WM-39

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

URFO-6

91-0660

VICINITY PROPERTY COMPLETION REPORT

AT

DU-144A S
TRUCK BY-PASS (CAMINO DEL RIO)
DURANGO, COLORADO

May 16, 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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 SUMMARY

PROPERTY NUMBER:	DU-144A
PROPERTY ADDRESS:	TRUCK BY-PASS (CAMINO DEL RIO) DURANGO, COLORADO
PROPERTY OWNER:	COLORADO DEPARTMENT OF HIGHWAYS 214 WEST 6th STREET DURANGO, COLORADO 81301
PROPERTY CATEGORY:	OPEN LAND
REMEDIAL ACTION CONTRACTOR:	MK-FERGUSON COMPANY
CONSTRUCTION SUBCONTRACTOR:	*
RADIOLOGICAL CONTRACTOR:	CHEM-NUCLEAR ENVIRONMENTAL SERVICES, INC.
REA APPROVED:	FEBRUARY 1, 1990
REMEDIAL ACTION STARTED:	*
REMEDIAL ACTION COMPLETED: (APPENDIX C SIGNED)	*
VOLUME OF MATERIAL REMOVED:	*

* Remedial action on this property was performed in conjunction with the Durango Site remediation and completed by the site subcontractor.

1.0 SUMMARY

Remedial action was completed on Vicinity Property DU-144A. All work on the property was performed as part of the Durango Site remediation.

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. This completion report recommends that the property be awarded with final certification.

2.0 OPERATIONS SUMMARY

2.1 Remedial Action Plan

The basic remedial action on this property was performed according to the Remedial Action Plan. The Remedial Action Plan called for remediation of the property by the Durango Site subcontractor.

2.2 Previously Unidentified Contamination

No new areas of contamination were identified during remedial action.

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 DU-144A-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 198 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 to 114 pCi/g, as described in Table 3.1.

Drawings DU-144A-020, DU-144A-021 and DU-144A-022 show 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 Durango site is 1.5 pCi/g Ra-226.

Interior:

There are no structures on this property.

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

_____ 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 exist

Brief Condition Description and Justification:

Five areas are proposed for application of supplemental standards.

Areas A, B and C have been excavated down to the water table and Ra-226 concentration in these Areas range from 40 pCi/g to 114 pCi/g. Further excavation in Areas A and C would require Z-pile along the rivers edge, pumping operations and water treatment. Continued excavation of Area B would require excavation of a 30 vertical cliff of radiological clean slag. As agreed upon by the RAC, TSC, CDH, DOE and NRC further excavation in these areas was not warranted due to the high cost relative to the long term benefits. These areas are covered with a minimum of two feet of backfill and riprap per the Durango Site Restoration Plan. With this cover in place general area exposure rates are near background levels. Background for the Durango Site is 14 micro R/hr. The estimated volume of contaminated material that remains in these areas is 125 cy.

Area D is presently covered with 3 feet of riprap. Contamination is sporadically distributed throughout the 2.5 foot layer of soil beneath the riprap. Ra-226 concentrations is soil in this area range from <1.5 to 35 pCi/g. General area exposure rates are near background. The estimated volume of contaminated material that remains in this area is 120 cy.

Area F is presently covered with 3 feet of riprap. Contamination is sporadically distributed throughout the 2 foot layer of soil beneath the riprap. Ra-226 concentrations in soil in this area range from <1.5 to 166.0 pCi/g. General area gamma exposure rates range from 16 to 25 micro R/hr. The estimated volume of contaminated material that remains in this area is a 600 cy.

Contamination in Area G does not exceed EPA standards for Ra-226; however, a lens of uranium was exposed at the high water mark on the bank of the Animas River. This lens varies from 1 to 6 inches in thickness. The extent to which the lens extends on to the property is undetermined due to an over burden of radiologically clean material that varies in thickness from 2 to 25 feet. This overburden consists mostly of slag generated by a lead smelter that operated from the 1880's to 1930. Ra-226 concentration in soil in the Uranium Lens Area range from <1.5 to 12.1 pCi/g. The exposed portions of the uranium lens was covered with 2 feet backfill and riprap per the Durango Site Restoration Plan. With 2 feet of backfill and riprap over the exposed portion of the lens, exposure rates are near background levels.

All the Supplemental Standards areas are covered with a minimum of 2 feet of backfill and riprap.

General area gamma exposure rates on the property range from 14 to 25 micro R/hr. If a man spent 8 hours a day, 5 days a week, 50 weeks a year in a 25 micro R/hr. radiation field, he would receive about 50 millirem of gamma exposure in one year. This is one tenth the amount allowed the general public (10 CFR 20.105). The amount of contamination material that will remain in place is approximately 845 cubic yards.

The cost of removing the contaminated material would have been excessive, due to the need to remove the existing riprap and slag overburden from these areas and the need for additional engineering measures to achieve the work, compared to the actual health benefits realized.

Additional cost without application of Supplemental Standards = $237,500.00.

This is a 304 percent increase over the estimated remedial action cost for the preferred option.

Yes	No	If Supplemental Standards are Applied:
X	____	1. Open Land?
____	X	2. Occupied Building?
____	N/A	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?
____	N/A	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 C).

in REA

Estimated volume of contaminated material to remain = 845 (cy).

Contaminated area to remain = 1150 (sy).

Exposure rate in contaminated area = 14 to 25 (micro R/hr) [at 3 feet above surface].

The Ra-226 concentration in soil in contaminated area = <1.5 to 166.0 (pCi/g).

3.2 Recommendation for Certification

3.2.1 Exterior:

One area of contamination was 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 for Supplemental Standards, for the UMTRA Project.

3.2.2 Interior:

There are no structures on this property.

Table 3.1
VERIFICATION SOIL SAMPLE SURVEY
Property DU-144A S

LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (pCi/g)
A-29-16	15	2
A-29-17	15	1
A-29-21	46	6
A-29-22	34	3
A-39-02	40	2
A-39-08	15	6
A-39-09	15	1
A-39-13	21	3
A-39-14	15	2
A-39-19	15	3
A-39-20	18	2
A-39-25	21	3
A-40-21	15	5
A-50-01	18	3
A-50-13	18	1
A-50-24	18	2
B-07-05	15	2
C-01-21	15	2
C-09-01	91	6
C-09-02	91	3
C-09-03	15	1
C-09-07	21	1
C-09-08	168	2
C-09-09	116	2
C-09-10	61	1
C-09-14	174	5
C-09-15	113	14
C-10-06	18	13
C-10-07	15	4
C-10-08	15	3
C-10-09	15	5
*C-10-11	162	20
C-10-12	82	8
C-10-13	162	13
C-10-14	85	10
C-10-15	49	3
C-10-18	149	11
C-10-19	131	3
C-10-20	137	6
C-11-11	61	12
C-11-12	61	2

* Areas where Supplemental Standards apply.

Table 3.1 Cont.
VERIFICATION SOIL SAMPLE SURVEY
Property DU-144A S

	LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (pCi/g)
	C-11-16	91	2
	C-11-17	76	2
	C-11-18	37	2
	C-11-19	61	10
	C-11-20	61	9
*	C-11-23	110	43
	C-11-24	91	10
	C-11-25	88	8
	C-12-16	15	1
	C-12-21	61	2
	C-12-22	61	9
*	C-19-04	91	20
	C-19-05	101	1
	C-20-01	110	9
	C-20-02	73	5
	C-20-03	40	4
	C-20-04	37	6
	C-20-06	59	2
	C-20-07	177	5
	C-20-08	189	3
	C-20-09	110	6
	C-20-10	37	9
	C-20-13	210	8
	C-20-14	213	12
	C-20-15	37	8
	C-20-19	107	8
	C-20-20	82	13
	C-20-24	85	7
	C-20-25	64	9
	C-20-11	37	11
	C-21-16	113	4
	C-21-17	49	9
	C-21-21	79	15
	C-21-22	134	6
	C-21-23	15	4
	C-28-05	46	12
	C-29-01	43	12
	C-29-02	207	12
	C-29-03	98	15
	C-29-04	43	1
	C-29-06	186	7
	C-29-07	341	8

* Areas where Supplemental Standards apply.

Table 3.1 Cont.
VERIFICATION SOIL SAMPLE SURVEY
Property DU-144A S

	LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (pCi/g)
	C-29-08	238	3
	C-29-09	162	7
	C-29-10	88	2
*	C-29-12	250	23
	C-29-13	290	12
	C-29-14	399	3
	C-29-15	155	5
	C-29-17	158	4
*	C-29-18	198	43
	C-29-19	219	3
	C-29-20	85	7
	C-29-23	37	9
	C-29-24	79	6
	C-29-25	107	5
	C-30-11	60	2
	C-30-16	73	9
	C-30-17	15	16
	C-30-21	43	2
	C-30-22	73	5
	C-30-23	18	1
	C-37-04	49	3
	C-37-05	64	1
	C-37-09	73	7
	C-37-10	21	9
	C-37-15	31	3
	C-38-01	40	2
	C-38-02	61	2
	C-38-03	61	3
	C-38-06	37	3
	C-38-07	46	1
	C-38-08	64	3
	C-38-09	15	2
	C-38-11	40	2
	C-38-12	58	8
	C-38-13	67	8
	C-38-14	37	3
	C-38-16	40	2
	C-38-17	70	8
	C-38-18	37	1
	C-38-19	42	2
	C-38-22	55	1

* Areas where Supplemental Standards apply.

Table 3.1 Cont.
VERIFICATION SOIL SAMPLE SURVEY
Property DU-144A S

	LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (pCi/g)
	C-38-23	24	1
	C-38-24	37	4
	C-38-25	15	2
	C-46-02	122	12
	C-46-03	34	2
	C-46-04	31	1
	C-46-05	15	2
	C-46-07	189	2
	C-46-08	61	3
	C-46-09	70	6
	C-46-10	24	4
	C-46-12	55	3
	C-46-13	43	3
	C-46-14	110	5
	C-46-15	34	3
	C-46-17	58	3
	C-46-18	79	3
	C-46-19	116	8
	C-46-20	27	4
	C-46-21	79	15
	C-46-22	58	2
	C-46-23	91	2
	C-46-24	122	10
	C-46-25	55	4
	E-06-01	76	4
	E-06-02	58	4
	E-06-03	37	5
	E-06-04	113	9
	E-06-05	61	5
	E-06-06	98	4
	E-06-07	67	3
	E-06-08	137	10
	E-06-09	122	12
	E-06-10	73	4
	E-06-11	119	4
*	E-06-12	94	22
	E-06-13	131	3
	E-06-14	128	5
	E-06-15	49	6
	E-06-16	168	4
*	E-06-17	122	17

* Areas where Supplemental Standards apply.

Table 3.1 Cont.
VERIFICATION SOIL SAMPLE SURVEY
Property DU-144A S

LOCATION (GRID NO.)	DEPTH (cm.)	CONCENTRATION (pCi/g)
E-06-18	125	8
E-06-19	101	7
E-06-20	55	14
E-06-21	226	2
E-06-22	174	3
E-06-23	58	1
E-06-24	73	2
E-06-25	70	2
E-07-11	15	3
E-13-05	314	3
E-13-10	436	3
E-13-15	146	3
E-13-20	235	2
E-13-25	323	3
E-14-01	280	16
E-14-02	226	3
E-14-03	186	10
* E-14-04	58	22
E-14-05	15	3
E-14-06	192	7
E-14-07	238	3
E-14-08	107	2
E-14-09	40	4
E-14-10	15	2
* E-14-11	104	17
E-14-12	247	4
E-14-13	85	9
E-14-14	61	9
E-14-16	143	3
* E-14-17	88	29 ✓
* E-14-18	61	114
* E-14-21	183	40
E-14-22	55	6

* Areas where Supplemental Standards apply.

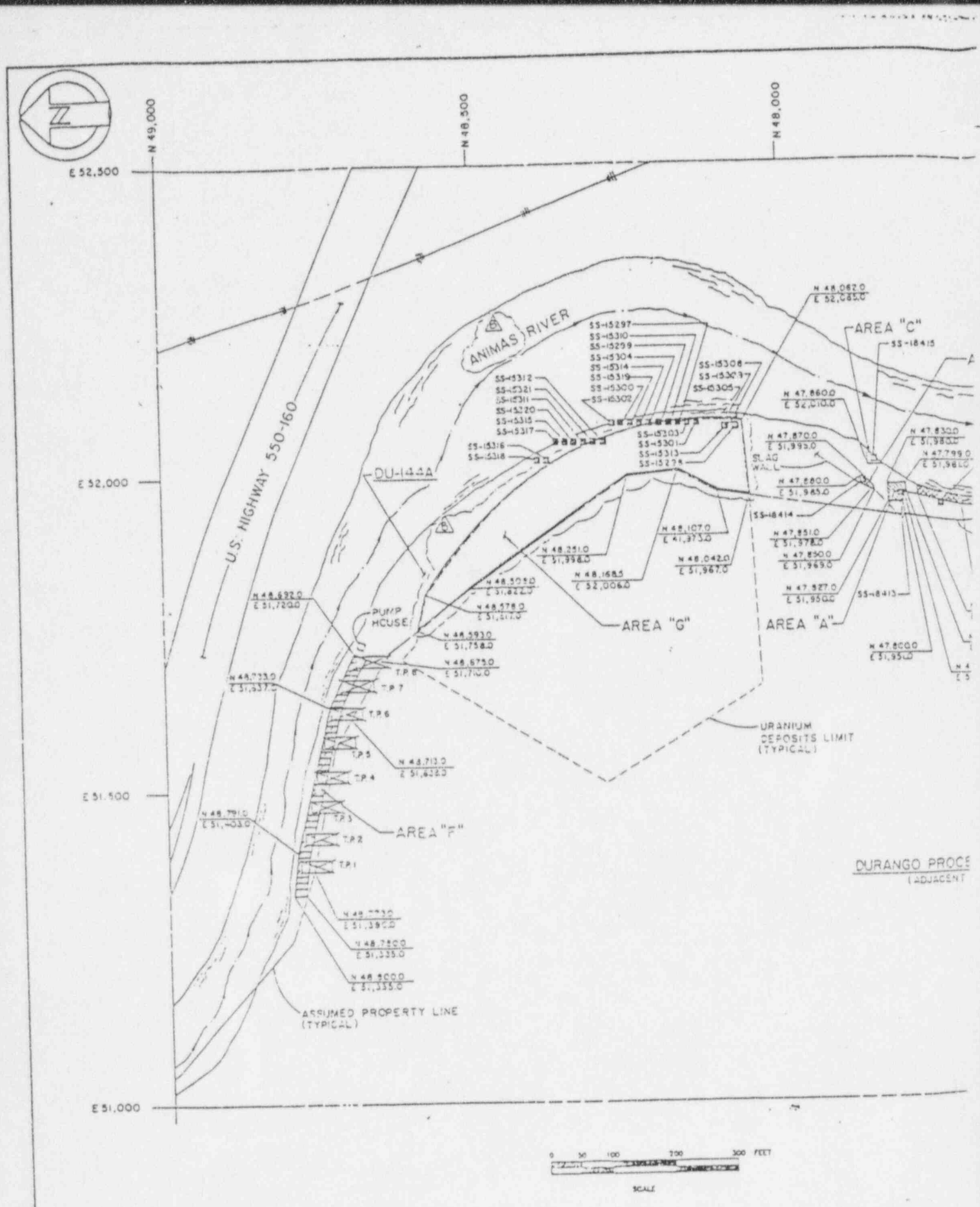
4.0 REFERENCES

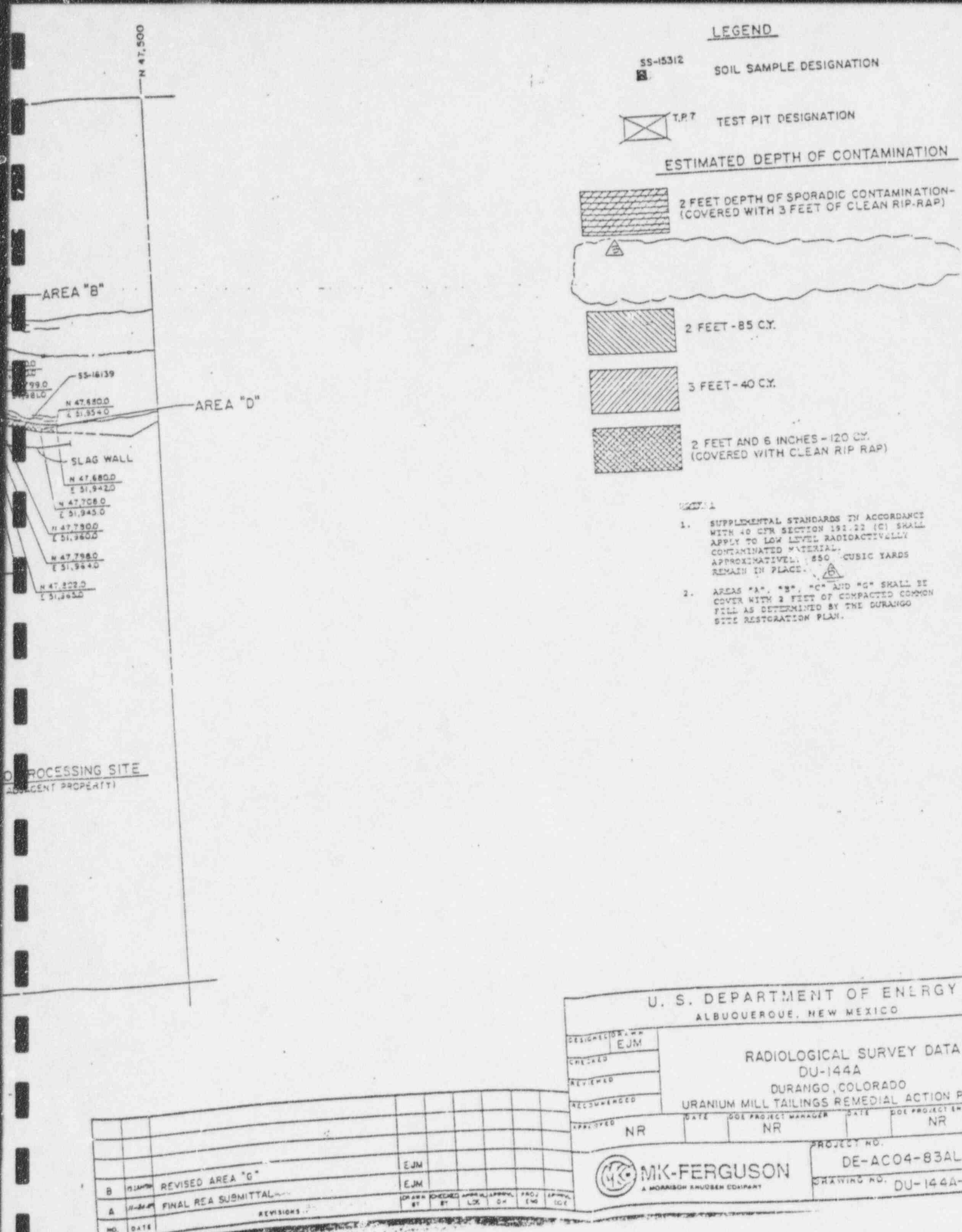
4.1 The Radiological and Engineering Assessment for Durango, Property DU-144A; MK-Ferguson Company/Chem-Nuclear Environmental Services, Inc.; Albuquerque, New Mexico; February 1, 1990.

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

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

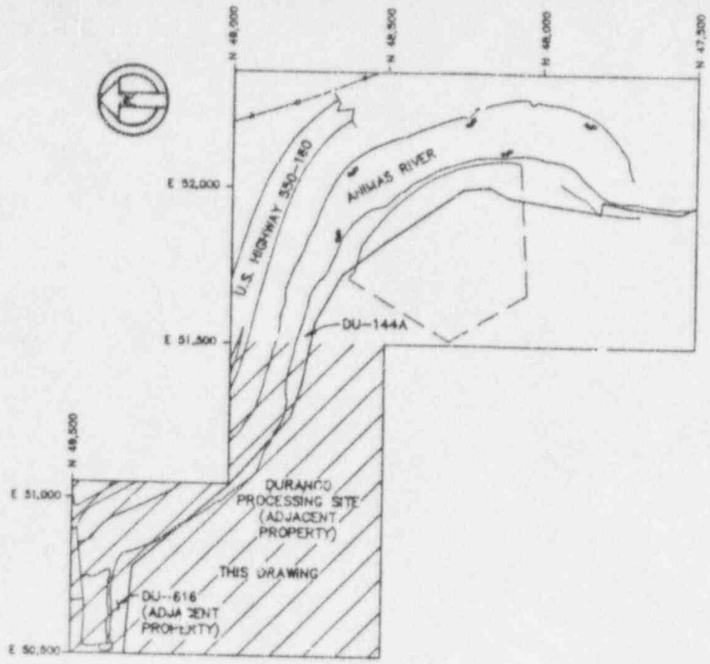
4.4 Title 40, Code of Federal Regulations, Part 192.12-23; U.S. Environmental Protection Agency; Washington, D.C.; July 1983.


N 49,000
N 48,500
N 48,000
E 52,500
E 52,000
E 51,500
E 51,000
U.S. HIGHWAY 550-160
ANIMAS RIVER
DU-144A
AREA "C"
AREA "G"
AREA "A"
AREA "F"
SLAG WALL
PUMP HOUSE
URANIUM DEPOSITS LIMIT (TYPICAL)
ASSUMED PROPERTY LINE (TYPICAL)
DURANGO PROCE
(ADJACENT
SCALE
0 50 100 200 300 FEET



LEGEND
SS-15312
SOIL SAMPLE DESIGNATION
T.P.7
TEST PIT DESIGNATION
ESTIMATED DEPTH OF CONTAMINATION
2 FEET DEPTH OF SPORADIC CONTAMINATION-
(COVERED WITH 3 FEET OF CLEAN RIP-RAP)
2 FEET - 85 C.Y.
3 FEET - 40 C.Y.
2 FEET AND 6 INCHES - 120 C.Y.
(COVERED WITH CLEAN RIP RAP)
1. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR SECTION 192.22 (C) SHALL APPLY TO LOW LEVEL RADIOACTIVALLY CONTAMINATED MATERIAL. APPROXIMATIVELY 850 CUBIC YARDS REMAIN IN PLACE.
2. AREAS "A", "B", "C" AND "G" SHALL BE COVER WITH 2 FEET OF COMPACTED COMMON FILL AS DETERMINED BY THE DURANGO SITE RESTORATION PLAN.
N 47,500
AREA "B"
SS-16139
N 47,680.0
E 51,954.0
AREA "D"
SLAG WALL
N 47,680.0
E 51,942.0
N 47,708.0
E 51,945.0
N 47,790.0
E 51,960.0
N 47,798.0
E 51,964.0
N 47,802.0
E 51,945.0
PROCESSING SITE
ADJACENT PROPERTY)
U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO
DESIGNED
DRAWN
EJM
CHECKED
REVIEWED
RECOMMENDED
APPROVED
NR
DATE
DOE PROJECT MANAGER
NR
DATE
DOE PROJECT ENG
NR
RADIOLOGICAL SURVEY DATA
DU-144A
DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION P
MK-FERGUSON
A MORRISON KNUDSEN COMPANY
PROJECT NO.
DE-AC04-83AL
DRAWING NO.
DU-144A-
EJM
B
REVISED AREA "G"
EJM
A
FINAL REA SUBMITTAL
REVISIONS
NO.
DATE
DRAWN BY
CHECKED BY

DU-144A-017)



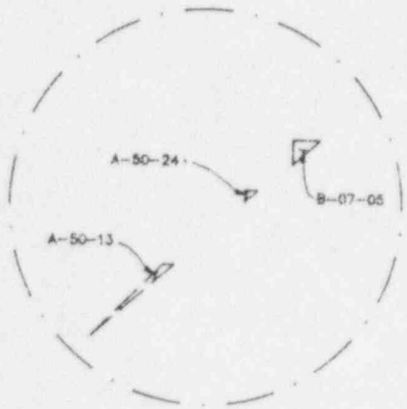
KEY PLAN

0 150 300 600 900 FEET

SCALE

VERIFICATION SOIL SAMPLES

A-29-16	C-09-03
A-29-17	C-09-07
A-29-21	C-09-08
A-29-22	C-09-09
A-39-02	C-09-10
A-39-08	C-09-14
A-39-09	C-09-15
A-39-13	C-10-06
A-39-14	C-10-07
A-39-19	C-10-08
A-39-20	C-10-09
A-39-25	C-10-11
A-40-21	C-10-12
A-50-01	C-10-13
A-50-13	C-10-14
A-50-24	C-10-15
B-07-05	C-10-18
C-01-21	C-10-19
C-09-01	C-10-20
C-09-02	



ENLARGED VERIFICATION SOIL SAMPLE LOCATION PLAN
(N.T.S.)

NOTES:

1. SEE DRAWINGS DU-144A-017 AND DU-144A-018 FOR VERIFICATION SOIL SAMPLES (PERTAINING TO OTHER PORTIONS OF THIS PROPERTY) NOT SHOWN THIS DRAWING.
2. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR SECTION 192.22 (C) SHALL APPLY TO LOW LEVEL RADIOACTIVELY CONTAMINATED MATERIAL. APPROXIMATELY 517 CUBIC YARDS REMAIN IN PLACE.
3. ALL VERIFICATION SOIL SAMPLES CONTAIN THE PREFIX DUR-SV.

DTE	REVISIONS	DRAWN BY	CHECKED BY	APPROV. DOE	APPROVAL DOE	PROJ. ENG.	APPROV. DOE
	ISSUE FOR CERTIFICATION	PGC					

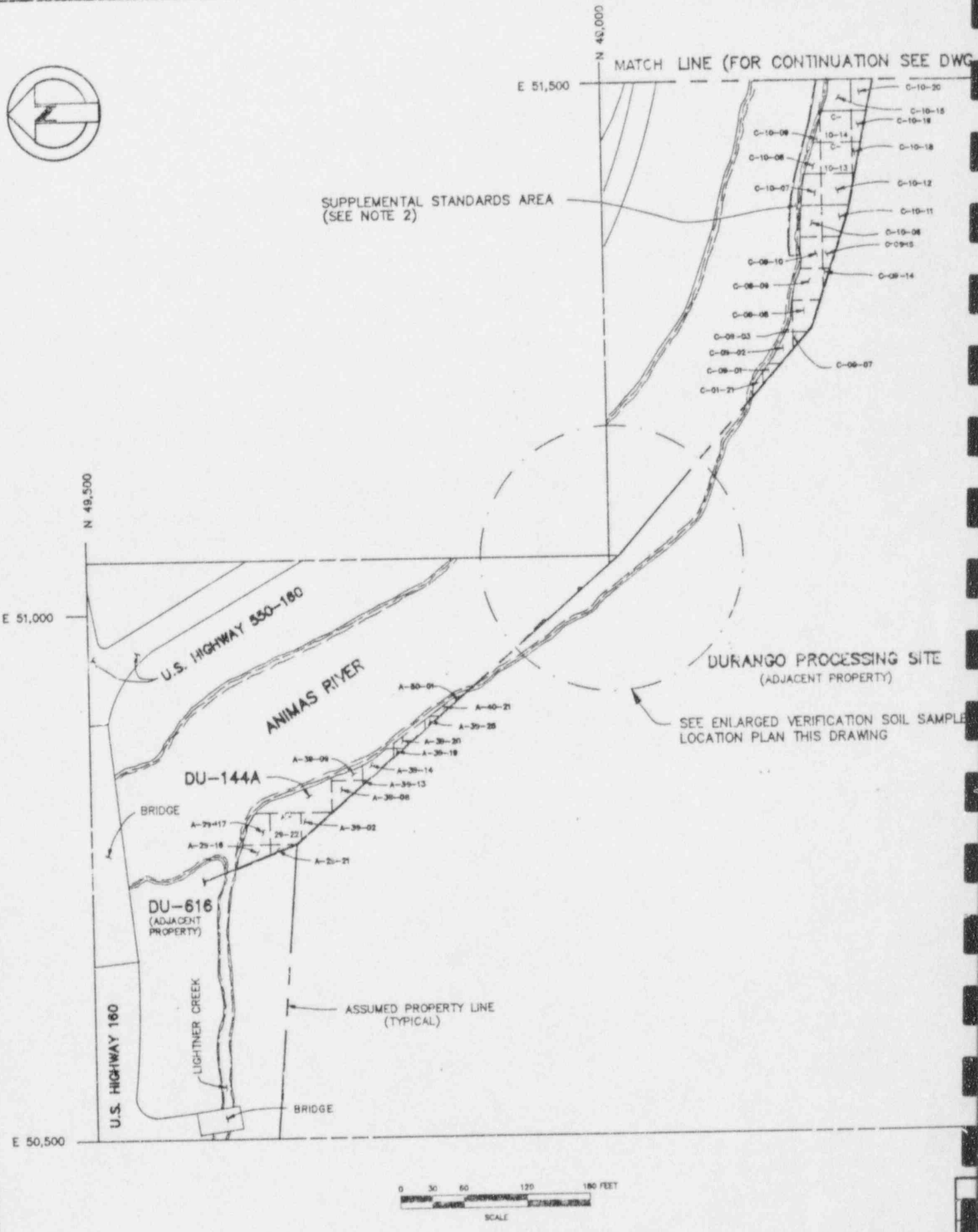
U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

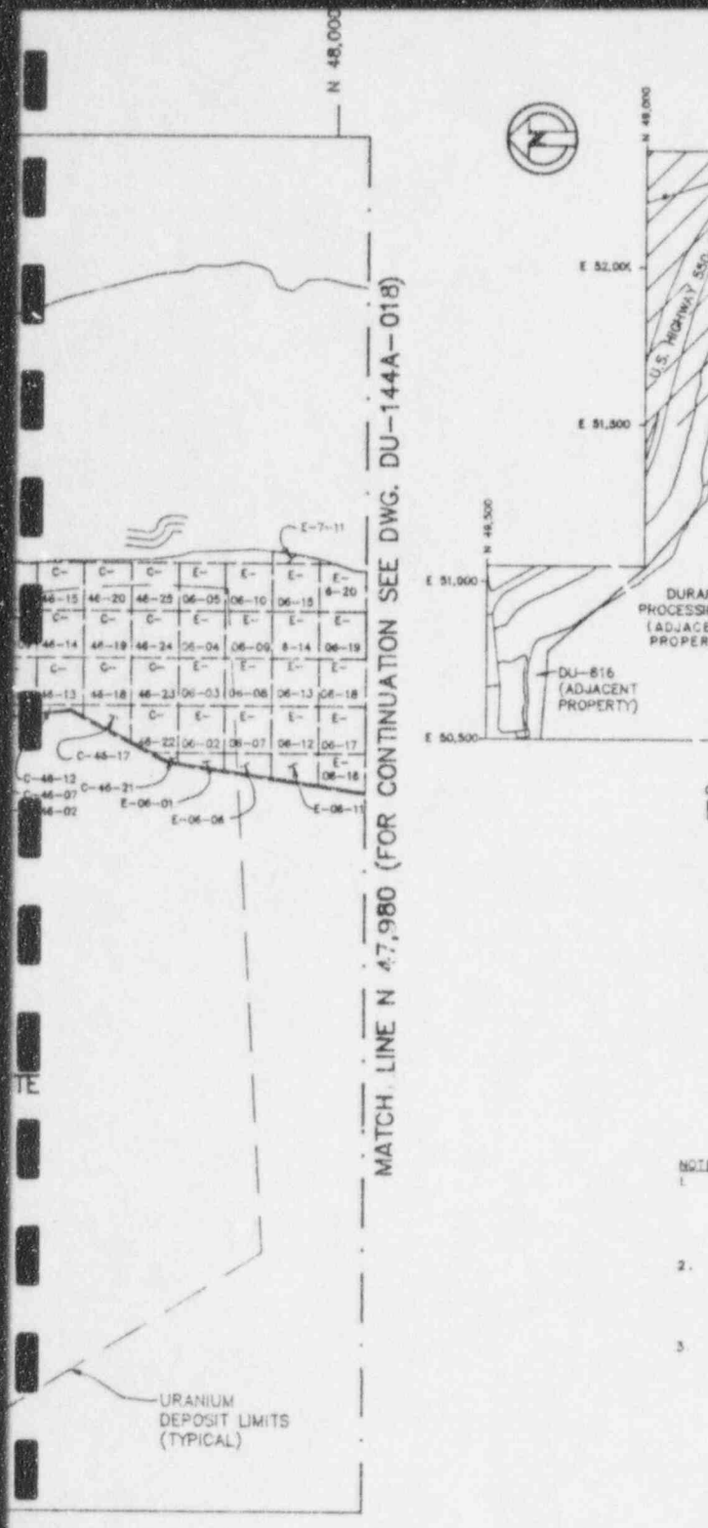
DESIGNED | DRAWN: PGC
CHECKED
REVIEWED
RECOMMENDED
APPROVED: NR | DATE | DOE PROJECT MANAGER: NR | DATE | DOE PROJECT ENGINEER: NR | DATE

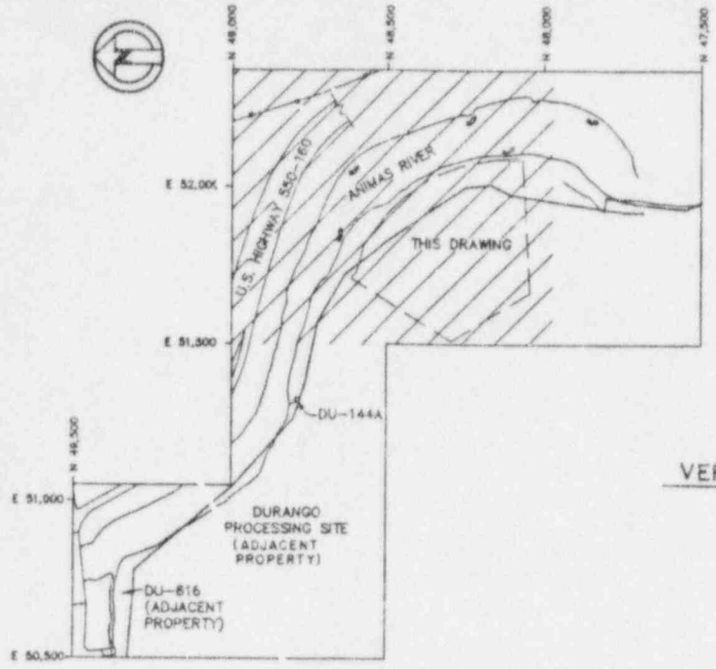
CERTIFICATION RADIOLOGICAL PLAN
DU-144A
SHEET 1 OF 3
DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO.: DE-AC04-83AL18796
DRAWING NO.: DU-144A-016 | REV. A


N 50,000
MATCH LINE (FOR CONTINUATION SEE DWG
E 51,500
SUPPLEMENTAL STANDARDS AREA
(SEE NOTE 2)
N 49,500
E 51,000
U.S. HIGHWAY 550-160
ANIMAS RIVER
DURANGO PROCESSING SITE
(ADJACENT PROPERTY)
SEE ENLARGED VERIFICATION SOIL SAMPLE
LOCATION PLAN THIS DRAWING
DU-144A
BRIDGE
DU-616
(ADJACENT
PROPERTY)
LIGHTNER CREEK
ASSUMED PROPERTY LINE
(TYPICAL)
U.S. HIGHWAY 160
BRIDGE
E 50,500
0 30 60 120 180 FEET
SCALE





KEY PLAN

0 150 300 600 900 FEET

SCALE

VERIFICATION SOIL SAMPLES

C-11-11	C-37-09
C-11-12	C-37-10
C-11-16	C-37-15
C-11-17	C-38-01
C-11-18	C-38-02
C-11-19	C-38-03
C-11-20	C-38-06
C-11-23	C-38-07
C-11-24	C-38-08
C-11-25	C-38-09
C-19-04	C-38-11
C-19-05	C-38-12
C-20-01	C-38-13
C-20-02	C-38-14
C-20-03	C-38-16
C-20-04	C-38-17
C-20-06	C-38-18
C-20-07	C-38-19
C-20-08	C-38-22
C-20-09	C-38-23
C-20-10	C-38-24
C-20-13	C-38-25
C-20-14	C-46-02
C-20-15	C-46-03
C-20-19	C-46-04
C-20-20	C-46-05
C-20-24	C-46-07
C-20-25	C-46-08
C-21-11	C-46-09
C-21-16	C-46-10
C-21-17	C-46-12
C-21-21	C-46-13
C-21-22	C-46-14
C-21-23	C-46-15
C-28-05	C-46-17
C-29-01	C-46-18
C-29-02	C-46-19
C-29-03	C-46-20
C-29-04	C-46-21
C-29-06	C-46-22
C-29-07	C-46-23
C-29-08	C-46-24
C-29-09	C-46-25
C-29-10	E-06-01
C-29-12	E-06-02
C-29-13	E-06-03
C-29-14	E-06-04
C-29-15	E-06-05
C-29-17	E-06-06
C-29-18	E-06-07
C-29-19	E-06-08
C-29-20	E-06-09
C-29-23	E-06-10
C-29-24	E-06-11
C-29-25	E-06-12
C-30-11	E-06-13
C-30-16	E-06-14
C-30-17	E-06-15
C-30-21	E-06-16
C-30-22	E-06-17
C-30-23	E-06-18
C-37-04	E-06-19
C-37-05	E-06-20
	E-07-11

NOTES

1. SEE DRAWINGS DU-144A-016 AND DU-144A-018 FOR VERIFICATION SOIL SAMPLES (PERTAINING TO OTHER PORTIONS OF THIS PROPERTY) NOT SHOWN THIS DRAWING.
2. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR SECTION 192.22 (C) SHALL APPLY TO LOW LEVEL RADIOACTIVELY CONTAMINATED MATERIAL. APPROXIMATELY 517 CUBIC YARDS REMAIN IN PLACE.
3. ALL VERIFICATION SOIL SAMPLES HAVE THE PREFIX (UR-SV.

DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LDE	APPROVAL DH	PROJ ENG	APPROVAL DOE
11/91	ISSUE FOR CERTIFICATION	PGC					

U. S. DEPARTMENT OF ENERGY

ALBUQUERQUE, NEW MEXICO

DESIGNED | DRAWN PGC

CHECKED

REVIEWED

RECOMMENDED

CERTIFICATION RADIOLOGICAL PLAN
DU-144A
SHEET 2 OF 3

DURANGO, COLORADO

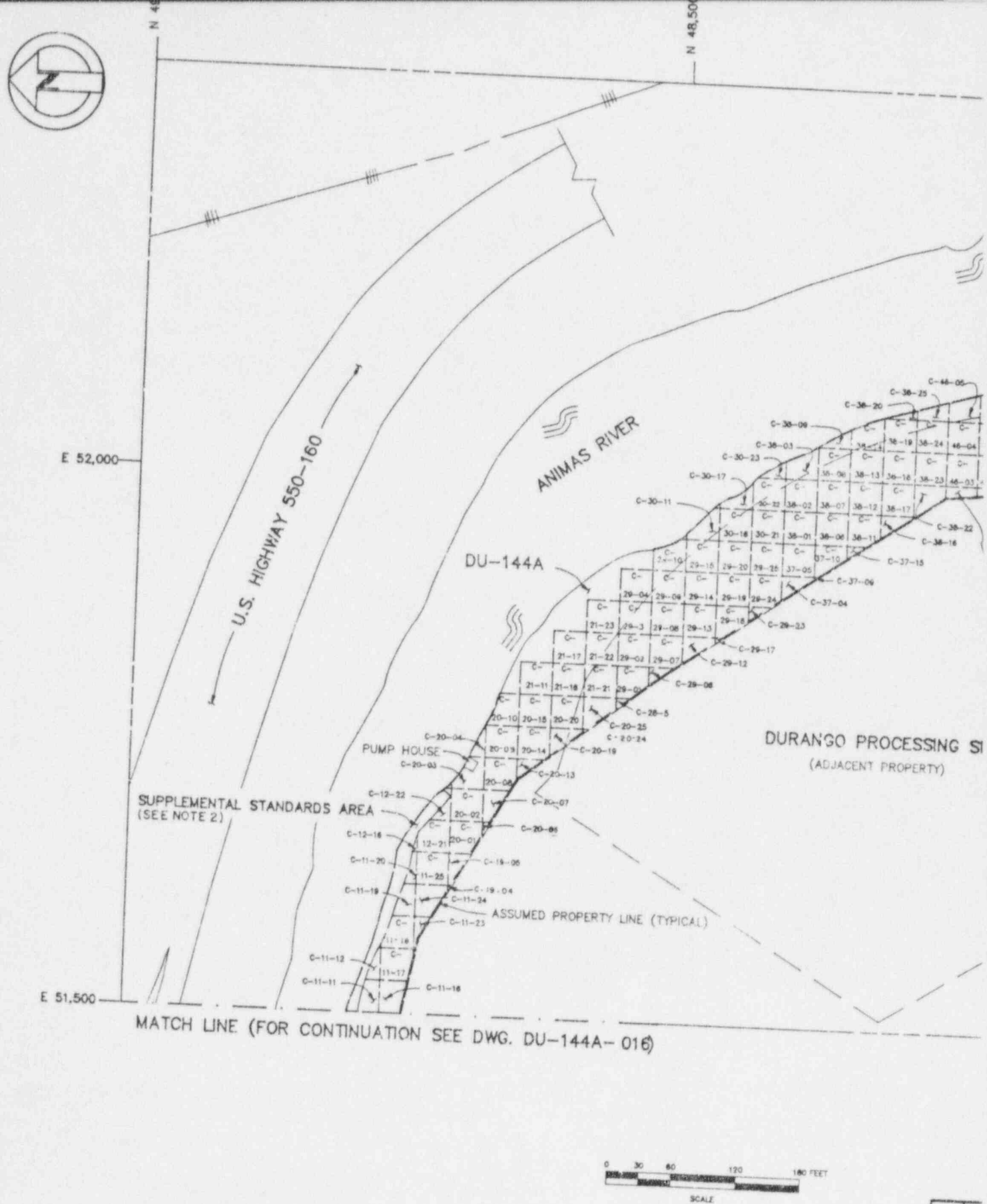
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

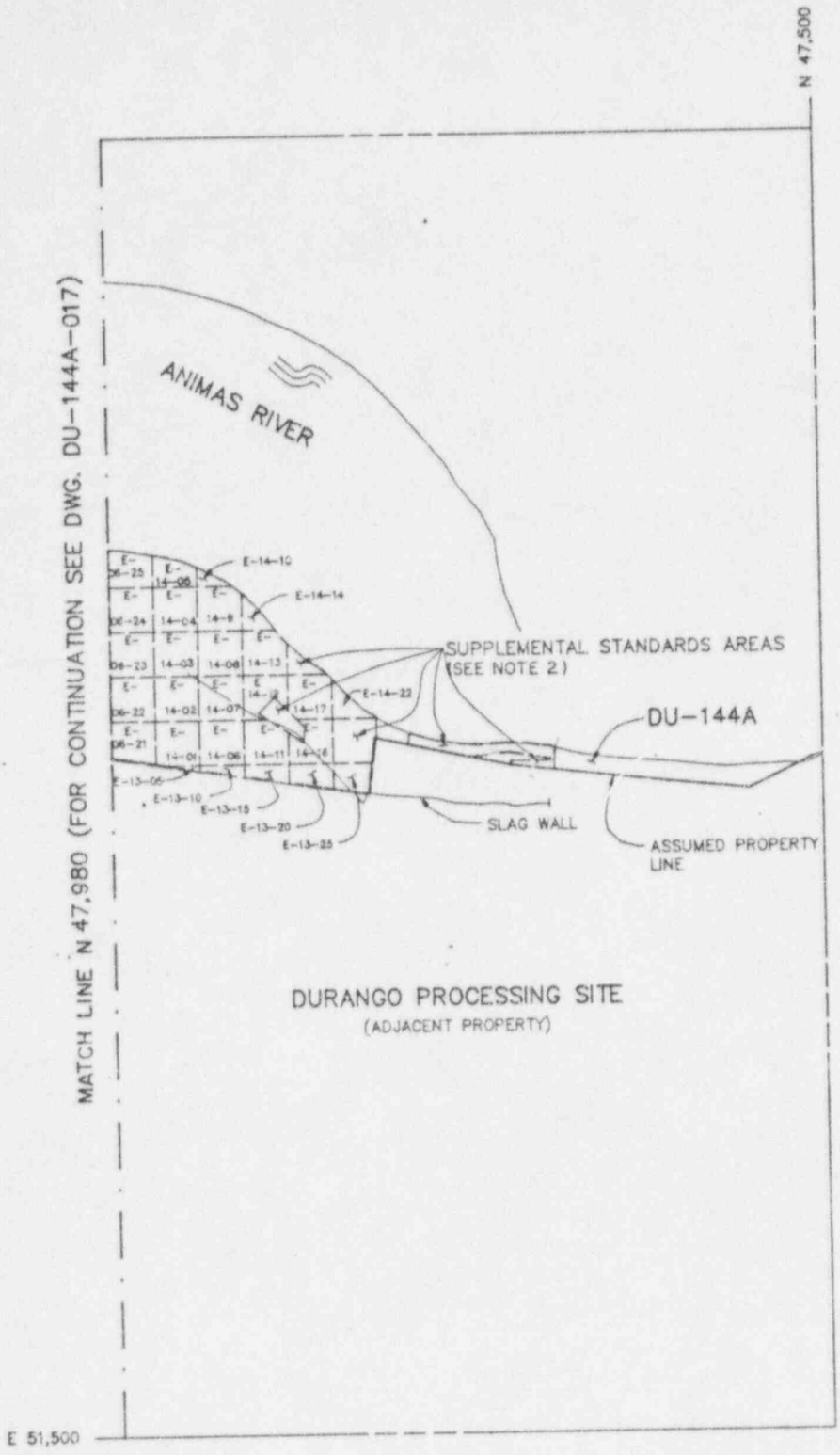
APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO. DE-AC04-83AL18796

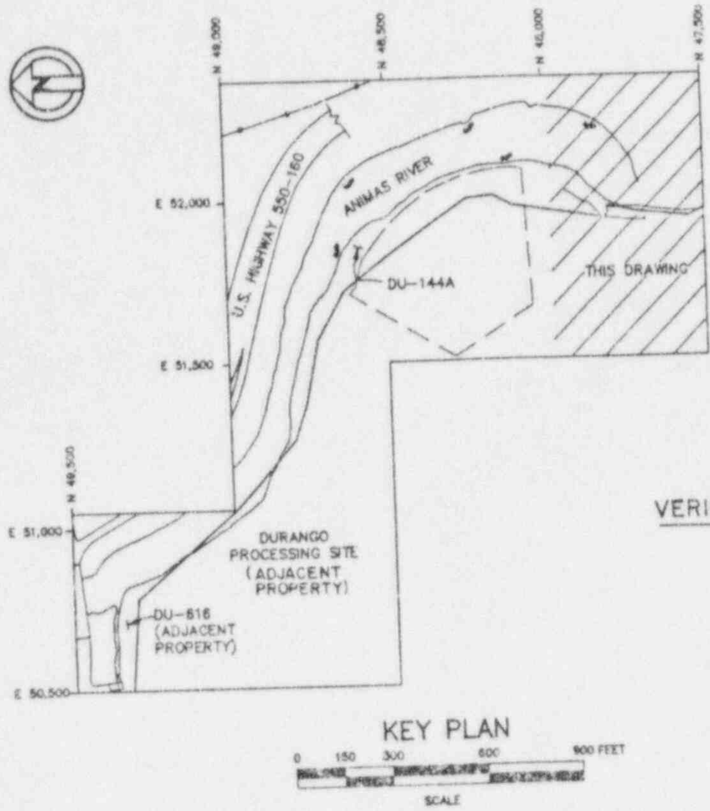
DRAWING NO. DU-144A-017 REV. A


N 48,500
E 52,000
E 51,500
U.S. HIGHWAY 550-160
ANIMAS RIVER
DU-144A
PUMP HOUSE
SUPPLEMENTAL STANDARDS AREA
(SEE NOTE 2)
ASSUMED PROPERTY LINE (TYPICAL)
DURANGO PROCESSING SI
(ADJACENT PROPERTY)
MATCH LINE (FOR CONTINUATION SEE DWG. DU-144A-016)
0 30 60 120 180 FEET
SCALE



0 30 60 120 180 FEET

SCALE



KEY PLAN

VERIFICATION SOIL SAMPLES

E-06-21
E-06-22
E-06-23
E-06-24
E-06-25
E-13-05
E-13-10
E-13-15
E-13-20
E-13-25
E-14-01
E-14-02
E-14-03
E-14-04
E-14-05
E-14-06
E-14-07
E-14-08
E-14-09
E-14-10
E-14-11
E-14-12
E-14-13
E-14-14
E-14-16
E-14-17
E-14-21
E-14-22

1. SEE DRAWINGS DU-144A-016 AND DU-144A-017 FOR VERIFICATION SOIL SAMPLES (PERTAINING TO OTHER PORTIONS OF THIS PROPERTY) NOT SHOWN THIS DRAWING.
2. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR SECTION 192.22 (C) SHALL APPLY TO LOW LEVEL RADIOACTIVELY CONTAMINATED MATERIAL. APPROXIMATELY 517 CUBIC YARDS REMAIN IN PLACE.
3. ALL VERIFICATION SOIL SAMPLES CONTAIN THE PREFIX DUR-SV.

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

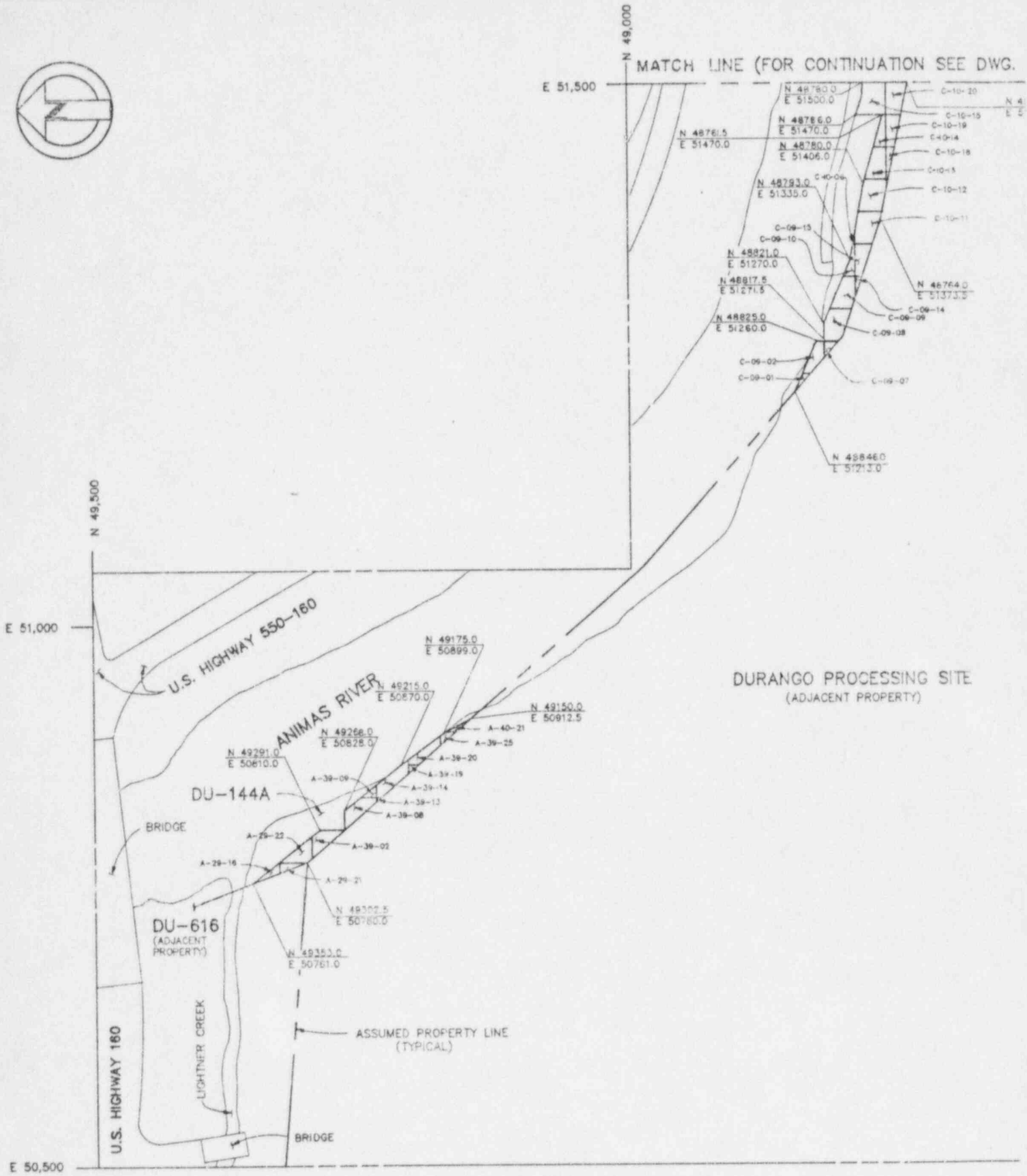
DESIGNED / DRAWN PGC	CERTIFICATION RADIOLOGICAL PLAN DU-144A SHEET 3 OF 3 DURANGO, COLORADO URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT
CHECKED	
REVIEWED	
RECOMMENDED	

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. DU-144A-018 REV. A

NO.	DATE	REVISIONS	DRAWN BY	CHECKED BY	APPRVL LDE	APPRVL DH	PROJ ENG	APPRVL DOE
		ISSUE FOR CERTIFICATION	PGC					



(NOTES CONT'D)

4. EXCAVATED THE FOLLOWING LOCATIONS TO THE AVERAGE DEPTHS INDICATED AND BACKFILLED WITH RIPRAP TO THE FOLLOWING ELEVATIONS:

LOCATION	EXCAVATION DEPTH	BACKFILL ELEVATION
C-09-01	0.1'	3.0'
C-09-02	0.1'	3.0'

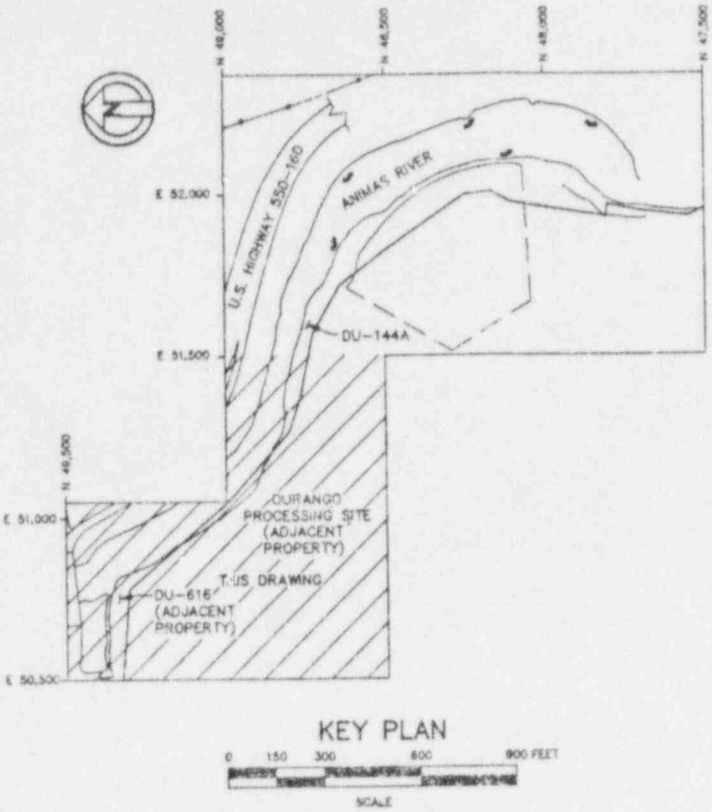
0 30 60 120 180 FEET

SCALE

0
NO

DU-144A-021) N 48,500

758.0
500.0



2. EXCAVATED THE FOLLOWING LOCATIONS TO THE LIMITS INDICATED TO THE FOLLOWING AVERAGE DEPTHS. BACKFILLED WITH COMPACTED COMMON FILL FOLLOWED BY A MINIMUM OF 6 INCHES OF TOPSOIL AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE:

LOCATION	EXCAVATION DEPTH	BACKFILL ELEVATION
A-29-16	0.0'	0.5'
A-29-21	0.4'	1.5'
A-29-22	0.8'	1.1'
A-39-02	1.2'	1.3'
A-39-08	1.5'	0.5'
A-29-09	0.2'	0.5'
A-39-13	0.9'	0.7'
A-39-14	0.3'	0.5'
A-39-19	0.1'	0.5'
A-39-20	0.3'	0.6'
A-39-25	1.1'	0.7'
A-40-21	0.3'	0.5'
A-50-01	0.0'	0.6'
C-09-07	6.7'	0.7'
C-09-08	20.0'	5.5'
C-09-09	11.5'	3.8'
C-09-10	3.9'	2.0'
C-09-14	11.0'	5.7'
C-09-15	1.9'	3.7'
C-10-06	0.0'	0.6'
C-10-11	3.7'	5.3'
C-10-12	0.9'	2.7'
C-10-13	0.8'	5.3'
C-10-14	0.6'	2.8'
C-10-15	0.4'	1.6'
C-10-18	5.6'	4.9'
C-10-19	3.7'	4.3'
C-10-20	1.7'	4.5'

3. TOPPED DISTURBED NON-RIPRAP LOCATIONS (SEE NOTE 4.) WITH NATIVE SEED, MULCH AND FERTILIZER.

GENERAL NOTES:

1. THE LATEST REVISION OF THE FOLLOWING TECHNICAL SPECIFICATIONS APPLY TO THE REMEDIAL ACTION WORK REQUIRED FOR PROPERTY NO. DU-144A:

SECTION 02110
CLEARING AND GRUBBING

SECTION 02130
CONTAMINATED MATERIAL REMOVAL

SECTION 02200
EXCAVATION AND BACKFILL

SECTION 02480
LANDSCAPING

NOTES:

1. SEE DRAWINGOS DU-144A-021 AND DU-144A-022 FOR EXCAVATION AND RESTORATION PLANS (PERTAINING TO OTHER PORTIONS OF THIS PROPERTY) NOT SHOWN THIS DRAWING.

AS-BUILT DRAWING

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED PGC | DRAWN PGC
CHECKED [signature]
REVIEWED [signature]
RECOMMENDED [signature]

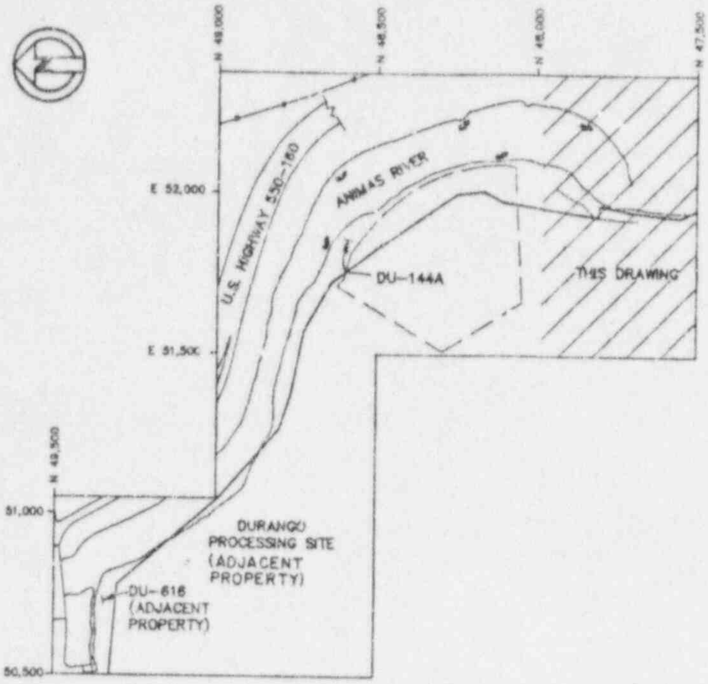
EXCAVATION AND RESTORATION PLAN
DU-144A
SHEET 1 OF 3
DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

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

	AS BUILT	PGC	PH	[illegible]	[illegible]	[illegible]	-
DATE	REVISIONS	DRAWN BY	CHECKED BY	APPRVL LOE	APPRVL DH	PROJ ENG	APPRVL DOE

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

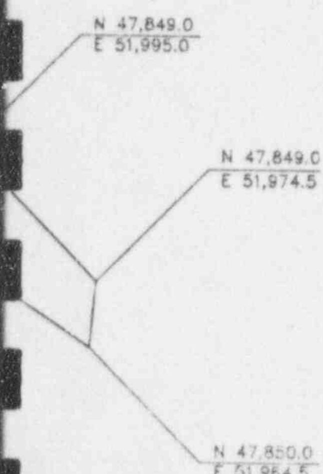
PROJECT NO. DE-AC04-83AL18796
DRAWING NO. DU-144A-020 REV 0



KEY PLAN

0 150 300 600 900 FEET

SCALE



DETAIL 1
(N.T.S.)

NOTES:

1. SEE DRAWING DU-144A-020 FOR GENERAL NOTES AND DRAWINGS DU-144A-020 AND DU-144A-021 FOR EXCAVATION AND RESTORATION PLANS (PERTAINING TO OTHER PORTIONS OF THIS PROPERTY) NOT SHOWN THIS DRAWING.

2. EXCAVATED THE FOLLOWING LOCATIONS TO THE LIMITS INDICATED TO THE FOLLOWING AVERAGE DEPTHS. BACKFILLED WITH COMPACTED COMMON FILL FOLLOWED BY A MINIMUM OF 6 INCHES OF TOPSOIL AS DIRECTED BY THE CONTRACTOR'S REPRESENTATIVE:

LOCATION	EXCAVATION DEPTH	BACKFILL ELEVATION
E-06-21	1.9'	7.4'
E-06-22	2.0'	5.7'
E-06-23	2.6'	1.5'
E-06-24	2.5'	2.4'
E-06-25	1.0'	2.3'
E-13-05	1.1'	10.3'
E-13-10	1.3'	14.3'
E-13-15	0.6'	4.8'
E-13-20	5.4'	7.7'
E-13-25	16.1'	10.6'
E-14-01	1.6'	9.2'
E-14-02	4.6'	7.4'
E-14-03	6.9'	6.1'
E-14-04	0.8'	1.9'
E-14-05	0.2'	0.5
E-14-06	2.2'	6.3'
E-14-07	5.3'	2.8'
E-14-08	0.9'	3.5'
E-14-09	0.3'	3.3'
E-14-11	4.7'	3.4'
E-14-12	8.1'	8.1'
E-14-13	0.5'	2.8'
E-14-16	2.3'	4.7'
E-14-17	4.8'	2.9'
E-14-22	0.2'	1.8'

3. TOPPED DISTURBED LOCATIONS WITH NATIVE SEED, MULCH AND FERTILIZER.

AS-BUILT DRAWING

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

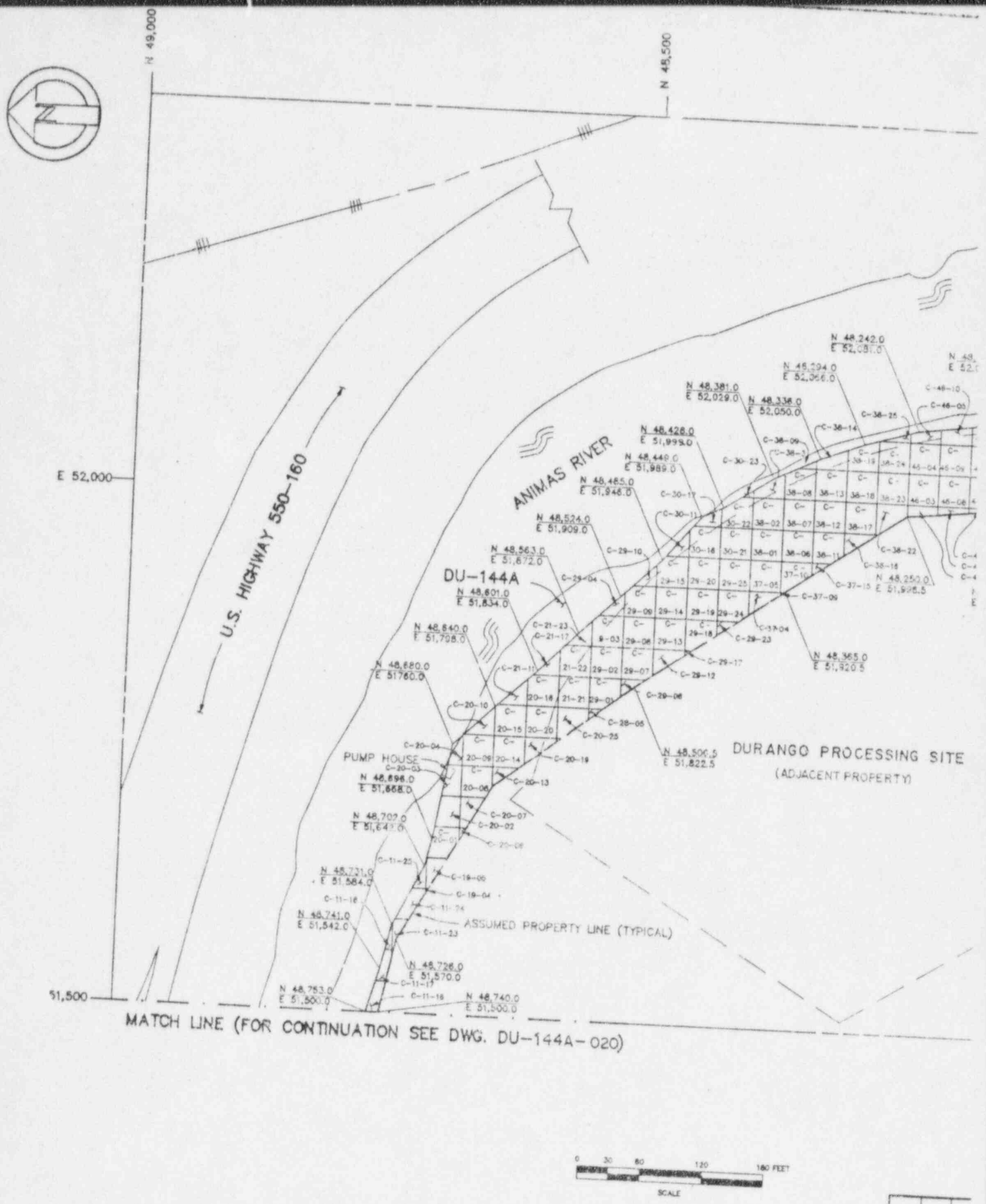
EXCAVATION AND RESTORATION PLAN
DU-144A
SHEET 3 OF 3
DURANGO, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED: PGC | DRAWN: PGC
CHECKED
REVIEWED
RECOMMENDED
APPROVED: NR | DATE | DOE PROJECT MANAGER: NR | DATE | DOE PROJECT ENGINEER: NR | DATE

MK-FERGUSON
A MORRISON KNUDSEN COMPANY

PROJECT NO. DE-AC04-83AL18796
DRAWING NO. DU-144A-022 | REV. 0

	AS-BUILT	PGC	PV	PGC	ABC	ABC	--
	REVISIONS	DRAWN BY	CHECKED BY	APPR. LDE	APPRVL DH	REQ'D ENG	APPRVL DOE


N 49,000
N 48,500
E 52,000
51,500
U.S. HIGHWAY 550-160
ANIMAS RIVER
DU-144A
PUMP HOUSE
DURANGO PROCESSING SITE
(ADJACENT PROPERTY)
ASSUMED PROPERTY LINE (TYPICAL)
MATCH LINE (FOR CONTINUATION SEE DWG. DU-144A-020)
N 48,242.0 E 52,081.0
N 48,294.0 E 52,056.0
N 48,381.0 E 52,029.0
N 48,336.0 E 52,050.0
N 48,426.0 E 51,998.0
N 48,449.0 E 51,989.0
N 48,465.0 E 51,948.0
N 48,524.0 E 51,909.0
N 48,563.0 E 51,872.0
N 48,601.0 E 51,834.0
N 48,640.0 E 51,798.0
N 48,680.0 E 51760.0
N 48,696.0 E 51,668.0
N 48,702.0 E 51,643.0
N 48,731.0 E 51,584.0
N 48,741.0 E 51,542.0
N 48,726.0 E 51,570.0
N 48,753.0 E 51,500.0
N 48,740.0 E 51,500.0
N 48,250.0 E 51,908.5
N 48,365.0 E 51,920.5
N 48,506.5 E 51,822.5
0 30 60 120 180 FEET
SCALE
NO. DATE

APPENDIX A

RADIOLOGICAL SURVEY DATA

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-A-29-16	2	>15
DUR-SV-A-29-17	1	>15
DUR-SV-A-29-21	6	>15
DUR-SV-A-29-22	3	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-A-39-01	5	>15
DUR-SV-A-39-02	2	>15
DUR-SV-A-39-06	6	>15
DUR-SV-A-39-07	3	>15
DUR-SV-A-39-08	6	>15
DUR-SV-A-39-09	1	>15
DUR-SV-A-39-11	4	>15
DUR-SV-A-39-12	5	>15
DUR-SV-A-39-13	3	>15
DUR-SV-A-39-14	2	>15
DUR-SV-A-39-16	4	>15
DUR-SV-A-39-17	4	>15
DUR-SV-A-39-18	4	>15
DUR-SV-A-39-19	3	>15
DUR-SV-A-39-20	2	>15
DUR-SV-A-39-24	5	>15
DUR-SV-A-39-25	3	>15
DUR-SV-A-39-26	4	>15
DUR-SV-A-39-27	2	>15
DUR-SV-A-39-05	3	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-A-40-21	5	15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-A-50-01	3	>15
~~DUR-SV-A-50-06~~	~~5~~	~~>15~~
~~DUR-SV-A-50-07~~	~~4~~	~~>15~~
~~DUR-SV-A-50-11~~	~~4~~	~~>15~~
~~DUR-SV-A-50-12~~	~~0~~	~~>15~~
DUR-SV-A-50-13	1	>15
~~DUR-SV-A-50-16~~	~~4~~	~~>15~~
~~DUR-SV-A-50-17~~	~~7~~	~~>15~~
~~DUR-SV-A-50-18~~	~~7~~	~~>15~~
~~DUR-SV-A-50-21~~	~~0~~	~~>15~~
~~DUR-SV-A-50-23~~	~~0~~	~~>15~~
~~DUR-SV-A-50-25~~	~~0~~	~~>15~~
DUR-SV-A-50-24	2	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-B-07-05	2	15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-01-21	2	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-09-01	6	>15
DUR-SV-C-09-02	3	>15
DUR-SV-C-09-03	1	>15
DUR-SV-C-09-06	5	>15
DUR-SV-C-09-07	1	>15
DUR-SV-C-09-08	2	>15
DUR-SV-C-09-09	2	<15
DUR-SV-C-09-10	1	<15
DUR-SV-C-09-14	5	>15
DUR-SV-C-09-15	1	>15

SAMPLE #	30 DAY RA-226	DEPTH
DUR-SV-C-10-06	13	>15
DUR-SV-C-10-07	4	>15
DUR-SV-C-10-08	3	>15
DUR-SV-C-10-09	5	>15
DUR-SV-C-10-11	20	>15
DUR-SV-C-10-12	8	>15
DUR-SV-C-10-13	12	>15
DUR-SV-C-10-14	10	>15
DUR-SV-C-10-15	3	>15
~~DUR-SV-C-10-16~~	~~16~~	~~>15~~
~~DUR-SV-C-10-17~~	~~15~~	~~>15~~
DUR-SV-C-10-18	11	>15
DUR-SV-C-10-19	3	>15
DUR-SV-C-10-20	6	>15
~~DUR-SV-C-10-21~~	~~13~~	~~>15~~
~~DUR-SV-C-10-22~~	~~15~~	~~>15~~
~~DUR-SV-C-10-23~~	~~15~~	~~>15~~
~~DUR-SV-C-10-24~~	~~19~~	~~>15~~
~~DUR-SV-C-10-25~~	~~18~~	~~>15~~

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-11-11	12	>15
DUR-SV-C-11-12	2	>15
DUR-SV-C-11-16	2	>15
DUR-SV-C-11-17	2	>15
DUR-SV-C-11-18	2	>15
DUR-SV-C-11-19	10	>15
DUR-SV-C-11-20	9	>15
~~DUR-SV-C-11-21~~	~~5~~	~~>15~~
~~DUR-SV-C-11-22~~	~~11~~	~~>15~~
DUR-SV-C-11-23	43	>15
DUR-SV-C-11-24	10	>15
DUR-SV-C-11-25	6	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-12-16	1	>15
DUR-SV-C-12-21	2	>15
DUR-SV-C-12-22	9	>15

SAMPLE #	20 DAY FA-226	DEPTH
DUR-SV-C-19-04	20	>15
DUR-SV-C-19-05	1	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-20-01	9	>15
DUR-SV-C-20-02	5	>15
DUR-SV-C-20-03	4	>15
DUR-SV-C-20-04	6	>15
DUR-SV-C-20-06	2	>15
DUR-SV-C-20-07	5	>15
DUR-SV-C-20-08	3	>15
DUR-SV-C-20-09	6	>15
DUR-SV-C-20-10	9	>15
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
DUR-SV-C-20-13	8	>15
DUR-SV-C-20-14	12	>15
DUR-SV-C-20-15	8	>15
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
DUR-SV-C-20-19	8	>15
DUR-SV-C-20-20	13	>15
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
DUR-SV-C-20-24	7	>15
DUR-SV-C-20-25	9	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-21-11	11	>15
DUR-SV-C-21-16	4	>15
DUR-SV-C-21-17	9	>15
DUR-SV-C-21-21	15	>15
DUR-SV-C-21-22	6	>15
DUR-SV-C-21-23	4	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-29-01	12	>15
DUR-SV-C-29-02	12	>15
DUR-SV-C-29-03	15	>15
DUR-SV-C-29-04	1	>15
DUR-SV-C-29-06	7	>15
DUR-SV-C-29-07	8	>15
DUR-SV-C-29-08	3	>15
DUR-SV-C-29-09	7	>15
DUR-SV-C-29-10	2	>15
DUR-SV-C-29-11	8	>15
DUR-SV-C-29-12	23	>15
DUR-SV-C-29-13	16	>15
DUR-SV-C-29-14	3	>15
DUR-SV-C-29-15	5	>15
DUR-SV-C-29-16	16	>15
DUR-SV-C-29-17	4	>15
DUR-SV-C-29-18	43	>15
DUR-SV-C-29-19	3	>15
DUR-SV-C-29-20	7	>15
DUR-SV-C-29-21	11	>15
DUR-SV-C-29-22	11	>15
DUR-SV-C-29-23	9	>15
DUR-SV-C-29-24	6	>15
DUR-SV-C-29-25	5	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-30-11	2	>15
DUR-SV-C-30-16	9	>15
DUR-SV-C-30-17	16	>15
DUR-SV-C-30-21	2	>15
DUR-SV-C-30-22	5	>15
DUR-SV-C-30-23	1	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-37-01	2	>15
DUR-SV-C-37-02	9	>15
DUR-SV-C-37-03	5	>15
DUR-SV-C-37-04	3	>15
DUR-SV-C-37-05	1	>15
DUR-SV-C-37-06	1	>15
DUR-SV-C-37-07	8	>15
DUR-SV-C-37-08	16	>15
DUR-SV-C-37-09	7	>15
DUR-SV-C-37-10	9	>15
DUR-SV-C-37-11	1	>15
DUR-SV-C-37-12	0	>15
DUR-SV-C-37-13	12	>15
DUR-SV-C-37-14	1	>15
DUR-SV-C-37-15	0	>15
DUR-SV-C-37-16	0	>15
DUR-SV-C-37-17	1	>15
DUR-SV-C-37-18	4	>15
DUR-SV-C-37-19	0	>15
DUR-SV-C-37-20	0	>15
DUR-SV-C-37-21	4	>15
DUR-SV-C-37-22	0	>15
DUR-SV-C-37-23	6	>15
DUR-SV-C-37-24	1	>15
DUR-SV-C-37-25	0	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-C-38-01	2	>15
DUR-SV-C-38-02	2	>15
DUR-SV-C-38-03	3	>15
DUR-SV-C-38-06	3	>15
DUR-SV-C-38-07	1	>15
DUR-SV-C-38-08	3	>15
DUR-SV-C-38-09	2	>15
DUR-SV-C-38-11	2	>15
DUR-SV-C-38-12	0	>15
DUR-SV-C-38-13	8	>15
DUR-SV-C-38-14	3	>15
DUR-SV-C-38-16	2	>15
DUR-SV-C-38-17	8	>15
DUR-SV-C-38-18	1	>15
DUR-SV-C-38-19	2	>15
~~DUR-SV-C-38-20~~	~~0~~	~~>15~~
~~DUR-SV-C-38-21~~	~~1~~	~~>15~~
DUR-SV-C-38-22	1	>15
DUR-SV-C-38-23	1	>15
DUR-SV-C-38-24	4	>15
DUR-SV-C-38-25	2	>15

SAMPLE #	20 DAY RA-226	DEPTH
~~DUR-SV-C-46-01~~	~~1~~	~~>15~~
DUR-SV-C-46-02	10	>15
DUR-SV-C-46-03	2	>15
DUR-SV-C-46-04	1	>15
DUR-SV-C-46-05	2	>15
DUR-SV-C-46-06	3	>15
DUR-SV-C-46-07	2	>15
DUR-SV-C-46-08	3	>15
DUR-SV-C-46-09	6	>15
DUR-SV-C-46-10	4	>15
~~DUR-SV-C-46-11~~	~~2~~	~~>15~~
DUR-SV-C-46-12	3	>15
DUR-SV-C-46-13	3	>15
DUR-SV-C-46-14	5	>15
DUR-SV-C-46-15	3	>15
~~DUR-SV-C-46-16~~	~~6~~	~~>15~~
DUR-SV-C-46-17	3	>15
DUR-SV-C-46-18	3	>15
DUR-SV-C-46-19	6	>15
DUR-SV-C-46-20	4	>15
DUR-SV-C-46-21	5	>15
DUR-SV-C-46-22	2	>15
DUR-SV-C-46-23	2	>15
DUR-SV-C-46-24	10	>15
DUR-SV-C-46-25	4	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-E-06-01	4	>15
DUR-SV-E-06-02	4	>15
DUR-SV-E-06-03	3	>15
DUR-SV-E-06-04	9	>15
DUR-SV-E-06-05	5	>15
DUR-SV-E-06-06	4	>15
DUR-SV-E-06-07	3	>15
DUR-SV-E-06-08	10	>15
DUR-SV-E-06-09	12	>15
DUR-SV-E-06-10	4	>15
DUR-SV-E-06-11	4	>15
DUR-SV-E-06-12	22	>15
DUR-SV-E-06-13	3	>15
DUR-SV-E-06-14	5	>15
DUR-SV-E-06-15	6	>15
DUR-SV-E-06-16	4	>15
DUR-SV-E-06-17	17	>15
DUR-SV-E-06-18	8	>15
DUR-SV-E-06-19	7	>15
DUR-SV-E-06-20	14	>15
DUR-SV-E-06-21	2	>15
DUR-SV-E-06-22	3	>15
DUR-SV-E-06-23	1	>15
DUR-SV-E-06-24	2	>15
DUR-SV-E-06-25	2	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-E-07-11	3	>15

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-E-13-01	16	>15
DUR-SV-E-13-02	10	>15
DUR-SV-E-13-03	1	>15
DUR-SV-E-13-04	2	>15
DUR-SV-E-13-05	3	>15
DUR-SV-E-13-06	3	>15
DUR-SV-E-13-07	2	>15
DUR-SV-E-13-08	3	>15
DUR-SV-E-13-09	2	>15
DUR-SV-E-13-10	3	>15
DUR-SV-E-13-11	2	>15
DUR-SV-E-13-12	3	>15
DUR-SV-E-13-13	3	>15
DUR-SV-E-13-14	2	>15
DUR-SV-E-13-15	3	<15
DUR-SV-E-13-16	2	>15
DUR-SV-E-13-17	3	>15
DUR-SV-E-13-18	3	>15
DUR-SV-E-13-19	2	>15
DUR-SV-E-13-20	2	>15
DUR-SV-E-13-21	3	>15
DUR-SV-E-13-22	2	>15
DUR-SV-E-13-23	3	>15
DUR-SV-E-13-24	2	>15
DUR-SV-E-13-25	3	>15

Vicinity Property No. DU-144A S

4/23/91 Standard Report

SAMPLE #	20 DAY RA-226	DEPTH
DUR-SV-E-14-01	16	>15
DUR-SV-E-14-02	3	>15
DUR-SV-E-14-03	10	>15
DUR-SV-E-14-04	22	>15
DUR-SV-E-14-05	3	>15
DUR-SV-E-14-06	7	>15
DUR-SV-E-14-07	3	>15
DUR-SV-E-14-08	2	>15
DUR-SV-E-14-09	4	>15
DUR-SV-E-14-10	2	>15
DUR-SV-E-14-11	17	>15
DUR-SV-E-14-12	4	>15
DUR-SV-E-14-13	9	>15
DUR-SV-E-14-14	9	>15
DUR-SV-E-14-16	3	>15
DUR-SV-E-14-17	29	>15
DUR-SV-E-14-18	114	>15
DUR-SV-E-14-21	40	>15
DUR-SV-E-14-22	6	>15
~~DUR-SV-E-14-18~~	~~114~~	~~>15~~

RDF 5/13/91

APPENDIX B

OWNERS/STATE, DOE AND NRC COMMENTS TO APPLICATION SUPPLEMENTAL STANDARDS

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

September 7, 1989

Alfred A. Shablo
District Engineer
Colorado Department of Highways
214 West 6th Street
Durango, CO 81301

SUBJECT: Use of Supplemental Standards - DU-144

Dear Mr. Shablo:

In accordance with the Uranium Mill Tailings Radiation Control Act (UMTRA) of 1978, Public Law 95-604, the Department of Energy (DOE) included property (DU-144) for remedial action. Further evaluation of the contamination on your property has been performed and a recommendation has been proposed to leave the contaminated material and place 2' of soil and riprap over the area. This recommendation is proposed per the Code of Federal Regulations 40 CFR 192, Supplemental Standards. We are basing the recommendation on the criteria presented below. Your comments/concurrence are requested.

The Radiological and Engineering Assessment (REA) performed on the property (DU-144) has revealed that radioactive contaminated materials are present in two areas on your property; the Riprap Area and Uranium Lens Area (Figure 3.1). The contamination in the Riprap Area is presently covered with 3 feet of radiologically clean riprap. Contamination is sporadically distributed through the 2 foot layer of soil beneath the riprap. In the Uranium Lens Area, contamination is present in a 1 to 6 inch lens that is exposed at the high water mark on the bank of the Animas River. This lens possibly extend from the river back to the property line beneath 2 to 25 feet of radiologically clean overburden.

The overburden consists mainly of slag generated by a lead smelter that was operated from the 1880's to 1930. It has been tentatively proposed that 2 feet of backfill and riprap be placed over the exposed portions of the Uranium Lens along the river. The cover will be blended to match the existing topography.

Because of the cost involved in cleaning up the material, coupled with the low health hazard, we are recommending that the contaminated material in these areas be left in place. This action is permitted under Title 40, Code of Federal Regulations, Section 192.21 and 22. The sections of the EPA Standards, which are established for the cleanup of 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) 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.

After the proposed remedial action occurs and the Uranium Lens has been covered with 2' of backfill and riprap, general area radiation levels will range from 14 to 25 micro R/hr. Background for the Durango area is 14 micro R/hr. If a person spent 8 hours a day, 5 days a week, for 50 weeks in a 25 micro R/hr radiation field, he would receive about 50 millirem of gamma exposure in one year. This is one-tenth the amount allowed the general public (10 CFR 20.105). The actual amount of contaminated material that will remain in place after remedial action is approximately 940 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 sections 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 concurrence/comments. We request your response by September 18, 1989.

If you have any questions or need additional information concerning this matter, please call either Dave Charlton of my staff at 1-800-443-4379, or Ms. Jolene Garcia of the U.S. Department of Energy at (505) 846-1238.

Sincerely,

MK-Ferguson Company

J. G. Oldham
Project Director

JGO/RAP/RDJ/mno
Enclosures
cc: w/o enclosures:
J. Garcia, DOE/UMTRA
C. Moore, TAV/UMTRA
Document Control

2439F

STATE OF COLORADO

DEPARTMENT OF HIGHWAYS
District V Maintenance Section 03
214 W. 6th Street
Durango, Colorado 81301
(303) 259-0021

October 3, 1989

A. A. Shablo
District Engineer

MK-FERGUSON CO.
ALBUQUERQUE
OCT 05 1989
RECEIVED

Mr. J. G. Oldham, Project Director
MK-Ferguson Company
P.O. Box 9136
Albuquerque, New Mexico 87119

Dear Mr. Oldham:

I gave verbal approval to your plan of leaving the contamination in place on our property to Mr. Ron Jacobs by telephone today. This letter will confirm our approval to go ahead with your plans.

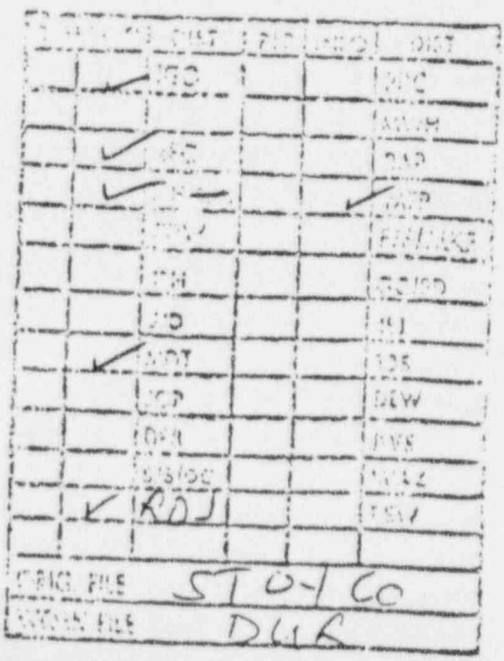
If we can be of further assistance, please feel free to contact us.

Sincerely,

Jon T. Vickers

Jon T. Vickers
Maintenance Superintendent

JTV:mh
cc: Shablo
Watson
File



DU-144A

FILE

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH
4210 East 11th Avenue
Denver, Colorado 80220
Phone (303) 320-8333

Roy Romer
Governor

Thomas M. Vernon, M.D.
Executive Director

November 1, 1989

J. G. Oldham
MK-Ferguson Company
P.O. Box 9136
Albuquerque, New Mexico 87119

Re: State Concurrence on Durango Processing Site Draft REA for DUR-144, File No. DUR-XIII.N

Dear Mr. Oldham:

On October 10, we received from your staff a Draft Radiological and Engineering Assessment (REA) for Vicinity Property No. Dur 144. The State herein provides concurrence on this document.

The Vicinity Property Dur 144 includes a strip of land located between the processing site to the south and the Animas River to the north. Approximately 940 cubic yards of contaminated material have been identified along this strip in areas beneath either 2 to 20 foot thick slag piles or 3 foot thick riprap. The REA states that the decontamination of these areas would require removal of the overlying slag and riprap piles at great expense as compared to the long-term health benefits.

The recommended option involves backfilling the contaminated exposed area beneath the slag pile with two feet of backfill material and riprap. No action is recommended in the riprap area. It is stated that health risks associated with exposure to these contaminated areas after the recommended remediation will be minimal.

We concur that supplemental standards should appropriately be applied to this area, and that the recommended options will satisfactorily protect the public health and environment.

If you have any questions, please contact Patricia Martinek at (303) 331-4828.

Sincerely,

Edward L. Bischoff
UMTRA Program Manager

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

cc: B. Franz, CDH
M. Matthews, DOE
J. Garcia, DOE
M. Thomson, MK-F

REP	INFO	DIST	REP	INFO	DIST
	✓	JGO			FDC
					MWH
	✓	REC		✓	RAP
	✓	JEH/GRJ			HAFP
		CDW			FJF/MKE
		JEH			GO/PD
		JJD			[illegible]
	✓	[illegible]			
		JGP			[illegible]
		[illegible]			JWS
		SJS/DC			WAZ
					RSW
ORIG. FILE	STDF 60				
WORK FILE	DUR				

FILE

DU-144A

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH

4210 East 11th Avenue
Denver, Colorado 80220-3716
Phone (303) 320-8333

Telefax:
(303) 322-9076 (Main Building/Denver)
(303) 320-1529 (Ptarmigan Place/Denver)
(303) 248-7198 (Grand Junction Regional Office)

Roy Romer
Governor

Thomas M. Vernon, M.D.
Executive Director

MK-FERGUSON CO.
ALBUQUERQUE

JAN 08 1990

RECEIVED

December 28, 1989

J. G. Oldham
MK-Ferguson Company
P.O. Box 9136
Albuquerque, New Mexico 87119

Re: State Concurrence on Durango Processing Site Final REA for DU-144A, File DUR-XIII.N

Dear Mr. Oldham:

We are pleased to provide State concurrence on the Final REA for DU-144A.

On November 1, 1989, we provided State concurrence on the draft REA for DU-144. The final REA is substantitively similar to the draft REA. Therefore, our comments have not changed.

We concur that supplemental standards should be applied to this area, and that the recommended options will satisfactorily protect the public health and environment.

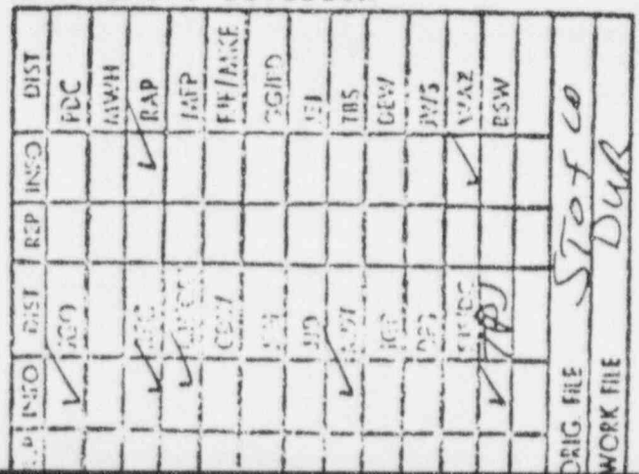
If you have any questions, please contact Patricia Martinek at (303) 331-4828.

Sincerely,

Edward L. Bischoff
UMTRA Program Manager

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

cc: B. Franz, CDH
M. Matthews, DOE
J. Garcia, DOE



Rob P.

RADIOLOGICAL AND ENGINEERING ASSESSMENT (REA) Review Form

DOE Location No. DU 144A Rev. No. 0

PRIORITY: ☒ ROUTINE ☐ URGENT DATE 11-29-89

REQUESTED RESPONSE BY 12-15-89

COMMENTS: RECOMMENDATION OF SUPPLEMENTAL STANDARDS AS PREVIOUSLY DISCUSSED BY TAC, CDH, DOE, NRC.

Robert A Poe 11-29-89

VP MANAGER DATE CONT. ON ATTACHED SHEET NO. ____

DATE RECEIVED 1/25/90 (REVISED)

☐ RECOMMEND APPROVAL ☒ RECOMMEND APPROVAL AS NOTED BELOW ☐ DO NOT RECOMMEND APPROVAL AS NOTED BELOW

COMMENTS: SEE ATTACHED Standard REA response form is appropriate

Concur w/ above 2/1/90

Robert Clyde Murphy 1/29/90

TAC DATE CONT. ON ATTACHED SHEET NO. ____

DATE TRANSMITTED ____

☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED

RESPONSE DATE ____ ATTACHED RESPONSE ON SHEET NO. ____

DATE TRANSMITTED ____

☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED

RESPONSE DATE ____ ATTACHED RESPONSE ON SHEET NO. ____

DATE TRANSMITTED ____

☐ APPROVED ☐ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED

RESPONSE DATE ____ ATTACHED RESPONSE ON SHEET NO. ____

DOE-UMTRA

DATE RECEIVED Nov 30 1989

☐ APPROVED ☒ APPROVED AS NOTED ☐ NOT APPROVED AS NOTED

COMMENTS:

MK-FERGUSON CO.
ALBUQUERQUE

FEB 02 1990

RECEIVED

SHEET NO. 1 OF ____

DOE VP MANAGER 2/1/90 DATE

RADIOLOGICAL AND ENGINEERING ASSESSMENT (REA)
Review Form

Date Received: 1/25/90 (Revised) DOE Location No. DU-144A
Date due DOE:

[X] RECOMMEND APPROVAL AS NOTED BELOW

[ ] DO NOT RECOMMEND APPROVAL AS NOTED BELOW

REVIEWED BY: Robert Murphy DATE: 1/29/90

REVIEWED BY: _____ DATE: _____

VP MANAGER: Richard M. Moore DATE: 2/1/90

PAGE	COMMENT
2	In "Estimated Extent of Contamination" section, the following should be added to the end of the first paragraph: "However, the deposit in Area G does not exceed the EPA standards or NRC guidelines, as discussed in Appendix D."
2	In "Option I" section, it should be stated that areas D and F are presently covered with 2 feet of riprap.
2	In "Option II" seciton, the depths should be specified as estimated.
2	In "Option II" section, the excavation depth in Area D is inconsistent with drawing DU-144A-015, which indicates a depth of 2½ feet. (Also on page 3.)
5	Estimated volume of material to remain should be 845 cy.
17	Is this the cost for common fill and riprap?
18	Item 1.1 should state "Z-Pile" not "2-Pile." Item 2.1 should indicate a quantity of 85 cy and Item 2.5 should indicate a quantity of 40 cy (per Drawing DUR-144A-015). Item 2.5 should indicate Area B.
App. C	The most recent letter from CDH should be included.

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

REVIEW COMMENTS

UMTRA Project No. DE-AC04-83AL18796

Date February 6, 1990

Page 1 of 1

Site Name: Durango

Site No.: DU-144A

Document Reviewed: Radiological and Engineering Assessment (REA)

Reference (Drwg. No., Spec. Sec., Etc.)	Reviewer	Comment	Resolution
Page 2	TAC	In "Estimated Extent of Contamination" section, the following should be added to the end of the first paragraph: "However, the deposit of Area G does not exceed the EPA standards or NRC guidelines, as discussed in Appendix D."	Agreed, REA revised.
Page 2	TAC	In "Option I" section, it should be stated that Areas D and F are presently covered with 2 feet of riprap.	Agreed, REA revised.
Page 2	TAC	In "Option II" section, the depths should be specified as estimated.	Agreed, REA revised.
Page 2	TAC	In "Option II" section, the excavation depth in Area D is inconsistent with drawing DU-144A-015, which indicated a depth of 2.5 feet. (Also on page 3)	REA revised to indicate an estimated depth of 2.5 feet in Area D.
Page 5	TAC	Estimated volume of material to remain should be 845 cy.	Agreed, REA revised.
Page 17	TAC	Is this the cost for common fill and riprap?	The cost for riprap will be added to the table.
Page 18	TAC	Item 1.1 should state "Z-Pile" not "2-Pile." Item 2.1 should indicate a quantity of 85 cy and Item 2.5 should indicate a quantity of 40 cy (per Drawing DU-144A-015). Item 2.5 should indicate Area B.	Agreed, REA revised.
Appendix C 2786F	TAC	The most recent letter from CDH should be included.	See Appendix C.

NRC/UMT/0490-0024

Rob P.

3050-90-578

DU-144A

FILE

UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE
BOX 25325
DENVER, COLORADO 80225

APR 12 1990

URFO:PWM
Docket No. 40-WM039
040WM039480E

MK-FERGUSON CO.
ALBUQUERQUE

APR 24 1990

RECEIVED

Mark L. Matthews, Project Manager
Uranium Mill Tailings Project Office
U. S. Department of Energy
P. O. Box 5400
Albuquerque, New Mexico 87115

Dear Mr. Matthews:

The NRC has completed a review of the Radiological and Engineering Assessment (REA) for vicinity property number DU-144A located in Durango, Colorado.

Based upon our review, we conclude that the criteria for applying supplemental standards contained in 40 CFR 192.21(c) have been met. The proposed remedial action of covering the exposed areas with 2 feet of backfill and riprap is reasonable under the circumstances and meets the requirements of 40 CFR 192.22(a). The Site Restoration Plan, which is yet to be submitted, will be required to include provisions to place the cover material as proposed.

We therefore concur with the application of supplemental standards as proposed in the REA for vicinity property DU-144A. Should you have any questions, please contact Paul Michaud of my staff at FTS 776-2805.

Sincerely,

Ramon E. Hall
Director

Case Closed: 040WM039480E

REP	INFO	DIST	REP	INFO	DIST
	✓	JGO			PDC
	✓	JBH			MWH
	✓	WAZ			RAP
	✓	REC			MFP
		CDW			FJF/MKE
		JBH			GG/PD
		JJD			JEJ
	✓	MDT			TBS
		JGP			DEW
		DPB			JWS
		SJS/DC			TGS
					RSW
ORIG. FILE		10-1			
WORK FILE		DU144A			

APPENDIX C

LEGAL DESCRIPTION

LEGAL DESCRIPTION

The property which is the subject of this Completion Report, the address of which is Truck By-Pass, Camino del Rio, Durango, Colorado, is more particularly described in the County Recorder's Office, as follows:

DU-144 has been divided into two portions, two simplify the application for Supplemental Standards to one portion of the property. This property is Highway 550/160 right of way. A portion of the property on the east side of the highway was previously remediated. The part of the property of concern is the highway right of way on the west side of the highway. More specifically, the highway right of way on the west side of the Animas River adjacent to the Durango UMTRA Processing Site.

ATTACHMENT B

VICINITY PROPERTY CERTIFICATION SUMMARY AND DECISION

VP NO. DU-144A S

The data presented in the certification folder indicate:	TAC Evaluation Yes	TAC Evaluation No	TAC Evaluation N/A	DOE Evaluation Yes	DOE Evaluation No	DOE Evaluation N/A
1. The Ra-226 concentration in the top 15 cm of soil averages ≤5 pCi/g above background over 100 sq m, in-situ [ ] lab [X].	[X]	[ ]	[ ]	[ ]	[ ]	[ ]
2. The Ra-226 concentration in any 15 cm of soil below the top 15 cm surface layer averages ≤15 pCi/g above background over 100 sq m, in-situ [ ] lab [X].	[ ]	[X]	[ ]	[ ]	[ ]	[ ]
3. The indoor gamma readings are <20 uR/h above background in every habitable room. No Structures	[ ]	[ ]	[X]	[ ]	[ ]	[ ]
4. The radon daughter concentration (RDC) in any habitable room is <0.02 working levels, or at most 0.03 WL.	[ ]	[ ]	[X]	[ ]	[ ]	[ ]
[ ] RDC levels exceed 0.03 WL due to non-tailings material						
5. Supplemental standards were applied in accordance with EPA standards 40 CFR Part 192.21.	[X]	[ ]	[ ]	[ ]	[ ]	[ ]

TAC Recommendation: [ ] Certification, [X] Certification upon receipt of NRC concurrence, [ ] Holding pending long-term RDC results (detectors previously installed), [ ] Request additional measurements per the TAC/RAC consensus form, [ ] Close Out (Stage 2 / Stage 3).

Comments: Grid # E-14-17 should be omitted for supplemental Standards.

Mark Wills 6/17/91
Radiological Services Manager / Date

[signature] 6/17/91
Vicinity Property Manager / Date

DOE Decision: [ ] Certification, [✓] Certification upon receipt of NRC concurrence, [ ] Hold pending long-term RDC results, [ ] Request additional measurements as as noted below, [ ] Close Out (Stage 2/Stage 3).

Comments:

Gaeton B. Falance 06-17-91
DOE Certification Evaluator/Date

NRC Concurrence Dated: _____

CERTIFICATION REVIEW SUMMARY

Property No.: DU-144 A-S Reviewed by: R. Conway Date: 6/12/91

Address: Truck By-Puss (Camino Del Rio) Durango, CO 81301 Approved by: Mark Miller Date: 6/17/91

Mark Miller
Manager, Radiological Services
Jacobs-Weston Team

Property Category: Open Land

Quantity of soil removed: N/A (yd^3) RA Contractor: MK-F

This property was remediated in conjunction with the processing site.

The recommendation for certification is based on a review of the Completion Report and other available data describing remedial actions and resulting radiological conditions at this property. Measurement methods and data are compared to the requirements provided in the Vicinity Properties Management and Implementation Manual, and in 40 CFR 192. The following recommendations are made according to the intent of those requirements:

1.0 CERTIFICATION

- This property complies with the EPA standards and is recommended for Certification.
- This property is recommended for Certification only after the conditions listed in 3.0, below, are met.
- Remedial actions were refused by the property owner, and the property cannot be Certified.

2.0 SUPPLEMENTAL STANDARDS

- Supplemental Standards were not applied at this property.
- Supplemental Standards were applied as described in the Completion Report.
- The following agencies concurred in the application of Supplemental Standards at this property.

State of Colorado
NRC

3.0 CONDITIONS

- Annual average RDC results are required.
- The following additional measurements are required:

_____
_____
_____

- The following additional actions must be completed:

_____
_____
_____

VICINITY PROPERTY CERTIFICATION REVIEW FOR COMPLIANCE WITH RADIOLOGICAL STANDARDS

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
I. SOIL EXCAVATION				198 soil samples all taken at ≥ 15cm depths.
1. Were soil samples collected/analyzed? (List quantity of surface and subsurface samples.)	✓			
2. Did grid intervals equal 10 meters or less? (List grid size and quantity sampled.)	✓			198 verification grids were sampled.
3. Were adequate spatial averaging techniques clearly demonstrated?	✓			
4. Was an outdoor gamma survey conducted? (List results.)			✓	Not required for verification.
5. Were alternate measurements performed? (List types of measurements, range, and average of results.)			✓	
6. Were all contaminated areas sampled after excavation?	✓			Five areas of contamination. A, B, C, D + F

* If no or N/A, then an explanation is required.

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
I. SOIL EXCAVATION (continued)				
7. Were soil concentrations of Ra-226, averaged over 100 square meters, less than or equal to: o 5 pCi/g plus background (surface)? o 15 pCi/g plus background (subsurface)?		✓		Of the 198 grids sampled all were less than 15 pCi/g except ~~eleven~~ twelve. grids where supplemental standards are being applied. BKG = 1.5 pCi/g
8. If excavation was done around structures or utility conduits to structures, was contamination removed to meet EPA Standards?			✓	
II. INDOOR GAMMA SURVEY				
1. Were assessment measurements taken in the lowest habitable level of every habitable building?			✓	open land - no structures
2. Were small rooms scanned and large rooms (2000 ft ^{2}) gridded at intervals of 10 feet or smaller?			✓	
3. Were verification measurements taken at locations of prior maximum readings?			✓	

* If no or N/A, then an explanation is required.

VICINITY PROPERTY CERTIFICATION REVIEW FOR COMPLIANCE WITH RADIOLOGICAL STANDARDS (continued)

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
II. INDOOR GAMMA SURVEY (continued)				
4. Were instrument readings converted to indicate microR/hr? (List range of readings.)			✓	
5. After remedial action, was the average value for each room or 2000 ft^2 area less than 20 microR/hr above background?			✓	
6. If any reading exceeded 20 microR/hr above background, was it satisfactorily investigated to ensure no tailings involvement?			✓	
III. INDOOR RDC MEASUREMENTS				
1. If RDC measurements were performed before remedial action, and results were above standards, were they repeated after remedial action was complete?			✓	no structures
2. If RDC measurements were not performed before remedial action, were they taken in every habitable structure after remedial action?			✓	

* If no or N/A, then an explanation is required.

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
III. INDOOR RDC MEASUREMENTS (continued)				
3. If tailings were excavated within 10 ft of the structure or around utility conduits into the structure, were RDC measurements performed after remedial action?			✓	
4. If grab samples were used for verification, were acceptable procedures used?			✓	
5. Were grab sample results less than 0.01 WL? (List range and average of results.)			✓	
6. If annual average measurements were used for verification, were acceptable procedures followed?			✓	
7. Were annual average RDC results less than EPA WL standards? (List range and average of results.)			✓	
8. If annual average RDC results were between 0.02 WL and 0.03 WL, was appropriate justification given?			✓	

* If no or N/A, then an explanation is required.

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
IV. OTHER VERIFICATION MEASUREMENTS			✓	Adequate data is present.
1. If adequate verification data are not presented, were additional measurements taken?			✓	
2. Were acceptable procedures used?			✓	
3. Were surface alpha contamination levels less than:			✓	
o 20 dpm/100 sq cm for removable alpha activity?			✓	
o 100 dpm/100 sq cm for total alpha activity?			✓	
4. Was Ra-226 the only radionuclide of concern at this property?			✓	
5. Were additional measurements performed? (List type and results.)			✓	

* If no or N/A, then an explanation is required.

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
V. SUPPLEMENTAL STANDARDS 1. If numerical standards were not met, is this due to the presence of natural radioactivity? What data show this?		✓		Supplemental standards were applied to ~~three~~ twelve vicinity properties such as stated in the Completion Report.
2. If all residual radioactive material at the property was not cleaned up, were supplemental standards (40 CFR 192 Subpart C) applied?	✓			Contaminated area to remain = 1150 sq. Volume of contaminated material = 845 cy Exposure rate range = 14 to 25 uR/hr. BKG = 14 uR/hr.
3. Was the application of supplemental standards in accordance with the Plan for Implementing EPA Standards?	✓			[ ] a. Risk injury to workers/public [ ] 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 exist
4. Did appropriate state and Federal agencies concur in this application of Supplemental Standards? (Note: final NRC concurrence of the Completion Report is obtained following the DOE certification decision.)	✓			[X] The application of Supplemental Standards appears in the REA. [ ] The application of Supplemental Standards does not appear in the REA. Supplemental Standards were applied in the field. State concurrence dated 1/8/90 NRC concurrence dated 4/12/90

* If no or N/A, then an explanation is required.

VICINITY PROPERTY CERTIFICATION REVIEW FOR COMPLIANCE WITH RADIOLOGICAL STANDARDS (continued)

CERTIFICATION REQUIREMENT	COMPLIANCE* Yes	No	N/A	COMMENTS (Reference Page in Completion Report)
VI. SITE AUDIT REPORTS				
1. If a site audit was performed at this property, were the results satisfactory?			✓	
2. If the contractor's efforts were evaluated at other properties, were the results satisfactory?	✓			
VII. ADDITIONAL CONSIDERATIONS				
1. Are there any additional comments or considerations?	✓			Grid number E-14-17 should be marked for application of supplemental standards.
VIII. CERTIFICATION				
1. Is this property recommended for certification as meeting the EPA standards for residual radioactive material?	✓			

* If no or N/A, then an explanation is required.