

# 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

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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: 23 Aug 21  
Lab Number: 21-W2892  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 15:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	12 Aug 21	RAA
pH	* 7.8	units	N/A	SM4500-H+-B-11	13 Aug 21 17:00	RAA
Conductivity (EC)	1320	umhos/cm	N/A	SM2510B-11	12 Aug 21 17:00	RAA
pH - Field	7.28	units	NA	SM 4500 H+ B	11 Aug 21 15:00	
Temperature - Field	17.6	Degrees C	NA	SM 2550B	11 Aug 21 15:00	
Total Alkalinity	464	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Bicarbonate	464	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Tot Dis Solids(Summation)	812	mg/l	12.5	SM1030-F	19 Aug 21 14:04	Calculated
Percent Sodium of Cations	54.8	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	329	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	19.3	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	14.8	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	14.2	meq/L	NA	SM1030-F	16 Aug 21 12:01	Calculated
Percent Error	1.99	%	NA	SM1030-F	19 Aug 21 14:04	Calculated
Sodium Adsorption Ratio	4.46		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 12:10	RMV
Total Organic Carbon	4.8	mg/l	0.5	SM5310C-11	13 Aug 21 18:17	NAS
Dissolved Organic Carbon	4.5	mg/l	0.5	SM5310C-96	13 Aug 21 18:17	NAS
Fluoride	0.32	mg/l	0.10	SM4500-F-C	12 Aug 21 17:00	RAA
Sulfate	222	mg/l	5.00	ASTM D516-11	16 Aug 21 11:34	EV
Chloride	10.4	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:01	SD
Nitrate-Nitrite as N	0.30	mg/l	0.20	EPA 353.2	12 Aug 21 15:36	SD

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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Report Date: 23 Aug 21  
Lab Number: 21-W2892  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 15:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 10:40	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 11:43	MDE
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 12:58	MDE
Total Dissolved Solids	832	mg/l	10	USGS I1750-85	13 Aug 21 15:00	RAA
Calcium - Total	76.7	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Magnesium - Total	33.5	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Sodium - Total	186	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Potassium - Total	4.7	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Lithium - Total	0.048	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Iron - Total	1.03	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Silicon - Total	11.5	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	1.14	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Zinc - Total	0.05	mg/l	0.05	6010D	16 Aug 21 11:31	SZ
Boron - Total	0.36	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	75.9	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	33.0	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	187	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	4.9	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.043	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 11:06	MDE
Iron - Dissolved	0.30	mg/l	0.10	6010D	19 Aug 21 11:06	MDE
Silicon - Dissolved	11.4	mg/l	0.10	6010D	17 Aug 21 12:40	SZ

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Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Strontium - Dissolved	1.14	mg/l	0.10	6010D	19 Aug 21 11:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 11:06	MDE
Boron - Dissolved	0.35	mg/l	0.10	6010D	20 Aug 21 11:34	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020B	20 Aug 21 11:16	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Barium - Total	0.0947	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Copper - Total	0.0235	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Lead - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Manganese - Total	0.2512	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Nickel - Total	0.0053	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	20 Aug 21 11:16	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	20 Aug 21 12:22	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Barium - Dissolved	0.0903	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

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Account #: 007033  
Date Sampled: 11 Aug 21 15:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Copper - Dissolved	0.0074	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Manganese - Dissolved	0.2518	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Nickel - Dissolved	0.0058	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	20 Aug 21 12:22	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

\* Holding time exceeded

Approved by:

*Claudette K. Carroll*

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

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Report Date: 23 Aug 21  
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Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 16:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1 Dup

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	12 Aug 21	RAA
pH	* 7.8	units	N/A	SM4500-H+-B-11	13 Aug 21 17:00	RAA
Conductivity (EC)	1298	umhos/cm	N/A	SM2510B-11	12 Aug 21 17:00	RAA
Total Alkalinity	468	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Bicarbonate	468	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Tot Dis Solids(Summation)	816	mg/l	12.5	SM1030-F	19 Aug 21 14:04	Calculated
Percent Sodium of Cations	52.8	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	321	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	18.8	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	14.9	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	14.5	meq/L	NA	SM1030-F	16 Aug 21 12:01	Calculated
Percent Error	1.56	%	NA	SM1030-F	19 Aug 21 14:04	Calculated
Sodium Adsorption Ratio	4.40		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 12:31	RMV
Total Organic Carbon	4.6	mg/l	0.5	SM5310C-11	13 Aug 21 18:17	NAS
Dissolved Organic Carbon	4.5	mg/l	0.5	SM5310C-96	13 Aug 21 18:17	NAS
Fluoride	0.32	mg/l	0.10	SM4500-F-C	12 Aug 21 17:00	RAA
Sulfate	232	mg/l	5.00	ASTM D516-11	16 Aug 21 11:34	EV
Chloride	10.3	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:01	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 15:36	SD
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 10:40	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD

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Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1 Dup

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 11:43	MDE
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 12:58	MDE
Total Dissolved Solids	824	mg/l	10	USGS 11750-85	13 Aug 21 15:00	RAA
Calcium - Total	74.7	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Magnesium - Total	32.6	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Sodium - Total	181	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Potassium - Total	4.7	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Lithium - Total	0.046	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Iron - Total	0.92	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Silicon - Total	11.5	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	1.13	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Zinc - Total	< 0.05	mg/l	0.05	6010D	16 Aug 21 11:31	SZ
Boron - Total	0.36	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	75.6	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	33.4	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	190	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	5.0	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.043	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Iron - Dissolved	0.23	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Silicon - Dissolved	11.4	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	1.16	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 12:06	MDE

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Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1 Dup

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	0.35	mg/l	0.10	6010D	20 Aug 21 11:34	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020B	20 Aug 21 11:16	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Barium - Total	0.0954	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Copper - Total	0.0200	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Lead - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Manganese - Total	0.2528	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Nickel - Total	0.0055	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	20 Aug 21 11:16	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	20 Aug 21 12:22	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Barium - Dissolved	0.0909	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Copper - Dissolved	0.0021	mg/l	0.0020	6020B	20 Aug 21 12:22	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

# MVTL

## MINNESOTA VALLEY TESTING LABORATORIES, INC.

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Page: 4 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2893  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 16:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-MPC-WS-1 Dup

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Manganese - Dissolved	0.2476	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Nickel - Dissolved	0.0053	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	20 Aug 21 12:22	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

\* Holding time exceeded

Approved by:

*Claudette K. Carroll*

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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

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! = Due to sample quantity                    + = Due to internal standard response

CERTIFICATION: ND # ND-00016



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Page: 1 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2894  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 17:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W289

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	12 Aug 21	RAA
pH	* 8.5	units	N/A	SM4500-H+-B-11	13 Aug 21 17:00	RAA
Conductivity (EC)	1846	umhos/cm	N/A	SM2510B-11	12 Aug 21 17:00	RAA
Total Alkalinity	883	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Bicarbonate	855	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Carbonate	28	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Tot Dis Solids(Summation)	1090	mg/l	12.5	SM1030-F	19 Aug 21 14:04	Calculated
Percent Sodium of Cations	96.4	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	14.6	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	0.85	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	20.3	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	19.8	meq/L	NA	SM1030-F	16 Aug 21 12:01	Calculated
Percent Error	1.07	%	NA	SM1030-F	19 Aug 21 14:04	Calculated
Sodium Adsorption Ratio	51.2		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 12:52	RMV
Total Organic Carbon	6.3	mg/l	0.5	SM5310C-11	13 Aug 21 18:17	NAS
Dissolved Organic Carbon	7.1	mg/l	0.5	SM5310C-96	13 Aug 21 18:17	NAS
Fluoride	1.96	mg/l	0.10	SM4500-F-C	12 Aug 21 17:00	RAA
Sulfate	93.2	mg/l	5.00	ASTM D516-11	16 Aug 21 11:34	EV
Chloride	8.6	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:01	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 15:36	SD
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 10:40	SD
Phosphorus as P - Total	0.31	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD

RL = Method Reporting Limit

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

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! = Due to sample quantity                      + = Due to internal standard response

CERTIFICATION: ND # ND-00016

# MVTL

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Page: 2 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2894  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 17:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W289

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	0.31	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 11:43	MDE
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 12:58	MDE
Total Dissolved Solids	1180	mg/l	10	USGS 11750-85	13 Aug 21 15:00	RAA
Calcium - Total	3.2	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Magnesium - Total	1.6	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Sodium - Total	449	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Potassium - Total	2.4	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Lithium - Total	0.051	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	0.35	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Iron - Total	0.51	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Silicon - Total	4.05	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	0.11	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Zinc - Total	< 0.05	mg/l	0.05	6010D	16 Aug 21 11:31	SZ
Boron - Total	0.46	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	2.4	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	1.3	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	459	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	2.3	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.049	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Iron - Dissolved	0.11	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Silicon - Dissolved	3.22	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	0.11	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 12:06	MDE

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! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: ND # ND-00016

# MVTL

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Page: 3 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2894  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 17:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W289

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	0.45	mg/l	0.10	6010D	20 Aug 21 11:34	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020B	20 Aug 21 11:16	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Barium - Total	0.0786	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Copper - Total	0.0047	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Lead - Total	0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Manganese - Total	0.0194	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Nickel - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	20 Aug 21 11:16	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	20 Aug 21 12:22	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Barium - Dissolved	0.0750	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Copper - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

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CERTIFICATION: ND # ND-00016

# MVTL

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Page: 4 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2894  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 17:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W289

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Manganese - Dissolved	0.0080	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Nickel - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	20 Aug 21 12:22	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

\* Holding time exceeded

Approved by:

*Claudette K. Carroll*

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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

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! = Due to sample quantity

# = Due to concentration of other analytes

+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

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Page: 1 of 4

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

Report Date: 23 Aug 21  
Lab Number: 21-W2895  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 19:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W510

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	12 Aug 21	RAA
pH	* 8.4	units	N/A	SM4500-H+-B-11	16 Aug 21 13:30	RAA
Conductivity (EC)	2699	umhos/cm	N/A	SM2510B-11	12 Aug 21 17:00	RAA
Total Alkalinity	1350	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Phenolphthalein Alk	25	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Bicarbonate	1300	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Carbonate	50	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 17:00	RAA
Tot Dis Solids(Summation)	1580	mg/l	12.5	SM1030-F	19 Aug 21 14:04	Calculated
Percent Sodium of Cations	98.0	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	17.8	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	1.04	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	28.1	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	30.6	meq/L	NA	SM1030-F	16 Aug 21 12:01	Calculated
Percent Error	-4.24	%	NA	SM1030-F	19 Aug 21 14:04	Calculated
Sodium Adsorption Ratio	65.2		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	0.740	mg/l	0.100	EPA 300.0	18 Aug 21 13:13	RMV
Total Organic Carbon	3.5	mg/l	0.5	SM5310C-11	13 Aug 21 18:17	NAS
Dissolved Organic Carbon	3.4	mg/l	0.5	SM5310C-96	13 Aug 21 18:17	NAS
Fluoride	0.88	mg/l	0.10	SM4500-F-C	12 Aug 21 17:00	RAA
Sulfate	13.4	mg/l	5.00	ASTM D516-11	16 Aug 21 11:34	EV
Chloride	116	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:01	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 15:36	SD
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	12 Aug 21 10:40	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD

RL = Method Reporting Limit

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! = Due to sample quantity                      + = Due to internal standard response

CERTIFICATION: ND # ND-00016

# MVTL

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

Report Date: 23 Aug 21  
Lab Number: 21-W2895  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 19:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W510

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	13 Aug 21 13:53	SD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 11:43	MDE
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 12:58	MDE
Total Dissolved Solids	1690	mg/l	10	USGS 11750-85	13 Aug 21 15:00	RAA
Calcium - Total	3.5	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Magnesium - Total	2.2	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Sodium - Total	632	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Potassium - Total	2.7	mg/l	1.0	6010D	19 Aug 21 9:54	SZ
Lithium - Total	0.105	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Iron - Total	0.43	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Silicon - Total	5.69	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	0.18	mg/l	0.10	6010D	16 Aug 21 11:31	SZ
Zinc - Total	0.23	mg/l	0.05	6010D	16 Aug 21 11:31	SZ
Boron - Total	1.55	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	3.6	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	2.2	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	635	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	2.8	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.100	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Iron - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Silicon - Dissolved	5.51	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	0.18	mg/l	0.10	6010D	19 Aug 21 12:06	MDE
Zinc - Dissolved	0.10	mg/l	0.05	6010D	19 Aug 21 12:06	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

# MVTL

## MINNESOTA VALLEY TESTING LABORATORIES, INC.

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

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ACIL

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

Report Date: 23 Aug 21  
Lab Number: 21-W2895  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 19:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W510

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	1.50	mg/l	0.10	6010D	20 Aug 21 11:34	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020B	20 Aug 21 11:16	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Barium - Total	0.1028	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Copper - Total	0.0058	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Lead - Total	0.0020	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Manganese - Total	0.0242	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Nickel - Total	0.0023	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	20 Aug 21 11:16	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	20 Aug 21 12:22	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Barium - Dissolved	0.0964	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Copper - Dissolved	0.0029	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

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CERTIFICATION: ND # ND-00016

# MVTL

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UND-Energy & Environmental  
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Lab Number: 21-W2895  
Work Order #: 82-2103  
Account #: 007033  
Date Sampled: 11 Aug 21 19:00  
Date Received: 12 Aug 21 8:00  
Sampled By: Client

Project Name: ND Carbon Safe  
Sample Description: NDCS-W510

Temp at Receipt: 4.4C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Manganese - Dissolved	0.0240	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Nickel - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	20 Aug 21 12:22	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

\* Holding time exceeded

Approved by:

*Claudette K. Carroll*

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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

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CERTIFICATION: ND # ND-00016