Alluvium Drill Cuttings Logging Form - Nye County Nuclear Waste Repository Project Office

Borehole ID: **NC-EWDP-24PA** (Phase 5) Driller/Drilling Company: Dennis White/Eklund Drilling Co. Drilling Method: Air Rotary Reverse Circ/Casing Advance Symmetrix Alluvium Depth (ft bgs): 0 to 151.8 Start Date: 1/25/2006 End Date: 1/27/2006

Date Logged	Logged By (Initials)	Date Checked	Checked By (Initials)	Sample Number	Depth Interval (feet bgs)		Drilling Data					Sample Density Measurements			Munsell Color Symbol	Moisture Content			Particle Size Distribution (%)					Gra-ding		Estimated Plasticity				USCS Group Symbol	Gravel/Sand GrainShape				Cementation				HCL Reaction			Major Rock Type (%)		
					From	To	Liquid Drilling Fluid Injection Rate (gpm)	Drilling Rate (feet/min)	Water Production (gpm)	Sample Recovery (gallons)	Borehole Diameter (inches)	Tare Weight (kg)	Sample Plus Tare Weight (kg)	Sample Weight (kg)		Dry	Moist	Wet	Gravel	Sand	Silt	Clay	Fines (Silt plus Clay)	Well Graded	Poorly Graded	None	Low	Moderate	High		Angular	Subangular	Subrounded	Rounded	None	Weak	Moderate	Strong	None	Weak	Strong	Volcanics	Carbonates	Other
1/25/2006	BW	2/10/2006	JSW	24PA-0-2.5-D	0.00	2.50	0.00	2.20	0.00	1.50	6.750				5YR 6/4	☑	☐	☐	6	79	12	3	15	☑	☐	☑	☐	☐	☐	SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	100		
1/25/2006	BW	2/10/2006	JSW	24PA-2.5-5-D	2.50	5.00	0.00	2.20	0.00	3.00	6.750				5YR 6/4	☑	☐	☐	18	70	10	2	12	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-5-7.5-D	5.00	7.50	0.00	2.20	0.00	2.00	6.750				5YR 6/4	☑	☐	☐	16	72	10	2	12	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-7.5-10-D	7.50	10.00	0.00	2.20	0.00	1.50	6.750				5YR 6/4	☑	☐	☐	16	81	3	0	3	☑	☐	☑	☐	☐	☐	SW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-10-12.5-D	10.00	12.50	0.00	2.20	0.00	1.00	6.750				5YR 6/4	☑	☐	☐	53	45	2	0	2	☑	☐	☑	☐	☐	☐	GW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-12.5-15-D	12.50	15.00	0.00	2.20	0.00	1.00	6.750				5YR 6/4	☑	☐	☐	54	42	4	0	4	☑	☐	☑	☐	☐	☐	GW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-15-17.5-D	15.00	17.50	0.00	2.20	0.00	2.00	6.750				5YR 6/4	☑	☐	☐	25	69	6	0	6	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-17.5-20-D	17.50	20.00	0.00	2.20	0.00	2.00	6.750				5YR 6/4	☑	☐	☐	47	49	4	0	4	☑	☐	☑	☐	☐	☐	SW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-20-22.5-D	20.00	22.50	0.00	2.20	0.00	1.50	6.750				2.5YR 4/3	☑	☐	☐	22	76	2	0	2	☑	☐	☑	☐	☐	☐	SW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-22.5-25-D	22.50	25.00	0.00	2.20	0.00	1.50	6.750				5YR 6/4	☑	☐	☐	7	76	16	1	17	☑	☐	☑	☐	☐	☐	SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-25-27.5-D	25.00	27.50	0.00	2.20	0.00	2.50	6.750				5YR 6/4	☑	☐	☐	9	76	13	2	15	☑	☐	☑	☐	☐	☐	SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-27.5-30-D	27.50	30.00	0.00	2.20	0.00	2.00	6.750				5YR 6/4	☑	☐	☐	20	68	10	2	12	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-30-32.5-D	30.00	32.50	0.00	2.20	0.00	2.00	6.750				2.5YR 4/3	☑	☐	☐	27	64	7	2	9	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-32.5-35-D	32.50	35.00	0.00	2.20	0.00	1.50	6.750				5YR 6/4	☑	☐	☐	24	61	13	2	15	☑	☐	☑	☐	☐	☐	SM	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-35-37.5-D	35.00	37.50	0.00	2.50	0.00	2.50	6.750				5YR 6/4	☑	☐	☐	8	77	13	2	15	☑	☐	☑	☐	☐	☐	SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-37.5-40-D	37.50	40.00	0.00	2.50	0.00	1.50	6.750				5YR 6/4	☑	☐	☐	13	72	13	2	15	☑	☐	☑	☐	☐	☐	SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-40-42.5-D	40.00	42.50	0.00	2.50	0.00	2.00	6.750				2.5YR 4/3	☑	☐	☐	30	62	7	1	8	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-42.5-45-D	42.50	45.00	0.00	2.50	0.00	2.50	6.750				2.5YR 4/3	☑	☐	☐	29	62	7	2	9	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-45-47.5-D	45.00	47.50	0.00	2.50	0.00	2.00	6.750				2.5YR 4/3	☑	☐	☐	16	71	11	2	13	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-47.5-50-D	47.50	50.00	0.00	2.50	0.00	3.00	6.750				2.5YR 4/3	☑	☐	☐	9	78	11	2	13	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	100		
1/25/2006	BW	2/10/2006	JSW	24PA-50-52.5-D	50.00	52.50	0.00	2.50	0.00	3.00	6.750				2.5YR 4/3	☑	☐	☐	31	63	5	1	6	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/25/2006	BW	2/10/2006	JSW	24PA-52.5-55-D	52.50	55.00	0.00	2.50	0.00	3.50	6.750				2.5YR 4/3	☑	☐	☐	38	56	5	1	6	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/25/2006	BW	2/10/2006	JSW	24PA-55-57.5-D	55.00	57.50	0.00	1.80	0.00	3.00	6.750				5YR 6/4	☑	☐	☐	25	64	9	2	11	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-57.5-60-D	57.50	60.00	0.00	1.80	0.00	3.00	11.250				10YR 4/4	☐	☑	☐	68	31	1	0	1	☑	☐	☑	☐	☐	☐	GW	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-60-62.5-D	60.00	62.50	0.00	1.80	0.00	3.00	11.250				5YR 6/4	☐	☑	☐	27	67	5	1	6	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-62.5-65-D	62.50	65.00	0.00	1.50	0.00	3.50	11.250				5YR 6/4	☐	☑	☐	34	59	6	1	7	☑	☐	☑	☐	☐	☐	SW-SM	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-65-67.5-D	65.00	67.50	0.00	1.50	0.00	2.00	11.250				5YR 6/4	☐	☑	☐	63	36	1	0	1	☑	☐	☑	☐	☐	☐	GW	☐	☑	☐	☐	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-67.5-70-D	67.50	70.00	0.00	1.50	0.00	3.00	11.250				5YR 6/4	☐	☑	☐	64	35	1	0	1	☑	☐	☑	☐	☐	☐	GW	☐	☑	☐	☐	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-70-72.5-D	70.00	72.50	0.00	1.50	0.00	3.50	11.250				5YR 6/4	☐	☑	☐	49	49	2	0	2	☑	☐	☑	☐	☐	☐	GW	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-72.5-75-D	72.50	75.00	0.00	1.50	0.00	3.00	11.250				5YR 6/4	☐	☑	☐	39	59	2	0	2	☑	☐	☑	☐	☐	☐	SW	☐	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-75-77.5-D	75.00	77.50	0.00	1.50	0.00	3.50	11.250				5YR 6/4	☐	☑	☐	54	44	2	0	2	☑	☐	☑	☐	☐	☐	GW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-77.5-80-D	77.50	80.00	0.00	1.50	0.00	3.00	11.250				5YR 6/4	☐	☑	☐	34	59	6	1	7	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		

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Borehole ID: **NC-EWDP-24PA** (Phase 5) Driller/Drilling Company: Dennis White/Eklund Drilling Co. Drilling Method: Air Rotary Reverse Circ/Casing Advance Symmetrix Alluvium Depth (ft bgs): 0 to 151.8 Start Date: 1/25/2006 End Date: 1/27/2006

Date Logged	Logged By (Initials)	Date Checked	Checked By (Initials)	Sample Number	Depth Interval (feet bgs)		Drilling Data					Sample Density Measurements			Munsell Color Symbol	Moisture Content			Particle Size Distribution (%)					Gra-ding		Estimated Plasticity				USCS Group Symbol	Gravel/Sand GrainShape				Cementation				HCL Reaction			Major Rock Type (%)		
					From	To	Liquid Drilling Fluid Injection Rate (gpm)	Drilling Rate (feet/min)	Water Production (gpm)	Sample Recovery (gallons)	Borehole Diameter (inches)	Tare Weight (kg)	Sample Plus Tare Weight (kg)	Sample Weight (kg)		Dry	Moist	Wet	Gravel	Sand	Silt	Clay	Fines (Silt plus Clay)	Well Graded	Poorly Graded	None	Low	Moderate	High		Angular	Subangular	Subrounded	Rounded	None	Weak	Moderate	Strong	None	Weak	Strong	Volcanics	Carbonates	Other
1/26/2006	BW	2/10/2006	JSW	24PA-80-82.5-D	80.00	82.50	0.00	1.50	0.00	3.00	11.250				5YR 6/4	☐	☐	☑	57	38	4	1	5	☑	☐	☑	☐	☐	☐	GW-GM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-82.5-85-D	82.50	85.00	0.00	1.30	0.00	3.50	11.250				5YR 6/4	☐	☑	☐	54	42	3	1	4	☑	☐	☑	☐	☐	☐	GW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-85-87.5-D	85.00	87.50	0.00	1.30	0.00	2.50	11.250				5YR 6/4	☐	☑	☐	40	51	7	2	9	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-87.5-90-D	87.50	90.00	0.00	1.30	0.00	2.50	11.250				5YR 6/4	☑	☐	☐	37	52	9	2	11	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-90-92.5-D	90.00	92.50	0.00	1.30	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	27	61	10	2	12	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-92.5-95-D	92.50	95.00	0.00	1.30	0.00	3.50	11.250				5YR 6/4	☑	☐	☐	37	53	8	2	10	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-95-97.5-D	95.00	97.50	0.00	1.30	0.00	2.50	11.250				5YR 6/4	☑	☐	☐	45	48	5	2	7	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-97.5-100-D	97.50	100.00	0.00	1.20	0.00	3.50	11.250				5YR 6/4	☑	☐	☐	29	58	11	2	13	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	100		
1/26/2006	BW	2/10/2006	JSW	24PA-100-102.5-D	100.00	102.50	0.00	1.20	0.00	2.50	11.250				2.5YR 4/3	☑	☐	☐	46	49	3	2	5	☑	☐	☑	☐	☐	☐	SW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-102.5-105-D	102.50	105.00	0.00	1.20	0.00	3.50	11.250				2.5YR 4/3	☑	☐	☐	39	56	3	2	5	☑	☐	☑	☐	☐	☐	SW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-105-107.5-D	105.00	107.50	0.00	1.20	0.00	3.50	11.250				2.5YR 4/3	☑	☐	☐	33	58	7	2	9	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-107.5-110-D	107.50	110.00	0.00	1.20	0.00	3.00	11.250				2.5YR 4/3	☑	☐	☐	39	50	9	2	11	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-110-112.5-D	110.00	112.50	0.00	1.20	0.00	2.50	11.250				5YR 6/4	☑	☐	☐	38	50	8	4	12	☑	☐	☐	☑	☐	☐	SW-SC	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-112.5-115-D	112.50	115.00	0.00	1.20	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	36	51	8	5	13	☑	☐	☐	☑	☐	☐	SW-SC	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-115-117.5-D	115.00	117.50	0.00	1.20	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	30	56	9	5	14	☑	☐	☐	☑	☐	☐	SW-SC	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-117.5-120-D	117.50	120.00	0.00	1.20	0.00	2.00	11.250				5YR 6/4	☑	☐	☐	34	58	5	3	8	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-120-122.5-D	120.00	122.50	0.00	1.20	0.00	3.50	11.250				5YR 6/4	☑	☐	☐	36	51	6	7	13	☑	☐	☐	☑	☐	☐	SW-SC	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-122.5-125-D	122.50	125.00	0.00	1.40	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	65	28	3	4	7	☑	☐	☐	☑	☐	☐	GW-GC	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-125-127.5-D	125.00	127.50	0.00	1.40	0.00	2.50	11.250				5YR 6/4	☑	☐	☐	37	53	6	4	10	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-127.5-130-D	127.50	130.00	0.00	1.40	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	47	45	5	3	8	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-130-132.5-D	130.00	132.50	0.00	1.40	0.00	3.50	11.250				5YR 6/4	☑	☐	☐	33	57	6	4	10	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-132.5-135-D	132.50	135.00	0.00	1.40	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	32	60	5	3	8	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-135-137.5-D	135.00	137.50	0.00	1.40	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	21	65	9	5	14	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-137.5-140-D	137.50	140.00	0.00	1.40	0.00	0.50	11.250				5YR 6/4	☑	☐	☐	31	57	8	4	12	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-140-142.5-D	140.00	142.50	0.00	1.40	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	33	57	8	2	10	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/26/2006	BW	2/10/2006	JSW	24PA-142.5-145-D	142.50	145.00	0.00	1.30	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	46	46	6	2	8	☑	☐	☑	☐	☐	☐	SW-SM	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/27/2006	BW	2/10/2006	JSW	24PA-145-147.5-D	145.00	147.50	0.00	1.30	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	43	52	3	2	5	☑	☐	☑	☐	☐	☐	SW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/27/2006	BW	2/10/2006	JSW	24PA-147.5-150-D	147.50	150.00	0.00	1.30	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	46	50	3	1	4	☑	☐	☑	☐	☐	☐	SW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		
1/27/2006	BW	2/10/2006	JSW	24PA-150-151.8-D	150.00	151.80	0.00	1.30	0.00	3.00	11.250				5YR 6/4	☑	☐	☐	53	43	3	1	4	☑	☐	☑	☐	☐	☐	GW	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	100		