



# Analytical Report

Norwest Labs  
 7217 Roper Road  
 Edmonton, AB. T6B 3J4  
 Phone: (780) 438-5522  
 Fax: (780) 438-0396

**Bill to:** Town of Cochrane  
**Report to:** Town of Cochrane  
 Box 10  
 Cochrane, AB, Canada  
 T4C 1A4  
 Attn: Andy Degraw  
 Sampled By:  
 Company:

**Project ID:**  
**Name:** Big Hill Spring  
**Location:**  
**LSD:**  
**P.O.:**  
**Acct. Code:**

**NWL Lot ID:** 326732  
 Control Number: E 163935  
 Date Received: Aug 17, 2004  
 Date Reported: Aug 20, 2004  
 Report Number: 584879

NWL Number 326732-1  
 Sample Description Water Sample  
 Matrix Water - General

Analyte	Units	Results	Results	Results	Detection Limit
<b>Inorganic Nonmetallic Parameters</b>					
Orthophosphate-P	Dissolved	mg/L	0.11		0.05
<b>Metals Extractable</b>					
Silicon	Extractable	mg/L	4.16		0.05
Sulphur	Extractable	mg/L	9.64		0.05
Mercury	Extractable	mg/L	<0.0001		0.0001
Aluminum	Extractable	mg/L	<0.005		0.005
Antimony	Extractable	mg/L	<0.0002		0.0002
Arsenic	Extractable	mg/L	0.0004		0.0002
Barium	Extractable	mg/L	0.214		0.001
Beryllium	Extractable	mg/L	<0.0001		0.0001
Bismuth	Extractable	mg/L	<0.0005		0.0005
Boron	Extractable	mg/L	0.027		0.002
Cadmium	Extractable	mg/L	<0.00001		0.00001
Chromium	Extractable	mg/L	0.0023		0.0005
Cobalt	Extractable	mg/L	<0.0001		0.0001
Copper	Extractable	mg/L	<0.001		0.001
Lead	Extractable	mg/L	<0.0001		0.0001
Lithium	Extractable	mg/L	0.018		0.001
Molybdenum	Extractable	mg/L	0.002		0.001
Nickel	Extractable	mg/L	<0.0005		0.0005
Selenium	Extractable	mg/L	0.0016		0.0002
Silver	Extractable	mg/L	<0.0001		0.0001
Strontium	Extractable	mg/L	0.536		0.001
Thallium	Extractable	mg/L	<0.00005		0.00005
Tin	Extractable	mg/L	<0.001		0.001
Titanium	Extractable	mg/L	<0.0005		0.0005
Uranium	Extractable	mg/L	0.0024		0.0005
Vanadium	Extractable	mg/L	0.0001		0.0001
Zinc	Extractable	mg/L	<0.001		0.001
Zirconium	Extractable	mg/L	<0.001		0.001
<b>Physical and Aggregate Properties</b>					
Temp. of observed pH and EC		°C	19.4		
Solids	Total Suspended	mg/L	<2		1
<b>Routine Water</b>					
pH			8.10		
Calcium	Extractable	mg/L	67.1		0.2
Magnesium	Extractable	mg/L	38.7		0.1



# Analytical Report

Norwest Labs  
7217 Roper Road  
Edmonton, AB. T6B 3J4  
Phone: (780) 438-5522  
Fax: (780) 438-0396

**Bill to:** Town of Cochrane  
**Report to:** Town of Cochrane  
Box 10  
Cochrane, AB, Canada  
T4C 1A4  
Attn: Andy Degraw  
Sampled By:  
Company:

**Project ID:**  
**Name:** Big Hill Spring  
**Location:**  
**LSD:**  
**P.O.:**  
**Acct. Code:**

**NWL Lot ID:** 326732  
Control Number: E 163935  
Date Received: Aug 17, 2004  
Date Reported: Aug 20, 2004  
Report Number: 584879

NWL Number 326732-1  
Sample Description Water Sample  
Matrix Water - General

Analyte	Units	Results	Results	Results	Detection Limit
<b>Routine Water - Continued</b>					
Sodium	Extractable mg/L	24.6			0.4
Potassium	Extractable mg/L	4.0			0.4
Iron	Extractable mg/L	<0.01			0.01
Chloride	Dissolved mg/L	25.2			0.5
Fluoride	mg/L	0.18			0.05
Nitrate - N	mg/L	2.3			0.1
Nitrite - N	mg/L	<0.05			0.05
T-Alkalinity	as CaCO3 mg/L	320			5
Hardness	as CaCO3 mg/L	327			

Approved by:

Anthony Neumann, MSc  
Laboratory Operations Manager



## Methodology and Notes

Norwest Labs  
7217 Roper Road  
Edmonton, AB. T6B 3J4  
**Phone:** (780) 438-5522  
**Fax:** (780) 438-0396

**Bill to:** Town of Cochrane  
**Report to:** Town of Cochrane  
Box 10  
Cochrane, AB, Canada  
T4C 1A4  
Attn: Andy Degraw  
Sampled By:  
Company:

**Project ID:**  
**Name:** Big Hill Spring  
**Location:**  
**LSD:**  
**P.O.:**  
**Acct. Code:**

**NWL Lot ID:** 326732  
**Control Number:** E 163935  
**Date Received:** Aug 17, 2004  
**Date Reported:** Aug 20, 2004  
**Report Number:** 584879

Page: 3 of 3

### Method of Analysis:

MethodName	Reference	Method	Date Analysis Started	Location
Alkalinity, pH, and EC in water	APHA	* Electrometric Method, 4500-H+ B	18-Aug-04	Norwest Labs Edmonton
Alkalinity, pH, and EC in water	APHA	* Titration Method, 2320 B	18-Aug-04	Norwest Labs Edmonton
Anions (Routine) by Ion Chromatography	APHA	Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	19-Aug-04	Norwest Labs Edmonton
Chloride in Water	APHA	* Automated Ferricyanide Method, 4500-Cl- E	19-Aug-04	Norwest Labs Edmonton
Mercury (Extractable) in water	APHA	* Cold Vapour Atomic Absorption Spectrometric Method, 3112 B	19-Aug-04	Norwest Labs Edmonton
Metals ICP-MS (Extractable) in water	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	19-Aug-04	Norwest Labs Edmonton
Metals Trace (Extractable) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	19-Aug-04	Norwest Labs Edmonton
Orthophosphate-P in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	19-Aug-04	Norwest Labs Edmonton
Solids Suspended (Total, Fixed and Volatile)	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	19-Aug-04	Norwest Labs Edmonton

\* Norwest method(s) is based on reference method

### References:

US EPA US Environmental Protection Agency Test Methods  
APHA Standard Methods for the Examination of Water and Wastewater

### Comments:

Please direct any inquiries regarding this report to our Client Services group.  
Results relate only to samples as submitted

The test report shall not be reproduced except in full, without the written approval of the laboratory