DEPARTMENT OF ENERGY
ALBUQUERQUE OPERATIONS OFFICE
CONTRACT NO. DE-AC04-83AL18796

Vicinity Property

Completion Report

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

VICINITY PROPERTY COMPLETION REPORT

AT

LO-023S
SOUTH FORK SUMMER HOME SITES (LOT #7)
LOWMAN, IDAHO

MARCH 26, 1991

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE
ALBUQUERQUE OPERATIONS OFFICE
U.S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NM

BY

MK-FERGUSON COMPANY

AND

CHEM-NUCLEAR ENVIRONMENTAL SERVICES, INC.

MK-Ferguson Company has been granted authorization to perform remedial action under the Uranium Mill Tailings Radiation Control Act of 1978, Public Law 95-604. Remedial action was done in accordance to the EPA Standards for Cleanup of Lands and Buildings Contaminated with Residual Radioactive Material from Inactive Uranium Processing Sites, 40 CFR 192.12, 192.20-23.

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1.0 SUMMARY

PROPERTY NUMBER:	LO-023S
PROPERTY ADDRESS:	SOUTH FORK SUMMER HOME SITE (LOT #7) LOWMAN, IDAHO 83637
PROPERTY OWNER:	REX P. & PEARL B. MCDONALD 1217 SOUTH ROOSEVELT BOISE, IDAHO 83705
PROPERTY CATEGORY:	RESIDENCE
REMEDIAL ACTION CONTRACTOR:	MK-FERGUSON COMPANY
CONSTRUCTION SUBCONTRACTOR:	FULFER'S ENVIRONMENTAL SERVICES
RADIOLOGICAL CONTRACTOR:	CHEM-NUCLEAR ENVIRONMENTAL SERVICES, INC.
REA APPROVED:	MARCH 14, 1990
REMEDIAL ACTION STARTED:	SEPTEMBER 5, 1990
REMEDIAL ACTION COMPLETED: (APPENDIX C SIGNED)	OCTOBER 17, 1990
VOLUME OF MATERIAL REMOVED:	OUTDOOR: 341 cy INDOOR: 19 cy

1.0 SUMMARY

Remedial action was completed on Vicinity Property LO-023. A total of 360 cubic yards of soil was removed from the property.

Radiological surveys conducted following removal of contaminated material, but before property restoration, demonstrate that the property has been cleaned up to the EPA standards with the application of Supplemental Standards to the area where a tree is rooted in residential radioactive material and the area under the rockwall footing. This completion report recommends that DOE review the radiological data provided for the property, with final certification to be awarded upon satisfactory results of long-term radon daughter concentration measurements.

2.0 OPERATIONS SUMMARY

2.1 Remedial Action Plan

The basic remedial action on this property was performed according to the Remedial Action Plan. A total of 360 cubic yards of soil was removed from the property, compared with an estimated excavation of 218 cubic yards of soil.

2.2 Previously Unidentified Contamination

No new areas of contamination were identified during remedial action. The extent and depth of contamination were greater than estimated in some areas.

2.3 Unanticipated Items During Remedial Action

No unanticipated items occurred during remedial action on this property.

3.0 VERIFICATION SUMMARY

3.1 Radiological Survey Data

All survey data were acquired according to approved procedures.

3.1.1 Pre-Remedial Action Survey

The results of the survey defining the contaminated area requiring remedial action are presented on Drawing LO-023-015.

3.1.2 Pre-Restoration Survey

Exterior:

After removal of contamination, and prior to backfilling, a soil sample survey was conducted in the excavated areas. Soil samples were aliquoted from the 13 verification grids and analyzed by gamma spectroscopy with the opposed crystal system in accordance with Health Physics Procedure 015. The radium concentration in these soil samples ranged from 1.6 to 29.0 pCi/g, as described in Table 3.1 (see Appendix A for radiological survey data).

LO-023-020 shows the actual areas of excavation.

These results confirm that exterior contamination has been reduced to levels below the EPA standards for radium in soil in most areas (see Section 3.1.3). Background for the Lowman site is 1.0 pCi/g Ra-226.

Interior:

Remedial action was performed indoors on this property. A gamma scan in the structure prior to and following excavation showed gamma levels up to a maximum of 20 micro R/hr, which is less than the EPA standard of background plus 20 micro R/hr. These results are described in Table 3.2. Background for the Lowman site is 15 micro R/hr.

"Grab" radon daughter concentration (RDC) measurements were made in four locations as described in Table 3.3. These measurements were made under standard conditions as described in the VPMIM and do not meet DOE guidelines for estimating that annual WL average to be less than 0.03.

3.1.3 Justification Checklist for Application of Supplemental Standards

Application of Supplemental Standards (SS) is in accordance with 40 CFR 192.22, Subpart (x) (check appropriate Subpart).

_____ a. Risk injury to worker/public

__X__ b. Environmental harm

__X__ c. High cost relative to long-term benefits

_____ d. High cost of cleaning up building relative to benefits

_____ e. No known remedial action

_____ f. Radionuclides other than RA-226 exists

Brief Condition Description and Justification:

One large Blue Spruce tree on the property is rooting in residual radioactive material. The owner expressed concern about any damage to this tree. Excavation removed contamination to the point where further excavation could not be performed without risk of damaging the root systems and killing the tree. It would be very costly, if not impossible, to replace this tree with a tree of comparable size. This area meets the requirements described in Section 3.2.3 of the VPMIM for the application of supplemental standards.

Additionally, contamination is present under the rock retaining wall at the rivers edge. This contamination is a six-inch layer under a forty foot length of the retaining wall. The average Ra-226 concentration in this area is 27 pCi/g. It would have been very costly relative to the long-term benefit to remove this material due to the need to demolish, remove and rebuild the retaining wall. The area is covered with four and one half feet of backfill.

The areas are covered with 6 to 54 inches of backfill and sod. Land use in the area is not expected to change in the future. With the contamination left in place the relative health risk is minimal. If a person spent 8 hours a day, 5 days a week, for 50 weeks a year in the area of maximum gamma exposure rate (19.5 micro R/hr), he would receive about 39 millirem of gamma exposure in one year. This is about 8% of the amount allowed the general public (10 CFR 20.105).

Additional cost for the retaining wall without application of supplemental standards equals $3,600.00.

	Yes		No	If Supplemental Standards are Applied
___	X	1.	Open Land?
X	___	2.	Occupied Building?
___	X	3.	If yes to No. 2, is contaminated area beneath or within 10 feet of a building?
___	X	4.	Anticipated change of land use within the next 5 years?
___	X	5.	If yes to No. 4, then will land use produce health risk?
___	X	6.	Is contamination in a habitable area?
X	___	7.	Have owners comments been solicited? (Attach comments or record of teleconference). (See Appendix B).

Estimated volume of contaminated material to remain = 8 (cy).

Contaminated area to remain = 15.1 (sy).

Range for contaminated areas = 15.0 to 19.5 (micro R/hr) [at 3 feet above surface].

Range Ra-226 concentration in soil in contaminated area = 26.6 to 29.0 (pCi/g)

If tailings are below or within 10 feet of the structure, radon daughter concentration = N/A (WL).

3.2 Recommendation for Certification

3.2.1 Exterior:

Eight areas of contamination were identified and removed. Soil samples after excavation and prior to backfilling indicate that the limits of 5 pCi/g in the surface 15 cm. and 15 pCi/g in any 15 cm. layer below the surface are not exceeded in most areas. Based on this information, we recommend that the exterior of this vicinity property be certified to be in compliance with EPA standards, with the application of supplemental standards, for the UMTRA Project.

3.2.2 Interior:

Remedial action was conducted in one structure on this vicinity property. All gamma readings taken in the structures were less than the 20 micro R/hr above background limit. Radon daughter concentrations are above the 0.01 WL limit. Based on this information, we recommend that the interior data be reviewed, with final certification pending the results of long term radon daughter concentration measurements.

Table 3.1
VERIFICATION SOIL SAMPLE SURVEY
LO-023S

	LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (Pci/g)
1	LO-SV-213	34	3.2
2	LO-SV-229	30	9.5
3.	LO-SV-230	66	3.2
4.	LO-SV-231	30	2.2
5.*	LO-SV-SS-232	15	29.0
6.	LO-SV-233	66	5.9
7.	LO-SV-234	46	3.0
8.	LO-SV-235	46	3.0
9.	LO-SV-236	46	3.0
10.	LO-SV-297	128	5.0
11.	LO-SV-298	128	4.4
12.	LO-SV-299	20	1.8
13.	LO-SV-300	20	1.6
SAMPLES UNDER RETAINING WALL			
	LO-SE-208	128	33.6
	LO-SE-209	128	19.7
		Average	26.6

* This sample was taken around trees rooted in residual radioactive material. This is one of two areas for the application of supplemental standards.

Table 3.2
INTERIOR GAMMA SURVEY
Property LO-023

LOCATION	MICRO R/hr
House	
Room 1	
E Wall	14
S Wall	14
W Wall	13
Floor	15
Ceiling	14
Room 2	
N Wall	14
E Wall	13
Floor	14
Ceiling	14
Room 3	
N Wall	13
S Wall	13
W Wall	14
Floor	15
Ceiling	13
Room 4	
N Wall	11
E Wall	11
S Wall	12
W Wall	11
Floor	14
Ceiling	12
Room 5	
N Wall	13
E Wall	12
S Wall	13
W Wall	12
Floor	14
Ceiling	12

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property LO-023

LOCATION	MICRO R/hr
Room 6	
N Wall	15
E Wall	13
S Wall	17
W Wall	20
Floor	16
Ceiling	17
Room 7	
N Wall	12
E Wall	12
S Wall	14
W Wall	15
Floor	15
Ceiling	13
Room 8	
N Wall	12
S Wall	11
W Wall	13
Floor	14
Ceiling	12
Room 9	
N Wall	11
E Wall	11
S Wall	11
W Wall	11
Floor	11
Ceiling	11
Room 10	
N Wall	12
E Wall	11
S Wall	12
W Wall	11
Floor	12
Ceiling	11

Use a post remedial?

Table 3.2 Cont'd.
INTERIOR GAMMA SURVEY
Property LO-023

LOCATION	MICRO R/hr
Room 11	
N Wall	12
E Wall	12
S Wall	12
W Wall	11
Floor	12
Ceiling	12
SHED	
N Wall	6
E Wall	7
S Wall	7
W Wall	7
Floor	7
Ceiling	6
GARAGE	
Room 1	
N Wall	5
E Wall	6
S Wall	7
W Wall	6
Ceiling	6
Floor	6
Room 2	
N Wall	6
E Wall	6
S Wall	6
W Wall	7
Floor	8
Ceiling	7

Table 3.3
RADON DAUGHTER CONCENTRATION MEASUREMENTS
Property LO-023S

LOCATION	DATE	CONCENTRATION
# House	9/28/90	0.0101
# House	9/28/90	0.008
* Garage	9/29/90	0.0103
* Garage	9/28/91	0.0116

* Alpha track detectors placed 10/17/90.
\# Alpha track detectors placed 3/27/91.

4.0 REFERENCES

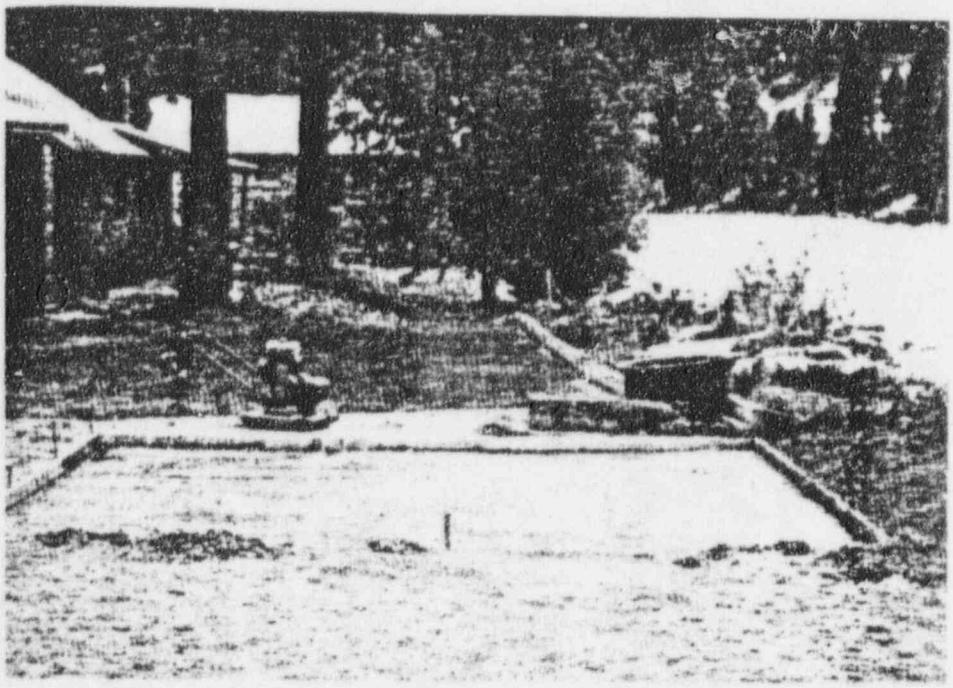
4.1 Results of the Radiological Survey of Property LO-023; Oak Ridge National Laboratory; Oak Ridge, Tennessee; January, 1986.

4.2 The Radiological and Engineering Assessment for Lowman, Property LO-023; MK-Ferguson Company/Chem-Nuclear Environmental Services, Inc.; Albuquerque, New Mexico; March 14, 1990.

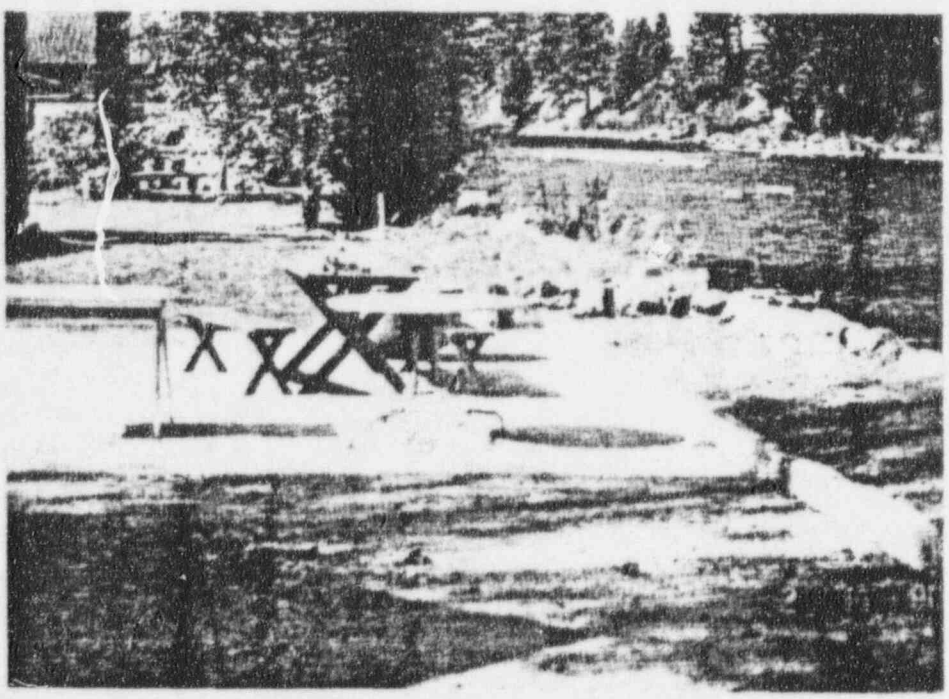
4.3 Health Physics Procedures; Chem-Nuclear Environmental Services, Inc., for MK-Ferguson Company, Remedial Action Contractor; Albuquerque, New Mexico; June 1986.

4.4 Vicinity Properties Management and Implementation Manual; UMTRAP, U.S. Department of Energy; Albuquerque, New Mexico; August 1986.

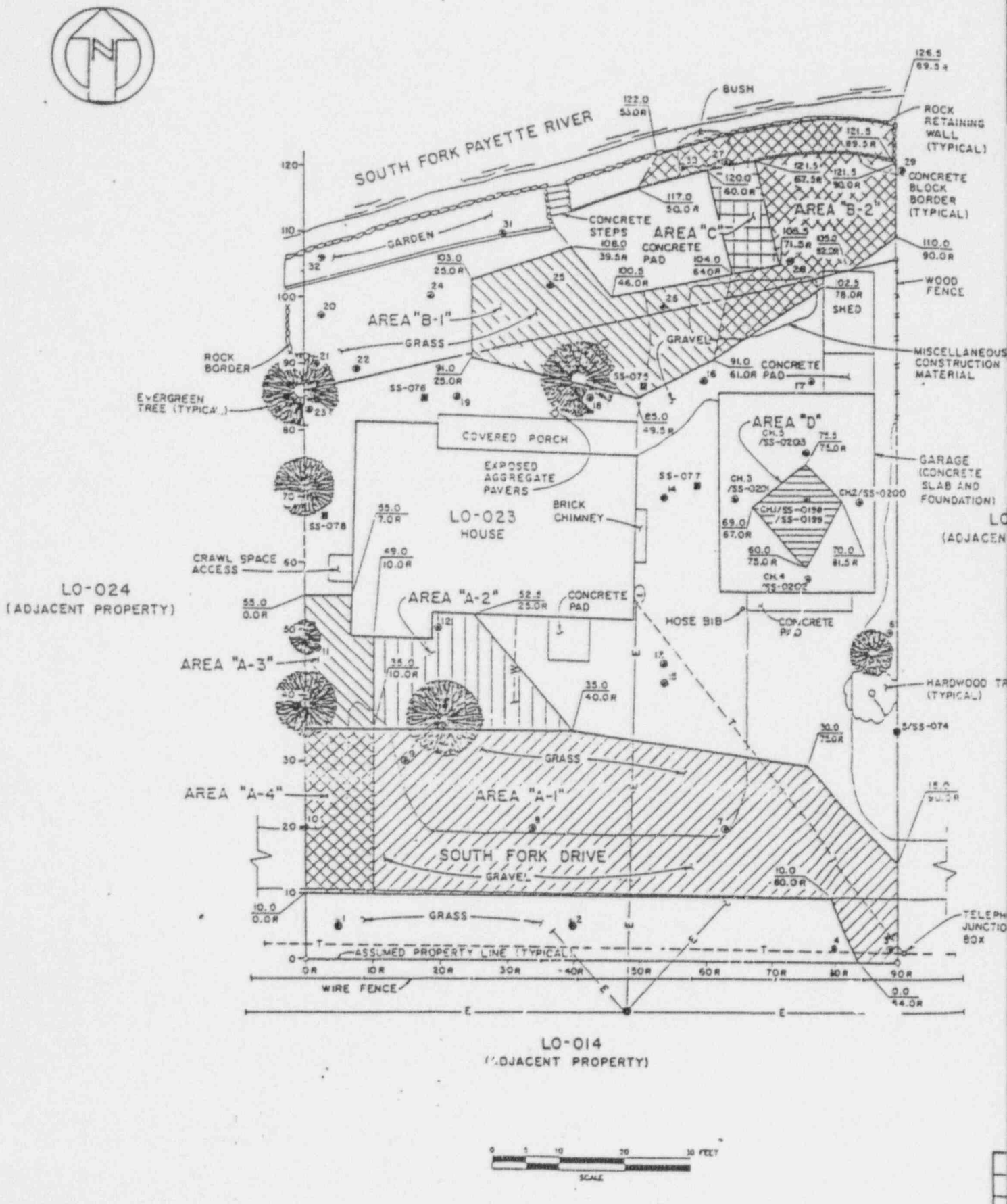
4.5 Title 40, Code of Federal Regulations, Part 192.12-23; U.S. Environmental Protection Agency; Washington, D.C.; July 1983.



Looking West at Area "1" With Exterior Concrete Slab Form in Place and Ready To Be Poured



Looking West at Area "1" With Remedial Action Complete


SOUTH FORK PAYETTE RIVER
BUSH
ROCK RETAINING WALL (TYPICAL)
CONCRETE BLOCK BORDER (TYPICAL)
AREA "B-2"
AREA "C"
CONCRETE STEPS
CONCRETE PAD
GARDEN
AREA "B-1"
GRASS
GRAVEL
ROCK BORDER
EVERGREEN TREE (TYPICAL)
WOOD FENCE
SHED
MISCELLANEOUS CONSTRUCTION MATERIAL
CONCRETE PAD
COVERED PORCH
EXPOSED AGGREGATE PAVERS
BRICK CHIMNEY
LO-023
HOUSE
AREA "D"
GARAGE (CONCRETE SLAB AND FOUNDATION)
CRAWL SPACE ACCESS
LO-024
(ADJACENT PROPERTY)
AREA "A-2"
CONCRETE PAD
HOSE BIB
AREA "A-3"
HARDWOOD TR
(TYPICAL)
AREA "A-4"
AREA "A-1"
SOUTH FORK DRIVE
GRAVEL
GRASS
TELEPH
JUNCTIO
BOX
ASSUMED PROPERTY LINE (TYPICAL)
WIRE FENCE
LO-014
(ADJACENT PROPERTY)
SCALE

LEGEND

15

BOREHOLE DESIGNATION

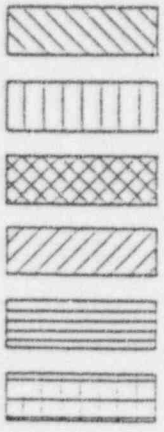
SS-077

SOIL SAMPLE DESIGNATION

CH.5/SS-0203

COREHOLE AND SOIL SAMPLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION



6 INCHES

12 INCHES

18 INCHES

24 INCHES

30+ INCHES

(DEPTH OF CONCRETE PAD)

022
PROPERTY)

9702280020-01

U. S. DEPARTMENT OF ENERGY

ALBUQUERQUE, NEW MEXICO

RADIOLOGICAL SURVEY DATA

LO-023

LOWMAN, IDAHO

MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED	DRAWN J.S.P				
CHECKED					
APPROVED					
RECOMMENDED					
APPROVED NR	DATE	PROJECT MANAGER NR	DATE	DOE PROJECT ENGINEER NR	DATE

LOGNO	FINAL REA SUBMITTAL	CRS					
DATE		DRAWING					

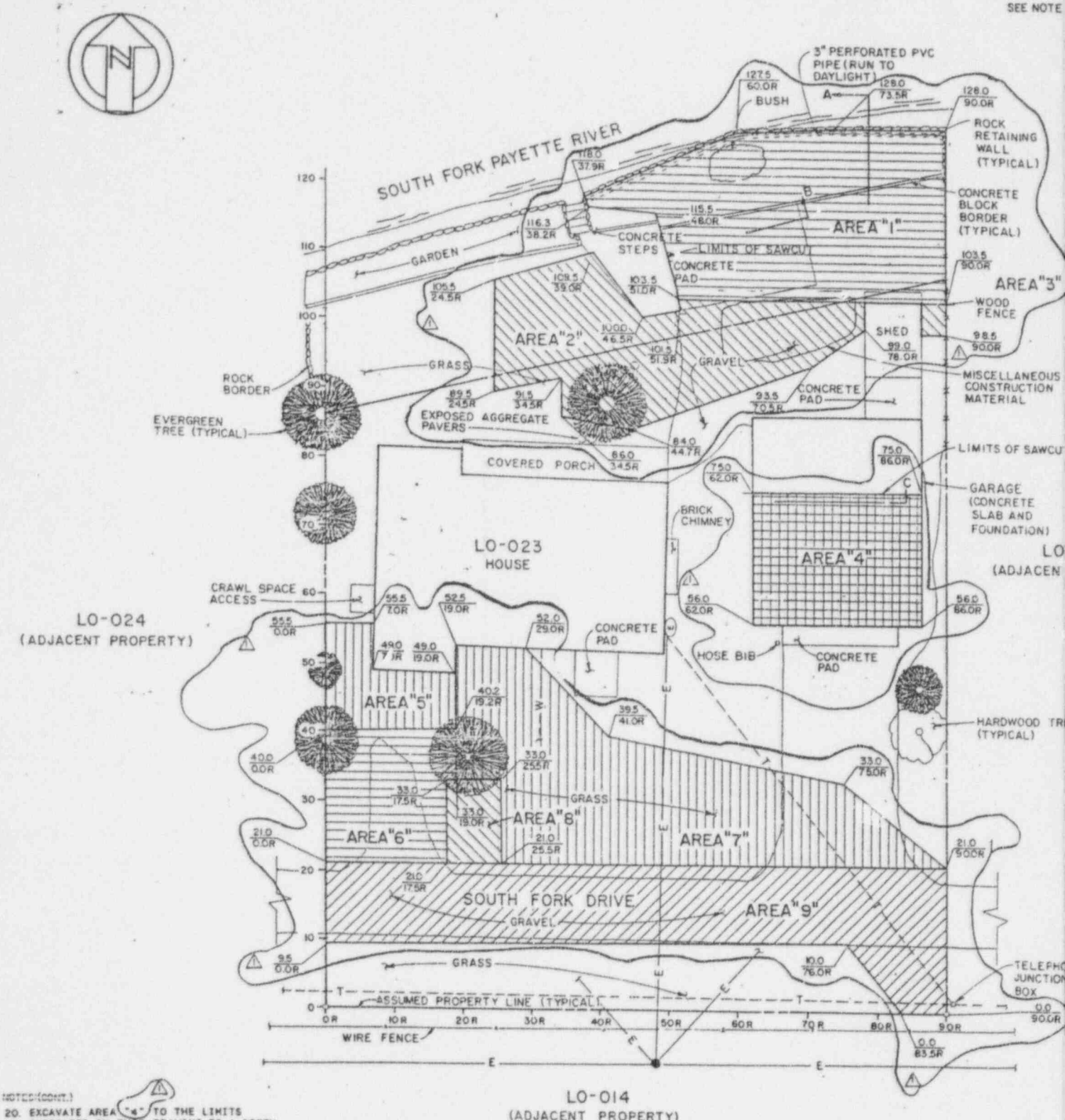
MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. LO-023-015

REV. A

SEE NOTE



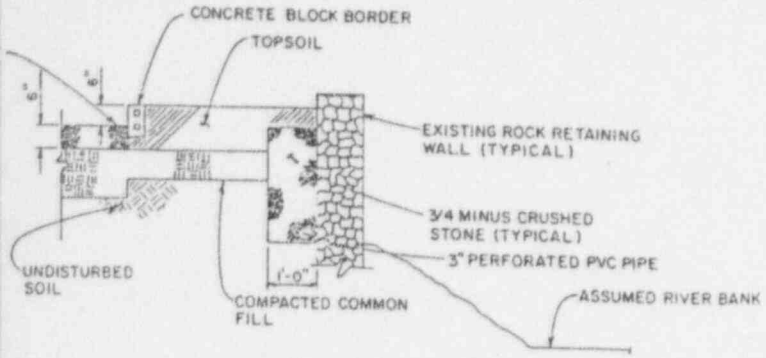
NOTES (CONT.)

20. EXCAVATE AREA "4" TO THE LIMITS INDICATED ON THIS DRAWING TO A DEPTH OF 30 INCHES. CONTRACTOR'S REPRESENTATIVE TO RESURVEY PRIOR TO BACKFILLING. IF ADDITIONAL CONTAMINATION IS FOUND, REMOVE AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE.

21. BACKFILL AREA "4" WITH COMPACTED COMMON FILL FOLLOWED BY 12 INCHES OF STRUCTURAL FILL. INSTALL 6 MIL VAPOR BARRIER AND PLACE NEW 6 INCH THICK REINFORCED CONCRETE SLAB TO MATCH EXISTING SLAB ELEVATION. SEE SECTION C THIS DRAWING.

SCALE: 0, 5, 10, 20, 30 FEET

AS-BUILT DRAWING

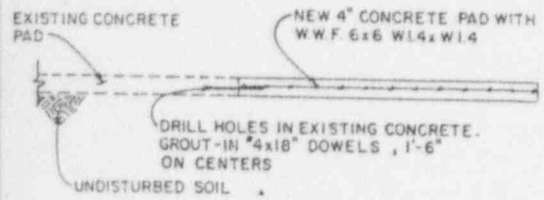


SECTION A
(N.T.S.)

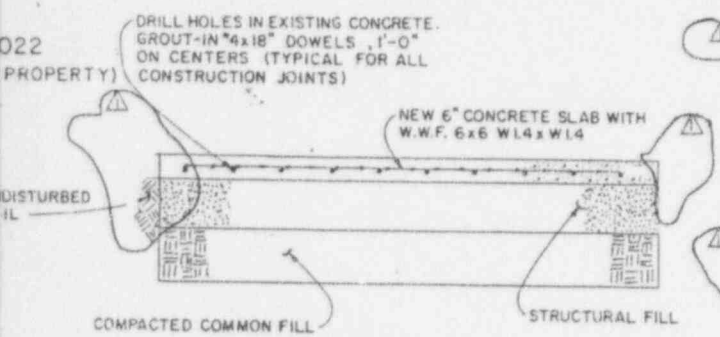
LEGEND

W	WATER LINE
G	GAS LINE
GM	GAS MAIN
S	SEWER LINE
SM	SEWER MAIN
STM	STORM SEWER
E	ELECTRICAL LINE
T	TELEPHONE LINE
TV	CABLE TV
	PROPERTY LINE
X X X	FENCE LINE
G,W, or E	METER
G or W	VALVE
	PROPERTY PIN
	POWER POLE

OVERHEAD SERVICE DENOTED BY SOLID LINE
UNDERGROUND SERVICE DENOTED BY DASHED LINE



SECTION B
(N.T.S.)



SECTION C
(N.T.S.)

NOTES: (CONT.)

6. PROVIDE MOISTURE CONTROL FOR COMPACTED COMMON FILL USED AS BACKFILL UNDER CONCRETE SLABS AND GRAVEL DRIVE IN ACCORDANCE WITH SECTION 02200 PART 1.02.B3.

7. RELOCATE MISCELLANEOUS CONSTRUCTION MATERIAL AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE

8. REMOVE AND SALVAGE CONCRETE PAVERS AND CONCRETE BLOCK BORDER AS REQUIRED TO PERFORM REMEDIAL ACTION. REPLACE TO LOCATION SHOWN AS DIRECTED BY CONTRACTOR'S REPRESENTATIVE.

9. SAWCUT CONCRETE PAD [illegible] TO THE LIMITS INDICATED THIS DRAWING.

10. DEMOLISH AND REMOVE CONCRETE PAD [illegible]

11. EXCAVATE THE FOLOWING AREAS TO THE LIMITS INDICATED ON THIS DRAWING TO THE FOLLOWING AVERAGE DEPTHS:

AREA "1"	50 INCHES	AREA "8"	6 INCHES
AREA "2"	8 INCHES	AREA "9"	24 INCHES
AREA "3"	6 INCHES		
AREA "4"	13 INCHES		
AREA "5"	12 INCHES		
AREA "6"	28 INCHES		
AREA "7"	12 INCHES		

CONTRACTOR'S REPRESENTATIVE TO RESURVEY PRIOR TO BACKFILLING. IF ADDITIONAL CONTAMINATION IS FOUND, REMOVE AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE.

12. POUR NEW 4 INCH THICK REINFORCED CONCRETE PAD ON UNDISTURBED GROUND TO SAME SIZE AS THAT REMOVED AND TO MATCH EXISTING CONCRETE PAD ELEVATION. IF GROUND IS DISTURBED, PLACE STRUCTURAL FILL PRIOR TO PLACEMENT OF NEW 4 INCH THICK REINFORCED CONCRETE PAD. SEE SECTION B THIS DRAWING.

13. BACKFILL PORTION OF AREA "1" ADJACENT TO ROCK RETAINING WALL AS SHOWN IN SECTION A THIS DRAWING.

14. BACKFILL EXCAVATED GRAVEL DRIVE PORTION OF AREA "7" WITH 12 INCHES OF AGGREGATE BASE COURSE AND GRADE TO MATCH ORIGINAL SURFACE. BACKFILL EXCAVATED GRAVEL DRIVE PORTIONS OF AREA "8" AND AREA "9" WITH COMPACTED COMMON FILL FOLLOWED BY 18 INCHES OF AGGREGATE BASE COURSE AND GRADE TO MATCH ORIGINAL SURFACE.

NOTES: (CONT.)

15. BACKFILL REMAINING EXCAVATED GRAVEL AREAS IN AREAS "1" AND "2" WITH 6 INCHES OF PEA GRAVEL AND GRADE TO MATCH ORIGINAL ELEVATION. WHERE EXCAVATION IN THIS AREA EXCEEDS 9 INCHES, BACKFILL WITH COMPACTED COMMON FILL FOLLOWED BY 6 INCHES OF PEA GRAVEL.

16. GRASS AREAS SHALL BE BACKFILLED WITH TOPSOIL. EXCAVATIONS DEEPER THAN 9 INCHES SHALL BE BACKFILLED WITH COMPACTED COMMON FILL FOLLOWED BY 6 INCHES OF TOPSOIL TO FINISH GRADE. ALL DISTURBED GRASS AREAS TO BE TOPPED WITH SOD.

17. RELOCATE ITEMS IN GARAGE AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE. REPLACE TO ORIGINAL LOCATION FOLLOWING OTHER WORK.

18. SAWCUT CONCRETE SLAB IN GARAGE TO THE LIMITS INDICATED THIS DRAWING.

19. DEMOLISH AND REMOVE CONCRETE SLAB TO THE LIMITS INDICATED THIS DRAWING.

NOTES:

1. THE LATEST REVISION OF THE FOLLOWING TECHNICAL SPECIFICATIONS APPLY TO THE REMEDIAL ACTION WORK REQUIRED FOR PROPERTY NO. LO-023:

   SECTION 02050 DEMOLITION

   SECTION 02110 CLEARING AND GRUBBING

   SECTION 02130 CONTAMINATED MATERIAL REMOVAL

   SECTION 02200 EXCAVATION AND BACKFILL

   SECTION 02480 LANDSCAPING

   SECTION 02500 PAVING AND SURFACING

   SECTION 03300 CAST-IN-PLACE CONCRETE

2. UTILITY LOCATIONS ARE FOR REFERENCE ONLY. SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACTUAL LOCATIONS OF UTILITIES PRIOR TO START OF CONSTRUCTION.

3. THE EXCAVATION LIMITS AND DEPTHS ARE BASED ON A LIMITED NUMBER OF BORINGS TAKEN DURING THE RADIOLOGICAL SURVEYS OF THIS PROPERTY. ADDITIONAL RADIOLOGICAL SURVEYS PERFORMED DURING REMEDIAL ACTION MAY REQUIRE MORE OR LESS EXCAVATION TO BE TAKEN FROM THE DESIGNATED AREAS. ALL CHANGES TO THE LIMITS AND DEPTHS OF EXCAVATION SHOWN ON THE DESIGN DRAWINGS SHALL BE AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE.

4. EXISTING TREES SHALL NOT BE REMOVED EXCEPT AS DIRECTED BY THE CONTACTOR'S REPRESENTATIVE. CARE SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING TREE ROOTS DURING EXCAVATION. ALL EXCAVATED AREAS SHALL BE RESTORED TO MATCH EXISTING GRADES.

5. SUBCONTRACTOR TO USE CAUTION WHEN PERFORMING REMEDIAL ACTION IN VICINITY OF ROCK RETAINING WALL. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ROCK RETAINING WALL AS A RESULT OF OTHER WORK.

REGISTERED PROFESSIONAL ENGINEER 4651 STATE OF IDAHO JERRY L. [illegible]

(ESKP1)	AS-BUILT DRAWING	JLJ	PDC	PDC	ASJ	ASJ	—
DRAWING NO.	ISSUE FOR CONSTRUCTION	JSP	PDC	PDC	RPT	ASJ	—
DATE	- REVISIONS	DRAWN BY	CHECKED BY	APPROV. LOE	APPROV. DH	PROJ ENG	APPROV. DOE

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DES GNED	DRAWN J.S.P
CHECKED	
REVIEWED	
RECOMMENDED	

EXCAVATION AND RESTORATION PLAN
LO-023
LOWMAN, IDAHO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

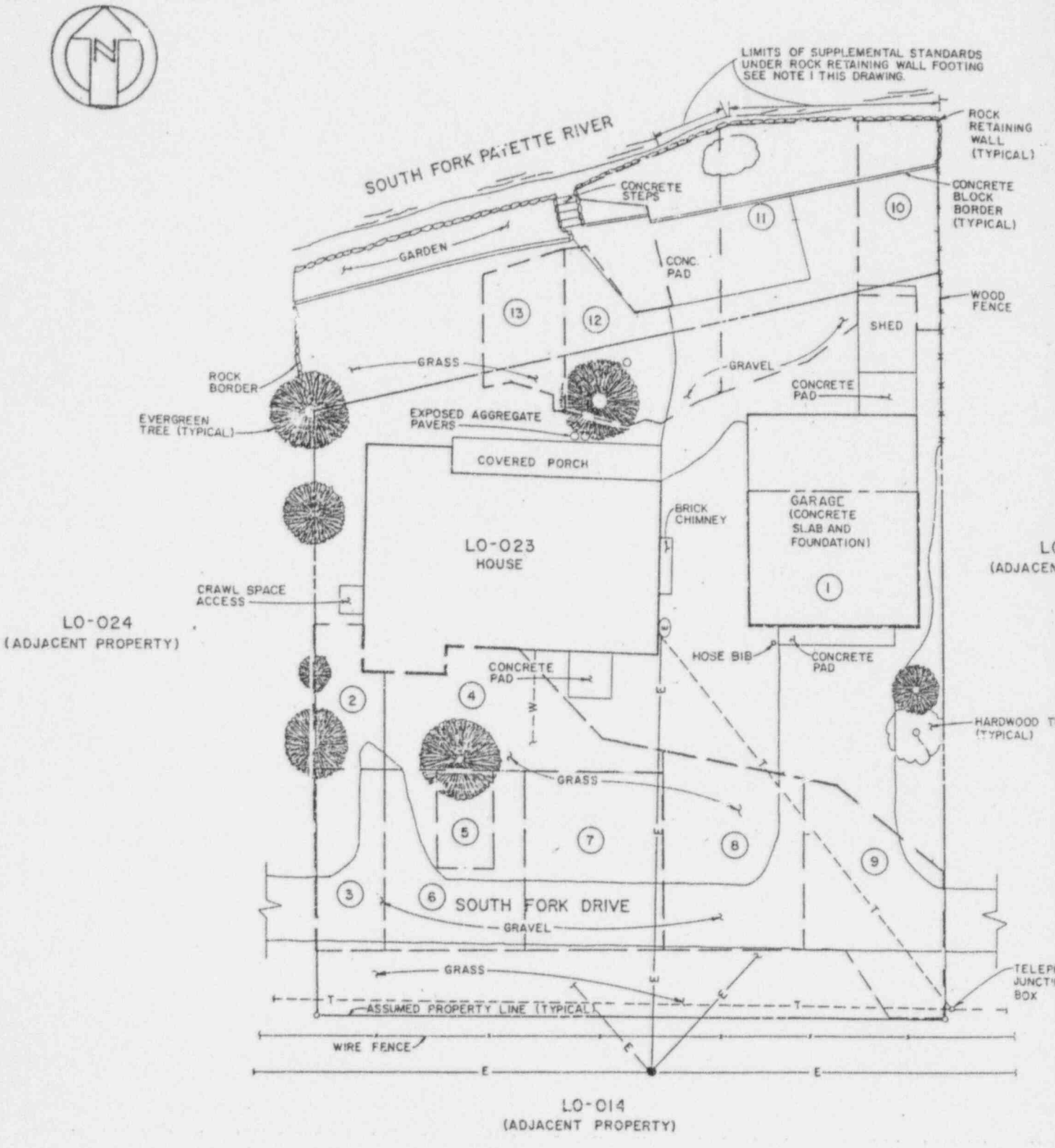
APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. LO-023-020 REV. 1

LO-023-020


LIMITS OF SUPPLEMENTAL STANDARDS UNDER ROCK RETAINING WALL FOOTING SEE NOTE 1 THIS DRAWING.
SOUTH FORK PAYETTE RIVER
ROCK RETAINING WALL (TYPICAL)
CONCRETE STEPS
CONCRETE BLOCK BORDER (TYPICAL)
GARDEN
CONC. PAD
WOOD FENCE
SHED
GRASS
GRAVEL
ROCK BORDER
EVERGREEN TREE (TYPICAL)
EXPOSED AGGREGATE PAVERS
CONCRETE PAD
COVERED PORCH
BRICK CHIMNEY
GARAGE (CONCRETE SLAB AND FOUNDATION)
LO-023 HOUSE
CRAWL SPACE ACCESS
LO-024 (ADJACENT PROPERTY)
HOSE BIB
CONCRETE PAD
HARDWOOD TR (TYPICAL)
GRASS
SOUTH FORK DRIVE
GRAVEL
GRASS
TELEPHO JUNCTIO BOX
ASSUMED PROPERTY LINE (TYPICAL)
WIRE FENCE
LO-014 (ADJACENT PROPERTY)
0 5 10 20 30 FEET
SCALE

VERIFICATION SOIL SAMPLES

LOCATION	SOIL SAMPLE NUMBER
1	LO-SV-213
2	LO-SV-229
3.	LO-SV-230
4.	LO-SV-231
5.	LO-SV-SS-232
6.	LO-SV-233
7.	LO-SV-234
8.	LO-SV-235
9.	LO-SV-236
10.	LO-SV-297
11.	LO-SV-298
12.	LO-SV-299
13.	LO-SV-300
SAMPLES UNDER RETAINING WALL	LO-SE-208
	LO-SE-209

2
ROPERTY)

NOTES:

1. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR 192.22 (B) AND (C) SHALL APPLY TO LOW LEVEL RADIOACTIVE MATERIAL SURROUNDING ROOTS OF TREES IN VERIFICATION GRID 5 AND UNDER ROCK RETAINING WALL FOOTING. APPROXIMATELY 8 CUBIC YARDS OF MATERIAL COVERING 15.1 SQUARE YARDS REMAINS IN PLACE TO THE AVERAGE DEPTHS AS FOLLOWS:

   FOR GRID 5:
   AN AREA OF 10.66 SQUARE YARDS IMMEDIATELY SURROUNDING THE EVERGREEN, STARTING 6 INCHES BELOW GRADE TO 30 INCHES BELOW GRADE.

   FOR ROCK RETAINING WALL FOOTING:
   AN AREA OF 4.44 SQUARE YARDS IMMEDIATELY UNDER THE FOOTING STARTING 54 INCHES BELOW GRADE TO 60 INCHES BELOW GRADE.

9702280020-03

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

SYMBOL	ISSUE FOR CERTIFICATION SURVEY	JLJ					
DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DH	PROJ ENG	APPROVAL DOE

DESIGNED | DRAWN J.S.P
CHECKED
REVIEWED
RECOMMENDED

CERTIFICATION RADIOLOGICAL PLAN
LO-023
LOWMAN, IDAHO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO. DE-AC04-83AL18796
DRAWING NO. LO-023-016 REV. A

APPENDIX A

RADIOLOGICAL SURVEY DATA

MK-FERGUSON/CHEM NUCLEAR
OPPOSED CRYSTAL SYSTEM RECORD

ATTACHMENT 2

SITE NAME Lowman - 012
SITE AREA LO-023

OCS SERIAL NO. # 484319 # 7X4359 *

COUNT DATE INITIAL 20 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	FUNCTION NO. INITIAL 20 DAY	MASS WET / DRY	RA-226 INITIAL / 20 DAY	QC SAMPLE	VENDOR LAB RESULT Ra-226	VENDOR LAB RESULT Th-230	DEPTH <15cm / >15cm	TECH INITIAL 20 DAY	REMARKS
9-5-90 *	LO-SV-	LO-023			58	1517	658.4	2.3 / 1.6					JC	F3 = 1272
9-26-90	213	#1	9-5-90	9-6-90	12	1864	588.5	3.2	QC			✓	JC	Area 'D' Garage
9-7-90 *	LO-SV-	LO-023			12	4506	558.3	8.1 / 16.3					JC	F3 = 1660
10-1-90	229	#2	9-7-90	9-11-90	26	4783	504.0	9.5				✓	JC	
9-7-90 *	LO-SV-	LO-023			13	1584	652.1	2.4 / 1.8					JC	F3 = 919
10-1-90	230	#3	9-7-90	9-11-90	27	1786	553.8	3.2				✓	JC	
9-7-90 *	LO-SV-	LO-023			18	900	460.0	2.0 / 4.0					JC	F3 = 454
10-1-90	231	#4	9-7-90	9-11-90	28	905	409.0	2.2				✓	JC	
9-7-90 *	LO-SS-SV- *	LO-023			19	11512	460.1	252 / 50.4				✓	JC	F3 = 3219
10-1-90	232	#5	9-7-90	9-11-90	29	12361	425.7	29.0					JC	
9-7-90 *	LO-SV-	LO-023			14	2824	692.3	4.1 / 8.2					JC	F3 = 1557
10-1-90	233	#6	9-7-90	9-11-90	30	3150	536.0	5.9				✓	JC	
9-7-90 *	LO-SV-	LO-023			15	1277	581.8	2.2 / 4.4					JC	F3 = 816
10-1-90	234	#7	9-7-90	9-11-90	31	1454	479.3	3.0				✓	JC	
9-7-90 *	LO-SV-	LO-023			16	1198	645.9	1.9 / 3.8					JC	F3 = 1083
10-1-90	235	#8	9-7-90	9-11-90	32	1618	541.6	3.0				✓	JC	
9-7-90 *	LO-SV-	LO-023			17	1225	561.9	3.9 / 3.8					JC	F3 = 893
10-2-90	236	#9	9-7-90	9-11-90	24	1685	560.3	3.0				✓	JC	

NOTE: All soil sample results are in pCi/gm

Site Correction factor = #2.0, 1.7.
Count time = 500 Sec. unless noted otherwise.
MDA = 1.2 pCi/gm Ra-226

MDA Calculation

$$4.65 \sqrt{\frac{10{,}000 \text{ sec. background cts.}}{20}}$$

(Ct. Time) (Eff.) (Sample Mass)*

*typically 500 gms

REVIEWED BY: _____
SITE H.P. MANAGER

07878

015-17

MK-FERGUSON/CHEM NUCLEAR
EXPOSED CRYSTAL SYSTEM RECORD

ATTACHMENT 2

SITE NAME Lowman-012

SITE AREA LO-023

OCS SERIAL NO. # 184319

COUNT DATE INITIAL / 20 DAY	SAMPLE NUMBER	SAMPLE LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	FUNCTION NO. INITIAL / 20 DAY	MASS WET / DRY	Ra-226 INITIAL / 20 DAY	QC SAMPLE	VENDOR LAB RESULT Ra-226	VENDOR LAB RESULT Th-230	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	REMARKS
9-18-90	LO-SV-	LO-023			31	3152	658.0	4.8/8.3					JC	F3=1841
10-10-90	297	#10	9-18-90	9-19-90	33	2975	600.6	5.0				✓	JC	Area B-2
9-18-90	LO-SV-	LO-023			32	3293	714.2	4.6/7.8					JC	F3=2065
10-10-90	298	#11	9-18-90	9-19-90	34	2947	670.7	4.4				✓	JC	
9-18-90	LO-SV-	LO-023			38	1473	691.8	3.1/3.6					JC	F3=1083
10-10-90	299	#12	9-18-90	9-19-90	35	1307	660.1	1.8				✓	JC	
9-18-90	LO-SV-	LO-023			39	832	696.5	1.3/2.2					JC	F3=1117
10-10-90	300	#13	9-18-90	9-19-90	36	987	626.5	1.6				✓	JC	
9-18-90	LO-SE	LO-023			23	21628	778.3	27.8/42.3					JC	F3=9169 ≈ 5' Depth, under rockwall, Area B-2, N. Side of Prop. Δ 3321 CPTM 1+33/56.5R
10-11-90	208	#10	9-18-90	9-19-90	15	23483	699.5	33.6				✓	JC	
9-18-90	LO-SE	LO-023			24	12236	754.0	16.2/27.5					JC	F3=7104 ≈ 5' Depth, under rockwall, Area B-2, N. side of Prop. Δ 2390 1+28/73.5R
10-11-90	209	#11	9-18-90	9-19-90	16	13484	682.8	19.7				✓	JC	
9-18-90	LO-SE	LO-023			25	9185	783.5	11.7/19.9					JC	F3=4080 ≈ 4' Depth, under rockwall W. of Area B-2 planter
10-11-90	210	#12	9-18-90	9-19-90	17	9294	712.3	13.0				✓	JC	1+21.5/47.5R Δ 2010 CPTM
9-24-90	LO-BF-	LO-023			5	448	574.7	0.8/1.4				✓	JC	F3=523
	055	#1	9-24-90											
9-24-90	LO-BF-	LO-023			6	773	607.5	1.1/2.3				✓	JC	F3=380
	056	#2	9-24-90											

NOTE: All soil sample results are in pCi/gm

Site Correction factor = 1.7

Count time = 500 sec. unless noted otherwise.

MDA = 1.2 pCi/gm Ra-226

MDA Calculation

$$4.65 \sqrt{\frac{10{,}800 \text{ sec. background cts.}}{20}}$$

(Ct. Time) (Eff.) (Sample Mass)*

*typically 500 gms

REVIEWED BY: _____
SITE H.P. MANAGER

0787a

015-17

Chem-Nuclear Environmental Services, Inc.

DATE: October 24, 1991

TO: Ron Jacobs

FROM: Neil Kiely

LOCATION: Albuquerque, NM

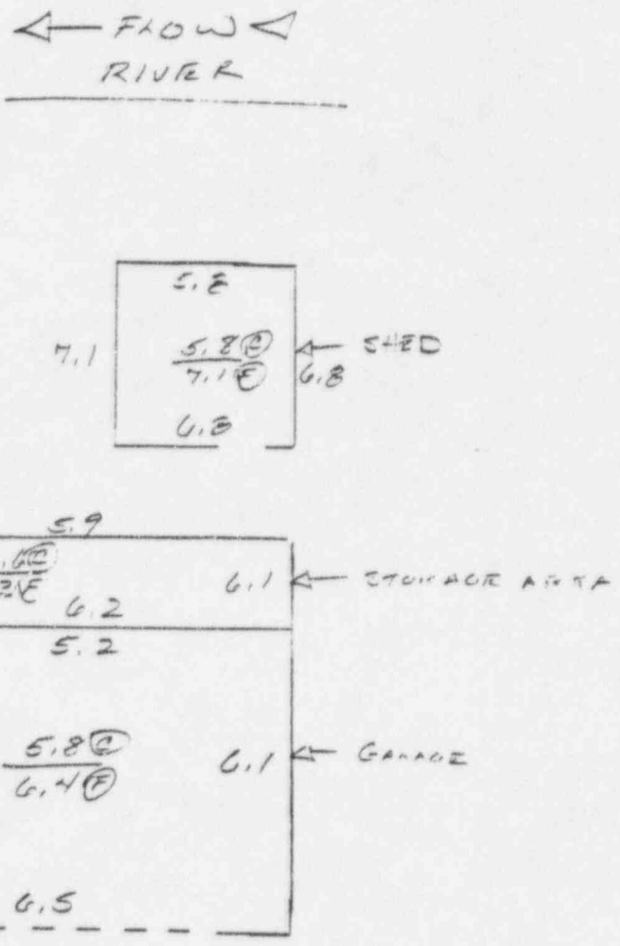
LOCATION: Lowman, ID

SUBJECT: Interior Gamma Scan
at LO-023

INSTRUMENT USED: L-2220 # 35641 w/44-10 # 02974-0

$\mu R/hR = (0.008 \times CPTM) - 4.4/4$

NUMBERS CORRESPOND TO LOCATION AND ARE EXPRESSED IN $\mu R/hR$.



MORRISON KNUDSEN

before removal
see Table 3.2

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW S. WILLIAMS
D. McCormick

SHEET ____ OF ____ PAGE ____

DATE 9/18/89

PROPERTY ID # LO-023

PROJECT UMTRA

SURVEY METHOD: ☑ ~~8990~~ ESP-1

EXPOSURE DATA

INST. ID # 1658 w/SPA-3 # 1601023

☐ PIC

INST. ID# N/A CALIBRATION DATE N/A

HOUSE

ROOM: 1		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	OPEN	
E WALL	1650	14
S WALL	1700	14
W WALL	1500	13
FLOOR	1800	15
~~TOTALS~~ = CEILING	1600	14
AVE. =		

ROOM: 2		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1650	14
E WALL	1550	13
S WALL	OPEN	
W WALL	OPEN	
FLOOR	1700	15
~~TOTALS~~ = CEILING	1650	14
AVE. =		

ROOM: 3		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1500	13
E WALL	OPEN	
S WALL	1470	13
W WALL	1700	14
FLOOR	1800	15
~~TOTALS~~ = CEILING	1570	13
AVE. =		

ROOM: 4		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1250	11
E WALL	1200	11
S WALL	1400	12
W WALL	1200	11
FLOOR	1650	14
~~TOTALS~~ = CEILING	1400	12
AVE. =		

ROOM: 5		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1500	13
E WALL	1300	12
S WALL	1500	13
W WALL	1400	12
FLOOR	1650	14
~~TOTALS~~ = CEILING	1350	12
AVE. =		

ROOM: 6		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1850	15
E WALL	1500	13
S WALL	2100	17
W WALL	2600	20
FLOOR	1950	16
TOTALS = CEILING	2100	17
AVE. =		

COMMENTS:

MORRISON KNUDSEN

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW S. WILLIAMS
D. McCormick

SHEET ____ OF ____ PAGE ____

DATE 9/18/89

PROPERTY ID # LO-023

PROJECT UMTRA

SURVEY METHOD: ~~E~~ ~~ESP-1~~ ESP-1

EXPOSURE DATA
INST. ID # 1658 W/SPA-3 #1601023

☐ PIC INST. ID# N/A CALIBRATION DATE N/A

ROOM: 7

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1350	12
E WALL	1350	12
S WALL	1650	14
W WALL	1800	15
FLOOR	1800	15
~~TOTALS =~~ CEILING	1500	13
AVE. =		

ROOM: 8

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1350	12
E WALL	OPEN	
S WALL	1200	11
W WALL	1550	13
FLOOR	1650	14
~~TOTALS =~~ CEILING	1400	12
AVE. =		

ROOM: 9

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1250	11
E WALL	1150	11
S WALL	1200	11
W WALL	1250	11
FLOOR	1250	11
~~TOTALS =~~ CEILING	1200	11
AVE. =		

ROOM: 10

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1300	12
E WALL	1250	11
S WALL	1350	12
W WALL	1250	11
FLOOR	1300	12
~~TOTALS =~~ CEILING	1250	11
AVE. =		

ROOM: 11

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1400	12
E WALL	1400	12
S WALL	1300	12
W WALL	1200	11
FLOOR	1300	12
~~TOTALS =~~ CEILING	1350	12
AVE. =		

ROOM:

READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL		
E WALL		
S WALL		
W WALL		
FLOOR		
TOTALS = CEILING		
AVE. =		

COMMENTS:

See Table 3.2

MORRISON KNUDSEN

INTERIOR SURVEY DATA LOG/EXPOSURE

SURVEY CREW S. WILLIAMS
D. McCormick

SHEET ____ OF ____ PAGE ____

DATE 9/18/89 before removal

PROPERTY ID # 20-023

PROJECT UMTRA

SURVEY METHOD: ☒ ~~2220~~ ESP-1 ☐ PIC

EXPOSURE DATA
INST. ID # 1658 W/SPA-3 #160 1023

INST. ID# N/A CALIBRATION DATE N/A

SHED

ROOM: 1		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	7000	49
E WALL	3200	24
S WALL	3500	26
W WALL	2200	17
FLOOR	2450	19
TOTALS =		
AVE. =		

GARAGE

ROOM: 1		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1900	15
E WALL	1800	15
S WALL	1750	14
W WALL	1700	14
CEILING	2200	17
TOTALS =		
AVE. =		

ROOM: 1		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
NW FLOOR	1700	14
NE FLOOR	1460	13
FLOOR CENTER	~~1960~~ ~~TEST~~ NO	62
SE FLOOR	1630	14
SW FLOOR	1620	14
TOTALS =		
AVE. =		

GARAGE

ROOM: 2		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
N WALL	1850	15
E WALL	1800	15
S WALL	1950	16
W WALL	1800	15
FLOOR	1850	15
~~TOTALS =~~ CEILING	2000	16
AVE. =		

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
TOTALS =		
AVE. =		

ROOM:		
READING LOCATION	COUNTS /0.1MIN	RATE uR/h
TOTALS =		
AVE. =		

COMMENTS: ____

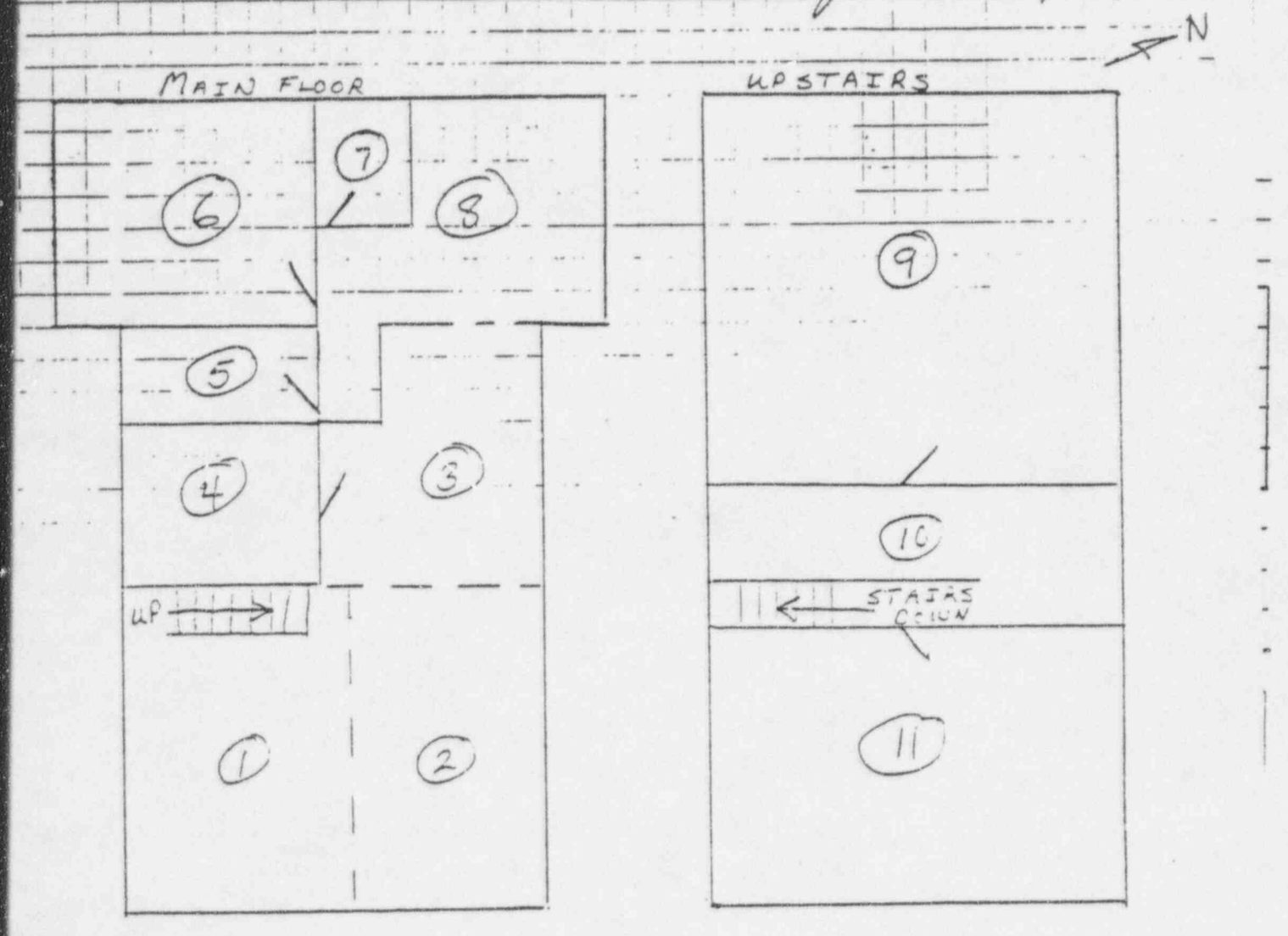
OPERATION CNSI COMPANY

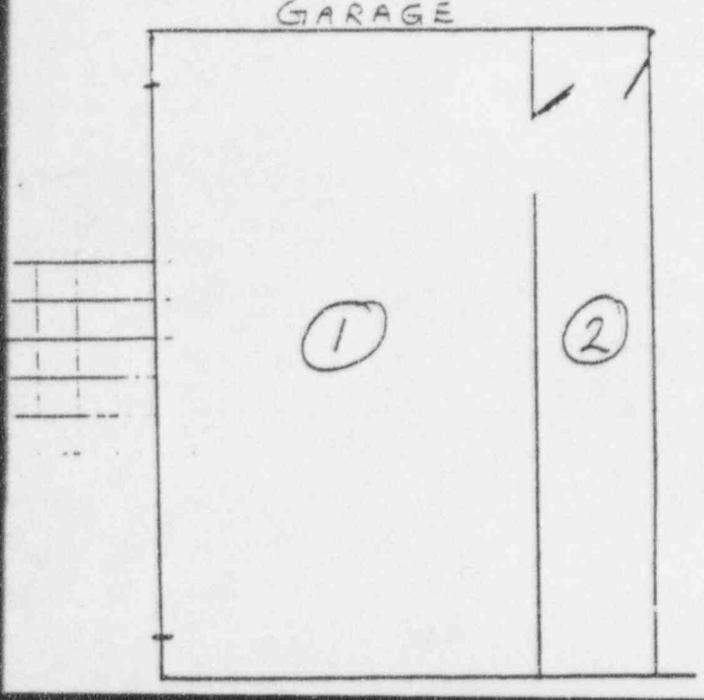
ENG 6-A/74

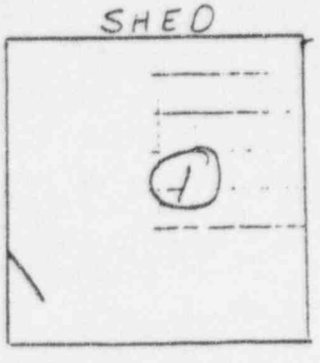
ITEM NO. LO-023 SHEET ___ OF ___ PAGE ___

JOB UMTRA

EST. BY RDF DATE 9/18/89







ATTACHMENT 2

RADIOLOGICAL SURVEY

AIR SAMPLING

RADON DAUGHTERS

Location: Lowman-012/LO-023

Date: 7-28-90

Surveyor: N.C. Kiely

LOCATION	DURATION (HR)			FLOW RATE (LPM)		ANALYSIS								
	Time		Total Time (min)			Sample		Background						
	Start	Stop		Start	Stop	Gross Count	Count Time	Gross Count	Count Time	Net Count	Eff. CPM/DPM	TAS	Table Factor	Working Level
LO-WLG-LO-023-*1 House	0907	0912	5	2.3	2.1	17	5	1	5	16	0.248	55	116	.0101
LO-WLG-LO-023-*2 House	0907	0912	5	2.4	2.35	12	5	1	5	11	0.248	65	98	.008
LO-WLG-LO-023-*1 Garage	0922	0927	5	2.3	2.1	16	5	1	5	15	0.248	60	107	.0103
LO-WLG-LO-023-*2 Garage	0922	0927	5	2.4	2.35	16	5	1	5	15	0.248	70	84	.0116

☒ ROUTINE ☐ SPECIAL (If special, indicate reason for initiation of survey below).

Wind Speed & Close up Criteria Met

Conversion Factors

RUN OF SAMPLING + COUNTING TIMES (MIN)

DECAY TIME (min)	Formula*	4	5	7	8	9	10	15	20	40	60
00	130	133	131	130	129	128	126	121	116	117	99
05	120	142	141	140	139	138	136	131	126	107	91
10	130	133	131	130	129	128	126	121	117	99	85
15	120	122	121	120	119	118	116	112	107	90	77
20	110	113	112	111	110	109	107	102	98	82	69
25	100	103	102	101	101	100	98	94	89	74	63
30	90	94	94	93	92	91	89	85	81	67	56
35	81	86	85	84		83	81	77	74	61	50
40	73	78	77	77		75	74	70	67	55	45
45	65	71	70	69		68	67	63	60	49	41
50	60	64	63	63	62	61	60	57	54	44	36

*Conversion factor, K, for modified 40-hour and the generalized formula

Pump I.D.No. _____

Date _____

$$WL = \frac{\text{Net Alpha Counts}}{E * V * ST * CT * K}$$

Where:

E – Detection system efficiency; cpm/dpm

V – Volume (flow per minute) (l/m)

ST – Sampling collection time (m)

CT – Counting time (m)

K – Conversion factor (dpm per WL)

1. Air sample collection exactly five minutes through .45u membrane filter at a flow rate of 2-10 LPM.
2. Analysis minimum of 60 minutes after collection. Count for a minimum of 5 minutes or as required to achieve a MDA of 0.005 WL.
3. Calibration Check Thorium 230 Standard I.D. No. # 136/88

Thorium Standard DPM 11180

Gross Counts, CPM 2774

CPM/DPM – Efficiency 0.248

Lab Tech: Derek J. Wetherson

0335B

016-18

L-2220 W/ 44-10
34787 W/ 24733

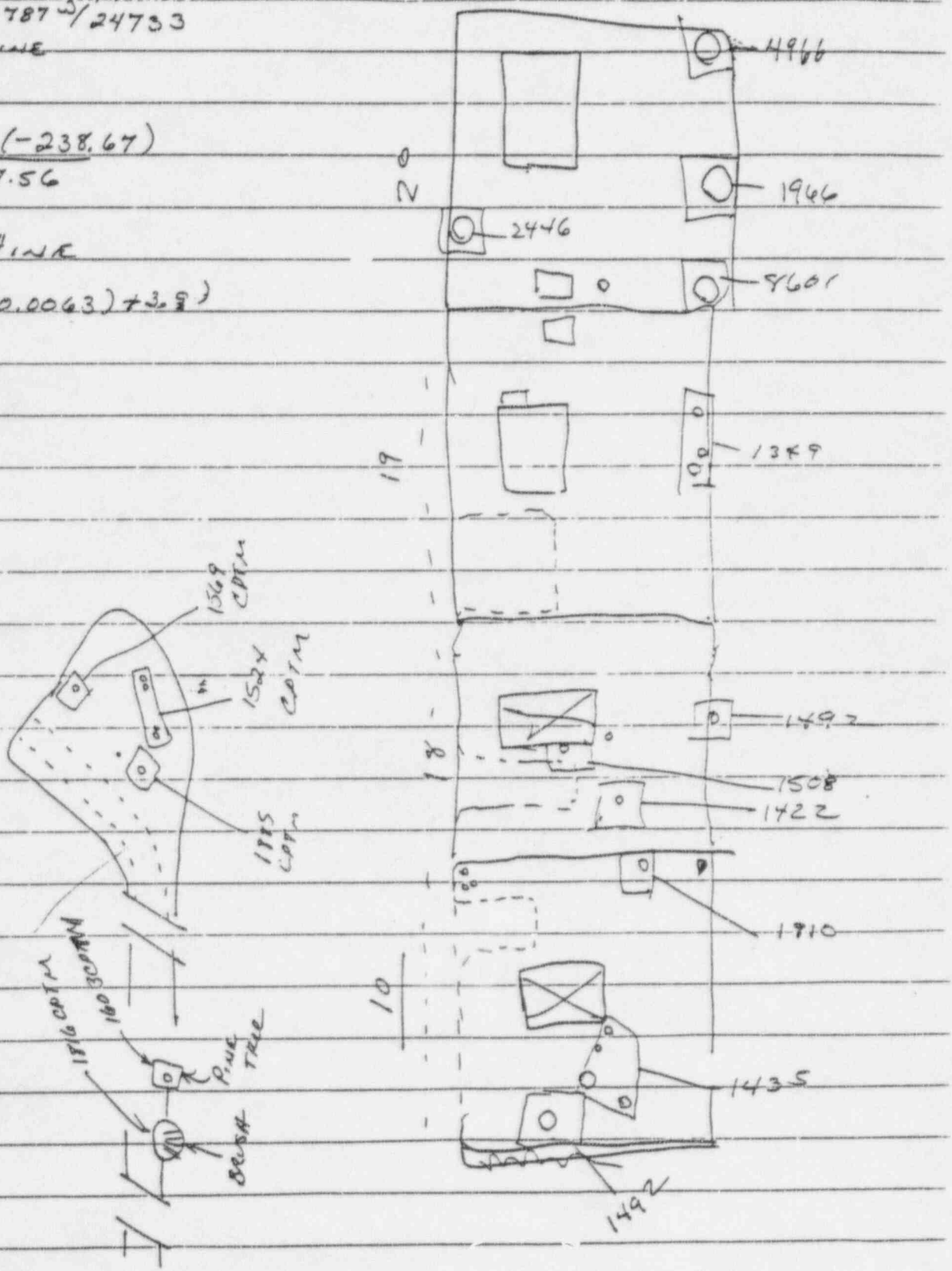
HIGH SHINE

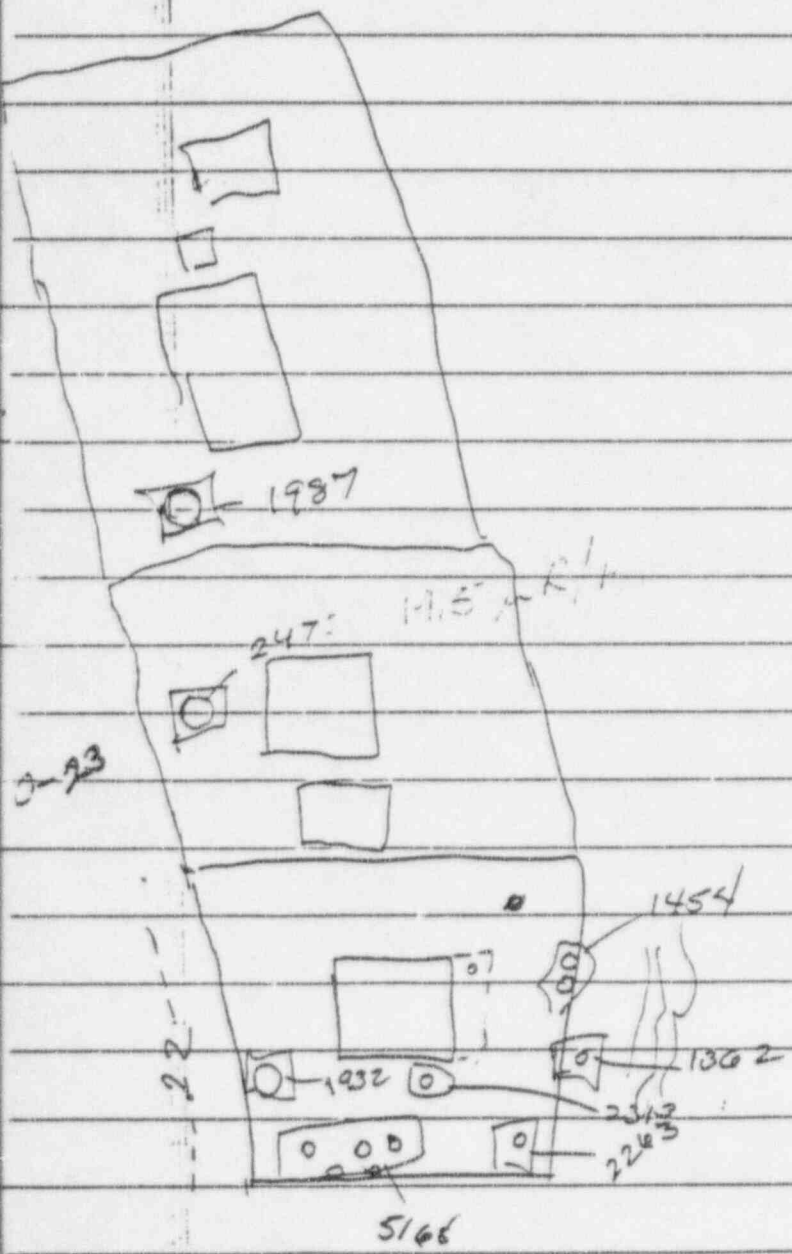
~~(CRTM)~~

CRTM - (-238.67)
147.56

LOW SHINE

(CRTM X 0.0063) + 3.8




1987
247
1454
1302
1932
2243
2263
5166

APPENDIX B

SUPPLEMENTAL STANDARDS DOCUMENTATION

ENGINEERS
AND
CONSTRUCTORS

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

HEADQUARTERS OFFICE
ONE ERIEVIEW PLAZA
CLEVELAND, OHIO U.S.A. 44114
PHONE: (216) 523-5600/TELEX: 985542

REPLY TO: MK-FERGUSON COMPANY
REMEDIAL ACTIONS
CONTRACTOR-UMTRA PROJECT
P.O. BOX 9136
ALBUQUERQUE, NEW MEXICO U.S.A. 87119

April 3, 1991

Paul McDonald
1217 South Roosevelt
Boise, Idaho 83705

SUBJECT: Application For Supplemental Standards LO-023

Dear Mr. McDonald:

In accordance with the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978, Public Law 95-604, the Department of Energy (DOE) included Property (LO-023) which you own, for remedial action. During remediation of the property it was discovered that one large blue spruce tree on the property is rooted in residual radioactive material. Excavation removed contamination to the point where further excavation could not be performed without risk of damaging the root system and killing the tree. It would be very costly, if not impossible, to replace this tree with a tree of comparable size. Additionally, contamination is present under the rock retaining wall at the river's edge. This contamination is a six inch layer under a forty foot length of the retaining wall. It would have been very costly relative to the long term benefit to remove this contaminated material due to the need to demolish, remove and rebuild the retaining wall. The area is covered with four and a half feet of backfill. MK-Ferguson did not excavate this material and has proposed that it be left in place. This recommendation is proposed per the Code of Federal Regulations 40 C.F.R. 192, Supplemental Standards. We are basing the recommendation on the criteria presented below. Your comments are requested.

A radiological characterization was performed on the area during remedial action. This characterization revealed that radiologically contaminated materials were left in place in the root system of one tree and under a section of the retaining wall footer. Drawing LO-023-010 (attached) shows the locations where contamination was left in place. The depth of the contaminated material under the tree varies from 6 to 18 inches.

Land use in this area is not expected to change in the future and it is unlikely that a person would spend an extended period of time in the area. Remediation of this area would require removal and replacement of the tree and retaining wall which would be very expensive. These facts make the cost of remediation very high relative to the long-term health benefits. Therefore, we are recommending that the contaminated material be left in place. This action is permitted under Title 40, Code of Federal Regulations, Section 192.21 and 22.

These sections of the EPA Standards, which are established for the cleanup of the Uranium Mill Tailings, allow residual radioactive materials to remain in place when certain conditions are met. The criteria defining when remedial action need not take place (Supplemental Standards) are as follows:

1. Remedial actions to satisfy the cleanup standards for land would directly produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near the site, now or in the future.

2. The estimated cost of remedial action is unreasonably high relative to the long term benefits, and the residual radioactive materials do not pose a clear present or future hazard.

The application of Supplemental Standards requires that the remedial action remove as much of the contaminated material as is reasonably possible. To meet this goal, contaminated material on all other areas of the property was excavated to meet the EPA Standards.

With the contaminated material left in place and a minimum of 6 inches of backfill covering these areas, general area radiation levels range from 15.0 to 19.5 micro R/hr. Background for the Lowman area is 15.0 micro R/hr. If a person spent 8 hours a day, 5 days a week, for 50 weeks in a 19.5 micro R/hr radiations field, he would receive about 39 millirem of gamma exposure in one year. This is about 8% of the amount allowed the general public (10 C.F.R. 20.105). The amount of contaminated material that remains in place is approximately 8 cubic yards.

In compliance with the EPA regulations found in the Code of Federal Regulations 40 192.21, we solicit your comments concerning this action. We are attaching a copy of the applicable section of the Code of Federal Regulations for your convenience in responding to this proposed action. To comply with EPA regulations, we must receive a written response with your

comments. We request your response by April 26, 1991. If you have any questions, please feel free to contact Ron Jacobs of my staff at 1-800-443-4379.

Sincerely,

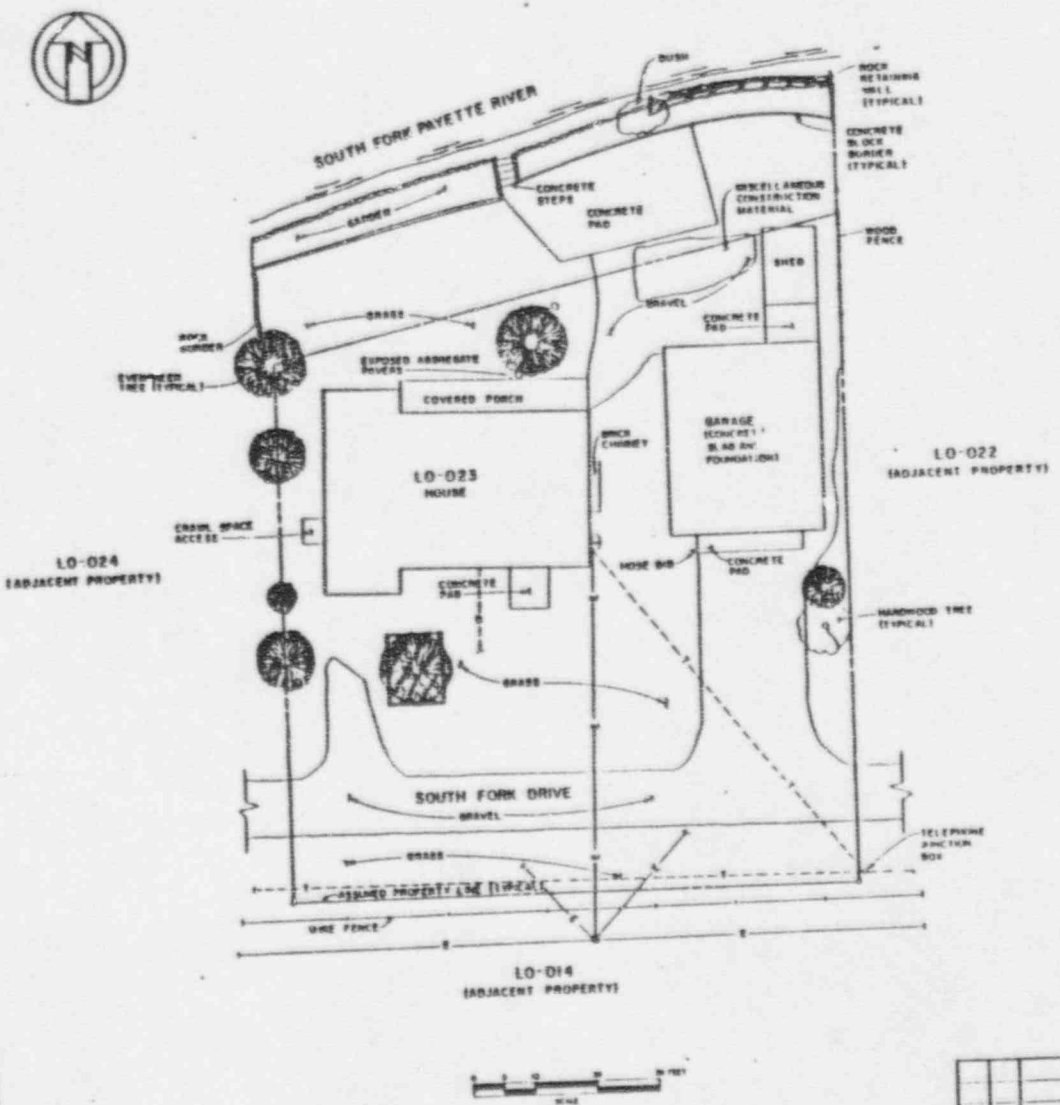
MK-FERGUSON COMPANY

J.G. Oldham
Project Director

JGO/RAP/RDJ/jlg
Enclosures

cc: w/o enclosures:
P. Mann, DOE/UMTRA
C. Cody, IDEQ
Document Control

bcc: w/o attachments:
R. Cooney
R. Pommerening
D. Charlton
~~ER~~ Jacobs 7
J. Singleton, LOW
File - EDT



LEGEND

- W — WATER LINE
- G — GAS LINE
- GM — GAS MAIN
- S — SEWER LINE
- SM — SEWER MAIN
- STM — STORM SEWER
- E — ELECTRICAL LINE
- T — TELEPHONE LINE
- TV — CABLE TV
- PROPERTY LINE
- FENCE LINE
- METER
- VALVE
- PROPERTY PIN
- POWER POLE

OVERHEAD SERVICE DENOTED BY SOLID LINE
UNDERGROUND SERVICE DENOTED BY DASHED LINE

AREAS WHERE CONTAMINATION WAS LEFT IN PLACE

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

SITE PLAN
LO-023
LOWMAN, IDAHO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

NR | NR | NR

MK-FERGUSON

DE-AC04-83AL18796
LO-023-010

FINAL REA SUBMITTAL

Record of Telephone Conversation

Date: May 7, 1991

[X] Telephone or [ ] Other _____

Between: R. Jacobs RDJ and P. McDonald of LO-023 (owner)

Subject: Application of Supplemental Standards

For Information: A letter was sent to Mr. McDonald requesting his comments on the application of supplemental standards at his property (LO-023). His comments were requested by April 26, 1991.

Discussion: I asked if he had received the letter and if he had any comments. He said he did not have a problem with the application of supplemental standards on his property. I then told him the "Record of Telephone Conversation" would stand at his response.

Action: _____

Route To: _____

Ronald D Jacobs
5/7/91

ENGINEERS
AND
CONSTRUCTORS

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

HEADQUARTERS OFFICE
ONE ERIEVIEW PLAZA
CLEVELAND OHIO U S A 44114
PHONE (216) 523-5600/TELEX 985542

REPLY TO MK-FERGUSON COMPANY
REMEDIAL ACTIONS
CONTRACTOR-UMTRA PROJECT
PO BOX 9136
ALBUQUERQUE NEW MEXICO U S A 87119

May 8, 1991

Mr. Clyde Cody
Division of Environmental Quality
Boise Field Office
1410 North Hilton Street, Suite 101
Boise, ID 83706-1290

SUBJECT: Application For Supplemental Standards LO-023

Dear Mr. Cody:

During remediation of the subject vicinity property, it was discovered that one large blue spruce tree on the property is rooted in residual radioactive material. Excavation removed contamination to the point where further excavation could not be performed without risk of damaging the root system and killing the tree. It would be very costly, if not impossible, to replace this tree with a tree of comparable size. Additionally, contamination is present under the rock retaining wall at the river's edge. This contamination is a six inch layer under a forty foot length of the retaining wall. It would have been very costly relative to the long term benefit to remove this contaminated material due to the need to demolish, remove and rebuild the retaining wall. The area is covered with four and a half feet of backfill. MK-Ferguson did not excavate this material and has proposed that it be left in place. This recommendation is proposed per the Code of Federal Regulations 40 C.F.R. 192, Supplemental Standards. We are basing the recommendation on the criteria presented below. Your comments/concurrence is requested.

A radiological characterization was performed on the area during remedial action. This characterization revealed that radiologically contaminated materials were left in place in the root system of one tree and under a section of the retaining wall footer. Drawing LO-023-010 (attached) shows the locations where contamination was left in place. The depth of the contaminated material under the tree varies from 6 to 18 inches.

Land use in this area is not expected to change in the future and it is unlikely that a person would spend an extended period of time in the area. Remediation of this area would require removal and replacement of the tree and retaining wall which would be very expensive. These facts make the cost of remediation very high relative to the long-term health benefits. Therefore, we are recommending that the contaminated material be left in place. This action is permitted under Title 40, Code of Federal Regulations, Section 192.21 and 22.

These sections of the EPA Standards, which are established for the cleanup of the Uranium Mill Tailings, allow residual radioactive materials to remain in place when certain conditions are met. The criteria defining when remedial action need not take place (Supplemental Standards) are as follows:

1. Remedial actions to satisfy the cleanup standards for land would directly produce environmental harm that is clearly excessive compared to the health benefits to persons living on or near the site, now or in the future.

2. The estimated cost of remedial action is unreasonably high relative to the long term benefits, and the residual radioactive materials do not pose a clear present or future hazard.

The application of Supplemental Standards requires that the remedial action remove as much of the contaminated material as is reasonably possible. To meet this goal, contaminated material on all other areas of the property was excavated to meet the EPA Standards.

With the contaminated material left in place and a minimum of 6 inches of backfill covering these areas, general area radiation levels range from 15.0 to 19.5 micro R/hr. Background for the Lowman area is 15.0 micro R/hr. If a person spent 8 hours a day, 5 days a week, for 50 weeks in a 19.5 micro R/hr radiation field, he would receive about 39 millirem of gamma exposure in one year. This is about 8% of the amount allowed the general public (10 C.F.R. 20.105). The amount of contaminated material that remains in place is approximately 8 cubic yards.

In compliance with the EPA regulations found in the Code of Federal Regulations 40 192.21, we solicit your comments concerning this action. We are attaching a copy of the applicable section of the Code of Federal Regulations for your convenience in responding to this proposed action. To comply with EPA regulations, we must receive a written response with your

comments/concurrence. We request your response by May 28, 1991. If you have any questions, please feel free to contact Ron Jacobs of my staff at 1-800-443-4379.

Sincerely,

MK-FERGUSON COMPANY

J.G. Oldham
Project Director

JGO/RAP/RDJ/jlg
Enclosures

cc: w/o enclosures:
P. Mann, DOE/UMTRA
File - VP

bcc: w/o attachments:
M. Albertin
W. Zebick
R. Cooney
R. Pommerening
D. Charlton
R. Jacobs
J. Singleton, LOW
File - EDT

LO-023
FILE

IDAHO DEPARTMENT
OF HEALTH AND WELFARE

DIVISION OF
ENVIRONMENTAL QUALITY

TREASURE ALLEY AREA OFFICE
142 N. Hilton
Boise, Idaho 83706-1260
(208) 334-0550

1410 North Hilton, Suite 101, Statehouse Mail, Boise, ID 83720-9000, (208) 334-0550

Cecil D. Andrus, Governor Richard P. Donovan, Director

May 28, 1991

MK-FERGUSON CO.
ALBUQUERQUE

JUN 03 1991

RECEIVED

Mr. J.G. Oldham
MK-Ferguson Company
Remedial Actions Contractor
UMTRA Project
P.O. Box 9136
Albuquerque, New Mexico 87119

Subject: Application of Supplemental Standard to LO-014, LO-019, LO-023 and LO-024

Dear Mr. Oldham:

Based on the information you provided us, and the concurrence of the property owners for the above referenced vicinity properties, the state agrees with the application of supplemental standards at these locations to avoid the destruction of the trees on the properties.

Sincerely,

Clyde A. Cody

Clyde A. Cody
Superfund Project Officer

CAC/gmc

APPENDIX C

LEGAL DESCRIPTION

LEGAL DESCRIPTION

The property which is the subject of this Completion Report, the address of which is South Fork Summer Home Sites, Lot #7, Lowman, Idaho, is more particularly described in the Boise County Recorder's Office, as follows:

Lot 7, River Front Home Sites, Lowman, Boise County, Idaho.