

# NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

## CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 0 To 60 (T.D. 340) Page 1 of 6

Driller BRYAN MORRIS/BOYLES BROS Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644

Drilling Equip./Method AP-1000/11" CROWD-OUT BIT Sampling Equip./Method CYCLONE/CUTTINGS  
DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
5	BCS 0000 2851 (1 MIN)	SPRING DEPOSIT SANDY SILT; very pale orange (10YR 8/2), very fine sand, clay.			WEAK REACTION TO 10% HCL
10	BCS 0000 2852 (2 MIN)				WEAK REACTION TO 10% HCL
15	BCS 0000 2853 (1 MIN)	SILTY SAND; trace - some fine subround gravel, very fine - fine sand, pale yel brn (10YR 6/2) moist			NO REACTION TO 10% HCL
20	BCS 0000 2854 (1 MIN)	Moist			NO REACTION TO 10% HCL
25	BCS 0000 2855 (2 MIN)	Moist			STRONG REACTION TO 10% HCL
30	BCS 0000 2856 (2 MIN)	Moist			STRONG REACTION TO 10% HCL
35	BCS 0000 2857 (9 MIN)	GRAVELLY SILTY SAND; Trace clay, some coarse ang gravel, pale yel brn (10YR 6/2) Some thin Dk yel brn (10YR 4/2) - Mod brn (5YR 3/4) clayey layers, moist			Hard @ 32'
40	BCS 0000 2858 (10 MIN)	VERY hard cemented with glassy frags & ang welded tuff frags			MODERATE REACTION TO 10% HCL
45	BCS 0000 2859 (17 MIN)	Cuttings coarse & angular - tabular cobbles. Caliche or silicified frags			MODERATE REACTION TO 10% HCL
50	BCS 0000 2860 (9 MIN)	Cobble sized fragments Moist			STRONG REACTION TO 10% HCL
55	BCS 0000 2861 (19 MIN)	Predom angular coarse gravel & cobbles, moist Lt pink orange (10YR 8/2) - Pink gray (5YR 8/1)			STRONG REACTION TO 10% HCL
60	BCS 0000 2862 (28 MIN)	52.7', 0646, 1-28-99 52.5', 0755, 2-3-99			STRONG REACTION TO 10% HCL

(NOTE: TIME FOR 5' RUN IN ( ) IN 2ND COLUMN

Prepared By REN DONNELSON Date 1-27-99 Checked By ARTHUR J. MENDENHALL Date 3-23-99

# NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

## CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 60 To 120 Page 2 of 6

Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644

Drilling Equip./Method AP-1000 / 11" CROWD-OUT BIT Sampling Equip./Method CYCLONE / CUTTINGS  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
60	BCS 0000 2863	GRAVELLY SILTY SAND: Coarse subang gravel & cobble, fine-coarse sand, Pale yel brn (10YR 6/2)			STRONG REACTION TO 10% HCl
65	(11 MIN)	MOIST			
65	BCS 0000 2864	VALLEY FILL			STRONG REACTION TO 10% HCl
70	(5 MIN)	VERY MOIST			
70	BCS 0000 2865	CLAYEY GRAVEL: fine to coarse ang sand, fine-coarse subang gravel, low plasticity, Pale yel brn (10YR 6/2)			MODERATE REACTION TO 10% HCl
75	(4 MIN)	WET			
75	BCS 0000 2866	DECREASE IN AMOUNT OF GRAVEL			WEAK REACTION TO 10% HCl
80	(8 MIN)	INCREASE IN AMOUNT OF COARSE SAND			NO REACTION TO 10% HCl
85	(4 MIN)				
85	BCS 0000 2868	CLAYEY SAND: Some fine gravel, coarse sand low plasticity, Pale Yel brn (10YR 6/2)			WEAK REACTION TO 10% HCl
90	(11 MIN)				
90	BCS 0000 2869				WEAK REACTION TO 10% HCl
95	(7 MIN)				
95	BCS 0000 2870	GRAVELLY SAND: Fine angular gravel (pea-size) coarse angular sand, silty, trace of clay moist, Pale yel brn (10YR 6/2). Trace cobbles			WEAK REACTION TO 10% HCl
100	(6 MIN)				
100	BCS 0000 2871	Increased amount of clay			MODERATE REACTION TO 10% HCl
105	(9 MIN)				
105	BCS 0000 2872				MODERATE REACTION TO 10% HCl
110	(5 MIN)	Decreased amount of clay Some cobbles.			MODERATE REACTION TO 10% HCl
115	(6 MIN)				
115	BCS 0000 2874	SANDY CLAY: Coarse ang sand, some - consid fine ang gravel, low-medium plasticity, Pale yel brn (10YR 6/2). Trace coarse gravel			STRONG REACTION TO 10% HCl
120	(4 MIN)				

NOTE: TIME FOR 5' RUN IN ( ) IN 2ND COLUMN.

Prepared By KEN DONNELSON

Date 1-27-99

Checked By ARTHUR J. MENDENHALL

Date 3-23-99

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 60 To 180 Page 3 of 5

Driller BRYAN MORRIS/BOYLES BROS. Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644

Drilling Equip./Method AP-1000/11" CROWD-OUT BIT Sampling Equip./Method CYCLONE/CUTTINGS  
DRILLED WITH AIR, SCHRAMM T685 DHH WITH 6 3/4" TRICONE BELOW 160'

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
125	BCS 0000 2875 (5 MIN)	CLAYEY GRAVEL: Coarse sand, predom fine angular gravel, some cobbles, low plasticity			MODERATE REACTION TO 10% HCl
130	BCS 0000 2876 (7 MIN)	No cobbles			WEAK REACTION TO 10% HCl Hit water @ 127! @ 1538, 1-27-99 1540, 1-27-99 0729, 1-28-99
135	BCS 0000 2877 (29 MIN)	SANDY GRAVEL: Coarse sand, trace clay. Gravels consist of silicified? Pale yel brn (10YR 6/1) rock with glassy frags.			MODERATE REACTION TO 10% HCl
140	BCS 0000 2878 (9 MIN)	Increased amount of clay, fine sub ang gravel some cobbles			NO REACTION TO 10% HCl
145	BCS 0000 2879 (8 MIN)				NO REACTION TO 10% HCl
150	BCS 0000 2880 (9 MIN)	NO RECOVERY	?		
155	BCS 0000 2881 (6 MIN)	GRAVELLY CLAY: Predom fine ang gravel, coarse sand, med - high plasticity. Dk yel brn (10YR 5/2)			NO REACTION TO 10% HCl
160	BCS 0000 2882 (25 MIN)	Picking up tabular frags of very hard xtal-rich welded tuff. 1-3 mm clear angular xtls in a Lt brn gry (5YR 6/1) aphanitic matrix.			NO REACTION TO 10% HCl 1039, 1-28-99
165	BCS 0000 2883 (7 MIN)	WELDED TUFF: Densely welded, very hard. 1-3 mm subangle xtls, xtal-rich "copper" colored biotite. Gry orange pink (5YR 6/2) matrix. Dry-aquifer sealed off.	W W	60 MIN/1"	1211, 2-2-99, DRILLED WITH SCHRAMM T685 DHH w/ 6 3/4" TRICONE
170	BCS 0000 2884 (7 MIN)				
175	BCS 0000 2885 (6 MIN)				
180	BCS 0000 2886 (7 MIN)				

NOTE: TIME FOR 5' RUN IN ( ) IN 2ND COLUMN

Prepared By K. DONNELSON Date 2-2-99 Checked By ARTHUR J. MENDEHALL Date 3-23-99

# NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

## CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 180 To 240 Page 4 of 6

Driller BRYAN MORRIS/BOYLES BROS Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644  
& MIKE BOYD

Drilling Equip./Method AP-1000/11" CROWD-OUT BIT Sampling Equip./Method CYCLONE/CUTTINGS  
DRILLED WITH AIR. SCRAMM T685 DHH WITH 6 3/4" TRICONE BELOW 160'

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
185	BCS 0000 2887 (9 MIN)	TUFF, WELDED, AS ABOVE	W W W W W W W W W W W W W W		
190	BCS 0000 2888 (7 MIN)				
195	BCS 0000 2889 (6 MIN)				
200	BCS 0000 2890 (4 MIN)				
205	BCS 0000 2891 (6 MIN)				
210	BCS 0000 2892 (7 MIN)	Lt brownish gray (5YR 6/1) Increase in calcite fragments from 190 - 215.	W W W W W W W W W W W W W W		COARSE CUTTINGS FROM 185-190
215	BCS 0000 2893 (7 MIN)				
220	BCS 0000 2894 (22 MIN)				
225	BCS 0000 2895 (19 MIN)				
230	BCS 0000 2896 (15 MIN)				
235	BCS 0000 2897 (9 MIN)	Predominantly Gray red (10R 4/2) - Dark reddish brn (10R 3/4) From 215 - 280'	W W W W W W W W W W W W W W		RETURN WATER BECOMES "MILKY" FROM 195 - 205'
240	BCS 0000 2898 (10 MIN)				
		Considerable white calcite from 235 - 245'			~ 200 GPM YIELD @ 225'
					MAY BE SOME CAVITIES FROM 230 - 235'
					COARSE CUTTINGS FROM 235' - 245'. DRILL RODS JERKING. FRACTURED.

NOTE: TIME FOR 5' RUN IN ( ) IN 2ND COLUMN.

Prepared By K. DOWNERSON Date 2-2-99 Checked By ARTHUR J. MENDENHALL Date 3-23-99

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 240 To 300 Page 5 of 6  
 Driller BRYAN MORRIS/ROYLES BROS & MIKE BOYD Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644  
 Drilling Equip./Method AP-1000/11" CROWD-OUT BIT Sampling Equip./Method CYCLONE/CUTTINGS  
DRILLED WITH AIR. SCHRAMM T68SDHH WITH 63/4" TRICONE BELOW 160'

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
245	BCS 0000 2899 (27 MIN)	TUFF, WELOED, AS ABOVE	W W		NO WATER RETURN AT DRILL COLLAR FROM 251 - 266'
	BCS 0000 2900		W W		
250	(12 MIN)		W W		
	BCS 0000 2901		W W		
255	(14 MIN)		W W		
	BCS 0000 2902		W W		
260	(15 MIN)		W W		
	BCS 0000 2903		W W		
265	(8 MIN)		W W		
	BCS 0000 2904		W W		
270	(8 MIN)	Pale brn (5YR 5/2) FROM 280 - 289'	W W		
	BCS 0000 2905		W W		
275	(8 MIN)		W W		
	BCS 0000 2906		W W		
280	(7 MIN)		W W		
	BCS 0000 2907		W W		
285	(4 MIN)		W W		
	BCS 0000 2908		W W		
290	(4 MIN)		W W		
	BCS 0000 2909		W W		
295	(7 MIN)	TUFF; Ashfall, Pale greenish yellow (10Y 8/2) - Grayish yellow green (5GY 7/2), Clayey, very soft with thin layers or frags of gray brn (5YR 4/2) welded tuff	++++		NO WATER RETURN AT COLLAR FROM 290 - 300' 1738, 2-2-99
	BCS 0000 2910		++++		
300	(15 MIN)		++++		
			++++		

NOTE: TIME FOR 5' RUN IN ( ) IN 2ND COLUMN.

Prepared By K. DONNELSON Date 2-2-99 Checked By ARTHUR J. MENDENHALL Date 3-23-99

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-15 Drill Depth From 300 To 340' Page 6 of 6  
 Driller BRYAN MORRIS / MIKE BOYD Start Date/Time 1-27-99, 0919 End Date/Time 2-3-99, 0644  
 Drilling Equip./Method SCHRAMM T685 DDH Sampling Equip./Method CYCLONE CUTTING  
WITH 6 3/4" TRICONE BELOW 160'

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
305	BCS 0000 2911 (10 MW)	TUFF: Ashfall, Palegreenish yellow (10Y 8/2) - Grayish yellow green (5GY 7/2), clayey, very soft, with thin layers or small frags of gray brown (5YR 4/2) welded tuft.	+++++		2-3-99, 0627 WEAK REACTION TO 10% HCl NO WATER RETURN AT COLLAR BELOW 301'
310	BCS 0000 2912 (7 MW)	TUFF: Ashfall, Greenish gray (5GY 6/1), very silty, soft.	+++++		WEAK REACTION TO 10% HCl 2-3-99, 0644
315	NO SAMPLES COLLECTED	T.D. = 310'			
320		NO CUTTINGS SAMPLES COLLECTED FROM 310 TO 340 FT. BECAUSE NO CUTTINGS COLLECTION EQUIPMENT IN PLACE AND NO SMF SUPPORT PERSONNEL ON LOCATION.			
325					
330					
335					
340		T.D. = 340'			

Prepared By K. DONNELSON Date 2-3-99 Checked By ARTHUR J. MENDENHALL Date 3-23-99