

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

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Page: 1 of 4

Barry Botnen
UND-Energy & Environmental
15 N. 23rd St.
Grand Forks ND 58201

Report Date: 14 Sep 21
Lab Number: 21-W3137
Work Order #: 82-2307
Account #: 007033
Date Sampled: 30 Aug 21 10:45
Date Received: 30 Aug 21 13:10
Sampled By: MVTL Field Services

Project Name: Center USGS Well

PO #: B. Botnen

Sample Description: USGS Well

Temp at Receipt: 9.3C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	31 Aug 21	RAA
pH - Field	8.46	units	NA	SM 4500 H+ B	30 Aug 21 10:45	JSM
Temperature - Field	13.5	Degrees C	NA	SM 2550B	30 Aug 21 10:45	JSM
Total Alkalinity	948	mg/l CaCO3	20	SM2320B-11	31 Aug 21 17:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	31 Aug 21 17:00	RAA
Bicarbonate	909	mg/l CaCO3	20	SM2320B-11	31 Aug 21 17:00	RAA
Carbonate	39	mg/l CaCO3	20	SM2320B-11	31 Aug 21 17:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	31 Aug 21 17:00	RAA
Conductivity - Field	2623	umhos/cm	1	EPA 120.1	30 Aug 21 10:45	JSM
Tot Dis Solids(Summation)	1540	mg/l	12.5	SM1030-F	2 Sep 21 11:43	Calculated
Cation Summation	29.4	meq/L	NA	SM1030-F	2 Sep 21 11:20	Calculated
Anion Summation	27.0	meq/L	NA	SM1030-F	2 Sep 21 11:43	Calculated
Percent Error	4.18	%	NA	SM1030-F	2 Sep 21 11:43	Calculated
Bromide	2.51	mg/l	0.100	EPA 300.0	13 Sep 21 15:47	RMV
Total Organic Carbon	2.0	mg/l	0.5	SM5310C-11	3 Sep 21 13:29	NAS
Dissolved Organic Carbon	2.1	mg/l	0.5	SM5310C-96	3 Sep 21 13:29	NAS
Fluoride	3.70	mg/l	0.10	SM4500-F-C	31 Aug 21 17:00	RAA
Sulfate	< 5	mg/l	5.00	ASTM D516-11	1 Sep 21 10:57	SD
Chloride	286	mg/l	2.0	SM4500-Cl-E-11	1 Sep 21 14:43	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	2 Sep 21 11:43	SD
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	31 Aug 21 13:11	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	3 Sep 21 8:56	SD
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	3 Sep 21 8:56	SD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	1 Sep 21 12:57	MDE

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: ND # ND-00016

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Sampled By: MVTL Field Services

Project Name: Center USGS Well

PO #: B. Botnen

Sample Description: USGS Well

Temp at Receipt: 9.3C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	1 Sep 21 14:26	MDE
Total Dissolved Solids	1670	mg/l	10	USGS I1750-85	3 Sep 21 14:43	RAA
Calcium - Total	3.5	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Magnesium - Total	< 1	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Sodium - Total	675	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Potassium - Total	2.5	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Lithium - Total	0.083	mg/l	0.020	6010D	9 Sep 21 10:31	MDE
Aluminum - Total	< 0.1	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Iron - Total	0.29	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Silicon - Total	5.02	mg/l	0.10	6010D	9 Sep 21 14:18	MDE
Strontium - Total	0.15	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Zinc - Total	< 0.05	mg/l	0.05	6010D	1 Sep 21 10:53	MDE
Boron - Total	2.81	mg/l	0.10	6010D	2 Sep 21 16:20	MDE
Calcium - Dissolved	3.4	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Magnesium - Dissolved	< 1	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Sodium - Dissolved	670	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Potassium - Dissolved	2.7	mg/l	1.0	6010D	2 Sep 21 11:20	MDE
Lithium - Dissolved	0.086	mg/l	0.020	6010D	9 Sep 21 11:31	MDE
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Iron - Dissolved	0.20	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Silicon - Dissolved	4.93	mg/l	0.10	6010D	9 Sep 21 14:18	MDE
Strontium - Dissolved	0.15	mg/l	0.10	6010D	1 Sep 21 10:53	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	1 Sep 21 10:53	MDE
Boron - Dissolved	2.79	mg/l	0.10	6010D	2 Sep 21 15:20	MDE

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Project Name: Center USGS Well

PO #: B. Botnen

Sample Description: USGS Well

Temp at Receipt: 9.3C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Antimony - Total	< 0.001	mg/l	0.0010	6020B	8 Sep 21 12:29	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Barium - Total	0.0966	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 12:29	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 12:29	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Copper - Total	< 0.002	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Lead - Total	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 12:29	MDE
Manganese - Total	0.0063	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Molybdenum - Total	0.0057	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Nickel - Total	< 0.005 ^	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	8 Sep 21 12:29	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 12:29	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 12:29	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	8 Sep 21 12:29	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	8 Sep 21 10:01	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Barium - Dissolved	0.0910	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 10:01	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 10:01	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Copper - Dissolved	< 0.002	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE

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Sampled By: MVTL Field Services

Project Name: Center USGS Well

PO #: B. Botnen

Sample Description: USGS Well

Temp at Receipt: 9.3C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 10:01	MDE
Manganese - Dissolved	0.0052	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Molybdenum - Dissolved	0.0051	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Nickel - Dissolved	< 0.005 ^	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	8 Sep 21 10:01	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 10:01	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	8 Sep 21 10:01	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	8 Sep 21 10:01	MDE

Bromide was analyzed at MVTL, New Ulm, MN.
ND Certification #:R-040

^ Elevated result due to instrument performance at the
lower limit of quantification (LLOQ).

Approved by:

Claudette K. Carroll

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

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