1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98119**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	26.9	47.6	**34.5**	*2.0*	5.7	86.5
pH - sp	Unit	47	1.0	8.1	**7.60**	*0.14*	1.8	86.7
ECe - sp	dS/m	47	0.24	1.8	**1.21**	*0.12*	10.2	78.3
HCO3 - sp	mmolc/L	13	2.0	10.0	**4.1**	*0.42*	10.3	69.2
Ca - sp	mmolc/L	40	0.1	11	**8.5**	*1.13*	13.2	90.0
Mg - sp	mmolc/L	39	1.4	6.7	**3.2**	*0.35*	11.1	87.2
Na - sp	mmolc/L	39	0.44	1.3	**0.8**	*0.14*	18.4	89.7
SAR - sp	value	34	0.17	1.3	**0.3**	*0.07*	21.2	87.9
Cl - sp	mmolc/L	28	0.16	10	**0.8**	*0.17*	22.2	75.0
SO4 - sp	mmolc/L	23	0.23	1.9	**1.2**	*0.30*	25.0	87.0
B - sp	mg/L	25	0.02	1.90	**0.11**	*0.01*	9.1	68.0
Soil EC								
Soil EC (1:1)	(dS/m)	36	0.19	2.5	**0.42**	*0.10*	23.8	79.4
Soil EC (1:2)	(dS/m)	39	0.11	220	**0.30**	*0.03*	10.0	77.5
Soil pH								
pH (1:1)	Unit	82	7.30	8.10	**7.85**	*0.09*	1.1	88.6
pH (1:2)	Unit	31	7.50	8.26	**7.90**	*0.18*	2.3	100.0
pH (1:1) 0.01 M CaCl2	Unit	12	7.07	7.66	**7.42**	*0.13*	4.0	75.0
pH (1:2) 0.01 M CaCl2	Unit	5	7.19	7.60	**7.40**	*0.02*	0.3	79.0
Buffer pH								
SMP Buffer pH	Unit	37	7.12	7.64	**7.50**	*0.04*	0.5	79.5
Adams-Evans Buf pH	Unit	8	7.70	7.90	**7.82**	*0.03*	0.4	75.0
Woodruff Buf. pH	Unit	8	7.0	7.60	**7.10**	*0.07*	1.0	85.7
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	51	11.5	59	**38.5**	*1.9*	4.9	75.5
ISE	mg/kg	33	15.0	80.4	**38.7**	*8.3*	21.4	88.2
CTA	mg/kg	7	28.9	45.1	**36.3**	*3.5*	9.5	100.0
Ion Chromatography	mg/kg	7	26.1	55.0	**36.4**	*1.6*	4.3	66.7
Other	mg/kg	9	29.0	44.0	**39.2**	*3.6*	9.2	88.9
NH4 - N (KCl Extr.)	mg/kg	53	0.7	95	**3.6**	*0.8*	22.2	72.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98119**

Analysis - cont.	Units	Sample No.	Descriptive Statistics Min	Max	Median	MAD [1]	RMD %	% Values < WL [2]	Lab ID
Phosphorus and Sulfur									
PO4-P Bray P1 (1:10)	mg/kg	43	31.3	152	**51.9**	*3.9*	7.5	78.0	
PO4-P Bray P1 (1:7)	mg/kg	12	33.9	82	**42.9**	*5.2*	12.1	91.7	
PO4-P Olsen/Bicarb	mg/kg	77	8.0	52	**19.7**	*1.8*	9.2	78.7	
PO4-P AB-DTPA	mg/kg	3	10	26	**17.2**	*7.1*	41.2	100.0	
PO4-P M. Morgan	mg/kg	11	12	215	**36.0**	*6.8*	18.9	70.0	
SO4 - S (PO4 Extr.)	mg/kg	54	4	69	**9.3**	*3.7*	39.2	90.4	
Ammonium Acetate Bases									
K	mg/kg	91	160	612	**276**	*16*	5.8	80.9	
Ca	mg/kg	86	3	24608	**3701**	*596*	16.1	83.3	
Mg	mg/kg	86	0	3780	**313**	*23*	7.3	82.1	
Na	mg/kg	71	0	157	**25**	*12*	47.0	76.8	
Mehlich-1 Multi Element									
Soil Scoop Mass	g	7	*5*	7	**5.0**				
K	mg/kg	7	86	220	**114**	*18*	16.0	85.7	
PO4-P	mg/kg	7	11	33	**28.1**	*3.5*	12.3	71.4	
Ca	mg/kg	7	3919	7000	**4408**	*489*	11.1	71.4	
Mg	mg/kg	7	312	554	**360**	*41.0*	11.4	85.7	
Zn	mg/kg	6	0.0	0.5	**0.07**	*0.04*	58.6	50.0	
Mehlich-3 Mult-Element									
Soil Scoop Mass	g	25	1.0	10.0	**2.25**				
P	mg/kg	40	44	88	**71.0**	*5.3*	7.4	89.7	
K	mg/kg	41	226	526	**319**	*16*	5.0	77.5	
Ca	mg/kg	41	3280	11000	**5250**	*547*	10.4	77.5	
Mg	mg/kg	41	343	1140	**481**	*35*	7.2	77.5	
Na	mg/kg	23	10	86	**21**	*6.1*	29.0	71.4	
Al	mg/kg	14	*198.0*	551	**367**	*55*	14.9	91.7	
Zn	mg/kg	34	2.8	660	**6.5**	*0.6*	9.1	63.6	
Mn	mg/kg	33	28	296	**195**	*28*	14.4	81.3	
Fe	mg/kg	31	13.0	189	**68**	*13.0*	19.1	83.3	
Cu	mg/kg	32	1.20	8.3	**2.60**	*0.24*	9.2	77.4	
B	mg/kg	26	0.24	4.0	**1.74**	*0.24*	13.8	88.5	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98119**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	9	193	260	**218**	*12*	5.5	77.8
K Modified Morgan	mg/kg	2	156	227	**192**	*36*	18.5	100.0
Ca Modified Morgan	mg/kg	2	13954	14200	**14077**	*123*	0.9	100.0
Micronutrients								
Zn - DTPA	mg/kg	88	0.14	16.3	**1.97**	*0.17*	8.6	86.2
Mn - DTPA	mg/kg	78	0.9	460	**10.1**	*1.3*	13.3	85.7
Fe - DTPA	mg/kg	80	2.2	18	**8.5**	*0.8*	9.4	82.3
Cu - DTPA	mg/kg	80	0.30	2.2	**0.89**	*0.12*	12.9	83.5
Zn - HCl	mg/kg	5	0.3	6	**1.10**	*0.81*	74.0	66.7
Mn-H3PO4	mg/kg	6	6	20	**8.5**	*0.5*	5.9	66.7
Cl - Ca(NO3)2 Extr.	mg/kg	14	7	23	**11.5**	*2.5*	21.7	92.9
B - Hot Water	mg/kg	62	0.21	145.8	**0.80**	*0.20*	25.0	88.3
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.08	1122	**0.12**	*0.010*	8.3	75.0
Soil TN (combustion)	%	32	0.09	6.50	**0.12**	*0.010*	8.3	75.0
Soil TOC (combustion)	%	26	0.87	10.2	**2.05**	*1.03*	50.1	65.4
SOM - Walkley-Black	%	59	1.4	6.5	**2.10**	*0.20*	9.5	83.1
SOM - LOI (Raw Values)	%	59	1.4	3.8	**2.17**	*0.23*	10.6	92.9
CaCO3 Content	%	19	2.5	54.0	**31.4**	*12.5*	39.8	100.0
Soil CEC	cmol/kg	39	6.9	62.0	**12.3**	*1.6*	13.0	73.7
Particle Size Analysis								
Sand 2000 - 50 um	%	58	7.0	73.1	**27.0**	*4.0*	14.8	84.2
Silt 50 - 2 um	%	58	8.0	70.0	**55.0**	*4.5*	8.2	84.2
Clay 2 - 0 um	%	58	7.4	32.0	**17.2**	*2.8*	16.3	100.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98120**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	24.2	37.5	**29.0**	*2.0*	6.9	97.3
pH - sp	Unit	47	4.4	6.8	**5.50**	*0.18*	3.3	71.1
ECe - sp	dS/m	48	0.08	1.1	**0.27**	*0.04*	15.1	82.6
HCO3 - sp	mmolc/L	13	0.0	5.3	**0.8**	*0.40*	49.4	84.6
Ca - sp	mmolc/L	40	0.6	9.0	**1.4**	*0.27*	19.6	95.0
Mg - sp	mmolc/L	39	0.4	3.1	**0.7**	*0.14*	19.4	89.7
Na - sp	mmolc/L	38	0.1	1	**0.34**	*0.21*	61.8	84.6
SAR - sp	value	34	0.1	1	**0.4**	*0.23*	64.3	90.9
Cl - sp	mmolc/L	28	0.10	11.8	**0.32**	*0.14*	43.8	78.6
SO4 - sp	mmolc/L	23	0.11	3.1	**0.92**	*0.10*	10.3	69.6
B - sp	mg/L	24	0.01	0.45	**0.07**	*0.02*	31.4	84.0
Soil EC								
Soil EC (1:1)	(dS/m)	30	0.04	6.1	**0.10**	*0.02*	20.0	70.6
Soil EC (1:2)	(dS/m)	42	0.03	70	**0.08**	*0.02*	25.8	80.0
Soil pH								
pH (1:1)	Unit	80	4.96	8.30	**5.60**	*0.10*	1.8	77.2
pH (1:2)	Unit	33	4.90	6.60	**5.70**	*0.14*	2.5	72.7
pH (1:1) 0.01 M CaCl2	Unit	13	4.40	6.93	**5.00**	*0.31*	2.2	100.0
pH (1:2) 0.01 M CaCl2	Unit	6	4.45	6.87	**5.00**	*0.17*	3.4	87.0
Buffer pH								
SMP Buffer pH	Unit	63	6.30	7.64	**6.80**	*0.10*	1.5	74.4
Adams-Evans Buf pH	Unit	12	6.02	7.98	**7.60**	*0.02*	0.3	37.5
Woodruff Buf. pH	Unit	10	6.58	6.80	**6.70**	*0.09*	1.3	100.0
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	51	0.5	38.4	**2.5**	*0.7*	28.0	77.6
ISE	mg/kg	32	1.1	19.5	**3.1**	*1.0*	32.3	85.3
CTA	mg/kg	7	2.2	4.8	**3.3**	*0.3*	7.7	57.1
Ion Chromatography	mg/kg	7	0.3	53.0	**2.0**	*0.8*	42.7	66.7
Other	mg/kg	10	1.5	7.4	**3.5**	*1.2*	34.8	100.0
NH4 - N (KCl Extr.)	mg/kg	53	1.0	15	**4.9**	*1.4*	28.6	82.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98120**

Analysis - cont.	Units	Sample No.	Descriptive Statistics Min	Max	Median	MAD[1]	RMD %	% Values < WL[2]	Lab ID
Phosphorus and Sulfur									
PO4-P Bray P1 (1:10)	mg/kg	44	50	83	**65.0**	*5.0*	7.7	78.0	
PO4-P Bray P1 (1:7)	mg/kg	11	22.0	108.0	**53.9**	*6.3*	11.7	75.0	
PO4-P Olsen/Bicarb	mg/kg	78	7.0	97	**23.0**	*3.0*	13.0	76.0	
PO4-P AB-DTPA	mg/kg	2	9.4	32.3	**20.9**	*11.4*	54.7	100.0	
PO4-P M. Morgan	mg/kg	10	5	29	**5.4**	*0.6*	11.1	70.0	
SO4 - S (PO4 Extr.)	mg/kg	54	2	104	**7.0**	*2.0*	28.6	82.7	
Ammonium Acetate Bases									
K	mg/kg	91	51	480	**77**	*9*	11.7	80.9	
Ca	mg/kg	87	0	3350	**371**	*54*	14.4	81.0	
Mg	mg/kg	87	0	648	**65**	*10*	15.4	81.0	
Na	mg/kg	71	0.0	338	**13**	*10*	76.9	76.8	
Mehlich-1 Multi Element									
Soil Scoop Mass	g	7	*5*	7	**5.0**				
K	mg/kg	7	56	76	**61**	*2*	2.8	57.1	
PO4-P	mg/kg	7	25	32	**28.8**	*1.2*	4.2	57.1	
Ca	mg/kg	7	131	450	**336**	*81*	24.2	85.7	
Mg	mg/kg	7	60	84	**68**	*6.7*	9.8	100.0	
Zn	mg/kg	7	1.2	3.2	**1.84**	*0.39*	21.2	83.3	
Mehlich-3 Mult-Element									
Soil Scoop Mass	g	24	1.0	10	**2.28**				
P	mg/kg	40	40	89	**72.2**	*5.8*	8.1	89.7	
K	mg/kg	41	55	500	**89**	*6*	6.2	77.5	
Ca	mg/kg	41	172	5700	**433**	*44*	10.1	75.0	
Mg	mg/kg	41	47	730	**74**	*11*	14.4	75.0	
Na	mg/kg	22	1	79	**11.7**	*7.2*	61.4	81.0	
Al	mg/kg	13	622	1868	**1009**	*131*	13.0	83.3	
Zn	mg/kg	34	1.2	6.4	**2.50**	*0.25*	10.0	87.9	
Mn	mg/kg	33	4.6	130	**40**	*4*	9.8	78.1	
Fe	mg/kg	31	28.0	414	**125**	*17.0*	13.6	76.7	
Cu	mg/kg	32	1.10	3.0	**1.70**	*0.20*	11.8	90.3	
B	mg/kg	26	0.00	3.0	**0.35**	*0.15*	42.0	76.9	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98120**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD[1]**	**RMD %**	**% Values < WL[2]**	**Lab ID**
Cations									
K- Bicarb.	mg/kg	9	64	107	**80**	*5*	5.6	66.7	
K Modified Morgan	mg/kg	2	59	68	**64**	*5*	7.1	100.0	
Ca Modified Morgan	mg/kg	2	340	392	**366**	*26*	7.1	100.0	
Micronutrients									
Zn - DTPA	mg/kg	89	0.20	12.0	**1.09**	*0.11*	10.1	75.9	
Mn - DTPA	mg/kg	80	3.3	60	**17.0**	*2.0*	11.7	87.0	
Fe - DTPA	mg/kg	81	8.0	218	**32.2**	*6.0*	18.6	77.2	
Cu - DTPA	mg/kg	82	0.00	2.4	**1.12**	*0.12*	10.3	78.5	
Zn - HCl	mg/kg	6	0.8	3	**1.78**	*0.62*	34.8	100.0	
Mn-H3PO4	mg/kg	6	13.1	31.2	**19.8**	*1.4*	7.1	66.7	
Cl - $Ca(NO_3)_2$ Extr.	mg/kg	14	1.0	26	**4.0**	*1.2*	30.0	85.7	
B - Hot Water	mg/kg	59	0.1	5.3	**0.30**	*0.10*	33.3	83.3	
Soil Organic Matter									
Soil Kjeldahl N	%	31	0.05	819.0	**0.08**	*0.013*	16.3	85.7	
Soil TN (combustion)	%	32	0.02	1.3	**0.09**	*0.006*	6.4	65.6	
Soil TOC (combustion)	%	29	0.78	7.0	**1.08**	*0.09*	8.6	76.9	
SOM - Walkley-Black	%	58	1.2	5.2	**1.70**	*0.20*	11.5	87.7	
SOM - LOI (Raw Values)	%	61	1.6	3	**2.10**	*0.20*	9.5	82.1	
$CaCO_3$ Content	%	17	0.0	13.4	**0.16**	*0.10*	59.4	73.7	
Soil CEC	cmol/kg	38	2.0	52.0	**5.2**	*1.1*	21.2	86.8	
Particle Size Analysis									
Sand 2000 - 50 um	%	59	24.8	69.0	**55.0**	*2.2*	4.0	77.2	
Silt 50 - 2 um	%	59	19.9	57.6	**32.6**	*3.6*	10.9	93.0	
Clay 2 - 0 um	%	59	4.8	22.8	**12.0**	*2.0*	16.7	77.2	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98121**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	27.8	44.2	**34.3**	*2.3*	6.6	89.2
pH - sp	Unit	48	6.0	7.5	**6.70**	*0.17*	2.5	75.6
ECe - sp	dS/m	49	0.12	3.6	**0.31**	*0.06*	19.0	89.1
HCO3 - sp	mmolc/L	13	0.7	13.4	**1.4**	*0.20*	14.3	69.2
Ca - sp	mmolc/L	40	0.7	2.5	**1.8**	*0.34*	19.6	95.0
Mg - sp	mmolc/L	39	0.4	1.8	**0.98**	*0.18*	17.9	87.2
Na - sp	mmolc/L	38	0.01	1	**0.35**	*0.20*	56.5	84.6
SAR - sp	value	35	0.01	1	**0.29**	*0.19*	65.5	78.8
Cl - sp	mmolc/L	26	0.03	8.8	**0.20**	*0.12*	57.5	78.6
SO4 - sp	mmolc/L	23	0.0	2.0	**0.52**	*0.07*	13.5	78.3
B - sp	mg/L	23	0.02	0.30	**0.07**	*0.02*	29.3	80.0
Soil EC								
Soil EC (1:1)	(dS/m)	31	0.06	6.8	**0.12**	*0.02*	16.7	70.6
Soil EC (1:2)	(dS/m)	42	0.02	85	**0.10**	*0.03*	26.3	80.0
Soil pH								
pH (1:1)	Unit	82	4.85	7.20	**6.90**	*0.11*	1.5	87.3
pH (1:2)	Unit	33	6.30	7.15	**6.90**	*0.13*	1.9	75.8
pH (1:1) 0.01 M CaCl2	Unit	13	5.83	6.54	**6.22**	*0.14*	2.2	83.3
pH (1:2) 0.01 M CaCl2	Unit	5	6.00	6.30	**6.18**	*0.02*	0.4	
Buffer pH								
SMP Buffer pH	Unit	46	6.90	7.40	**7.08**	*0.08*	1.1	82.1
Adams-Evans Buf pH	Unit	10	6.87	7.70	**7.66**	*0.04*	0.6	75.0
Woodruff Buf. pH	Unit	9	6.80	7.00	**6.89**	*0.05*	0.7	71.4
Nitrate (NO_3-N)								
Cd. Rd.	mg/kg	50	2.2	15.8	**6.5**	*0.6*	9.6	85.7
ISE	mg/kg	35	2.0	20.0	**6.8**	*1.9*	27.8	79.4
CTA	mg/kg	7	6.0	7.8	**6.4**	*0.4*	5.5	85.7
Ion Chromatography	mg/kg	8	0.1	55.0	**5.5**	*0.8*	14.1	66.7
Other	*mg/kg*	9	4.0	8.1	**6.5**	*1.0*	15.4	100.0
NH_4 - N (KCl Extr.)	mg/kg	53	0.3	15	**2.4**	*0.9*	37.3	84.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98121**

Analysis - cont.	Units	Sample No.	Descriptive Statistics Min	Max	Median	MAD[1]	RMD %	% Values < WL[2]	Lab ID
Phosphorus and Sulfur									
PO4-P Bray P1 (1:10)	mg/kg	43	19	35	**28.0**	*2.0*	7.1	90.2	
PO4-P Bray P1 (1:7)	mg/kg	12	13.0	39.0	**23.0**	*5.0*	21.9	92.0	
PO4-P Olsen/Bicarb	mg/kg	78	6.0	40	**14.0**	*2.0*	13.9	74.7	
PO4-P AB-DTPA	mg/kg	2	5	14	**9.4**	*4.4*	46.7	100.0	
PO4-P M. Morgan	mg/kg	10	6	55	**6.9**	*0.9*	12.4	92.0	
SO4 - S (PO4 Extr.)	mg/kg	53	0	63	**4.5**	*1.5*	32.6	80.8	
Ammonium Acetate Bases									
K	mg/kg	90	16	514	**45**	*6*	13.3	76.4	
Ca	mg/kg	90	1	5387	**1696**	*124*	7.3	78.6	
Mg	mg/kg	86	0	657	**303**	*19*	6.3	82.1	
Na	mg/kg	69	0	498	**15**	*9*	62.3	75.4	
Mehlich-1 Multi Element									
Soil Scoop Mass	g	6	5	7	**5.7**				
K	mg/kg	7	25	48	**26**	*2*	5.8	85.7	
PO4-P	mg/kg	7	20	25	**22.2**	*1.2*	5.4	100.0	
Ca	mg/kg	7	1573	2598	**1770**	*166*	9.4	85.7	
Mg	mg/kg	7	134	339	**279**	*25.7*	9.2	85.7	
Zn	mg/kg	7	1	3	**1.52**	*0.33*	21.7	83.3	
Mehlich-3 Mult-Element									
Soil Scoop Mass	g	24	1.0	10	**2.25**				
P	mg/kg	40	20	45	**35.0**	*4.0*	11.4	92.3	
K	mg/kg	41	18	460	**50**	*5*	9.2	75.0	
Ca	mg/kg	41	230	3317	**2076**	*163*	7.9	80.0	
Mg	mg/kg	41	58	884	**354**	*23*	6.4	77.5	
Na	mg/kg	22	1	71	**15.1**	*5.1*	33.8	71.4	
Al	mg/kg	13	416	1188	**610**	*65*	10.7	83.3	
Zn	mg/kg	34	0.8	4	**1.88**	*0.21*	10.9	75.8	
Mn	mg/kg	33	17.0	221	**76**	*8*	11.0	81.3	
Fe	mg/kg	31	27.0	418	**129**	*21*	16.0	83.3	
Cu	mg/kg	32	0.70	2.5	**1.50**	*0.20*	13.3	83.9	
B	mg/kg	27	0.00	3.0	**0.50**	*0.16*	31.0	80.8	

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

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January 4, 1999 — **4th Quarter Results** — **Soil ID - 98121**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	9	20	49	**42**	*5*	11.9	88.9
K Modified Morgan	mg/kg	2	26	35	**31**	*5*	14.8	100.0
Ca Modified Morgan	mg/kg	2	1720	1792	**1756**	*36*	2.1	100.0
Micronutrients								
Zn - DTPA	mg/kg	89	0.41	2.0	**0.80**	*0.10*	12.5	87.4
Mn - DTPA	mg/kg	79	1.7	350	**14.2**	*1.6*	10.9	88.3
Fe - DTPA	mg/kg	81	3.1	66	**30.9**	*4.0*	12.9	87.3
Cu - DTPA	mg/kg	81	0.40	1.4	**0.64**	*0.06*	10.2	83.5
Zn - HCl	mg/kg	6	0.8	3.0	**1.95**	*0.12*	6.2	66.7
Mn-H3PO4	mg/kg	6	13	27	**16.6**	*1.8*	11.0	83.3
Cl - Ca(NO3)2 Extr.	mg/kg	14	1.0	60	**2.6**	*1.5*	56.9	78.6
B - Hot Water	mg/kg	61	0.1	64.5	**0.37**	*0.12*	31.5	85.0
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.06	976.00	**0.10**	*0.006*	5.5	67.9
Soil TN (combustion)	%	33	0.08	1.30	**0.10**	*0.010*	10.0	81.3
Soil TOC (combustion)	%	28	0.90	2.2	**1.22**	*0.09*	7.0	80.8
SOM - Walkley-Black	%	58	1.0	6.4	**2.04**	*0.24*	11.8	81.5
SOM - LOI (Raw Values)	%	61	1.6	4.0	**2.23**	*0.22*	9.9	76.8
CaCO3 Content	%	18	0.0	1.7	**0.35**	*0.27*	77.1	89.5
Soil CEC	cmol/kg	38	5.6	46.0	**11.8**	*1.5*	12.6	81.6
Particle Size Analysis								
Sand 2000 - 50 um	%	56	21.0	66.0	**53.3**	*2.5*	4.6	89.5
Silt 50 - 2 um	%	56	24.0	54.0	**35.0**	*2.8*	7.9	89.5
Clay 2 - 0 um	%	56	2.4	25.0	**12.5**	*2.4*	19.3	84.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

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January 4, 1999 — **4th Quarter Results** — **Soil ID - 98122**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	29.0	48.3	**34.8**	*3.4*	9.8	94.6
pH - sp	Unit	46	7.2	8.4	**7.80**	*0.11*	1.4	68.9
ECe - sp	dS/m	47	0.10	3.6	**0.43**	*0.06*	14.0	84.8
HCO_3 - sp	mmolc/L	13	1.8	13.7	**3.85**	*0.52*	13.6	69.2
Ca - sp	mmolc/L	40	1.2	4.1	**2.63**	*0.40*	15.0	82.5
Mg - sp	mmolc/L	39	0.6	1.8	**1.15**	*0.25*	21.7	97.4
Na - sp	mmolc/L	39	0.0	1	**0.6**	*0.18*	31.3	79.5
SAR - sp	value	34	0.0	2	**0.4**	*0.13*	31.9	81.8
Cl - sp	mmolc/L	27	0.08	20	**0.41**	*0.13*	31.7	78.6
SO_4 - sp	mmolc/L	22	0.01	0.6	**0.30**	*0.07*	23.3	78.3
B - sp	mg/L	26	0.03	0.40	**0.11**	*0.01*	9.1	68.0
Soil EC								
Soil EC (1:1)	(dS/m)	30	0.10	1.0	**0.27**	*0.05*	17.0	82.4
Soil EC (1:2)	(dS/m)	41	0.1	128.0	**0.16**	*0.05*	30.6	92.5
Soil pH								
pH (1:1)	Unit	82	4.60	8.60	**8.20**	*0.15*	1.8	88.6
pH (1:2)	Unit	32	7.40	8.69	**8.30**	*0.16*	1.9	90.9
pH (1:1) 0.01 M $CaCl_2$	Unit	12	7.10	7.66	**7.54**	*0.06*	0.9	58.3
pH (1:2) 0.01 M $CaCl_2$	Unit	5	7.40	7.80	**7.48**	*0.02*	0.2	60.0
Buffer pH								
SMP Buffer pH	Unit	36	6.78	7.70	**7.55**	*0.05*	0.7	76.9
Adams-Evans Buf pH	Unit	8	7.60	7.87	**7.81**	*0.02*	0.3	87.5
Woodruff Buf. pH	Unit	7	7.00	7.18	**7.10**	*0.06*	0.8	71.4
Nitrate (NO_3-N)								
Cd. Rd.	mg/kg	50	0.6	7.3	**2.6**	*0.6*	22.0	87.8
ISE	mg/kg	32	1.2	25.0	**4.4**	*2.0*	44.8	79.4
CTA	mg/kg	7	2.0	4.5	**3.0**	*0.3*	8.3	71.4
Ion Chromatography	mg/kg	7	0.1	5.1	**2.0**	*0.4*	21.0	66.7
Other	mg/kg	9	1.0	13.6	**2.3**	*0.3*	13.0	66.7
NH_4 - N (KCl Extr.)	mg/kg	50	0.5	137	**4.1**	*0.9*	22.0	82.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98122**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	42	2.0	172	**24.9**	*3.5*	14.1	75.6
PO4-P Bray P1 (1:7)	mg/kg	11	9.0	28.0	**20.0**	*5.0*	25.0	100.0
PO4-P Olsen/Bicarb	mg/kg	76	3.0	20	**7.0**	*1.2*	16.4	77.3
PO4-P AB-DTPA	mg/kg	2	2.6	5.6	**4.1**	*1.5*	36.4	100.0
PO4-P M. Morgan	mg/kg	10	3.6	267.0	**45.0**	*18.5*	41.1	80.0
SO4 - S (PO4 Extr.)	mg/kg	50	0.4	53	**4.7**	*2.7*	57.1	76.9
Ammonium Acetate Bases								
K	mg/kg	89	37.0	1085	**478**	*28*	5.8	70.8
Ca	mg/kg	85	3.6	16350	**4318**	*698*	16.2	82.1
Mg	mg/kg	85	0.5	1436	**532**	*30*	5.7	79.8
Na	mg/kg	71	5.8	253	**27**	*12*	43.4	81.2
Mehlich-1 Multi Element								
Soil Scoop Mass	g	6	5	7	**5.4**	*0.44*		
K	mg/kg	7	160	193	**170**	*10*	5.9	100.0
PO4-P	mg/kg	7	21.0	60.5	**57.0**	*3.5*	6.1	71.4
Ca	mg/kg	7	55	5630	**4276**	*307*	7.2	57.1
Mg	mg/kg	7	352	511	**447**	*61.4*	13.7	100.0
Zn	mg/kg	6	0.0	0.5	**0.05**	*0.14*	287.0	50.0
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	25	1.0	10	**2.11**	*0.39*		
P	mg/kg	39	7.00	64	**46.0**	*2.8*	6.1	76.9
K	mg/kg	40	28	641	**524**	*29.2*	5.6	75.0
Ca	mg/kg	40	160	13700	**5941**	*361*	6.1	72.5
Mg	mg/kg	40	41	1360	**743**	*45*	6.1	72.5
Na	mg/kg	22	12	93	**25.9**	*4.1*	15.8	81.0
Al	mg/kg	13	69	640	**260**	*37*	14.2	66.7
Zn	mg/kg	34	0.6	4.3	**1.24**	*0.23*	18.5	78.8
Mn	mg/kg	33	7.7	216.0	**122.0**	*13.0*	10.7	75.0
Fe	mg/kg	31	6.6	322	**27**	*4*	15.4	73.3
Cu	mg/kg	32	0.40	2.2	**1.50**	*0.13*	8.4	87.1
B	mg/kg	26	0.24	4.0	**1.70**	*0.25*	14.7	69.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98122**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	9	315	389	**367**	*8*	2.0	55.6
K Modified Morgan	mg/kg	2	272	408	**340**	*68*	20.0	100.0
Ca Modified Morgan	mg/kg	2	13255	13800	**13528**	*273*	2.0	100.0
Micronutrients								
Zn - DTPA	mg/kg	87	0.06	1.4	**0.37**	*0.06*	16.2	81.6
Mn - DTPA	mg/kg	77	1.0	730	**3.0**	*1.0*	33.3	88.3
Fe - DTPA	mg/kg	79	0	91	**2**	*0.6*	35.3	84.8
Cu - DTPA	mg/kg	79	0.18	1.4	**0.56**	*0.07*	11.7	72.2
Zn - HCl	mg/kg	6	0.3	1.6	**1.13**	*0.20*	17.8	83.3
Mn-H3PO4	mg/kg	6	1.0	29.3	**3.5**	*1.9*	56.0	83.3
Cl - $Ca(NO_3)_2$ Extr.	mg/kg	14	2.0	20	**5.2**	*1.3*	24.6	85.7
B - Hot Water	mg/kg	61	0.2	152.7	**0.66**	*0.25*	37.4	93.3
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.01	957	**0.10**	*0.010*	10.0	71.4
Soil TN (combustion)	%	33	0.03	1.8	**0.10**	*0.010*	10.0	81.3
Soil TOC (combustion)	%	26	0.54	2.1	**1.18**	*0.48*	40.7	96.2
SOM - Walkley-Black	%	57	0.9	4.8	**1.60**	*0.18*	10.9	90.8
SOM - LOI (Raw Values)	%	61	0.5	5.0	**2.1**	*0.2*	9.5	80.4
$CaCO_3$ Content	%	20	0.0	13.8	**7.13**	*1.75*	24.5	94.7
Soil CEC	cmol/kg	38	5.8	69.0	**16.9**	*2.9*	17.0	81.6
Particle Size Analysis								
Sand 2000 - 50 um	%	56	25.2	70.0	**37.5**	*3.3*	8.9	84.2
Silt 50 - 2 um	%	56	19.3	60.5	**42.0**	*3.2*	7.7	82.5
Clay 2 - 0 um	%	56	1.5	36.8	**20.0**	*3.1*	15.5	84.2

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98123**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	18.2	38.4	**24.0**	*2.0*	8.4	94.6
pH - sp	Unit	46	5.5	7.5	**6.26**	*0.18*	2.9	84.4
ECe - sp	dS/m	47	0.15	2.6	**1.58**	*0.30*	19.0	87.0
HCO3 - sp	mmolc/L	13	0.8	20.6	**1.21**	*0.43*	35.5	92.3
Ca - sp	mmolc/L	40	0.7	147	**11.9**	*2.08*	17.4	82.5
Mg - sp	mmolc/L	40	0.5	10	**5.3**	*0.79*	14.9	87.2
Na - sp	mmolc/L	39	0.5	2	**0.9**	*0.21*	22.5	89.7
SAR - sp	value	33	0.2	1	**0.3**	*0.08*	25.0	97.0
Cl - sp	mmolc/L	28	0.2	19	**0.7**	*0.21*	30.0	82.1
SO4 - sp	mmolc/L	23	1.8	18	**13.3**	*2.05*	15.4	82.6
B - sp	mg/L	26	0.10	0.40	**0.18**	*0.02*	11.1	84.0
Soil EC								
Soil EC (1:1)	(dS/m)	30	0.12	0.9	**0.38**	*0.10*	25.3	82.4
Soil EC (1:2)	(dS/m)	41	0.09	158	**0.26**	*0.06*	21.7	80.0
Soil pH								
pH (1:1)	Unit	82	4.60	7.59	**6.40**	*0.10*	1.6	75.9
pH (1:2)	Unit	33	5.99	7.70	**6.52**	*0.12*	1.8	78.8
pH (1:1) 0.01 M CaCl2	Unit	13	5.63	6.64	**6.12**	*0.18*	2.9	83.3
pH (1:2) 0.01 M CaCl2	Unit	6	5.71	7.80	**5.90**	*0.15*	2.5	89.0
Buffer pH								
SMP Buffer pH	Unit	54	4.84	7.60	**7.20**	*0.10*	1.4	87.2
Adams-Evans Buf pH	Unit	10	6.36	7.85	**7.79**	*0.05*	0.6	75.0
Woodruff Buf. pH	Unit	9	6.80	7.0	**6.91**	*0.06*	0.9	71.4
Nitrate (NO_3-N)								
Cd. Rd.	mg/kg	51	5.6	70.0	**14.9**	*1.3*	8.6	75.5
ISE	mg/kg	32	3.0	35.1	**15.5**	*4.0*	25.6	82.4
CTA	mg/kg	7	14.0	16.8	**14.5**	*0.4*	2.4	85.7
Ion Chromatography	mg/kg	8	7.6	58.0	**13.0**	*1.0*	7.4	66.7
Other	mg/kg	8	12.5	24.8	**16.5**	*2.5*	15.2	88.9
NH_4 - N (KCl Extr.)	mg/kg	52	0.8	38	**2.5**	*0.9*	34.0	76.0

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98123**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	43	23	106	**41**	*4.0*	9.8	78.0
PO4-P Bray P1 (1:7)	mg/kg	12	26	107	**33.5**	*4.5*	13.4	91.7
PO4-P Olsen/Bicarb	mg/kg	76	4.0	35	**11.0**	*2.0*	18.2	85.3
PO4-P AB-DTPA	mg/kg	2	5	16	**10.3**	*5.7*	55.6	100.0
PO4-P M. Morgan	mg/kg	10	8	77	**15.0**	*4.0*	26.7	91.0
SO4 - S (PO4 Extr.)	mg/kg	52	3	119	**54**	*17.8*	33.0	84.6
Ammonium Acetate Bases								
K	mg/kg	90	1	451	**122**	*12*	9.8	85.4
Ca	mg/kg	85	1	3935	**729**	*107*	14.7	82.1
Mg	mg/kg	85	0	427	**104**	*16*	15.4	84.5
Na	mg/kg	69	0	320	**17**	*10*	56.8	78.3
Mehlich-1 Multi Element								
Soil Scoop Mass	g	6	5	8	**6.2**			
K	mg/kg	7	78	122	**88**	*7*	7.8	71.4
PO4-P	mg/kg	7	89	154	**105.5**	*10.0*	9.5	71.4
Ca	mg/kg	7	838	1329	**935**	*90*	9.6	85.7
Mg	mg/kg	7	97	177	**112**	*15*	13.6	85.7
Zn	mg/kg	7	1	2	**1.26**	*0.46*	36.5	100.0
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	25	1.0	10	**2.50**			
P	mg/kg	40	47	130	**69**	*7.4*	10.7	92.3
K	mg/kg	41	94	298	**148**	*6*	4.1	75.0
Ca	mg/kg	41	414	4534	**1045**	*105*	10.1	77.5
Mg	mg/kg	41	100	623	**147**	*14*	9.5	80.0
Na	mg/kg	22	3	280	**17**	*7*	41.3	76.2
Al	mg/kg	13	301	1151	**512**	*80*	15.6	75.0
Zn	mg/kg	34	0.4	173	**1.85**	*0.25*	13.3	72.7
Mn	mg/kg	33	8.4	660	**43**	*5.5*	12.8	84.4
Fe	mg/kg	31	32	449	**156**	*27*	17.0	83.3
Cu	mg/kg	32	0.50	2.1	**1.21**	*0.21*	17.4	90.3
B	mg/kg	26	0.0	3.0	**0.54**	*0.16*	29.5	80.8

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.

2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98123**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	9	102	121	**116**	*5*	3.9	88.9
K Modified Morgan	mg/kg	2	90	96	**93**	*3*	3.2	100.0
Ca Modified Morgan	mg/kg	2	800	870	**835**	*35*	4.2	100.0
Micronutrients								
Zn - DTPA	mg/kg	87	0.20	2.3	**0.56**	*0.09*	16.1	79.3
Mn - DTPA	mg/kg	77	1.6	140	**3.8**	*0.9*	23.5	89.6
Fe - DTPA	mg/kg	79	3	56	**27**	*5*	17.4	89.9
Cu - DTPA	mg/kg	79	0.18	1.7	**0.40**	*0.10*	25.0	86.1
Zn - HCl	mg/kg	6	0.5	10	**1.36**	*0.30*	22.1	66.7
Mn-H3PO4	mg/kg	6	5	16	**7.6**	*1.3*	16.6	83.3
Cl - Ca(NO3)2 Extr.	mg/kg	14	2.4	200	**7.0**	*1.6*	22.9	93.0
B - Hot Water	mg/kg	60	0.04	50	**0.40**	*0.13*	31.3	93.3
Soil Organic Matter								
Soil Kjeldahl N	%	23	0.01	436.00	**0.04**	*0.010*	23.5	82.1
Soil TN (combustion)	%	31	0.02	1.29	**0.05**	*0.010*	20.0	71.9
Soil TOC (combustion)	%	27	0.4	1.1	**0.6**	*0.06*	9.7	84.6
SOM - Walkley-Black	%	56	0.7	5.4	**1.10**	*0.12*	10.9	87.7
SOM - LOI (Raw Values)	%	61	0.7	46	**1.10**	*0.10*	9.1	80.4
CaCO3 Content	%	16	0.0	12.6	**0.30**	*0.18*	60.0	73.7
Soil CEC	cmol/kg	39	1.1	44	**4.8**	*0.9*	18.8	78.9
Particle Size Analysis								
Sand 2000 - 50 um	%	54	7.0	78.2	**70.7**	*2.0*	2.8	80.7
Silt 50 - 2 um	%	54	12.6	85.7	**20.8**	*2.2*	10.4	77.2
Clay 2 - 0 um	%	54	2.5	31.0	**8.0**	*1.8*	22.5	78.9

1 - Values flagged exceed Warning Limits " * " based on 2.5 x MAD (Median Absolute Deviation) and Control Limits " ** " based on 4 x MAD.
2 - Percentage (%) of all reported laboratory values within established Warning Limits.

1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98124**

		Sample	Descriptive Statistics					Lab ID
Analysis	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Salinity								
Sat. Paste Moisture	%	37	20.1	46.3	**27.0**	*1.3*	4.8	75.7
pH - sp	Unit	47	4.2	7.0	**4.92**	*0.19*	3.8	82.2
ECe - sp	dS/m	48	0.05	0.5	**0.20**	*0.03*	15.0	76.1
HCO3 - sp	mmolc/L	12	0.0	5.7	**0.5**	*0.22*	48.4	92.3
Ca - sp	mmolc/L	40	0.2	1	**0.7**	*0.10*	14.3	87.5
Mg - sp	mmolc/L	39	0.1	1	**0.3**	*0.05*	16.7	76.9
Na - sp	mmolc/L	38	0.01	1	**0.29**	*0.18*	62.1	89.7
SAR - sp	value	33	0.01	1	**0.36**	*0.22*	61.1	78.8
Cl - sp	mmolc/L	27	0.10	12	**0.34**	*0.17*	48.5	82.1
SO4 - sp	mmolc/L	22	0.0	2	**0.29**	*0.09*	30.8	82.6
B - sp	mg/L	22	0.00	0.30	**0.04**	*0.02*	57.1	72.0
Soil EC								
Soil EC (1:1)	(dS/m)	30	0.02	0.40	**0.10**	*0.02*	22.0	76.5
Soil EC (1:2)	(dS/m)	41	0.02	65	**0.06**	*0.02*	33.3	77.5
Soil pH								
pH (1:1)	Unit	83	4.64	6.40	**5.15**	*0.05*	1.0	74.7
pH (1:2)	Unit	33	4.40	5.70	**5.20**	*0.08*	1.4	72.7
pH (1:1) 0.01 M CaCl2	Unit	14	4.18	6.22	**4.50**	*0.19*	4.1	75.0
pH (1:2) 0.01 M CaCl2	Unit	6	4.20	4.90	**4.32**	*0.08*	2.0	78.0
Buffer pH								
SMP Buffer pH	Unit	64	5.90	6.90	**6.50**	*0.14*	2.2	89.7
Adams-Evans Buf pH	Unit	12	5.81	7.50	**7.35**	*0.06*	0.8	62.5
Woodruff Buf. pH	Unit	10	6.30	6.60	**6.50**	*0.10*	1.5	71.4
Nitrate (NO3-N)								
Cd. Rd.	mg/kg	50	2.5	30	**5.0**	*1.0*	20.0	91.8
ISE	mg/kg	35	1.0	20.5	**5.0**	*1.1*	22.0	76.5
CTA	mg/kg	7	3.8	6.1	**5.2**	*0.7*	13.5	100.0
Ion Chromatography	mg/kg	7	3.0	11.0	**3.6**	*0.6*	16.2	90.0
Other	mg/kg	9	3.0	12.6	**4.8**	*1.1*	22.9	100.0
NH4 - N (KCl Extr.)	mg/kg	52	0.6	13	**4.0**	*1.0*	25.0	82.0

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1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98124**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Phosphorus and Sulfur								
PO4-P Bray P1 (1:10)	mg/kg	44	19.6	46	**30.0**	*2.0*	6.7	70.7
PO4-P Bray P1 (1:7)	mg/kg	12	17.0	35.2	**22.5**	*4.3*	19.2	75.0
PO4-P Olsen/Bicarb	mg/kg	76	4.0	23	**9.0**	*1.8*	20.0	90.7
PO4-P AB-DTPA	mg/kg	2	2.6	13.7	**8.1**	*5.6*	68.3	100.0
PO4-P M. Morgan	mg/kg	10	1.0	15	**1.0**	*0.5*	50.0	20.0
SO4 - S (PO4 Extr.)	mg/kg	53	1.5	69	**10.5**	*3.7*	35.2	94.2
Ammonium Acetate Bases								
K	mg/kg	91	9	290	**62**	*7*	10.9	78.7
Ca	mg/kg	87	0	2180	**200**	*40*	20.0	82.1
Mg	mg/kg	86	0.1	572	**40**	*9*	22.8	84.5
Na	mg/kg	69	0.0	312	**13**	*10*	71.6	82.6
Mehlich-1 Multi Element								
Soil Scoop Mass	g	6	5	7	**6.0**	*0.96*		
K	mg/kg	7	39	51	**42**	*2*	3.8	71.4
PO4-P	mg/kg	7	5.0	12.0	**8.3**	*1.1*	13.1	71.4
Ca	mg/kg	7	23	224	**154**	*18*	11.8	57.1
Mg	mg/kg	7	27	42	**33**	*4*	10.9	100.0
Zn	mg/kg	7	1.1	2.5	**1.59**	*0.33*	20.8	66.7
Mehlich-3 Mult-Element								
Soil Scoop Mass	g	25	1.0	10	**2.42**	*0.42*		
P	mg/kg	40	22	67	**27.3**	*2.7*	9.8	84.6
K	mg/kg	41	40	285	**69**	*5*	7.0	82.5
Ca	mg/kg	41	76	2600	**224**	*23*	10.3	80.0
Mg	mg/kg	41	29	630	**44**	*6*	13.3	77.5
Na	mg/kg	22	2	70	**10.6**	*3.5*	33.0	81.0
Al	mg/kg	13	706.9	1881	**1210**	*151*	12.5	75.0
Zn	mg/kg	34	1.2	5.4	**1.95**	*0.31*	15.9	78.8
Mn	mg/kg	33	3.0	659.0	**260**	*34*	13.1	75.0
Fe	mg/kg	31	23.0	318	**88**	*13*	15.2	76.7
Cu	mg/kg	31	0.10	1.2	**0.70**	*0.11*	15.7	80.6
B	mg/kg	25	0.00	2.0	**0.30**	*0.13*	43.3	80.8

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1998 Interim North American Proficiency Testing Program

January 4, 1999 — **4th Quarter Results** — **Soil ID - 98124**

		Sample	Descriptive Statistics					Lab ID
Analysis - cont.	**Units**	**No.**	**Min**	**Max**	**Median**	**MAD [1]**	**RMD %**	**% Values < WL [2]**
Cations								
K- Bicarb.	mg/kg	9	49	64	**61**	*3*	4.1	77.8
K Modified Morgan	mg/kg	2	48	53	**51**	*3*	5.0	100.0
Ca Modified Morgan	mg/kg	2	198	200	**199**	*1*	0.5	100.0
Micronutrients								
Zn - DTPA	mg/kg	89	0.30	5.2	**1.13**	*0.17*	15.1	85.5
Mn - DTPA	mg/kg	78	3.0	171	**82.6**	*10.2*	12.3	79.2
Fe - DTPA	mg/kg	81	3.4	53	**13**	*3*	19.1	79.7
Cu - DTPA	mg/kg	81	0.10	29.1	**0.30**	*0.10*	33.3	87.3
Zn - HCl	mg/kg	6	1.2	9.0	**1.70**	*0.40*	23.5	66.7
Mn-H3PO4	mg/kg	6	6.0	107.5	**85.8**	*11.2*	13.0	83.3
Cl - $Ca(NO_3)_2$ Extr.	mg/kg	14	1.0	85	**3.5**	*1.5*	42.9	92.0
B - Hot Water	mg/kg	59	0.04	26.10	**0.20**	*0.10*	50.0	83.3
Soil Organic Matter								
Soil Kjeldahl N	%	29	0.02	460.00	**0.050**	*0.010*	20.0	64.3
Soil TN (combustion)	%	33	0.02	0.99	**0.048**	*0.008*	16.7	78.1
Soil TOC (combustion)	%	28	0.7	1.8	**0.97**	*0.07*	7.2	76.9
SOM - Walkley-Black	%	58	1.0	6.3	**1.60**	*0.20*	12.5	81.5
SOM - LOI (Raw Values)	%	62	1.3	12	**2.12**	*0.22*	10.4	83.9
$CaCO_3$ Content	%	15	0.0	4.6	**0.11**	*0.10*	90.5	78.9
Soil CEC	cmol/kg	38	1.5	43.0	**6.8**	*1.4*	21.2	76.3
Particle Size Analysis								
Sand 2000 - 50 um	%	55	39.2	69.0	**54.3**	*2.7*	5.0	89.5
Silt 50 - 2 um	%	55	17.0	40.0	**27.0**	*3.0*	11.1	89.5
Clay 2 - 0 um	%	55	5.4	30.8	**18.0**	*2.6*	14.4	86.0

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