

APPENDIX D

C & SH SHAFT

GEOLOGIC LOGS AND MAPS



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BECHTEL

GEOLOGIC DRILL LOG

PROJECT

WIPP

JOB NO.

12484

SHEET NO.

1 OF 11

HOLE NO.

EXPLORATORY
SHAFT (SPDV)

SITE WIPP EDDY CO., NEW MEXICO			COORDINATES (PLANT GRID) N 9687.23 E 6894.89				ANGLE FROM HORIZ. 90°		BEARING N. A.					
BEGUN 7-4-81	COMPLETED 10-24-81	DRILLER CHALLENGER DRILLING CO.	DRILL MAKE AND MODEL NATIONAL 125			HOLE SIZE 142 IN.	OVERTURDEN (FT.) 16	ROCK (FT.) 2282	TOTAL DEPTH (FROM G.S.) 2298 FT.					
CORE RECOVERY (FT./%) N. A.		CORE BOXES N. A.	SAMPLES 172	EL. TOP OF CASING N.A.	GROUND EL. 3410.5	DEPTH/EL. GROUND WATER NOT DETERMINED		DEPTH/EL. TOP OF ROCK (FROM GROUND SURFACE) 16 FT./3394.5						
SAMPLE HAMMER WEIGHT/FALL N. A.		CASING LEFT IN HOLE: DIA./LENGTH 180 IN./11FT. 144 IN./93.4 FT.			LOGGED BY: R.M. BEATHARD, R.C. KISER, J.L. MATTHEWS									
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY	SAMPLE BLOWS IN.	WATER PRESSURE TESTS		ELEVATION 3417.5	DEPTH (FT.) 0 BELOW K. B.	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION		NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
				LOSS IN.	G.P.M.				P.S.I.	TIME IN MINUTES		SAMPLE		
BACKHOE	168 IN. DIA. AUGER FROM 11 TO 91.5 FT NO SAMPLES TAKEN FROM GROUND SURFACE TO 103 FT.	3410.5	10 20 30 40 50 60	GROUND SURFACE						Rig depths measured from kelly bushing approx. 7 ft. above ground surface.				
				0-11' DUNE SAND, Reddish brown										NOTES:
				11-16' CALICHE, White										1. Stratigraphic description from 0 to 103 ft. based on geologic log of boring B-25.
				16-36.5' GATUNA FORMATION, Sandstone, reddish brown, fine to medium grained										2. 168 in. dia. pilot hole augered from 0-97.5 ft. by Meredith Drilling Co. prior to setting and cementing 144 in. dia. surface casing.
				36.5-46.5' SANTA ROSA FORMATION, Sandstone, gray and reddish brown, fine grained										3. All depths given are from ground surface except for those shown in depth column.
				46.5-538' DEWEY LAKE FORMATION, Siltstone and sandstone, reddish brown, whitish veins of gypsum interspersed throughout										
														CASING:
														0-11 ft. = 180 in. dia CMP
														0-93.4 ft. = 144 in. dia. surface casing
														0-843 ft. = 120 in. dia. steel liner (installed after completion of shaft drilling)
SS - SPLIT SPOON; ST - SHELBY TUBE; D - DENNISON; P - PITCHER; O - OTHER				SITE WIPP - EDDY CO., N. M.						HOLE NO. EXPLORATORY SHAFT				

BECHTEL

GEOLOGIC DRILL LOG

PROJECT

WIPP

JOB NO.

12484

SHEET NO.

2 OF 11

HOLE NO.
EXPLORATORY
SHAFT (SPDV)

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE	LENGTH CORE RUN	SAMPLE RECOVERY	SAMPLE BELOW "IN."	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELLOW K. H.	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION			NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
142 IN. DIA. ROTARY CUTTER BIT FROM 97.5 TO 2298 FT.	168 IN. DIA. AUGER	CUTTINGS SAMPLES TAKEN FROM 103 TO 2298 FT.	NO SAMPLES TAKEN						3347.5	70						
										80						
										90						
										100						
										110	1			Siltstone, dark reddish brown, moderately weak, thinly bedded		
										120	2			Sandstone, dark reddish brown, fine grained, well sorted, sub-rounded grains, weakly cemented	Horizontal displacement at 99 ft. was 0.01 ft. S27°06'W	
										130	3			Sandstone, silty, very fine grained, grading into siltstone in places	Cuttings samples collected from discharge end of borehole line unless otherwise indicated. Sample depths shown are approximate	
										140	4			As above	Drilling rate from 122 to 148 ft. was 1.4 ft/hr	
									3267.5	150	5			Siltstone, sandy, dark reddish brown		
S = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER						SITE									HOLE NO.	
WIPP - EDDY CO., N. M.														EXPLORATORY SHAFT		

BECHTEL

GEOLOGIC DRILL LOG

PROJECT

WIPP

JOB NO.

12484

SHEET NO.

3 OF 11

HOLE NO.
EXPLORATORY
SHAFT (SPDV)

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE SLOWS IN'	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW M.R.	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
142 IN. DIA. ROTARY CUTTER BIT		CUTTINGS SAMPLES					3267.5	150			Siltstone, sandy, dark reddish brown, moderately weak, thin bedded, grading into sandstone in places	Horizontal displacement at 143 ft. was 0.02 ft. S04°07'W
							150	6			Clay, dark reddish brown, some siltstone (dark reddish brown and greenish gray, moderately weak), clay probably occurs as claystone interbedded with siltstone	Drilling rate from 148 to 158 ft. was 3.3 ft./hr.
							170	7			Siltstone, sandy, dark reddish brown, moderately weak, little clay	Drilling rate from 158 to 194 ft. was 12 ft./hr.
							180	8			As above	
							190	9			Clay and Siltstone, dark reddish brown	Horizontal displacement at 183 ft. was 0.01 ft. S17°47'W
							200	10			Sandstone, dark reddish brown, moderately weak, very fine grained, subrounded, well sorted	Drilling rate from 194 to 203 ft. was 1.3 ft./hr.
							210	11			Siltstone, dark reddish brown, moderately weak, gypsum fragments	Drilling rate from 203 to 217 ft. was 1.2 ft./hr.
							220	12			Sandstone, silty, dark reddish brown, moderately weak, very fine grained, subrounded, well sorted	Drilling rate from 217 to 245 ft. was 1.4 ft./hr.
							3187.5	230			Siltstone, dark reddish brown	
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER				SITE WIPP - EDDY CO., N. M.								HOLE NO. EXPLORATORY SHAFT

BECHTEL

GEOLOGIC DRILL LOG								PROJECT WIPP			JOB NO. 12484	SHEET NO. 4 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)						
SAMPLER TYPE AND DIAMETER		SAMPLER ADVANCE LENGTH CORE RUN		SAMPLE RECOVERY CORE RECOVERY		SAMPLE BLOWS 'IN.'		WATER PRESSURE TESTS		ELEVATION			DEPTH (FT.) BELOW K.R.	GRAPHIC LOG		DESCRIPTION AND CLASSIFICATION			NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SAMPLER	ADVANCE	SAMPLER	LENGTH	SAMPLE	RECOVERY	SAMPLE	BLOWS	G.P.M.	P.S.I.	TIME	IN	MINUTES	ELEVATION	DEPTH (FT.) BELOW K.R.	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION		
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES												3187.5	230					Horizontal dis- placement at 229 ft. was 0.02 ft. S43°30'W
													240	14			Siltstone, dark reddish brown, moderately weak, gypsum fragments, little clay		
													250	15			Sandstone, silty, dark reddish brown, moderately weak, very fine grained, subrounded, well sorted, some siltstone, abundant gypsum fragments	Sample 16 taken from drill bit - no formal descrip- tion	
													260	16			As above, much less gypsum	Drilling rate from 245 to 262 ft. was 1.0 ft./hr.	
													270	17			As above (sample No. 14)	Drilling rate from 262 to 276 ft. was 0.6 ft./hr.	
													280	18			As above, abundant gypsum and greenish sand- stone fragments	Horizontal dis- placement at 271 ft. was 0.03 ft. S19°29'W	
													290	19			As above	Drilling rate from 276 to 299 ft. was 1.2 ft./hr.	
													300	20			As above	Horizontal dis- placement at 300 ft. was 0.03 ft. S19°29'W	
													310	21			Sandstone, silty, dark reddish brown, moderately weak, very fine grained, well sorted, and Siltstone, dark reddish brown, moderately weak, some gypsum fragments	Drilling rate from 299 to 309 ft. was 1.3 ft./hr.	
													3107.5	310	22		Sandstone, as above, some lt. green color		
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER								SITE WIPP - EDDY CO., N. M.			HOLE NO. EXPLORATORY SHAFT								

BECHTEL

GEOLOGIC DRILL LOG

CHAUSSY

117

18 NO

1368

14481 NO

5 - 1

MOLE NO.

EXPLORATORY

SAMPLER TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS IN.	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW K.R.	GRAPHIC LOG	SAMPLE NO.	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES							3107.5	310		23	S# 23 taken from drill bit - no formal description	
									320		24	Sandstone, silty, dark reddish brown, moderately weak, very fine grained, well sorted, and Siltstone, dark reddish brown, moderately weak	Horizontal displacement at 311 ft. was 0.04 ft. S 0° 03'E
									330		25	Sandstone, silty, dark reddish brown, moderately weak, very fine grained, subrounded, well sorted, some gypsum fragments	Drilling rate from 309 to 322 ft. was 1.9 ft./hr.
									340		26	Siltstone, clayey, dark reddish brown, moderately weak, and Sandstone, dark reddish brown, moderately weak, very fine grained, trace of clay	Drilling rate from 336 to 375 ft. was 2.1 ft./hr.
									350		27	Siltstone, sandy, dark reddish brown and greenish gray, moderately weak	
									360		28	Siltstone, sandy, dark reddish brown, moderately weak, grades into Sandstone, dark reddish brown, moderately weak, very fine grained	Horizontal displacement at 357 ft. was 0.06 ft. S 0° 10'E
									370		29	Sandstone, silty, dark reddish brown, moderately weak, very fine grained, subrounded, well sorted	
									380		30	As above, with gypsum fragments	
									390		31	Sandstone, as above, and Siltstone	Drilling rate from 375 to 433 ft. was 2.0 ft./hr.
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER				SITE WIPP - EDDY CO., N. M.								HOLE NO. EXPLORATORY SHAFT	

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DERNISON; P = PITCHER; O = OTHER

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WIRE - EDDY CO N M

HOLE NO. EXPLORATORY SHAFT

BECHTEL

GEOLOGIC DRILL LOG								PROJECT WIPP	JOB NO. 12484	HEET NO. 6 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)	
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY	SAMPLE BLOWS IN.	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW K.B. GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES					
142 IN. DIA. ROTARY CUTTER BIT		CUTTINGS SAMPLES						3027.5	390		Sandstone, as above, and Siltstone, sandy, dark reddish brown, some greenish gray frags., moderately weak, abundant gypsum fragments	
								400	32		As above	
								410	33		Sandstone, as sample No. 29, abundant gypsum fragments	Horizontal displacement at 401 ft. was 0.08 ft. S08° 13' W
								420	34		As above	
								430	35		As above	
								440	36		As above, some gray green color	Drilling rate from 433 to 464 ft. was 1.6 ft./hr.
								450	37		Sandstone and Siltstone, as sample No. 32	Horizontal displacement at 445 ft. was 0.10 ft. S18° 50' W
								460	38		As above	
								2947.5	470		Sandstone, as sample No. 29	
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER				SITE WIPP - EDDY CO., N. H.				HOLE NO. EXPLORATORY SHAFT				

BECHTEL

GEOLOGIC DRILL LOG

PROJECT

WIPP

JOB NO.

12484

SHEET NO.
7 OF 11HOLE NO.
EXPLORATORY
SHAFT (SPDV)

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY	SAMPLE SLOWS IN. / FT.	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT. BELOW K.B.)	GRAPHIC LOG	SAMPLE NUMBER	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.M.	P. F.S.I.	TIME IN MINUTES							
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES							2947.5	470				Drilling rates: 464-490 ft. = 1.5 ft./hr. 490 - 502 ft. = 0.8 ft./hr. 502 - 506 ft. = 0.7 ft./hr.	
								480	480		40	Siltstone, dark reddish brown, moderately weak, gypsum fragments, trace of sandstone		
								490	490		41	Sandstone, silty, dark reddish brown, moderately strong to moderately weak, very fine grained, abundant greenish gray reduction spots	Horizontal dis- placement at 489 ft. was 0.14 ft. S28°17'W	
								500	500		42	As above		
								510	510		43	As above, subrounded, well sorted, gypsum fragments	Drilling rates: 506 - 510 ft. = 1.3 ft./hr. 510 - 513 ft. = 0.5 ft./hr. 513 - 527 ft. = 0.6 ft./hr. 527 - 538 ft. = 0.5 ft./hr. 538 - 548 ft. = 0.4 ft./hr.	
								520	520		44	As above		
								530	530		45	As above, moderately weak, some greenish gray reduction spots		
								540	540		46	As above		
								550	550		47	As above		
								2867.5	538 - 850'		48	As above		
									RUSTLER FORMATION, primarily anhydrite, dolomite, and mudstone				Horizontal dis- placement at 533 ft. was 0.18 ft. S35° 10'W	
								2867.5	550		49	Anhydrite, white to light brownish gray		
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER					SITE WIPP - EDDY CO., N. M.			HOLE NO. EXPLORATORY SHAFT						

GEOLOGIC DRILL LOG								PROJECT WIPP	JOB NO. 12484	HEET NO. 8 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)	
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH	CORE RUN SAMPLE RECOVERY	SAMPLE BLOWS IN."	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION 2867.5	DEPTH (FT.) B BELOW K.R. GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE IN P.S.I.	TIME IN MINUTES					
											Anhydrite, white to light brownish gray, hard, finely crystalline, some gypsum fragments	
											As above	Drilling rates: 548-554 ft. = 0.5 ft./hr. 554-561 ft. = 0.7 ft./hr.
											As above, light gray to light brownish gray	
											Clay, dark brown, high plasticity, some silt	
											Siltstone, medium gray, moderately weak, some very fine sand and minor clay	Horizontal dis- placement at 577 ft. was 0.24 ft. S46° 12' W
											Anhydrite, very lt. gray to med. dk. gray, moderately hard	
											'593 - 628' MAGENTA DOLomite MEMBER	
											Siltstone, calcareous, med. olive gray to olive gray, strong, mod. hard, mod. to well cemented, sparse gypsum crystals	
											As above	
											?	
											?	
											Dolomite, olive gray	
SS = SPLIT SPOON; ST = SHELBY TUBE; O = OENNISON; P = FITCHER; G = OTHER				SITE WIPP - EDDY CO., N. M.								HOLE NO. EXPLORATORY SHAFT

BECHTEL

GEOLOGIC DRILL LOG										PROJECT WIPP			JOB NO. 12484	SHEET NO. 9 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY	SAMPLE BLOWS IN."	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW K.R.	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
					LOSS IN	Q.P.M. P.S.I.	TIME IN MINUTES								
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES							2787.5	630						
								2782.5	640		58	Dolomite, olive gray, mod. strong, mod. hard, sugary texture w/small silver blebs (mica?), evidence of lamella, powdered sample reacts slightly w/HCl acid			
								650	59			Anhydrite, very light gray to brownish gray, mod. strong, mod. hard, well cemented, possibly gypsiferous			
								660	60			As above			
								670	61			As above, contains minor amt. of small black grains w/resinous luster, pulverized grains have earthy to sandy appearance & small reaction w/HCl acid			
								680	62			As above (sample No. 58), lighter in overall color and larger fragments			
								690	63			As above, lighter in overall color, smaller fragments than above			
								700	64			Anhydrite, mot. pale yellow brn. overall, some pale reddish brn. frags. (polyhalite), stronger and harder than previous samples, trace translucent to white, fibrous satinspar gypsum, trace gray clay frags.			
								2707.5	710		65	Anhydrite, slightly mot. med. to lt. gray			
SS = SPLIT SPOON; ST = SHKLEY TUBE; D = DENNISON; P = PITCHER; O = OTHER				SITE	WIPP - EDDY CO., N. M.							HOLE NO. EXPLORATORY SHAFT			

BECHTEL

GEOLOGIC DRILL LOG							PROJECT WIPP	JOB NO. 12484	SHEET NO. 10 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)			
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS IN., "IN."	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW K.B.	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES							2707.5	710				
								2699.5	720	66		Anhydrite, slightly mot. med. to lt. gray over-all, trace gypsum	
								2670.5	730	67		711-740' CULEBRA DOLOMITE MEMBER	
								2658.5	740	68		Dolomita, crystalline, lt. olive gray, mod. strong, well cemented, sugary texture, powdered sample reacts slightly w/HCl acid, trace transparent gypsum crystals	
								2627.5	750	69		As above	
									760	70		Anhydrite, crystalline, variegated color (primarily grayish pink, pale red, and light gray), strong, hard, sugary texture, blebs of grayish red (polyhalite?)	
									770	71		Halite, pale reddish brn., strong, hard, dissolves slowly in hot water, few transparent frags. exhibiting cleavage faces, trace argillaceous material	Horizontal displacement at 753 ft. was 0.49 ft. S51°15'W
									780	72		As above, more abundant crystals, some mudstone (clay to fine sand particles, grayish red, poor to mod. cementation, crumbles easily)	
									790	73		As above, trace anhydrite (yellow gray, strong, mod. hard)	
												Mudstone, moderate brown	
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER				SITE	WIPP - EDDY CO., N. M.							HOLE NO. EXPLORATORY SHAFT	

BECHTEL

GEOLOGIC DRILL LOG

PROJECT WIIPP											JOB NO. 12484	SHEET NO. 11 OF 11	HOLE NO. EXPLORATORY SHAFT (SPDV)
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS IN.	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH (FT.) BELOW K.R. GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
142 IN. DIA. ROTARY CUTTER BIT	CUTTINGS SAMPLES							2627.5	790		Mudstone, primarily silt w/clay and fine sand particles, mod. brn., strong, hard, well cemented, trace transparent halite crystals		
									800	74	As above, less halite, trace anhydrite		
									810	75	Mudstone, primarily silt w/fine sand & minor clay particles, olive gray, strong, hard, mod. cemented, mica flakes present		
									820	76	As above (sample No. 73), trace gypsum crystals and olive gray mudstone		
									830	77	As above (sample No. 75), trace brn. mudstone		
									840	78	As above		
									850	79	As above, larger frags.		
									860	80	As above, brown and olive gray, trace anhydrite	← Horizontal dis- placement at 841 ft. was 0.59 ft. 554°18'W	
										81	850-2298' SALADO FORMATION Note: For description of Salado Formation stratigraphy and lithology see geologic map of shaft		
										82			
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER					SITE WIIPP - EDDY CO., N. M.						HOLE NO. EXPLORATORY SHAFT		

EXPLANATION

ROCK TYPE



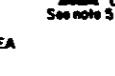
CONTACTS



FRACTURE



SEEP



GEOLOGIC UNIT SYMBOLS AND DESCRIPTIONS *

- A ARGILLACEOUS MATERIAL, GENERALLY FOUND AS AN INTERGRANULAR ACCESSORY CONSTITUENT, LIGHT GRAY (N7) TO MODERATE REDDISH-BROWN (10Y 4/6), SLIGHTLY MOIST TO MOIST, TRACE TO SOME SILT.
- AN ANHYDRITE, LIGHT GRAY (N7) TO WHITE (N9), MODERATE ORANGE-PINK (10R 7/4) TO PALE REDDISH-BROWN (10R 5/8), FINELY CRYSTALLINE.
- AC ANHYDRITE, LIGHT GRAY (N7) TO GRAYISH-ORANGE (10YR 7/4) TO WHITE (N9), WITH SEVERAL SOFT 1/2"- TO 1 1/2"-INCH CLAY STRINGERS WITH TRACE OF SILTY.
- CB CLAY, DARK REDDISH-BROWN (10R 3/4) TO MODERATE REDDISH-BROWN (10R 4/6) WITH TRACE TO SOME SILT, TRACE TO SOME HALITE.
- HA** HALITE, DARK REDDISH-BROWN (10R 3/4) TO MODERATE REDDISH-BROWN (10R 4/6) TO MODERATE REDDISH-ORANGE (10R 5/6), LOCALLY MEDIUM LIGHT GRAY (N7), MEDIUM TO COARSELY CRYSTALLINE, ARGILLACEOUS.
- HB HALITE, DARK REDDISH-BROWN (10R 3/4) TO MODERATE REDDISH-BROWN (10R 4/6), SLIGHTLY TRANSLUCENT, MEDIUM TO COARSELY CRYSTALLINE.
- H HALITE, COLORLESS (TRANSPARENT TO TRANSLUCENT) TO GRAYISH-ORANGE-PINK (5YR 7/2), MEDIUM TO COARSELY CRYSTALLINE, MAY BE BANDED.
- SB SILTSTONE, DARK REDDISH-BROWN (10R 3/4), TRACE TO NO HALITE, TRACE FINE-GRAINED SAND.
- SG SILTSTONE, LIGHT OLIVE-GRAY (5Y 6/1), TRACE FINE-GRAINED SAND, TRACE TO NO HALITE.
- SH** SILTSTONE, DARK REDDISH-BROWN (10R 3/4) TO MODERATE REDDISH-BROWN (10R 4/6), HALITIC, TRACE TO SOME CLAY, LOCALLY CONTAINS VERY FINE TO FINE-GRAINED SAND.
- SSH SILTSTONE, MODERATE REDDISH-ORANGE (10R 6/6), WITH VERY FINE-GRAINED SAND, TRACE HALITE; LOCALLY GRADES TO A VERY FINE TO FINE-GRAINED SANDSTONE, MODERATE REDDISH-BROWN (10R 4/6) TO MEDIUM LIGHT GRAY (N7), TRACE TO SOME SILT.

* SLIGHT VARIATIONS FROM THESE GENERAL DESCRIPTIONS MAY EXIST.
THE EXCEPTIONS ARE NOTED IN THE REMARKS COLUMN.

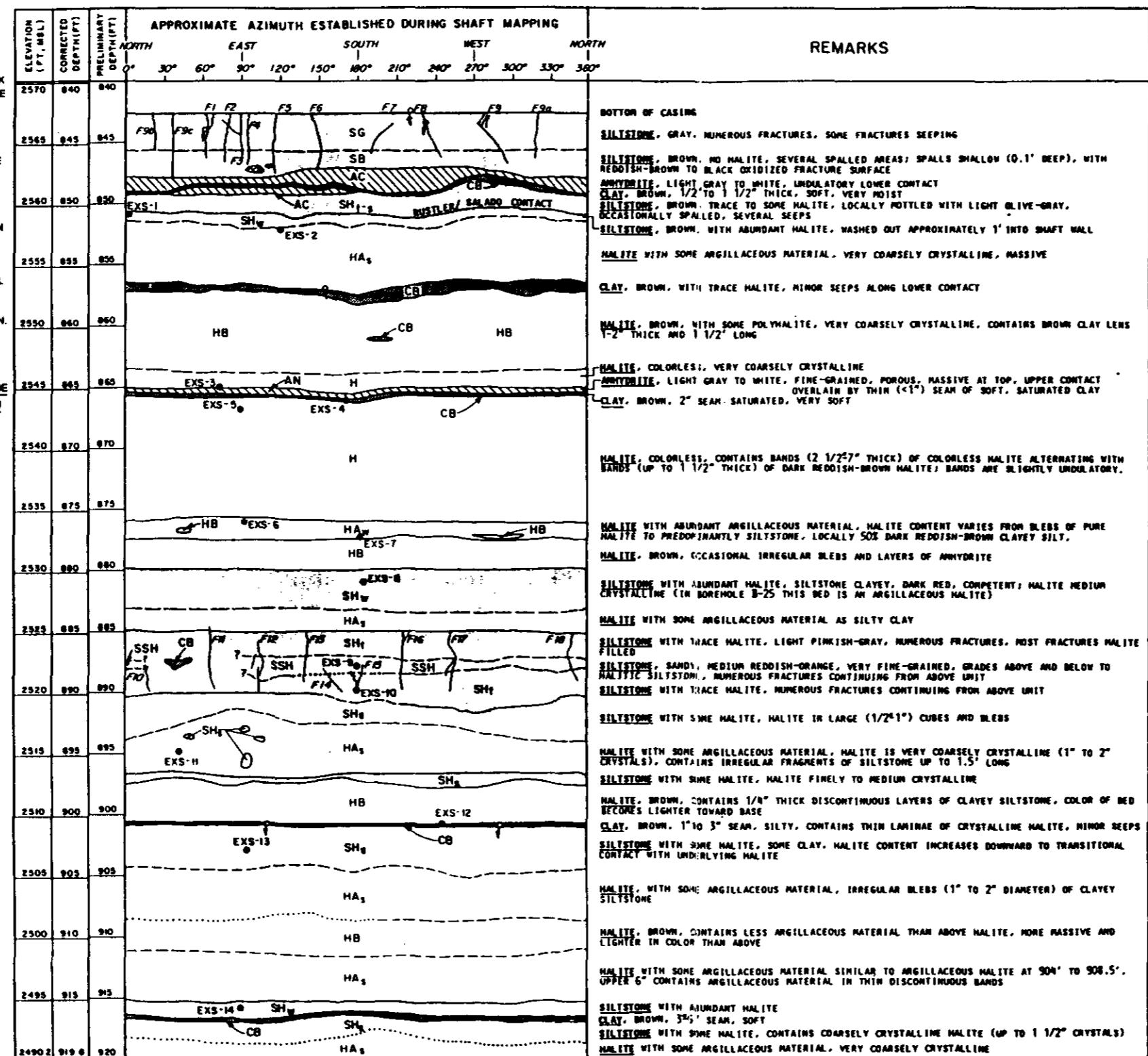
** ESTIMATED CONTENT OF ACCESSORY CONSTITUENTS IS INDICATED BY A MODIFIER:
T = TRACE
S = SOME
W = WITH OR ABUNDANT

NOTES:

- 1) ELEVATIONS REFER TO BOTTOM OF CONCRETE AT ELEVATION OF 2530.38 WHICH WAS TIED TO CWI BENCHMARK NO. CW-1 (BRASS CAP OUTSIDE THE C & SH SHAFT) AT ELEVATION 3410.000 ON DECEMBER 2, 1982.
- 2) DEPTHS ARE RELATED TO THE TOP OF FIRST BUNTON AT ELEVATION 3410.00 FT. MSL.
- 3) PRELIMINARY DEPTHS WERE CORRECTED BY THE ADDITION OF A -0.2 FT. CORRECTION FACTOR.
- 4) STANDARD GEOLOGIC SYMBOL FOR HALITE IS NOT USED IN ORDER TO ENHANCE THE CLARITY OF THE LOG COLUMN.

REFERENCE:

GEOTECHNICAL ACTIVITIES IN THE EXPLORATORY SHAFT-SELECTION OF THE FACILITY INTERNAL, MARCH 1983, TIME 3178.



SCALE
5 0 5 10 FT

- FRACTURE NOTES:**
- F1 OPEN TO 1/8-INCH WIDE ABOVE CONTACT, CLOSED BELOW CONTACT; VERY MINOR SEEPAGE.
F2 FILLED WITH WHITE PRECIPITATE (SALT?); 1/8-INCH WIDE IN UPPER EXTENT, CLOSED IN LOWER EXTENT.
F3 BIFURCATION FORMS POTENTIAL SPALL AREA.
F4 VERY MINOR SEEPAGE; OPEN.
F5 OXIDIZED MATERIAL IN FRACTURE BELOW CONTACT; 1/8-INCH MAXIMUM WIDTH.
F6 TRENDS N20°E; 1/8-INCH WIDE; OPEN.
F7 CLOSED ABOVE CONTACT, OPEN TO 1/4-INCH WIDE BELOW CONTACT.
- F8 OPEN 1/16"- TO 1/2-INCH WIDE ABOVE CONTACT; CLOSED BELOW CONTACT; PARTIALLY FILLED WITH SILT; MINOR SEEPAGE.
F9 1/8"- TO 1/4-INCH WIDE.
F9a ESTIMATED STRIKE N60°W.
F9b OPEN 1/8-INCH WIDE.
F9c CLOSED TO OPEN 1/8-INCH WIDE.
F10 HALITE FILLED, STRIKE E-W.
F11 VERTICAL FRACTURE WITH MAXIMUM WIDTH OF 1 INCH; HALITE FILLED; MODERATE REDDISH-BROWN COLOR; ESTIMATED STRIKE N30°E; MATCHES WITH F15.
- F12 FRACTURE PARTIALLY FILLED WITH HALITE; STRIKE N80°E; MATCHES WITH F17.
F13 NO SPECIFIC DATA.
F14 ESTIMATED STRIKE N60°W, DIPPING N40°SW.
F15 POSSIBLE MATCHES F11?; STRIKE N50°E.
F16 VERTICAL FRACTURE 3/8-INCH WIDE; HALITE FILLED; PROBABLY MATCHES F18; STRIKE N11°E.
F17 VERTICAL FRACTURE 1/2-INCH WIDE; HALITE FILLED; MATCHES F12; STRIKE N80°E.
F18 ESTIMATED STRIKE N10 TO 20°E; FRACTURE F18 MATCHES F16; HALITE FILLED.

FIGURE D-2
C & SH SHAFT
KEY AREA GEOLOGY
BOTTOM CASING TO 920 FEET

EXPLANATION

NOTES:

- 1) ELEVATIONS REFER TO BOTTOM OF CONCRETE AT ELEVATION OF 2530.36 WHICH WAS TIED TO CMI BENCHMARK NO. CW-1 (BRASS CAP OUTSIDE THE C & SH SHAFT) AT ELEVATION 3410.00 ON DECEMBER 2, 1962.
- 2) DEPTHS ARE RELATED TO THE TOP OF FIRST BUNTON AT ELEVATION 3410.00 FT. MSL.
- 3) PRELIMINARY DEPTHS WERE CORRECTED BY THE ADDITION OF A CORRECTION FACTOR.
- 4) STANDARD GEOLOGIC SYMBOL FOR HALITE IS NOT USED IN ORDER TO ENHANCE THE CLARITY OF THE LOG COLUMN.

REFERENCE:

GEOTECHNICAL ACTIVITIES IN THE EXPLORATORY SHAFT-SELECTION OF THE FACILITY INTERVAL MARCH 1963, TIME 3178.

ELEVATION (FT., MSL)	CORRECTED DEPTH (FT.)	PRELIMINARY DEPTH (FT.)		REMARKS
2610	800	800		
2600	810	810		
2590	820	820	C A S I N G	
2580	830	830		
2570	840	840	BOTTOM OF CASING	SILTSTONE (SH), GRAY, SEVERAL OPEN FRACTURES, 1/16" TO 1/2". RIBBED SILTSTONE (SH), BROWN, FRACTURES AS ABOVE ANHYDRITE (AH), LIGHT GRAY TO WHITE CLAY (CB), BROWN, SOFT, VERY MOIST SILTSTONE (SH), WITH TRACE TO SOME HALITE, OCCASIONALLY SPALLED, SEVERAL SEAMS SILTSTONE (SH), WITH ABUNDANT HALITE HALITE (H), WITH SOME ARGILLACEOUS MATERIAL, VERY COARSELY CRYSTALLINE, MASSIVE CLAY (CB), BROWN, 1" TO 12" SEAM HALITE (H), BROWN, WITH SOME POLYHALITE HALITE (H), COLORLESS, VERY COARSELY CRYSTALLINE ANHYDRITE (AH), 1/2" THICK, BROWN, WITH HALITE, BROWN CLAY SEAM (2") AND UNDERLAIN BY BROWN CLAY SEAM (2") HALITE (H), COLORLESS
2560	850	850	EXS-1 EXS-2	
2550	860	860	EXS-3 EXS-4 EXS-5 EXS-6	
2540	870	870		HALITE (H), BROWN, WITH ABUNDANT ARGILLACEOUS MATERIAL HALITE (H), BROWN SILTSTONE (SH), WITH ABUNDANT HALITE HALITE (H), WITH SOME ARGILLACEOUS MATERIAL SILTSTONE (SH), WITH TRACE HALITE, HALITE-FILLED FRACTURES SILTSTONE (SH), BROWN, 1/2" TO 1" THICK, FRACTURES AS ABOVE SILTSTONE (SH), WITH TRACE HALITE, FRACTURES AS ABOVE SILTSTONE (SH), WITH SOME HALITE, FRACTURES AS ABOVE
2530	880	880	EXS-7 EXS-8	
2520	890	890	EXS-9 EXS-10 EXS-11	
2510	900	900	EXS-12	
2500	910	910	EXS-13 EXS-14	
2490	920	920		HALITE (H), BROWN HALITE (H), WITH SOME ARGILLACEOUS MATERIAL SILTSTONE (SH), WITH ABUNDANT HALITE CLAY (CB), BROWN, 1" TO 6" SEAM SILTSTONE (SH), WITH ABUNDANT HALITE HALITE (H), WITH SOME POLYHALITE HALITE (H), WITH VARIABLE AMOUNT OF HALITE HALITE (H), WITH SOME POLYHALITE HALITE (H), WITH SOME POLYHALITE HALITE (H), WITH SOME TO ABUNDANT POLYHALITE AND POLYHALITE HALITE (H), WITH ABUNDANT ARGILLACEOUS MATERIAL AND TRACE POLYHALITE
2470	940	940		HALITE (H), COLORLESS, WITH TRACE TO SOME POLYHALITE INCREASING DOWNWARD, COUPLED WITH SEAMS POLYHALITE (PH) STRETCHES FROM 290' TO 940' HALITE (H), 1" SEAM HALITE (H), COLORLESS, WITH TRACE POLYHALITE HALITE (H), WITH ABUNDANT ARGILLACEOUS MATERIAL HALITE (H), WITH ABUNDANT POLYHALITE AND SOME ARGILLACEOUS MATERIAL POLYHALITE (PH) AND ARGILLACEOUS MATERIAL, Banded HALITE (H), WITH ABUNDANT POLYHALITE AND SOME ARGILLACEOUS MATERIAL HALITE (H), 1" SEAM HALITE (H), WITH ABUNDANT POLYHALITE AND SOME ARGILLACEOUS MATERIAL HALITE (H), WITH SOME POLYHALITE AND SOME ARGILLACEOUS MATERIAL HALITE (H), WITH POLYHALITE (PH), WITH HALITE INTERBEDDED 1"-2" THICK
2460	950	950		
2450	960	960		
2440	970	970		
2430	980	980	EXS-15	
2420	990	990		
2410	1000	1000		

GEOLOGIC UNIT SYMBOLS AND DESCRIPTIONS*

- A ARGILLACEOUS MATERIAL, GENERALLY FOUND AS AN INTERGRANULAR ACCESSORY CONSTITUENT, LIGHT GRAY (R7) TO MODERATE REDDISH-BROWN (IOR 4/6), SLIGHTLY MOIST TO MOIST, TRACE TO SOME SILTY.
 AC ANHYDRITE, LIGHT GRAY (R7) TO WHITE (R9) TO GRAYISH-ORANGE (SYR 7/8), FINELY CRYSTALLINE TO MICROCRYSTALLINE, SEVERAL SOFT 1/2" TO 1 1/2" INCH CLAY STRINGERS WITH TRACE SILTY.
 AH ANHYDRITE, MEDIUM DARK GRAY (R8) TO LIGHT GRAY (R7) TO WHITE (R9), MODERATE ORANGE-PINK (IOR 7/8) TO PALE REDDISH-BROWN (IOR 5/4), FINELY CRYSTALLINE TO MICROCRYSTALLINE.
 B CLAY, DARK REDDISH-BROWN (IOR 3/4), TRACE TO SOME SILTY, TRACE TO SOME HALITE.
 C CLAY, MEDIUM LIGHT GRAY (R6) TO MEDIUM DARK GRAY (R8) TO LIGHT OLIVE-GRAY (SY 6/1), TRACE TO SOME SILT, TRACE TO SOME HALITE.
 H HALITE, COLORLESS (TRANSPARENT TO TRANSLUCENT) TO GRAYISH-ORANGE-PINK (SYR 7/2), MEDIUM TO COARSELY CRYSTALLINE, MAY BE BANDED.
 HA** HALITE, DARK REDDISH-BROWN (IOR 3/4) TO MODERATE REDDISH-BROWN (IOR 4/6), MEDIUM TO COARSELY CRYSTALLINE, ARGILLACEOUS.
 HB HALITE, DARK REDDISH-BROWN (IOR 3/4) TO MODERATE REDDISH-BROWN (IOR 4/6), SLIGHTLY TRANSLUCENT.
 HP** HALITE, TRANSLUCENT TO MODERATE REDDISH-ORANGE (IOR 5/6) TO MODERATE REDDISH-BROWN (IOR 4/6), POLYHALITIC.
 HPA** HALITE, MODERATE REDDISH-ORANGE (IOR 5/6) TO MODERATE REDDISH-BROWN (IOR 4/6), POLYHALITIC AND ARGILLACEOUS.
 P POLYHALITE, MODERATE REDDISH-BROWN (IOR 4/6) TO MODERATE REDDISH-ORANGE (IOR 5/6), FINELY CRYSTALLINE TO MICROCRYSTALLINE.
 PA** POLYHALITE, MODERATE REDDISH-BROWN (IOR 4/6), FINELY CRYSTALLINE TO MICROCRYSTALLINE, ARGILLACEOUS.
 PH** POLYHALITE, MODERATE REDDISH-BROWN (IOR 4/6) TO MODERATE REDDISH-ORANGE (IOR 5/6), FINELY CRYSTALLINE TO MICROCRYSTALLINE, HALITIC.
 SB SILTSTONE, DARK REDDISH-BROWN (IOR 3/4), TRACE HALITE, TRACE FINE SAND.
 SG SILTSTONE, LIGHT OLIVE-GRAY (SY 6/1), TRACE HALITE, TRACE FINE-GRAINED SAND.
 SH SILTSTONE, DARK REDDISH-BROWN (IOR 3/4) TO MODERATE REDDISH-BROWN (IOR 4/6), HALITIC, TRACE TO SOME CLAY, LOCALLY CONTAINS VERY FINE-GRAINED SAND.
 SSN SILTSTONE, MODERATE REDDISH-ORANGE (IOR 5/6), WITH VERY FINE-GRAINED SAND, TRACE HALITE; LOCALLY GRADES TO VERY FINE TO FINE-GRAINED SANDSTONE, MODERATE REDDISH-BROWN (IOR 4/6) TO MEDIUM LIGHT GRAY (R6) TRACE TO SOME SILT.

* SLIGHT VARIATIONS FROM THESE GENERAL DESCRIPTIONS MAY EXIST. THE EXCEPTIONS ARE NOTED IN THE REMARKS COLUMN.

**ESTIMATED CONTENT OF ACCESSORY CONSTITUENTS IS INDICATED BY A MODIFIER:
 T = TRACE
 S = SOME
 M = WITH OR ABUNDANT

SILTSTONE	HALITE	ANHYDRITE	POLYHALITE

ACCESSORY CONSTITUENTS

ESTIMATED PERCENTAGE OF ACCESSORY CONSTITUENTS INDICATED AS FOLLOWS:

TRACE SOME ABUNDANT

Argillaceous			
Halite			
Anhydritic			
Polyhalitic			
Sand			

LAMINAR FEATURES

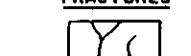
Clay	SEAM >1/4" Thick	PARTING Between 1/4" - 1/16" Thick	BREAK <1/16" Thick	DISCONTINUOUS PARTINGS AND BREAKS

Halite	Anhydrite	Polyhalite

CONTACTS

SHARP	GRADATIONAL	DIFFUSE

FRACTURES



EXS-6 * ROCK SAMPLE LOCATION AND NUMBER

▲ INSTRUMENT LOCATION

SHEET 1 OF 3

FIGURE D-3
C & SH SHAFT
LITHOLOGIC LOG SHOWING
SAMPLE AND INSTRUMENT LOCATIONS
BOTTOM OF CASING TO 2200 FEET

ELEVATION (FT. MSL)	CORRECTED DEPTH	PRELIMINARY DEPTH	STRATIGRAPHIC COLUMN	REMARKS	ELEVATION (FT. MSL)	CORRECTED DEPTH	PRELIMINARY DEPTH	STRATIGRAPHIC COLUMN	REMARKS	ELEVATION (FT. MSL)	CORRECTED DEPTH	PRELIMINARY DEPTH	STRATIGRAPHIC COLUMN	REMARKS	
		1000					1200						1400		
2400	1010	1010		HALITE (NaCl) WITH SOME ANGILLACEOUS MATERIAL. 1/2" SEAM OF POLYHALITE AND ANHYDRITE FROM 1000' TO 3000'	2200	1210	1210		HALITE (NaCl) WITH SOME TO ABUNDANT POLYHALITE (P. ₁) AND ANHYDRITE (An). COLORLESS, WITH STRINGS OF POLYHALITE HALITE (NaCl) WITH SOME POLYHALITE	2000	1410	1410		HALITE (NaCl) WITH SOME ANGILLACEOUS MATERIAL	
		1010	X X	CLAY (CaCO ₃) BROWN, 1/4" SEAM	2100	1220	1220	X X X	HALITE (NaCl) WITH ABUNDANT POLYHALITE AND POLYHALITIC STRINGERS UP TO 2" THICK	1900	1420	1420	X X X	ANHYDRITE (An) WITH SOME TO ABUNDANT POLYHALITE	
		1020	X X X	HALITE (NaCl) COLORLESS	2100	1230	1230	X X X	HALITE (NaCl) COLORLESS	1900	1430	1430	X X X	HALITE (NaCl) WITH SOME ANHIDRITE	
2390	1020	1020	X X X	HALITE (NaCl) WITH SOME ANGILLACEOUS MATERIAL	2100	1240	1240	X X X	HALITE (NaCl) WITH ABUNDANT POLYHALITE	1900	1440	1440	X X X	HALITE (NaCl) COLORLESS	
		1030	X X X	HALITE (NaCl) WITH SOME POLYHALITE	2100	1250	1250	X X X	HALITE (NaCl) WITH TRACE POLYHALITE	1900	1450	1450	X X X	HALITE (NaCl) WITH POLYHALITE	
		EXS-16			2100	1260	1260	X X X	ANHYDRITE (An), LIGHT GRAY TO WHITE	1900	1460	1460	X X X	HALITE (NaCl) WITH ABUNDANT POLYHALITE	
2370	1040	1040		CLAY (CaCO ₃) BROWN, 2 1/2" SEAM, 4" DEEP WASHED	2100	1270	1270	X X X	HALITE (NaCl) WITH POLYHALITE	1900	1470	1470	X X X	HALITE (NaCl) COLORLESS	
		EXS-17	X X	HALITE (NaCl) WITH ABUNDANT ANGILLACEOUS MATERIAL	2100	1280	1280	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL. 1/2" HALITE STRINGERS	1900	1480	1480	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANHIDRITE (An)	
		EXS-18	X X	HALITE (NaCl) WITH SOME POLYHALITE	2100	1290	1290	X X X	CLAY (CaCO ₃) BROWN, 1" TO 2" SEAM	1900	1490	1490	X X X	HALITE (NaCl) COLORLESS	
2360	1050	1050	X X X	HALITE (NaCl) WITH TRACE TO SOME POLYHALITE	2100	1300	1300	X X X	POLYHALITE (P. ₁), 1/2" TO 1" THICK	1900	1500	1500	X X X	HALITE (NaCl) WITH SOME ANGILLACEOUS MATERIAL	
		EXS-19		HALITE (NaCl) 1/2" TO 3" THICK	2100	1310	1310	X X X	HALITE (NaCl) COLORLESS TO HALITE WITH TRACE POLYHALITE. BLOCKS OF GRAY CLAY TO 2" DIAMETER	1900	1510	1510	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME HALITE, 2" SEAM	
		EXS-20	X X	HALITE (NaCl) COLORLESS	2100	1320	1320	X X X	HALITE (NaCl) WITH SOME POLYHALITE	1900	1520	1520	X X X	HALITE (NaCl) COLORLESS	
2340	1070	1070	X X X	HALITE (NaCl) COLORLESS TO HALITE WITH TRACE POLYHALITE	2100	1330	1330	X X X	CLAY (CaCO ₃) BROWN, 1" TO 2" SEAM	1900	1530	1530	X X X	HALITE (NaCl) WITH POLYHALITE	
		EXS-21		HALITE (NaCl) COLORLESS	2100	1340	1340	X X X	POLYHALITE (P. ₁), 1/2" TO 1" THICK	1900	1540	1540	X X X	HALITE (NaCl) WITH ABUNDANT POLYHALITE, 2" SEAM OF POLYHALITE AT 1460'	
2320	1080	1080	X X X	HALITE (NaCl) WITH TRACE POLYHALITE	2100	1350	1350	X X X	HALITE (NaCl) COLORLESS	1900	1550	1550	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH TRACE HALITE AND ANHYDRITE IN THIS SEAM	
		EXS-22		POLYHALITE (P. ₁) STRANDS, 1/2" TO 1" THICK	2100	1360	1360	X X X	CLAY (CaCO ₃) BROWN, 1/2" TO 1" THICK	1900	1560	1560	X X X	CLAY (CaCO ₃) BROWN, 1" TO GRAY, 2" SEAM	
2300	1100	1100	X X X	CLAY (CaCO ₃) BROWN, 1/2" TO 1" THICK	2100	1370	1370	X X X	HALITE (NaCl) WITH POLYHALITE	1900	1570	1570	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
		EXS-23		HALITE (NaCl) WITH SOME ANGILLACEOUS MATERIAL	2100	1380	1380	X X X	HALITE (NaCl) WITH POLYHALITE	1900	1580	1580	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
2280	1110	1110	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1390	1390	X X X	ANHYDRITE (An), 1/2" THICK	1900	1590	1590	X X X	HALITE (NaCl) COLORLESS	
		EXS-24		HALITE (NaCl) COLORLESS	2100	1400	1400	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH TRACE TO SOME ANGILLACEOUS MATERIAL	1900	1600	1600	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
2290	1120	1120	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL AND TRACE TO SOME POLYHALITE	2100	1410	1410	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH TRACE TO SOME ANHIDRITE AND POLYHALITE	1900	1610	1610	X X X	HALITE (NaCl) BROWN, 1" TO GRAY, 2" SEAM	
		EXS-25		HALITE (NaCl) COLORLESS	2100	1420	1420	X X X	CLAY (CaCO ₃) BROWN, 1/2" TO 1" THICK	1900	1620	1620	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
2280	1130	1130	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL AND ANHYDRITE AND POLYHALITE	2100	1430	1430	X X X	ANHYDRITE (An), 1/2" THICK	1900	1630	1630	X X X	HALITE (NaCl) COLORLESS	
		EXS-26		HALITE (NaCl) COLORLESS	2100	1440	1440	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH TRACE TO SOME ANHIDRITE AND POLYHALITE	1900	1640	1640	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
2270	1140	1140	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1450	1450	X X X	HALITE (NaCl) COLORLESS	1900	1650	1650	X X X	HALITE (NaCl) BROWN, 1" TO GRAY, 2" SEAM	
		EXS-27		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1460	1460	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	1900	1660	1660	X X X	HALITE (NaCl) COLORLESS	
2260	1150	1150	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1470	1470	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1670	1670	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
		EXS-28		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1480	1480	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1680	1680	X X X	HALITE (NaCl) WITH POLYHALITE, 1/2" TO 1" THICK	
2250	1160	1160	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1490	1490	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1690	1690	X X X	HALITE (NaCl) COLORLESS	
		EXS-29		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1500	1500	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1700	1700	X X X	HALITE (NaCl) COLORLESS	
2240	1170	1170	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1510	1510	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1710	1710	X X X	HALITE (NaCl) COLORLESS	
		EXS-30		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1520	1520	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1720	1720	X X X	HALITE (NaCl) COLORLESS	
2230	1180	1180	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1530	1530	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1730	1730	X X X	HALITE (NaCl) COLORLESS	
		EXS-31		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1540	1540	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1740	1740	X X X	HALITE (NaCl) COLORLESS	
2220	1190	1190	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1550	1550	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1750	1750	X X X	HALITE (NaCl) COLORLESS	
		EXS-32		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1560	1560	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1760	1760	X X X	HALITE (NaCl) COLORLESS	
2210	1200	1200	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1570	1570	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1770	1770	X X X	HALITE (NaCl) COLORLESS	
		EXS-33		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1580	1580	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1780	1780	X X X	HALITE (NaCl) COLORLESS	
2200	1590	1590	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1590	1590	X X X	HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH POLYHALITE STRANDS 1/8" TO 1/4" THICK	1900	1790	1790	X X X	HALITE (NaCl) COLORLESS	
		EXS-34		HALITE (NaCl) WITH POLYHALITE (P. ₁) WITH SOME ANGILLACEOUS MATERIAL	2100	1600	16								

ELEVATION (FT., MSL)	CORRECTED DEPTH (ft.)	PRELIMINARY DEPTH (ft.)	STRATIGRAPHIC COLUMN	REMARKS	ELEVATION (FT., MSL)	CORRECTED DEPTH (ft.)	PRELIMINARY DEPTH (ft.)	STRATIGRAPHIC COLUMN	REMARKS	ELEVATION (FT., MSL)	CORRECTED DEPTH (ft.)	PRELIMINARY DEPTH (ft.)	STRATIGRAPHIC COLUMN	REMARKS
1600	1600	1600		MOLITE (M) ₁ , COLORLESS	1800	1800	X X		MOLITE (M) ₂ WITH SOME POLYHALITE	2000	2000	—		MOLITE (M) ₁ , COLORLESS
1600	1610	1610	X	MOLITE (M) ₁ , COLORLESS, WITH TRACE POLYHALITE	1810	1810	X X		MOLITE (M) ₂ WITH TRACE POLYHALITE IN LAYER 1"	2010	2010	X		MOLITE (M) ₂ , COLORLESS, WITH TRACE POLYHALITE
1610	1610	1610	X X	MOLITE (M) ₁ , COLORLESS, WITH SOME POLYHALITE	EXS-48	EXS-48	X X		CLAY (C) ₁ , GRAY, 1" TO 2" SEAM	2020	2020	X X		MOLITE (M) ₂ , COLORLESS, WITH ABUNDANT ARGILLACEOUS MATERIAL
1610	1620	1620	X X	TOP OF 122 POLYHALITE (P)	EXS-49	EXS-49	—		MOLITE (M) ₁ , COLORLESS	EXS-52	EXS-52	X X		MOLITE (M) ₂ WITH ABUNDANT ARGILLACEOUS MATERIAL
1620	1620	1620	X	BASE OF 122 POLYHALITE (P), WITH SOME ARGILLACEOUS	1820	1820	—		MOLITE (M) ₁ , COLORLESS, WITH SOME ARGILLACEOUS MATERIAL	2030	2030	—		MOLITE (M) ₂ , WITH SOME POLYHALITE, INCREASING WITH DEPTH TO ABUNDANT POLYHALITE
1630	1630	1630		122 POLYHALITE (P)	1830	1830	X X		MOLITE (M) ₁ , COLORLESS	EXS-53	EXS-53	X X		122 ANHYDRITE (A) ₁ , LIGHT GRAY TO WHITE, WITH SOME POLYHALITE
1630	1630	1630		CLAY (C) ₁ , GRAY, WASHED OUT 1" INTO WALL	1840	1840	—		ROT RAPPED	2040	2040	X		CLAY (C) ₂ , BROWN, WITH SOME MOLITE
1640	1640	1640	X X	POLYHALITE (P) ₁ , WITH ABUNDANT GRAY ARGILLACEOUS MATERIAL	1850	1850	—		POLYHALITE (P) STRINGER, DEPTH AND THICKNESS ESTIMATED	2050	2050	—		MOLITE (M) ₁ , COLORLESS, WITH TRACE POLYHALITE AND ARGILLACEOUS MATERIAL
1640	1650	1650	X X	MOLITE (M) ₁ , COLORLESS	1860	1860	—		ROT RAPPED	EXS-54	EXS-54	—		122 POLYHALITE (P) AND ANHYDRITE (A) ₁ , INTERBEDDED
1650	1650	1650	X X	MOLITE (M) ₁ , WITH SOME ARGILLACEOUS MATERIAL	1870	1870	—		MOLITE (M) ₁ , COLORLESS	2060	2060	X		MOLITE (M) ₂ , DARK REDISH BROWN, WITH SOME ARGILLACEOUS MATERIAL
1650	1660	1660	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	1880	1880	—		ROT RAPPED	EXS-55	EXS-55	—		ROTTERNDALE STATION EXTRUSION, GRAY, CONTINUOUS
1660	1660	1660	X X	CLAY (C) ₂ , GRAY, DISCONTINUOUS BREAK	1890	1890	—		MOLITE (M) ₁ , COLORLESS, WITH SOME POLYHALITE, LEAD POSITION OF 122 POLYHALITE WITH DARK ARGILLACEOUS MATERIAL AND ANHYDRITE	2070	2070	—		MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL
1660	1670	1670	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	1900	1900	X X		MOLITE (M) ₁ , COLORLESS	2080	2080	X X X		MOLITE (M) ₂ , COLORLESS
1670	1670	1670	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE, SLIGHTLY ARGILLACEOUS	1910	1910	X X		122 CLAY (C) ₂ , BROWN, 6" SEAM	EXS-56	EXS-56	X X X		MOLITE (M) ₁ , COLORLESS, WITH SOME POLYHALITE AND TRACE TO SOME ARGILLACEOUS MATERIAL
1680	1680	1680	X X	MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL	1920	1920	—		MOLITE (M) ₁ , COLORLESS	2090	2090	—		CLAY (C) ₃ , BROWN, 1" TO 2" SEAM, WITH SOME MOLITE
1680	1690	1690	X X	122 MOLITE (M) ₁ , WITH TRACE TO SOME POLYHALITE, TRACE ARGILLACEOUS MATERIAL	1930	1930	—		MOLITE (M) ₁ , COLORLESS, DECREASING THICKNESS	EXS-57A	EXS-57A	—		MOLITE (M) ₁ , COLORLESS
1690	1690	1690	X X	CLAY (C) ₂ , GRAY, 2" TO 3" SEAM	1940	1940	—		122 POLYHALITE (P), THICKNESS ESTIMATED	2100	2100	—		CLAY (C) ₃ , BROWN, 1" TO 1 1/2" SEAM
1690	1700	1700	X X	MOLITE (M) ₁ , TRACE TO MORE POLYHALITE, TRACE ARGILLACEOUS MATERIAL	1950	1950	—		MOLITE (M) ₁ , WITH TRACE ARGILLACEOUS MATERIAL	2110	2110	—		MOLITE (M) ₁ , WITH TRACE POLYHALITE AND TRACE ARGILLACEOUS MATERIAL
1700	1710	1710	X X	MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL	1960	1960	—		MOLITE (M) ₁ , COLORLESS	2120	2120	—		CLAY (C) ₃ , BROWN, 1" TO 2" SEAM
1710	1710	1710	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	1970	1970	—		122 POLYHALITE (P) WITH STRANDERS OF ANHYDRITE	2130	2130	—		MOLITE (M) ₁ , WITH TRACE ARGILLACEOUS MATERIAL
1710	1720	1720	X X	MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL	1980	1980	—		CLAY (C) ₃ , BROWN, 1" TO 2" SEAM	2140	2140	—		MOLITE (M) ₁ , COLORLESS
1720	1720	1720	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	1990	1990	—		MOLITE (M) ₁ , WITH POLYHALITE	2150	2150	—		MOLITE (M) ₁ , WITH SOME ARGILLACEOUS MATERIAL
1720	1730	1730	X X	122 CLAY (C) ₂ , GRAY	2000	2000	X X		122 POLYHALITE (P), 6" THICK	EXS-59	EXS-59	X X X		MOLITE (M) ₁ , WITH ABUNDANT POLYHALITE INCREASING THICKNESS
1730	1730	1730	X X	MOLITE (M) ₁ , WITH TRACE POLYHALITE AND TRACE ARGILLACEOUS MATERIAL	2010	2010	—		MOLITE (M) ₁ , GRAY, 6" SEAM, WASHED OUT	2160	2160	X X X		122 ANHYDRITE (A) ₁ , GRAY, 1/4" TO 1/2" SEAM, CONTACTS POLYHALITE
1730	1740	1740	X X	CLAY (C) ₂ , BROWN	2020	2020	—		MOLITE (M) ₁ , WITH POLYHALITE	2170	2170	X X X		CLAY (C) ₃ , GRAY, 1/4" TO 1/2" SEAM
1740	1740	1740	X X	MOLITE (M) ₁ , WITH TRACE POLYHALITE AND TRACE ARGILLACEOUS MATERIAL	2030	2030	—		MOLITE (M) ₁ , COLORLESS	2180	2180	X X X		MOLITE (M) ₁ , WITH POLYHALITE
1740	1750	1750	X X	122 MOLITE (M) ₁ , WITH STRANDERS OF MOLITE	2040	2040	—		122 POLYHALITE (P), 6" THICK	EXS-50	EXS-50	X X X		MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1750	1760	1760	X X	CLAY (C) ₂ , GRAY, 1" SEAM	2050	2050	—		MOLITE (M) ₁ , GRAY, 6" SEAM	2190	2190	X X X		MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1760	1760	1760	X X	MOLITE (M) ₁ , WITH TRACE POLYHALITE	2060	2060	—		122 POLYHALITE (P) STRINGERS, 1" AND 2" THICK	2200	2200	—		MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1760	1770	1770	X X	TOP OF 122 POLYHALITE (P), WITH SOME MOLITE	2070	2070	—		122 POLYHALITE (P), 6" THICK					MOLITE (M) ₁ , COLORLESS
1770	1770	1770	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	2080	2080	—		MOLITE (M) ₁ , WITH POLYHALITE					MOLITE (M) ₁ , COLORLESS
1780	1780	1780	X X	MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL	2090	2090	—		CLAY (C) ₂ , BROWN, 1/4" PARTING					MOLITE (M) ₁ , COLORLESS
1780	1790	1790	X X	CLAY (C) ₂ , BROWN	2100	2100	—		MOLITE (M) ₁ , WITH SOME POLYHALITE DECREASING THICKNESS TO TRACE					MOLITE (M) ₁ , COLORLESS
1790	1790	1790	X X	122 POLYHALITE (P)	2110	2110	—		122 POLYHALITE (P)					MOLITE (M) ₁ , COLORLESS
1790	1800	1800	X X	CLAY (C) ₂ , BROWN	2120	2120	—		MOLITE (M) ₁ , WITH SOME POLYHALITE					MOLITE (M) ₁ , COLORLESS
1800	1800	1800	X X	MOLITE (M) ₁ , COLORLESS	2130	2130	—		CLAY (C) ₂ , GRAY, 1/4" SEAM					MOLITE (M) ₁ , COLORLESS
1800	1800	1800	X X	MOLITE (M) ₁ , WITH SOME POLYHALITE	2140	2140	—		MOLITE (M) ₁ , WITH POLYHALITE					MOLITE (M) ₁ , COLORLESS
1800	1800	1800	X X	CLAY (C) ₂ , GRAY, 1/4" SEAM	2150	2150	—		CLAY (C) ₂ , GRAY, 1/4" PARTING					MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1800	1800	1800	X X	MOLITE (M) ₁ , COLORLESS	2160	2160	—		MOLITE (M) ₁ , COLORLESS					MOLITE (M) ₁ , COLORLESS
1800	1800	1800	X X	CLAY (C) ₂ , GRAY, 1/4" PARTING	2170	2170	—		CLAY (C) ₂ , GRAY, 1/4" TO 5/8" SEAM					MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1800	1800	1800	X X	MOLITE (M) ₁ , WITH ABUNDANT ARGILLACEOUS MATERIAL	2180	2180	—		MOLITE (M) ₁ , WITH POLYHALITE					MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1800	1800	1800	X X	CLAY (C) ₂ , GRAY	2190	2190	—		CLAY (C) ₂ , GRAY, 1/4" TO 5/8" SEAM					MOLITE (M) ₁ , COLORLESS, WITH POLYHALITE
1800	1800	1800	X X	MOLITE (M) ₁ , COLORLESS	2200	2200	—		MOLITE (M) ₁ , COLORLESS					MOLITE (M) ₁ , COLORLESS

FIGURE D-3
C & SH SHAFT
LITHOLOGIC LOG SHOWING
SAMPLE AND INSTRUMENT LOCATIONS
BOTTOM OF CASING TO 2200 FEET

SHEET 3 OF 3

NOTES:

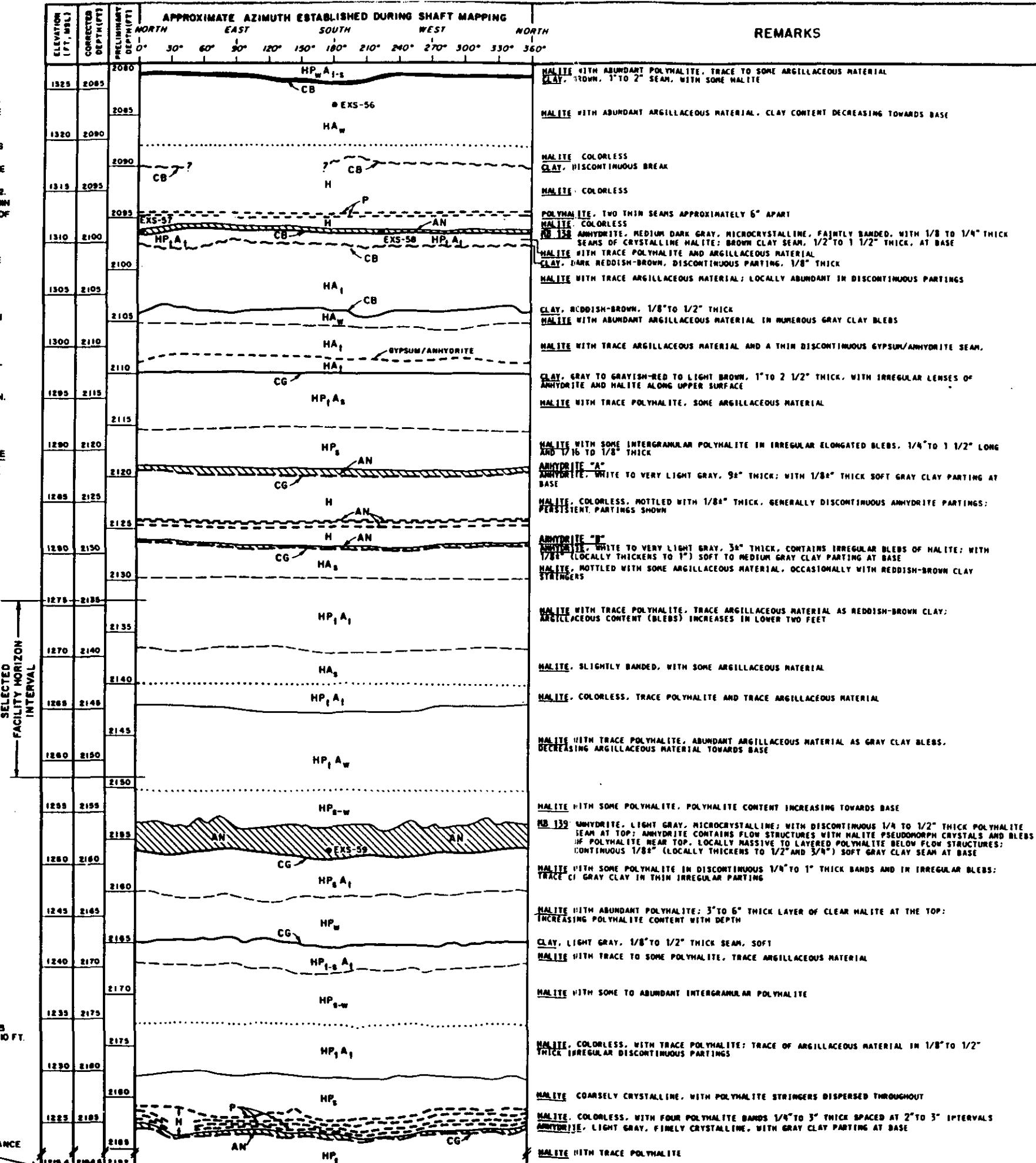
- 1) ELEVATIONS REFER TO CMI BENCHMARK NO. 82-D (BRASS CAP ON N.W. CORNER OF THE UNDERGROUND POWER CENTER FOUNDATION) AT ELEVATION 1258.50 WHICH WAS TIED TO CMI BENCHMARK NO. CMI (BRASS CAP OUTSIDE THE C & SH SHAFT) AT ELEVATION 1400.00 ON DECEMBER 2, 1962. BENCHMARK NO. 82-D IS WITHIN THE ZONE OF DEFORMATION OF THE STATION AND CANNOT BE CONSIDERED STABLE.
- 2) DEPTHS ARE RELATED TO THE TOP OF FIRST BUNTON AT ELEVATION 9410.0 FT. MSL.
- 3) PRELIMINARY DEPTHS WERE CORRECTED BY THE ADDITION OF A +2.8 FT. CORRECTION FACTOR.
- 4) STANDARD GEOLOGIC SYMBOL FOR HALITE IS NOT USED IN ORDER TO ENHANCE THE CLARITY OF THE LOG COLUMN.

REFERENCE:

GEOTECHNICAL ACTIVITIES IN THE EXPLORATORY SHAFT SELECTION OF THE FACILITY INTERVAL, MARCH 1963, TIME 317A.

SCALE
5 0 5 10 FT.

END OF STATION ZONE MAPPING; RECONNAISSANCE MAPPING CONTINUES



EXPLANATION

ROCK TYPE

HALITE	ANHYDRITE
<input type="checkbox"/>	<input checked="" type="checkbox"/>

See note 4

LAMINAR FEATURES

MISCELLANEOUS (AS LABELED)	CLAY
<input type="checkbox"/>	SEAM 1/4" 1/4" BAND 1/16" THICK

CONTACTS

SHARP	GRADATIONAL	DIFFUSE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Identifiable within 0.05 feet) (Identifiable within 0.05 to 0.2 feet) (Identifiable within 0.2 to 0.5 feet)

EXS-56 ROCK SAMPLE LOCATION AND NUMBER
CLAY LAYER

GEOLOGIC UNIT SYMBOLS AND DESCRIPTIONS *

A**	ARGILLACEOUS MATERIAL, GENERALLY FOUND AS AN INTERGRANULAR ACCESSORY CONSTITUENT, LIGHT GRAY (N7) TO MODERATE REDDISH-BROWN (10R 4/6), SLIGHTLY MOIST TO MOIST, TRACE TO SOME SILT.
AN	ANHYDRITE, MEDIUM DARK GRAY (N6) TO LIGHT GRAY (N7) TO WHITE (N9), MODERATE ORANGE-PINK (10R 7/4) TO PALE REDDISH-BROWN (10R 5/4), FINELY CRYSTALLINE TO MICROCRYSTALLINE.
CB	CLAY, DARK REDDISH-BROWN (10R 3/4), TRACE TO SOME SILT, TRACE TO SOME HALITE.
CG	CLAY, MEDIUM LIGHT GRAY (N6) TO MEDIUM DARK GRAY (N4) TO LIGHT OLIVE-GRAY (SY 6/1), TRACE TO SOME SILT, TRACE TO SOME HALITE.
HA**	HALITE, DARK REDDISH-BROWN (10R 3/4) TO MODERATE REDDISH-BROWN (10R 4/6), MEDIUM TO COARSELY CRYSTALLINE, ARGILLACEOUS.
H	HALITE, COLORLESS (TRANSPARENT TO TRANSLUCENT) TO GRAYISH-ORANGE-PINK (SYR 7/2), MEDIUM TO COARSLY CRYSTALLINE, MAY BE BANDED.
HP**	HALITE, TRANSLUCENT TO MODERATE REDDISH-ORANGE (10R 6/6) TO MODERATE REDDISH-BROWN (10R 4/6), POLYHALITIC.
HPA**	HALITE, MODERATE REDDISH-ORANGE (10R 6/6) TO MODERATE REDDISH-BROWN (10R 4/6), POLYHALITIC AND ARGILLACEOUS.
P	POLYHALITE, MODERATE REDDISH-BROWN (10R 4/6) TO MODERATE REDDISH-ORANGE (10R 6/6), FINELY CRYSTALLINE TO MICROCRYSTALLINE.

* SLIGHT VARIATIONS FROM THESE GENERAL DESCRIPTIONS MAY EXIST. THE EXCEPTIONS ARE NOTED IN THE REMARKS COLUMN.

** ESTIMATED CONTENT OF ACCESSORY CONSTITUENTS IS INDICATED BY A MODIFIER: T = TRACE
S = SOME
W = WITH OR ABUNDANT

FIGURE D-4

C & SH SHAFT
FACILITY LEVEL AREA GEOLOGY
2080 TO 2192 FEET