

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWPD-095X Drill Depth From 22.5 To 80.0 (T.D. 397.0') Page 1 of 7

Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-98, 1032

Drilling Equip./Method AP-1000(BECKER) 10<sup>3</sup>/4" Sampling Equip./Method CUTTINGS / CYCLONE  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
		0-0-22.5' SAMPLES TAKEN BY 2" CALIFORNIA SAMPLER (TREATED AS CORE)			
	BCS 00000 850	VALLEY FILL SILTY SAND: Yell gray (SY 7/2), fine sand, fine ang gravel			12-8-98
	BCS 00000 849	Increased fine ang volc. gravel			
30	BCS 00000 848				1331
35	BCS 00000 847	Considerable subrnd gravel & cobble (subang dk volc gravels)			
40	BCS 00000 846				
45	BCS 00000 845	GRAVELLY SAND: Lt brn (SYR - 6/4 - 5/8) (SYR 5/8) fine subang gravel, f-med gravel, trace silt, some coarse gravel. Slightly moist - moist			
50	BCS 00000 844				
55	BCS 00000 843				
60	BCS 00000 842	Basalt boulder at 63' Increased coarse sand & silt moist -			
65	BCS 00000 841				
70	BCS 00000 840	considerable coarse subang gravel			
75	BCS 00000 839				

QUALITY ASSURANCE RECORD  
 AUG 18 1999  
 THIS IS A RED STAMP  
 DO NOT REMOVE FROM FILE

Prepared By K. DODD NELSON Date 12-8-98 Checked By BENT ARQUIST Date 1-4-99

# NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

## CUTTINGS SAMPLE LOG

Borehole ID NC-EWPD-09SX Drill Depth From 80.0 To 140.0 Page 2 of 7

Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-98, 1032

Drilling Equip./Method AP-1000 (BECKER) Sampling Equip./Method CUTTINGS / CYCLONE  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
83.8	BCS 000000	GRAVELLY SAND: Lt brn (5YR 5/6) - Pale rd brn (10R 5/4), fine - coarse subang. gravel med - coarse sand, moist, trace silt			
83.7	BCS 000000				
83.6	BCS 000000	Hard from 91-92' Increased coarse, v. moist sand			
83.5	BCS 000000	Trace of clay Sand less dense from 95-97'			
83.4	BCS 000000	12-8-98 12-10-98, 0645 VERY MOIST TRACE - some clay			12-8-98 START DRILLING 12-9-98, 0649
83.3	BCS 000000	Increased coarse gravel			
83.2	BCS 000000	112.3', 12-9-98, 1542			SATURATED BELOW 110'
83.1	BCS 000000	SAMPLE MUDDY some coarse angular gravel			WATER AT 115'
83.0	BCS 000000	Considerable gravel some clay			
82.9	BCS 000000				
82.8	BCS 000000	CLAYEY GRAVEL: Pale rd brn (10R 5/4), coarse subang - ang gravel, hi plasticity clay, wet			POOR RECOV.
82.7	BCS 000000	134.8, 12-9-98, 1355			plugged cyclone

Prepared By K. DOWNESON Date 12-9-98 Checked By BENT ANQUIST Date 1-4-99

# NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

## CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-09SX Drill Depth From 140.0 To 200.0 Page 3 of 7

Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-98, 1032

Drilling Equip./Method AP-1000 (BECKER) Sampling Equip./Method CUTTINGS/CYCLONE  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
140	BCS 00000 826	CLAYEY GRAVEL: Pale Red brn (10R 5/4) coarse subang-ang gravel, hi plasticity. Increased clay & f. sand wet			12-9-98
146.5	BCS 00000 825	▽ 146.5', 12-12-98, 0637 WITH CASING AT 396' Increased gravel			
149.4	BCS 00000 824	▽ 149.4', 12-9-98, 1303			
155	BCS 00000 823	SANDY GRAVEL & COBBLES: Pale Red brn (10R 5/4) coarse, angular gravel. May be reworked. Increased gravel			WATER AT 155'
160.8	BCS 00000 822	▽ 160.8', 12-9-98, 1235 Increased clay			
165	BCS 00000 821	Increased sand & silt			
170	BCS 00000 820	Increased clay & cobbles (mun)			
177.7	BCS 00000 819	▽ 177.7', 12-9-98, 1201 w/casing @ 210'			
178	BCS 00000 818	WELDED TUFF: Grayish Red (10R 4/2), hard fractured, devitrified,			YIELDING WATER @ 178'
196.4	BCS 00000 751	▽ 196.4', 12-9-98, 1123 w/casing @ 210'			

Prepared By KEN DONNELSON Date 12-9-98 Checked By BENT ANQUIST Date 1-4-99

**NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE**

**CUTTINGS SAMPLE LOG**

Borehole ID NC-EWDP-095X      Drill Depth From 200.0 To 260.0 Page 4 of 7  
 Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-98, 1032  
 Drilling Equip./Method AP-1000 (BECKER) Sampling Equip./Method CUTTINGS / CYCLONE  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
	BCS 00000 812	WELED TUFF: Grayish Red (10R 4/2), devitrified Some blk dendrites, hard	W W W W W W W W		12-9-98 Hand drilling @ 202.5'
	BCS 00000 811	some clay coating	W W W W W W		
210	BCS 00000 810		W W W W		
215	BCS 00000 809	some clay some dk gry vitric? rock (brecciated?) May be out of tuff & into alluvium	W W W W W W		Hand drilling @ 221'
220	BCS 00000 808	Clayey	W W W W		
225	BCS 00000 807		W W W W		
230	BCS 00000 806	Clayey	W W W W		
235	BCS 00000 805	SANDY GRAVEL: coarse sand, coarse subangular gravel. Grayish red (10R 4/2) welded tuff & med lt gry (NG) - Pale blue (5B 6/2) Limestone. some cobbles, (conglomeritic)	o o o o o o o o o o o o o o o o		12-9-98 12-10-98
240	BCS 00000 804		o o o o o o o o o o o o		
245	BCS 00000 803		o o o o o o o o o o o o		
250	BCS 00000 802		o o o o o o o o o o o o		Hand drilling at 255'
255	BCS 00000 801	GRAVELLY SAND; coarse sand, fine-coarse sub- ang gravel. Color same as above. Trace of clay (conglomeritic)	o o o o o o o o o o o o		

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-095X      Drill Depth From 260.0 To 320.0 Page 5 of 7  
 Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-97, 1032  
 Drilling Equip./Method AP-1000 (BECKER) Sampling Equip./Method CUTTINGS / CYCLONE  
DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
	BCS 00000 800	SAND: coarse, some coarse subang gravel, white and brown sand grains (conglomeritic)			12-10-98
	BCS 00000 799	SAND & GRAVEL: coarse white & brn sand, coarse subang mixed gravel (conglomeritic)			
270	BCS 00000 798	Lt brn sandy matrix with limestone clasts ang-subang clasts. Some limestone rubble clasts. Healed breccia?			
275	BCS 00000 797				
280	BCS 00000 796	Increased gravel, trace clay, some silt			Hard drilling at 283'
285	BCS 00000 795	WELDED TUFF: Grayish red (10R 4/2), devitrified, crystal rich; some blk dendrites. Very hard			
290	BCS 00000 794	Some thin layers (10mm) of Lt brn (5YR 5/6) "waxy" soft claystone w/ some blk grains			Hard drilling @ 290'
295	BCS 00000 793				30 min to drill from 295-300'
	BCS 00000 792	fractured?			19 min to drill from 300-305'
305	BCS 00000 791				7 min to drill 305-310'
310	BCS 00000 790	"muddy"			
315	BCS 000 789	cuttings decrease from gravel to sand size			
320					

**NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE**

**CUTTINGS SAMPLE LOG**

NC-EWDP-095X

Borehole ID \_\_\_\_\_ Drill Depth From 320.0 To 380.0 Page 6 of 7

Driller BRYAN MORRIS / BOYLES BROS Start Date/Time 12-8-98-1358 End Date/Time 12-12-98, 1032

Drilling Equip./Method AP-1000 (BECKER) Sampling Equip./Method CUTTINGS / CYCLONE  
 DRILLED WITH AIR

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	Lithologic Unit	Notes
325	BCS 00000 788	WELDED TUFF: Grayish Red (10R 4/2), devitrified, BRECCIATED TUFF: Grayish Red (10R 4/2) welded tuff, Lt brn (5YR 5/6) brecciated tuff with white calcite veining. Some limestone fragments. Very hard.  Some gry rd (10R 5/2) brecciated matrix	W W		Hard drilling from 320 - 325' (200 min)
	BCS 00000		W W		
	787		W W		
330	BCS 00000		W W		
	786	Increased Lt brn (5YR 5/6) matrix with some clay.	W		12-10-98 12-11-98, PAY SHIFT Changed bit
335	BCS 00000		W W		
	785		W W		
340	BCS 00000		W W		
	784	BEDDED TUFF: Lt brn (5YR 5/6) - (5YR 6/4) Considerable hi plasticity clay, soft. Increased clay with depth.  BENTONITIC? CLAY	+		Increased water @ 334'
345	BCS 00000		+		
	783		+		
350	BCS 00000		+		
	782	softer becoming med orange pink (5YR 8/4) mottled with Lt brn (5YR 5/6)	+		
355	BCS 00000		+		
	781		+		
360	BCS 00000		+		
	780		+		
365	BCS 00000		+		
	779		+		
370	BCS 00000		+		
	778	TUFF BRECCIA: Grayish orange pink (10R 8/2)	+		Harder at 379'
375	BCS 00000		+		
380	777				

Prepared By K. DONNELSON Date 12-11-98 Checked By BENT HAQUIST Date 1-4-99

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

NC-EWDP-095X  
 Borehole ID \_\_\_\_\_ Drill Depth From 380.0 To 397.8 Page 7 of 7  
 Driller BRYAN MARSH / BOYLES BROS Start Date/Time 12-8-98, 1358 End Date/Time 12-12-98, 1032  
 Drilling Equip./Method AP-1000 (BECKER) 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
380	BCS 00000	with angular clast of grayish red (10R 4/2) welded tuff. Some grayish red & lt brn (5YR 5/6) bentonitic? clay. Mod hard fine grained matrix. Grading to soft gray rd (10R 4/2) hi plastic soft clay  TUFF BRECCIA: Grayish red (10R 4/2) matrix with gray red (10R 4/2) welded tuff clasts trace clay. Predom welded tuff. Matrix is fine grained & mod soft - mod hard. Welded tuff is very hard	+  +  +  +  +  +		Hard below 390'    12-11-98 12-12-98 T.D. = 397' @ 12-12-98 1032
	776				
	BCS				
	00000				
390	775				
	BCS				
	00000				
395	774				
	BCS 00000				
	773				
400					
405					
410					
415					
420					
425					
430					
435					
440					