

The District of Lantzville Annual Water Report ~ 2015 ~



District of Lantzville
Water System Annual Report - 2015

Date of Report:	April 12 th , 2015
Period of Monitoring:	January to December 2015
Water Supply Permit Number:	1310847
Location of Water System:	Lantzville, BC
Name of Owner:	District of Lantzville
Contact Person(s):	Fred Spears Director of Public Works District of Lantzville Phone: 250.390.4006 Fax: 250.390.5188 Email: spears@lantzville.ca Jason Gosling Maintenance Technician II District of Lantzville Phone: 250.390.4006 Fax: 250.390.5188 Email: publicworks@lantzville.ca

Water System Description

Source:

The District of Lantzville has four wells that produce a combined 1.2 cubic meters of water per minute, (264 imperial gallons per minute). Each of the four wells varies in depth from 70 feet (21m) to 120 feet (36m). Within each well there are pumps that range in horsepower from 5hp to 20 hp. The District has a stand-by generator that can supply power to the pumps during a power outage.

The wells are located in a semi-confined aquifer. A semi-confined aquifer is an aquifer partially confined by soil layers of low permeability through which recharge and discharge can still occur.

The wells, while during the winter months artesian, the overall supply drops during the dry season. In addition to the drop in supply, water demands increase substantially during the summer months, as people tend to irrigate their lawns and gardens. Therefore, The District has necessary water restrictions to ensure conservation during these seasonal demands.

The criteria that sets water restrictions is based on an average hourly use of the well pumps for one week and are as follows:

Water Restriction 1: May 1st

Water Restriction 2: When well pumps reach 15 hours per day

Water Restriction 3: When well pumps reach 18 hours per day

Water Restriction 4: When well pumps reach 21 hours per day

Treatment:

The water from the well field is pumped via an isolated supply line to the existing 1854.8 cubic meter (407,999 imperial gallons) concrete reservoir on Ware Road. Prior to the water supply reaching the reservoir, chlorine is injected in very small doses to eliminate the possibility of bacteria growth.

A small pump that is attached to the supply line injects chlorine into the main line entering into the reservoir. The “chlorine pump” is controlled by the Supervisory Control and Data Acquisitions Systems (SCADA) and is activated at the same time the well pumps start. The District is very aware of the amount of chlorine that is being placed in

the system. Currently, staff maintains a chlorine residual of between 0.1 and 0.3 within the distribution system.

Reservoirs:

The District has two reservoirs: one at Ware Road and one at Aulds Road. The Ware Road reservoir consists of a two chamber concrete tank (927.4m³ or 203,999 imperial gallons each) that is partially buried in the ground. With the two chambers, the District has the ability to drain on chamber for cleaning/repairs, while keeping the second chamber in operation. Also, at the Ware Road reservoir, there are booster pumps which alternate in pumping water to a higher elevation reservoir, a permanent generator, the SCADA system that controls both the water and sewer systems in the District.

From the Ware Road reservoir, water is distributed in two directions. Firstly, the water is released from the reservoir via gravity to the lower pressure zone; this zone is mainly any part of the water distribution systems that is north of the Island Highway with the exception of a short portion of Lantzville Road. The second direction has the water being pumped from the Ware Road reservoir to a second reservoir, which is at a higher elevation near Aulds Road.

The Aulds Road reservoir, a 262.76 cubic meter (57,800 imperial gallon) pre-cast concrete circular tank supplies the upper pressure zone. The upper pressure zone consists of any part of the water distribution system that is above (south) of the highway with the exception of a few properties on the North side of the highway.

Distribution System:

The Distribution System consists of 11,013 meters of PVC (plastic) pipe. In addition to the PVC there is 13,620m of AC (asbestos cement) pipe for a total of 24,638 meters.

The following table shows the different pipes and lengths of those pipes that are in the District's water distribution system:

200 Millimeter – PVC	7,845 Meters (M)
250 Millimeter – PVC	1,880 M
300 Millimeter – PVC	818 M
150 Millimeter – PVC	470 M
100 Millimeter – Asbestos Cement (AC)	4,968 M
150 Millimeter – AC	7,607 M
200 Millimeter – AC	985 M
250 Millimeter - AC	60 M

With two separate pressure zones within the District's water system there is a need for interconnection to increase fire flow capacity. A pressure-reducing valve (PRV) allows

this interconnection. When the pressure on the lower side drops (only happens when a large main breaks or a when a fire requires an abundance of water), the PRV opens and water is supplied from the upper pressure zone to the lower pressure zone. When the pressure in the lower zone returns to normal, the PRV then closes, separating the two zones once again.

There are currently 29 dead ends in the water system. There are no areas where the water goes stagnant within the water system. This is due to the Districts Annual Uni-Directional Flushing Program.

Improvement Action and Plans:

The District of Lantzville continues to update and upgrade the water infrastructure.

Scheduled for the 2016 construction season is:

- Replacement of Well #6 and Rehabilitate Well 4, 12 and 9.
- Replace 75 Residential Meters;
- Embark on a Water Master Plan;

Water System Maintenance

Source:

Maintenance on the Wells and Kiosks is as follows:

- Back flush every 7 to 10 years
- Remove brush every 1 to 2 years
- Wire brush and re-paint piping every 2 to 5 years
- Visual check daily
- Annual water sample testing

Treatment:

Maintenance on the Chlorinator is as follows:

- Equipment taken apart and cleaned twice per year
- Hypochlorite solution is added once a week
- Chlorine levels are adjusted as needed

Reservoirs:

Maintenance on the Reservoirs is as follows:

- Drained and cleaned every five years
- Daily/Weekly/Monthly inspections of hatches and venting
- Concrete integrity
- Landscape

Distribution System:

Maintenance of the Distribution System is as follows:

- Entire system flush twice per year
- Hydrant disassemble and re-assemble once per year
- Meter replacement
- Brush around hydrants as necessary
- Weekly water sample collecting
- Leak Detection Program

Water Sampling and Testing Program

As per the requirements of the Vancouver Island Health Authority, the District of Lantzville collects samples from the treated side of the water system on a weekly basis for testing. The following tables show the results from the testing completed in 2015 on a weekly and quarterly basis.

Monitoring for coliform/E-coli, as per Section 11 of the Act and Section 8 of the Water Regulations

DISTRICT OF LANTZVILLE

Facility Location:

7192 Lantzville Road
Lantzville

Facility Information:

Facility Type: 301-10000 (DWT)

Facility Sampling History:

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
6966 Seaside Terrace Lantzville, Lantzville	14-Dec-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	14-Dec-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	14-Dec-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	14-Dec-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	7-Dec-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	7-Dec-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	1-Dec-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	1-Dec-2015	L1	L1
7192 Lantzville Rd/Village Off,	1-Dec-2015	L1	L1

District of Lantzville
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7192 Lantzville Rd - Office, Lantzville, B.C.			
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	23-Nov-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	23-Nov-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	23-Nov-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	16-Nov-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	16-Nov-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	9-Nov-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	9-Nov-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	2-Nov-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	2-Nov-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	26-Oct-2015	1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	26-Oct-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	26-Oct-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	19-Oct-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	19-Oct-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	13-Oct-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	13-Oct-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	7-Oct-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	7-Oct-2015	L1	L1

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6966 Seaside Terrace Lantzville, Lantzville	29-Sep-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	29-Sep-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	21-Sep-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	21-Sep-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	14-Sep-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	14-Sep-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	14-Sep-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	8-Sep-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	8-Sep-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	24-Aug-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	24-Aug-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	24-Aug-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	17-Aug-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	17-Aug-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	10-Aug-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	10-Aug-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	4-Aug-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	4-Aug-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office,	28-Jul-2015	L1	L1

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Lantzville, B.C.

7329 Millard Dr, 7329 Millard Drive, Lantzville	28-Jul-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	20-Jul-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	20-Jul-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	20-Jul-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	13-Jul-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	13-Jul-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	13-Jul-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	13-Jul-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	24-Jun-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	24-Jun-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	15-Jun-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	15-Jun-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	15-Jun-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	9-Jun-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	9-Jun-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	3-Jun-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	3-Jun-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	25-May-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	25-May-2015	L1	L1

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7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	19-May-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	19-May-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	11-May-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	11-May-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	11-May-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	4-May-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	4-May-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	20-Apr-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	20-Apr-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	20-Apr-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	13-Apr-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	13-Apr-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	8-Apr-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	8-Apr-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	30-Mar-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	30-Mar-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	23-Mar-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	23-Mar-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	23-Mar-2015	L1	L1

District of Lantzville
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6966 Seaside Terrace Lantzville, Lantzville	16-Mar-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	16-Mar-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	9-Mar-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	9-Mar-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	3-Mar-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	3-Mar-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	23-Feb-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	23-Feb-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	23-Feb-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	16-Feb-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	16-Feb-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office, Lantzville, B.C.	10-Feb-2015	L1	L1
7430 Aulds Road, 7430 Aulds Road, Lantzville	10-Feb-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	2-Feb-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	2-Feb-2015	L1	L1
6966 Seaside Terrace Lantzville, Lantzville	28-Jan-2015	L1	L1
7345 Venture Rd, 7345 Venture Rd, Lantzville Bc	28-Jan-2015	L1	L1
8020 Lantzville Rd, 8020 Lantzville Road, Lantzville Bc	28-Jan-2015	L1	L1
7192 Lantzville Rd/Village Off, 7192 Lantzville Rd - Office,	19-Jan-2015	L1	L1

District of Lantzville
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Lantzville, B.C.

7430 Aulds Road, 7430 Aulds Road, Lantzville	19-Jan-2015	L1	L1
7052 Caillet Rd, 7052 Caillet Rd, Lantzville	12-Jan-2015	L1	L1
7536 Superior Rd, 7536 Superior Rd, Lantzville Bc	12-Jan-2015	L1	L1
6898 Harwood Dr, 6898 Harwood Dr, Lantzville	6-Jan-2015	L1	L1
7329 Millard Dr, 7329 Millard Drive, Lantzville	6-Jan-2015	L1	L1

Annual Untreated Water Testing

The District, on a yearly basis, carries out a broader range of testing than is required on a weekly or quarterly basis.

During the annual sampling, water is collected directly from the well prior to any treatment. These samples are then sent off to a lab that has the capability to carry out the full range of testing required.

The following report from Maxxam Labs is for the untreated water testing the District does on an annual basis. In 2015 Wells 4 and 6 were sampled and tested and the results are as follows:

District of Lantzville Water System Annual Report - 2015



Success Through Science®

Your P.O. #: 559639
Your C.O.C. #: G097807

Attention: Fred Spears

DISTRICT OF LANTZVILLE
7192 Lantzville Rd
PO Box 100
Lantzville, BC
CANADA V0R 2H0

Report Date: 2015/09/24
Report #: R2047372
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B580678

Received: 2015/09/16, 09:00

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity - Water	1	2015/09/16	2015/09/16	BBY6SOP-00026	SM 22 2320 B m
Alkalinity - Water	1	2015/09/16	2015/09/17	BBY6SOP-00026	SM 22 2320 B m
Chloride by Automated Colourimetry	2	N/A	2015/09/16	BBY6SOP-00011	SM 22 4500-Cl- G m
Cyanide SAD (strong acid dissociable)	2	N/A	2015/09/23	BBY6SOP-00004	SM 22 4500-CN O m
Colour (True) by Kone Lab	2	N/A	2015/09/17	BBY6SOP-00057	SM 22 2120 C m
Coliform by membrane filtration	2	N/A	2015/09/16	BBY4SOP-00001	SM 22 9222 m
E.coli by membrane filtration in Water	2	N/A	2015/09/16	BBY4SOP-00001	SM 22 9222 m
Fluoride	2	N/A	2015/09/17	BBY6SOP-00048	SM 22 4500-F C m
Hardness (calculated as CaCO ₃)	2	N/A	2015/09/21	BBY7SOP-00002	EPA 6020a R1 m
Heterotrophic Plate Count (MF) in Water	2	N/A	2015/09/16	BBY4SOP-00003	SM 21 9215
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2015/09/21	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved)	2	N/A	2015/09/19	BBY7SOP-00002	EPA 6020A R1 m
Ammonia-N (Preserved)	2	N/A	2015/09/18	BBY6SOP-00009	SM 22 4500-NH3- G m
Nitrate + Nitrite (N)	2	N/A	2015/09/16	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrite (N) by CFA	2	N/A	2015/09/16	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N)	2	N/A	2015/09/16	BBY6SOP-00010	SM 22 4500-NO3 I m
Filter and HNO ₃ Preserve for Metals	2	N/A	2015/09/16	BBY7 WI-00004	BCMOE Reqs 08/14
pH Water (1)	1	N/A	2015/09/16	BBY6SOP-00026	SM 22 4500-H+ B m
pH Water (1)	1	N/A	2015/09/17	BBY6SOP-00026	SM 22 4500-H+ B m
Sulphate by Automated Colourimetry	2	N/A	2015/09/16	BBY6SOP-00017	SM 22 4500-SO42- E m
Total Dissolved Solids (Filt. Residue)	2	2015/09/22	2015/09/23	BBY6SOP-00033	SM 22 2540 C m
Turbidity	2	N/A	2015/09/16	BBY6SOP-00027	SM 22 2130 B m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/PHA Standard Method holding time.

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Success Through Science

Your P.O. #: 559639
Your C.O.C. #: G097807

Attention: Fred Spears
DISTRICT OF LANTZVILLE
7192 Lantzville Rd
PO Box 100
Lantzville, BC
CANADA V0R 2H0

Report Date: 2015/09/24
Report #: R2047372
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B580678
Received: 2015/09/16, 09:00

Encryption Key



Maxxam
24 Sep 2015 19:09:26 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Tanya Eugene, M.Sc., Project Manager
Email: TEugene@maxxam.ca
Phone# (604)639-2609

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Maxxam Analytics International Corporation c/o Maxxam Analytics Burnaby: 4606 Canada Way V5G 3K5 Telephone(604) 734-7276 Fax(604) 731-2386

District of Lantzville
Water System Annual Report - 2015



Maxxam Job #: 8580678
Report Date: 2015/09/24

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DISTRICT OF LANTZVILLE
Your P.O. #: 559639

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		ND3358	ND3359		
Sampling Date		2015/09/15 08:45	2015/09/15 09:00		
COC Number		G097807	G097807		
	UNITS	WELL 6	WELL 4	RDL	QC Batch
ANIONS					
Nitrite (N)	mg/L	<0.0050	<0.0050	0.0050	8040170
Calculated Parameters					
Filter and HNO3 Preservation	N/A	LAB	LAB	N/A	8039400
Nitrate (N)	mg/L	1.03	1.59	0.020	8039531
Misc. Inorganics					
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.00050	<0.00050	0.00050	8047924
Fluoride (F)	mg/L	0.031	0.021	0.010	8041937
Alkalinity (Total as CaCO3)	mg/L	76.0	68.1	0.50	8040480
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	0.50	8040480
Bicarbonate (HCO3)	mg/L	92.7	83.0	0.50	8040480
Carbonate (CO3)	mg/L	<0.50	<0.50	0.50	8040480
Hydroxide (OH)	mg/L	<0.50	<0.50	0.50	8040480
Anions					
Dissolved Sulphate (SO4)	mg/L	6.09	7.84	0.50	8040331
Dissolved Chloride (Cl)	mg/L	16	25	0.50	8040327
MISCELLANEOUS					
True Colour	Col. Unit	<5.0	21.3	5.0	8041760
Nutrients					
Total Ammonia (N)	mg/L	0.0094	0.012	0.0050	8043294
Nitrate plus Nitrite (N)	mg/L	1.03	1.59	0.020	8040168
Physical Properties					
pH	pH	7.72	7.56	N/A	8040483
Physical Properties					
Total Dissolved Solids	mg/L	122	164	10	8046126
Turbidity	NTU	<0.10	<0.10	0.10	8039647
RDL = Reportable Detection Limit N/A = Not Applicable					

District of Lantzville
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Maxxam Job #: B580678
Report Date: 2015/09/24

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DISTRICT OF LANTZVILLE
Your P.O. #: 559639

CSR DISSOLVED METALS IN WATER (WATER)

Maxxam ID		ND3358	ND3359		
Sampling Date		2015/09/15 08:45	2015/09/15 09:00		
COC Number		G097807	G097807		
	UNITS	WELL 6	WELL 4	RDL	QC Batch
Misc. Inorganics					
Dissolved Hardness [CaCO ₃]	mg/L	84.4	91.0	0.50	8039313
Dissolved Metals by ICPMS					
Dissolved Aluminum (Al)	ug/L	5.1	5.7	3.0	8041019
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	8041019
Dissolved Arsenic (As)	ug/L	0.22	0.13	0.10	8041019
Dissolved Barium (Ba)	ug/L	2.9	9.4	1.0	8041019
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	8041019
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	8041019
Dissolved Boron (B)	ug/L	136	115	50	8041019
Dissolved Cadmium (Cd)	ug/L	<0.010	0.011	0.010	8041019
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	8041019
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	8041019
Dissolved Copper (Cu)	ug/L	2.57	2.04	0.20	8041019
Dissolved Iron (Fe)	ug/L	<5.0	<5.0	5.0	8041019
Dissolved Lead (Pb)	ug/L	0.38	0.37	0.20	8041019
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	8041019
Dissolved Manganese (Mn)	ug/L	<1.0	<1.0	1.0	8041019
Dissolved Mercury (Hg)	ug/L	<0.050	<0.050	0.050	8041019
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	1.0	8041019
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	1.0	8041019
Dissolved Selenium (Se)	ug/L	<0.10	0.11	0.10	8041019
Dissolved Silicon (Si)	ug/L	13000	12800	100	8041019
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	8041019
Dissolved Strontium (Sr)	ug/L	63.8	82.6	1.0	8041019
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	8041019
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	8041019
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	8041019
Dissolved Uranium (U)	ug/L	<0.10	<0.10	0.10	8041019
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	8041019
Dissolved Zinc (Zn)	ug/L	<5.0	6.3	5.0	8041019
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	8041019
Dissolved Calcium (Ca)	mg/L	21.9	24.7	0.050	8039315
Dissolved Magnesium (Mg)	mg/L	7.20	7.13	0.050	8039315
Dissolved Potassium (K)	mg/L	0.439	0.415	0.050	8039315
Dissolved Sodium (Na)	mg/L	10.3	11.8	0.050	8039315
Dissolved Sulphur (S)	mg/L	<3.0	<3.0	3.0	8039315
RDL = Reportable Detection Limit					

District of Lantzville
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Maxxam Job #: B580678
Report Date: 2015/09/24

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GENERAL COMMENTS

Results relate only to the items tested.

District of Lantzville
Water System Annual Report - 2015



Maxxam Job #: B580678
Report Date: 2015/09/24

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QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8039647	Turbidity	2015/09/16								
8040168	Nitrate plus Nitrite (N)	2015/09/16	104	80 - 120	102	80 - 120	<0.10	NTU	4.0	20
8040170	Nitrite (N)	2015/09/16	100	80 - 120	108	80 - 120	<0.020	mg/L	0.064	25
8040327	Dissolved Chloride (Cl)	2015/09/16	NC	80 - 120	106	80 - 120	<0.0050	mg/L	NC	20
8040331	Dissolved Sulphate (SO4)	2015/09/16	100	80 - 120	109	80 - 120	<0.50	mg/L	NC	20
8040480	Alkalinity (pp as CaCO3)	2015/09/17			89	80 - 120	<0.50	mg/L	0.87	20
8040480	Alkalinity (Total as CaCO3)	2015/09/17	NC	80 - 120	97	80 - 120	<0.50	mg/L	NC	20
8040480	Bicarbonate (HCO3)	2015/09/17					0.94, RDL=0.50	mg/L	0.63	20
8040480	Carbonate (CO3)	2015/09/17					1.15, RDL=0.50	mg/L	0.63	20
8040480	Hydroxide (OH)	2015/09/17					<0.50	mg/L	NC	20
8040483	pH	2015/09/17			102	97 - 103			0	N/A
8041019	Dissolved Aluminum (Al)	2015/09/19	105	80 - 120	114	80 - 120	<3.0	ug/L	NC	20
8041019	Dissolved Antimony (Sb)	2015/09/19	105	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
8041019	Dissolved Arsenic (As)	2015/09/19	NC	80 - 120	97	80 - 120	<0.10	ug/L	1.6	20
8041019	Dissolved Barium (Ba)	2015/09/19	NC	80 - 120	98	80 - 120	<1.0	ug/L	3.5	20
8041019	Dissolved Beryllium (Be)	2015/09/19	98	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
8041019	Dissolved Bismuth (Bi)	2015/09/19	97	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
8041019	Dissolved Boron (B)	2015/09/19					<5.0	ug/L	2.8	20
8041019	Dissolved Cadmium (Cd)	2015/09/19	99	80 - 120	101	80 - 120	<0.010	ug/L	23 (1)	20
8041019	Dissolved Chromium (Cr)	2015/09/19	103	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
8041019	Dissolved Cobalt (Co)	2015/09/19	99	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
8041019	Dissolved Copper (Cu)	2015/09/19	98	80 - 120	95	80 - 120	<0.20	ug/L	NC	20
8041019	Dissolved Iron (Fe)	2015/09/19	104	80 - 120	115	80 - 120	<5.0	ug/L	NC	20
8041019	Dissolved Lead (Pb)	2015/09/19	98	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
8041019	Dissolved Lithium (Li)	2015/09/19	NC	80 - 120	102	80 - 120	<5.0	ug/L	0.0067	20
8041019	Dissolved Manganese (Mn)	2015/09/19	NC	80 - 120	99	80 - 120	<1.0	ug/L	1.8	20
8041019	Dissolved Mercury (Hg)	2015/09/19	90	80 - 120	101	80 - 120	<0.050	ug/L		
8041019	Dissolved Molybdenum (Mo)	2015/09/19	NC	80 - 120	106	80 - 120	<1.0	ug/L	2.7	20
8041019	Dissolved Nickel (Ni)	2015/09/19	96	80 - 120	96	80 - 120	<1.0	ug/L	NC	20
8041019	Dissolved Selenium (Se)	2015/09/19	90	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
8041019	Dissolved Silicon (Si)	2015/09/19					<100	ug/L	7.4	20
8041019	Dissolved Silver (Ag)	2015/09/19	107	80 - 120	103	80 - 120	<0.020	ug/L	NC	20

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Maxxam Job #: 8580678
Report Date: 2015/09/24

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QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8041019	Dissolved Strontium (Sr)	2015/09/19	NC	80 - 120	99	80 - 120	<1.0	ug/L	0.35	20
8041019	Dissolved Thallium (Tl)	2015/09/19	101	80 - 120	101	80 - 120	<0.050	ug/L	NC	20
8041019	Dissolved Tin (Sn)	2015/09/19	99	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
8041019	Dissolved Titanium (Ti)	2015/09/19	100	80 - 120	91	80 - 120	<5.0	ug/L	NC	20
8041019	Dissolved Uranium (U)	2015/09/19	97	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
8041019	Dissolved Vanadium (V)	2015/09/19	96	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
8041019	Dissolved Zinc (Zn)	2015/09/19	110	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8041760	Dissolved Zirconium (Zr)	2015/09/19					<0.50	ug/L	NC	20
8041760	True Colour	2015/09/17			106	80 - 120	<5.0	Col. Unit	NC	20
8041937	Fluoride (F)	2015/09/17	NC	80 - 120	100	80 - 120	0.015, RDL=0.010	mg/L	3.2	20
8043294	Total Ammonia (N)	2015/09/18	NC	80 - 120	94	80 - 120	<0.0050	mg/L	0.20	20
8046126	Total Dissolved Solids	2015/09/23	103	80 - 120	104	80 - 120	<10	mg/L	1.7	20
8047924	Strong Acid Dissoc. Cyanide (CN)	2015/09/23			103	80 - 120	0.00074, RDL=0.00050	mg/L	NC	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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