

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

Borehole ID NC-EWDP-19P Drill Depth From 0 To 500.0 TD Page 1 of 8
Driller BRYAN MORRIS Start Date/Time 3-7-00/1234 End Date/Time 3-10-00/1303
Drilling Equip./Method AP-1000 Sampling Equip. Method CYCLONE
4.5" CROWD-OUT BIT

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
5	BCS0000 3651 1 MIN	SILTY SAND: Some coarse subrounded gravel, fine sand pale yellow brown (10YR 6/2)			3/7/00, 1234 Strong HCl reaction
10	BCS0000 3652 2 MIN	SANDY GRAVEL: Coarse sand, well graded sub rounded gravel, pale red (10R 6/2 - 5R 6/2) - med lt gray (N6)			No HCl reaction
15	BCS0000 3653 2 MIN	some caliche rind. Increased fine gravel			Mod HCl reaction
20	BCS0000 3654 2 MIN	Increased coarse gravel			Mod HCl reaction
25	BCS0000 3655 3 MIN	Some cobbles, some silt			Mod HCl reaction
30	BCS0000 3656 2 MIN				Mod HCl reaction
35	BCS0000 3657 3 MIN	Increased fine gravel & silt			Strong HCl reaction
40	BCS0000 3658 1 MIN				Strong HCl reaction
45	BCS0000 3659 2 MIN	Increased sand			Weak-med HCl reaction
50	BCS0000 3660 1 MIN	GRAVELLY SAND: Some silt, predom fine sand, fine subrnd gravel, very pale orange (10YR 8/2) - grayish orange pink (5YR 7/2)			Strong HCl reaction
55	BCS0000 3661 1 MIN				Mod HCl reaction
60	BCS0000 3662 3 MIN	Increased gravel			Weak-med HCl reaction

Prepared By KEN DONNELSON Date 3-7-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 60 To 125 Page 2 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes	
	BCS0000 3663	SAND: Trace silt, trace fine gravel, fine sand v. pale orange (10YR 8/2)			No HCl reaction	
65	1 MIN	Increased gravel & silt Increased coarse sand			Mod HCl reaction	
	BCS0000 3664					
70	1 MIN	GRAVELLY SAND: Predom fine subnd gravel some coarse gravel, well graded sand, some silt, v. pale orange (10YR 8/2)			mod - weak HCl reaction	
	BCS0000 3665					
75	1 MIN					
	BCS0000 3666				Mod HCl reaction	
80	3 MIN	SANDY GRAVEL: well graded sand, some silt, predom coarse subnd gravel & cobbles v. pale orange (10YR 8/2)			Weak HCl reaction	
	BCS0000 3667					
85	4 MIN	Increased fine gravel & coarse sand Grayish orange (10YR 7/4). Decreased silt - Mod orange pink (5YR 8/4)			No HCl reaction	
	BCS0000 3668					
90	2 MIN	Increase angularity			No HCl reaction	
	BCS0000 3669					
95	2 MIN				No HCl reaction	
	BCS0000 3670	Increased silt & sand				
100	2 MIN				No HCl reaction	
	BCS0000 3671					
105	3 MIN	Decreased silt, Increased gravel			Mod HCl reaction	
	BCS0000 3672					
110	2 MIN				Weak HCl reaction	
	BCS0000 3673	GRAVELLY SAND: Some silt, predom fine subnd gravel, well graded sand, gry orange pink (5YR 7/2)			Mod HCl reaction	
115	2 MIN					
	BCS0000 3674	SANDY GRAVEL & COBBLES: Coarse subnd gravel, coarse sand, gry orange pink (5YR 7/2)			No HCl reaction	
120	2 MIN					
	BCS0000 3675					
125	4 MIN					

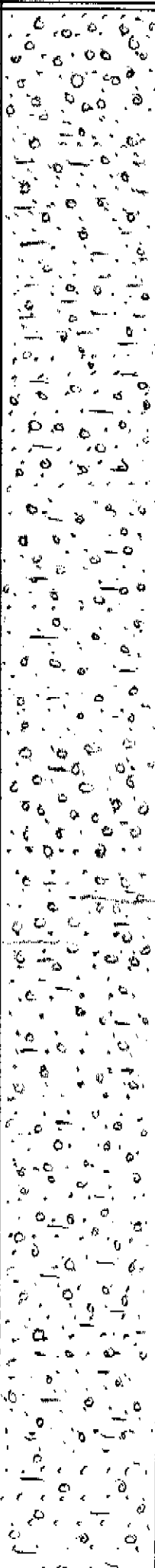
Prepared By KEN DOWNERSON Date 3-7-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 125 To 190 Page 3 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
	BCS0000 3676	Gry orange pink (SYR 7/2) - Mod orange pink (SYR 8/4)			No HCl reaction
130	6 MIN				No HCl reaction
	BCS0000 3677	GRAVELLY SAND: Some silt, well graded sand, predom fine gravel, Mod orange pink (SYR 8/4) - Lt brn (SYR 6/4)			
135	2 MIN				No HCl reaction
	BCS0000 3678	SILTY GRAVELLY SAND: Predom fine gravel, trace cobbles, fine sand, Mod orange pink (SYR 8/4) - U. pale orange (10YR 8/2)			
140	3 MIN				No HCl reaction
	BCS0000 3679	Increased gravel & decreased silt Increased coarse sand			
145	2 MIN				No HCl reaction
	BCS0000 3680				
150	2 MIN				No HCl reaction
	BCS0000 3681	Some non-calcareous cemented sand.			
155	3 MIN				No HCl reaction
	BCS0000 3682	SANDY GRAVEL & COBBLES: Coarse sand, trace silt, coarse subund gravel, pale mod (5R 6/2-10R 6/2)			
160	4 MIN				START INJECTING H ₂ O AT 150'
	BCS0000 3683	Lt brn (SYR 6/4) - Trace clay			No HCl reaction
165	5 MIN				
	BCS0000 3684	GRAVELLY SAND: Fine subang gravel, well graded sand, trace - some silt, Lt brn (SYR 6/4 - 5/6)			Weak-mod HCl reaction
170	3 MIN				No HCl reaction
	BCS0000 3685	Decreased silt, Predom subund pea gravel			
175	2 MIN				No HCl reaction
	BCS0000 3686	Increased coarse gravel & silt			
180	8 MIN				No HCl reaction
	BCS0000 3687	Increased silt, decreased coarse gravel Lt brn (SYR 5/6)			
185	3 MIN				No HCl reaction
	BCS0000 3688	Decreased silt			
190	6 MIN				

Prepared By KEN DOWNERLOW Date 3-7-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 190 To 255 Page 4 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
	BCS0000 3689				No HCl reaction
195	2 MIN				
	BCS0000 3690	Increased gravel			No HCl reaction
200	5 MIN				3-7-00, 1643
	BCS0000 3691	SANDY GRAVEL & COBBLES: Some silt, trace clay, subrnd gravel, fine-med sand, Lt brn (SYR 6/4-5/6)			3-8-00, 0728
205	5 MIN				No HCl reaction
	BCS0000 3692	Decreased gravel & silt			
210	2 MIN				No HCl reaction
	BCS0000 3693	SANDY GRAVEL: Predom fine subang-subrnd gravel, well graded sand, pale brn (SYR 5/2)			No HCl reaction
215	1 MIN				
	BCS0000 3694	Trace of silt			Weak HCl reaction
220	2 MIN				
	BCS0000 3695	Increased angular gravel & decreased sand			No HCl reaction
225	4 MIN				
	BCS0000 3696	SANDY GRAVEL: Well graded sand, some silt, fine subrnd-subang gravel, Lt brn (SYR 6/4)			No HCl reaction
230	3 MIN				
	BCS0000 3697	Decreased silt & increased coarse gravel			No HCl reaction
235	3 MIN				
	BCS0000 3698	GRAVELLY SAND: Fine subang gravel, some silt trace of clay, fine-med sand, mod yel brn (10YR 5/4)			No HCl reaction
240	5 MIN				
	BCS0000 3699	SANDY GRAVEL & COBBLES: Coarse sand, silty subang gravel, Mod yel brn (10YR 5/4)			No HCl reaction
245	7 MIN				
	BCS0000 3700	GRAVELLY SAND: Predom fine subang gravel, some silt, well graded sand, Lt brn (SYR 6/4-5/6)			No HCl reaction
250	3 MIN				
	BCS0000 3701	SANDY GRAVEL: Coarse angular gravel & sand, silty, trace clay, Lt brn (SYR 6/4)			No HCl reaction
255	3 MIN				

Prepared By KEN DONNELSON Date 3-8-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 255 To 320 Page 5 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
255	BCS0000 3702	SANDY GRAVEL & COBBLES: coarse sand, trace clay, subang - subbrnd gravel, pale med brn (10R 5/4) - pale brn (5YR 5/2)			No HCl reaction
260	8 MIN BCS0000 3703	Note: gravel clasts predom med gry (N5) - med blu gry (5B 5/1) basalt from 260' - 270'			No HCl reaction
265	11 MIN BCS0000 3704				No HCl reaction
270	7 MIN BCS0000 3705				3-8-00, 1456 3-9-00, 0731
275	10 MIN BCS0000 3706	GRAVELLY SAND: Predom fine subbrnd gravel, coarse sand, trace - some clay, low plasticity, Mod brn (5YR 4/4)			No HCl reaction
280	9 MIN BCS0000 3707	Decreased clay & increased coarse gravel & cobbles			No HCl reaction
285	9 MIN BCS0000 3708	SANDY GRAVEL & COBBLES: coarse subbrnd gravel, coarse sand, trace - some clay, low plasticity, Mod brn (5YR 4/4)			No HCl reaction
290	6 MIN BCS0000 3709	Increasing sandy clay & sandy silt layers, Lt brn (5YR 6/4 - 5/6)			No HCl reaction
295	11 MIN BCS0000 3710	CLAYEY SAND & GRAVEL: Some cobbles, predom fine sand, subbrnd gravel, low plasticity, Lt brn (5YR 6/4 - 5/6) . MUDDY			No HCl reaction Note: two samples collected from 300 - 500'
300	7 MIN BCS0000 3711 & 3751	Decreased cobbles			No HCl reaction
305	3 MIN BCS0000 3712 & 3752	GRAVELLY SAND: Predom fine subbrnd gravel, med. sand, trace of clay, Lt brn (5YR 6/4 - 5/6)			No HCl reaction
310	3 MIN BCS0000 3713 & 3753	SANDY GRAVEL: Predom coarse sand, fine subang gravel, pale yel brn (10YR 6/2)			No HCl reaction
315	4 MIN BCS0000 3714 & 3754	CLAYEY SAND: Some gravel & cobbles, med sand low plasticity, pale yel brn (10YR 6/2)			No HCl reaction
320	8 MIN				

Prepared By KEN DONNELSON Date 3-8-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 320 To 385 Page 6 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
	BCS0000 3715 & 3755	SANDY GRAVEL: Some cobbles, coarse gravel, coarse sand, low plasticity, pale brn (SYR 5/2)			No HCl reaction
325	14 MIN BCS0000 3716 & 3756	SANDY GRAVEL: Some cobbles, coarse gravel, coarse sand, fairly clean, multicolored			No HCl reaction
330	8 MIN BCS0000 3717 & 3757	GRAVELLY SAND: Some cobbles, coarse sand, trace clay, some silt, Mod brn (SYR 4/4)			No HCl reaction
335	3 MIN BCS0000 3718 & 3758	SANDY GRAVEL: Trace silt & clay, coarse subnd gravel & cobbles, coarse sand, Lt brn (SYR 6/4) - Mod brn (SYR 4/4)			No HCl reaction
340	7 MIN BCS0000 3719 & 3759	GRAVELLY SAND: Predom fine gravel, some coarse subnd gravel, well graded sand, trace-some silt, Lt brn (SYR 6/4)			No HCl reaction
345	5 MIN BCS0000 3720 & 3760	Predom med - coarse sand, trace silt Lt brn (SYR 6/4 - 5/6)			No HCl reaction
350	3 MIN BCS0000 3721 & 3761	GRAVELLY SAND: Coarse sand, coarse-fine gravel, trace-some clay, low plasticity Lt brn (SYR 5/6)			No HCl reaction
355	3 MIN BCS0000 3722 & 3762	SANDY GRAVEL: Coarse sand, trace-some silt, well graded subnd gravel Lt brn (SYR 6/4 - 5/6)			No HCl reaction
360	8 MIN BCS0000 3723 & 3763	GRAVELLY SAND: Predom fine gravel, well graded sand, trace clay & silt Lt brn (SYR 6/4)			No HCl reaction
365	4 MIN BCS0000 3724 & 3764	3-9-00, 1512 (BIT PULLED UP TO 368.9 AFTER DRILLING TO 380') Increased gravel			No HCl reaction
370	5 MIN BCS0000 3725 & 3765	Increased gravel & trace-some clay			Mod HCl reaction
375	6 MIN BCS0000 3726 & 3766	SANDY GRAVEL: Trace-some silt & clay, some cobbles, coarse subnd gravel, coarse sand, Lt brn (SYR 5/6)			No HCl reaction
380	14 MIN BCS0000 3727 & 3767	CLAYEY SAND, GRAVEL & COBBLES: Coarse sand & gravel, low plasticity, Lt brn (SYR 6/4 - 5/6)			3-9-00, 1956 3-10-00, 0832
385	6 MIN				No HCl reaction

Prepared By KEN DONNELSON Date 3-10-00 Checked By J.S. Walker Date 3-16-00

REV.

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 385 To 450 Page 7 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
	BCS0000 3728 & 3768				No HCl reaction
390	11 MIN BCS0000 3729 & 3769	Increased clay			No HCl reaction
395	6 MIN BCS0000 3730 & 3770	Decreased clay & gravel			No HCl reaction
400	5 MIN BCS0000 3731 & 3771	Increased gravel			No HCl reaction
405	7 MIN BCS0000 3732 & 3772	GRAVELLY SAND: Predom fine subang gravel, coarse sand. Gry rod (SR 5/4)			No HCl reaction
410	5 MIN BCS0000 3733 & 3773	SANDY GRAVEL: Predom fine subang gravel, coarse sand, some silt, trace clay; Lt brn (SYR 6/4)			No HCl reaction
415	4 MIN BCS0000 3734 & 3774	Increased coarse gravel & clay			No HCl reaction
420	3 MIN BCS0000 3735 & 3775	Increased fine gravel Lt brn (SYR 6/4 - 5/6)			No HCl reaction
425	7 MIN BCS0000 3736 & G1S1	Decreased clay, some cobbles			No HCl reaction
430	7 MIN BCS0000 3737 & G1S2	CLAYEY SAND WITH GRAVEL: Predom fine subang gravel, some coarse gravel, coarse sand medium plasticity, Lt brn (SYR 5/6)			No HCl reaction
435	3 MIN BCS0000 3738 & G1S3	Increased clay & sand			No HCl reaction
440	2 MIN BCS0000 3739 & G1S4	SANDY GRAVEL & COBBLES: Coarse sand, predom coarse subang gravel, Lt brn (SYR 5/6) - Mod brn (SYR 3/4)			No HCl reaction
445	9 MIN BCS0000 3740 & G1S5	well graded gravels, trace of clay			No HCl reaction
450	8 MIN				

Prepared By KEN DONNELSON Date 3-10-00 Checked By J.S. Walker Date 3-16-00

NYE COUNTY NUCLEAR WASTE REPOSITORY PROJECT OFFICE

CUTTINGS SAMPLE LOG

CONTINUATION

Borehole ID NC-EWDP-19P Drill Depth From 450 To 500 Page 8 of 8

DEPTH (Feet)	Top/Bottom of Cuttings Sample Interval	Description of Lithology - Petrology	GRAPHIC LOG	LITHOLOGIC UNIT	Notes
	BCS0000 37418 6156				No HCl reaction
455	8 MIN BCS0000 37428 6157	Multicolored. Increased sand			No HCl reaction
460	3 MIN BCS0000 37438 6158	Some silt, trace clay.			No HCl reaction
465	4 MIN BCS0000 37448 6159	Decreased silt. Mod brn (5YR 4/4 - 3/4)			No HCl reaction
470	4 MIN BCS0000 37458 6160				No HCl reaction
475	4 MIN BCS0000 37468 6161	Increased cobbles.			No HCl reaction
480	19 MIN BCS0000 37478 6162				No HCl reaction
485	10 MIN BCS0000 37488 6163	Increased sand & silt. Gray orange (10YR 7/4)			No HCl reaction
490	4 MIN BCS0000 37498 6164	Trace - some clay.			No HCl reaction
495	4 MIN BCS0000 37508 6165	Decreased silt & clay, Multicolored.			No HCl reaction
500	5 MIN	TD = 500.0'			3-10-00, 1303 TOTAL DEPTH 2224

QUALITY ASSURANCE RECORD
 APR 07 2000
 THIS IS
 DO NOT RE

Prepared By KEN DONNELSON Date 3-10-00 Checked By J.S. Walker Date 3-22-00