



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100062-022  
**Client Sample ID:** T2/GB-10-(0-2")

**Report Date:** 01/20/04  
**Collection Date:** 10/08/03 17:00  
**Date Received:** 10/10/03  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	7.7	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	0.73	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	43.6	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	5.0	meq/l		0.1		SW6010B	10/28/03 02:58 / rp
Mg-SatPst	1.9	meq/l		0.1		SW6010B	10/28/03 02:58 / rp
Na-SatPst	0.4	meq/l		0.1		SW6010B	10/28/03 02:58 / rp
SAR	0.2	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	6.5	meq/L		1.0		ASA10-3	10/22/03 00:00 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	37	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	49	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	14	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	L	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
CEC	28.7	meq/100g		0.1		SW6010B	10/28/03 01:50 / rp
ESP	1.2	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	4.3	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	0.4	meq/100g		0.1		SW6010B	10/24/03 05:08 / rp

**Report Definitions:** RL - Analyte reporting limit.  
 QCL - Quality control limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring  
 Lab ID: H03100062-023  
 Client Sample ID: T2/GB-10-(0-6")

Report Date: 01/20/04  
 Collection Date: 10/08/03 17:00  
 Date Received: 10/10/03  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	7.9	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	0.63	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	42.1	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	3.8	meq/l		0.1		SW6010B	10/28/03 03:01 / rp
Mg-SatPst	1.6	meq/l		0.1		SW6010B	10/28/03 03:01 / rp
Na-SatPst	0.6	meq/l		0.1		SW6010B	10/28/03 03:01 / rp
SAR	0.4	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	5.1	meq/L		1.0		ASA10-3	10/22/03 00:00 / rp
Nitrate as N, Saturated Paste	0.9	mg/L		0.1		ASA10-3	10/30/03 08:00 / cwh
SO4-SatPst	0.6	meq/L		0.1		ASA10-3	10/30/03 04:05 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	33	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	50	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	17	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	SiL	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
F	< 1.0	mg/kg		1.0		A4500-F C	10/31/03 11:30 / ddb
K-EXT	296	mg/kg		1		AAA13-3	01/15/04 00:00 / jdH
OM-WB	3.20	wt%		0.02		ASA29-3	11/17/03 13:25 / rp
CEC	27.7	meq/100g		0.1		SW6010B	10/28/03 01:52 / rp
ESP	1.0	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	5.9	wt%		0.1		USDA23c	10/27/03 00:00 / nh
P-Olsen	7.4	mg/kg		0.1		ASA24-5	11/04/03 03:51 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	0.3	meq/100g		0.1		SW6010B	10/24/03 05:10 / rp
<b>METALS, HOT WATER EXTRACTABLE</b>							
Ba-H2O	< 5	mg/kg		5		SW6020	10/31/03 23:37 / jjw
B-H2O	0.3	mg/kg		0.1		SW6020	11/03/03 11:34 / car
Se-H2O	< 0.01	mg/kg		0.01		SW6020	10/31/03 23:37 / jjw
<b>METALS, DTPA EXTRACTABLE</b>							
Zn-DTPA	0.39	mg/kg		0.02		SW6010B	11/05/03 12:52 / jdH

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LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring  
 Lab ID: H03100062-024  
 Client Sample ID: T2/GB-10-(6-12")

Report Date: 01/20/04  
 Collection Date: 10/08/03 17:00  
 Date Received: 10/10/03  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	8.0	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	0.64	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	38.5	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	2.6	meq/l		0.1		SW6010B	10/28/03 03:04 / rp
Mg-SatPst	1.6	meq/l		0.1		SW6010B	10/28/03 03:04 / rp
Na-SatPst	1.7	meq/l		0.1		SW6010B	10/28/03 03:04 / rp
SAR	1.2	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	4.9	meq/L		1.0		ASA10-3	10/22/03 00:00 / rp
Nitrate as N, Saturated Paste	< 0.1	mg/L		0.1		ASA10-3	10/30/03 08:00 / cwh
SO4-SatPst	0.9	meq/L		0.1		ASA10-3	10/30/03 04:08 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	34	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	47	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	19	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	L	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
CEC	23.2	meq/100g		0.1		SW6010B	10/28/03 01:55 / rp
ESP	1.8	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	6.3	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	0.5	meq/100g		0.1		SW6010B	10/24/03 05:13 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring  
 Lab ID: H03100062-025  
 Client Sample ID: T2/GB-10-(12-24")

Report Date: 01/20/04  
 Collection Date: 10/08/03 17:00  
 Date Received: 10/10/03  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	8.1	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	4.05	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	39.2	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	14.0	meq/l		0.1		SW6010B	10/28/03 03:06 / rp
Mg-SatPst	17.4	meq/l		0.1		SW6010B	10/28/03 03:06 / rp
Na-SatPst	16.8	meq/l		0.1		SW6010B	10/28/03 03:06 / rp
SAR	4.2	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	3.7	meq/L		1.0		ASA10-3	10/22/03 00:00 / rp
Nitrate as N, Saturated Paste	< 0.1	mg/L		0.1		ASA10-3	10/30/03 08:00 / cwh
SO4-SatPst	43.1	meq/L		0.1		ASA10-3	10/30/03 04:11 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	36	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	46	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	18	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	L	unitless				ASA15-5	11/15/03 13:00 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
CEC	22.9	meq/100g		0.1		SW6010B	10/28/03 01:57 / rp
ESP	3.5	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	7.0	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	1.5	meq/100g		0.1		SW6010B	10/24/03 05:16 / rp

Report Definitions: RL - Analyte reporting limit.  
 QCL - Quality control limit.

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100062-026  
**Client Sample ID:** T2/GB-10-(24-36")

**Report Date:** 01/20/04  
**Collection Date:** 10/08/03 17:00  
**Date Received:** 10/10/03  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	8.0	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	5.49	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	42.1	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	13.1	meq/l		0.1		SW6010B	10/30/03 12:52 / rp
Mg-SatPst	26.6	meq/l		0.1		SW6010B	10/30/03 12:52 / rp
Na-SatPst	30.8	meq/l		0.1		SW6010B	10/30/03 12:52 / rp
SAR	6.9	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	2.4	meq/L		1.0		ASA10-3	10/31/03 00:00 / cwh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	35	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	46	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	19	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	L	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
CEC	15.0	meq/100g		0.1		SW6010B	10/28/03 01:00 / rp
ESP	9.0	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	7.9	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	2.6	meq/100g		0.1		SW6010B	10/24/03 05:18 / rp

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring  
 Lab ID: H03100062-027  
 Client Sample ID: T2/GB-10-(36-60")

Report Date: 01/20/04  
 Collection Date: 10/08/03 17:00  
 Date Received: 10/10/03  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	8.1	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	6.85	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	42.7	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	17.6	meq/l		0.1		SW6010B	10/30/03 12:55 / rp
Mg-SatPst	37.7	meq/l		0.1		SW6010B	10/30/03 12:55 / rp
Na-SatPst	32.7	meq/l		0.1		SW6010B	10/30/03 12:55 / rp
SAR	6.2	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	2.4	meq/L		1.0		ASA10-3	10/31/03 00:00 / cwh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	41	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	41	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	18	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	L	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
F	1.9	mg/kg		1.0		A4500-F C	10/31/03 11:30 / ddb
CEC	14.1	meq/100g		0.1		SW6010B	10/28/03 01:00 / rp
ESP	6.8	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	7.8	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	2.4	meq/100g		0.1		SW6010B	10/24/03 05:21 / rp
<b>METALS, HOT WATER EXTRACTABLE</b>							
Ba-H2O	< 5	mg/kg		5		SW6020	10/31/03 23:42 / jjw
B-H2O	0.7	mg/kg		0.1		SW6020	11/03/03 11:41 / car
Se-H2O	0.04	mg/kg		0.01		SW6020	10/31/03 23:42 / jjw

Report Definitions: RL - Analyte reporting limit.  
 QCL - Quality control limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring  
**Lab ID:** H03100062-028  
**Client Sample ID:** T2/GB-10-(60-96")

**Report Date:** 01/20/04  
**Collection Date:** 10/08/03 17:00  
**Date Received:** 10/10/03  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH-SatPst	8.0	s.u.		0.1		ASAM10-3.2	11/17/03 13:25 / rp
COND	2.64	mmhos/cm		0.01		ASAM10-3	11/17/03 13:25 / rp
Percent Sat	35.4	wt%		0.1		USDA27a	11/17/03 13:25 / rp
Ca-SatPst	5.3	meq/l		0.1		SW6010B	10/30/03 12:57 / rp
Mg-SatPst	10.3	meq/l		0.1		SW6010B	10/30/03 12:57 / rp
Na-SatPst	15.6	meq/l		0.1		SW6010B	10/30/03 12:57 / rp
SAR	5.6	unitless		0.1		Calculation	11/17/03 13:25 / rp
Alk-SatPst	2.8	meq/L		1.0		ASA10-3	10/31/03 00:00 / cwh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	56	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Silt	28	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Clay	16	wt%		1.0		ASA15-5	11/17/03 13:25 / rp
Texture	SL	unitless				ASA15-5	11/17/03 13:25 / rp
C=Clay, S=Sand(y), Si=Silt(y), L=Loam(y)							
<b>CHEMICAL CHARACTERISTICS</b>							
CEC	21.6	meq/100g		0.1		SW6010B	10/28/03 01:00 / rp
ESP	3.6	%		0.1		USDA20b	11/17/03 13:25 / rp
Lime as CaCO3	8.3	wt%		0.1		USDA23c	10/27/03 00:00 / nh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Na-Av	1.3	meq/100g		0.1		SW6010B	10/24/03 05:23 / rp

**Report Definitions:** RL - Analyte reporting limit.  
 QCL - Quality control limit.

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.