



LABORATORY ANALYTICAL REPORT

Client: AMPP  
 Project: Tongue River Monitoring Tier 2  
 Lab ID: H04100167-025  
 Client Sample ID: T2/EA-10-(0-6")

Report Date: 11/22/04  
 Collection Date: 10/13/04 17:00  
 Date Received: 10/20/04  
 Matrix: Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.5	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	2.28	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	54.7	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.9	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	6.4	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	0.1	mg/L		0.1		ASA10-3	11/10/04 12:43 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	10.7	meq/l		0.05		SW6010B	11/04/04 12:12 / rp
Magnesium, Saturated Paste	6.64	meq/l		0.08		SW6010B	11/04/04 12:12 / rp
Sodium, Saturated Paste	5.49	meq/l		0.04		SW6010B	11/04/04 12:12 / rp
Sulfate, Saturated Paste	15.7	meq/l		0.002		SW6010B	11/04/04 12:12 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	18	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	56	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	26	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	ND	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Potassium, NH4OAc Extractable	333	mg/kg		1		ASA13-3	11/22/04 13:00 / jdh
Organic Matter	3.30	%		0.02		ASA29-3	11/22/04 07:49 / jdh
Cation Exchange Capacity	35.5	meq/100g		0.09		SW6010B	11/05/04 11:24 / rp
Lime as CaCO3	6.3	%		0.1		USDA23c	11/09/04 00:00 / jdh
Phosphorus	6.2	mg/kg		0.1		ASA24-5	11/12/04 07:21 / rp
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.86	meq/100g		0.04		SW6010B	11/08/04 12:13 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	1.6	%		0.1		USDA20a	11/22/04 07:49 / jdh
<b>METALS, DTPA EXTRACTABLE</b>							
Zinc	0.51	mg/kg		0.02		SW6010B	11/09/04 10:57 / rp
<b>METALS, CaCl2 EXTRACTABLE</b>							
Barium	4.6	mg/L		0.04		SW6010B	11/09/04 09:12 / rp

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

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



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**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-025  
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**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>METALS, CACL2 EXTRACTABLE</b>							
Boron	1.8	mg/L		0.04		SW6010B	11/09/04 09:12 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 09:12 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-026  
**Client Sample ID:** T2/EA-10-(6-12")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	3.30	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	56.1	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	3.4	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.6	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	1.6	mg/L		0.1		ASA10-3	11/10/04 12:46 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	15.2	meq/l		0.05		SW6010B	11/04/04 12:20 / rp
Magnesium, Saturated Paste	11.4	meq/l		0.08		SW6010B	11/04/04 12:20 / rp
Sodium, Saturated Paste	12.5	meq/l		0.04		SW6010B	11/04/04 12:20 / rp
Sulfate, Saturated Paste	33.0	meq/l		0.002		SW6010B	11/04/04 12:20 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	17	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	53	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	30	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiCL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	28.0	meq/100g		0.09		SW6010B	11/05/04 11:33 / rp
Lime as CaCO3	6.5	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.78	meq/100g		0.04		SW6010B	11/08/04 12:16 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.1	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	3.8	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-027  
**Client Sample ID:** T2/EA-10-(12-24")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.8	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	5.37	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	54.5	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	4.7	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.9	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	2.2	mg/L		0.1		ASA10-3	11/10/04 12:47 / cwh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	22.7	meq/l		0.05		SW6010B	11/04/04 12:23 / rp
Magnesium, Saturated Paste	19.6	meq/l		0.08		SW6010B	11/04/04 12:23 / rp
Sodium, Saturated Paste	21.7	meq/l		0.04		SW6010B	11/04/04 12:23 / rp
Sulfate, Saturated Paste	59.8	meq/l		0.002		SW6010B	11/04/04 12:23 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	17	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	50	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	33	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiCL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	26.3	meq/100g		0.09		SW6010B	11/05/04 11:41 / rp
Lime as CaCO3	7.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	2.45	meq/100g		0.04		SW6010B	11/08/04 12:25 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.3	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	4.8	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-028  
**Client Sample ID:** T2/EA-10-(24-36")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.8	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	4.81	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	53.4	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	5.2	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	3.1	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	16.7	meq/l		0.05		SW6010B	11/04/04 12:32 / rp
Magnesium, Saturated Paste	18.9	meq/l		0.08		SW6010B	11/04/04 12:32 / rp
Sodium, Saturated Paste	22.1	meq/l		0.04		SW6010B	11/04/04 12:32 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	20	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	57	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	23	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SiL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	24.0	meq/100g		0.09		SW6010B	11/05/04 11:44 / rp
Lime as CaCO3	7.9	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	2.44	meq/100g		0.04		SW6010B	11/08/04 12:28 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.3	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	5.2	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-029  
**Client Sample ID:** T2/EA-10-(36-60")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	8.0	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	5.88	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	45.3	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	6.7	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.4	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	14.4	meq/l		0.05		SW6010B	11/04/04 12:35 / rp
Magnesium, Saturated Paste	25.4	meq/l		0.08		SW6010B	11/04/04 12:35 / rp
Sodium, Saturated Paste	30.0	meq/l		0.04		SW6010B	11/04/04 12:35 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	34	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	40	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	26	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Fluoride	1.1	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Cation Exchange Capacity	22.7	meq/100g		0.09		SW6010B	11/05/04 11:47 / rp
Lime as CaCO3	8.5	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	2.55	meq/100g		0.04		SW6010B	11/08/04 12:31 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.2	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	5.2	%		0.1		USDA20a	11/22/04 07:49 / jdh
<b>METALS, CACL2 EXTRACTABLE</b>							
Barium	1.0	mg/L		0.04		SW6010B	11/09/04 09:27 / rp
Boron	2.2	mg/L		0.04		SW6010B	11/09/04 09:27 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 09:27 / rp

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-030  
**Client Sample ID:** T2/EA-10-(60-90")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	8.0	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	2.70	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	43.2	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	4.8	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.8	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	4.51	meq/l		0.05		SW6010B	11/04/04 12:38 / rp
Magnesium, Saturated Paste	9.14	meq/l		0.08		SW6010B	11/04/04 12:38 / rp
Sodium, Saturated Paste	12.5	meq/l		0.04		SW6010B	11/04/04 12:38 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	33	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	41	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	26	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	18.6	meq/100g		0.09		SW6010B	11/09/04 03:12 / rp
Lime as CaCO3	8.5	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	1.73	meq/100g		0.04		SW6010B	11/08/04 12:34 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	1.2	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	6.4	%		0.1		USDA20a	11/22/04 07:49 / jdh

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LABORATORY ANALYTICAL REPORT

**Client:** AMPP  
**Project:** Tongue River Monitoring Tier 2  
**Lab ID:** H04100167-031  
**Client Sample ID:** T2/EA-10-(0-2")

**Report Date:** 11/22/04  
**Collection Date:** 10/13/04 17:00  
**Date Received:** 10/20/04  
**Matrix:** Soil

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
<b>SATURATED PASTE</b>							
pH, sat. paste	7.6	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.09	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	55.5	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.1	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	9.5	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
<b>SATURATED PASTE</b>							
Calcium, Saturated Paste	5.09	meq/l		0.05		SW6010B	11/04/04 12:44 / rp
Magnesium, Saturated Paste	3.29	meq/l		0.08		SW6010B	11/04/04 12:44 / rp
Sodium, Saturated Paste	2.17	meq/l		0.04		SW6010B	11/04/04 12:44 / rp
<b>PHYSICAL CHARACTERISTICS</b>							
Sand	22	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	51	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	27	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	CL	unitless				ASA15-5	11/22/04 07:49 / jdh
<b>CHEMICAL CHARACTERISTICS</b>							
Cation Exchange Capacity	26.8	meq/100g		0.09		SW6010B	11/09/04 03:18 / rp
Lime as CaCO3	6.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
<b>METALS, AMMONIUM ACETATE EXTRACTABLE</b>							
Sodium, Extractable	0.55	meq/100g		0.04		SW6010B	11/08/04 12:40 / rp
<b>EXCHANGEABLES</b>							
Exchangeable Sodium	0.4	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	1.6	%		0.1		USDA20a	11/22/04 07:49 / jdh

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