

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID: NC-GWE-Felderhoff-25-1PA Drill Depth From: 0 to 367 Page: 1 of 4

Driller: Bill Nelson/Ray Wilson Start Date/Time: 05/18/2010 @ 16:15 End Date/Time: 5/30/2010 @ 08:58

Drilling Equip./Method: Ford Bucket/Auger and Speedstar 50k/Conventional Air-Foam Sampling Equip. Method: Auger to 20 ft/Cyclone from 20 to 367 ft.

DEPTH (FEET)	Drilling Time (min/5 ft)	DESCRIPTION OF LITHOLOGY-PETROLOGY	GRAPHIC LOG	LITHOLOGIC UNIT	NOTES	
10	18	From 0 to 15 ft poorly-graded sand with gravel SP: Light brown (5YR 6/4), 25% medium grained sand, 25% gravel, sub-angular composition is tuff, weak cement, strong reaction to HCl, gravels are fine grained, ½ inch material is slightly moist @ 4 ft: Moisture increases.		Qal	Moist from 0 to 17 ft. Material is SP from 0-15 ft.	
	30	@ 6 ft: Gravels size increases to 1 inch, gravel percentage increases to 30%. @ 7 ft: Moisture decreases to slight. @ 9 ft: Gravel content increases to 35%.			Increasing gravel size and percentage. ↓	
	35	@ 11 ft: A few gravels up to 2 ½ inches; From 15 to 16 ft well-graded sand with gravel (SW), light brown (5YR 6/4), fine to medium sand, 25% gravel up to 1 ½ inches, sub-angular, gravel clasts composed of tuff, minor silt ~ 3-5%, slightly moist, a few gravel clasts up to 3 inches;				
20	50	From 16 to 17 ft well-graded sand with silt and gravel (SW-SM): Light brown (5YR 6/4), 10% silt, 25% gravel up to 1 ½ inches, sub-angular, tuff clasts, weak cement, strong reaction to HCl acid, slightly moist; From 17-20 ft silty sand with gravel (SM): Pale greenish-yellow (10YR 8/2), 35% silt, 40% fine to medium coarse sand 25% gravels up to 1 ½ inches a few cobbles, up to 3 inches, dry.			(SW) at 15-16 ft with gravel. (SW-SM) at 16 ft with gravel. SM at 17 ft with gravel, dry @ 17 ft.	
	2	From 20 to 65 ft: Well-graded gravel with sand (GW); Moderate yellowish-brown (10YR 5/4), 55% fine to coarse gravels, 45% sand, sub angular, composed of ash-flow tuff, HCl strong, no cementation.			Set 10 ft casing at 20 ft. Begin air foam drilling @ 20 ft. Fines are lost due to wet drilling.	
30	4	@ 30 ft: Gravel increase to 75%, gravels up to 1 inch.				
	4					
	11					
40	6	@ 40 ft: Sand decreases to 10%.				
	6					Rod change.
50	2	@ 50 ft: Sand increases to 30%, gravels decrease in size to ½ inch.				
	2	@ 50 ft: Sand increases to 30%, gravels decrease in size to ½ inch. @ 55 ft: Sand increases to 20%, gravel increases to ¾ inch.				
60	2	@ 60 ft: Sand increases to 35%, gravels increase to 1 inch.				
	4	From 65 to 70 ft: Well-graded sand with gravel (SW): Light brown (5YR 6/4), 65% sand, 35% gravels up to 1 inch, gravels are sub-rounded to sub-angular, composed of predominantly ash-flow tuff and minor basalt (<2%).			@ 65 ft: Clean out contamination.	
70	5	From 70 to 150 ft: Well-graded gravel with sand (GW); Pale yellowish -brown (10YR 6/2), 70% gravel, 30% sand, gravel up to ¾ inch, sub-angular to angular, HCl strong, no cementation, gravels are composed of ash-flow tuff.				
	6					
80	2	@ 80 ft: Sand increases to 45%.				
	4					
90	3	@ 90 ft: Sand decreases to 25%.				
	3	@ 100 ft: Sand increases to 45%.		Qal		

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110	4			Qal	All samples are wet due to wet drilling.
	4				
	2				
120	3	@ 115 ft: Gravels increase to 1 inch, sand decreases to 30%.			
	3	@ 120 ft: gravels increase to 90%.			
	6	@ 125 ft: Sand increases to 40%.			
130	4	@ 130 ft: Gravel size decreases to ½ inch.			
	4	@ 135 ft: Sand increases to 45%.			
	3				
140	6	@ 145 ft: 10% Clay.			
	6	From 150 to 190 ft: Well-graded sand (SW), light brown (5YR 6/4), 10% fine gravel to ½ inch, 90% sand, gravel sub-round to sub-angular, predominantly ash-flow tuff with minor basalt (<2%), HCl strong, no cementation, thick grain coating on gravel clast (5ml).			
	3				
150	3				
	3				
	7	@ 165 ft: Sand decreases to 55%.			
160	4	@ 170 ft: Sand increases to 60%.			
	3				
	3				
170	3	@ 180 ft: Some rounding of gravels (<2%).			
	4				
	4				
180	4				
	4				
	4	From 190 to 230 ft: Clayey gravel (GC); Moderate yellowish-brown (10YR 5/4), 50% fine gravel to ¼ inch, 35% sand, 15% clay, gravel is sub-angular, gravels are composed of ash-flow tuff, clay has low plasticity, HCl strong, no cementation.			
190	4				
	4				
	2				
200					

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210	3	@ 200 ft: Gravel increases 65%, sand 25%, clay 10%.		Qal		
	4					
220	2					Poor circulation, only gravels in return 210 to 220 ft.
	2					
230	2	@ 220 ft: Gravel increases to 75%, no clay.				
	2	@ 225 ft: Gravel decreases to 65%, sand 33%, clay 2%, HCl weak.				
240	3	From 230 to 240 ft: Clayey sand (SC); Moderate yellowish-brown (10YR 5/4), gravel 10%, sub-angular, 70% sand, 20% clay, low plasticity, gravels composed of ash-flow tuff, HCL weak, no cementation, gravel size ¾ inch.				
	3					
250	2	From 240 to 260 ft: Well-graded gravel with sand (GW), light brown (5YR 5/6). Gravel 65% sub-angular, 33% sand, 2% clay low plasticity, gravels composed of ash-flow tuff, HCL weak, no cementation, gravels up to 1 inch.				
	2	@ 245 ft: Gravel decreases to 55%, 3/4 inch size, sand increases 40%, clay increases to 5%.				
260	2					
	3					
270	4	From 260 to 280 ft, Well-graded gravel with sand (GW), light brown (5YR 5/6). Gravel 75% up to 3/4 inch size, sand 25%, no clay, gravel sub-angular to angular, gravels are ash-flow tuff, HCl weak, no cementation.				
	2	@ 265 ft: Gravels decrease to 60%, sand increase to 38%, clay 2%.				
280	2					
	2	@ 275 ft: Gravels increase to 75%, sand decreases to 23%, clay 2%.			Poor return @ 275 to 280 ft.	
290	1	From 280 to 290 ft, Well-graded sand with gravel (SW), light brown (5YR 5/6) gravel 5%, size 1/2 inch, sub-rounded sub-angular, sand 90%, clay 5%, HCl weak, no cementation, clay low plasticity.				
	10	@ 285 ft: Gravel increases to 25%, sand decreases to 70%, clay 5%.				
300	2	From 290 to 340 ft, Well-graded gravel with clay and sand (GW-GC), light brown (5YR 5/6). Gravel 60%, 3/4 inch size, sub-rounded to sub-angular, sand 30%, clay 10%, low plasticity, gravel composed of predominantly ash-flow tuff with minor black vesicular basalt (<3%). HCl weak. no cementation.				
	1	@ 295 ft: Clay decreases to 5%		Qal		

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310	1	@ 305 ft: No clay, gravels increase to 70%, Basalt decreases to 1%.		Qal		
	2					
320	7	@ 315 ft: Gravels decrease to 50%, sand increases to 50%.				
	2					
330	2	@ 320 ft: Gravel increases to 65%, sand decreases to 37%, clay to 3%.				@ 325 to 330 ft rod changed. Fines were washed out.
	7					
340	4	@ 330 ft: Gravel decreases to 45%, sand increases to 45%, Clay 10%.				
	4	@ 335 ft: Gravel increases to 49%, sand increases to 49%, clay decreases to 2 %.				
350	4	@ 340 to 366.8 ft: Drilling boulders.				@ 342 to 366.8 ft: Poor recover due to boulders and lots of water production washing out fines.
	4					
360	19					
	6					
366.8	2	TD		Qal	TD at 366.8 ft.	
0						
0						
0						
0						
0						