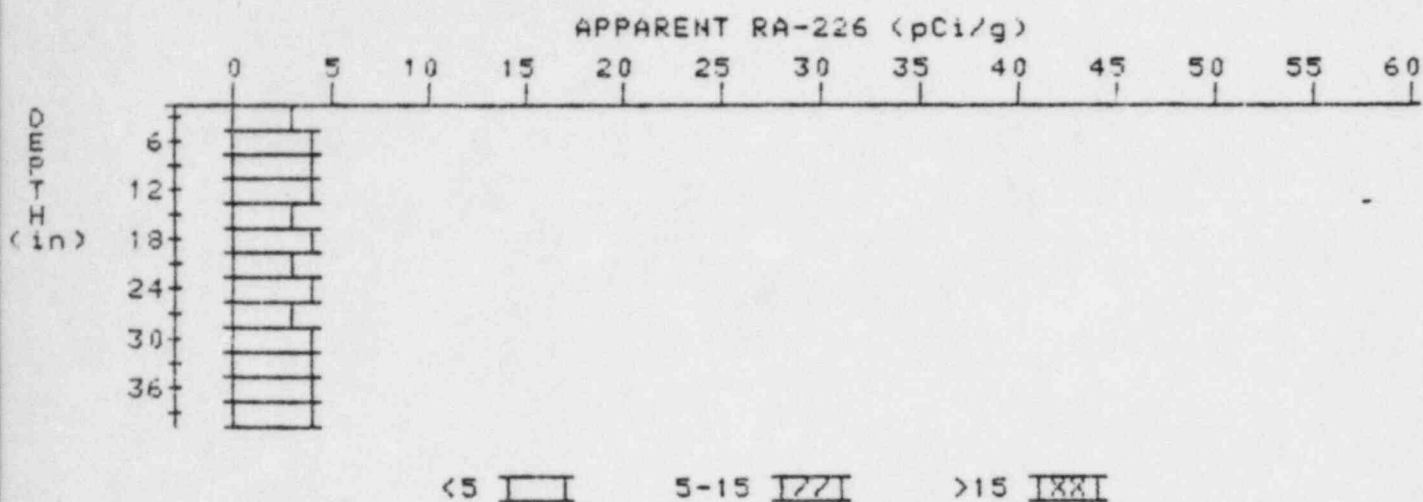
APPARENT RADIUM-226 CONCENTRATION 11

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS

HOLE NUMBER: 11

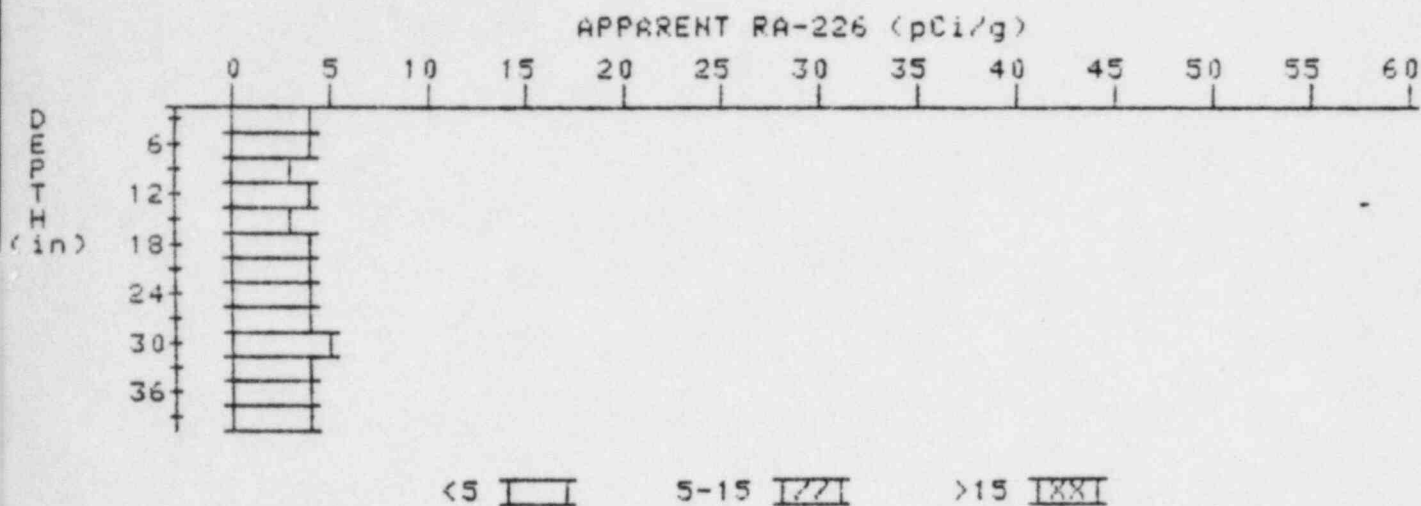
LOCATION: 171241



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.2 | 3.2 |
| 6 | 3.5 | 3.9 |
| 9 | 3.6 | 3.6 |
| 12 | 3.7 | 4.1 |
| 15 | 3.6 | 3.2 |
| 18 | 3.7 | 4.1 |
| 21 | 3.6 | 3.4 |
| 24 | 3.6 | 3.6 |
| 27 | 3.5 | 3.0 |
| 30 | 3.7 | 4.1 |
| 33 | 3.7 | 3.5 |
| 36 | 3.8 | 3.6 |
| 39 | 4.0 | 4.0 |

APPARENT RADIUM-226 CONCENTRATION 12 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 12
LOCATION: 180260

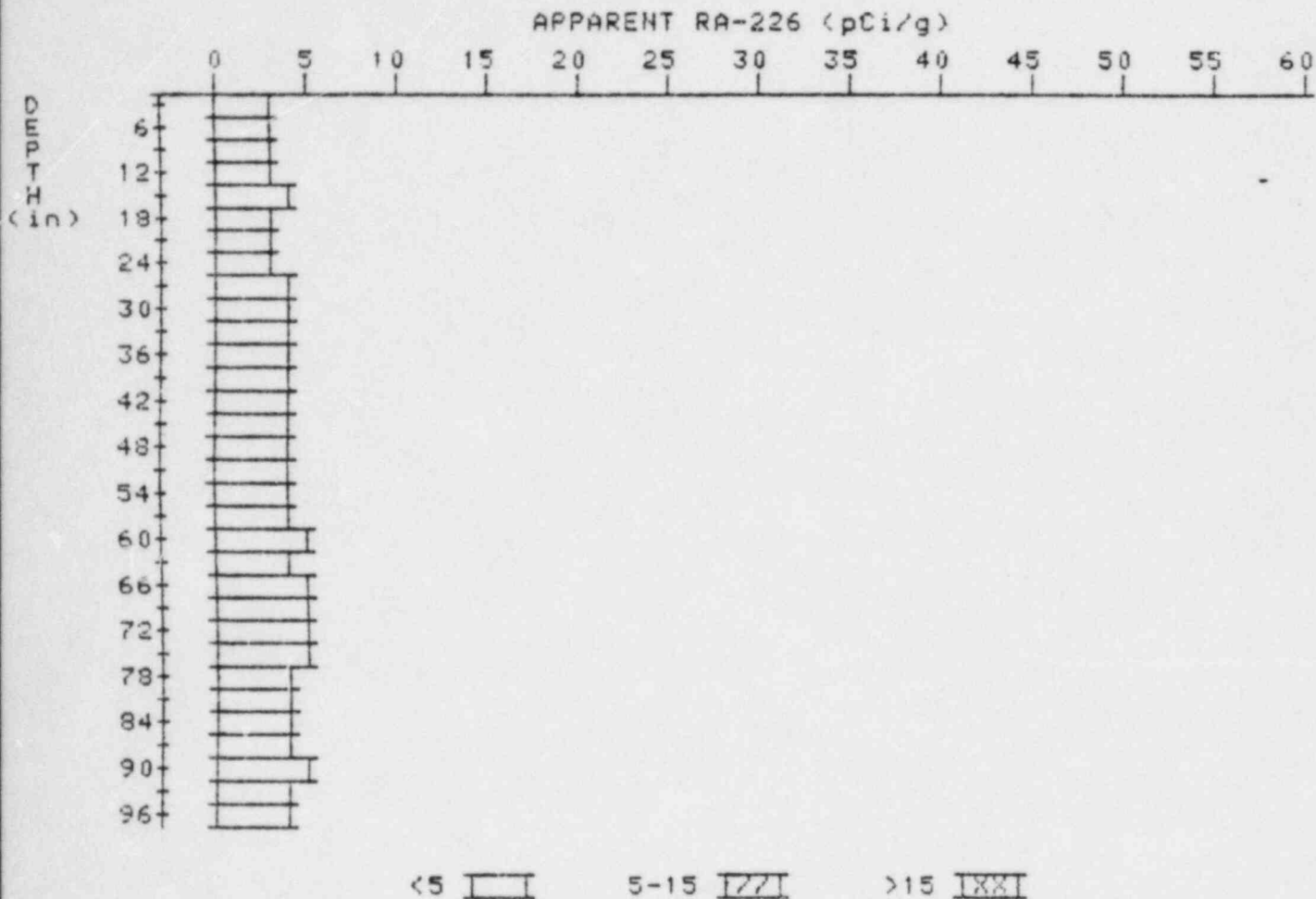


| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.5 | 3.5 |
| 6 | 3.7 | 4.2 |
| 9 | 3.6 | 3.2 |
| 12 | 3.7 | 4.1 |
| 15 | 3.6 | 3.2 |
| 18 | 3.7 | 3.7 |
| 21 | 3.8 | 3.8 |
| 24 | 3.9 | 3.9 |
| 27 | 4.0 | 3.8 |
| 30 | 4.2 | 4.7 |
| 33 | 4.1 | 3.9 |
| 36 | 4.1 | 4.1 |
| 39 | 4.1 | 4.1 |

APPARENT RADIUM-226 CONCENTRATION 13

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-03189-RS
HOLE NUMBER: 13
LOCATION: 199250



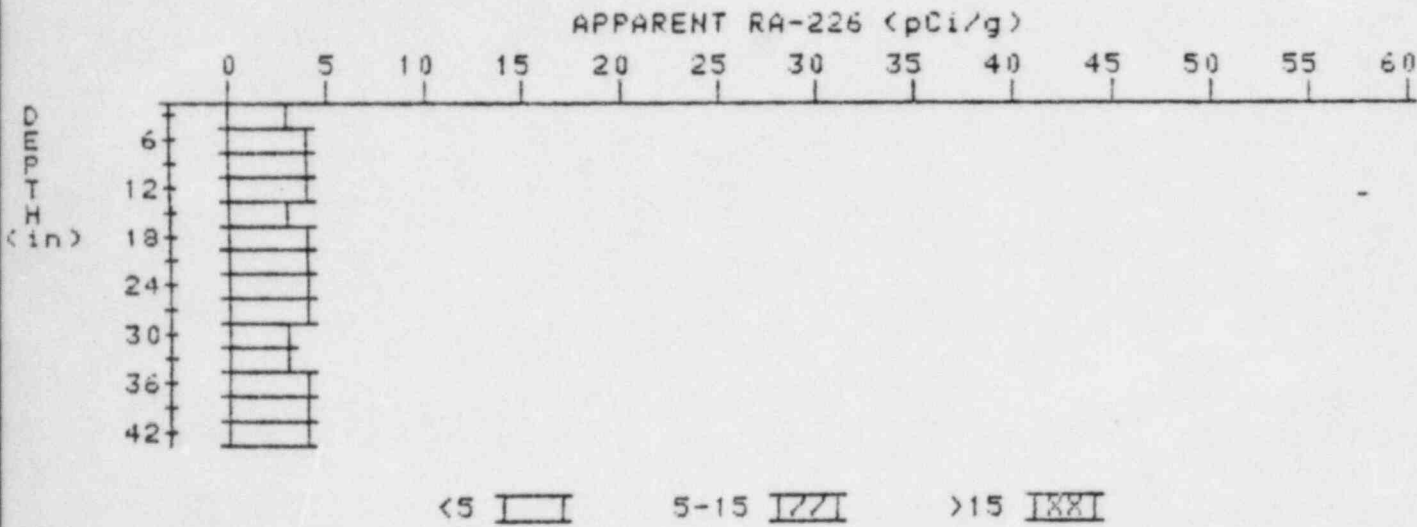
| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| ===== | ===== | ===== |
| 3 | 3.1 | 3.1 |
| 6 | 3.2 | 3.2 |
| 9 | 3.3 | 3.5 |
| 12 | 3.3 | 3.1 |
| 15 | 3.4 | 3.8 |
| 18 | 3.3 | 3.1 |
| 21 | 3.3 | 3.3 |
| 24 | 3.3 | 2.9 |
| 27 | 3.5 | 3.7 |

| | | |
|----|-----|-----|
| 30 | 3.6 | 3.6 |
| 33 | 3.7 | 3.5 |
| 36 | 3.9 | 4.1 |
| 39 | 4.0 | 4.0 |
| 42 | 4.1 | 4.3 |
| 45 | 4.1 | 3.9 |
| 48 | 4.2 | 4.4 |
| 51 | 4.2 | 4.0 |
| 54 | 4.3 | 4.3 |
| 57 | 4.4 | 4.4 |
| 60 | 4.5 | 4.9 |
| 63 | 4.4 | 4.0 |
| 66 | 4.5 | 4.7 |
| 69 | 4.5 | 4.5 |
| 72 | 4.5 | 4.5 |
| 75 | 4.5 | 4.7 |
| 78 | 4.4 | 4.2 |
| 81 | 4.4 | 4.4 |
| 84 | 4.4 | 4.4 |
| 87 | 4.4 | 4.2 |
| 90 | 4.5 | 4.9 |
| 93 | 4.4 | 4.4 |
| 96 | 4.3 | 4.3 |

APPARENT RADIUM-226 CONCENTRATION 17

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 17
LOCATION: 241253

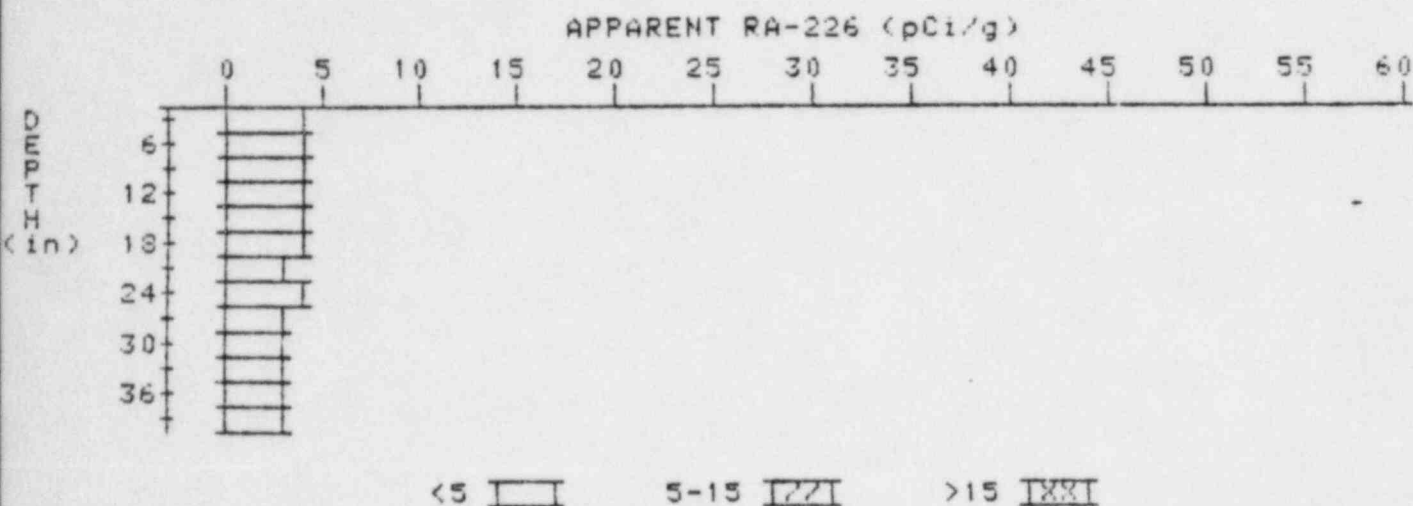


| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.1 | 3.1 |
| 6 | 3.5 | 3.9 |
| 9 | 3.7 | 4.1 |
| 12 | 3.7 | 3.9 |
| 15 | 3.6 | 3.2 |
| 18 | 3.7 | 3.7 |
| 21 | 3.8 | 4.2 |
| 24 | 3.7 | 3.5 |
| 27 | 3.7 | 3.9 |
| 30 | 3.6 | 3.4 |
| 33 | 3.6 | 3.4 |
| 36 | 3.7 | 3.9 |
| 39 | 3.7 | 3.9 |
| 42 | 3.6 | 3.6 |

APPARENT RADIUM-226 CONCENTRATION 19

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 19
LOCATION: 256261

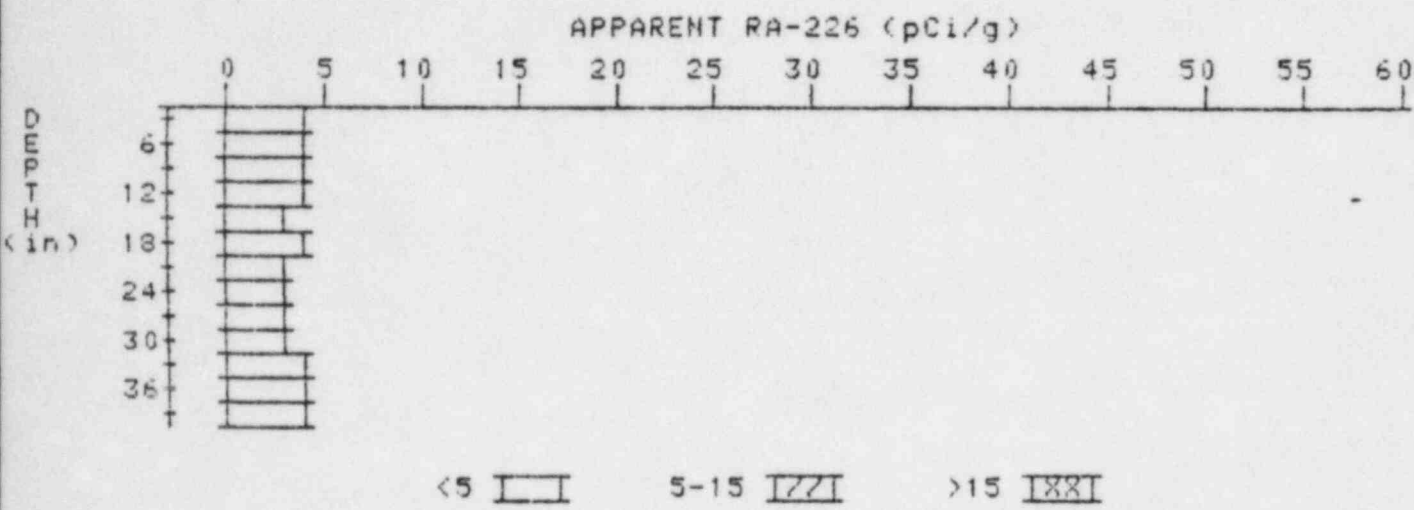


| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.6 | 3.6 |
| 6 | 3.8 | 4.0 |
| 9 | 3.9 | 4.3 |
| 12 | 3.8 | 3.6 |
| 15 | 3.8 | 4.2 |
| 18 | 3.6 | 3.6 |
| 21 | 3.4 | 3.0 |
| 24 | 3.4 | 3.6 |
| 27 | 3.3 | 3.1 |
| 30 | 3.3 | 3.3 |
| 33 | 3.3 | 3.3 |
| 36 | 3.3 | 3.3 |
| 39 | 3.3 | 3.3 |

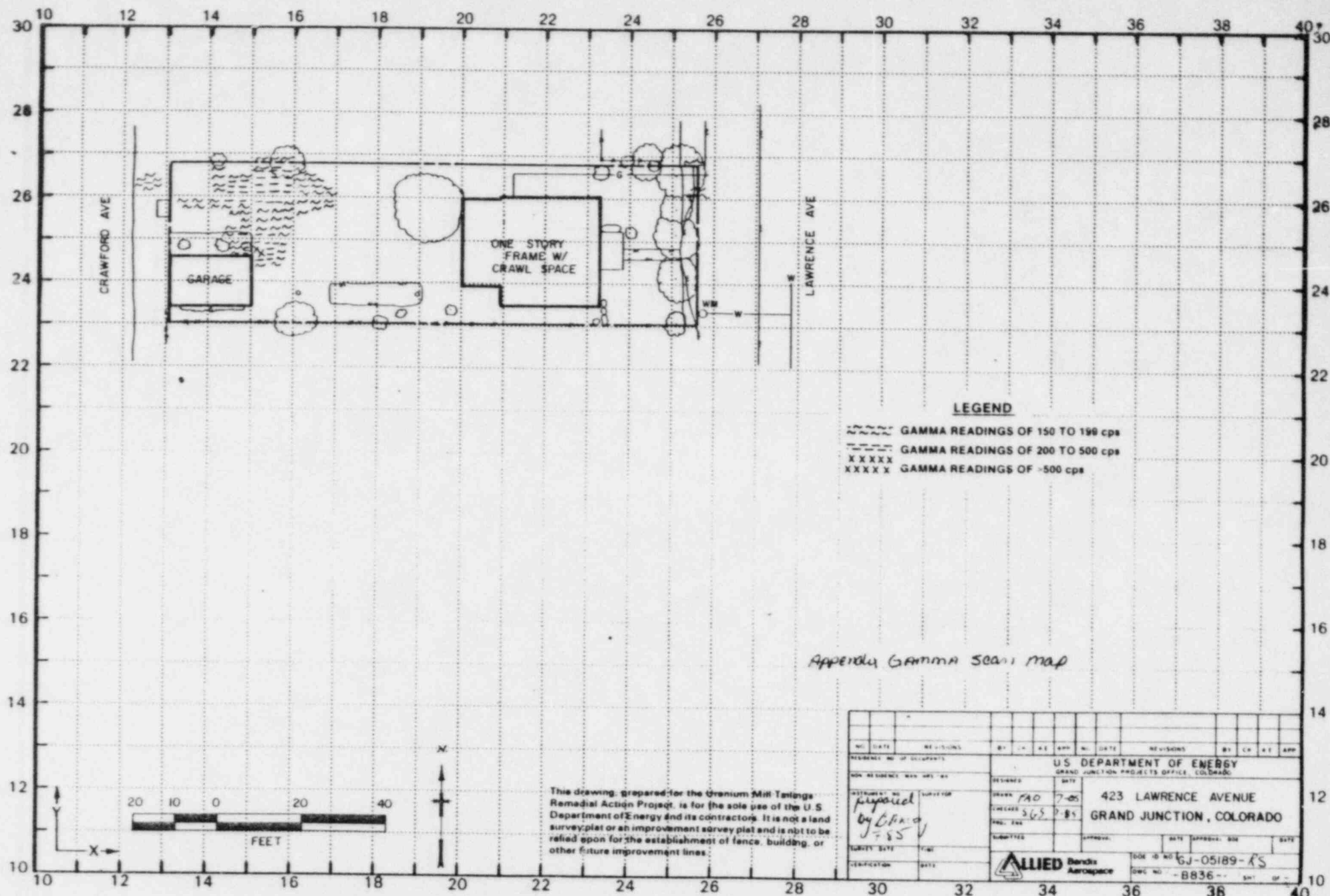
APPARENT RADIUM-226 CONCENTRATION 20

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-05189-RS
HOLE NUMBER: 20
LOCATION: 259268



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



| | | | | | | | | | | | | | | |
|---|--|------------------------|--|---|-----|------|----------|--|-----------|--|----|-----|------|-----|
| NO. DATE | | REVISIONS | | BY | CHK | DATE | NO. DATE | | REVISIONS | | BY | CHK | DATE | APP |
| U.S. DEPARTMENT OF ENERGY GRAND JUNCTION PROJECTS OFFICE, COLORADO | | | | | | | | | | | | | | |
| DESIGNED | | DATE | | 423 LAWRENCE AVENUE GRAND JUNCTION, COLORADO | | | | | | | | | | |
| DRAWN | | DATE | | 7-85 | | | | | | | | | | |
| CHECKED | | DATE | | 8-85 | | | | | | | | | | |
| SUBMITTED | | DATE | | APPROVED: _____ DATE: _____ | | | | | | | | | | |
| TITLED | | DATE | | APPROVED: _____ DATE: _____ | | | | | | | | | | |
| CERTIFICATION | | DATE | | APPROVED: _____ DATE: _____ | | | | | | | | | | |
| ALLIED BENDIS Aerospace | | DOW ID NO. GJ-05189-RS | | DOW NO. -8836-1-1 | | | | | | | | | | |