APPENDIX E

APPENDIX E

GEOTECHNICAL TEST RESULTS
SOIL COVER

- Western Technologies, Inc.'s Summary
- Grid Map
- Constant Head Permeabilities
- Specific Gravity Test
- Sand Cone Field Density Tests
- Gradation/Atterberg Tests
- Proctor Tests

Soil Cover Material (South Cell)

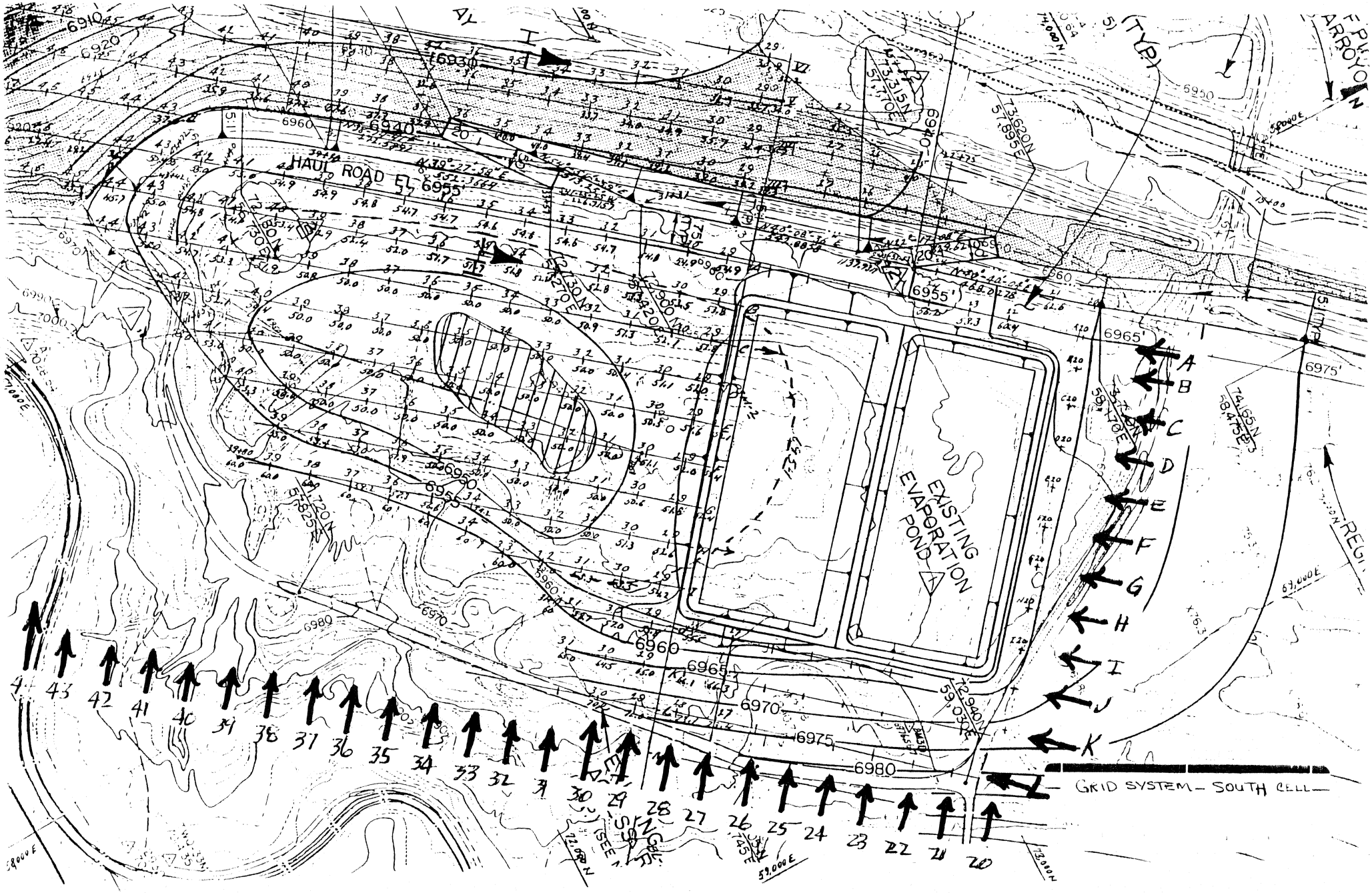
This soil cover material was obtained from the Haul Road Embankment along the south cell site, and the Borrow Pit #2 Stockpile. Soil types ranged from sandy silt, (SM) to sandy lean clay(CL). Forty gradation and atterberg tests were taken as soil cover material was being placed.

Nielsons Inc. used a rome plow (large disc) to process water into the soil. A sheepfoot compactor was used to knead the soil and a pneumatic roller was used to further compact and seal the soil cover surface. In order to minimize contamination of the soil cover by the tailings material, Nielsons Inc. decided to place the soil cover in one 12 inch lift.

Eighty-two density test locations were selected by WT prior to any construction activity on the South Cell Site. Including retests and tests on finish grade, a total of one hundred and thirteen tests were taken while soil cover was being placed. All eighty-two test locations met job specifications. Thirteen proctor tests and two one point proctor test checks were performed during south cell soil cover material placement.

UNC verified using surveying method that at least one foot of soil cover material had been placed on tailing materials.

Three constant head permeabilities and one specific gravity test were performed on the soil cover material from the south cell.


HAUL ROAD EL 6955'
EXISTING EVAPORATION POND
GRID SYSTEM – SOUTH CELL
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57,420E
72,940N
59,030E
74,165N
58,475E
59,000E
73,000N
72,000N
58,000E
69,000E
72,180N
57,825E
72,720N
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WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab./Invoice No. 31411110
Date of Report 12/03/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Material/Specimen: Clay — Sampled By H. Kuebler/WT — Date 10/10/91
Source: South Cell — Submitted By H. Kuebler/WT — Date 10/11/91
Test Procedure: Coefficient of Permeability Constant Head — Authorized By E. Morales/UNC — Date 10/10/91

RESULTS

LOCATION	CONSTANT HEAD PERMEABILITY (cm/sec)
72540N & 57400E (B-34)	1.1×10^{-8}
72200N & 57220E (C-38)	5.3×10^{-8}
72380N & 57680E (F-34)	1.7×10^{-8}

MISTYPED new sheet Attached

Note: Specimens remolded to 95% of ASTM D1557 proctor at optimum moisture content.

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Farmington, New Mexico 87401
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LABORATORY REPORT

Client: United Nuclear Corporation 30992
ATtn: Mr. Ed Morales
P.O. Drawer 3077
Gallup, NM 87301

Job No. 3141K062
Lab./Invoice No. 31411110
Date of Report 12/03/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Material/Specimen: Clay
Source: South Cell
Test Procedure: Coefficient of Permeability Constand Head

Sampled By: H. Kuebler/WT Date: 10/10/91
Submitted By: H. Kuebler/WT Date: 10/11/91
Authorized By: E. Morales/UNC Date: 10/10/91

RESULTS

LOCATION	CONSTAND HEAD PERMEABILITY (CM/SEC)
72540N & 57400E (B-34)	1.1×10^{-8}
72200N & 57220E (C-38)	5.3×10^{-8}
72380N & 57680E (F-34)	1.7×10^{-8}

NOTE: SPECIMENS REMOLDED TO 95% OF ASTM D698 PROCTOR AT OPTIMUM MOISTURE CONTENT.

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Farmington, New Mexico 87401
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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410973
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing

Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date See Note

Material: Sandy lean clay Submitted by H. Kuebler/WT Date See Note

Description: See Note Authorized by E. Morales/UNC Date See Note

Source of Material: See Note

Material	SoilType	Specific Gravity
Soil Cover (South Cell)	CL-ML	2.68

Note: Material for specific gravities was sampled from compaction test moisture samples. A composite sample for each soil type encountered was kept. A total of five specific gravities, three on regraded tailings surface materials and two on soil cover material, south and central cells were performed.

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Billing (1)
/sr

United Nucle . Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/03	Sandcone	A-23	73480	58020	6959.3	TSC	95.5	15.7	86 F	CL	No
09/04	Sandcone	A-21	73650	58100	6963.7	TSC	112.5	11.9 F	100+	CL	No
	Retest Sandcone	A-23	73480	58020	6959.3	TSC	106.7	11.2 F	96	CL	No
	Sandcone	A-24	73400	57950	6957.2	TSC	117.2	15.2	100+	CL	Yes
	Sandcone	A-25	73310	57900	6956.0	TSC	109.7	12.5 F	98	CL	No
	Sandcone	A-26	73250	57830	6956.0	TSC	117.0	13.8 F	96	CL	No
09/05	Sandcone	B-40	72110	57020	6954.4	TSC	112.9	15.2	100+	CL	Yes
	Sandcone	B-39	72100	57010	6953.9	TSC	109.2	15.3	99	CL	Yes
	Sandcone	B-38	72260	57050	6953.4	TSC	112.6	16.4	100+	CL	Yes
	Sandcone	B-37	72330	57130	6953.0	TSC	109.7	17.4 F	100+	CL	No
	Sandcone	B-36	72400	57260	6952.7	TSC	111.2	16.5	100+	CL	Yes
	Sandcone	B-35	72490	57330	6952.7	TSC	115.9	16.9	100+	CL	Yes
	Sandcone	B-33	72680	57380	6952.8	TSC	107.1	17.9 F	97	CL	No
	Sandcone	B-31	72830	57520	6954.3	TSC	108.3	16.0	98	CL	Yes
	Sandcone	B-29	72950	57720	6954.8	TSC	106.0	15.2	96+	CL	Yes
	Sandcone	B-42	71950	57880	6955.8	TSC	117.3	17.1	100+	CL	Yes
09/06	Sandcone	C-29	72990	57800	6953.8	TSC	113.4	14.0 F	100+	CL	No
	Sandcone	C-30	72800	57730	6953.1	TSC	115.0	15.8	100+	CL	Yes
	Sandcone	C-32	72710	57530	6951.9	TSC	109.2	15.3	96	CL	Yes
	Sandcone	C-33	72580	57500	6951.0	TSC	113.8	15.6	100+	CL	Yes
	Sandcone	C-34	72490	57460	6951.0	TSC	109.1	15.5	96	CL	Yes

F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nucl. Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/06	Sandcone	C-35	72420	57390	6951.0	TSC	112.4	14.8	100+	CL	Yes
	Sandcone	C-36	72330	57330	6951.0	TSC	106.1	15.3	95	CL	Yes
	Sandcone	C-38	72200	57220	6951.0	TSC	115.6	16.4	100+	CL	Yes
	Sandcone	C-40	72050	57060	6952.9	TSC	112.5	15.1	100+	CL	Yes
	Sandcone	C-31	72760	57660	6952.3	TSC	115.1	15.6	100+	CL	Yes
09/09	Sandcone	A-41	72090	56850	6956.0	TSC	114.6	12.8 F	100+	CL	No
	Sandcone	A-40	72170	56930	6955.9	TSC	109.2	12.3 F	100+	CL	No
	Sandcone	A-39	72550	56990	6955.9	TSC	113.3	13.2 F	100+	CL	No
	Sandcone	A-38	72330	57070	6955.8	TSC	105.1	16.6	96	CL	Yes
	Sandcone	A-37	72400	57130	6955.7	TSC	110.0	15.6	100	CL	Yes
	Sandcone	A-36	72480	57200	6955.7	TSC	114.0	12.3 F	100+	CL	No
	Sandcone	A-35	72540	57250	6955.6	TSC	116.5	11.0 F	100+	CL	No
	Sandcone	A-33	72680	57380	6955.6	TSC	112.7	13.0 F	100+	CL	No
	Sandcone	A-31	72830	57510	6955.8	TSC	109.3	12.4 F	99	CL	No
	Sandcone	A-21	73650	58100	6963.7	TSC	116.0	15.5	100+	CL	Yes
	Retest Sandcone	A-23	73480	58020	6959.3	TSC	115.0	12.0 F	100+	CL	No
	Retest Sandcone	A-25	73310	57900	6956.0	TSC	115.5	13.6 F	100+	CL	No
	Retest Sandcone	A-26	73250	57830	6956.0	TSC	115.5	12.0 F	100+	CL	No
	Sandcone	A-29	73000	57650	6956.0	TSC	112.8	14.6	100+	CL	Yes

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United Nucle.. Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft 3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/10	Sandcone	B-33	72680	57380	6952.8	TSC	112.0	15.3	100+	CL	Yes
	Sandcone	B-37	72330	57130	6953.0	TSC	115.5	15.8	100+	CL	Yes
09/11	Retest Sandcone	A-23	73480	58020	6959.3	TSC	110.8	15.4	99	CL	Yes
	Retest Sandcone	A-25	73310	57900	6956.0	TSC	111.5	16.1	100	CL	Yes
	Retest Sandcone	A-26	73250	57830	6956.0	TSC	112.6	15.8	100+	CL	Yes
	Retest Sandcone	A-31	72830	57510	6955.6	TSC	106.5	16.5	97	CL	Yes
	Retest Sandcone	A-33	72680	57380	6955.6	TSC	114.0	16.9	100+	CL	Yes
	Retest Sandcone	A-35	72540	57250	6955.6	TSC	108.0	16.8	98	CL	Yes
	Retest Sandcone	A-36	72480	57200	6955.7	TSC	114.1	16.6	100+	CL	Yes
	Retest Sandcone	A-39	72250	56990	6955.9	TSC	109.3	16.3	100+	CL	Yes
	Retest Sandcone	A-40	72170	56930	6955.9	TSC	116.7	15.3	100+	CL	Yes
	Retest Sandcone	A-41	72090	56850	6956.0	TSC	109.6	16.9	100+	CL	Yes
09/25	Sandcone	D-34	72580	57670	6951.0	TSC	112.7	16.3	100	CL	Yes
	Sandcone	D-35	72350	57470	6951.0	TSC	111.5	16.0	100	CL	Yes
	Sandcone	D-36	72280	57400	6951.0	TSC	108.0	16.3	98	CL	Yes
	Sandcone	D-37	72220	57350	6951.0	TSC	113.2	15.7	100	CL	Yes

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United Nuclear Corporation
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Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft^3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/25	Sandcone	D-31	72660	57740	6951.4	TSC	114.5	16.2	100	CL	Yes
	Sandcone	D-38	72150	57280	6951.0	TSC	111.5	17.0	100	CL	Yes
	Sandcone	D-29	72850	57890	6952.0	TSC	107.9	16.1	98	CL	Yes
	Sandcone	D-30	72750	57810	6952.2	TSC	111.1	15.8	100	CL	Yes
	Sandcone	D-32	72570	57670	6951.0	TSC	108.7	17.5	98	CL	Yes
	Sandcone	D-33	72510	57600	6951.0	TSC	113.4	16.6	100	CL	Yes
	Sandcone	D-39	72070	57220	6951.0	TSC	117.5	16.1	100	CL	Yes
	Sandcone	D-40	71980	57170	6951.4	TSC	109.5	15.8	99	CL	Yes
09/26	Sandcone	E-29	72760	57950	6952.6	TSC	111.8	15.2	100	CL	Yes
	Sandcone	E-30	72690	57890	6951.5	TSC	112.6	15.4	100	CL	Yes
	Sandcone	E-31	72600	57810	6951.0	TSC	111.6	17.1	100	CL	Yes
	Sandcone	E-32	72530	57750	6951.0	TSC	109.2	16.7	98	CL	Yes
	Sandcone	E-33	72440	57670	6951.0	TSC	104.9	18.6 F	94 F	CL	No
	Sandcone	E-34	72350	57600	6951.0	TSC	110.1	15.7	99	CL	Yes
	Sandcone	E-35	72290	59550	6951.0	TSC	105.2	15.5	95	CL	Yes
	Sandcone	E-36	72210	57480	6951.0	TSC	107.7	18.2 F	97	CL	No
	Sandcone	E-37	72150	57430	6951.0	TSC	107.1	18.3 F	96	CL	No
	Sandcone	E-38	72090	57370	6951.0	TSC	103.3	16.9	93	CL	No
	Sandcone	E-39	72000	57250	6951.0	TSC	109.7	17.0	99	CL	Yes
	Sandcone	E-40	71850	57220	6951.0	TSC	113.1	15.3	100	CL	Yes

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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/27	Sandcone	F-30	72610	57950	6952.1	TSC	108.5	16.0	96	CL	Yes
	Sandcone	F-35	72220	57620	6951.0	TSC	107.8	18.7 F	95	CL	No
	Sandcone	F-34	72380	57680	6951.0	TSC	111.6	16.9 F	98	CL	No
	Sandcone	F-33	72330	57750	6951.0	TSC	104.5	15.8	92 F	CL	No
	Sandcone	F-32	72450	57820	6951.0	TSC	112.5	15.5	99	CL	Yes
	Sandcone	F-31	72610	57820	6951.0	TSC	106.3	17.0 F	94 F	CL	No
	Sandcone	F-40	71870	57270	6954.3	TSC	99.5	17.0 F	88 F	CL	No
	Sandcone	F-39	71940	57370	6951.0	TSC	103.4	19.4 F	91 F	CL	No
	Sandcone	F-38	72030	57450	6951.0	TSC	103.2	20.7 F	91 F	CL	No
	Sandcone	F-37	72080	57500	6951.0	TSC	103.0	18.5 F	91 F	CL	No
	Sandcone	F-36	72150	57560	6951.0	TSC	115.2	17.6 F	100	CL	No
	Retest Sandcone	E-33	72440	57670	6951.0	TSC	106.7	15.3	96	CL	Yes
	Retest Sandcone	E-36	72210	57480	6951.0	TSC	108.9	15.6	98	CL	Yes
	Retest Sandcone	E-37	72150	57430	6951.0	TSC	107.0	15.1	96	CL	Yes
	Retest Sandcone	E-38	72090	57370	6951.0	TSC	107.8	15.7	97	CL	Yes
09/30	Retest Sandcone	F-40	71870	57270	6954.3	TSC	112.4	14.9	99	CL	Yes
	Retest Sandcone	F-39	71940	57370	6951.0	TSC	107.5	13.3	95	CL	Yes

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P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/30	Retest Sandcone	F-38	72080	57500	6951.0	TSC	108.3	15.7	95	CL	Yes
	Retest Sandcone	F-37	72080	57500	6951.0	TSC	114.2	14.8	100	CL	Yes
	Retest Sandcone	F-36	72150	57560	6951.0	TSC	115.2	15.1	100	CL	Yes
	Retest Sandcone	F-35	72220	57620	6951.0	TSC	116.5	14.9	100	CL	Yes
	Retest Sandcone	F-34	72380	57680	6951.0	TSC	112.6	15.8	99	CL	Yes
	Retest Sandcone	F-33	72330	57750	6951.0	TSC	117.6	14.9	100	CL	Yes
	Retest Sandcone	F-31	72610	57820	6951.0	TSC	114.2	15.1	100	CL	Yes
10/01	Sandcone	G-29	72620	58100	6952.8	TSC	113.2	14.8	100	CL-ML	Yes
	Sandcone	G-30	72550	58050	6951.6	TSC	109.1	15.2	96	CL-ML	Yes
	Sandcone	G-31	72460	57960	6951.0	TSC	112.4	15.6	99	CL	Yes
	Sandcone	G-32	72380	57890	6951.0	TSC	112.6	14.7	99	CL	Yes
	Sandcone	G-33	72310	57820	6951.0	TSC	113.4	14.2	100	CL-ML	Yes
	Sandcone	G-34	72300	57750	6951.0	TSC	118.2	14.0	100+	CL-ML	Yes
10/02	Sandcone	H-31	72410	58100	6951.0	TSC	107.8	14.8	95	CL-ML	Yes
	Sandcone	H-30	72430	58110	6952.3	TSC	108.1	14.4	95	CL-ML	Yes
10/03	Sandcone	C-29	72990	57800	6953.8	TSC	107.2	14.8	95	CL-ML	Yes
	Sandcone	F-29	72700	58030	6953.0	TSC	111.7	14.2	99	CL	Yes

F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Sandcone Field Density Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
10/03	Sandcone	H-29	72570	58200	6953.6	TSC	117.7	14.0	100	CL-ML	Yes
	Sandcone	I-33.5	72150	57950	6961.0	TSC	108.1	14.6	95	CL-ML	Yes
	Sandcone	I-34	72110	57910	6961.0	TSC	110.0	15.9	97	CL-ML	Yes

F=Failing specification
P=Passing specification
Elevations are given in feet above mean sea level

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Albuquerque, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/10/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of soil cover Authorized By E. Morales/Client Date 09/03/91
Source of Material: Native (Haul Road embankment) Tested/Calc. By H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A Test Locations Designated By H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/03/91	73480N & 58020E (A-23)	6959.3

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1		14.2	111.6	15.7	95.5	86	No.	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content optimum to +2% of optimum.
14. Tested D-1556/~~AASHTO T-191~~ XXXXXXXX
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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Note: 6959.3 = Top of Soil Cover

WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
Attn: Mr. Ed Morales
P.O. Drawer QQ
Albuquerque, NM 87301

30992

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/10/91
Reviewed By J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of soil cover
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date 09/04/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/04/91	73650N & 58100E (A-21)	6963.7*
2R	09/04/91	Retest of #1 (09/03/91) 73480N & 58020E (A-23)	6959.3*
3	09/04/91	73400N & 57950E (A-24)	6957.2*
4	09/04/91	73310N & 57900E (A-25)	6956.0*
5	09/04/91	73250N & 57830E (A-26)	6956.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.2	111.6	11.9	112.5	100+	No	1-10-13-15-18
2R		14.2	111.6	11.2	106.7	96	No	1-10-13-15-18
3		14.2	111.6	15.2	117.2	100+	Yes	1-10-13-15-18
4		14.2	111.6	12.5	109.7	98	No	1-10-13-15-18
5		14.2	111.6	13.8	117.0	100+	No	1-10-13-15-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content optimum to +2% of optimum.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

Copies to: Client (3) Field Copy (1) Billing (1) /sr

*Note: Test elevations given above represent the Top of the Soil Cover.

WESTERN TECHNOLOGIES INC.

400 South Lorena Avenue
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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
Attn: Mr. Ed Morales
P.O. Drawer QQ
Albuquerque, NM 87301

30992

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/10/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of soil cover
Authorized By: E. Morales/Client Date: 09/05/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/05/91	72110N & 57020E (B-40)	6954.4*
2	09/05/91	72100N & 57010E (B-39)	6953.9*
3	09/05/91	72260N & 57050E (B-38)	6953.4*
4	09/05/91	72330N & 57130E (B-37)	6953.0*
5	09/05/91	72400N & 57260E (B-36)	6952.7*
6	09/05/91	72490N & 57330E (B-35)	6952.7*
7	09/05/91	72680N & 57380E (B-33)	6952.8*
8	09/05/91	72830N & 57520E (B-31)	6954.3*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		15.2	110.2	15.2	112.9	100+	Yes	1-10-13-15-18
2		15.2	110.2	15.3	109.2	99	Yes	1-10-13-15-18
3		15.2	110.2	16.4	112.6	100+	Yes	1-10-13-15-18
4		15.2	110.2	17.4	109.7	100+	No	1-10-13-15-18
5		15.2	110.2	16.5	111.2	100+	Yes	1-10-13-15-18
6		15.0	110.0	16.9	115.9	100+	Yes	1-10-13-15-18
7		15.0	110.0	17.9	107.1	97	No	1-10-13-15-18
8		15.1	111.0	16.0	108.3	98	Yes	1-10-13-15-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content optimum to +2% of optimum.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation
Attn: Mr. Ed Morales
P.O. Drawer QQ
Albuquerque, NM 87301

30992

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/10/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of soil cover
Authorized By: E. Morales/Client
Date: 09/05/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9	09/05/91	72950N & 57720E (B-29)	6954.8*
10	09/05/91	71950N & 57880E (B-42)	6955.8*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9		15.1	111.0	15.2	106.0	96	Yes	1-10-13-15-18
10		15.2	110.2	17.1	117.3	100+	Yes	1-10-13-15-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content optimum to +2% of optimum.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Authorized By: Ed Morales/Client Date: 09/06/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/06/91	72990N & 57800E (C-29)	6953.8*
2	09/06/91	72800N & 57730E (C-30)	6953.1*
3	09/06/91	72710N & 57530E (C-32)	6951.9*
4	09/06/91	72580N & 57500E (C-33)	6951.0*
5	09/06/91	72490N & 57460E (C-34)	6951.0*
6	09/06/91	72420N & 57390E (C-35)	6951.0*
7	09/06/91	72330N & 57330E (C-36)	6951.0*
8	09/06/91	72200N & 57220E (C-38)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ‡	Comments *
1		15.0	113.3	14.0	113.4	100	No	1-10-13-14-18
2		15.0	113.3	15.8	115.0	100	Yes	1-10-13-14-18
3		15.0	113.3	15.3	109.2	96	Yes	1-10-13-14-18
4		15.0	113.3	15.6	113.8	100	Yes	1-10-13-14-18
5		15.0	113.3	15.5	109.1	96	Yes	1-10-13-14-18
6		14.8	111.8	14.8	112.4	100	Yes	1-10-13-14-18
7		14.8	111.8	15.3	106.1	95	Yes	1-10-13-14-18
8		14.8	111.8	16.4	115.6	100	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. Moisture Content-Opt. to +2% of opt.
14. Tested D-1556/~~XXXXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density, AASHTO T-224
18. Other ASTM D1226
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Note: Test elevations given above represent the Top of the Soil Cover.

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SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Authorized By: Ed Morales/Client Date 09/06/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9	09/06/91	72050N & 57060E (C-40)	6952.9*
10	09/06/91	72760N & 57660E (C-31)	6952.3*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9		14.8	111.8	15.1	112.5	100+	Yes	1-10-13-14-18
10		15.0	113.3	15.6	115.1	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum: Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Source of Material: On Site
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: Ed Morales/Client Date 09/09/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/09/91	72090N & 56850E (A-41)	6956.0*
2	09/09/91	72170N & 56930E (A-40)	6955.9*
3	09/09/91	72250N & 56990E (A-39)	6955.9*
4	09/09/91	72330N & 57070E (A-38)	6955.8*
5	09/09/91	72400N & 57130E (A-37)	6955.7*
6	09/09/91	72480N & 57200E (A-36)	6955.7*
7	09/09/91	72540N & 57250E (A-35)	6955.6*
8	09/09/91	72680N & 57380E (A-33)	6955.6*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1		15.0	108.5	12.8	114.6	100+	No	1-10-13-14-18
2		15.0	108.5	12.3	109.2	100+	No	1-10-13-14-18
3		15.0	108.5	13.2	113.3	100+	No	1-10-13-14-18
4		15.0	110.0	16.6	105.1	96	Yes	1-10-13-14-18
5		15.0	110.0	15.6	110.0	100	Yes	1-10-13-14-18
6		15.0	110.0	12.3	114.0	100+	No	1-10-13-14-18
7		15.0	110.0	11.0	116.5	100+	No	1-10-13-14-18
8		15.0	110.0	13.0	112.7	100+	No	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-180~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Source of Material: On Site
Moisture/Density Relationship: ASTM D698 Meth. A
Authorized By: Ed Morales/Client Date 09/09/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9	09/09/91	72830N & 57510E (A-31)	6955.8*
10R	09/09/91	Retest of #1 (09/04/91) 73650N & 58100E (A-21)	6963.7*
11R	09/09/91	Retest of #1 (09/03/91) and #2R (09/04/91) 73480N & 58020E (A-23)	6959.3*
12R	09/09/91	Retest of #4 (09/04/91) 73310N & 57900E (A-25)	6956.0*
13R	09/09/91	Retest of #5 (09/04/91) 73250N & 57830E (A-26)	6956.0*
14	09/09/91	73000N & 57650E (A-29)	6956.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9		15.0	110.0	12.4	109.3	99	No	1-10-13-14-18
10R		14.2	111.6	15.5	116.0	100+	Yes	1-10-13-14-18
11R		14.2	111.6	12.0	115.0	100+	No	1-10-13-14-18
12R		14.2	111.6	13.6	115.5	100+	No	1-10-13-14-18
13R		14.2	111.6	12.0	115.5	100+	No	1-10-13-14-18
14		14.2	111.6	14.6	112.8	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-180~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Note: Test elevations given above represent the Top of the Soil Cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Source of Material: On Site
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: Ed Morales/Client Date 09/10/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	09/10/91	Retest of #7 (09/05) 72680N & 57380E (B-33)	6952.8*
2R	09/10/91	Retest of #4 (09/05) 72330N & 57130E (B-37)	6953.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1R		15.0	110.0	15.3	112.0	100+	Yes	1-10-13-14-18
2R		15.0	110.0	15.8	115.5	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-180~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Authorized By: Ed Morales/Client Date: 09/11/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	09/11/91	Retest of #1(09/03) #2R (09/04) #11R (09/09) 73480N & 58020E A-23	6959.3*
2R	09/11/91	Retest of #4 (09/04) #12R (09/09) 73310N & 57900E (A-25)	6956.0*
3R	09/11/91	Retest of #5 (09/04) #13R (09/09) 73250N & 57830E (A-26)	6956.0*
4R	09/11/91	Retest of #9 (09/09) 72830N & 57510E (A-31)	6955.6*
5R	09/11/91	Retest of #8 (09/09) 72680N & 57380E (A-33)	6855.6*
6R	09/11/91	Retest of #7 (09/09) 72540N & 57250E (A-35)	6955.6*
7R	09/11/91	Retest of #6 (09/09) 72480N & 57200E (A-36)	6955.7*
8R	09/11/91	Retest of #3 (09/09) 72250N & 56990E (A-39)	6955.9*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1R		14.2	111.6	15.4	110.8	99	Yes	1-10-13-14-18
2R		14.2	111.6	16.1	111.5	100	Yes	1-10-13-14-18
3R		14.2	111.6	15.8	112.6	100+	Yes	1-10-13-14-18
4R		15.0	110.0	16.5	106.5	97	Yes	1-10-13-14-18
5R		15.0	110.0	16.9	114.0	100+	Yes	1-10-13-14-18
6R		15.0	110.0	16.8	108.0	98	Yes	1-10-13-14-18
7R		15.0	110.0	16.6	114.1	100+	Yes	1-10-13-14-18
8R		15.0	108.5	16.3	109.3	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% above opt.
14. Tested D-1556/~~XXXXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Note: Test elevations given above represent the Top of the Soil Cover.

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400 South Lorena Avenue
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(505) 327-4966 • fax 327-5293

LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410844
Date 09/17/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy Lean Clay-Top of Soil Cover
Authorized By: Ed Morales/Client Date 09/11/91
Source of Material: On Site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9R	09/11/91	Retest of #2 (09/09) 72170N & 56930E (A-40)	6955.9*
10R	09/11/91	Retest of #1 (09/09) 72090N & 56850E (A-41)	6956.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9R		15.0	108.5	15.3	116.7	100+	Yes	1-10-13-14-18
10R		15.0	108.5	16.9	109.6	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AXXXXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other D-2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

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*Note: Test elevations given above represent the Top of the Soil Cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 09/25/91
Source of Material: On site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
10	09/25/91	72580N & 57670E (D-34)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
10		15.8	110.5	16.3	112.7	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~XXXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

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*Note: Elevations represent Top of Soil Cover

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Top of Soil Cover Authorized By: E. Morales/Client Date: 09/25/91
Source of Material: On site Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
11	09/25/91	72350N & 57470E (D-35)	6951.0*
12	09/25/91	72280N & 57400E (D-36)	6951.0*
13	09/25/91	72220N & 57350E (D-37)	6951.0*
14	09/25/91	72150N & 57280E (D-38)	6951.0*
15	09/25/91	72850N & 57890E (D-29)	6952.0*
16	09/25/91	72750N & 57810E (D-30)	6952.2*
17	09/25/91	72660N & 57740E (D-31)	6951.4*
18	09/25/91	72570N & 57670E (D-32)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
11		15.8	110.5	16.0	111.5	100+	Yes	1-10-13-14-18
12		15.8	110.5	16.3	108.0	98	Yes	1-10-13-14-18
13		15.6	110.5	15.7	113.2	100+	Yes	1-10-13-14-18
14		15.6	110.5	17.0	111.5	100+	Yes	1-10-13-14-18
15		15.8	110.5	16.1	107.9	98	Yes	1-10-13-14-18
16		15.8	110.5	15.8	111.1	100+	Yes	1-10-13-14-18
17		15.8	110.5	16.2	114.5	100+	Yes	1-10-13-14-18
18		15.8	110.5	17.5	108.7	98	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum: Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Note: Elevations represent Top of Soil Cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Top of Soil Cover
Authorized By: E. Morales/Client Date: 09/25/91
Source of Material: On site
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
19	09/25/91	72510N & 57600E (D-33)	6951.0*
20	09/25/91	72070N & 57220E (D-39)	6951.0*
21	09/25/91	71980N & 57170E (D-40)	6951.4*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
19		15.8	110.5	16.6	113.4	100+	Yes	1-10-13-14-18
20		15.6	110.5	16.1	117.5	100+	Yes	1-10-13-14-18
21		15.6	110.5	15.8	109.5	99	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum: Sea Level

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Top of Soil Cover Authorized By: E. Morales/Client Date: 09/26/91
Source of Material: On site Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/26/91	72760N & 57950E (E-29)	6952.6*
2	09/26/91	72690N & 57890E (E-30)	6951.5*
3	09/26/91	72600N & 57810E (E-31)	6951.0*
4	09/26/91	72530N & 57750E (E-32)	6951.0*
5	09/26/91	72440N & 57670E (E-33)	6951.0*
6	09/26/91	72350N & 57600E (E-34)	6951.0*
7	09/26/91	72290N & 57550E (E-35)	6951.0*
8	09/26/91	72210N & 57480E (E-36)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		15.1	111.3	15.2	111.8	100+	Yes	1-10-13-14-18
2		15.1	111.3	15.4	112.6	100+	Yes	1-10-13-14-18
3		15.1	111.3	17.1	111.6	100+	Yes	1-10-13-14-18
4		15.1	111.3	16.7	109.2	98	Yes	1-10-13-14-18
5		15.1	111.3	18.6	104.9	94	No	1-10-13-14-18
6		15.1	111.3	15.7	110.1	99	Yes	1-10-13-14-18
7		15.1	111.3	15.5	105.2	95	Yes	1-10-13-14-18
8		15.1	111.3	18.2	107.7	97	No	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
Attn: Mr. Ed Morales
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 10/02/91
Reviewed By Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay - Top of Soil Cover Authorized By: E. Morales/Client Date: 09/26/91
Source of Material: On site Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9	09/26/91	72150N & 57430E (E-37)	6951.0*
10	09/26/91	72090N & 57370E (E-38)	6951.0*
11	09/26/91	72000N & 57250E (E-39)	6951.0*
12	09/26/91	71850N & 57220E (E-40)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9		15.1	111.3	18.3	107.1	96	No	1-10-13-14-18
10		15.1	111.3	16.9	103.3	93	No	1-10-13-14-18
11		15.1	111.3	17.0	109.7	99	Yes	1-10-13-14-18
12		15.1	111.3	15.3	113.1	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHTO T-191~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum: Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Note: Elevations represent Top of Soil Cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 09/27/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	09/27/91	72610N & 57950E (F-30)	6952.1*
2	09/27/91	72220N & 57620E (F-35)	6951.0*
3	09/27/91	72380N & 57680E (F-34)	6951.0*
4	09/27/91	72330N & 57750E (F-33)	6951.0*
5	09/27/91	72450N & 57820E (F-32)	6951.0*
6	09/27/91	72610N & 57820E (F-31)	6951.0*
7	09/27/91	71870N & 57270E (F-40)	6954.3*
8	09/27/91	71940N & 57370E (F-39)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics Moisture %	In-Place Characteristics Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.0	113.5	16.0	108.5	96	Yes	1-10-13-14-18
2		14.0	113.5	18.7	107.8	95	No	1-10-13-14-18
3		14.0	113.5	16.9	111.6	98	No	1-10-13-14-18
4		14.0	113.5	15.8	104.5	92	No	1-10-13-14-18
5		14.0	113.5	15.5	112.5	99	Yes	1-10-13-14-18
6		14.0	113.5	17.0	106.3	94	No	1-10-13-14-18
7		14.0	113.5	17.0	99.5	88	No	1-10-13-14-18
8		14.0	113.5	19.4	103.4	91	No	1-10-13-15-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXSHTOXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

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*Test elevations represent Top of Soil cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of Soil Cover
Source of Material: Native
Moisture/Density Relationship: ASTM D698 Meth. A

Authorized By: E. Morales/Client Date: 09/27/91
Tested/Calc. By: H. Kuebler/WT
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
9	09/27/91	72030N & 57450E (F-38)	6951.0*
10	09/27/91	72080N & 57500E (F-37)	6951.0*
11	09/27/91	72150N & 57560E (F-36)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
9		14.0	113.5	20.7	103.2	91	No	1-10-13-14-18
10		14.0	113.5	18.5	103.0	91	No	1-10-13-14-18
11		14.0	113.5	17.6	115.2	100	No	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXSHRDXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

*Test elevations represent Top of Soil cover.

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WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy lean clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 09/27/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	09/27/91	Retest of #5 (09/26/91) 72440N & 57670E (E-33)	6951.0*
2R	09/27/91	Retest of #8 (09/26/91) 72210N & 57480E (E-36)	6951.0*
3R	09/27/91	Retest of #9 (09/26/91) 72150N & 57430E (E-37)	6951.0*
4R	09/27/91	Retest of #10 (09/26/91) 72090N & 57370E (E-38)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1R		15.1	111.3	15.3	106.7	96	Yes	1-10-13-14-18
2R		15.1	111.3	15.6	108.9	98	Yes	1-10-13-14-18
3R		15.1	111.3	15.1	107.0	96	Yes	1-10-13-14-18
4R		15.1	111.3	15.7	107.8	97	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXSHXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

*Test elevations represetn Top of Soil cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Silty lean clay - Top of Soil Cover
Authorized By: E. Morales/Client Date: 09/30/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1R	09/30/91	Retest of #7 (09/27/91) 71870N & 57250E (F-40)	6954.3*
2R	09/30/91	Retest of #8 (09/27/91) 71940N & 57370E (F-39)	6951.0*
3R	09/30/91	Retest of #9 (09/27/91) 72080N & 57500E (F-38)	6951.0*
4R	09/30/91	Retest of #10 (09/27/91) 72080N & 57500E (F-37)	6951.0*
5R	09/30/91	Retest of #11 (09/27/91) 72150N & 57560E (F-36)	6951.0*
6R	09/30/91	Retest of #2 (09/27/91) 72220N & 57620E (F-35)	6951.0*
7R	09/30/91	Retest of #3 (09/27/91) 72380N & 57680E (F-34)	6951.0*
8R	09/30/91	Retest of #4 (09/27/91) 72330N & 57750E (F-33)	6951.0*
9R	09/30/91	Retest of #6 (09/27/91) 72610N & 57820E (F-31)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1R		14.0	113.5	14.9	112.4	99	Yes	1-10-13-14-18
2R		14.0	113.5	15.3	107.5	95	Yes	1-10-13-14-18
3R		14.0	113.5	15.7	108.3	95	Yes	1-10-13-14-18
4R		14.0	113.5	14.8	114.2	100	Yes	1-10-13-14-18
5R		14.0	113.5	15.1	115.2	100	Yes	1-10-13-14-18
6R		14.0	113.5	14.9	116.5	100	Yes	1-10-13-14-18
7R		14.0	113.5	15.8	112.6	99	Yes	1-10-13-14-18
8R		14.0	113.5	14.9	117.6	100	Yes	1-10-13-14-18
9R		14.0	113.5	15.1	114.2	100	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Test elevations represents Top of Soil Cover

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 10/01/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	10/01/91	72620N & 58100E (G-29)	6952.8*
2	10/01/91	72550N & 58050E (G-30)	6951.6*
3	10/01/91	72460N & 57960E (G-31)	6951.0*
4	10/01/91	72380N & 57890E (G-32)	6951.0*
5	10/01/91	72310N & 57820E (G-33)	6951.0*
6	10/01/91	72300N & 57750E (G-34)	6951.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics		Relative Compaction %	Within Specs. ?	Comments *
				Moisture %	Dry Density pcf			
1		14.0	113.4	14.8	113.2	100	Yes	1-10-13-14-18
2		14.0	113.4	15.2	109.1	96	Yes	1-10-13-14-18
3		14.0	113.4	15.6	112.4	99	Yes	1-10-13-14-18
4		14.0	113.4	14.7	112.6	99	Yes	1-10-13-14-18
5		14.0	113.4	14.2	113.4	100	Yes	1-10-13-14-18
6		14.0	113.4	14.0	118.2	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXSHTOXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

*Test elevations represent Top of Soil cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 10/02/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
1	10/02/91	72410N & 58100E (H-31)	6951.0*
2	10/02/91	72430N & 58110E (H-30)	6952.3*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
1		14.0	113.4	14.8	107.8	95	Yes	1-10-13-14-18
2		14.0	113.4	14.4	108.1	95	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture opt. to +2% of opt.
14. Tested D-1556/~~XXSHMXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

*Test elevations represent Top of Soil cover.

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410925
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 10/03/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
5	10/03/91	72990N & 57800E (C-29)	6953.8*
6	10/03/91	72700N & 58030E (F-29)	6953.0*
7	10/03/91	72570N & 58200E (H-29)	6953.6*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
5		14.0	113.4	14.8	107.2	95	Yes	1-10-13-14-18
6		14.0	113.4	14.2	111.7	99	Yes	1-10-13-14-18
7		14.0	113.4	14.0	117.7	100+	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~AASHXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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*Test elevations represent Top of Soil Cover

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LABORATORY REPORT

SOIL/AGGREGATE FIELD DENSITY TESTS

Client: United Nuclear Corporation 30992
P.O. Drawer QQ
Gallup, NM 87301

Job No. 3141K062
Lab/Invoice No. 31410973
Date 11/06/91
Reviewed By J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico
Type of Material: Sandy silty clay-Top of Soil Cover
Authorized By: E. Morales/Client Date: 10/07/91
Source of Material: Native
Tested/Calc. By: H. Kuebler/WT
Moisture/Density Relationship: ASTM D698 Meth. A
Test Locations Designated By: H. Kuebler/WT

Test No.	Date	Location of Test Hole	Elevation of Test Datum †
4	10/07/91	72110N & 57910E (I-34)	6961.0*
5	10/07/91	72150N & 57950E (I-33.5)	6961.0*

Test No.	Moisture Density Lab No.	Optimum Moisture %	Max. Dry Density pcf	In-Place Characteristics: Moisture %	In-Place Characteristics: Dry Density pcf	Relative Compaction %	Within Specs. ?	Comments *
4		14.0	113.4	15.9	110.0	97	Yes	1-10-13-14-18
5		14.0	113.4	14.6	108.1	95	Yes	1-10-13-14-18

* Comments
1. Subgrade
2. Subbase Fill
3. Base Course
4. Backfill
5. Pavement Area
6. Below Footing Bottom
7. Above Footing Bottom
8. 100% min. req'd.
9. 98% min. req'd.
10. 95% min. req'd.
11. 90% min. req'd.
12. 85% min. req'd.
13. moisture content opt. to +2% of opt.
14. Tested D-1556/~~ASHXXXXXX~~
15. Tested ASTM D-2922/D-3017
16. Tested ASTM D-2922/AASHTO T-217
17. Rock correction applied to maximum dry density. AASHTO T-224
18. Other ASTM D2216
19. Test Locations on Accompanying Site Plan
20. Specifications Unknown

† Datum: Sea Level

Note: Tests reported herein are not part of a continuous monitoring program of compaction operations and accordingly apply only to the actual location tested.

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United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/28	Gradation/ Atterberg	A-22	73550	58100	6961.4	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-24	73400	57950	6957.2	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-26	73250	57830	6956.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-28	73100	57700	6956.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-30	72900	57570	6955.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-32	72800	57430	6955.7	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	A-34	72640	57320	6955.6	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	A-36	72480	57200	6955.7	TSC	-	-	-	CL	Yes
08/30	Gradation/ Atterberg	A-40	72170	56930	6955.9	TSC	-	-	-	CL	Yes
09/03	Gradation/ Atterberg	A-38	72330	57070	6955.8	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-41	72030	56940	6955.1	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	B-39	72180	57080	6953.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-37	72340	57200	6953.0	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	B-35	72480	57320	6952.7	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-33	72620	57460	6953.2	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	B-31	72780	57500	6954.3	TSC	-	-	-	CL	Yes

Elevations are given in feet above mean sea level

United Nuclear Co[illegible]ation
SOUTH CELL INTERIM REC[illegible]TION - 1991

Final Test Sum[illegible]y

Gradation/Atterberg Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft 3	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/10	Gradation/ Atterberg	C-32	72710	57530	6951.9	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-34	72490	57460	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-36	72330	57330	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-38	72200	57220	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	C-40	72050	57060	6952.9	TSC	-	-	-	CL	Yes
09/17	Gradation/ Atterberg	D-40	71980	57170	6951.4	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-37	72220	57350	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-35	72350	57470	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-33	72510	57600	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-31	72660	57740	6951.4	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	D-29	72850	57890	6952.0	TSC	-	-	-	CL	Yes
09/23	Gradation/ Atterberg	E-33	72440	57670	6951.0	TSC	-	-	-	CL	Yes
09/26	Gradation/ Atterberg	E-30	72690	57890	6951.5	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	E-36	72210	57480	6951.0	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	E-38	72090	57370	6951.0	TSC	-	-	-	CL	Yes

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Gradation/Atterberg Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
09/30	Gradation/ Atterberg	F-37	72030	57440	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	F-34	72380	57680	6951.0	TSC	-	-	-	CL	Yes
	Gradation/ Atterberg	F-31	72610	57820	6951.0	TSC	-	-	-	CL	Yes
10/01	Gradation/ Atterberg	G-30	72550	58050	6951.6	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	G-30	72550	58050	6951.6	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	G-32	72380	57890	6951.0	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	F-29	72700	58030	6953.0	TSC	-	-	-	CL	Yes
10/02	Proctor (1 Point) ASTM D698	H-30	72430	58110	6952.3	TSC	113.4	14.0	-	CL-ML	n/a
	Retest Sandcone	R-7	73660	60330	6981.0	TSC	109.3	16.8 F	97	CL	No
	Gradation/ Atterberg	R-7	73660	60330	6981.0	TSC	-	-	-	CL	Yes
	Retest Sandcone	Q-6.5	73750	60250	6980.7	TSC	115.6	15.3	100	CL	Yes
10/03	Gradation/ Atterberg	H-29	72570	58200	6953.6	TSC	-	-	-	CL-ML	Yes
	Gradation/ Atterberg	H-31	72410	58100	6951.0	TSC	-	-	-	ML	Yes

Elevations are given in feet above mean sea level

United Nuclear Corporation
SOUTH CELL INTERIM RECLAMATION - 1991

Final Test Summary

Proctor Tests
Top of Soil Cover

DATE	TYPE OF TEST	GRID	N	E	ELEV.	MATERIAL	DENSITY lb/Ft.^{3}	MOISTURE %	RELATIVE COMPACT. %	USCS SOIL CL.	WITHIN SPECIFICATIONS?
08/28	Proctor ASTM D698A	A-22	73550	58100	6961.4	TSC	111.6	14.2	-	CL	n/a
	Proctor ASTM D698A	A-30	72900	57570	6955.9	TSC	109.3	16.4	-	CL	n/a
08/30	Proctor ASTM D698A	A-40	72170	56930	6955.9	TSC	108.5	15.0	-	CL	n/a
09/03	Proctor ASTM D698A	A-38	72330	57070	6955.8	TSC	110.0	15.0	-	CL	n/a
	Proctor ASTM D698A	B-39	72180	57080	6953.9	TSC	110.2	15.4	-	CL	n/a
	Proctor ASTM D698A	B-35	72480	57320	6952.7	TSC	110.0	15.0	-	CL	n/a
	Proctor ASTM D698A	B-31	72780	57500	6954.3	TSC	111.0	15.1	-	CL	n/a
09/10	Proctor ASTM D698A	C-34	72490	57460	6951.0	TSC	113.3	15.0	-	CL	n/a
	Proctor ASTM D698A	C-38	72200	57220	6951.0	TSC	111.8	14.8	-	CL	n/a
09/17	Proctor ASTM D698A	D-40	71980	57170	6951.4	TSC	110.5	15.6	-	CL	n/a
09/23	Proctor ASTM D698A	E-33	72440	57670	6951.0	TSC	111.3	15.1	-	CL	n/a
09/30	Proctor ASTM D698A	F-34	72380	57680	6951.0	TSC	113.5	14.0	-	CL	n/a
10/01	Proctor ASTM D698A	G-30	72550	58050	6951.6	TSC	113.4	14.0	-	CL-ML	n/a
10/02	Proctor (1 Point) ASTM D698	H-30	72430	58110	6952.3	TSC	113.4	14.0	-	CL-ML	n/a
10/07	Proctor (1 Point) ASTM D698A	I-34	72110	57910	6961.0	TSC	113.3	14.0	-	CL-ML	n/a

Elevations are given in feet above mean sea level

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/06/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 73550N & 58100E (A-22) Elevation 6961.4

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	98	
3/8"	97	
No. 4	95	90-100
No. 10	93	85-100
No. 40	89	65-100
No. 100	77	50-100
No. 200	63	40-85

Plasticity Index, ASTM D4318

Liquid Limit 30
Plasticity Index 14

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.6
Optimum Moisture Content, % 14.2

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 73400N & 57950E (A-24) Elevation 6957.2

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	98	
3/8"	96	
No. 4	95	90-100
No. 10	94	85-100
No. 40	90	65-100
No. 100	74	50-100
No. 200	60	40-85

Plasticity Index, ASTM D4318

Liquid Limit	30
Plasticity Index	13

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 73250N & 57830E (A-26) Elevation 6956.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	96	
No. 4	95	90-100
No. 10	94	85-100
No. 40	90	65-100
No. 100	76	50-100
No. 200	57	40-85

Plasticity Index, ASTM D4318

Liquid Limit	30
Plasticity Index	9

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 73100N & 57700E (A-28) Elevation 6956.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	99	90-100
No. 10	97	85-100
No. 40	92	65-100
No. 100	80	50-100
No. 200	66	40-85

Plasticity Index, ASTM D4318

Liquid Limit	32
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 72900N & 57570E (A-30) Elevation 6955.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	98	90-100
No. 10	96	85-100
No. 40	92	65-100
No. 100	76	50-100
No. 200	61	40-85

Plasticity Index, ASTM D4318

Liquid Limit 29
Plasticity Index 11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 109.3
Optimum Moisture Content, % 16.4

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 72800N & 57430E (A-32) Elevation 6955.7

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	99	90-100
No. 10	97	85-100
No. 40	94	65-100
No. 100	74	50-100
No. 200	62	40-85

Plasticity Index, ASTM D4318

Liquid Limit	30
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 72640N & 57320E (A-34) Elevation 6955.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	99	
3/8"	98	
No. 4	96	90-100
No. 10	93	85-100
No. 40	89	65-100
No. 100	66	50-100
No. 200	51	40-85

Plasticity Index, ASTM D4318

Liquid Limit	26
Plasticity Index	7

Soils Classification ASTM D2487

Group Symbol	CL-ML
Group Name	Sandy silty clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/28/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/28/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/28/91
Source of Material: 72480N & 57200E (A-36) Elevation 6955.7

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	98	
No. 4	96	90-100
No. 10	94	85-100
No. 40	88	65-100
No. 100	69	50-100
No. 200	53	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 08/30/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 08/30/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 08/30/91
Source of Material: 7217ON & 5963OE (A-40) Elevation 6955.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	99	90-100
No. 10	99	85-100
No. 40	96	65-100
No. 100	74	50-100
No. 200	54	40-85

Plasticity Index, ASTM D4318

Liquid Limit 29
Plasticity Index 9

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 108.5
Optimum Moisture Content, % 15.0

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72330N & 57070E (A-38) Elevation 6955.8

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	97	85-100
No. 40	94	65-100
No. 100	79	50-100
No. 200	63	40-85

Plasticity Index, ASTM D4318

Liquid Limit 30
Plasticity Index 12

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.0
Optimum Moisture Content, % 15.0

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Job No. 3141K062
Invoice No. 31410844
Date of Report 09/09/91
Reviewed by J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72030N & 56940E (B-41) Elevation 6955.1

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	99	95-100
3/8"	98	
No. 4	96	90-100
No. 10	94	85-100
No. 40	90	65-100
No. 100	64	50-100
No. 200	52	40-85

Plasticity Index, ASTM D4318

Liquid Limit	29
Plasticity Index	7

Soils Classification ASTM D2487

Group Symbol	CL-ML
Group Name	Sandy silty clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72180N & 57080E (B-39) Elevation 6953.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"	100	
3/4"	99	95-100
3/8"	97	
No. 4	95	90-100
No. 10	93	85-100
No. 40	90	65-100
No. 100	69	50-100
No. 200	54	40-85

Plasticity Index, ASTM D4318

Liquid Limit 28
Plasticity Index 11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.2
Optimum Moisture Content, % 15.4

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Job No. 3141KO62
Invoice No. 31410844
Date of Report 09/09/91
Reviewed by J Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72340N & 57200E (B-37) Elevation 6953.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	97	90-100
No. 10	96	85-100
No. 40	93	65-100
No. 100	72	50-100
No. 200	56	40-85

Plasticity Index, ASTM D4318

Liquid Limit 27
Plasticity Index 7

Soils Classification ASTM D2487

Group Symbol CL-ML
Group Name Sandy silty clay

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Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72480N & 57320E (B-35) Elevation 6952.7

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"	100	
3/4"	99	95-100
3/8"	97	
No. 4	96	90-100
No. 10	94	85-100
No. 40	90	65-100
No. 100	71	50-100
No. 200	55	40-85

Plasticity Index, ASTM D4318

Liquid Limit 30
Plasticity Index 11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.0
Optimum Moisture Content, % 15.0

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Job No. 3141K062
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72620N & 57460E (B-33) Elevation 6953.2

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.*
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	97	90-100
No. 10	95	85-100
No. 40	91	65-100
No. 100	72	50-100
No. 200	55	40-85

Plasticity Index, ASTM D4318

Liquid Limit	25
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/03/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/03/91
Source of Material: 72850N & 57500E (B-31) Elevation 6954.3

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	98	85-100
No. 40	95	65-100
No. 100	81	50-100
No. 200	65	40-85

Plasticity Index, ASTM D4318

Liquid Limit 32
Plasticity Index 12

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.0
Optimum Moisture Content, % 15.1

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Invoice No. 31410844
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Project: 1991 Reclamation Testing

Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/10/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/10/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/10/91
Source of Material: 72710N & 57530E (C-32) Elevation 6951.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	97	85-100
No. 40	94	65-100
No. 100	78	50-100
No. 200	64	40-85

Plasticity Index, ASTM D4318

Liquid Limit	31
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Job No. 3141KO62
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing

Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/10/91

Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/10/91

Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/10/91

Source of Material: 72330N & 57330E (C-36) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	99	90-100
No. 10	97	85-100
No. 40	95	65-100
No. 100	75	50-100
No. 200	62	40-85

Plasticity Index, ASTM D4318

Liquid Limit	31
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/10/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/10/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/10/91
Source of Material: 72200N & 57220E (C-38) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"		
1"		
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	96	85-100
No. 40	93	65-100
No. 100	71	50-100
No. 200	54	40-85

Plasticity Index, ASTM D4318

Liquid Limit	36
Plasticity Index	11

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf	111.8
Optimum Moisture Content, %	14.8

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Job No. 3141K062
Invoice No. 31410844
Date of Report 09/17/91
Reviewed by Joseph A. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/10/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/10/91
Description: Top of Soil Cover Authorized by R. Morales/UNC Date 09/10/91
Source of Material: 72050N & 57060E (C-40) Elevation 6952.9

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"		
3/8"	98	
No. 4	97	90-100
No. 10	95	85-100
No. 40	92	65-100
No. 100	70	50-100
No. 200	55	40-85

Plasticity Index, ASTM D4318

Liquid Limit	27
Plasticity Index	13

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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LABORATORY REPORT

Client: United Nuclear Corporation
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Job No. 3141K062
Invoice No. 31410925
Date of Report 10/02/91
Reviewed by Joseph A Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 71980N & 57170E (D-40) Elevation 6951.4

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	95	85-100
No. 40	92	65-100
No. 100	69	50-100
No. 200	52	40-85

Plasticity Index, ASTM D4318

Liquid Limit 36
Plasticity Index 21

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.5
Optimum Moisture Content, % 15.6

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Job No. 3141K062
Invoice No. 31410925
Date of Report 10/02/91
Reviewed by Joseph D. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 72220N & 57350E (D-37) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	95	85-100
No. 40	91	65-100
No. 100	66	50-100
No. 200	50	40-85

Plasticity Index, ASTM D4318

Liquid Limit	32
Plasticity Index	20

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 72350N & 57470E (D-35) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	99	95-100
3/8"	97	
No. 4	96	90-100
No. 10	94	85-100
No. 40	91	65-100
No. 100	63	50-100
No. 200	52	40-85

Plasticity Index, ASTM D4318

Liquid Limit	31
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Invoice No. 31410925
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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 72510N & 57600E (D-33) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	96	85-100
No. 40	93	65-100
No. 100	69	50-100
No. 200	59	40-85

Plasticity Index, ASTM D4318

Liquid Limit	32
Plasticity Index	14

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 72660N & 57740E (D-31) Elevation 6951.4

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	95	85-100
No. 40	93	65-100
No. 100	77	50-100
No. 200	60	40-85

Plasticity Index, ASTM D4318

Liquid Limit 35
Plasticity Index 19

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 110.5
Optimum Moisture Content, % 15.8

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/17/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/17/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/17/91
Source of Material: 72850N & 57890E (D-29) Elevation 6952.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	95	85-100
No. 40	92	65-100
No. 100	64	50-100
No. 200	51	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Invoice No. 31410925
Date of Report 10/02/91
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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/23/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/23/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/23/91
Source of Material: 72440N & 57670E (E-33) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	98	90-100
No. 10	96	85-100
No. 40	93	65-100
No. 100	78	50-100
No. 200	62	40-85

Plasticity Index, ASTM D4318

Liquid Limit 32
Plasticity Index 9

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 111.3
Optimum Moisture Content, % 15.1

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Job No. 3141K062
Invoice No. 31410925
Date of Report 11/07/91
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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/26/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/26/91
Description: Top of Soil Cover Authorized by R. Morales/UNC Date 09/26/91
Source of Material: 72690N & 57890E (E-30) Elevation 6951.5

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	98	90-100
No. 10	96	85-100
No. 40	94	65-100
No. 100	77	50-100
No. 200	66	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	11

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Date of Report 11/07/91
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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/26/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 09/26/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/26/91
Source of Material: 72220N & 57480E (E-36) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	98	
3/8"	97	
No. 4	96	90-100
No. 10	94	85-100
No. 40	90	65-100
No. 100	68	50-100
No. 200	54	40-85

Plasticity Index, ASTM D4318

Liquid Limit	27
Plasticity Index	6

Soils Classification ASTM D2487

Group Symbol	CL-ML
Group Name	Sandy silty clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/26/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/26/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/26/91
Source of Material: 72090N & 57370E (E-38) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	100	
No. 4	98	90-100
No. 10	97	85-100
No. 40	93	65-100
No. 100	78	50-100
No. 200	63	40-85

Plasticity Index, ASTM D4318

Liquid Limit	33
Plasticity Index	14

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Invoice No. 31410925
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/30/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/30/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/30/91
Source of Material: 72030N & 57440E (F-37) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	96	85-100
No. 40	94	65-100
No. 100	73	50-100
No. 200	58	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	19

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/30/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/30/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/30/91
Source of Material: 72380N & 57680E (F-34) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"	100	
1"	99	
3/4"	98	95-100
1/2"	97	
3/8"	97	
No. 4	95	90-100
No. 10	93	85-100
No. 40	90	65-100
No. 100	67	50-100
No. 200	53	40-85

Plasticity Index, ASTM D4318

Liquid Limit 28
Plasticity Index 9

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 113.5
Optimum Moisture Content, % 14.0

Soils Classification ASTM D2487

Group Symbol CL
Group Name Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 09/30/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 09/30/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 09/30/91
Source of Material: 72610N & 57820E (F-31) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
3/4"	100	95-100
1/2"	100	
3/8"	99	
No. 4	98	90-100
No. 10	96	85-100
No. 40	94	65-100
No. 100	74	50-100
No. 200	57	40-85

Plasticity Index, ASTM D4318

Liquid Limit	27
Plasticity Index	8

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Invoice No. 31410925
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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/01/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 10/01/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/01/91
Source of Material: 72550N & 58050E (G-30) Elevation 6951.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs
1-1/2"	100	
1"	98	
3/4"	98	95-100
1/2"	97	
3/8"	96	
No. 4	95	90-100
No. 10	94	85-100
No. 40	91	65-100
No. 100	67	50-100
No. 200	58	40-85

Plasticity Index, ASTM D4318

Liquid Limit 26
Plasticity Index 6

Moisture Density Relations ASTM D698 A

Maximum Dry Density, pcf 113.4
Optimum Moisture Content, % 14.0

Soils Classification ASTM D2487

Group Symbol ML-CL
Group Name Sandy silty clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/01/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 10/01/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/01/91
Source of Material: 72380N & 57890E (G-32) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	99	95-100
3/8"	98	
No. 4	97	90-100
No. 10	95	85-100
No. 40	92	65-100
No. 100	63	50-100
No. 200	58	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/01/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 10/01/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/01/91
Source of Material: 72170N & 57640E (G-35) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	99	
No. 4	97	90-100
No. 10	96	85-100
No. 40	93	65-100
No. 100	68	50-100
No. 200	60	40-85

Plasticity Index, ASTM D4318

Liquid Limit	27
Plasticity Index	9

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/02/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 10/02/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/02/91
Source of Material: 72430N & 58110E (H-30) Elevation 6952.3

Moisture Density Relations (1 point method)*

Single Point Data:

Dry Density, pcf	113.9
Moisture Content, %	13.5

The single point data falls on the same curve as that drawn for material sampled from G-30 on 10/01/91. Therefore, the following values should be used.

Maximum Dry Density, pcf	113.4
Optimum Moisture Content, %	14.0

*The single point was tested in accordance with the applicable portions of ASTM D698 Method A.

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410925
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/03/91
Material: Sandy lean clay Submitted by H. Kuebler/WT Date 10/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/03/91
Source of Material: 72700N & 58030E (F-29) Elevation 6953.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	100	
No. 4	99	90-100
No. 10	98	85-100
No. 40	96	65-100
No. 100	74	50-100
No. 200	66	40-85

Plasticity Index, ASTM D4318

Liquid Limit	28
Plasticity Index	10

Soils Classification ASTM D2487

Group Symbol	CL
Group Name	Sandy lean clay

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WESTERN TECHNOLOGIES INC.
400 South Lorena Avenue
Farmington, New Mexico 87401
(505) 327-4966 • fax 327-5293

LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410925
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/03/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 10/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/03/91
Source of Material: 72570N & 58200E (H-29) Elevation 6953.6

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	98	
No. 4	97	90-100
No. 10	95	85-100
No. 40	93	65-100
No. 100	72	50-100
No. 200	62	40-85

Plasticity Index, ASTM D4318

Liquid Limit	25
Plasticity Index	6

Soils Classification ASTM D2487

Group Symbol	CL-ML
Group Name	Sandy silty clay

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141KO62
Invoice No. 31410925
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/03/91
Material: Sandy silt Submitted by H. Kuebler/WT Date 10/03/91
Description: Top of Soil Cover Authorized by E. Morales/UNC Date 10/03/91
Source of Material: 72410N & 58100E (H-31) Elevation 6951.0

SIEVE ANALYSIS, ASTM C136 & C117

Sieve Size	%Passing Accumulative	Specs.
1"	100	
3/4"	100	95-100
3/8"	100	
No. 4	99	90-100
No. 10	97	85-100
No. 40	95	65-100
No. 100	71	50-100
No. 200	59	40-85

Plasticity Index, ASTM D4318

Liquid Limit	32
Plasticity Index	3

Soils Classification ASTM D2487

Group Symbol	ML
Group Name	Sandy silt

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LABORATORY REPORT

Client: United Nuclear Corporation
Post Office Drawer QQ
Gallup, New Mexico 87301

Job No. 3141K062
Invoice No. 31410973
Date of Report 11/07/91
Reviewed by J. Phillips

Project: 1991 Reclamation Testing
Location: Church Rock, New Mexico Sampled by H. Kuebler/WT Date 10/07/91
Material: Sandy silty clay Submitted by H. Kuebler/WT Date 10/07/91
Description: Top of Soil Cover Authorized by R. Morales/UNC Date 10/07/91
Source of Material: 72110N & 57910E (I-34) Elevation 6961.0

Moisture Density Relations (1 point method)*

Single Point Data:

Dry Density, pcf	113.3
Moisture Content, %	13.9

The single point data falls on the same curve as that drawn for material sampled from G-30 on 10/01/91. Therefore, the following values should be used.

Maximum Dry Density, pcf	113.3
Optimum Moisture Content, %	14.0

*The single point was tested in accordance with the applicable portions of ASTM D698 Method A.

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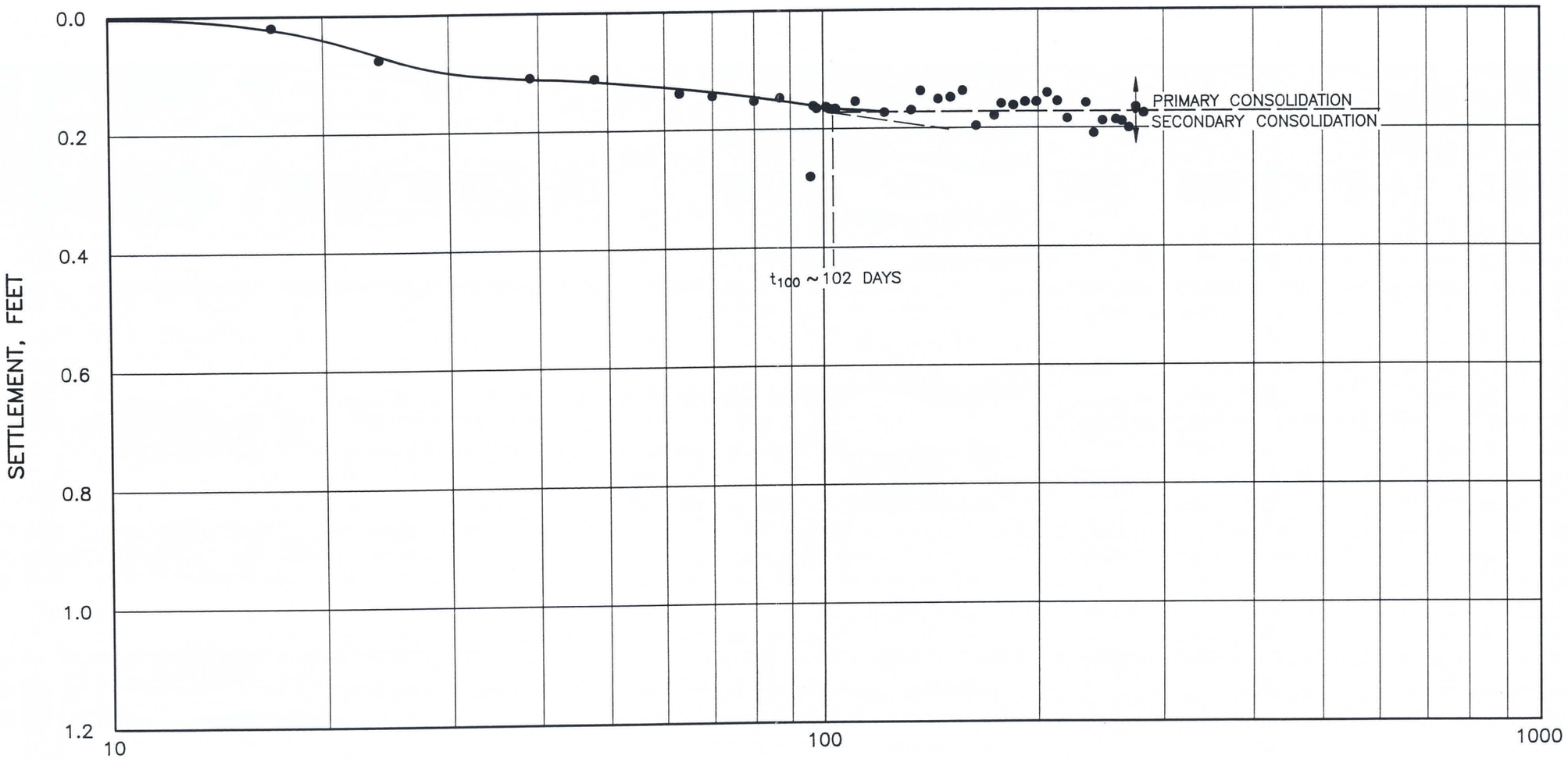
APPENDIX F

APPENDIX F

SETTLEMENT PLOTS

- Figure F-1 Monument SM-1
- Figure F-2 Monument SM-2
- Figure F-3 Monument SM-4A

DRAWING NUMBER 86-060-B725



NOTE:

1. DATA FROM JULY 5, 1991 THROUGH APRIL 13, 1992.

LEGEND:

t_{100} TIME TO END OF PRIMARY CONSOLIDATION

SETTLEMENT VS. LOG TIME
FOR SM-1
SOUTH CELL TAILINGS
DISPOSAL FACILITY
PREPARED FOR
UNC MINING AND MILLING
GALLUP, NEW MEXICO

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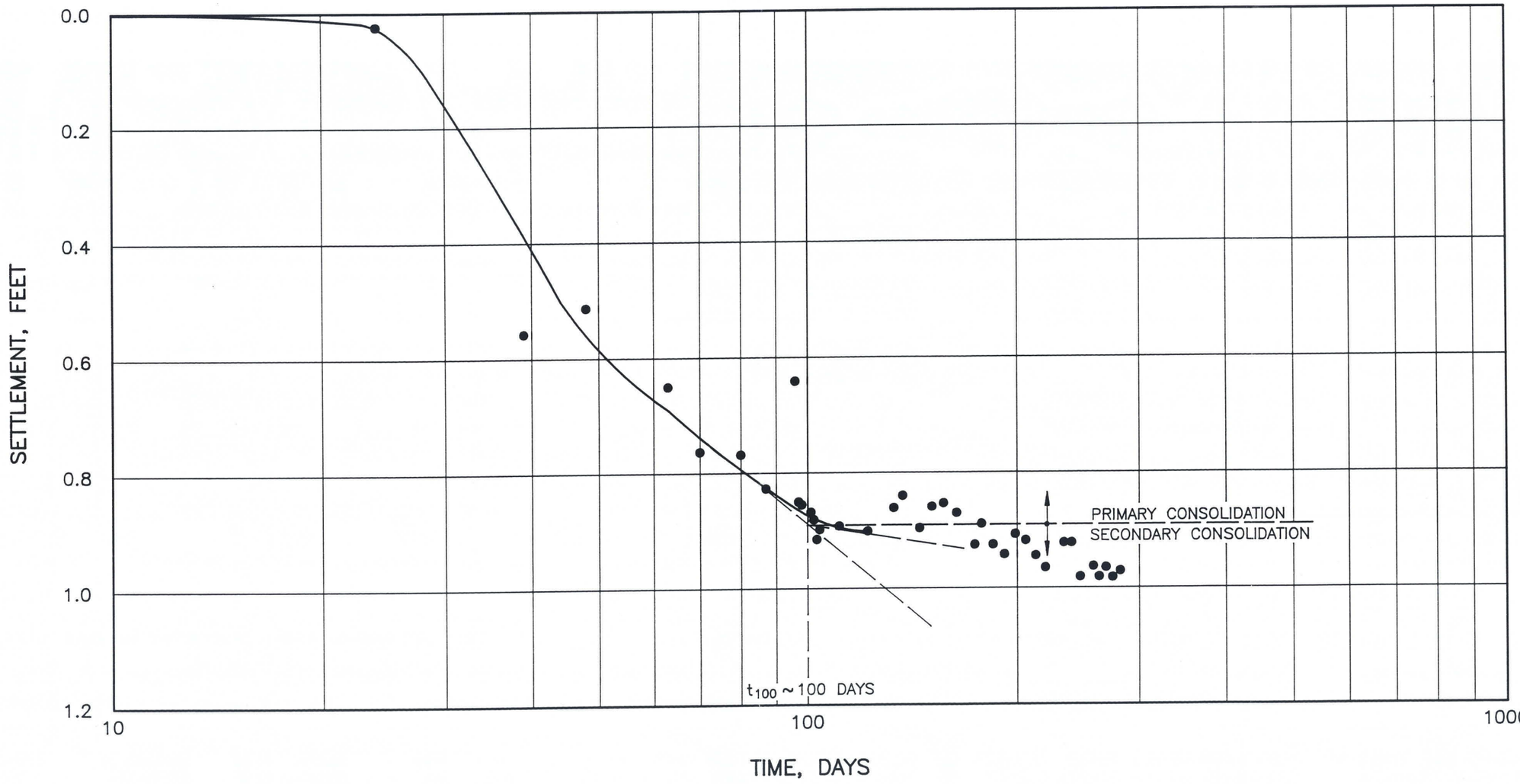
No.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1	4-20-92	AS-BUILT CONSTRUCTION DRAWING FOR SOUTH CELL INTERIM STABILIZATION REPORT	P.M.W.		DWK

DATE: 4-8-92	FIGURE F-1	DRAWING NUMBER 86-060-B725
SCALE: AS SHOWN		

1

DRAWING NUMBER 86-060-B726



NOTE:

1. DATA FROM JULY 5, 1991 THROUGH APRIL 13, 1992.

LEGEND:

t_{100} TIME TO END OF PRIMARY CONSOLIDATION

SETTLEMENT VS. LOG TIME
FOR SM-2
SOUTH CELL TAILINGS
DISPOSAL FACILITY

PREPARED FOR

UNC MINING AND MILLING
GALLUP, NEW MEXICO

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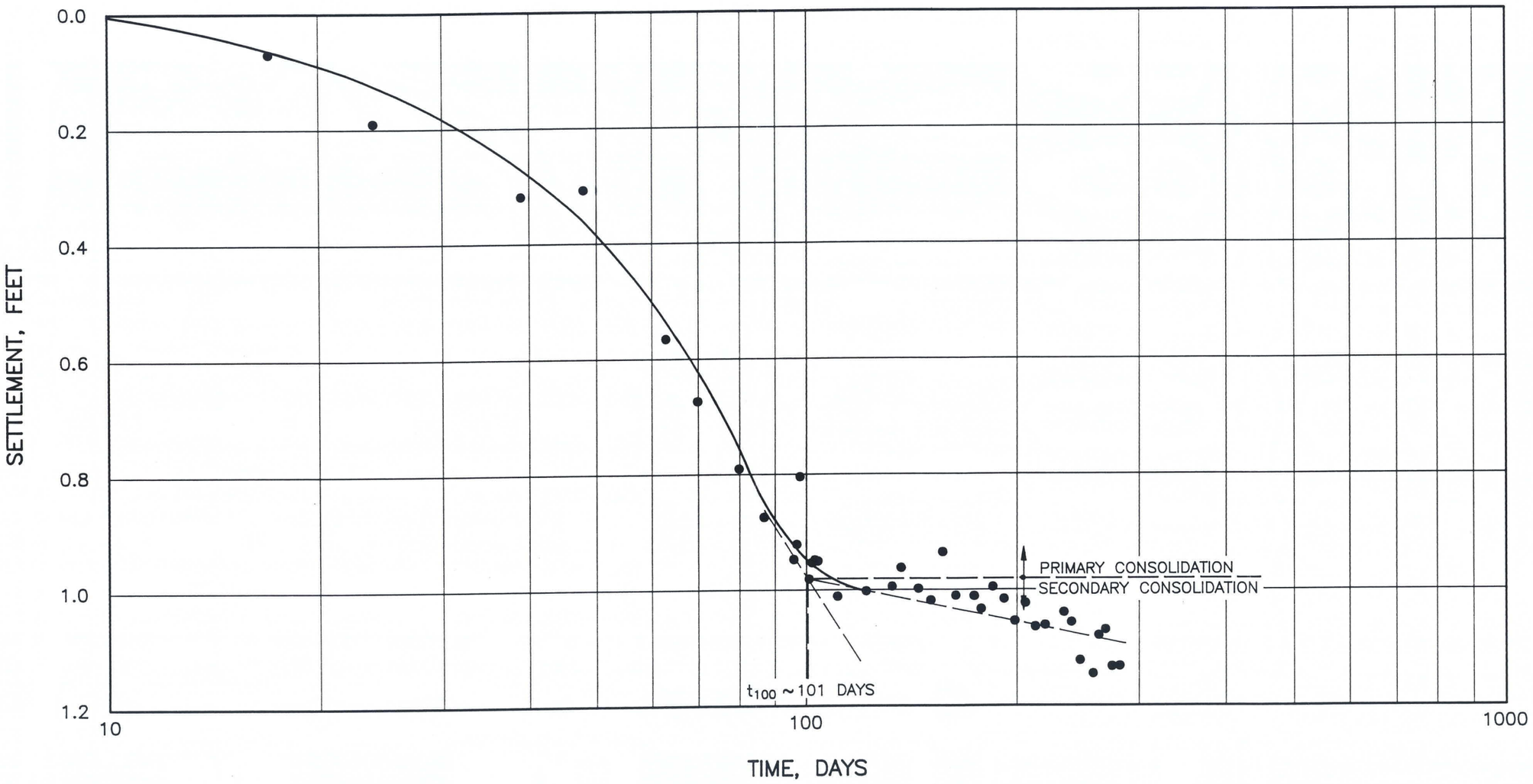
DATE: 4-8-92	FIGURE F-2	DRAWING NUMBER 86-060-B726
SCALE: AS SHOWN		

1

DRAWING NUMBER 86-060-B727



NOTE:

1. DATA FROM JULY 5, 1991 THROUGH APRIL 13, 1992.

LEGEND:

t_{100} TIME TO END OF PRIMARY CONSOLIDATION

SETTLEMENT VS. LOG TIME
FOR SM-4A
SOUTH CELL TAILINGS
DISPOSAL FACILITY

PREPARED FOR

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GALLUP, NEW MEXICO

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1	4-10-92	AS-BUILT CONSTRUCTION DRAWING FOR SOUTH CELL INTERIM STABILIZATION REPORT	P.M.W.		DWK

DATE: 4-8-92	FIGURE F-3	DRAWING NUMBER 86-060-B727
SCALE: AS SHOWN		

1