

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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AN EQUAL OPPORTUNITY EMPLOYER

Page: 1 of 4

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

Report Date: 7 Sep 21
Lab Number: 21-W2920
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 10:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W269

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	13 Aug 21	RAA
pH	* 7.6	units	N/A	SM4500-H+-B-11	13 Aug 21 18:00	RAA
Conductivity (EC)	1968	umhos/cm	N/A	SM2510B-11	13 Aug 21 18:00	RAA
Total Alkalinity	396	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Bicarbonate	396	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Tot Dis Solids(Summation)	1370	mg/l	12.5	SM1030-F	20 Aug 21 9:07	Calculated
Percent Sodium of Cations	41.6	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	710	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	41.5	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	24.2	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	21.7	meq/L	NA	SM1030-F	20 Aug 21 9:07	Calculated
Percent Error	5.42	%	NA	SM1030-F	20 Aug 21 9:07	Calculated
Sodium Adsorption Ratio	3.74		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 13:34	RMV
Total Organic Carbon	7.5	mg/l	0.5	SM5310C-11	13 Aug 21 21:34	NAS
Dissolved Organic Carbon	7.6	mg/l	0.5	SM5310C-96	13 Aug 21 21:34	NAS
Fluoride	0.23	mg/l	0.10	SM4500-F-C	13 Aug 21 18:00	RAA
Sulfate	649	mg/l	5.00	ASTM D516-11	16 Aug 21 12:13	EV
Chloride	9.4	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:36	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	20 Aug 21 9:07	EV
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	13 Aug 21 14:52	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 9:25	EMS

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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Lab Number: 21-W2920
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 10:30
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Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W269

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS
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	1540	mg/l	10	USGS 11750-85	13 Aug 21 15:00	RAA
Calcium - Total	170	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Magnesium - Total	69.3	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Sodium - Total	229	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Potassium - Total	5.0	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Lithium - Total	0.059	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Iron - Total	7.05	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Silicon - Total	13.5	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	2.05	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Zinc - Total	0.05	mg/l	0.05	6010D	16 Aug 21 12:31	SZ
Boron - Total	0.27	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	168	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	69.5	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	223	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	5.2	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.056	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Iron - Dissolved	6.54	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Silicon - Dissolved	13.5	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	2.06	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 13:06	MDE

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Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W269

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	0.27	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	0.0563	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	< 0.002	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	0.5066	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	0.0025	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	0.0522	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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Report Date: 7 Sep 21
Lab Number: 21-W2920
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 10:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W269

Temp at Receipt: 7.0C 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	0.5240	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	0.0025	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

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! = Due to sample quantity

= Due to concentration of other analytes

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Report Date: 7 Sep 21
Lab Number: 21-W2921
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 14:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W217

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	13 Aug 21	RAA
pH	* 8.2	units	N/A	SM4500-H+-B-11	13 Aug 21 18:00	RAA
Conductivity (EC)	2780	umhos/cm	N/A	SM2510B-11	13 Aug 21 18:00	RAA
Total Alkalinity	1040	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Bicarbonate	1040	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Tot Dis Solids(Summation)	1660	mg/l	12.5	SM1030-F	20 Aug 21 9:07	Calculated
Percent Sodium of Cations	100	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	13.6	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	0.80	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	26.9	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	32.3	meq/L	NA	SM1030-F	20 Aug 21 9:07	Calculated
Percent Error	-9.18	%	NA	SM1030-F	20 Aug 21 9:07	Calculated
Sodium Adsorption Ratio	73.0		NA	USDA 20b	19 Aug 21 14:04	Calculated
Free Carbon Dioxide	12.9	mg/L	NA			Calculated
Total Carbon Dioxide	921	mg/L	NA			Calculated
Bromide	2.90	mg/l	0.100	EPA 300.0	18 Aug 21 13:55	RMV
Total Organic Carbon	1.7	mg/l	0.5	SM5310C-11	13 Aug 21 21:34	NAS
Dissolved Organic Carbon	1.8	mg/l	0.5	SM5310C-96	13 Aug 21 21:34	NAS
Fluoride	3.11	mg/l	0.10	SM4500-F-C	13 Aug 21 18:00	RAA
Sulfate	< 5	mg/l	5.00	ASTM D516-11	16 Aug 21 12:13	EV
Chloride	408	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:36	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	20 Aug 21 9:07	EV

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Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 14:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W217

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	13 Aug 21 14:52	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 9:25	EMS
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS
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	1540	mg/l	10	USGS I1750-85	13 Aug 21 15:00	RAA
Calcium - Total	3.8	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Magnesium - Total	1.0	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Sodium - Total	619	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Potassium - Total	2.3	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Lithium - Total	0.088	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Iron - Total	0.17	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Silicon - Total	5.28	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	0.15	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Zinc - Total	0.12	mg/l	0.05	6010D	16 Aug 21 12:31	SZ
Boron - Total	2.88	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	3.8	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	< 1	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	612	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	2.4	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.088	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Iron - Dissolved	0.15	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Silicon - Dissolved	5.25	mg/l	0.10	6010D	17 Aug 21 12:40	SZ

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Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W217

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Strontium - Dissolved	0.16	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Zinc - Dissolved	0.12	mg/l	0.05	6010D	19 Aug 21 13:06	MDE
Boron - Dissolved	2.89	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	0.1130	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	< 0.002	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	< 0.005 ^	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	0.0043	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	0.1112	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

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

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Page: 4 of 4

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

Report Date: 7 Sep 21
Lab Number: 21-W2921
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 14:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W217

Temp at Receipt: 7.0C 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	< 0.002	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	< 0.005 ^	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	0.0039	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

^ 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

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

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

Report Date: 7 Sep 21
Lab Number: 21-W2922
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 15:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W1686

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	13 Aug 21	RAA
pH	* 7.2	units	N/A	SM4500-H+-B-11	13 Aug 21 18:00	RAA
Conductivity (EC)	2894	umhos/cm	N/A	SM2510B-11	13 Aug 21 18:00	RAA
Total Alkalinity	530	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Bicarbonate	530	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Tot Dis Solids(Summation)	2420	mg/l	12.5	SM1030-F	20 Aug 21 9:28	Calculated
Percent Sodium of Cations	23.0	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	1440	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	84.5	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	39.2	meq/L	NA	SM1030-F	19 Aug 21 14:04	Calculated
Anion Summation	39.9	meq/L	NA	SM1030-F	20 Aug 21 9:28	Calculated
Percent Error	-0.86	%	NA	SM1030-F	20 Aug 21 9:28	Calculated
Sodium Adsorption Ratio	2.36		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 14:16	RMV
Total Organic Carbon	9.9	mg/l	0.5	SM5310C-11	13 Aug 21 21:34	NAS
Dissolved Organic Carbon	10.1	mg/l	0.5	SM5310C-96	13 Aug 21 21:34	NAS
Fluoride	0.14	mg/l	0.10	SM4500-F-C	13 Aug 21 18:00	RAA
Sulfate	1370	mg/l	5.00	ASTM D516-11	16 Aug 21 12:13	EV
Chloride	25.8	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:36	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	20 Aug 21 9:28	EV
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	13 Aug 21 14:52	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 9:25	EMS

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

Report Date: 7 Sep 21
Lab Number: 21-W2922
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 15:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W1686

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS
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	2680	mg/l	10	USGS 11750-85	13 Aug 21 15:00	RAA
Calcium - Total	364	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Magnesium - Total	130	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Sodium - Total	206	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Potassium - Total	5.4	mg/l	1.0	6010D	19 Aug 21 11:04	SZ
Lithium - Total	0.076	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Iron - Total	4.96	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Silicon - Total	5.11	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	3.62	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Zinc - Total	< 0.05	mg/l	0.05	6010D	16 Aug 21 12:31	SZ
Boron - Total	0.13	mg/l	0.10	6010D	20 Aug 21 9:34	SZ
Calcium - Dissolved	374	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	136	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	207	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	5.8	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.075	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Iron - Dissolved	4.97	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Silicon - Dissolved	5.18	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	3.76	mg/l	0.10	6010D	19 Aug 21 13:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 13:06	MDE

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CERTIFICATION: ND # ND-00016

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

Report Date: 7 Sep 21
Lab Number: 21-W2922
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 15:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W1686

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	0.13	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	0.0270	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	< 0.002	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	0.5100	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	0.0270	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

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

Report Date: 7 Sep 21
Lab Number: 21-W2922
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 15:30
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-W1686

Temp at Receipt: 7.0C 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	0.5124	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

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Page: 1 of 4

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

Report Date: 7 Sep 21
Lab Number: 21-W2923
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 17:00
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-471

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	13 Aug 21	RAA
pH	* 8.5	units	N/A	SM4500-H+-B-11	13 Aug 21 18:00	RAA
Conductivity (EC)	2561	umhos/cm	N/A	SM2510B-11	13 Aug 21 18:00	RAA
Total Alkalinity	1160	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Phenolphthalein Alk	22	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Bicarbonate	1117	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Carbonate	43	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Tot Dis Solids(Summation)	1510	mg/l	12.5	SM1030-F	20 Aug 21 9:28	Calculated
Percent Sodium of Cations	97.8	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	13.8	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	0.80	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	27.0	meq/L	NA	SM1030-F	19 Aug 21 14:06	Calculated
Anion Summation	28.9	meq/L	NA	SM1030-F	20 Aug 21 9:28	Calculated
Percent Error	-3.43	%	NA	SM1030-F	20 Aug 21 9:28	Calculated
Sodium Adsorption Ratio	71.1		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	1.28	mg/l	0.100	EPA 300.0	18 Aug 21 14:37	RMV
Total Organic Carbon	5.2	mg/l	0.5	SM5310C-11	13 Aug 21 21:34	NAS
Dissolved Organic Carbon	5.5	mg/l	0.5	SM5310C-96	13 Aug 21 21:34	NAS
Fluoride	1.12	mg/l	0.10	SM4500-F-C	13 Aug 21 18:00	RAA
Sulfate	< 5	mg/l	5.00	ASTM D516-11	16 Aug 21 12:13	EV
Chloride	201	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 12:36	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	20 Aug 21 9:28	EV
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	13 Aug 21 14:52	SD
Phosphorus as P - Total	0.22	mg/l	0.20	EPA 365.1	20 Aug 21 9:25	EMS

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
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CERTIFICATION: ND # ND-00016

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

Report Date: 7 Sep 21
Lab Number: 21-W2923
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 17:00
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-471

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	0.24	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS
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	1600	mg/l	10	USGS I1750-85	13 Aug 21 15:00	RAA
Calcium - Total	3.2	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Magnesium - Total	1.4	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Sodium - Total	606	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Potassium - Total	2.3	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Lithium - Total	0.092	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Iron - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Silicon - Total	4.62	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	0.15	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Zinc - Total	< 0.05	mg/l	0.05	6010D	16 Aug 21 12:31	SZ
Boron - Total	2.34	mg/l	0.10	6010D	20 Aug 21 10:34	SZ
Calcium - Dissolved	3.2	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	1.4	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	612	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	0.089	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Iron - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Silicon - Dissolved	4.46	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	0.15	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 14:06	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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MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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

Report Date: 7 Sep 21
Lab Number: 21-W2923
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 17:00
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-471

Temp at Receipt: 7.0C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	2.44	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	0.1326	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	< 0.002	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	0.0110	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	0.1258	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

RL = Method Reporting Limit

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CERTIFICATION: ND # ND-00016

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Page: 4 of 4

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

Report Date: 7 Sep 21
Lab Number: 21-W2923
Work Order #: 82-2121
Account #: 007033
Date Sampled: 12 Aug 21 17:00
Date Received: 13 Aug 21 7:21
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-471

Temp at Receipt: 7.0C 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	0.0102	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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