*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -001 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : CH ;
REVISED TO : ;

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 855, SAMPLES 1P 4608- 4609
- GENERAL METHODS 1B1A, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
			(- - -TOTAL - - -)			(- -CLAY- -)		(- -SILT- -)			(- - - - - -SAND- - - - - -)					(-COARSE FRACTIONS(MM)-)			(>2MM)
			CLAY	SILT	SAND	FINE	CO3	FINE	COARSE	VF	F	M	C	VC	- - - - WEIGHT - - - -				WT
SAMPLE	DEPTH	HORIZON	LT	.002	.05	LT	LT	.002	.02	.05	.10	.25	.5	1	2	5	20	.1-	PCT OF
NO.	(CM)		.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	75	WHOLE
			<- - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				SOIL
1P4608S	8- 10	E	6.8	30.8	62.4			13.8	17.0	23.8	27.5	5.2	3.5	2.4	2	--	--	40	2
1P4609S	10- 11	Bs	5.5	40.9	53.6			23.9	17.0	16.2	15.4	7.2	12.1	2.7	4	--	--	40	4

	ORGN TOTAL		EXTR TOTAL		(- - DITH-CIT - -)			(RATIO/CLAY)	(ATTERBERG)		(- BULK DENSITY -)			COLE	(- - -WATER CONTENT - -)				WRD
	C	N	P	S	EXTRACTABLE			15	- LIMITS -		FIELD	1/3	OVEN	WHOLE	FIELD	1/10	1/3	15	WHOLE
DEPTH					FE	AL	MN	CEC	BAR	LL	PI	MOIST	BAR	DRY	SOIL	MOIST	BAR	BAR	BAR	SOIL
(CM)	6A1c	6B4b	6S3e	6R3d	6C2h	6G7g	6D2g	8D1	8D1	4F1	4F	4A5	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT	OF	<2MM -->				PCT <0.4MM		<- - G/CC - - ->			CM/CM	<- - -PCT OF <2MM - ->				CM/CM
8- 10		0.074		0.01	0.4	0.2	--		0.90									6.1	
10- 11		0.087		0.01	0.6	0.4	--												

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S01WA- -001 PRINT DATE 08/15/01
SAMPLED AS : CH ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 855, SAMPLE 1P 4608- 4609

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -)					ACID- EXTR		(- - - -CEC - - -)			AL	-BASE SAT-		CO3 AS	RES.		COND.(- - - -PH - - -)			
	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS		MMHOS	NAF	CACL2	H2O
DEPTH	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM		/CM		.01M	
(CM)	6N2i	6O2h	6P2f	6Q2f		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1h	8E1		8I	8C1d	8C1f	8C1f
	<- - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
8- 10																	--	10.1	5.2	5.4
10- 11																	--	10.9		

ANALYSES: S= ALL ON SIEVED <2mm BASIS

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LINCOLN, NEBRASKA 68508-3866

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 855, SAMPLES 1P 4608- 4609
- GENERAL METHODS 1B1A, 2A1, 2B

		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID	OXALATE	EXTRACTION		PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN	C	0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><		- - SML		- - ->		8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm><PCT>																			
1P4608	1	0.21	0.44	0.06	0.23	19			1.99												
1P4609	2	0.30	0.62	0.14	0.51	42			1.71												

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- PEDON 1P 855, SAMPLES 1P 4608- 4609
- GENERAL METHODS (ENGINEERING FRACTIONS ARE CALCULATED FROM USDA FRACTION SIZES)

SAMPLE No.	DEPTH (In.)	HORIZON	ENGINEERING PERCENTAGE PASSING SIEVE <-INCHES-> 3	2	3/2	1	3/4	3/8	<-NUMBER-> 4	10	40	200	<-MICRONS-> 20	5	2	PSDA USDA <--- MILLIMETER ---> 1.	.5	.25	.10	.05	CUMULATIVE CURVE FRACTIONS(<75mm) LESS THAN DIAMETERS(mm) AT <--PERCENTILE--> 60	50	10	ATTERBERG <-PCT> LL	PI	GRADATION UNIFMTY CU	CURVTUR CC
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4608S	3- 4	E	100	100	100	100	100	100	100	98	91	50	20	12	7	96	92	87	60	37	0.10	0.074	0.004			28.2	3.4
1P4609S	4- 4	Bs	100	100	100	100	100	100	100	96	80	54	28	14	5	93	82	75	60	45	0.10	0.064	0.003			31.0	1.5

DEPTH (In.)	WEIGHT FRACTIONS ---WHOLE SOIL (mm)- <------PCT of WHOLE SOIL-----> >2	250 -UP	250 -75	75 -2	75 -20	20 -5	5 -2	<2	-<75 mm FRACTION-- <--PCT OF <75 mm-> 75 -2	75 -20	20 -5	5 -2	<2		WEIGHT PER UNIT VOLUME G/CC ------WHOLE SOIL------ SOIL SURVEY 1/3 BAR	SOIL SURVEY OVEN -DRY	ENGINEERING MOIST	ENGINEERING SATUR -ATED	-------<2 mm FRACTION------- --SOIL SURVEY-- 1/3 BAR	15 BAR	OVEN -DRY	ENGINEERING MOIST	SATUR -ATED	VOID --RATIOS-- AT 1/3 BAR WHOLE SOIL	<2 mm
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
3- 4	2	--	--	2	--	--	2	98	2	--	--	2	98		1.46										
4- 4	4	--	--	4	--	--	4	96	4	--	--	4	96		1.48										

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USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 855, SAMPLE 1P 4608- 4609

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD)																									
	----WHOLE SOIL (mm)																									
	>2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	2- .05	.05- .002	LT .002	PORES D	RAT F	FINE -IO	CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	WHOLE SOIL <--In/In->	<2 mm		
	<----------PCT of WHOLE SOIL---------->																									
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
3- 4	1	--	--	1	--	--	1	99	33	16	4	45						0.90								
4- 4	2	--	--	2	--	--	2	98	29	22	3	44														

DEPTH (In.)	(WEIGHT FRACTIONS - CLAY FREE)(-TEXTURE--)(--PSD A(mm)---)(PH)(-ELECTRICAL)< >																									
	(--WHOLE SOIL--) (--<2 mm FRACTION ----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >																									
	>2 -2	75 -2	20 -2	2- .05	.05- .002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2- .05	.05- .002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	<			
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																									
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
3- 4	2	2	2	66	32	7	3	4	6	30	26	18	15	7		VFSL	62.4	30.8	6.8	5.2						
4- 4	4	4	4	54	41	6	3	13	8	16	17	18	25	6		FSL	53.6	40.9	5.5							

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SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 856, SAMPLES 1P 4610- 4613
- GENERAL METHODS 1B1A, 2A1, 2B

-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
			(- - -TOTAL - - -)			(- -CLAY- -)		(- -SILT- -)		(- - - - - -SAND- - - - - -)					(-COARSE FRACTIONS(MM)-)				(>2MM)
			CLAY	SILT	SAND	FINE	CO3	FINE	COARSE	VF	F	M	C	VC	- - - - WEIGHT - - - -				WT
SAMPLE	DEPTH	HORIZON	LT	.002	.05	LT	LT	.002	.02	.05	.10	.25	.5	1	2	5	20	.1-	PCT OF
NO.	(CM)		.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	75	WHOLE
			<- - - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				SOIL
1P4610S	8- 10	E	2.9	32.5	64.6			15.7	16.8	21.3	26.4	8.2	5.8	2.9	3	1	--	46	4
1P4611S	10- 16	Bs	3.1	28.1	68.8			15.3	12.8	16.2	19.4	14.5	11.6	7.1	11	7	--	61	18
1P4612S	38- 42	E	2.5	35.8	61.7			18.8	17.0	20.1	23.6	6.6	5.7	5.7	8	7	--	50	15
1P4613S	42- 49	Bs	4.7	24.1	71.2			16.7	7.4	10.5	16.1	18.9	17.7	8.0	10	11	--	69	21

	ORGN	TOTAL	EXTR	TOTAL	(- - DITH-CIT - -)			(RATIO/CLAY)	(ATTERBERG)		(- BULK DENSITY -)			COLE	(- - -WATER CONTENT - -)				WRD
	C	N	P	S	EXTRACTABLE			15	- LIMITS -		FIELD	1/3	OVEN	WHOLE	FIELD	1/10	1/3	15	WHOLE
DEPTH					FE	AL	MN	CEC	BAR	LL	PI	MOIST	BAR	DRY	SOIL	MOIST	BAR	BAR	BAR	SOIL
(CM)	6A1c	6B4b	6S3e	6R3d	6C2h	6G7g	6D2g	8D1	8D1	4F1	4F	4A5	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT	OF	<2MM -->				PCT <0.4MM		<- - G/CC - - ->			CM/CM	<- - -PCT OF <2MM - ->				CM/CM
8- 10		0.171		0.02	0.4	0.1	--		4.48									13.0	
10- 16		0.105		0.02	1.0	0.8	--		2.48									7.7	
38- 42		0.059		0.02	0.7	0.4	--		2.80									7.0	
42- 49		0.109		0.03	1.6	0.9	--		3.28									15.4	

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USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 856, SAMPLE 1P 4610- 4613

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -)					ACID-	EXTR (- - - -CEC - - -)				AL	-BASE SAT-		CO3 AS	RES.		COND.(- - - -PH - - -)			
	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS		MMHOS	NAF	CACL2	H2O
DEPTH	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM		/CM		.01M	
(CM)	6N2i	6O2h	6P2f	6Q2f		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1h	8E1		8I	8C1d	8C1f	8C1f
	<- - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
8- 10							3.5										--	7.3	3.4	4.0
10- 16							2.5										--	11.0	4.7	4.9
38- 42																	--	11.1	5.9	5.7
42- 49																	--	11.0	5.8	5.8

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

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SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID OXALATE EXTRACTION				PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN		0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><- - - SML - - ->						8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm>< PCT>																			
1P4610	3	0.19	0.21	0.03	0.11	8		26.0	6.25												
1P4611	4	0.62	0.95	0.42	1.50	75		11.8	3.75												
1P4612	5	0.12	0.56	0.59	1.46	72			1.09												
1P4613	6	0.28	0.99	1.62	3.73	98			2.79												

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SAMPLE No.	DEPTH (In.)	HORIZON	ENGINEERING PERCENTAGE PASSING SIEVE <-----INCHES----->						<-NUMBER->				<-MICRONS->			PSDA USDA <---	CUMULATIVE CURVE FRACTIONS(<75mm) LESS THAN DIAMETERS(mm) AT MILLIMETER --->					<--PERCENTILE-->			ATTER-BERG LL	PI	GRADATION UNIFMTY CU	CURVTUR CC
			3	2	3/2	1	3/4	3/8	4	10	40	200	20	5	2	1.	.5	.25	.10	.05	60	50	10				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4610S	3- 4	E	100	100	100	100	100	100	99	96	86	46	18	9	3	93	88	80	54	34	0.12	0.086	0.006			20.3	2.2
1P4611S	4- 6	Bs	100	100	100	100	100	97	93	83	64	34	15	8	3	77	67	55	39	26	0.33	0.183	0.008			42.3	1.5
1P4612S	15- 17	E	100	100	100	100	100	97	93	85	74	42	18	8	2	80	75	70	50	33	0.16	0.102	0.006			25.8	1.8
1P4613S	17- 19	Bs	100	100	100	100	100	95	89	79	55	27	17	9	4	73	59	44	31	23	0.53	0.334	0.006			89.0	2.6

DEPTH (In.)	(WHOLE SOIL (mm)-UP <------PCT of WHOLE SOIL----->								(<75 mm FRACTION-- <--PCT OF <75 mm->							(WEIGHT PER UNIT VOLUME G/CC) ------WHOLE SOIL------ SOIL SURVEY ENGINEERING 1/3 BAR OVEN -DRY MOIST SATUR -ATED				(<2 mm FRACTION------- --SOIL SURVEY-- ENGINEERING 1/3 BAR 15 BAR OVEN -DRY MOIST SATUR -ATED				(VOID RATIOS-- AT 1/3 WHOLE SOIL BAR <2 mm)	
	>2	250	250	75	75	20	5		75	75	20	5															
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50		
3- 4	4	--	--	4	--	1	3	96	4	--	1	3	96		1.48												
4- 6	17	--	--	17	--	7	10	83	17	--	7	10	83		1.57												
15- 17	15	--	--	15	--	7	8	85	15	--	7	8	85		1.55												
17- 19	21	--	--	21	--	11	10	79	21	--	11	10	79		1.60												

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -002 PRINT DATE 08/15/01
SAMPLED AS : PL ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 856, SAMPLE 1P 4610- 4613

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD)																									
	----WHOLE SOIL (mm) at 1/3 BAR---(/N) --------<2 mm FRACTION------- WHOLE SOIL --<2 mm-- WHOLE <2																									
	>2 -UP	250 -75	250 -20	75 -2	75 -20	20 -5	5 -2	<2	2-.05	.05-.002	LT .002	PORES D	RAT F	-IO	FINE CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	SOIL <--In/In->	mm
	<----------PCT of WHOLE SOIL---------->																									
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
3- 4	2	--	--	2	--	1	2	98	34	17	2	44						4.48								
4- 6	10	--	--	10	--	4	6	90	34	14	2	41						2.48								
15- 17	9	--	--	9	--	4	5	91	31	18	1	41						2.80								
17- 19	13	--	--	13	--	7	6	87	34	12	2	40						3.28								

DEPTH (In.)	(WEIGHT FRACTIONS-CLAY FREE)(-TEXTURE--)(--PSDA(mm)---)(PH)(-ELECTRICAL)< >																									
	(--WHOLE SOIL--) (--<2 mm FRACTION ----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >																									
	>2 -2	75 -2	20 -.05	2-.05	.05-.002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2-.05	.05-.002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	< >			
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																									
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
3- 4	4	4	4	64	32	3	3	6	8	27	22	17	16	3		FSL	64.6	32.5	2.9	3.4						
4- 6	17	17	17	59	24	3	7	12	15	20	17	13	16	3		SL	68.8	28.1	3.1	4.7						
15- 17	15	15	15	54	31	2	6	6	7	24	21	17	19	3		FSL	61.7	35.8	2.5	5.9						
17- 19	22	22	22	58	20	4	8	19	20	17	11	8	18	5		COSL	71.2	24.1	4.7	5.8						

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

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SAMPLED AS : CC ;
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SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 857, SAMPLES 1P 4614- 4615
- GENERAL METHODS 1B1A, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
			(- - -TOTAL - - -)			(- -CLAY- -)		(- -SILT- -)			(- - - - - -SAND- - - - - -)					(-COARSE FRACTIONS(MM)-)			(>2MM)
			CLAY	SILT	SAND	FINE	CO3	FINE	COARSE	VF	F	M	C	VC	- - - - WEIGHT - - - -				WT
SAMPLE	DEPTH	HORIZON	LT	.002	.05	LT	LT	.002	.02	.05	.10	.25	.5	1	2	5	20	.1-	PCT OF
NO.	(CM)		.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	75	WHOLE
			<- - - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				SOIL
1P4614S	4- 7	E	2.6	30.1	67.3			14.1	16.0	22.6	37.1	5.4	1.5	0.7	--	--	--	45	--
1P4615S	7- 11	Bs	3.0	36.4	60.6			18.4	18.0	17.4	17.1	10.7	9.9	5.5	5	1	--	47	6

	ORGN TOTAL		EXTR TOTAL (- - DITH-CIT - -)(RATIO/CLAY)(ATTERBERG)(- BULK DENSITY -) COLE (- - -WATER CONTENT - -)																WRD
	C	N	P	S	EXTRACTABLE			15	- LIMITS -		FIELD	1/3	OVEN	WHOLE	FIELD	1/10	1/3	15	WHOLE
DEPTH					FE	AL	MN	CEC	BAR	LL	PI	MOIST	BAR	DRY	SOIL	MOIST	BAR	BAR	BAR	SOIL
(CM)	6A1c	6B4b	6S3e	6R3d	6C2h	6G7g	6D2g	8D1	8D1	4F1	4F	4A5	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT OF <2MM -->						PCT <0.4MM		<- - G/CC - - ->			CM/CM	<- - -PCT OF <2MM - ->				CM/CM
4- 7		0.122		0.02	0.3	0.1	--	3.73										9.7	
7- 11		0.058		0.01	0.7	0.5	--	2.03										6.1	

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

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USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 857, SAMPLE 1P 4614- 4615

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -)					ACID- EXTR		(- - - -CEC - - -)			AL	-BASE SAT-		CO3 AS	RES.		COND.(- - - -PH - - -)			
	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS		MMHOS	NAF	CACL2	H2O
DEPTH	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM		/CM		.01M	
(CM)	6N2i	6O2h	6P2f	6Q2f		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1h	8E1		8I	8C1d	8C1f	8C1f
	<- - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
4- 7							1.4										--	7.6	4.1	4.6
7- 11																	--	10.9	5.4	5.4

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

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		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID OXALATE EXTRACTION				PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN	C	0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><- - - SML - - ->						8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm>< PCT>																			
1P4614	7	0.17	0.28	0.03	0.09	8		5.9	5.60												
1P4615	8	0.28	0.74	0.30	0.88	55			1.82												

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- GENERAL METHODS (ENGINEERING FRACTIONS ARE CALCULATED FROM USDA FRACTION SIZES)

SAMPLE No.	DEPTH (In.)	HORIZON	PERCENTAGE PASSING <-----INCHES----->								<-NUMBER->		PASSING <-MICRONS->			SIEVE USDA <--- MILLIMETER --->			CUMULATIVE CURVE FRACTIONS(<75mm) DIAMETERS(mm) AT <--PERCENTILE-->					ATTER-BERG LL <-PCT>	ATTER-BERG PI	GRADATION UNIFMTY CU	GRADATION CURVTUR CC
			3	2	3/2	1	3/4	3/8	4	10	40	200	20	5	2	1.	.5	.25	.10	.05	60	50	10				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4614S	2- 3	E	100	100	100	100	100	100	100	100	96	45	17	8	3	99	98	92	55	33	0.11	0.085	0.007			16.8	2.4
1P4615S	3- 4	Bs	100	100	100	100	100	100	99	94	77	47	20	10	3	89	80	69	53	37	0.15	0.087	0.005			28.0	1.5

DEPTH (In.)	(WEIGHT FRACTIONS) WHOLE SOIL (mm) >2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	<75 mm FRACTION 75 -2	75 -20	20 -5	5 -2	<2	(WEIGHT PER UNIT VOLUME G/CC) WHOLE SOIL SOIL 1/3 BAR	SURVEY OVEN -DRY	ENGINEERING MOIST	ENGINEERING SATUR -ATED	<2 mm FRACTION SOIL SURVEY 1/3 BAR	SOIL SURVEY 15 BAR	ENGINEERING OVEN -DRY	ENGINEERING MOIST	ENGINEERING SATUR -ATED	(VOID RATIOS) AT 1/3 WHOLE SOIL	BAR <2 mm
	<-----PCT of WHOLE SOIL----->							<--PCT OF <75 mm->															
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
2- 3	--	--	--	--	--	--	--	100	--	--	--	--	100		1.45								
3- 4	6	--	--	6	--	1	5	94	6	--	1	5	94		1.49								

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USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 857, SAMPLE 1P 4614- 4615

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD)																									
	----WHOLE SOIL (mm)																									
	>2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	2-.05	.05-.002	LT .002	PORES D	RAT F	FINE -IO	CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	WHOLE SOIL <--In/In->	<2 mm
	<----------PCT of WHOLE SOIL---------->																									
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
2- 3	--	--	--	--	--	--	--	100	37	16	1	45						3.73								
3- 4	3	--	--	3	--	1	3	97	32	19	2	44						2.03								

DEPTH (In.)	(WEIGHT FRACTIONS-CLAY FREE)(-TEXTURE--)(--PSDA(mm)---)(PH)(-ELECTRICAL)																									
	(--WHOLE SOIL--) (--<2 mm FRACTION----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >																									
	>2 -2	75 -2	20 -2	2-.05	.05-.002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2-.05	.05-.002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	<	<		
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																									
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
2- 3				69	31	3	1	2	6	38	23	16	14	3		FSL	67.3	30.1	2.6	4.1						
3- 4	6	6	6	59	35	3	6	10	11	18	18	19	19	3		FSL	60.6	36.4	3.0	5.4						

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -004 (WASHINGTON)

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NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 858, SAMPLES 1P 4616- 4617
- GENERAL METHODS 1B1A, 2A1, 2B

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

SAMPLE NO.	DEPTH (CM)	HORIZON	(- - -TOTAL - - -) CLAY LT .002 .002	SILT .002 -.05	SAND .05 -2	FINE LT .0002	CO3 LT .002 .002	(- -CLAY- -) FINE .002 -.02	COARSE .02 -.05	(- -SILT- -) VF .05 -.10	F .10 -.25	(- - - - - -SAND- - - - - -) M .25 -.50	C .5 -1	VC 1 -2	(-COARSE FRACTIONS(MM)-) 2 -5	- - - - WEIGHT - - - - 5 -20	20 -75	.1- 75	(>2MM) WT PCT OF WHOLE SOIL
			<- - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				
1P4616S	24- 26	E	3.7	41.2	55.1			21.4	19.8	24.8	21.7	5.3	2.5	0.8	1	3	--	33	4
1P4617S	26- 34	Bs	2.8	36.6	60.6			17.5	19.1	21.7	21.8	9.4	6.2	1.5	3	3	--	43	6

DEPTH (CM)	ORGN TOTAL C 6A1c PCT	N 6B4b <2MM	EXTR TOTAL P 6S3e PPM	S 6R3d <- PERCENT	(- - DITH-CIT - -) EXTRACTABLE FE 6C2h	AL 6G7g OF	MN 6D2g <2MM -->	CEC 8D1	(RATIO/CLAY) 15 BAR 8D1	(ATTERBERG) - LIMITS - LL 4F1 PCT	PI 4F <0.4MM	(- BULK DENSITY -) FIELD MOIST 4A5 <- -	1/3 BAR 4A1d G/CC - - ->	OVEN DRY 4A1h	COLE WHOLE SOIL 4D1 CM/CM	(- - -WATER CONTENT - -) FIELD MOIST 4B4 <- -	1/10 BAR 4B1c -PCT OF	1/3 BAR 4B1c <2MM -	15 BAR 4B2a ->	WRD WHOLE SOIL 4C1 CM/CM
24- 26		0.069		0.01	0.8	0.4	TR		1.30										4.8	
26- 34		0.068		0.01	1.2	0.6	TR		2.50										7.0	

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USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 858, SAMPLE 1P 4616- 4617

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -)					ACID- EXTR		(- - - -CEC - - -)			AL	-BASE SAT-		CO3 AS	RES.		COND.(- - - -PH - - -)			
	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS		MMHOS	NAF	CACL2	H2O
DEPTH	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM		/CM		.01M	
(CM)	6N2i	6O2h	6P2f	6Q2f		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1h	8E1		8I	8C1d	8C1f	8C1f
	<- - - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
24- 26																	--	10.7	5.8	5.8
26- 34																	--	11.0	5.7	5.8

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

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- PEDON 1P 858, SAMPLES 1P 4616- 4617
- GENERAL METHODS 1B1A, 2A1, 2B

		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID OXALATE EXTRACTION				PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN	C	0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><			- - SML		- - ->	8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm>< PCT>																			
1P4616	9	0.19	0.89	0.22	0.70	49			1.29												
1P4617	10	0.20	1.02	0.46	1.32	68			1.59												

*** S U P P L E M E N T A R Y   C H A R A C T E R I Z A T I O N   D A T A ***

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- PEDON 1P 858, SAMPLES 1P 4616- 4617
- GENERAL METHODS (ENGINEERING FRACTIONS ARE CALCULATED FROM USDA FRACTION SIZES)

SAMPLE No.	DEPTH (In.)	HORIZON	ENGINEERING PERCENTAGE PASSING SIEVE 3 (INCHES)	2	3/2	1	3/4	3/8 (INCHES)	4 (NUMBER)	10	40	200 (NUMBER)	PSDA USDA 20 (MICRONS)	5	2 (MICRONS)	CUMULATIVE CURVE FRACTIONS (<75mm) LESS THAN 1. (MILLIMETER)	.5	.25	.10	.05 (MILLIMETER)	DIAMETERS(mm) AT 60 (PERCENTILE)	50	10 (PERCENTILE)	ATTERBERG LL (PCT)	PI (PCT)	GRADATION UNIFMTY CU	CURVTUR CC
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4616S	9- 10	E	100	100	100	100	100	99	97	96	92	57	24	12	4	95	93	88	67	43	0.08	0.061	0.004			19.8	2.1
1P4617S	10- 13	Bs	100	100	100	100	100	99	97	94	85	49	19	9	3	93	87	78	57	37	0.11	0.078	0.006			20.0	1.9

DEPTH (In.)	WEIGHT FRACTIONS: WHOLE SOIL (mm) >2 (PCT of WHOLE SOIL)	250 -UP	250 -75	75 -2	75 -20	20 -5	5 -2	<2	<75 mm FRACTION 75 -2 (PCT OF <75 mm)	75 -20	20 -5	5 -2	<2		WEIGHT PER UNIT VOLUME G/CC: WHOLE SOIL, SOIL SURVEY 1/3 BAR	SOIL SURVEY OVEN -DRY	ENGINEERING MOIST	ENGINEERING SATUR -ATED	<2 mm FRACTION, SOIL SURVEY 1/3 BAR	SOIL SURVEY 15 BAR	SOIL SURVEY OVEN -DRY	ENGINEERING MOIST	ENGINEERING SATUR -ATED	VOID RATIOS AT 1/3 BAR WHOLE SOIL	VOID RATIOS AT 1/3 BAR <2 mm
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
9- 10	4	--	--	4	--	3	1	96	4	--	3	1	96		1.48										
10- 13	6	--	--	6	--	3	3	94	6	--	3	3	94		1.49										

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -004 PRINT DATE 08/15/01
SAMPLED AS : LF ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 858, SAMPLE 1P 4616- 4617

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD)																									
	----WHOLE SOIL (mm)																									
	>2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	2- .05	.05- .002	LT .002	PORES D	RAT F	FINE -IO	CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	WHOLE SOIL <--In/In->	<2 mm
	<----------PCT of WHOLE SOIL---------->																									
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
9- 10	2	--	--	2	--	2	1	98	29	22	2	44						1.30								
10- 13	3	--	--	3	--	2	2	97	32	19	1	44						2.50								

DEPTH (In.)	(WEIGHT FRACTIONS - CLAY FREE)(-TEXTURE--)(--PSD A(mm)---)(PH)(-ELECTRICAL)< >																									
	(--WHOLE SOIL--) (--<2 mm FRACTION ----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >																									
	>2 -2	75 -2	20 -2	2- .05	.05- .002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2- .05	.05- .002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	<			
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																									
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
9- 10	4	4	4	55	41	4	1	3	6	23	26	21	22	4		VFSL	55.1	41.2	3.7	5.8						
10- 13	6	6	6	58	35	3	2	6	10	22	22	20	18	3		FSL	60.6	36.6	2.8	5.7						

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -005 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : CF ;
REVISED TO : ;

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 859, SAMPLES 1P 4618- 4619
- GENERAL METHODS 1B1A, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
			(- - -TOTAL - - -)			(- -CLAY- -)		(- -SILT- -)			(- - - - - -SAND- - - - - -)					(-COARSE FRACTIONS(MM)-)			(>2MM)
			CLAY	SILT	SAND	FINE	CO3	FINE	COARSE	VF	F	M	C	VC	- - - - WEIGHT - - - -				WT
SAMPLE	DEPTH	HORIZON	LT	.002	.05	LT	LT	.002	.02	.05	.10	.25	.5	1	2	5	20	.1-	PCT OF
NO.	(CM)		.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	75	WHOLE
			<- - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				SOIL
1P4618S	0- 5	E	4.2	35.1	60.7			18.3	16.8	12.6	35.4	11.0	0.8	0.9	1	--	--	49	1
1P4619S	5- 12	Bs	3.8	31.2	65.0			17.1	14.1	13.7	22.0	13.7	9.3	6.3	8	9	--	60	17

	ORGN TOTAL		EXTR TOTAL	(- - DITH-CIT - -)			(RATIO/CLAY)	(ATTERBERG)		(- BULK DENSITY -)			COLE	(- - -WATER CONTENT - -)				WRD
	C	N	P	S	EXTRACTABLE			15	- LIMITS -		FIELD	1/3	OVEN	WHOLE	FIELD	1/10	1/3	15	WHOLE
DEPTH					FE	AL	MN	CEC	BAR	LL	PI	MOIST	BAR	DRY	SOIL	MOIST	BAR	BAR	BAR	SOIL
(CM)	6A1c	6B4b	6S3e	6R3d	6C2h	6G7g	6D2g	8D1	8D1	4F1	4F	4A5	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT	OF	<2MM -->				PCT <0.4MM		<- - G/CC - - ->			CM/CM	<- - -PCT OF <2MM - ->				CM/CM
0- 5		0.079		0.01	0.4	0.1	TR	1.12										4.7	
5- 12		0.103		0.01	0.7	0.4	TR	1.92										7.3	

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -005 PRINT DATE 08/15/01
SAMPLED AS : CF ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 859, SAMPLE 1P 4618- 4619

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -)					ACID- EXTR		(- - - -CEC - - -)			AL	-BASE SAT-		CO3 AS	RES.		COND.(- - - -PH - - -)			
	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS		MMHOS	NAF	CACL2	H2O
DEPTH	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM		/CM		.01M	
(CM)	6N2i	6O2h	6P2f	6Q2f		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1h	8E1		8I	8C1d	8C1f	8C1f
	<- - - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
0- 5																	--	8.9	5.6	5.7
5- 12																	--	10.9	5.7	5.7

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -005 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : CF ;

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 859, SAMPLES 1P 4618- 4619
- GENERAL METHODS 1B1A, 2A1, 2B

		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID OXALATE EXTRACTION				PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN	C	0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><			- - SML		- - ->	8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm>< PCT>																			
1P4618	11	0.10	0.46	0.04	0.11	8			1.21												
1P4619	12	0.24	0.60	0.49	1.18	57			1.64												

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -005 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : CF ;
REVISED TO : ;

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 859, SAMPLES 1P 4618- 4619
- GENERAL METHODS (ENGINEERING FRACTIONS ARE CALCULATED FROM USDA FRACTION SIZES)

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

SAMPLE No.	DEPTH (In.)	HORIZON	E N G I N E E R I N G P E R C E N T A G E P A S S I N G S I E V E <-----I N C H E S-----> <-N U M B E R->										P S D A S I E V E <-MICRONS->			CUMULATIVE CURVE FRACTIONS(<75mm) USDA <--- MILLIMETER --->						ATTER- BERG LL	GRADATION DIAMETERS(mm) AT PI		UNI- FMTY CU	CUR- VTUR CC
			3	2	3/2	1	3/4	3/8	4	10	40	200	20	5	2	1.	.5	.25	.10	.05	60	50	10	<-PCT>		<-PCT>		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4618S	0- 2	E	100	100	100	100	100	100	100	99	95	46	22	11	4	98	97	86	51	39	0.13	0.093	0.004			29.8	1.8
1P4619S	2- 5	Bs	100	100	100	100	100	96	91	83	67	35	17	9	3	78	70	59	40	29	0.27	0.162	0.006			44.6	1.7

DEPTH (In.)	(W E I G H T F R A C T I O N S) ---W H O L E S O I L (mm)- >2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	-<75 mm FRACTION-- 75 -2	75 -20	20 -5	5 -2	<2	(W E I G H T P E R U N I T V O L U M E G/CC) ------WHOLE SOIL------ SOIL SURVEY 1/3 BAR	OVEN -DRY	ENGINEERING MOIST	SATUR -ATED	-------<2 mm FRACTION------- --SOIL SURVEY-- 1/3 BAR	15 BAR	ENGINEERING OVEN -DRY	MOIST	SATUR -ATED	(VOID) --RATIOS-- AT 1/3 WHOLE SOIL	BAR <2 mm
	<------PCT of WHOLE SOIL----->							<--PCT OF <75 mm->																
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
0- 2	1	--	--	1	--	--	1	99	1	--	--	1	99		1.46									
2- 5	17	--	--	17	--	9	8	83	17	--	9	8	83		1.57									

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -005 PRINT DATE 08/15/01
SAMPLED AS : CF ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 859, SAMPLE 1P 4618- 4619

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD) >2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	2-.05	.05-.002	LT .002	PORES D	RAT F	FINE -IO	CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	WHOLE SOIL <--In/In->	<2 mm SOIL	<2 mm
	<----PCT of WHOLE SOIL---->																								
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
0- 2	1	--	--	1	--	--	1	99	34	19	2	45						1.12							
2- 5	10	--	--	10	--	5	5	90	32	16	2	41						1.92							

DEPTH (In.)	(WEIGHT FRACTIONS - CLAY FREE)(-TEXTURE--)(--PSD A(mm)---)(PH)(-ELECTRICAL)< (--WHOLE SOIL--)(--<2 mm FRACTION----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >2 -2	75 -2	20 -.05	2- .05	.05- .002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2- .05	.05- .002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	>
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																							
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
0- 2	1	1	1	63	36	4	1	1	11	37	13	18	19	4		FSL	60.7	35.1	4.2	5.6					
2- 5	18	18	18	56	27	3	7	10	14	23	14	15	18	4		FSL	65.0	31.2	3.8	5.7					

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -006 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : AC ;
REVISED TO : ;

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 860, SAMPLES 1P 4620- 4628
- GENERAL METHODS 1B1A, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
			(- - -TOTAL - - -)			(- -CLAY- -)		(- -SILT- -)			(- - - - - -SAND- - - - - -)					(-COARSE FRACTIONS(MM)-)			(>2MM)
			CLAY	SILT	SAND	FINE	CO3	FINE	COARSE	VF	F	M	C	VC	- - - - WEIGHT - - - -				WT
SAMPLE	DEPTH	HORIZON	LT	.002	.05	LT	LT	.002	.02	.05	.10	.25	.5	1	2	5	20	.1-	PCT OF
NO.	(CM)		.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	75	WHOLE
			<- - - - - - - - - - - - - PCT OF <2MM (3A1) - - - - - - - - - - - - - - - ->												<- PCT OF <75MM(3B1)->				SOIL
1P4620S	5- 18	E	2.7	21.6	75.7			10.0	11.6	14.4	38.6	20.3	2.0	0.4	TR	2	--	62	2
1P4621S	8- 14	Bs	2.6	29.7	67.7			16.2	13.5	14.1	22.8	12.8	11.5	6.5	4	8	--	59	12
1P4622S	14- 18	E	2.3	25.9	71.8			13.8	12.1	11.0	28.2	15.3	10.5	6.8	2	--	--	62	2
1P4623S	21- 24	E	2.7	29.7	67.6			16.5	13.3	10.2	18.9	14.0	15.4	9.1	3	TR	--	59	3
1P4624S	28- 38	Bs	2.5	24.8	72.7			16.7	8.1	8.7	26.2	23.7	10.4	3.7	2	3	--	66	5
1P4625S	38- 50	E	2.9	28.3	68.8			16.8	11.5	13.0	21.6	16.4	12.6	5.2	8	5	--	62	13
1P4626S	50- 68	Bs	3.6	31.8	64.6			19.8	12.0	12.6	18.9	16.6	10.5	6.0	17	21	3	72	41
1P4627S	68- 75	E	2.9	24.6	72.5			14.2	10.4	14.1	21.7	21.7	12.0	3.0	7	18	--	69	25
1P4628S	75- 95	Bs	1.7	19.3	79.0			11.6	7.7	13.6	23.0	23.6	14.8	4.0	6	7	--	70	13

	ORGN	TOTAL	EXTR	TOTAL	(- - DITH-CIT - -)			(RATIO/CLAY)	(ATTERBERG)		(- BULK DENSITY -)			COLE	(- - -WATER CONTENT - -)				WRD
	C	N	P	S	EXTRACTABLE			15	- LIMITS -		FIELD	1/3	OVEN	WHOLE	FIELD	1/10	1/3	15	WHOLE
DEPTH					FE	AL	MN	CEC	BAR	LL	PI	MOIST	BAR	DRY	SOIL	MOIST	BAR	BAR	BAR	SOIL
(CM)	6A1c	6B4b	6S3e	6R3d	6C2h	6G7g	6D2g	8D1	8D1	4F1	4F	4A5	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT	OF	<2MM -->				PCT <0.4MM		<- - G/CC - - ->			CM/CM	<- - -PCT OF <2MM - ->				CM/CM
5- 18		0.172		0.02	0.4	0.1	--	3.56										9.6	
8- 14		0.119		0.02	1.3	1.2	--	4.27										11.1	
14- 18		0.049		0.01	0.6	0.6	--	2.48										5.7	
21- 24		0.085		0.01	0.7	0.7	--	2.93										7.9	
28- 38		0.043		0.01	0.5	0.4	--	2.00										5.0	
38- 50		0.040		0.01	0.6	0.5	--	2.24										6.5	
50- 68		0.059		0.02	1.2	0.7	--	3.33										12.0	
68- 75		0.046		0.02	0.9	0.4	--	3.31										9.6	
75- 95		0.055		0.03	0.8	0.4	--	7.18										12.2	

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -006 PRINT DATE 08/15/01
SAMPLED AS : AC ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 860, SAMPLE 1P 4620- 4628

DEPTH (CM)	-1-- CA 5B5a 6N2i	-2-- MG 5B5a 6O2h	-3-- NA 5B5a 6P2f	-4-- K 5B5a 6Q2f	-5-- SUM BASES	-6-- ACID-ITY 6H5a	-7-- EXTR AL 6G9c	-8-- CEC SUM CATS 5A3a	-9-- CEC NH4-OAC 5A8b	-10- CEC BASES + AL 5A3b	-11- AL SAT 5G1	-12- BASE SUM 5C3	-13- SAT NH4 OAC 5C1	-14- CO3 AS CACO3 <2MM 6E1h	-15- RES. OHMS /CM 8E1	-16-	-17- COND. MMHOS /CM 8I	-18- PH NAF 8C1d	-19- PH CACL2 .01M 8C1f	-20- PH H2O 8C1f
	<- - - - - - - - - - - -MEQ / 100 G - - - - - - - - - - - ->										<- - - - -PCT - - - ->								1:2	1:1
5- 18							1.9										--	7.7	4.5	4.7
8- 14																	--	11.3	5.4	5.3
14- 18																	--	11.3	5.9	5.6
21- 24																	--	11.4	5.5	5.6
28- 38																	--	11.2	5.6	5.7
38- 50																	--	11.1	5.8	5.6
50- 68																	--	11.1	5.9	5.7
68- 75																	--	11.1	6.0	5.7
75- 95																	--	11.2	6.5	5.9

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -006 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : AC ;

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 860, SAMPLES 1P 4620- 4628
- GENERAL METHODS 1B1A, 2A1, 2B

		-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
		ACID	OXALATE	EXTRACTION		PHOSPHOUS		KCL	TOTAL	(- -WATER		CONTENT- -)(- - - - WATER DISPERSIBLE - - - -)								MIN	AGGRT
		OPT	FE	SI	AL		CIT-	MN	C	0.06	1-	2-	15	<- - PIPETTE - - >< - HYDROMETER - >						SOIL	STABL
		DEN				RET	ACID			BAR	BAR	BAR	BAR	CLAY	SILT	SAND	CLAY	SILT	SAND	CONT	<5mm
SAMPLE	HZ	8J1c	6C9b	6V2b	6G12b	6S4d	6S5	6D3b	6A2f	4B1c	4B1a	4B1a	4B2b	<- - - 3A1c - - -><- - - SML - - ->						8F1	4G1
NO.	NO	<- P C T o f < 2 m m -><- P P M -><- - - - - - - - - - - P E R C E N T o f < 2 m m - - - - - - - -><20mm>< PCT>																			
1P4620	13	0.30	0.30	0.03	0.14	12		3.0	4.77												
1P4621	14	0.57	1.30	0.41	1.74	88			3.08												
1P4622	15	0.18	0.82	0.38	1.19	64			1.37												
1P4623	16	0.32	0.97	0.50	1.65	79			2.16												
1P4624	17	0.14	0.66	0.35	1.02	56			0.86												
1P4625	18	0.16	0.79	0.52	1.50	71			1.00												
1P4626	19	0.17	0.62	1.01	2.64	90			1.57												
1P4627	20	0.12	0.56	0.90	2.23	79			0.95												
1P4628	21	0.10	0.40	1.27	2.74	84			0.80												

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -006 (WASHINGTON)

PRINT DATE 08/15/01

SAMPLED AS : AC ;
REVISED TO : ;

SSL - PROJECT 1P 138, (RP01WA174) TEPHRA FIELD TOUR - GIFFORD PINCHOT NAT. F
- PEDON 1P 860, SAMPLES 1P 4620- 4628
- GENERAL METHODS (ENGINEERING FRACTIONS ARE CALCULATED FROM USDA FRACTION SIZES)

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

SAMPLE No.	DEPTH (In.)	HORIZON	ENGINEERING PERCENTAGE PASSING SIEVE <-----INCHES----->										PASSING SIEVE <-MICRONS->			USDA <--- MILLIMETER --->			CUMULATIVE CURVE FRACTIONS(<75mm) DIAMETERS(mm) AT <--PERCENTILE-->			ATTER-BERG LL PI <-PCT>		GRADATION UNI-FMTY CU	CUR-VTUR CC
			3	2	3/2	1	3/4	3/8	4	10	40	200	20	5	2	1.	.5	.25	.10	.05	60	50	10				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1P4620S	2- 7	E	100	100	100	100	100	99	98	98	91	32	12	7	3	98	96	76	38	24	0.17	0.134	0.011			15.2	2.4
1P4621S	3- 6	Bs	100	100	100	100	100	96	92	88	69	35	17	8	2	82	72	61	41	28	0.24	0.152	0.007			34.5	1.8
1P4622S	6- 7	E	100	100	100	100	100	100	100	98	77	34	16	8	2	91	81	66	38	28	0.20	0.147	0.007			27.4	2.2
1P4623S	8- 9	E	100	100	100	100	100	100	100	97	70	37	19	9	3	88	73	60	41	31	0.25	0.154	0.006			43.4	1.4
1P4624S	11- 15	Bs	100	100	100	100	100	99	97	95	76	31	18	9	2	91	82	59	34	26	0.26	0.179	0.006			42.5	3.2
1P4625S	15- 20	E	100	100	100	100	100	98	95	87	68	34	17	8	3	82	72	57	38	27	0.29	0.176	0.007			44.0	1.9
1P4626S	20- 27	Bs	100	99	99	98	97	87	76	59	47	25	14	7	2	55	49	39	28	21	2.10	0.543	0.009			>100	0.7
1P4627S	27- 29	E	100	100	100	100	100	92	83	76	60	27	13	6	2	74	65	48	32	21	0.41	0.271	0.011			39.0	1.9
1P4628S	29- 37	Bs	100	100	100	100	100	97	93	87	65	25	12	5	1	84	71	50	30	18	0.35	0.249	0.014			25.0	2.0

DEPTH (In.)	(WEIGHT PER UNIT VOLUME G/CC) WHOLE SOIL (mm) >2 -UP	250 -75	250 -2	75 -20	75 -5	20 -2	5 <2	<75 mm FRACTION 75 -2	75 -20	20 -5	5 -2	<2	WHOLE SOIL SOIL 1/3 BAR	SURVEY OVEN -DRY	ENGINEERING MOIST	SATUR -ATED	<2 mm FRACTION SOIL SURVEY 1/3 BAR	15 BAR	ENGINEERING OVEN -DRY	MOIST	SATUR -ATED	VOID RATIOS AT 1/3 WHOLE SOIL	BAR <2 mm
	<-----PCT of WHOLE SOIL----->							<--PCT OF <75 mm->															
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
2- 7	2	--	--	2	--	2	TR	98	2	--	2	TR	98		1.46										
3- 6	12	--	--	12	--	8	4	88	12	--	8	4	88		1.53										
6- 7	2	--	--	2	--	--	2	98	2	--	--	2	98		1.46										
8- 9	3	--	--	3	--	TR	3	97	3	--	TR	3	97		1.47										
11- 15	5	--	--	5	--	3	2	95	5	--	3	2	95		1.48										
15- 20	13	--	--	13	--	5	8	87	13	--	5	8	87		1.53										
20- 27	41	--	--	41	3	21	17	59	41	3	21	17	59		1.79										
27- 29	24	--	--	24	--	17	7	76	24	--	17	7	76		1.63										
29- 37	13	--	--	13	--	7	6	87	13	--	7	6	87		1.55										

*** S U P P L E M E N T A R Y C H A R A C T E R I Z A T I O N D A T A ***

S01WA- -006 PRINT DATE 08/15/01
SAMPLED AS : AC ;
USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 1P 860, SAMPLE 1P 4620- 4628

DEPTH (In.)	(VOLUME FRACTIONS)(C/)(RATIOS to CLAY)(LINEAR EXTENSIBILITY)(WRD)																									
	----WHOLE SOIL (mm)																									
	>2	250 -UP	250 -75	75 -2	75 -20	20 -5	5 -2	<2	2- .05	.05- .002	LT .002	PORES D	RAT F	RAT -IO	FINE CLAY	---CEC-- SUM CATS	NH4- OAC	15 BAR H2O	LEP 1/3 BAR	<-1/3 BAR to (PCT)---> 15 BAR	OVEN -DRY	15 BAR	OVEN -DRY	WHOLE SOIL <--In/In->	<2 mm	
	<----------PCT of WHOLE SOIL---------->																									
	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
2- 7	1	--	--	1	--	1	TR	99	41	12	1	45						3.56								
3- 6	7	--	--	7	--	5	2	93	35	15	1	42						4.27								
6- 7	1	--	--	1	--	--	1	99	39	14	1	45						2.48								
8- 9	2	--	--	2	--	TR	2	98	36	16	1	45						2.93								
11- 15	3	--	--	3	--	2	1	97	38	13	1	44						2.00								
15- 20	7	--	--	7	--	3	5	93	34	14	1	42						2.24								
20- 27	28	--	--	28	2	14	11	72	25	12	1	32						3.33								
27- 29	15	--	--	15	--	11	4	85	34	12	1	38						3.31								
29- 37	8	--	--	8	--	4	4	92	40	10	1	41						7.18								

DEPTH (In.)	(WEIGHT FRACTIONS-CLAY FREE)(-TEXTURE--)(--PSD A(mm)---)(PH)(-ELECTRICAL)< >																									
	(--WHOLE SOIL--) (--<2 mm FRACTION----)(DETERMINED)(SAND SILT CLAY) CA- RES- CON- < >																									
	>2 -2	75 -2	20 -2	2- .05	.05- .002	LT .002	------SANDS------- VC	C	M	F	VF	SILTS C	F	CL AY	IN FIELD	BY PSDA	2- .05	.05- .002	LT .002	CL2 .01M	IST. OHMS	DUCT. MMHOS	< >			
	PCT of >2mm+SAND+SILT > <------PCT of SAND+SILT-------><---<2 mm--><---PCT of 2mm---><----- <2mm -----><---------->																									
	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	
2- 7	2	2	2	76	22	3	TR	2	21	40	15	12	10	3		LFS	75.7	21.6	2.7	4.5						
3- 6	12	12	12	61	27	2	7	12	13	23	14	14	17	3		SL	67.7	29.7	2.6	5.4						
6- 7	2	2	2	72	26	2	7	11	16	29	11	12	14	2		SL	71.8	25.9	2.3	5.9						
8- 9	3	3	3	67	30	3	9	16	14	19	10	14	17	3		SL	67.6	29.7	2.7	5.5						
11- 15	5	5	5	71	24	2	4	11	24	27	9	8	17	3		LS	72.7	24.8	2.5	5.6						
15- 20	13	13	13	61	25	3	5	13	17	22	13	12	17	3		SL	68.8	28.3	2.9	5.8						
20- 27	42	42	39	39	19	2	6	11	17	20	13	12	21	4		SL	64.6	31.8	3.6	5.9						
27- 29	25	25	25	56	19	2	3	12	22	22	15	11	15	3		SL	72.5	24.6	2.9	6.0						
29- 37	13	13	13	70	17	2	4	15	24	23	14	8	12	2		LS	79.0	19.3	1.7	6.5						