



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-023  
**Client Sample ID:** T2/GA-10 (0-2)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 14:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.7	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.67	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	1.41	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	43.9	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.6	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	6.2	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.48	meq/l		0.05		SW6010B	06/21/04 01:34 / jdh
Magnesium, Saturated Paste	2.51	meq/l		0.08		SW6010B	06/21/04 01:34 / jdh
Sodium, Saturated Paste	1.19	meq/l		0.04		SW6010B	06/21/04 01:34 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	44	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	26	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	23.7	meq/100g		0.09		SW6010B	06/09/04 01:44 / rp
Exchangeable Sodium Percentage	2.1	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	5.7	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.56	meq/100g		0.04		SW6010B	06/14/04 02:13 / 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 Tier 2 Spring 2004  
**Lab ID:** H04050024-024  
**Client Sample ID:** T2/GA-10 (0-6)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 14:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.7	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.64	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	3.24	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdH
Saturation	42.3	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	0.8	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	5.2	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdH
Nitrate as N, Saturated Paste	5.5	mg/L		0.6		ASA10-3	06/15/04 11:55 / cwh
Sulfate, Saturated Paste	1.58	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.40	meq/l		0.05		SW6010B	06/21/04 01:37 / jdH
Magnesium, Saturated Paste	2.32	meq/l		0.08		SW6010B	06/21/04 01:37 / jdH
Sodium, Saturated Paste	1.48	meq/l		0.04		SW6010B	06/21/04 01:37 / jdH
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	38	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Silt	39	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Clay	23	wt%		1.0		ASA15-5	06/20/04 13:00 / rp
Texture	L	unitless				ASA15-5	06/20/04 13:00 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.0	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Organic Matter	2.60	wt%		0.02		ASA29-3	06/28/04 07:41 / rp
Cation Exchange Capacity	21.2	meq/100g		0.09		SW6010B	06/09/04 01:47 / rp
Exchangeable Sodium Percentage	2.6	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	5.7	wt%		0.1		USDA23c	06/28/04 07:41 / rp
Phosphorus	12	mg/kg		0.1		ASA24-5	06/24/04 05:18 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Potassium	174	mg/kg		1		SW6010B	06/14/04 02:16 / rp
Sodium, Extractable	0.61	meq/100g		0.04		SW6010B	06/14/04 02:16 / rp
<b>METALS, WATER EXTRACTABLE</b>							
Selenium	0.072	mg/kg		0.010		SW6020	06/28/04 13:01 / car
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.39	mg/kg		0.02		SW6010B	06/16/04 02:26 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP  
Project: Tongue River Monitoring Tier 2 Spring 2004  
Lab ID: H04050024-024  
Client Sample ID: T2/GA-10 (0-6)

Report Date: 07/04/04  
Collection Date: 04/30/04 14:30  
Date Received: 05/04/04  
Matrix: Soil

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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>METALS, CACL2 EXTRACTABLE</b>							
Barium	9.0	mg/L		0.001		SW6010B	06/16/04 12:43 / rp
Boron	1.1	mg/L		0.04		SW6010B	06/16/04 12:43 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-025  
**Client Sample ID:** T2/GA-10 (6-12)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 14:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.8	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	0.63	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.71	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	40.3	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	1.3	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	4.4	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	11.1	mg/L		0.6		ASA10-3	06/15/04 11:57 / cwh
Sulfate, Saturated Paste	2.66	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	3.65	meq/l		0.05		SW6010B	06/21/04 01:40 / jdh
Magnesium, Saturated Paste	1.90	meq/l		0.08		SW6010B	06/21/04 01:40 / jdh
Sodium, Saturated Paste	2.19	meq/l		0.04		SW6010B	06/21/04 01:40 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	47	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	23	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	19.2	meq/100g		0.09		SW6010B	06/09/04 01:50 / rp
Exchangeable Sodium Percentage	3.2	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	6.4	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.69	meq/100g		0.04		SW6010B	06/14/04 02:19 / rp

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2 Spring 2004  
**Lab ID:** H04050024-026  
**Client Sample ID:** T2/GA-10 (12-24)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 14:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	7.9	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	2.13	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.85	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	41.7	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	3.5	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
Nitrate as N, Saturated Paste	5.4	mg/L		0.6		ASA10-3	06/15/04 11:59 / cwh
Sulfate, Saturated Paste	23.7	meq/L		0.002		ASA10-3	06/20/04 13:00 / rp
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	8.30	meq/l		0.05		SW6010B	06/21/04 01:43 / jdh
Magnesium, Saturated Paste	7.94	meq/l		0.08		SW6010B	06/21/04 01:43 / jdh
Sodium, Saturated Paste	9.96	meq/l		0.04		SW6010B	06/21/04 01:43 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	29	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	46	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	25	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	20.0	meq/100g		0.09		SW6010B	06/09/04 01:59 / rp
Exchangeable Sodium Percentage	5.0	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	7.4	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.41	meq/100g		0.04		SW6010B	06/14/04 02:28 / 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 Tier 2 Spring 2004  
Lab ID: H04050024-027  
Client Sample ID: T2/GA-10 (24-36)

Report Date: 07/04/04  
Collection Date: 04/30/04 14:30  
Date Received: 05/04/04  
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	8.0	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	6.34	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	1.55	meq/L		0.01		ASA10-3	06/21/04 13:00 / jd
Saturation	39.1	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	6.5	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.2	meq/L		1.0		ASA10-3	06/24/04 13:00 / jd
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	19.1	meq/l		0.05		SW6010B	06/21/04 01:52 / jd
Magnesium, Saturated Paste	28.4	meq/l		0.08		SW6010B	06/21/04 01:52 / jd
Sodium, Saturated Paste	31.7	meq/l		0.04		SW6010B	06/21/04 01:52 / jd
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	44	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	39	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	17	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	L	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	14.8	meq/100g		0.09		SW6010B	06/09/04 02:02 / rp
Exchangeable Sodium Percentage	6.2	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	6.8	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	2.16	meq/100g		0.04		SW6010B	06/14/04 02:31 / 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 Tier 2 Spring 2004  
**Lab ID:** H04050024-028  
**Client Sample ID:** T2/GA-10 (36-60)

**Report Date:** 07/04/04  
**Collection Date:** 04/30/04 14:30  
**Date Received:** 05/04/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	8.0	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	5.98	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	1.83	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	31.4	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	6.3	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	16.8	meq/l		0.05		SW6010B	06/21/04 01:55 / jdh
Magnesium, Saturated Paste	28.4	meq/l		0.08		SW6010B	06/21/04 01:55 / jdh
Sodium, Saturated Paste	30.0	meq/l		0.04		SW6010B	06/21/04 01:55 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	59	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	30	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	11	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	SL	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.5	mg/kg		1.0		A4500-F C	06/17/04 13:00 / ddb
Cation Exchange Capacity	9.97	meq/100g		0.09		SW6010B	06/09/04 02:05 / rp
Exchangeable Sodium Percentage	8.2	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	5.9	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.76	meq/100g		0.04		SW6010B	06/14/04 02:34 / rp
<b>METALS, WATER EXTRACTABLE</b>							
Selenium	0.11	mg/kg		0.010		SW6020	06/28/04 13:05 / car
<b>METALS, CaCl2 EXTRACTABLE</b>							
Barium	1.0	mg/L		0.001		SW6010B	06/16/04 12:46 / rp
Boron	1.6	mg/L		0.04		SW6010B	06/16/04 12:46 / 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 Tier 2 Spring 2004  
Lab ID: H04050024-029  
Client Sample ID: T2/GA-10 (60-96)

Report Date: 07/04/04  
Collection Date: 04/30/04 14:30  
Date Received: 05/04/04  
Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, Saturated Paste	8.2	s.u.		0.1		ASAM10-3.2	06/28/04 07:41 / rp
Conductivity, Paste Extract	1.91	mmhos/cm		0.01		ASAM10-3	06/28/04 07:41 / rp
Chloride, Saturated Paste	0.56	meq/L		0.01		ASA10-3	06/21/04 13:00 / jdh
Saturation	31.7	wt%		0.1		USDA27a	06/28/04 07:41 / rp
Sodium Adsorption Ratio (SAR)	5.1	unitless		0.1		Calculation	06/28/04 07:41 / rp
Alkalinity, Saturated Paste	3.4	meq/L		1.0		ASA10-3	06/24/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	3.38	meq/l		0.05		SW6010B	06/21/04 01:57 / jdh
Magnesium, Saturated Paste	3.81	meq/l		0.08		SW6010B	06/21/04 01:57 / jdh
Sodium, Saturated Paste	9.59	meq/l		0.04		SW6010B	06/21/04 01:57 / jdh
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	82	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Silt	11	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Clay	7.0	wt%		1.0		ASA15-5	06/28/04 07:41 / rp
Texture	LS	unitless				ASA15-5	06/28/04 07:41 / rp
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	4.54	meq/100g		0.09		SW6010B	06/09/04 02:07 / rp
Exchangeable Sodium Percentage	17	%		0.1		USDA20b	06/28/04 07:41 / rp
Lime as CaCO3	4.9	wt%		0.1		USDA23c	06/28/04 07:41 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.08	meq/100g		0.04		SW6010B	06/14/04 02:37 / rp

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

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