



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100167-001
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.2	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.65	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	51.4	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.3	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	7.4	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	ND	mg/L		0.1		ASA10-3	11/10/04 12:17 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	7.78	meq/l		0.05		SW6010B	11/04/04 10:49 / rp
Magnesium, Saturated Paste	4.01	meq/l		0.08		SW6010B	11/04/04 10:49 / rp
Sodium, Saturated Paste	3.17	meq/l		0.04		SW6010B	11/04/04 10:49 / rp
Sulfate, Saturated Paste	6.84	meq/l		0.002		SW6010B	11/04/04 10:49 / rp
PHYSICAL CHARACTERISTICS							
Sand	30	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	46	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	24	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Fluoride	ND	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Potassium, NH4OAc Extractable	289	mg/kg		1		ASA13-3	11/22/04 13:00 / jdh
Organic Matter	3.20	%		0.02		ASA29-3	11/22/04 07:49 / jdh
Cation Exchange Capacity	29.4	meq/100g		0.09		SW6010B	11/05/04 09:58 / rp
Lime as CaCO3	6.7	%		0.1		USDA23c	11/09/04 00:00 / jdh
Phosphorus	21	mg/kg		0.1		ASA24-5	11/12/04 07:13 / rp
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.77	meq/100g		0.04		SW6010B	11/08/04 10:42 / rp
EXCHANGEABLES							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.0	%		0.1		USDA20a	11/22/04 07:49 / jdh
METALS, DTPA EXTRACTABLE							
Zinc	1.04	mg/kg		0.02		SW6010B	11/09/04 10:48 / rp
METALS, CACL2 EXTRACTABLE							
Barium	5.9	mg/L		0.04		SW6010B	11/09/04 08:54 / 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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Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
METALS, CACL2 EXTRACTABLE							
Boron	1.7	mg/L		0.04		SW6010B	11/09/04 08:54 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 08:54 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100167-002
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.5	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	0.92	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	45.9	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	1.5	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	5.0	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	2.3	mg/L		0.1		ASA10-3	11/10/04 12:19 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	4.58	meq/l		0.05		SW6010B	11/04/04 10:52 / rp
Magnesium, Saturated Paste	2.29	meq/l		0.08		SW6010B	11/04/04 10:52 / rp
Sodium, Saturated Paste	2.71	meq/l		0.04		SW6010B	11/04/04 10:52 / rp
Sulfate, Saturated Paste	3.96	meq/l		0.002		SW6010B	11/04/04 10:52 / rp
PHYSICAL CHARACTERISTICS							
Sand	29	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	45	%		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
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	28.3	meq/100g		0.09		SW6010B	11/05/04 10:01 / rp
Lime as CaCO3	7.8	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.69	meq/100g		0.04		SW6010B	11/08/04 10:45 / rp
EXCHANGEABLES							
Exchangeable Sodium	0.6	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.0	%		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: H04100167-003
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.48	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	48.5	%		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	4.1	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
Nitrate as N, Saturated Paste	0.9	mg/L		0.1		ASA10-3	11/10/04 12:21 / cwh
SATURATED PASTE							
Calcium, Saturated Paste	6.06	meq/l		0.05		SW6010B	11/04/04 10:55 / rp
Magnesium, Saturated Paste	4.41	meq/l		0.08		SW6010B	11/04/04 10:55 / rp
Sodium, Saturated Paste	4.30	meq/l		0.04		SW6010B	11/04/04 10:55 / rp
Sulfate, Saturated Paste	10.2	meq/l		0.002		SW6010B	11/04/04 10:55 / rp
PHYSICAL CHARACTERISTICS							
Sand	26	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	46	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	28	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	CL	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	26.9	meq/100g		0.09		SW6010B	11/05/04 10:04 / rp
Lime as CaCO3	7.5	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.94	meq/100g		0.04		SW6010B	11/08/04 10:48 / rp
EXCHANGEABLES							
Exchangeable Sodium	0.7	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	2.7	%		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: H04100167-004
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	4.71	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	42.5	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	2.5	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
SATURATED PASTE							
Calcium, Saturated Paste	24.0	meq/l		0.05		SW6010B	11/04/04 10:58 / rp
Magnesium, Saturated Paste	21.9	meq/l		0.08		SW6010B	11/04/04 10:58 / rp
Sodium, Saturated Paste	12.1	meq/l		0.04		SW6010B	11/04/04 10:58 / rp
PHYSICAL CHARACTERISTICS							
Sand	41	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	36	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	23	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	23.5	meq/100g		0.09		SW6010B	11/05/04 10:07 / rp
Lime as CaCO3	6.9	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.42	meq/100g		0.04		SW6010B	11/08/04 10:51 / rp
EXCHANGEABLES							
Exchangeable Sodium	0.9	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: H04100167-005
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.8	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	4.54	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	40.2	%		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	2.8	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	12.4	meq/l		0.05		SW6010B	11/04/04 11:01 / rp
Magnesium, Saturated Paste	16.8	meq/l		0.08		SW6010B	11/04/04 11:01 / rp
Sodium, Saturated Paste	20.0	meq/l		0.04		SW6010B	11/04/04 11:01 / rp
PHYSICAL CHARACTERISTICS							
Sand	45	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	33	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	22	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Fluoride	1.2	mg/kg		1.0		A4500-F C	11/22/04 13:00 / jdh
Cation Exchange Capacity	23.8	meq/100g		0.09		SW6010B	11/05/04 10:10 / rp
Lime as CaCO3	7.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	2.08	meq/100g		0.04		SW6010B	11/08/04 10:54 / rp
EXCHANGEABLES							
Exchangeable Sodium	1.3	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	5.4	%		0.1		USDA20a	11/22/04 07:49 / jdh
METALS, CACL2 EXTRACTABLE							
Barium	0.49	mg/L		0.04		SW6010B	11/09/04 08:57 / rp
Boron	0.89	mg/L		0.04		SW6010B	11/09/04 08:57 / rp
Selenium	ND	mg/L		0.10		SW6010B	11/09/04 08:57 / rp

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LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100167-006
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.7	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	4.89	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	31.1	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	4.6	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	2.6	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	17.8	meq/l		0.05		SW6010B	11/04/04 11:04 / rp
Magnesium, Saturated Paste	23.5	meq/l		0.08		SW6010B	11/04/04 11:04 / rp
Sodium, Saturated Paste	20.9	meq/l		0.04		SW6010B	11/04/04 11:04 / rp
PHYSICAL CHARACTERISTICS							
Sand	60	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	26	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	14	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	SL	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	16.3	meq/100g		0.09		SW6010B	11/05/04 10:13 / rp
Lime as CaCO3	8.1	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	1.75	meq/100g		0.04		SW6010B	11/08/04 10:57 / rp
EXCHANGEABLES							
Exchangeable Sodium	1.1	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	6.8	%		0.1		USDA20a	11/22/04 07:49 / jdh

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 ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: AMPP
Project: Tongue River Monitoring Tier 2
Lab ID: H04100167-007
Client Sample ID: T2/LA-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		
SATURATED PASTE							
pH, sat. paste	7.0	s.u.		0.1		ASAM10-3.2	11/22/04 07:49 / jdh
Conductivity, Paste Extract	1.77	mmhos/cm		0.01		ASAM10-3	11/22/04 07:49 / jdh
Saturation	58.2	%		0.1		USDA27a	11/22/04 07:49 / jdh
Sodium Adsorption Ratio (SAR)	0.96	unitless		0.01		Calculation	11/22/04 07:49 / jdh
Alkalinity, Saturated Paste	9.2	meq/L		1.0		ASA10-3	11/22/04 13:00 / jdh
SATURATED PASTE							
Calcium, Saturated Paste	9.00	meq/l		0.05		SW6010B	11/04/04 11:07 / rp
Magnesium, Saturated Paste	5.46	meq/l		0.08		SW6010B	11/04/04 11:07 / rp
Sodium, Saturated Paste	2.57	meq/l		0.04		SW6010B	11/04/04 11:07 / rp
PHYSICAL CHARACTERISTICS							
Sand	32	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Silt	44	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Clay	24	%		1.0		ASA15-5	11/22/04 07:49 / jdh
Texture	L	unitless				ASA15-5	11/22/04 07:49 / jdh
CHEMICAL CHARACTERISTICS							
Cation Exchange Capacity	33.0	meq/100g		0.09		SW6010B	11/05/04 10:16 / rp
Lime as CaCO3	6.3	%		0.1		USDA23c	11/09/04 00:00 / jdh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Sodium, Extractable	0.61	meq/100g		0.04		SW6010B	11/08/04 11:00 / rp
EXCHANGEABLES							
Exchangeable Sodium	0.5	meq/100g		0.1		Calculation	11/22/04 07:49 / jdh
Exchangeable Sodium Percentage	1.4	%		0.1		USDA20a	11/22/04 07:49 / jdh

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