

2017 Annual Groundwater Monitoring and Corrective Action Report

CCR Annual Monitoring Report

Blue Pit Area

Coyote Station
Beulah, North Dakota

Prepared for Otter Tail Power Company

January 2018

2017 CCR Annual Groundwater Monitoring and Corrective Action Report

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Coyote Station Beulah, North Dakota

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Acronyms

Acronym	Description
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
OTP	Otter Tail Power Company
SSI	Statistically Significant Increase

1.0 Introduction

Otter Tail Power Company (OTP) operates Coyote Station, a coal-fired generation unit near Beulah, North Dakota (Figure 1). The Blue Pit is an existing Coal Combustion Residuals (CCR) landfill at Coyote Station that is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261 Disposal of Coal Combustion Residuals From Electric Utilities). The CCR management unit (Blue Pit) is shown on Figure 1.

This 2017 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the Blue Pit Area at Coyote Station (Site).

1.1 Purpose

As stated in Section §257.90(e), the purpose of the Annual Report is to:

- Document the status of monitoring and corrective action program for the CCR unit
- Summarize key actions completed
- Describe any problems encountered
- Discuss actions to resolve the problems
- Project key activities for the upcoming year

1.2 Status of the Groundwater Monitoring and Corrective Action Program

Baseline monitoring was completed prior to October 17, 2017. The evaluation of groundwater monitoring data for statistically significant increases over background levels for the constituents listed in Appendix III began on October 17, 2017.

1.3 CCR Rule Requirements

This Annual Report has been prepared in accordance with the requirements of §257.90(e) of the CCR Rule, as outlined in the following Table 1.

Table 1 CCR Rule Requirements

CCR Rule Reference	Content Required in Report	Location
§257.90(e)(1)	Map showing the CCR unit and all monitoring wells that are part of the groundwater monitoring system	Section 2.1.1 Documentation; see Figure 1
§257.90(e)(2)	Discuss any new or decommissioned monitoring wells	Section 2.1.2 Changes to Monitoring System
§257.90(e)(3)	Provide the number and date groundwater samples were collected, and the monitoring (i.e., detection or assessment)	Section 2.2 Monitoring and Analytical Results
§257.90(e)(4)	Discuss any transition between monitoring programs	Section 2.4 Key Activities for Upcoming Year
§257.90(e)(5)	Other information specified in §257.90 through §257.98	Other information not required in this report.

2.0 Groundwater Monitoring and Corrective Action Program

This section documents the status of the groundwater monitoring and corrective action program for the CCR unit for the period starting with the effective date of the Rule through the end of 2017. The groundwater monitoring system is described in Section 2.1, the monitoring and analytical results are described in Section 2.2, key actions completed and problems encountered are described in Section 2.3, and key activities planned for 2018 are described in Section 2.4.

2.1 Groundwater Monitoring System

2.1.1 Documentation

Figure 1 shows an aerial image of the CCR unit and all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program, as required by §257.90(e)(1). Further details on the monitoring system and the CCR unit monitoring wells are included in the Groundwater Monitoring System Report, Coyote Station Blue Pit Area (Barr, 2016).

2.1.2 Changes to Monitoring System

The groundwater monitoring system was unchanged in 2017.

2.2 Monitoring and Analytical Results

CCR Rule provisions §257.90(e)(3) and §257.94(b) require collection of eight independent samples to establish background water quality for the detection monitoring program. A total of 48 (six monitoring wells and eight sampling events) groundwater samples were collected and analyzed for the constituents listed in Appendices III and IV (Part 257) before October 17, 2017. Dates of sampling are reported on the field data sheets and analytical laboratory reports in Appendix A.

2.3 Key Actions Completed/Problems Encountered

The following key actions were completed for the groundwater monitoring program through 2017:

- Baseline groundwater samples were collected and analyzed for the constituents listed in Appendices III and IV from the CCR Rule.
- A statistical method was selected for evaluating groundwater monitoring data by a qualified professional engineer in 2017.

No problems were encountered during the report period.

2.4 Key Activities for Upcoming Year

The following key groundwater monitoring program activities are planned for 2018:

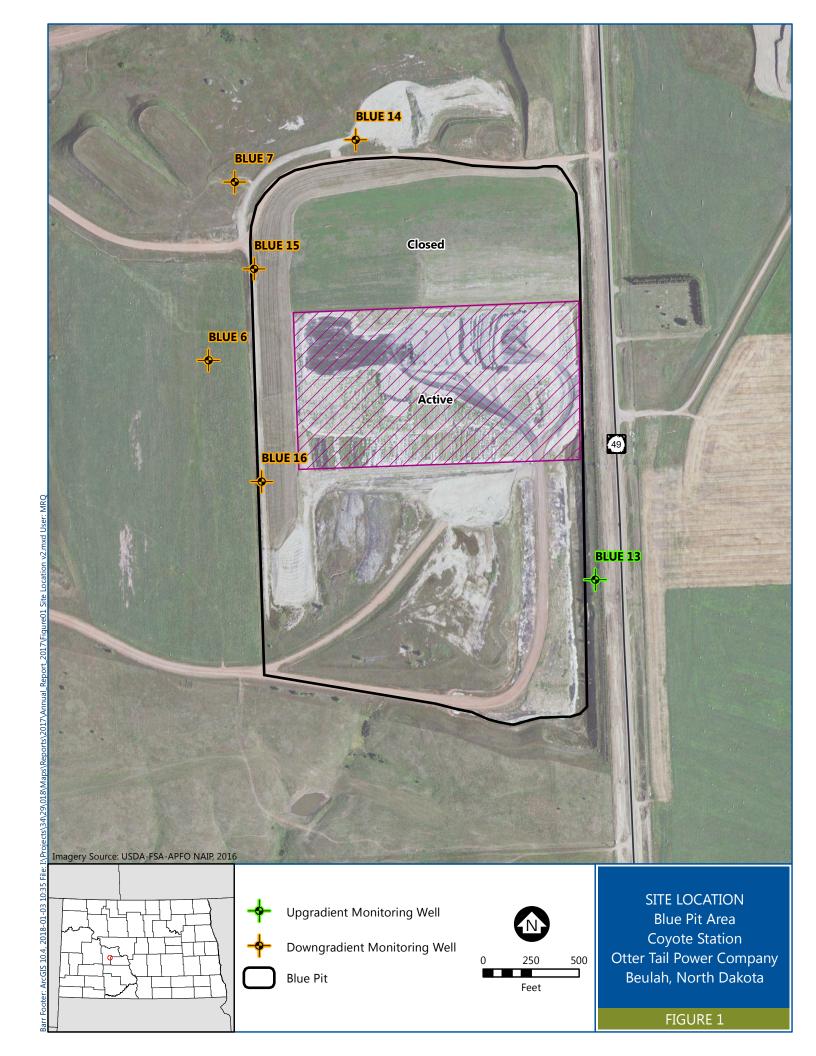
- Evaluate analytical results from the 2018 semiannual detection monitoring events for statistically significant increases (SSIs) according to the CCR Groundwater Sampling and Analysis Plan (McCain, 2017).
- Continue the groundwater monitoring program in accordance with the CCR rule.

3.0 References

Barr, 2016, Groundwater Monitoring System Report, Coyote Station Blue Pit Area. Prepared for Otter Tail Power Company. November 2016.

Carlson McCain, 2017. CCR Groundwater Sampling and Analysis Plan (Including Statistical Method Selection and Certification), Coyote Station Blue Pit. Prepared for Otter Tail Power Company. October 2017

Figures



Appendices

Appendix A

Laboratory Reports and Field Sheets



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201682-2920

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

3rd Quarter 2016

MVTL Laboratory Identifications:

16-W4074

Page 1 of 1

Sample Identification	MVTL Laboratory #
Blue 7	16-W4074

RECEIPT 1.

- All samples were received at the laboratory on 14 Sep 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 5.7°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

HOLDING TIMES 11.

With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

METHODS III.

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.

ANALYSIS IV.

- All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.
 - One lithium matrix spike duplicate recovery was outside the acceptable limits. Recovery for the matrix spike was acceptable. RPD for the recoveries of the matrix spike duplicate and the matrix spike was within limits. No further action was taken.
 - o One mercury matrix spike recovery was outside the acceptable limits. Low spike recovery was determined to be due to matrix. Data was accepted based on the acceptable recovery of the LCS. No further action was taken.

All laboratory data has been approved by MVTL Laboratories.

SIGNED:

DATE: 400716

Claudette Carroll - MVTL Bismarck Laboratory Manager



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 7

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 26 Sep 16 Lab Number: 16-W4074 Work Order #:82-2920 Account #: 006106

Date Sampled: 13 Sep 16 15:55 Date Received: 14 Sep 16 8:00 Sampled By: MVTL Field Services

PO #: 38307-2

Temp at Receipt: 5.7C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyze	ed		Analyst
Metal Digestion				EPA 200.2	14	Sep	16	7 10	ML
Lab, pH	* 6.5	s.u.	0.1	SM4500 H+ B	14	Sep	16	17:00	ML
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	13	Sep	16	15:55	DJN
Field Appearance	Clear		NA	SM 2110	13	Sep	16	15:55	DJN
Field Temperature	11.5	Degrees C	0.1	SM 2550B	13	Sep	16	15:55	DJN
Field Conductivity	2691	umhos/cm	1	EPA 120.1	13	Sep	16	15:55	DJN
Fluoride	0.19	mg/1	0.10	SM4500-F-C	14	Sep	16	17:00	ML
Sulfate	1040	mg/1	5.00	ASTM D516-07	21	Sep	16	11:35	EMS
Chloride	8.5	mg/1	1.0	SM4500-C1-E	16	Sep	16	10:26	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	19	Sep	16	12:59	EV
Total Dissolved Solids	1980	mg/1	5	I1750-85	14	Sep	16	11:02	ML
Calcium - Total	186	mg/1	1.0	6010	19	Sep	16	13:16	SZ
Lithium - Total	0.11	mg/l	0.10	6010	16	Sep	16	9:37	KMD
Boron - Total	0.40	mg/1	0.10	6010	24	Sep	16	10:18	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	21	Sep	16	9:25	KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16	9:25	KMD
Barium - Total	0.0380	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep	16	9:25	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16	9:25	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
Lead - Total	0.0005	mg/1	0.0005	6020	21	Sep	16	9:25	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16	9:25	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep	16	9:25	KMD
Walland Manager and Walland									

* Holding time exceeded

Approved by:

Claudette K. Canteo

CC 40CT16

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:

* Due to sample matrix # * Due to complete to sample quantity * * Due to in

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016

MVTL

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Quality Control Report

Lab ID: 16-W4074 Project: OTP Coyote CCR Blue Pit

Work Order: 201682-2920

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	104	80-120	0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q	< 0.001 < 0.001 < 0.001 < 0.001	0.4124 0.4168 0.4410 0.4358	103 104 110 109	75-125 75-125 75-125 75-125	0.4124 0.4168 0.4410 0.4358	0.4042 0.4266 0.4378 0.4394	101 107 109 110	2.0 2.3 0.7 0.8	20 20 20 20 20	- - -	-	< 0.001
Arsenic - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400	16W4178q 16W3990q 16W4067q	< 0.001 0.0022 0.0031	0.4222 0.4222 0.4118	106 105 102	75-125 75-125 75-125	0.4222 0.4222 0.4118	0.4336 0.4116 0.4388	108 102 109	2.7 2.5 6.3	20 20 20		-	< 0.002
				0.400 0.400 0.400	16W4074q 16W4155q 16W4178q	< 0.002 0.0129 < 0.002	0.4386 0.4434 0.4264	110 108 107	75-125 75-125 75-125	0.4386 0.4434 0.4264	0.4414 0.4486 0.4356	110 109 109	0.6 1.2 2.1	20 20 20 20	-	-	
Barium - Total mg/l	0.1000	99	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0102 0.0695 0.0380 0.0488 0.0273	0.4110 0.4770 0.4486 0.4560 0.4238	100 102 103 102 99	75-125 75-125 75-125 75-125 75-125	0.4110 0.4770 0.4486 0.4560 0.4238	0.3978 0.4848 0.4530 0.4692 0.4328	97 104 104 105 101	3.3 1.6 1.0 2.9 2.1	20 20 20 20 20 20	-	- - - -	< 0.002
Beryllium - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.4264 0.4420 0.4356 0.4632 0.4450	107 110 109 116 111	75-125 75-125 75-125 75-125 75-125	0.4264 0.4420 0.4356 0.4632 0.4450	0.4048 0.4550 0.4536 0.4612 0.4658	101 114 113 115 116	5.2 2.9 4.0 0.4 4.6	20 20 20 20 20 20	-		< 0.0005
Boron - Total mg/l	0.40 0.40	110 115	80-120 80-120	0.400 0.400 0.400 0.400 0.400	16-D3777 16-W4067 16-W4074 16-W4155 16-W4178	0.50 0.25 0.40 0.21 0.40	0.88 0.64 0.78 0.62 0.79	95 97 95 102 98	75-125 75-125 75-125 75-125 75-125	0.88 0.64 0.78 0.62 0.79	0.89 0.66 0.80 0.62 0.79	97 102 100 102 98	1.1 3.1 2.5 0.0 0.0	20 20 20 20 20 20	-	- - -	< 0.1 < 0.1 < 0.1

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Quality Control Report

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Lab ID: 16-W4074 Project: OTP Coyote CCR Blue Pit Work Order: 201682-2920 Matrix Matrix Matrix MSD/ MSD/ LCS LCS LCS Matrix Matrix Spike Matrix Spike Spike Dup MSD/ MSD MSD/ Dup Known Known Spike Rec % Rec Spike Spike Orig Spike Rec % Rec Orig Dup Rec Dup **RPD** Rec % Rec Method Amt % Limits Amt ID Result % Result Limits Result Result % Limit (<) (%) RPD Limits Blank Analyte Cadmium - Total mg/l 0.1000 108 80-120 0.400 16W3990a < 0.0005 0.4094 102 0.4094 75-125 0.3934 98 20 4.0 < 0.0005 0.400 16W4067q < 0.0005 0.4200 75-125 105 0.4200 0.4368 109 3.9 20 0.400 16W4074q < 0.0005 0.4214 105 75-125 0.4214 0.4310 108 2.3 20 0.400 16W4155a < 0.0005 0.4290 107 75-125 0.4290 0.4400 110 2.5 20 16W4178q 0.400 < 0.0005 0.4320 108 75-125 0.4320 0.4308 108 0.3 20 _ Calcium - Total mg/l 20.0 100 80-120 100 16W4073a 192 272 80 75-125 272 274 82 0.7 20 < 1 100 16W4074q 186 272 86 75-125 272 267 81 1.9 20 < 1 Chloride mg/1 30.0 101 80-120 30.0 16-W4073 8.7 38.4 99 80-120 38.4 38.3 99 20 0.3 < 1 30.0 16-W4074 8.5 35.8 91 80-120 35.8 38.1 99 6.2 20 < 1 Chromium - Total mg/l 0.1000 93 80-120 0.400 16W3990q < 0.002 0.3700 92 75-125 0.3700 0.3578 89 3.4 20 < 0.002 0.400 16W4067q < 0.002 0.3722 93 75-125 0.3722 0.3832 96 2.9 20 0.400 16W4074q 0.3898 97 < 0.002 75-125 0.3898 0.3862 97 0.9 20 0.400 16W4155q < 0.002 97 0.3866 75-125 0.3866 0.3858 96 0.2 20 0.400 16W4178q < 0.002 0.3728 93 75-125 0.3728 0.3936 98 5.4 20 Cobalt - Total mg/l 0.1000 95 80-120 0.400 16W3990a 0.3828 92 0.0139 75-125 0.3828 0.3736 90 2.4 20 < 0.002 0.400 16W4067q < 0.002 0.3766 94 75-125 0.3766 0.3878 97 2.9 20 0.400 16W4074q < 0.002 0.3950 99 75-125 0.3950 0.3932 98 0.5 20 0.400 16W4155q 0.3880 97 97 < 0.002 75-125 0.3880 0.3892 0.3 20 0.400 16W4178a < 0.002 0.3768 94 0.3768 98 75-125 0.3920 4.0 20 Fluoride mg/l 0.50 106 90-110 0.500 16-W4073 0.18 0.70 104 80-120 0.19 20 0.18 106 5.4 < 0.1 16-W4074 0.500 0.19 0.71 104 80-120 0.71 0.71 104 0.0 20 < 0.10.500 16-W4133 0.43 0.91 96 80-120 0.91 0.93 100 20 2.2 Lead - Total mg/l 0.1000 101 80-120 0.400 16W3990q < 0.0005 0.3812 95 75-125 0.3812 0.3708 93 20 2.8 < 0.0005 0.400 16W4067q < 0.0005 0.4038 101 75-125 0.4038 0.4118 103 2.0 20 0.400 16W4074q 0.0005 99 0.3960 75-125 0.3960 0.4028 101 1.7 20 0.400 16W4155q < 0.0005 0.4014 100 75-125 0.4014 0.4198 105 4.5 20 0.400 16W4178a < 0.0005 0.3886 97 98 75-125 0.3886 0.3920 0.9 20

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Quality Control Report

Lab ID: 16-W4074 Project: OTP Coyote CCR Blue Pit

Work Order: 201682-2920

Lau ID: 10-W40/4						L-LJLU Testingen	Laine Carling an order	S Zama Se e de Se Se Se Santono de									
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Lithium - Total mg/l	0.40 0.40 0.40	102 105 102	80-120 80-120 80-120	0.400 0.400 0.400	16-W3968 16-W4074 16-W4006	0.03 0.11 0.10	0.51 0.59 0.60	120 120 125	75-125 75-125 75-125	0.51 0.59 0.60	0.51 0.60 0.61	120 122 128	0.0 1.7 1.7	20 20 20	- - -	-	< 0.1 < 0.1 < 0.1 < 0.1
Mercury - Total mg/l	0.0020	100	85-115	0.002 0.002 0.002	A46663 A46666 16-M2796	< 0.0002 < 0.0002 < 0.0002	0.0020 0.0020 0.0013	100 100 65	70-130 70-130 70-130	0.0020 0.0020	0.0020 0.0020	100 100	0.0	20 20	-	-	< 0.0002
Molybdenum - Total mg/l	0.1000	95	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0035 0.0065 < 0.002 0.0026 < 0.002	0.4170 0.4074 0.4224 0.4122 0.4024	103 100 106 102 101	75-125 75-125 75-125 75-125 75-125	0.4170 0.4074 0.4224 0.4122 0.4024	0.3972 0.4264 0.4308 0.4218 0.4154	98 105 108 105 104	4.9 4.6 2.0 2.3 3.2	20 20 20 20 20 20	- - -		< 0.002
pH units	-	-	-	-	-	-	-	-	-	6.5 6.5	6.6 6.7	-	1.5 3.0	20 20	-	-	-
Selenium - Total mg/l	0.1000	116	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.002 < 0.002 < 0.002 < 0.002 < 0.002	0.4772 0.4666 0.4854 0.5012 0.4522	119 117 121 125 113	75-125 75-125 75-125 75-125 75-125	0.4772 0.4666 0.4854 0.5012 0.4522	0.4508 0.4698 0.4748 0.4836 0.4830	113 117 119 121 121	5.7 0.7 2.2 3.6 6.6	20 20 20 20 20 20	-	-	< 0.002
Sulfate mg/l	100	106	90-110	500 500	16-W4073 16-W4074	1040 1040	1570 1600	106 112	80-120 80-120	1570 1600	1590 1550	110 102	1.3 3.2	20 20	-	-	< 5
Thallium - Total mg/l	0.1000	100	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.3992 0.4004 0.4062	92 100 100 102 97	75-125 75-125 75-125 75-125 75-125	0.3684 0.3992 0.4004 0.4062 0.3878	0.3654 0.4122 0.4020 0.4226 0.3996	91 103 100 106 100	0.8 3.2 0.4 4.0 3.0	20 20 20 20 20 20	- - - -		< 0.0005
Total Dissolved Solids mg/l	-	-	-	-	-	-	-	-	-	1980 1980	1990 1980	-	0.5 0.0	20 20	-	-	< 5

Approved by: C. Cauch
40cr16

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Chain of Custody Record

Projec	t Name:							Name	of Sam	pler(s):		`	
	OTP Coyote	CCR	Blue P	Pit	Sept 16				6	alle	nN	esua	r)
Report To: Attn: Address: Phone:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0	496	Carbon Cor Attn: Address:	oy:				Work	Order N	lumber:	82-	iesnac -2920	7
	Samp	le Informat	ion				Во	ttle Typ	ое	Fi	eld Para	meters	Analysis
Lab Number	Glean MS7/MSD7	13Sept ()	The state of the s	Sample Type		3 500 MH IM 005	3 3	Out mi HNO ₃ (filtered)		Field Temperature °C	Field Spec. Cond.	Held pH	Analysis Required OTP CCR List. No RadChem.
													No Radonem.

Comments:

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	° C
1	Da ning	walkin2	1354246	C. Jackson		14Sep+16	ROI 5, 7
2			.,,,				-TM562
3							1350+16155



Field Datasheet

Groundwater Assessment

Company:	OTP Coyote	
Event:	Sept 2016	
Sample ID:	Blue 7	

2616 E. Broadway Ave, Bis	smarck, ND						_	Sampling Persor	nal: Pav	ren Nics	way	
Phone: (701) 258-9	720						•		<i>y</i>	7		
Weather Conditions:		Temp:	6 °F		Wind:	1,19	ht	F	Precip:	Sunny / Partly C	loudy / Clo	ıdy
	Well Info	rmation	.					Sampl	ling Inforn	nation		
Well Locked?	Yes	No				Purgi	ng Method:	Bladder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampli	ng Method:	Bladder		Purge:	,4	sec.
Casing Straight?	Yes	. No				Dedica	ted Equip?:	Yes 🔊	<u> </u>	Recover:	56	sec.
Grout Seal Intact?	Yes	No	Not Visit	HE		Duplicate	Sample?:	Yes N	0	PSI:	75	
Repairs Necessary:						Duplicate	Sample ID:	m57/ms	0'7	Pumping R	ate: (<i>[)[</i>)	mL/min
Casing	Diameter:		2"					· /				
Water Level Befo	ore Purge:	8	0,21	ft		F	Purge Date:	13 Sept 66	Time	Purging Began:	1215	am/pm
Total W	Vell Depth:	9	7,20	ft		Well P	urged Dry?	Yes (N	o)T	ime Purged Dry:		am/pm
We	ell Volume:		1028	liters		Sa	ample Date:	13 Seat 4	Ti	me of Sampling:	1555	am/pm
Depth to Top	o of Pump:		92,95	ft								
Water Level After	er Sample:	88	0,30	ft		Bottle	CCR: 1L R	aw, 500mL Nitrio	c, 4-1L Nitric			
Measuremer	nt Method:	Electric	Water Level Ind	icator		List:						

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 consecutive)		(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1220	12,03	2746	651	287	37.0	51.8	80.27	500	-Ca Stinhly turbid
2	1230	11,56	2703	6,47	1,51	31,2	123	80.30	1000	Tulkid
3	1250	11.04	7691	6.56	0,64	15,1	414	RO.30	2000	Turkid
4	1310	11,57	2696	6.57	1,21	16,3	393	80,30	2000	Turbid
5	1330	11.12	262701	6,55	0,37	14,5	245	80,30	2000	Turbid
6	1350	11.23	2708	6,54	0,29	24.6	123	80,30	2000	stight twent
7	1410	11.14	2702	6.02	0,26	24.3	67.5	80,30	2000	5/3/Hy turbid
8	1420	11,01	2707	651	\$175	259	56.4	80,30	1000	CT 1
9	1430	11.76	2701	652	0123	30.9	46.7	80,30	1000	37
10	1440	11,50	2-701	6,51	0,20	0-32,0	33.3	80,30	1000	I ST
Ctabilina de	Voc	No				T	محسربام لا احدم	Demoved		1

Stabilized:

Total Volume Removed: mL

Comments:

Continue on next pase



Field Datasheet

Groundwater Assessment

Company:	OTP Coyo	te	
Event:	Sept 2016		
Sample ID:	Blue 7		
Sampling Par	reonal: 10 - Ocea	Al Decial acco	

Phone: (701) 258-9720

Field Measurements

Field Measurements											
	ization	Temp (°C)	Spec. Cond.	nU	DO (mg/L)	ORP	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.	
	secutive)	(0)	±5%	pH ±0.1	(mg/L)	(mV) ±20 mV	±10%	0.25 ft	Removeu		
SEQ#	Time	2 4			±10%					clear, partly cloudy, cloudy	
11	1450	11.75	2700	6,50	0.20	30.6	28.5	80,30	1000	Clear	
12	1500	11.62	2700	649	0,19	30,8	20,5	80,30	1000	Cler	
13	1510	11.60	2700	6,51	0,22	32,2	17.7	80,30	1000	de	
14	1520	1196	2701	6,49	0,20	33,9	16,8	80,30	1000	der	
15	1525	11.53	2699	6,51	0.18	33.9	12.8	87,30	500	de	
16	1530	40,96,	2703	6e 48	0.18	31,6	10,3	80,30	500	de	
17	1535	11,79	2696	6,50	0,16	27.7	13,2	80,30	500	ch_	
18	1540	11,54	26.95	6.50	Da 18	21.0	9,13	80,30	300	de	
19	1545	11,54	2693	6,50	Della	19,2	8.84	80,30	500	der	
20	1550	11,38	2689	6,50	0,15	18,0	8,63	80,30	500	Un-	
21	1555	11,50	2691	6,49	0.10	19,0	8,22	80.30	500	CG_	
22											
23											
24											
25											
26											
27											
28											
29											
30	16				_						
Stahilizad	· (Yes)	No		-	-	·	otal Valuma	Pomovod	22000	ml	

Stabilized:

Yes

No

Total Volume Removed: 22,000 mL

Date:

Comments:



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG:

201682-2921

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

3rd Quarter 2016

MVTL Laboratory Identifications:

16-W4075

Page 1 of 1

Sample Identification	MVTL Laboratory #	
Blue 7	16-W4075	

I. RECEIPT

- All samples were received at the laboratory on 14 September 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 5.7°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 16 September 2016.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudite and DATE: 190CT16

Claudette Carroll - MVTL Bismarck Laboratory Manager



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 7

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 19 Oct 16 Lab Number: 16-W4075 Work Order #:82-2921 Account #: 006106

Date Sampled: 13 Sep 16 15:55 Date Received: 14 Sep 16 8:00 Sampled By: MVTL Field Services

PO #: 38307-2

Temp at Receipt: 5.7C ROI

	As Recei Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	13 Sep 16 15:55	DJN
Field Appearance	Clear		NA	SM 2110	13 Sep 16 15:55	DJN
Field Temperature	11.5	Degrees C	0.1	SM 2550B	13 Sep 16 15:55	DJN
Field Conductivity	2691	umhos/cm	1	EPA 120.1	13 Sep 16 15:55	DJN
Radium 226	See Atta	ched Report			30 Sep 16	OL
Radium 228	See Atta	ched Report			1 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudite K Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 10/5/2016

CLIENT:

MVTL Laboratories, Inc.

CASE NARRATIVE

Project:

201682-2921

S1609279

Report ID: S1609279001

Lab Order:

Sample 16-W4075 Blue 7 was received on September 16, 2016.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2921

Lab ID:

S1609279-001 ClientSample ID: 16-W4075 Blue 7

COC:

201682-2921

Date Reported

10/5/2016

Report ID

S1609279001

WorkOrder:

S1609279

CollectionDate: 9/13/2016 3:55:00 PM

9/16/2016 11:52:00 AM

DateReceived: FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/li	nit	
Allaryoco			Gaui		Metriou			
Radionuclides - Total								
Radium 226	0.2	pCi/L		0.2	SM 7500 Ra-B	09/30/2016 1214	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	09/30/2016 1214	MB	
Radium 228	ND	pCi/L		1	Ga-Tech	10/01/2016 354	MB	
Radium 228 Precision (±)	NA	pCi/L			Ga-Tech	10/01/2016 354	MB	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

0 Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



nter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Work Order:

Project:

MVTL Laboratories, Inc.

S1609279 201682-2921 Date: 10/5/2016

Report ID: S1609279001

Radium 228 by Ga/Tech Sample Type MBLK Units: pCi/L PrepDate: 09/26/16 12:00 MB-388 (09/30/16 12:49) RunNo: 139392 BatchID: 12360 Analyte Result RL. Spike Ref Samp %REC % Rec Limits Qual Total Radium 228 ND 1 Radium 228 by Ga/Tech Sample Type LCS Units: pCi/L

LCS-388 (09/30/16 15:50) PrepDate: 09/26/16 12:00 RunNo: 139392 BatchID: 12360 Analyte Result RL Spike Ref Samp %REC % Rec Limits Qual 40 Total Radium 228 1 38.5 105 61.3 - 120 Radium 228 by Ga/Tech Sample Type MS Units: pCi/L S1609279-001AMS (10/01/16 06:55) RunNo: 139392 PrepDate: 09/26/16 12:00 BatchID: 12360 Analyte Result Spike Ref Samp %REC % Rec Limits Qual Total Radium 228 74 1 77 ND 96.6 64.3 - 120 Radium 228 by Ga/Tech Sample Type MSD Units: pCi/L \$1609279-001AMSD (10/01/16 09:56) RunNo: 139392 PrepDate: 09/26/16 12:00 BatchID: 12360 Analyte Result RI. Conc %RPD %REC % RPD Limits Qual Total Radium 228 72 74 2.73 20 Radium 226 in Water - Total by SM7500RA_B Sample Type MBLK Units: pCi/L MB-1666 (09/30/16 12:14) RunNo: 139417 PrepDate: 09/21/16 0:00 BatchID: 12364 Analyte Result RL. Spike Ref Samp %REC % Rec Limits Qual ND 0.2 Radium 226 Radium 226 in Water - Total by SM7500RA_B Sample Type LCS Units: pCi/L LCS-1666 (09/30/16 12:14) RunNo: 139417 PrepDate: 09/21/16 0:00 BatchID: 12364 Analyte Result Spike Ref Samp %REC % Rec Limits Qual

Radium 226 5.4 0.2 5.99 89.7 67.1 - 122 Radium 226 in Water - Total by SM7500RA_B Sample Type MS Units: pCi/L \$1609279-001AM\$ (09/30/16 12:14) RunNo: 139417 PrepDate: 09/21/16 0:00 BatchID: 12364 Analyte Result RL Spike Ref Samp %REC % Rec Limits Qual Radium 226 13.1 0.2 12 0.2 107 65 - 131 Radium 226 in Water - Total by SM7500RA_B Sample Type MSD Units: pCi/L \$1609279-001AMSD (09/30/16 12:14) RunNo: 139417 PrepDate: 09/21/16 0:00 BatchID: 12364 % RPD Limits Qual Analyte Result RL Conc %RPD %REC

Qualifiers:

В Analyte detected in the associated Method Blank

Radium 226

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

O Outside the Range of Dilutions

Spike Recovery outside accepted recovery limits

Value above quantitation range Ε

12.6

0.2

13.1

3.95

103

Analyte detected below quantitation limits

Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

Matrix Effect Χ

20



Transferred by:

C. Jackson

LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Time:

1700

Date:

09/14/16

Chain of Custody Record

Received by:

Kathy Bap

Date:

9.16.16

Temp:

19.9

11:52

Page	1	of	1	

Toll Free: (8	Phone: (701) 2 00) 279-6885	58-9720 Fax: (701) 258-9724									201682-2921					
Company Name	e and Address:		Account #	:						Phone #:						
											701-258-9720					
		<u>/TL</u>		Contact:							Fax #:					
		Broadway			Claud	lette	<u> </u>				For faxed report check box					
Dilling Address		, ND 58501		Name of S	ampler:						E-mail: ccarroll@mvtl.com					
billing Address	(indicate if different	trom above):		Quote Nur	mhor						For e-mail report check box Date Submitted:					
	PO Bo	ox 249		Quote Nui	linei						9/14/2016					
		MN 56073		Project Na	me/Numbe	er:					Purchase Order #:					
											BL5665					
		Sample Information					В	ottle	Туј	эе	Analysis					
S(60° IML Lab Number	アイヤ MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Untreated	1000 ml HNO3	VOC Vials Umpreserved	Glass Jar	Other	Analysis Required					
001	16-W4075	Blue 7		9/13/2016	1555						Ra226 & Ra228					
										 -						
										_						
Comments: All	results must be rep	orted as a numerical value	•	· · · · · · · · · · · · · · · · · · ·	A				•		4					

Sample Condition:



Field Datasheet

Groundwater Assessment

Company: OTP Coyote

Event: Sept 2016

Sample ID: AFF Blue T

Sampling Personal: Baven Micswan

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9	720									,		
Weather Conditions:		Temp:	61 °F		Wind:	1,19	6	Pr	recip: (Su	nny / Partly C	Cloudy / Clo	udy
	Well Info	rmation	<u> </u>					Sampli	ng Informa	tion		
Well Locked?	(es	No				Purgi	ng Method:	Bladder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampli	ng Method:	Bladder		Purge:	, 4	sec.
Casing Straight?	(es	. No				Dedicat	ted Equip?:	Yes No	2	Recover:	56	sec.
Grout Seal Intact?	Yes	No	Not Visi	ble		Duplicate	Sample?:	(Yes) No		PSI:	75	
Repairs Necessary:						Duplicate	Sample ID:	m57/ms1	27	Pumping R	late: (<i>[[]]</i>)	mL/min
Casing	Diameter:		2"								, ,	
Water Level Befo	ore Purge:	8	0,21	ft		F	Purge Date:	13 Sept 6	Time Pu	ırging Began:	1215	am/pm
Total W	Vell Depth:	9	7,20	ft		Well P	urged Dry?	Yes No	Time	Purged Dry:	$\left. \begin{array}{c} \lambda \\ \lambda \end{array} \right $	am/pm
We	ell Volume:		1028	liters		Sa	ample Date:	13 Sept 4	Time	of Sampling:	1555	am/ស្ត្រីជិ
Depth to Top	of Pump:		92,95	ft								
Water Level After	er Sample:	8	0,30	ft		Bottle	CCR: 1L R	aw, 500mL Nitric,	4-1L Nitric			
Measuremen	nt Method:	Electric	Water Level Inc	licator		List:						

Field Measurements

						mododio				
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1220	12,03	2746	6,51	2.87	37.0	51.8	80.27	500	-Ca Slightly turbed
2	1230	11,56	2700	6,43	1,51	31,2	223	80.30	1000	Tulking
3	1250	11.04	2691	6.56	0,64	15,1	414	80.30	2000	Turkid
4	1310	11,57	2696	6.57	1,21	16,3	393	80,30	2000	tuosid
5	1330	11.12	262201	6,55	0,37	14,5	245	80,30	2000	Tu/bid
6	1350	11.23	2708	6,54	0,29	24.6	123	80,30	2000	stight twent
7	1410	11.14	2702	6.02	0,26	24.3	67.5	80,30	2000	5/13/14 torbid
8	1420	11.01	2707	651	1275	25.9	56.4	80,30	1000	ST
9	1430	11176	2701	6,52	0123	30,9	46.7	80,30	1000	13T
10	1440	11,50	2-701	6,51	0.20	0-32,0	33.3	80,30	1000	L.ST
01 1:11: 1	V	NI.					4-137-1	D		

Stabilized: Yes No

Total Volume Removed: mL

Comments:

Continued on next pase



Field Datasheet

Groundwater Assessment

Company:	OTP Coyo	te	
Event:	Sept 2016		
Sample ID:	Blue 7		
Sampling Pe	reonal: 10 - Ocea	al Decial Cons	

Phone: (701) 258-9720

Field Measurements

	Field Weastrements											
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:		
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy		
11	1450	11,75	2700	6,50	0,20	30.6	28.5	80,30	1000	clear		
12	1500	11.62	2700	649	0,19	30,8	20,5	80,30	1000	Clex		
13	1510	11.60	2700	651	0,22	32,2	17.7	80,30	1000	de		
14	1520	1196	2701	6,49	0,20	33,9	16,8	80,30	1000	der		
15	1525	1153	2699	6,51	0.18	33.9	128	87,30	500	de		
16	1530	40,96	2703	6e 48	0.18	31,6	10,3	80,30	500	de		
17	1535	11,79	2696	6,50	0.16	27.7	13,2	80,30	500	d_		
18	1540	11,54	26.95	6.50	Da 18	2100	9,13	80.30	300	d		
19	1545	11,54	2693	6,50	Dello	19,2	8.84	80,30	500	der		
20	1550	11,38	2689		0.15	1800	8,63	80,30	500	Un		
21	1555	11,50	2691	6,49	0.10	19,0	8,22	80.30	500	cq_		
22												
23												
24												
25												
26												
27												
28												
29												
30	16											
	K	A.F.				_			2200			

Stabilized:

Νo

Total Volume Removed: 22,000 mL

Date:

Comments:



Project Name:

Chain of Custody Record

Name of Sampler(s):

	OTP Coyote	RadChem	Blue	Pit	Sept 16				Va	Wen	Nie	snac	2
Report To: Attn: Address: Phone:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0		Work Order Number: 82-2921										
	Samp	le Informat	ion				Bott	le Ty	pe	Fi	eld Para	ameters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type		1000 ml HNO.		//		Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Required
W4075	Blue 7/MS7/MSD7	135ept 16	1555	GW		12				11,50	2691	6,49	
													OTP CCR combined
													RadChem
Comments:													

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	° C
1	Stution	walkin2	1350016	C. Jackson		0800	ROIS.7
2			,,,,,				TM562
3							135-pt H 155





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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-2978

Client: Ottertail Power Company

Location: Coyote Station Project Identification: CCR Blue Pit

Event & Year 3rd Quarter 2016

MVTL Laboratory Identifications: 16-W4178 through 16-W4183

Page 1 of 2

MVTL Laboratory #					
16-W4178					
16-W4179					
16-W4180					
16-W4181					
16-W4182					
Insufficient volume - no sample					
16-W4183					

I. RECEIPT

- All samples were received at the laboratory on 16 Sep 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 2.2°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG:

201682-2978

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

3rd Quarter 2016

NAVET Laboration

3.4 Quarter 2016

MVTL Laboratory Identifications:

16-W4178 through 16-W4183

Page 2 of 2

IV. ANALYSIS

- All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.
 - For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.
 - One mercury matrix spike recovery was outside the acceptable limits. Low spike recovery
 was determined to be due to matrix. Data was accepted based on the acceptable recovery of
 the LCS. No further action was taken.

All laboratory data has been approved by MVTL Laboratories.

lauditte

SIGNED:

DATE:

400016

Claudette Carroll - MVTL Bismarck Laboratory Manage



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 6

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 26 Sep 16 Lab Number: 16-W4178 Work Order #:82-2978 Account #: 006106

Date Sampled: 14 Sep 16 9:04 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Received Result		Method RL	Method Reference	Date Analyzed			Analyst
	Kepuic			NOTO: CITCO	1210			
Metal Digestion	77.0	1.1		EPA 200.2		Sep		KMD
Lab, pH	* 6.7	s.u.	0.1	SM4500 H+ B			16 17:00	ML
Field pH	6.50	s.u.	0.1	SM 4500 H+ B	14	Sep :	16 9:04	DJN
Field Appearance	Clear		NA	SM 2110	14	Sep	16 9:04	DJN
Field Temperature	10.3	Degrees C	0.1	SM 2550B	14	Sep	16 9:04	DJN
Field Conductivity	2591	umhos/cm	1	EPA 120,1	15	Sep	16 9:04	DJN
Fluoride	0.18	mg/l	0.10	SM4500-F-C	16	Sep	16 17:00	ML
Sulfate	992	mg/1	5.00	ASTM D516-07	21	Sep	16 13:06	EMS
Chloride	7.3	mg/1	1.0	SM4500-C1-E	23	Sep	16 9:25	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	19	Sep	16 12:59	EV
Total Dissolved Solids	1930	mg/l	5	11750-85	16	Sep	16 10:15	ML
Calcium - Total	184	mg/1	1.0	6010	19	Sep	16 15:16	SZ
Lithium - Total	< 0.1	mg/l	0.10	6010	26	Sep	16 10:49	KMD
Boron - Total	0.40	mg/1	0.10	6010	24	Sep	16 10:18	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	21	Sep	16 9:25	KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16 9:25	KMD
Barium - Total	0.0273	mg/l	0.0020	6020	21	Sep	16 9:25	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16 9:25	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16 9:25	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16 9:25	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020		Sep		KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020		Sep		KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020		Sep		KMD
Selenium - Total	< 0,002	mg/l	0.0020	6020		Sep		KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020		Sep		KMD

* Holding time exceeded

Approved by:

Clauditte K Canto

(c 40CT16

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: \emptyset = Due to sample matrix \emptyset = Due to con \emptyset = Due to sample quantity \emptyset = Due to int

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 13

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 26 Sep 16 Lab Number: 16-W4179 Work Order #:82-2978 Account #: 006106

Date Sampled: 15 Sep 16 9:05 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Received Result		Method RL	Method Reference	Date Analyzed			Analyst
Metal Digestion				EPA 200.2	16	Sep 1	.6	KMD
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	16	Sep 1	6 17:00	ML
Field pH	6.84	s.u.	0.1	SM 4500 H+ B	15	Sep 3	6 9:05	DJN
Field Appearance	Clear		NA	SM 2110	15	Sep 1	6 9:05	DJN
Field Temperature	11.8	Degrees C	0.1	SM 2550B	15	Sep 1	6 9:05	DJN
Field Conductivity	6245	umhos/cm	1	EPA 120.1	15	Sep 1	6 9:05	DJN
Fluoride	0.27	mg/1	0.10	SM4500-F-C	16	Sep 1	6 17:00	ML
Sulfate	2580	mg/l	5.00	ASTM D516-07	21	Sep 3	6 13:06	EMS
Chloride	30.1	mg/1	1.0	SM4500-C1-E	23	Sep 3	6 9:25	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	19	Sep 1	6 12:59	EV
Total Dissolved Solids	4700	mg/l	5	11750-85	16	Sep 3	6 10:15	ML
Calcium - Total	152	mg/l	1.0	6010	19	Sep 3	6 15:16	SZ
Lithium - Total	< 0.5 @	mg/1	0.10	6010	26	Sep 3	6 10:49	KMD
Boron - Total	0.61	mg/1	0.10	6010	24	Sep 3	6 10:18	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	21	Sep 3	6 9:25	KMD
Arsenic - Total	0.0041	mg/1	0.0020	6020	21	Sep :	6 9:25	KMD
Barium - Total	0.0233	mg/1	0.0020	6020	21	Sep :	6 9:25	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep :	6 9:25	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 3	6 9:25	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	21	Sep :	6 9:25	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	21	Sep 3	6 9:25	KMD
Lead - Total	0.0019	mg/1	0.0005	6020	21	Sep 3	6 9:25	KMD
Molybdenum - Total	0.0021	mg/1	0.0020	6020	21	Sep 3	6 9:25	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	21	Sep :	6 9:25	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	6 9:25	KMD

* Holding time exceeded

Approved by:

Claudette K Canto

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:

@ = Due to sample matrix # = Due to come to sample quantity # = Due to income to sample quantity # = Due to i

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 14

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 26 Sep 16 Lab Number: 16-W4180 Work Order #:82-2978 Account #: 006106

Date Sampled: 14 Sep 16 13:05 Date Received: 16 Sep 16

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Received Result		Method RL	Method Reference	Date Analyzed			Analyst	
Metal Digestion				EPA 200.2	16	Sep 1	5	KMD	-
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	16	Sep 1	5 17:00	ML	
Field pH	6.59	s.u.	0.1	SM 4500 H+ B	14	Sep 1	13:05	DJN	
Field Appearance	Clear		NA	SM 2110	14	Sep 1	5 13:05	DJN	
Field Temperature	11.8	Degrees C	0.1	SM 2550B	14	Sep 1	13:05	DJN	
Field Conductivity	5009	umhos/cm	1	EPA 120.1	14	Sep 1	13:05	DJN	
Fluoride	0.18	mg/1	0.10	SM4500-F-C	16	Sep 1	5 17:00	ML	
Sulfate	2230	mg/1	5.00	ASTM D516-07	21	Sep 1	5 13:06	EMS	
Chloride	8.8	mg/1	1.0	SM4500-C1-E	23	Sep 1	9:25	EMS	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	19	Sep 1	12:59	EV	
Total Dissolved Solids	3880	mg/l	5	I1750-85	16	Sep 1	5 10:15	ML	
Calcium - Total	261	mg/1	1.0	6010	19	Sep 1	5 15:16	SZ	
Lithium - Total	< 0.5 @	mg/l	0.10	6010	26	Sep 1	5 10:49	KMD	
Boron - Total	0.54	mg/l	0.10	6010	24	Sep 1	5 10:18	KMD	
Antimony - Total	0.0017	mg/1	0.0010	6020	21	Sep 1	9:25	KMD	
Arsenic - Total	0.0026	mg/1	0.0020	6020		Sep 1		KMD	
Barium - Total	0.0804	mg/l	0.0020	6020	21	Sep 1	9:25	KMD	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep 1	9:25	KMD	
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	9:25	KMD	
Chromium - Total	< 0.002	mg/1	0.0020	6020	21	Sep 1	9:25	KMD	
Cobalt - Total	0.0066	mg/1	0.0020	6020	21	Sep 1	9:25	KMD	
Lead - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	9:25	KMD	
Molybdenum - Total	0.0095	mg/1	0.0020	6020	21	Sep 1	9:25	KMD	
Selenium - Total	< 0.002	mg/l	0.0020	6020	21	Sep 1	9:25	KMD	
Thallium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	9:25	KMD	

* Holding time exceeded

Approved by:

Clauditte K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

CERTIFICATION: ND # ND-00016

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 15

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 26 Sep 16 Lab Number: 16-W4181 Work Order #:82-2978 Account #: 006106

Date Sampled: 14 Sep 16 14:44 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Receive Result	bed	Method RL	Method Reference	Da	e lyze	d		Analys
Metal Digestion				EPA 200.2	16	Sep	16		KMD
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	16	Sep	16	17:00	ML
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	14	Sep	16	14:44	DJN
rield Appearance	Clear		NA	SM 2110	14	Sep	16	14:44	DJN
ield Temperature	12.7	Degrees C	0.1	SM 2550B	14	Sep	16	14:44	DJN
ield Conductivity	3292	umhos/cm	1	EPA 120.1	14	Sep	16	14:44	DJN
luoride	0.22	mg/1	0.10	SM4500-F-C	16	Sep	16	17:00	ML
ulfate	1170	mg/l	5.00	ASTM D516-07	21	Sep	16	13:06	EMS
hloride	8.1	mg/1	1.0	SM4500-C1-E	23	Sep	16	9:25	EMS
ercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	19	Sep	16	14:01	EV
otal Dissolved Solids	2330	mg/1	5	11750-85				10:15	ML
alcium - Total	122	mg/l	1.0	6010	19	Sep	16	15:16	SZ
ithium - Total	0.11	mg/1	0.10	6010	26	Sep	16	10:49	KMD
oron - Total	0.48	mg/1	0.10	6010	24	Sep	16	10:18	KMD
intimony - Total	< 0.001	mg/l	0.0010	6020	21	Sep	16	9:25	KMD
rsenic - Total	0.0121	mg/1	0.0020	6020	21	Sep	16	9:25	KMD
arium - Total	0.0366	mg/1	0,0020	6020	21	Sep	16	9:25	KMD
eryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD
admium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep	16	9:25	KMD
hromium - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
obalt - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
ead - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD
olybdenum - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16	9:25	KMD
hallium - Total	< 0.0005	mg/1	0.0005	6020		Sep		9:25	KMD

* Holding time exceeded

Approved by:

Claudette K. Canteo

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:

* Due to sample matrix
! = Due to sample quantity # * Due to in

* Due to concentration of other analytes + * Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 16

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 26 Sep 16 Lab Number: 16-W4182 Work Order #:82-2978 Account #: 006106

Date Sampled: 15 Sep 16 14:18 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Receive Result	ed	Method RL	Method Reference	Dat	e alyzed		Analyst
Metal Digestion				EPA 200.2	16	Sep 1	5	KMD
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	16	Sep 1	17:00	ML
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	15	Sep 1	14:18	DJN
Field Appearance	Slightly '	Turbid	NA	SM 2110	15	Sep 1	5 14:18	DJN
Field Temperature	12.1	Degrees C	0.1	SM 2550B	15	Sep 1	5 14:18	DJN
Field Conductivity	2806	umhos/cm	1	EPA 120.1	15	Sep 1	5 14:18	DJN
Fluoride	0.20	mg/1	0.10	SM4500-F-C	16	Sep 1	5 17:00	ML
Sulfate	1090	mg/1	5.00	ASTM D516-07	21	Sep 1	5 13:06	EMS
Chloride	11.0	mg/1	1.0	SM4500-C1-E	23	Sep 1	9:25	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	19	Sep 1	5 14:01	EV
Total Dissolved Solids	2010	mg/1	5	I1750-85	16	Sep 1	5 10:15	ML
Calcium - Total	150	mg/1	1.0	6010	19	Sep 1	5 15:16	SZ
Lithium - Total	< 0.1	mg/1	0.10	6010	26	Sep 1	6 10:49	KMD
Boron - Total	0.41	mg/1	0.10	6010	24	Sep 1	5 10:18	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	21	Sep 1	9:25	KMD
Arsenic - Total	0.0064	mg/1	0.0020	6020	21	Sep 1	9:25	KMD
Barium - Total	0.0560	mg/1	0.0020	6020	21	Sep 1	9:25	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	6 9:25	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	21	Sep 1	9:25	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	21	Sep 1	9:25	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	21	Sep 1	6 9:25	KMD
Lead - Total	0.0006	mg/1	0.0005	6020	21	Sep 1	9:25	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	21	Sep 1	9:25	KMD
Selenium - Total	< 0.002	mg/l	0.0020	6020	21	Sep 1	6 9:25	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep 1	6 9:25	KMD
i ii i								

* Holding time exceeded

Approved by:

Clauditte K Canteo

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:

0 = Due to sample matrix # = Due to con
1 = Due to sample quantity + = Due to int

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Field Blank

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 26 Sep 16 Lab Number: 16-W4183 Work Order #:82-2978 Account #: 006106

Date Sampled: 15 Sep 16

Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyze	ed		Analyst	
Metal Digestion			7	EPA 200.2	16	Sep	16	0.11367	KMD	_
Lab, pH	* 6.3	s.u.	0.1	SM4500 H+ B	16	Sep	16	17:00	ML	
Fluoride	< 0.1	mg/1	0.10	SM4500-F-C				17:00	ML	
Sulfate	< 5	mg/1	5.00	ASTM D516-07	21	Sep	16	13:06	EMS	
Chloride	< 1	mg/1	1.0	SM4500-C1-E	23	Sep	16	9:25	EMS	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245,1	19	Sep	16	14:01	EV	
Total Dissolved Solids	< 5	mg/1	5	11750-85	16	Sep	16	10:15	ML	
Calcium - Total	< 1	mg/l	1.0	6010	19	Sep	16	15:16	SZ	
Lithium - Total	< 0.1	mg/l	0.10	6010	26	Sep	16	10:49	KMD	
Boron - Total	< 0.1	mg/1	0.10	6010	24	Sep	16	11:18	KMD	
Antimony - Total	< 0.001	mg/1	0.0010	6020	21	Sep	16	9:25	KMD	
Arsenic - Total	< 0.002	mg/l	0,0020	6020	21	Sep	16	9:25	KMD	
Barium - Total	< 0.005 *	mg/1	0.0020	6020	21	Sep	16	9:25	KMD	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD	
Chromium - Total	< 0.002	mg/1	0.0020	6020	21	Sep	16	9:25	KMD	
Cobalt - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD	
Lead - Total	< 0.0005	mg/l	0.0005	6020	21	Sep	16	9:25	KMD	
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD	
Selenium - Total	< 0.002	mg/l	0.0020	6020	21	Sep	16	9:25	KMD	
Thallium - Total	< 0.0005	mg/1	0.0005	6020		Sep		9:25	KMD	

^{*} Holding time exceeded

Approved by:

Claudette K Canto LIOC TIG

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:

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

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

MVTL

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Quality Control Report

Page: 1 of 3

Lab IDs: 16-W4178 to 1	6-W4183	P	roject: O	ΓΡ Coyot	e CCR Blue P							Wo	rk Ord	er: 201682	2-2978		
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	104	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.001 < 0.001 < 0.001 < 0.001 < 0.001	0.4124 0.4168 0.4410 0.4358 0.4222	103 104 110 109 106	75-125 75-125 75-125 75-125 75-125	0.4124 0.4168 0.4410 0.4358 0.4222	0.4042 0.4266 0.4378 0.4394 0.4336	101 107 109 110 108	2.0 2.3 0.7 0.8 2.7	20 20 20 20 20 20	- - - -		< 0.001
Arsenic - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0022 0.0031 < 0.002 0.0129 < 0.002	0.4222 0.4118 0.4386 0.4434 0.4264	105 102 110 108 107	75-125 75-125 75-125 75-125 75-125	0.4222 0.4118 0.4386 0.4434 0.4264	0.4116 0.4388 0.4414 0.4486 0.4356	102 109 110 109 109	2.5 6.3 0.6 1.2 2.1	20 20 20 20 20 20	-	-	< 0.002
Barium - Total mg/l	0.1000	99	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0102 0.0695 0.0380 0.0488 0.0273	0.4110 0.4770 0.4486 0.4560 0.4238	100 102 103 102 99	75-125 75-125 75-125 75-125 75-125	0.4110 0.4770 0.4486 0.4560 0.4238	0.3978 0.4848 0.4530 0.4692 0.4328	97 104 104 105 101	3.3 1.6 1.0 2.9 2.1	20 20 20 20 20 20	- - -		< 0.002
Beryllium - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.4420 0.4356 0.4632	107 110 109 116 111	75-125 75-125 75-125 75-125 75-125	0.4264 0.4420 0.4356 0.4632 0.4450	0.4048 0.4550 0.4536 0.4612 0.4658	101 114 113 115 116	5.2 2.9 4.0 0.4 4.6	20 20 20 20 20 20	-	- - - -	< 0.0005
Boron - Total mg/l	0.40 0.40 0.40 0.40	110 115 112 110	80-120 80-120 80-120 80-120	0.400 0.400 0.400 0.400 0.400 3.00	16-D3777 16-W4067 16-W4074 16-W4155 16-W4178 16-W4194	0.50 0.25 0.40 0.21 0.40 2.88	0.88 0.64 0.78 0.62 0.79 5.92	95 97 95 102 98 101	75-125 75-125 75-125 75-125 75-125 75-125	0.88 0.64 0.78 0.62 0.79 5.92	0.89 0.66 0.80 0.62 0.79 6.23	97 102 100 102 98 112	1.1 3.1 2.5 0.0 0.0 5.1	20 20 20 20 20 20 20 20	-	- - - -	< 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1

MVTL

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MEMBER ACIL

Quality Control Report
Lab IDs: 16-W4178 to 16-W4183

Page: 2 of 3

Lab IDs: 16-W4178 to 16	5-W4183	P	roject: O	ΓΡ Coyot	te CCR Blue I							Wo	rk Ord	er: 201682	2-2978		
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec	Known % Rec	Method Blank
Cadmium - Total mg/l	0.1000	108	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.4200 0.4214 0.4290	102 105 105 107 108	75-125 75-125 75-125 75-125 75-125	0.4094 0.4200 0.4214 0.4290 0.4320	0.3934 0.4368 0.4310 0.4400 0.4308	98 109 108 110 108	4.0 3.9 2.3 2.5 0.3	20 20 20 20 20 20	- - - -	-	< 0.0003
Calcium - Total mg/l	20.0	103	80-120	500	16W4197q	580	1000	84	75-125	1000	1000	84	0.0	20	-	-	< 1 < 1
Chloride mg/l	30.0	102	80-120	30.0	16-W4177	< 1	27.4	91	80-120	27.4	27.0	90	1.5	20		_	< 1 < 1
Chromium - Total mg/l	0.1000	93	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	<0.002 <0.002 <0.002 <0.002 <0.002	0.3700 0.3722 0.3898 0.3866 0.3728	92 93 97 97 93	75-125 75-125 75-125 75-125 75-125	0.3700 0.3722 0.3898 0.3866 0.3728	0.3578 0.3832 0.3862 0.3858 0.3936	89 96 97 96 98	3.4 2.9 0.9 0.2 5.4	20 20 20 20 20 20	-	-	< 0.002
Cobalt - Total mg/l	0.1000	95	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0139 < 0.002 < 0.002 < 0.002 < 0.002	0.3828 0.3766 0.3950 0.3880 0.3768	92 94 99 97 94	75-125 75-125 75-125 75-125 75-125	0.3828 0.3766 0.3950 0.3880 0.3768	0.3736 0.3878 0.3932 0.3892 0.3920	90 97 98 97 98	2.4 2.9 0.5 0.3 4.0	20 20 20 20 20 20	-		< 0.002
Fluoride mg/l	0.50	102	90-110	0.500 0.500	16-W4178 16-W4181	0.18 0.22	0.68 0.72	100 100	80-120 80-120	0.68 0.72	0.69 0.73	102 102	1.5	20 20	-	-	< 0.1 < 0.1
Lead - Total mg/l	0.1000	101	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 0.0005 < 0.0005 < 0.0005	0.3812 0.4038 0.3960 0.4014 0.3886	95 101 99 100 97	75-125 75-125 75-125 75-125 75-125	0.3812 0.4038 0.3960 0.4014 0.3886	0.3708 0.4118 0.4028 0.4198 0.3920	93 103 101 105 98	2.8 2.0 1.7 4.5 0.9	20 20 20 20 20 20	-	-	< 0.0005
Lithium - Total mg/l	0.40	100	80-120	0.400 0.400	16-W4155 16-W4178	0.09 0.08	0.49 0.50	100 105	75-125 75-125	0.49 0.50	0.49 0.48	100 100	0.0 4.1	20 20	-	-	< 0.1 < 0.1

MVTL

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MEMBER ACIL

Quality Control Report Lab IDs: 16-W4178 to 16-W4183

Project: OTP Covote CCR Blue Pit

Work Order: 201682 2078

Page: 3 of 3

Lab 105: 10-W41/6 to 10-	VV 4103	T.	oject: O.	IF Coyou	e CCK Blue P							Wo	rk Ord	er: 201682	2-2978		
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Mercury - Total mg/l	0.0020 0.0020	100	85-115 85-115	0.002 0.002 0.002 0.002	A46663 A46666 16-M2796 16-W4183	< 0.0002 < 0.0002 < 0.0002 < 0.0002		100 100 65 100	70-130 70-130 70-130 70-130	0.0020 0.0020 0.0020	0.0020 0.0020 0.0020	100 100 100	0.0 0.0 0.0	20 20 20	- - -	- - -	< 0.0002 < 0.0002
Molybdenum - Total mg/l	0.1000	95	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	0.0035 0.0065 < 0.002 0.0026 < 0.002	0.4170 0.4074 0.4224 0.4122 0.4024	103 100 106 102 101	75-125 75-125 75-125 75-125 75-125	0.4170 0.4074 0.4224 0.4122 0.4024	0.3972 0.4264 0.4308 0.4218 0.4154	98 105 108 105 104	4.9 4.6 2.0 2.3 3.2	20 20 20 20 20 20	- - - -		< 0.002
pH units	-	-	_	-	-	-	-	-	-	7.2 7.3	7.4 7.2	-	2.7	20 20	-	-	-
Selenium - Total mg/l	0.1000	116	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.002 < 0.002 < 0.002 < 0.002 < 0.002	0.4772 0.4666 0.4854 0.5012 0.4522	119 117 121 125 113	75-125 75-125 75-125 75-125 75-125	0.4772 0.4666 0.4854 0.5012 0.4522	0.4508 0.4698 0.4748 0.4836 0.4830	113 117 119 121 121	5.7 0.7 2.2 3.6 6.6	20 20 20 20 20 20	-	-	< 0.002
Sulfate mg/l	100	105	90-110	100	16-W4177	< 5	105	105	80-120	105	103	103	1.9	20	_	_	< 5
Thallium - Total mg/l	0.1000	100	80-120	0.400 0.400 0.400 0.400 0.400	16W3990q 16W4067q 16W4074q 16W4155q 16W4178q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.3684 0.3992 0.4004 0.4062 0.3878	92 100 100 102 97	75-125 75-125 75-125 75-125 75-125	0.3684 0.3992 0.4004 0.4062 0.3878	0.3654 0.4122 0.4020 0.4226 0.3996	91 103 100 106 100	0.8 3.2 0.4 4.0 3.0	20 20 20 20 20 20 20	- - - -		< 0.0005
Total Dissolved Solids mg/l	,	-	-	-	-	-	-	-	-	1280 2010	1270 2020	-	0.8	20 20	-	-	< 5

Approved by:

400-16



Laboratories, Inc.

2616 E. Broadway Bismarck, ND 58501 Phone (701) 258-9720

Chain of Custody Record

Projec	ct Name:		Name of Sam	pler(s):	
	OTP Coyote CCR	Blue Pit Sept 16	Dassen	Nieswaag	
Report To: Attn: Address: Phone:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Work Order !		i
	Sample Inforr	nation	Bottle Type	Field Parameters	Analysis
Number	Ol eld	ple Type	II HNO3 (fillered)	Temperature °C	

Sam Lab Analysis Required 0904 Blue 6 GW clear XXX Blue 7/MS7/MSD7 GW 0905 1,5 Sept 16 Blue 13 GW X 1385 Blue 14 GW XXX clear 3292 Blue 15 1444 GW X OTP CCR List. No RadChem. Blue 16 GW Blue 8 GW field Blank (PB) W4183 AU WA NA w NA

Comments:

13 Sept 16 DN

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	°C
1	Dan his	walkin 2	1857	C. Jackson		16560+16	ROTZ.Z
2		,					TM562
3							15 sept 16 n



Groundwater Assessment

Company:	OTP Coyote	
Event:	Sept_2016	
Sample ID:	Blue 6	

Sampling Personal: Dacon Niecuna

Phono: (701) 259 0720

Phor	ne: (701) 258-9	9720								Į		112		
Weather C	onditions:		Temp:	52	°F	Wind:	Light			Precip:	Suni	ny / Partly (Cloudy Clo	udy
		Well Info	ormation						Sa	mpling l	nformatio	on		
W∈	ell Locked?	Xes	No				Purgir	ng Method:	Blac	lder		Co	ontrol Setting	s
Wel	l Labeled?) es	No				Samplir	ng Method:	Blac	lder		Purge:	56	sec.
Casin	g Straight?	Ves	No				Dedicat	ed Equip?:	Yes	(No)		Recover:	4	sec.
Grout S	eal Intact?	Yes	No	Not V	ișible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Ne	ecessary:		<u> </u>		,		Duplicate \$	Sample ID:		~]	Pumping R	Rate: / & 0	mL/min
	Casing	Diameter:		2"						,	_		,	
Wate	er Level Bef	fore Purge:		63.0	/ ft		Р	urge Date:	13 Se	otlo	Time Purg	jing Began:	1104	(am/pm
	Total V	Vell Depth:	-	79,10'	ft		Well P	urged Dry?) Xes	No	Time F	Purged Dry:	1200	am/pm
	We	ell Volume:		10.0	liters		Sa	mple Date:	1450	4	Time o	f Sampling:	0904	am/pm
[Depth to To	p of Pump:		71.20						•				,
Wate	er Level Aft	er Sample:		72.9	<u>^2</u> ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
١.	/leasuremer	nt Method:	Electric \	N ater Level	Indicator		List:							
					Field	Measure	ments							
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription	:		
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity	, Color, Od	or, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear,	partly cloudy	, cloudy		
1	1109	10,77	2571	6.44	2.87	182.5	6,28	64.38	500	cler				
2	1114	[0,28]	2567	6,37	2,29	180,4	5,06	64.86		ca	~			
3	1/24	11.06	2568	6,30	01,73	168,4	5.43	65.94		occe				
4	1134	10,69	25.66	6,47	1.43	145-6	6,16	66.95	1000	de				
5	1200	1005	2559	6.58	2.48	94.2	6.80	71,20	4200	de				
6 7														
8													-	
	0159							63.18		Pun 0	Tan La	clen Ch	i	
1	17/1-	l	L	1		J	1	1 010	i	117965 6	-ulin To	cent 1	the .	

3 | 8 , 3 7 | 6 4 , 0 4 | 7 6 0 mL

Stabilized: Comments:

Yes

10

Water level wasn't keeping up 50 Went to 200ml, at 1144



Stabilized:

Comments:

Yes

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote
Event:	Sept 2016
Sample ID:	B/4 13
Sampling Per	sonal: Darren Vioswales

Phone: (701) 258-9720

								•		······				
Weather C	onditions:	:	Temp:	50	°F	Wind:	Lin.			Precip:	Sunr	ny / Partly C	loudy //Clo	udy
		Well Info	ormation	10			7.0	· · · · · · · · · · · · · · · · · · ·	Sa	mpling lı	nformatio	on		\supset
We	ell Locked?	√es	No				Purgir	ng Method:	Blad	der		Co	ntrol Setting	js
We	II Labeled?	Yes	No				Samplir	ng Method:	Blad	der		Purge:	5	sec.
Casin	g Straight?	Yes	No				Dedicat	ed Equip?:	Yes	NO		Recover:	55	sec.
	Seal Intact?		No	CNOTY	Isible		Duplicate	Sample?:	Yes	No		PSI:	120°	ìo
Repairs No	ecessary:						Duplicate:	Sample ID:				Pumping R	ate: / <i>0</i> ට	mL/min
	Casing	g Diameter:		2"							_			
Wate	er Level Be	fore Purge:	10	05,23	ft		F	urge Date:	14500+	-16	Time Purg	ing Began:	1029	ám/pm
	Total V	Nell Depth:)	16,65	ft		Well P	urged Dry?	(Yes)	No		Purged Dry:	1205	am/p m am/pm
	W	ell Volume:	-	7.1	liters		Sa	mple Date:	15-5pot	-1/z	Time o	f Sampling:	0905	(am/pm
	Depth to To	p of Pump:	1)	3.78	ft			·	9.				-	
Wat	er Level Aft	ter Sample:	11	2,61	ft		Bottle	CCR: 1L R	Raw, 500mL	Nitric, 4-1L	Nitric			
N	<i>l</i> leasureme	nt Method:	Electric	Water Level	Indicator]	List:							
					Field	Measure	ements							
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription	*		
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed		, Color, Od	<u> </u>		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	:	clear,	partly cloudy			
1	1634	11,26	5675	6.67	1.94	125.9	81.8	107.02	502	4	-5 63hr/g	, tubid	,	
2	1044	11,77	5436	6.157	2,34	134.2	681	108,42	1000	the	3°T			
3	1054	11.96	5287	6.53	3,19	139,9	58.8	109,22	1000	27				
4	1164	12.06	5371	6,57	3.08	132,0	45.7	109,85	1000	Cley				
5	11/4	12/18	5564	6.63	2.63	1186	40,5	11051	1000	Cles				
6	1:34	12,73	5813	6,71	2,11	104,6	21.8	111,55	2000	Clem				
7	11 44	12,23	1	6.69	2.13	103,8	17,6	11(1.67	1000	Cur				
8	1154	12.28	5891	16.14	11/5/	102,7	17.8	111.78	1000	00				
9	1159	11.79	6089	6,79	11.05	98,1	1915	112,43	500	18	,			

Total Volume Removed:

1159 went to 2000xl to jurgedry.



Groundwater Assessment

Company:	OTP Coyote	:	
Event:	Sept 2016		
Sample ID:	B/48 13		
Sampling Per	sonal: Davien	Niesway	
Date:///-/.5	Se ni / ('	

Phone: (701) 258-9720

Field Measurements

Field Measurements										
	ization secutive)	Temp (°C)	Spec. Cond.	рН	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear partly cloudy cloudy
11	0900			CONTRACTOR	omotoriami e emana e en e			107.08	_	Purged Line for Sm.
12	0905	11.79	6245	6.84	2.64	181,0	58.2	108,30	500	dea
13										
14										
15	1 = 144 <u>-</u>									
16										
17										
18										
19										
20							1	gr ²		
21										
22										
23										
24	<u> </u>									
25										
26										
27			1							
28										
29										
30									1	

Stabilized:	Yes	X	No	
Comments:		7	\bigcirc	

Total Volume Removed: - m

31



Groundwater Assessment

Company: OTP Coyote

Event: Sept 2016

Sample ID: Black III

Sampling Personal: Dat Control (1) 10 Control (1)

2616 E. Broadway Ave, Bismarck, ND									Sampling Personal: //ar/cm///cg/aac					
Phone: (701) 258-9	9720													
Weather Conditions:		Temp:	(oh	°F	Wind:	SW	0		Precip:	Sun	ny Partly C	loudy / Clo	udy	
	Well Info	rmation				•		Sar	npling l	nformati	on			
Well Locked?	(¥es	No				Purgi	ng Method:	Blado	ler		Co	ntrol Setting:	s	
Well Labeled?	¥es	No				Sampli	ng Method:	Blado	ler		Purge:	5	sec	
Casing Straight?	(es	No		50.250ap		Dedicat	ed Equip?:	Yes	(No)		Recover:	55	sec	
Grout Seal Intact?	Yes	No	Not V	isible		Duplicate	Sample?:	Yes /	No		PSI:	50		
Repairs Necessary:						Duplicate	Sample ID:				Pumping Ra	ate: <i> 00</i>	m∐mir	
Casing	Diameter:		2"						2.1					
Water Level Bef	fore Purge:	•	79,17	ft		F	Purge Date:	145ept	16	Time Purg	jing Began:	1225	am/pn	
Total V	Vell Depth:	رر	6.88	ft		Well P	urged Dry?	Yeś	(No)	Time I	Purged Dry:		am/pn	
We	ell Volume:		48	liters		Sa	mple Date:	1458050	6	Time o	f Sampling:	1705	am/pŋ	
Depth to Top	p of Pump:	8	4,05	ft									_	
Water Level After Sample:		ft		Bottle CCR: 1L Raw, 500mL Nitric, 4-1L Nitric										
Measurement Method: Electric Water Level Indicator				List:										

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1230	12,71	4897	6,55	0,72	668	97.7	79.46	500	Stightly tubed
2	1245	11.81	4899	6.57	0,49	93,2	17,7	79,54	1500	Cer
3	1250	11,75	4918	6.58	0155	8800	10.3	7954	900	Cay
4	1255	11.67	4956	6,59	0,56	85.5	7.78	79,56	500	cla
5 ,	tz 1300	11.82	4993	6.58	0,57	86.5	7.99	79,63	500	Cler
6	1305		5009	6.59	0156	76,4	7.84	P1.65	500	dr
7 N	1310						•			
8										
9										
10									(fano	

Stabilized: Yes No

Total Volume Removed: 4000 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	Sept 2016	
Sample ID:	B/4215	
^	70000	

2010 E. Broadway Ave, Dis	Smarck, ND							Sampling P	ersonal: 🏌	arren	10105m	-645	
Phone: (701) 258-9	720											/	
Weather Conditions:		Temp:	69 °F		Wind:	\$15			Precip	Sung	y / Partly C	loudy / Clo	ıdy
	Well Info	rmation						Sa	mpling l	nformatio	on		
Well Locked?	Yes	(No)				Purgi	ing Method:	Blad	ider		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampli	ing Method:	Blad	ider		Purge:	5	sec
Casing Straight?	Xes	No				Dedica	ted Equip?:	Yes	ØØ		Recover:	55	sec
Grout Seal Intact?	Yes	No	Not Visit	dle		Duplicate	e Sample?:	Yes	No		PSI:		
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: <i>[100</i>	mL/mir
Casing	Diameter:		2"										
Water Level Bef	ore Purge:		76.94	ft			Purge Date:	lusept	-16	Time Purg	ing Began:	1409	am/pr
Total W	Vell Depth:		87.89	ft			urged Dry?	Yes	No	Time F	urged Dry:		am/pm
We	ell Volume:		6.8	liters		Sa	ample Date:	MSept 4		Time of	Sampling:	1444	am/pm
Depth to Top	o of Pump:		22.88	ft									
Water Level After	er Sample:	760	16-6-40	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	. Nitric			
Measuremen	nt Method:	,	Water Level Indi	icator		List:							
				- ::	N.F								

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1414	13,26	7274	6.55	0,40	0,7	35.2	77.05	500	cla
2	1429	13.18	3266	6.56	0,27	13.8	13,9	76.9h	1500	a
3	1434	12.94	3267	6,56	0,24	16,3	8.01	77.00	500	de
4	1439	12,59	3271	6,66	0.21	18,9	8.52	76,99	500	an
5	1444	12.73	3292	6.56	0,24	21.8	8,66	76,96	500	ch
6		' /			,					
7										
8										
9										
10										

Stabilized: Yes No

Comments:

Total Volume Removed: 3500 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	Sept 2016
Sample ID:	Blue 16
Sampling Pe	rsonal: Marcen Micronal

Phone: (701) 258-9720

Weather Conditions:		Temp	1961 °F		Wind:	55			Precip	Suni	ny / Partly C	loudy //Clo	udy
•	Well Info	rmation	, , , , , , , , , , , , , , , , , , ,		-	, *		s	ampling l	nformatio	on		
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder		Co	ntrol Setting	s
Well Labeled?	€ 8	No				Sampli	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No		<u> </u>		Dedica	ted Equip?:	Yes	(No		Recover:	55	sec.
Grout Seal Intact?	Yes	No -	Not Visi	ble		Duplicate	Sample?:	Yes	No		PSI:	35	
Repairs Necessary:	<u> </u>					Duplicate	Sample ID:	_			Pumping Ra	ate: / <u>() ()</u>	mL/min
Casing	Diameter:		2"									1	
Water Level Befo	ore Purge:		75.78	ft			Purge Date:	155	otla	Time Purg	ing Began:	1043	(am/pm
Total W	ell Depth:		97.63	ft		Well F	urged Dry?	Yes	(No)	Time F	Purged Dry:		am/pm
We	ll Volume:		13.5	liters		Sa	ample Date:	15 Su	16	Time o	f Sampling:	1418	am/pm
Depth to Top	of Pump:		92,95	ft									
Water Level Afte	r Sample:			ft		Bottle	CCR: 1L R	aw, 500ml	_ Nitric, 4-1L	. Nitric			,
Measurement	t Method:	Electric	Water Level Inc	licator		List:							
,				Field	Measure	ements							

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:	
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy	
1	1048	12.69	3012	6.70	1.19	-2.6	21000	75.80	500	Agenturbid Bro	2
2	1118	12.93	2867	6.54	0,43	-6.5	71000	75.80	3000	Tubia Brown	
3	1148	11,76	2805	6,49	0,29	-22,7	1.08.	75280	3000	Strapply turbed	
4	1218	11.96	2804	6. 48	0,21	-35.5	13%	75.80	3000	Straply tobid	
5	1248	11,69	2804	648	0,20	-364	73,2	15.80	3000	SlightlyTubix	
6	1318	11,67	2804	2,49	0,17	35,3	59,0	7588	2000	Slighty tweed	
7	1348	12,00	2805	6.49	0,14	-37.6	56,4	75.80	3000	5+5+	
8	1353	11.89	2808	6,49	0,15	-31,1	46.1	75.80	500	ST	
9	13.58	11.83	2817	6,49	0,15	-3915	49.3	75.80	500	57	
10	1403	12.13	2868	6,49	0,14	47.	48.0	75.80	290	57	
Stabilized:	: Yes-	No_	. •	•		T	otal Volume	Removed:		mL	

Comments:

Continual on next page



Groundwater Assessment

Company:	OTP Coyote
Event:	Şept 2016
Sample ID:	Kluelb
Sampling Persona	al: Passen Nieswag
Date: 1550	otil

Phone: (701) 258-9720

Field Measurements

				Г	·ield Mea	suremen	เร			
Stabili (3 cons	ization ecutive)	Temp (°C)	Spec. Cond.	рН	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.
SEQ#	Time	, ,	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
11	1408	12.05	2809	6.49	0.14	-44,3	47.3	75.80	500	ST
12	1413	12,00	2811	6,49	6,14	-45.0	46,3	75.80	500	ST
13	1418	12,14	2806	6.49	0,13	-45.6	46.8	75.80	500	ST
14										
15										
16										
17										
18										
19										, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

Sta	bil	ized	:

Yes

No

Total Volume Removed: 21, くか mL



Groundwater Assessment

Company:	OTP Coyote
Event:	Sept 2016
Sample ID:	Blue 8
Sampling Personal:	Varen Niscons

2616 E. Broadway Ave, Bismarck, ND

Phor	ne: (701) 258-9	9720								<u>'</u>	, , , , , , , , , , , , , , , , , , ,			
Weather C	onditions:		Temp:	64	°F	Wind: 4	F,55			Precip	Sunn	y / Partly C	loudy / Clo	udy
		Well Info	rmation						Sa	mpling l	nformatio	n		
We	ell Locked?	Xes	No				Purgir	ng Method:	Blad	der		Co	ntrol Setting	js
	Il Labeled?	Yes	No				Samplir	ng Method:	Blad	der		Purge:	-	sec.
Casing	g Straight?	X 68	No				Dedicat	ed Equip?:	Yes	No		Recover:		sec.
Grout S	eal Intact?	Yes	No	(Not V	jsible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Ne	ecessary:						Duplicate \$	Sample ID:	-			Pumping R	ate:	mL/min
	Casing	Diameter:		2"	"									
Wate	er Level Bet	fore Purge:	1	<u> 13.93</u>	ft.		Р	urge Date:	1535p	46	Time Purgi		1536	am/pm
	Total V	Vell Depth:	•	16,4	5 ft		Well P	urged Dry?	Yes	-No		urged Dry:		am/pm
	W	ell Volume:		1,6	liters		Sa	mple Date:	<i>t</i>		Time of	Sampling:		am/pm
	Depth to To	p of Pump:		74,94	-∫ ft									
Wate	er Level Aft	er Sample:			' ft			CCR: 1LR	aw, 500mL-	Nitric, 4-1L	Nitric			
	/leasureme	nt Method:	Electric '	Water Level	Indicator		List:							
					Field	Measure	ements							
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription:			
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed		y, Color, Odo			
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear,	partly cloudy,	cloudy		
1														
2						<u> </u>								
3				1										
5							_							
6				\rightarrow										
7				1		1								
8														
9														
10														
Stabilized:	Yes	No			•	Ţ	otal Volume	Removed:		mL			•	
Comments	3:		•						-	•				
				~/		1								

Josufficent Volume 10 Sample



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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-2979

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year 3rd Quarter 2016

MVTL Laboratory Identifications: 16-W4184 through 16-W4189

Page 1 of 1

Sample Identification	MVTL Laboratory #
Blue 6	16-W4184
Blue 13	16-W4185
Blue 14	16-W4186
Blue 15	16-W4187
Blue 16	16-W4188
Blue 8	Insufficient volume – no sample
Field Blank (FB)	16-W4189

I. RECEIPT

- All samples were received at the laboratory on 16 September 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 2.2°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 21 September 2016.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - o Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: DATE: 190CT 16

Claudette Carroll - MVTL Bismarck Laboratory Manager



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 6

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 18 Oct 16 Lab Number: 16-W4184 Work Order #:82-2979 Account #: 006106

Date Sampled: 14 Sep 16 9:04 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.50	s.u.	0.1	SM 4500 H+ B	14 Sep 16	9:04	DJN
Field Appearance	Clear		NA	SM 2110	14 Sep 16	9:04	DJN
Field Temperature	10.3	Degrees C	0.1	SM 2550B	14 Sep 16	9:04	DJN
Field Conductivity	2591	umhos/cm	1	EPA 120.1	14 Sep 16	9:04	DJN
Radium 226	See Atta	ched Report			3 Oct 16		OL
Radium 228	See Atta	ched Report			2 Oct 16		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte

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:

= Due to sample matrix # = Due to concentration of other analytes

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



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1 of 1 Page:

Report Date: 18 Oct 16 Lab Number: 16-W4185 Work Order #:82-2979 Account #: 006106

Date Sampled: 15 Sep 16 9:05 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 13

Event and Year: 3rd Qtr 2016

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.84	s.u.	0.1	SM 4500 H+ B	15 Sep 16 9:	05 DJN
Field Appearance	Clear		NA	SM 2110	15 Sep 16 9:	05 DJN
Field Temperature	11.8	Degrees C	0.1	SM 2550B	15 Sep 16 9:	05 DJN
Field Conductivity	6245	umhos/cm	1	EPA 120.1	15 Sep 16 9:	05 DJN
Radium 226	See Atta	ched Report			3 Oct 16	OL
Radium 228	See Atta	ched Report			2 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K. Canteo 90CT16

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:

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



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 14

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 18 Oct 16 Lab Number: 16-W4186 Work Order #:82-2979 Account #: 006106

Date Sampled: 14 Sep 16 13:05 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.59	s.u.	0.1	SM 4500 H+ B	14 Sep 16 13:05	DJN
Field Appearance	Clear		NA	SM 2110	14 Sep 16 13:05	DJN
Field Temperature	11.8	Degrees C	0.1	SM 2550B	14 Sep 16 13:05	DJN
Field Conductivity	5009	umhos/cm	1	EPA 120.1	14 Sep 16 13:05	DJN
Radium 226	See Atta	ched Report			3 Oct 16	OL
Radium 228		ched Report			2 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canteo

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:

Due to sample matrix ### = Due to co

! = Due to sample quantity + = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 15

Event and Year: 3rd Qtr 2016

Page: 1 of 1

Report Date: 18 Oct 16 Lab Number: 16-W4187 Work Order #:82-2979 Account #: 006106

Date Sampled: 14 Sep 16 14:44 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Recei	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	14 Sep 16 14:44	DJN
Field Appearance	Clear		NA	SM 2110	14 Sep 16 14:44	DJN
Field Temperature	12.7	Degrees C	0.1	SM 2550B	14 Sep 16 14:44	DJN
Field Conductivity	3292	umhos/cm	1	EPA 120.1	14 Sep 16 14:44	DJN
Radium 226	See Atta	ched Report			3 Oct 16	OL
Radium 228	See Atta	ched Report			3 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

= Due to sample matrix # = Due to come to sample quantity # = Due to interpret the sample quantity # = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Blue 16

Event and Year: 3rd Qtr 2016

1 of 1 Page:

Report Date: 18 Oct 16 Lab Number: 16-W4188 Work Order #:82-2979 Account #: 006106

Date Sampled: 15 Sep 16 14:18 Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Receive Result	d	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	15 Sep 16 14:18	DJN
Field Appearance	Slightly T	urbid	NA	SM 2110	15 Sep 16 14:18	DJN
Field Temperature	12.1	Degrees C	0.1	SM 2550B	15 Sep 16 14:18	DJN
Field Conductivity	2806	umhos/cm	1	EPA 120.1	15 Sep 16 14:18	DJN
Radium 226	See Attach	ed Report			3 Oct 16	OL
Radium 228	See Attach				3 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

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:

= Due to sample matrix # = Due to concentration of other analytes

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

= Due to sample quantity



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page:

1 of 1

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue Pit

Sample Description: Field Blank

Event and Year: 3rd Qtr 2016

Report Date: 18 Oct 16 Lab Number: 16-W4189 Work Order #:82-2979 Account #: 006106

Date Sampled: 15 Sep 16

Date Received: 16 Sep 16 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 2.2C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Radium 226	See Attached Report			3 Oct 16	OL
Radium 228	See Attached Report			3 Oct 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K. Cantes 190CT16

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:

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



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 10/11/2016

CLIENT: Project:

Lab Order:

MVTL Laboratories, Inc.

201682-2979

201682-2979 S1609367 **CASE NARRATIVE**

Report ID: S1609367001

Samples 16-W4184 Blue 6, 16-W4185 Blue 13, 16-W4186 Blue 14, 16-W4187 Blue 15, 16-W4188 Blue 16, and 16-W4189 Field Blank were received on September 21, 2016.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O

Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

S1609367-001

ClientSample ID: 16-W4184 Blue 6 COC:

201682-2979

Date Reported

10/11/2016

Report ID

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/14/2016 9:04:00 AM

DateReceived: 9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
Radium 228	-4.5	pCi/L		1	Ga-Tech	10/02/2016 1605	MB
Radium 228 Precision (±)	3.3	pCi/L			Ga-Tech	10/02/2016 1605	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Е Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

0 Outside the Range of Dilutions

Х Matrix Effect **RL** - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 6



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

S1609367-002

ClientSample ID: 16-W4185 Blue 13 COC:

201682-2979

Date Reported

10/11/2016

Report ID

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/15/2016 9:05:00 AM

DateReceived: 9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Commonto

Result	Units	Qual	RL	Method	Date Analyzed/I	nit
0.4	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	МВ
0.1	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
-4.5	pCi/L		1	Ga-Tech	10/02/2016 1906	MB
3.5	pCi/L			Ga-Tech	10/02/2016 1906	МВ
	0.4 0.1 -4.5	0.4 pCi/L 0.1 pCi/L -4.5 pCi/L	0.4 pCi/L 0.1 pCi/L -4.5 pCi/L	0.4 pCi/L 0.2 0.1 pCi/L -4.5 pCi/L 1	0.4 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B -4.5 pCi/L 1 Ga-Tech	0.4 pCi/L 0.2 SM 7500 Ra-B 10/03/2016 1454 0.1 pCi/L SM 7500 Ra-B 10/03/2016 1454 -4.5 pCi/L 1 Ga-Tech 10/02/2016 1906

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

O X Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

1. Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 6



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

S1609367-003 16-W4186 Blue 14

ClientSample ID: COC:

201682-2979

Date Reported

10/11/2016

Report ID

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/14/2016 1:05:00 PM

DateReceived:

9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Analysis	Danuli	ll mit m	Ouel	D1	88 - 41 I	Data Analyzadii	
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	1111
Radionuclides - Total							
Radium 226	2.1	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	MB
Radium 226 Precision (±)	0.3	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
Radium 228	-0.1	pCi/L		1	Ga-Tech	10/02/2016 2207	MB
Radium 228 Precision (±)	3.5	pCi/L			Ga-Tech	10/02/2016 2207	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range Ε

Analyte detected below quantitation limits J

М Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions 0

Matrix Effect Х

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

NDNot Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 6



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

COC:

S1609367-004

ClientSample ID: 16-W4187 Blue 15

201682-2979

Report ID

10/11/2016

Date Reported

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/14/2016 2:44:00 PM

DateReceived:

9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Commonto

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.7	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	MB
Radium 226 Precision (±)	0.2	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
Radium 228	0.7	pCi/L		1	Ga-Tech	10/03/2016 108	MB
Radium 228 Precision (±)	3.1	pCi/L			Ga-Tech	10/03/2016 108	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range Е

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

Outside the Range of Dilutions О

Χ Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 6



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

MVTL Laboratories, Inc. Company:

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

S1609367-005 ClientSample ID: 16-W4188 Blue 16

COC:

201682-2979

Date Reported

10/11/2016

Report ID

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/15/2016 2:18:00 PM

DateReceived: 9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.8	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	МВ
Radium 226 Precision (±)	0.2	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
Radium 228	-3.4	pCi/L		1	Ga-Tech	10/03/2016 409	MB
Radium 228 Precision (±)	3.3	pCi/L			Ga-Tech	10/03/2016 409	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Value above quantitation range Ε

J Analyte detected below quantitation limits

М Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions 0

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 6



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

MVTL Laboratories, Inc. Company:

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-2979

Lab ID:

S1609367-006

ClientSample ID: 16-W4189 Field Blank

COC:

201682-2979

Date Reported

10/11/2016

Report ID

S1609367001

WorkOrder:

S1609367

CollectionDate: 9/15/2016

DateReceived:

9/21/2016 3:43:00 PM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	10/03/2016 1454	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	10/03/2016 1454	MB
Radium 228	-6.6	pCi/L		1	Ga-Tech	10/03/2016 710	MB
Radium 228 Precision (±)	3.2	pCi/L			Ga-Tech	10/03/2016 710	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Value above quantitation range Ε

Analyte detected below quantitation limits

М Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions 0

Matrix Effect Х

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 6



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: MVTL Laboratories, Inc.

Date: 10/11/2016

Work Order: S16

S1609367

Report ID: S1609367001

Project: 201682-2979

Radium 228 by Ga/Tech	Sample Type MBLK	Units: pCi/L
MB-388 (09/30/16 12:49)	RunNo: 139392	PrepDate: 09/26/16 12:00 BatchID: 12360
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Total Radium 228	ND	1
Radium 228 by Ga/Tech	Sample Type LCS	Units: pCi/L
LCS-388 (09/30/16 15:50)	RunNo: 139392	PrepDate: 09/26/16 12:00 BatchID: 12360
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Total Radium 228	40	1 38.5 105 61.3 - 120
Radium 228 by Ga/Tech	Sample Type MS	Units: pCi/L
S1609279-001AMS (10/01/16 06:55)	RunNo: 139392	PrepDate: 09/26/16 12:00 BatchID: 12360
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Total Radium 228	74	1 77 ND 96.6 64.3 - 120
Radium 228 by Ga/Tech	Sample Type MSD	Units: pCi/L
S1609279-001AMSD (10/01/16 09:56)	RunNo: 139392	PrepDate: 09/26/16 12:00 BatchID: 12360
Analyte	Result	RL Conc %RPD %REC % RPD Limits Qual
Total Radium 228	72	1 74 2.73 83.1 20
Radium 226 in Water - Total by SM7500RA_B	Sample Type MBLK	Units: pCi/L
MB-1667 (10/03/16 14:54)	RunNo: 139587	PrepDate: 09/26/16 0:00 BatchID: 12387
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Radium 226	ND	0.2
Radium 226 in Water - Total by SM7500RA_B	Sample Type LCS	Units: pCi/L
LCS-1667 (10/03/16 14:54)	RunNo: 139587	PrepDate: 09/26/16 0:00 BatchID: 12387
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Radium 226	5.4	0.2 5.99 90.4 67.1 - 122
Radium 226 in Water - Total by SM7500RA_B	Sample Type MS	Units: pCi/L
S1609357-004CMS (10/04/16 16:23)	RunNo: 139587	PrepDate: 09/26/16 0:00 BatchID: 12387
Analyte	Result	RL Spike Ref Samp %REC % Rec Limits Qual
Radium 226	6.6	0.2 5.99 ND 110 65 - 131
Radium 226 in Water - Total by SM7500RA_B	Sample Type MSD	Units: pCi/L
S1609357-004CMSD (10/04/16 16:23)	RunNo: 139587	PrepDate: 09/26/16 0:00 BatchID: 12387
Analyte	Result	RL Conc %RPD %REC % RPD Limits Qual
Radium 226	5.9	0.2 6.6 10.8 98.5 20

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- O Outside the Range of Dilutions
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- X Matrix Effect



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page	1	of	1	

	Phone: (701) :	258-9720										~	
Toll Free: (8	300) 279-6885	Fax: (701) 258-9724									2	201682-2979	
Company Nam	e and Address:			Account #	ł:						Ph	one #:	
	ил	VTL					·				ļ	701-258-9720	
		<u>v i ∟</u> <u>Broad</u> way		Contact:	Classe	J - 4.4					Fa	x #:	
		c, ND 58501		Name of S	Claud	iett	<u>e</u>				-	For faxed report check box	
Billing Address	s (indicate if differen								=	-mail: ccarroll@mvtl.com For e-mail report check box			
		,		Quote Nu	mber						Da	te Submitted:	
	· · · · · · · · · · · · · · · · · · ·	ox 249									-"	9/16/2016	
	<u>New Ulm</u>	<u>, MN 56073</u>		Project Na	me/Numbe	er:	w				Pu	rchase Order #:	
		Compute Informati										BL5667	
511,000		Sample Information	1			<u> </u>	<u> B</u>	ottle	Ту	ре	,	Analysis	
51693	67						_						
		•					Š	VOC Vials Umpreserved					
IML Lab						ited	౼	ials	Jar				
Number	MVTL Lab Number	Olimat Omer L. ID	Sample	Date	Time	Untreated	00	OC V	Glass	Other			
		Client Sample ID	Туре	Sampled	Sampled	5	9	<u>> 5</u>	<u> </u>	ō	Analysis Required		
001	16-W4184	Blue 6		9/14/2016	904							Ra226 & Ra228 on all	
200	16-W4185	Blue 13		9/15/2016	905								
003	16-W4186	Blue 14		9/14/2016	1305								
904	16-W4187	Blue 15		9/14/2016	1444								
2)5	16-W4188	Blue 16		9/15/2016	1418								
006	16-W4189	Field Blank		9/15/2016									
Comments: All	results must be rep-	orted as a numerical value	2										

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	T T	Temp:
C. Jackson	09/16/16	1700		Kathy Boun	9.21.110	15:42	190
2.				100119 2091		10.10	1
	······································				11	<u> </u>	



Groundwater Assessment

Company:	OTP Coyo	ote	
Event:	Sept_2016		
Sample ID:	Blue 6		

2616 E. Broadway Ave, Bis Phone: (701) 258-9	·					3	Sampling F	Personal:	Parce	nNie	Swaa	7
Veather Conditions:		Temp:	52 °F	Wind:	Light			Precip	Sun	ny / Partiy C	loudy / Clo	udy
1	Well Info	rmation					S	ampling I			loudy Glo	uuy
Well Locked?	/(es	No			Purgir	ng Method:		dder		T	ntrol Setting	 S
Well Labeled?	(es	No			Samplir	ng Method:	Bla	dder		Purge:	56	sec.
Casing Straight?	¥स्टेड	No			Dedicat	ed Equip?:	Yes	NO		Recover:	4	sec.
Grout Seal Intact?	Yes	No	Not Visible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Necessary:	-	<u> </u>			Duplicate 9	Sample ID:			1	Pumping R	ate: / 🗚 O	mL/min
Casing	Diameter:		2"				***		1			
Water Level Befo	ore Purge:		63.0/ ft		Р	urge Date:	1350	orla	Time Purg	ing Began:	1104	(am/pm
Total W	ell Depth:		7 9 ,10' ft		Well Pu	urged Dry?	Yes	No		Purged Dry:	1200	am/pm
We	ll Volume:		10.0 liters		Sai	mple Date:	1454	24		f Sampling:	0904	@m/pm
Depth to Top	of Pump:		71.20 ft				7	<u> </u>				/ E 1311 P 1111
Water Level Afte	r Sample:		72.92 ft		Bottle	CCR: 1L Ra	w, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric '	Water Level Indicator		List:							
			Fiald		•			· V.	······································			

Field Measurements

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 con	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1109	10,77	2571	6.44	2.87	182.5	6,28	64.38	500	cler
2	1114	10.28	2567	6,37	2,29	18004	5,06	6486	500	0.4
3	1124	11.06	2568	6,30	01,73	168,4	5.43	65.94		occe
4	1134	10,69	25-66	6.47	1,43	145-6	6.16	66.95	1000	Cl.
5	1200	10,05	2559	6058	2.48	94.2	1.80	71.20		de
6							0 0	1,00		
7										
8										
9	0159							63.18		Promo O Trans I and I al
10	9904	10.33	2591	(50	70.38	205,3	8.37	64.04	500	furgel Jonin to clearly
Stabilized	: Yes	No			3,38	······································	otal Volume	1.42	7200	friL

Comments:

Water level wasn't keeping up 50 Went to 280mL. at 1144



Groundwater Assessment

Company:	OTP Coyo	ote
Event:	Sept 2016	5
		· · · · · · · · · · · · · · · · · · ·

sec.

mL/min

am/pm am/pm am/pm

Sample ID: B/u

Sampling Personal: Darren Não Swary

Phone: (701) 258-9720

Weather Conditions:	Temp:	50	°F	Wind:	(jah	/		Precip:	Sunr	ny / Partly C	Cloudy //C	loudy	
	Well Info	rmation	V 0				1	S	ampling l	nformatio	on		
Well Locked?	Yes	No	_			Purgir	ng Method:	Bla	dder		Co	ntrol Settir	ngs
Well Labeled?	Yes	No				Samplin	ng Method:	Bla	dder		Purge:	5	
Casing Straight?	Yes	No				Dedicat	ed Equip?:	Yes	(No)		Recover:	55	
Grout Seal Intact?	Yes	No	CNOT	Visible		Duplicate	Sample?:	Yes	No		PSI:	120	90
Repairs Necessary:						Duplicate \$	Sample ID:				Pumping R	late: / 00	n
Casing	Diameter:		2"										
Water Level Bet	fore Purge:	10	05,23	ft		P	urge Date:	145001	+16	Time Purg	ing Began:	1029	Æ
Total V	Vell Depth:	7	16,65	- ft	1	Well P	urged Dry?	Yes	No No	Time F	Purged Dry:	1205	а
We	ell Volume:	-1	7,1	liters		Sa	mple Date:	155po-	rlle	Time o	f Sampling:	0905	K
Depth to To	p of Pump:	11	3.78	ft				9					
Water Level Aft	er Sample:	11:	2,61	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measurement Method:		Electric	Water Leve	el Indicator		List:							
			·		-								

Field Measurements

Stabili:	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL.	Discription:
(3 conse	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		. clear, partly cloudy, cloudy
1	1634	11,26	5675	6.67	1.94	125.9	81.8	107,02	502	Sichely tubid
2	1044	11,77	5436	6.57	2,34	134,2	68,1	108,42	1000	the set
3	1054	11.96	5287	6.53	3,19	139,9	58.8	109022	1000	57
4	1164	12.06	5371	6,57	3,08	1320	45,7	109,85	1000	Cley
5	1114	12/18	5564	6.63	2.63	118,6	40,5	11051	1090	Cler
6	1134	12,73	5813	6.71	211	1046	21.8	111,55	2000	Cen
7	1144	12,23	5757	6.69	2113	163,8	13,6	111.67	1000	Cler
8	1154	12,28	5891	6.74	1,77	102,7	17.8	11.78	1000	den
9	1159	11.79	6089	6,79	1,25	9811	1905	112,43	500	da
10	1205	10,88	6244	6,84	1.09	878	23.7	113.78	1200	des
Stabilized:	Yes	/Njo		*****		· T	otal Volume	Removed:	10,200	mL

Comments: Usy went to 2000 to pursedry.



Groundwater Assessment

Company:	OTP Coyote	
Event:	Sept 2016	
Sample ID:	3/4× 13	
Sampling Persor	nal: Davien Nieswan	
Date:/4-1/5 S		

Phone: (701) 258-9720

Field Measurements

	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)		Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
11	0900			The second secon		the state of the s	And the Control of th	107.08		Purged Line For Sir
12	0905	11.79	6245	6.84	2.64	181.0	58.2	108,30	500	clear
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28				•						
29										
30										
tabilized:	Yes	√No	1		1	<u> </u>	atal Malura a	Removed:	L	ml .

Comments:

Total Volume Removed: ____ mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	Sept 2016	
Sample ID:	Blue 14	
	20000	

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9	720							Sampling Fersonal.	MICCO	10160	-a o s	
1 Holle. (701) 250-9	720						/ .					
Weather Conditions:		Temp:	(9h	°F	Wind:	SW	10	Precip	Sunr	Partly C	loudy / Cloι	ıdy
	Well Info	rmation				•		Sampling I	nformatio	on .		
Well Locked?	(Les	No				Purgi	ing Method:	Bladder		Co	ntrol Settings	}
Well Labeled?	¥es	No				Sampli	ing Method:	Bladder		Purge:	5	sec.
Casing Straight?	(Fee	No				Dedica	ted Equip?:	Yes (No)		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	e Sample?:	Yes No		PSI:	50	
Repairs Necessary:						Duplicate	Sample ID:			Pumping Ra	ate: <i>100</i>	mL/min
Casing	Diameter:		2"						_			
Water Level Befo	ore Purge:	<u> </u>	79,17	ft		F	Purge Date:	145ept 6	Time Purg	ing Began:	1225	am/pm
Total W	/ell Depth:		6.88	ft		Well F	urged Dry?	Yes (No	Time F	urged Dry:		am/pm
We	ll Volume:		4,8	liters		Sa	ample Date:	145ear 16	Time of	Sampling:	1705	am/pm
Depth to Top	of Pump:	8	4.05	ft								
Water Level Afte	r Sample:	· · · · · · · · · · · · · · · · · · ·	20.00	ft		Bottle	CCR: 1L R	aw, 500mL Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric	Water Leve	l Indicator		List:						
				Field	Measure	ements						

					1 1014	Micasarc	11101110			
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1230	12,71	4897	6,55	0,72	668	97.7	79.46	500	Slightly tubid
2	1245	11.81	4899	6.57	0.49	93,2	17,7	79,54	1500	Car
3	1250	11,75	4918	6.58	0055	8800	10,3	79.54	500	Clay
4	1255	11.67	4956	6,59	0,56	85,5	7.78	79,56	500	clin
5,	12 1300	11.82	4993	1.58	0,57	86.5	7.99	79,63	500	der
6	1305	11,79	5009	6,59	0156	76,4	7.84	71.65	500	dr
7 1~	1310									
8										
9										
10										

Stabilized: Yes No

Total Volume Removed: 4000 mL



Company:	OTP Coyote	
Event:	Şept 2016	
Sample ID:	18/42/5	

	Assessi	ment		Sample ID): 15	14e 19	,						
2616 E. Broadway Ave, Bis	smarck, ND							Sampling		Parren	Niesn	-6as	
Phone: (701) 258-9	720										912	7	
Weather Conditions:		Temp:	69 °F.		Wind:	\$15			Precip	ı: (Sunj	py / Partly C	Cloudy / Clou	ıq۸
,	Well Info	rmation		•				S	ampling l	Information			
Well Locked?	Yes	(No)				Purgi	ng Method:	Bla	ıdder		Co	ntrol Settings	 }
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	ıdder	1	Purge:	5	sec.
Casing Straight?	Xes	No				Dedica	ted Equip?:	Yes	W	1	Recover:	5.5	sec.
Grout Seal Intact?	Yes	No	Not Visib	ile		Duplicate	Sample?:	Yes	و ا لج	7	PSI:		
Repairs Necessary:						Duplicate	Sample ID:			7	Pumping R	ate: / ��	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	•	76,94	ft		F	Purge Date:	14sep	+16	Time Purg	ing Began:	1409	am/pm
Total W	/ell Depth:	***************************************	87.89	ft			urged Dry?		No	Time F	urged Dry:		am/pm
We	ll Volume:		6.8	liters		Sa	ample Date:	14 Sept 1	4	Time of	f Sampling:	1444	am/pm
Depth to Top	of Pump:		22,88	ft				7					
Water Level Afte	er Sample:	769	6-6-8-	ft		Bottle	CCR: 1L R	aw, 500ml	Nitric, 4-1L	_ Nitric			
Measuremen	t Method:	Electric V	Nater Level Indi	cator		List:							
				Field	Maasura	monte							

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL.	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1414	13,26	3274	6.55	0.40	0,7	35.2	77.05	500	cla_
2	1429	1318	3266	6.56	0,27	13.8	13,9	76.96	1500	de
3	1434	12.94	3267	6,56	0,24	16, 3	8.01	27.00	500	U)
4	1439	12,59	3271	6,66	0.21	18,9	8.52	76,99	500	an
5	1444	12.73	3292	6.56	0,24	21.8	8,66	76,96	500	ch
6	, , , ,	' / -		•		1				
7										
8										
9										
10										
Ot - b::: d-	Von	N. N.							7//12	

Stabilized: Yes Comments:

Total Volume Removed: 3500 mL



Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote** Event: Sept 2016 Sample ID:

Sampling Personal:

							_							
Weather Conditions:		Temp): G 6 1 °F		Wind:	55			Precip:	Sunn	y / Partly C	loudy //Clo	udy	
	Well Info	rmatio	n			•		Sa	ampling l	nformatic	n			
Well Locked?	Xes)	No				Purg	ing Method:	Blac	dder		Со	ntrol Setting		_
Well Labeled?	Kes?	No				Sampl	ing Method:	Blac	dder		Purge:	5	se	·C.
Casing Straight?	Kes	No				Dedica	ted Equip?:	Yes	(No)		Recover:	55	se	
Grout Seal Intact?	Yes	No	Not Visit	δĺe		Duplicate	Sample?:	Yes	(Na)		PSI:	35		
Repairs Necessary:						Duplicate	Sample ID:	~			Pumping R	ate: / () ()	mL/m	iir
Casing 1	Diameter:		2" ,						_			/ / /		
Water Level Befo	re Purge:		75.78	ft			Purge Date:	1550	1/2	Time Purg	ing Began:	1043	(am/p	m
Total W	ell Depth:		97.63	ft		Well F	urged Dry?	Yes	4No)	Time P	urged Dry:		am/p	
Wel	l Volume:		13.5	liters		Sa	ample Date:	15 Sun	16	Time of	Sampling:	1418	ami/p	
Depth to Top	of Pump:		92,95	ft						*	•			
Water Level Afte	r Sample:			ft		Bottle	CCR: 1L Ra	aw, 500mL	Nitric, 4-1L	Nitric				
Measurement	: Method:	Electric	Water Level Ind	icator		List:							*****	
				Fiold	Moseura	omonte						***************************************		

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1048	12.69	3012	1.70	1.19	-2.6	21000	7580	500	After Turkid B
2	ling	12.93	22867	654	0,43	-6.5	71000	75.80	3000	Rubin Brown
3	1148	11,76	2805	6.49	0.29	-22,7	1.08.	75280	3000	Strapply tryby
4	1218	11.96	2804	6.48	0,21	-35.5	13%	75.80	3000.	Straply tobox
5	1248	11,69	2804	648	0,20	-364	73,2	15.80	3000	SlightlyTubil
6	1318	11,67	2804	6,49	0,17	35,3	59,0	75.88	2000	Slightly tweed
7	1348	12,00	2805	6.49	0,14	-37.6	56,4	75.80	3000	345
8	1353	11.89	2808	6,49	0,15	-31,1	46.1	75,80	500	ST
9	1358	11.83	2811	6,49	0115	-39,5	49.3	75.80	300	57
10	1號03	12.13	2868	6,49	0,14	177.	48.0	75.80	290	ST
Stabilized:	¹Yes-	No/	•			Ţ	otal Volume	Removed:		mL

Comments:

Continue on next page



Groundwater Assessment

Company:	OTP Coyote
Event:	Şept 2016
Sample ID:	Blueb
Sampling Persona	1: Parlen Nieswag
Data: 1 5	atil

Phone: (701) 258-9720

Field Measurements

					Telu Iviea	suremen	13			
Stabiliz		Temp (°C)	Spec. Cond.	рН	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.
SEQ#	Time	, , , , , , , , , , , , , , , , , , , ,	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	·	clear, partly cloudy, cloudy
11	1408	12,05	2809	6.49	0.14	-44,3	47.3	75.80	500	87
12	1413	12,00	2811	6,49	6.14	-45.0	46,3	75.80	500	ST
13	1418	12,14	2806	6.49	0.13	-45.6	46.8	75.80	500	57
14	, , ,									
15			,							
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30	1750								71/00	

Stabilized:

No

Total Volume Removed: 21,500 mL



Groundwater Assessment

OTP Coyote Company: Sept 2016 Event: Sample ID: Sampling Personal:

Phone: (701) 258-9720

1 Hotie. (701) 230-3	720											_	
Weather Conditions:		Temp:	G G °F		Wind: 4	F.55)		Precip	Sunr	ny / Partly C	loudy / Clou	ıdy
	Well Info	rmation						S	ampling I	nformatio	on .		/
Well Locked?	∦es	No				Purgi	ng Method:	Bla	dder		Co	ntrol Settings	3
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:		sec.
Casing Straight?	768	No				Dedicat	ted Equip?:	Yes	No		Recover:	<u></u>	sec.
Grout Seal Intact?	Yes	No	Wot Visik	rte		Duplicate	Sample?:	Yes	No	1	PSI:		
Repairs Necessary:						Duplicate	Sample ID:]	Pumping R	ate:	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	4	<u> 73.93 .</u>	ft		F	Purge Date:	1530	Fl.	Time Purg	ing Began:	1536	am/pm
Total W	/ell Depth:		16,45	ft		Well P	urged Dry?	Yes	No	— ∓ime F	urged Dry:	-	am/pm
We	ll Volume:		1.6	liters		Sa	imple Date:			Time of	Sampling:		am/pm
Depth to Top	of Pump:		74,94	ft									
Water Level Afte	er Sample:			ft		Bottle	GCR: 1LR	aw, 500ml	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric	W ater Level Indi	cator		List:					1		
				Field	Measure	monte							

						mousuic	11101160			
Stabiliza (3 consec		Temp (°C)	Spec. Cond.	pН	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1				,				-		
2)				
3										
4										
5										er menter en
6										
7		_				***************************************				
8					, , , , , , , , , , , , , , , , , , , ,		-			
9						· · · · · · · · · · · · · · · · · · ·				
10										41.31.4
Stabilized:	Yes	No	4		***** *******************************	T	otal Volume	Removed:		mL

Comments:

Johnsufficent Volume No Sample

Laboratories, Inc. 2616 E. Broadway Bismarck, ND 58501 Phone (701) 258-9720

Chain of Custody Record

Project	t Name:						Name of Sa	mpler(s):				
	OTP Coyote	RadChem	Blue	Pit	Sept 16		Varre	n Ni	esway	ag		
Report To: Attn: Address:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-04	196	Carbon C Attn: Address:				Work Orde	r Number:	82-	-29r	79	
	Sample	e Informati	ion			Во	ttle Type	Fi	eld Para	meters		Analysis
Lab Number	Sample ID	Date	Time	Sample Type		1000 ml HNO ₃		Field Temperature °C	Field Spec. Cond.	Field pH	An	alysis Required
04184	Blue 6	14 Sept 16	0904	GW	clear	4		10.33	2591	6,50		
-	Blue-7/MS7/MSD7	-	_	G₩	<u> </u>	12			_			
28190	Blue 13	155ept/6	0905	GW	clear	4		11,79	6245	6.84		
04186	Blue 14	14Scottle	1305	GW	Clear	4		11.79	5009	6,59		
N4187	Blue 15	14 Seatt	1444	GW	clear	4		12.73	3292	6.56	OTI	P CCR combined
N4188	Blue 16	152016	1418	GW	Partly cloudy	4		12,14	2806	6,49		RadChem
~	Blue 8	155ex16	1536	GW		4-		-	~			
W4189	Field Black (PR)	155epT16	NA	W	Clear =	2\		NA	NA	NA		
Comments:	* 13 Sept 16 0.	~										
	Transferred by:		le Condit	ion	Date/Time	Rec	eived by:	Sample C	ondition	Date/Tim		*C
1.	Donas	wal	Kin 2	2	15 Sept 14	0.5	aucson			16Ser	04 16	KOT 2,
2		1										TM 562





1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com



October 28, 2016

Otter Tail Power Company Attn: Paul Vukonich P.O. Box 496 Fergus Falls, MN 56538-0496

RE: Coyote Station Groundwater Sampling - October 2016

Dear Mr. Vukonich,

From October 17-19, 2016, MVTL Laboratories' Field Services division collected groundwater samples from wells with sufficient volume at the Coyote Station near Beulah, ND. The seven wells from the Blue Pit, and seven wells from the Ash Pond site were purged and sampled at a low rate with a bladder pump. The wells were found to be in good condition. Well BLUE8 had insufficient water to collect a sample. Well POND15s did not recharge sufficiently over night to collect a sample the next day, the well was later checked on October 21, 2016 and still did not recharge sufficiently to collect a sample. Well POND10 was purged dry on October 18, 2016, due to insufficient recharge only a partial sample for the general chemistry portion of analysis was collected. POND10 was then left to recharge until October 21, 2016 and a sample for combined radiochem was then able to be collected. Collected samples were placed on ice and then transported back to the MVTL laboratory for analysis.

Thank you for your trust and support of our services. If you have any questions, please call me at (800) 279-6885.

Sincerely,

Jeremy Meyer

MVTL Field Services



WO# 82-3449 82-3437

OTP Coyote Station

Blue Pit

Attn: Paul Vukonich PO Box 496

Fergus Falls, MN 56538-0496

WELL ID	PURGE DATE	START PURGE TIME	SAMPLE DATE	TIME OF SAMPLE	WATER LEVEL START (FT)	TOTAL DEPTH (FT)	WATER LEVEL END (FT)	VOLUME IN WELL (Liters)	VOLUME REMOVED (mL)	SAMPLE METHOD	TEMP (°C)	EC	рН	Turb. NTU	SAMPLE APPEARANCE OR COMMENT
Blue6	17-Oct-16	10:15	18-Oct-16	8:11	63.41	79.10	73.01	9.7	16000.0	Bladder	9.49	2543	6.58	106.00	partly cloudy
Blue7	17-Oct-16	14:40	17-Oct-16	17:35	81.10	97.70	81.30	10.2	32000.0	Bladder	9.51	2588	6.55	17.20	clear
Blue13	17-Oct-16	9:25	18-Oct-16	10:16	104.43	116.65	below pump	7.5	10000.0	Bladder	10.51	6234	6.89	216	partly cloudy
Blue14	18-Oct-16	8:40	18-Oct-16	9:15	79.70	86.88	81.25	4.4	4000.0	Bladder	9.83	5024	6.86	2.71	clear
Blue15	17-Oct-16	13:33	17-Oct-16	14:03	78.00	87.89	78.09	6.1	6000.0	Bladder	9.76	3205	6.67	3.98	clear
Blue16	17-Oct-16	11:40	17-Oct-16	12:55	77.16	97.63	77.02	12.6	13000.0	Bladder	10.03	2737	6.62	121.00	partly cloudy
Blue8	NA	NA	17-Oct-16	8:44	74.19	76.46	NA	1.4	NA	NA	NA	NA	NA	NA	insufficient volume
											On 11192 - 2119 - 11 - 11 - 11 - 11				



OTP Coyote Station

Slag Pond

Attn: Paul Vukonich

PO Box 496 Fergus Falls, MN 56538-0496

WO# 82-3450

82-3451

82-3487

WELL ID	PURGE DATE	START PURGE TIME	SAMPLE DATE	TIME OF SAMPLE	WATER LEVEL START (FT)	TOTAL DEPTH (FT)	WATER LEVEL END (FT)	VOLUME IN WELL (Liters)	VOLUME REMOVED (mL)	SAMPLE METHOD	TEMP (°C)	EC	рН	Turb. NTU	SAMPLE APPEARANCE OR COMMENT
Pond6	19-Oct-16	14:10	19-Oct-16	14:40	16.98	18.78	below pump	1.1	3000.0	Bladder	11.57	4190	7.21	0.54	clear
PondN3	18-Oct-16	11:37	18-Oct-16	13:42	11.66	37.07	17.90	15.7	24000.0	Bladder	12.58	5192	6.66	25.40	clear
Pond10	18-Oct-16	11:14	19-Oct-16	13:35	19.92	22.18	below pump	1.4	700.0	Bladder	13.64	3209	7.42	10.1	clear
Pond12	19-Oct-16	9:26	19-Oct-16	10:21	36.90	40.12	37.48	2.0	7000.0	Bladder	9.51	3678	7.22	2.49	clear
Pond15S	18-Oct-16	14:28	19-Oct-16	8:21	35.55	37.72	below pump	1.3	4700.0	Bladder	7.46	4327	6.51	2.89	clear
Pond16S	19-Oct-16	11:08	19-Oct-16	12:43	37.90	48.83	40.04	6.7	9500.0	Bladder	11.02	2941	6.94	10.10	clear
MW2S	18-Oct-16	14:57	19-Oct-16	8:40	23.25	36.60	33.56	8.2	14300.0	Bladder	9.12	4671	6.94	0.86	clear
											,			1	
															



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blueb	
Sampling Personal:	Jeny Hy	

Phone: (701) 258-97	720												
Weather Conditions:		Temp:	45	°F	Wind:	505~16	>		Precip	Sunr	ny / Partly C	loudy / Clo	udy
	Well Info	rmation						Sa	ampling I	nformatio	on		
Well Locked?	Yés	No				Purgi	ng Method:	Blac	der		Co	ntrol Setting	js
Well Labeled?	Yes	No				Sampli	ng Method:	Blac	der		Purge:	5	sec.
Casing Straight?	Tes	No				Dedica	ted Equip?:	Yes	(a)		Recover:	25	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	(No)		PSI:	40	
Repairs Necessary:	w					Duplicate	Sample ID:				Pumping R	ate: Zoc	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	63	3.41	ft		F	Purge Date:	17 Oct	16	Time Purg	ing Began:	1015	æpz/pm
Total W	/ell Depth:		 -	ft		Well P	urged Dry?	Yes	No	Time F	Purged Dry:	1125	<am₀ pm<="" td=""></am₀>
We	Il Volume:	~		liters		Sa	ample Date:	18 oct 1	6	Time o	f Sampling:	084	æn/pm
Depth to Top	of Pump:	7	5,35	ft									
Water Level Afte	er Sample:	7	3:01	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	. Nitric			
Measuremen	t Method:	Electric \	Vater Leve	el Indicator		List:							
				Fiold	Mossur	omonte							

					i icia	moacaro	1110110			
Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1020	9.67	2529	6.56	1.93	30,4	258,0	65,77	1800	partycloudy
2	1035	9,66	2471	6.53	1.64	54.6	35,0	68,42	36°0	partly cloudy
3	1050	9,75	2470	6155	1,77	101.8	26.0	73,01	39 00	Clesv
4	1100	9.84	2469	6,55	1,95	63.5	20.7	73.65	2 <i>50</i> 0	Clear
5	1110	10.34	2478	6.56	2,20	653	14.9	74,20	2000	Cles
6	1125	10,26	2482	6.57	2,22	\$ 4.8		7535	3000	den
7								Top of zopy		
8										
9	0809	porged a	ell for Z	inh to c	lear (im			65,35	2000	
10	084	9.49	2543	6.58	5,12	82.5	106.0			Portly Clardy
								D	11 000	, ·

Yes Stabilized:

Total Volume Removed: 16,000 mL

Comments:



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	Blue 7
Sampling Personal:	for oly

Phone: (701) 258-9	9720												
Weather Conditions:		Temp:	45 °	'F	Wind:	right			Precip:	Sunr	ny / Partly C	loudy Clou	īdy
	Well Info	rmation						Sa	ampling I	nformatio	on		
Well Locked?	YES)	No				Purgi	ng Method:	Blac	ider		Со	ntrol Settings	3
Well Labeled?	Yes	No				Sampli	ng Method:	Blac	der		Purge:	5	sec.
Casing Straight?	(Tes	No				Dedica	ted Equip?:	Yes	(N)				sec.
Grout Seal Intact?	Yes	No	(Not -Vi	sible		Duplicate	Sample?:	,Xes	No		PSI:		
Repairs Necessary:						Duplicate	Sample ID:	115/ Y	isd		Pumping R	ate: 200	mL/min
Casing	Diameter:		2"				1			•			
Water Level Bef	ore Purge:	B	31.10	ft		F	Purge Date:	170ct	-16	Time Purg	ing Began:	1440	am/pm
Total V	Vell Depth:			ft		Well P	urged Dry?	Yes	(No)	Time F	urged Dry:		am/pm
We	ell Volume:	4		liters		Sa	ample Date:	17-Oct	16	Time of	Sampling:	1735	am/gm
Depth to To	p of Pump:			ft									
Water Level Aft	er Sample:	81	130	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremer	nt Method:	Electric V	Nater Level I	ndicator		List:	***************************************	· · · · · · · · · · · · · · · · · · ·					

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1445	9,73	2667	.6.62	2.02	21.7	68.6	BIJB	1000	Partly chardy
2	1455	9.66	2 56°1	6.61	1,89	160	408.0	81,20	2000	partly clady
3	1510	9.64	2570	6.61	1.93	9.6	384.0	81.21	3000	party cloudy
4	1525	9,59	2576	6.60	1.96	1.3	217.0	8622	3000	ps-fly cloudy
5	1540	9.59	2583	6,57	1.72	-5.4	108.0	81,21	3000	Dath clouds
6	1600	9,60	2566	6.5B	1195	-/3.0	55.1	81,22	4000	partly Chardy
7	1620	9.63	2588	6.57	1.97	-16.8	32,7	81,22	4000	partly Claudy
8	1640	9.61	2590	6,56	1.96	- 19.8	25.9	B1,22	4000	Gles
9	1700	9,52	2590	6,56	1.96	-23,6	22,7	B1. 22	4000	Clea
10	1720	9.51	2589	6,55	1.95	-27.8		81.26	4000	Clea

Stabilized:

Total Volume Removed: 32,000 mL

Comments:

Continued on next page



Groundwater Assessment

Phone: (701) 258-9720

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Rhee 7	
Sampling Personal:	Jerny gly	
Date: 17 0c	160	

Field Measurements

Field Weasurements												
Stabiliz		Temp	Spec.		DO	ORP	Turbidity	Water	mL_	Discription:		
(3 conse	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy		
11	1725	9.52	2588	6,55	1.95	-29,6	17.7	81,25	1000	Clean		
12	1730	9.51	2589	6.55	1.93	-29.9	18.2	81.26	1000	Clear		
13	1435	9.51	2566	6.55	1,95	- 30.6	17.2	81,28	1000	Clear		
14						-						
15					:							
16												
17												
18												
19												
20												
21												
22												
23												
24												
25									-			
26												
27												
28												
29												
30												

Stai	Olliz	ed	ľ

No

Total Volume Removed: <u>考ら、</u> mL



Groundwater Assessment

Company: OTP Coyote

Event: 2016

Sample ID: How 13 Blow 13

Sampling Personal: Jen thy

Phone: (701) 258-9720

		1 te -										<u> </u>	
Weather Conditions:		Temp:	<u>45</u>	°F	Wind:	SOS-W	D		Precip	: Sunr	ıy / Þartly C	loudy / Clo	udy
	Well Info	rmation		2.0				Sa	mpling l	nformatio	on		
Well Locked?	(B)	No	, /			Purgi	ng Method:	Blade	der		Со	ntrol Setting	js
Well Labeled?	(4)	No				Sampli	ng Method:	Blade	der		Purge:	10	sec.
Casing Straight?	(Je	No				Dedica	ted Equip?:	Yes	(Noi)		Recover:	20	sec.
Grout Seal Intact?	Yes	(No)	Not	t Visible		Duplicate	Sample?:	Yes	No	1	PSI:	90	
Repairs Necessary:	slight of	struction i	nwell			Duplicate	Sample ID:	-		1	Pumping R	ate: 200	mL/min
Casing	Diameter:		2"							-			
Water Level Bef	fore Purge:	10	24,43	ft		F	Purge Date:	170d 16		Time Purg	ing Began:	0925	@m/pm
Total V	Vell Depth:	•		ft		Well P	urged Dry?	(Yes)	No	Time P	urged Dry:	1000	am/pm
We	ell Volume:	•		liters		Sa	ample Date:	18 Oct 16		Time of	Sampling:	1016	æm/pm
Depth to To	p of Pump:	ti	2.30	ft									
Water Level Aft	er Sample:	Belo	w Perup	ft		Bottle	CCR: 1L R	aw, 500mL 1	Vitric, 4-1L	. Nitric			
Measuremer	nt Method:	Electric '	Water Lev	el Indicator		List:							
_		·											

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	0930	9.57	5185	6.56	4.39	147.4	3.83	107,00	1000	Cles
2	0945	9.67	5348	6.65	2,99	93.1	68.9	110.54	3000	South cloudy
3	1000	9.86	5672	6,77	2.76	441	80,2	112.30	3000	peth clinds
4				***************************************						
5										
6										
7							***************************************	42111. 1		
8										, , , , , , , , , , , , , , , , , , ,
9	1013	paged a	ell for 3	um to c	lear Time			106.15	3000	
10	1016	1051	6234	6.89	762	61.8	216.0		-	partly cloudy
Stabilized:	Yes	(Ñô)				To	otal Volume	Removed:	10000	mL

Comments:

- water level not stabilizing

- paged well dry



Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote						
Event:	2016						
Sample ID:	Blue 14						
Sampling Personal:	Juny play						

Weather Conditions:		Temp:	45 .	F	Wind:	S@ 5/	~(0		Precip	: Suni	ny / Partly C	Cloudy (Clo	nudy)
					Sampling Information								
Well Locked?	CY45	No				Purg	ing Method:	Blac	dder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampl	ing Method:	Blac	dder		Purge:	5	sec.
Casing Straight?	(res	No				Dedica	ted Equip?:	Yes	(No)		Recover:	25/55	sec.
Grout Seal Intact?	Yes	No	Not Vi	sib le		Duplicate	e Sample?:	Yes	Mo		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: 200/1	<i>∞</i> mL/min
Casing	Diameter:		2"							_			
Water Level Bef	ore Purge:	7	9.70	ft			Purge Date:	18 Oct 11	6	Time Purg	ing Began:	0840	@m/pm
Total V	Vell Depth:	-	-	ft		Well F	Purged Dry?	Yes	MO	Time F	urged Dry:		am/pm
We	ell Volume:			liters		Sa	ample Date:	18 Oct 16		Time or	Sampling:	0915	a m∕pm
Depth to To	p of Pump:			ft									
Water Level After	er Sample:	₽	1.25	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1	L Nitric			
Measuremer	nt Method:	Electric	Water Level II	ndicator		List:			······				

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	0845	9,53	5072	6,73	817	-0,3	11.6	80,58	1000	Clear
2	0850	9.47	5079	6,68	8,67	-2.3	5.41	80.83	HODE SOD	Clear
3	0855	9.76	5026	6.67	8.72	-3.2	4.42	80.94	r oco Sao	Clean
4	0900	9.78	4995	6,68	8,69	-4.0	4,49	80,94	5∞	clear
5	090S	9.89	500B	6.69	8,66	-4.9	2.95	B1. 05	500	Clea
6	0910	9.89	5024	6.69	8,77	-6.4	2.91	81.10	500	Clear
7	0915	9.83	5024	6.68	8.≤6	-7,0	2.71	81.13	500	Clear
8										
9										
10										

Stabilized:

Total Volume Removed: 4000 mL

Comments:
Water land not stabil: zmg
reduced purping vate to 100 ml/min @ 0850



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue 15	
Sampling Personal:	Jerry May	

							_	<u> </u>						
Phone: (701) 258-9	720										•			
Weather Conditions: Temp: 坮Ś °F		Wind:	Kigh-		Precip: Sunny / Partly 0				loudy / Elo	udy				
	Well Info	rmation				v		Sampling Information						
Well Locked?	Yes	No	lo			Purgi	ing Method:	Blac	Bladder		Co	ntrol Setting	ettinas	
Well Labeled?	Yes	No				Sampli	ing Method:	Blad	lder		Purge:	5	sec.	
Casing Straight?	KG S	No				Dedica	ted Equip?:	Yes	No		Recover:	25	sec.	
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	e Sample?:	Yes			PSI:	60		
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: 200	mL/min	
Casing	Diameter:		2"											
Water Level Befo	ore Purge:		78.00	ft		- F	Purge Date:	170ct	16	Time Purg	ing Began:	1333	am/6m	
Total W	/ell Depth:			ft		Well F	Purged Dry?	Yes	(No)	Time F	urged Dry:		am/pm	
We	ll Volume:	<i>-</i>		liters		Sa	ample Date:	17 Oct	16	Time or	Sampling:	1403	am/øm	
Depth to Top	Depth to Top of Pump:													
Water Level After	er Sample:	7	8,09	ft		Bottle	CCR: 1L Ra	aw, 500mL	Nitric, 4-1L	Nitric		*		
Measurement Method: Electric Water Level Indicator			dicator		List:									
				Field	Measure	ments								

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1338	9.97	3227	6,68	1.38	3,2	1810	76.4	1000	Clear
2	1343	19.84	3266	6,66	1.37	1.9	જ.૩૯	78.06	1000	Clear
3	1348	9.B1	32SB	6,67	1,42	1.8	5.34	78,07	1600	Cles
4	1353	9.74	3250	6,67	1.48	1.1	3,87€	78.10	1000	Cles
5	1358	9.75	3246	6.67	1.46	0.8	3.48	78.15	1000	clea
6	1403	9,76	3205	6.67	1,50	0,0	3.98	78.15	1000	Clez
7										
8										
9							· · · · · · · · · · · · · · · · · · ·			711111111111111111111111111111111111111
10										

Stabilized: Yes No Total Volume Removed: 6000 mL

Comments:



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	Blue 16
Sampling Personal:	Jen sley -

2010 E. Bioadway Ave, Bismarck, ND							_	Sampling I	ersonal:	Jern	Men		
Phone: (701) 258-9	9720												
Veather Conditions: Temp: 4 5 °F					Wind:	light		Precip: Sunny / Partly Cloudy & Cloudy					
					Sampling Information								
Well Locked?	(Yes)	No				Purgi	ng Method:	Bla	dder		Co	ntrol Settin	ıgs
Well Labeled?	(ES)	No				Sampli	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	(Tes)	No				Dedica	ted Equip?:	Yes	№		Recover:	25	sec.
Grout Seal Intact?	(Yes)	No	Not Visil	ble		Duplicate	Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: <i>29</i> 0	mL/min
Casing	Diameter:		2"										
Water Level Bef	ore Purge:	7	7.16	ft		F	Purge Date:	17-0ct	16	Time Purg	ing Began:	1140	am /pm
Total V	Vell Depth:	-		ft			urged Dry?	Yes	(A)	Time F	Purged Dry:		aṃ/pm
We	ell Volume:	•		liters		Sa	ample Date:	17 Oct 1	6	Time o	f Sampling:	1285	amyen
Depth to Top of Pump: ft			ft									t	
Water Level Aft	er Sample:	-	1202	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	. Nitric			
Measuremer	nt Method:	Electric V	W ater Level Ind	icator		List:							

Field Measurements

Stabil	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1145	10.14	2868	6.74	1:54	-35.4	71000	47.01	1000	Tubid
2	7200	80,01	2728	6,61	1,42	-15.2	154.0	77.00	3000	Partly Cloudy
3	1245	10.01	2729	6,60	1,32	0,3	187,0	77,00	3000	Partly Cloudy
4	1230	10,02	2734	6,61	1.40	4.9	115.0	77.01	3000	Partly Cloudy
5	1245	10,02	2734	6,61	1.41	8,5	135,0	77.05	3000	Parth cloudy
6	1250	10,03	2735	6.61	1.42	9,1	126.0	77.04	100	Pathy Clards
7	1255	10,03	2737	6.62	1.41	9,7	121,0	77.03	1800	Parth Clady
8										
9										
10										

Stabilized: Yes No

Total Volume Removed: 13000 mL

Comments:



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue,	
Sampling Personal:	Jerry play-	
	· · · · · · · · · · · · · · · · · · ·	

Phone: (701) 258-9	9720						_						
Veather Conditions:		Temp:		F	Wind:				Precip	Suni	ny / Partly C	loudy / Clo	udy
	Well Info	rmation				Sampling Information							
Well Locked?	KB	No	No			Purg	ing Method:	Bladder			Со	ntrol Setting	 js
Well Labeled?		No				Sampl	ing Method:	Blad	lder		Purge:	-	sec.
Casing Straight?	199	No				Dedica	ted Equip?:	Yes	4 40>		Recover:	_	sec.
Grout Seal Intact?	Yes	No	Not Vi	sible		Duplicate	e Sample?:	Yes	_c Nt⊚		PSI:		
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate:	mL/min
Casing	Diameter:		2"							•			
Water Level Bet	fore Purge:	7	1.19	ft			Purge Date:			Time Purg	ing Began:		am/pm
Total V	Vell Depth:	7	6.46	ft		Well F	Purged Dry?	Yes No		Time F	Time Purged Dry:		am/pm
We	ell Volume:	l.	4	liters		S	ample Date:	170ct	16	Time o	f Sampling:	0844	∕am /pm
Depth to To	p of Pump:		`	ft								•	
Water Level After Sample: ft				Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	_Nitric	********				
Measurement Method: Electric Water Level Indicator				List:									
				Field	Measure	ments							

Stabili: (3 cons		Temp (°C)	Spec. Cond.	pН	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	mL Removed	Discription: Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1										
2								******		
3								***************************************		
4										
5					\sim					
6										
7									-	
8										
9										
10										
tabilized:	Yes	No		_		т.	otal Volume	Removed:	•	ml

Comments:

insufficient volume no sople



2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Field Datasheet

Water Level

Sampling Personnel:		
Jarry & hy	Company:	OTP - Coyote
	17 oct	2016

Well ID	Time	Depth to Water	Casing Diameter	Comments
Blue6	0852	64.04	2"	
Blue7	0859	81.87	2"	
Blue8	0844	74.19	2"	76.46 Bottom
Blue13	6910	104,43	2"	
Blue14	0901	79,81	2"	
Blue15	0857	78.00	2"	
Blue16	0855	76.96	2"	
MW2s	0815	23,40	2"	
PondN3	OBU	11,70	2"	
Pond6	0825	17.05	2"	
Pond10	0823	20,40	2"	22,15 botton
Pond12	0817	3666	2"	
Pond15s	0814	35.55	2"	
Pond16s	0820	38.21	2"	



Chain of Custody Record

Projec	t Name:				Name of Sampler(s):	•
	OTP Coyote C	CR B	llue Pit	Oct 2016	Jeremy May-	
Report To: Attn: Address:	Otter Tail Power Paul Vukonich PO Box 496	Carbo Attn: Addre	n Copy:	OTP Josh Hollen	Work Order Number: 82 -3437	
Email:	Fergus Falls, MN 56538-0496 pvukonich@otpco.com	Email:		ihollen@otpco.com		

	Samp	le Informat	ion			Bottle	Bottle Type			meters	Analysis	
Lab Number	Sample ID	Date	Time	Sample Type	sample speriouse	500 ml HNO ₃ 1 liter		Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Required	
04822	Blue 6	06 Octio	0811	GW	Olean	x x		9.49	2543	6.58		
04823	Blue 7/MS7/MSD7	170c+16	*1130	GW	Class	3 3		9.51	2588	6.55		
04824	Blue 13	18 Oct 16	1016	GW	partly Cloudy	x x		10.51	6234	6.89		
04825	Blue 14	1800tl6	0915	GW	Clear	x x		9.83	5024	6,68		
04826	Blue 15	170ct16	1403	GW	Clear	X X		9.76	3205	6.67	OTP CCR List.	
04827	Blue 16	128ct 16	1255	GW	partly Clouchy	x x	N. S. C.	10.03	2737	6.62	No RadChem.	
-	Blue 8	170ct16	0844	GW	·	XX		ins office	nt volu	me		
W4828	field Blank	180cH6										
				777								

Comments: * 18 Oct 16 2

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	° C
1 🔾	Tros	Walker #2	1730	C. Jackson		1906416	- Ko! 11 5 +H 268
2							
3							





1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-3437

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year October 2016

MVTL Laboratory Identifications: 16-W4822 through 16-W4828

Page 1 of 2

Sample Identification	MVTL Laboratory #
Blue 6	16-W4822
Blue 7	16-W4823
Blue 13	16-W4824
Blue 14	16-W4825
Blue 15	16-W4826
Blue 16	16-W4827
Blue 8	Insufficient volume - no sample
Field Blank (FB)	16-W4828

I. RECEIPT

- All samples were received at the laboratory on 19 Oct 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

With the exception of laboratory pH, all holding times were met for both preparation and analysis
unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201682-3437

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

October 2016

MVTL Laboratory Identifications:

16-W4822 through 16-W4828

Page 2 of 2

IV. ANALYSIS

- All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.
 - For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.
 - Recovery for one mercury matrix spike was outside of the acceptable limits. Recovery of the matrix spike duplicate was acceptable. RPD for the recoveries of the matrix spike/matrix spike duplicate was acceptable. No further action was taken.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudette Carroll - MVTL Bismarck Laboratory Manager

MVTL

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Quality Control Report

Project: OTP Coyote CCR Blue Pit Oct 2016

0.400

0.400

16W4940q

16W4941q

Page: 1 of 4

Lab IDs: 16-W4822 to 16-W4828 Work Order: 201682-3437 Matrix Matrix Matrix MSD/ MSD/ LCS LCS LCS Matrix Matrix Spike Matrix Spike Spike Dup MSD/ MSD MSD/ Dup Known Known Spike Rec % Rec Spike Spike Orig Spike Rec % Rec Orig Dup Rec RPD Dup Rec % Rec Method Amt % Limits Amt ID Result Result % Analyte Limits Result Result % RPD Limit (<) (%) Limits Blank Antimony - Total mg/l 0.0160 102 80-120 0.100 16W4753q 0.1094 0.0018 108 75-125 0.4490 0.4482 112 0.2 20 < 0.001 0.0160 101 80-120 0.400 16W4753q 0.0018 0.4490 112 75-125 0.4486 0.4564 114 1.7 20 < 0.001 0.400 16W4823q < 0.001 0.4486 75-125 112 0.4254 0.4232 106 0.5 20 0.400 16W4827a < 0.001 0.4254 75-125 106 0.4198 0.4182 105 0.4 20 0.400 16W4940a < 0.001 0.4198 105 75-125 0.4254 0.4232 106 0.5 20 0.400 16W4941q < 0.001 0.4254 75-125 106 Arsenic - Total mg/l 99 0.0160 80-120 0.100 16W4753q 0.0921 0.1950 103 75-125 0.5360 0.5340 110 0.4 20 < 0.002 0.0160 92 80-120 0.400 16W4753q 0.0921 0.5360 111 75-125 0.4374 0.4234 105 3.3 20 < 0.002 0.400 16W4823q 0.0020 0.4374 75-125 109 0.4176 0.4218 104 1.0 20 0.400 16W4827q 0.0074 0.4176 103 75-125 0.4348 0.4006 100 8.2 20 0.400 16W4940a < 0.002 0.4348 109 75-125 0.4096 0.4152 104 1.4 20 0.400 16W4941q < 0.002 0.4096 102 75-125 Barium - Total mg/l 0.0160 102 80-120 0.400 16W4753a 0.2618 0.6912 107 75-125 0.6912 0.6766 104 2.1 20 < 0.002 0.0160 96 80-120 0.400 16W4823a 0.0518 0.4958 111 75-125 0.4958 0.5094 114 2.7 20 < 0.002 0.400 16W4827a 0.0982 0.5160 104 75-125 0.5160 99 0.4952 4.1 20 0.400 16W4940q 0.0372 0.4450 102 75-125 0.4450 0.4382 100 1.5 20 0.400 16W4941q 0.0197 0.4462 107 75-125 0.4462 0.4400 105 1.4 20 Beryllium - Total mg/l 0.0160 100 80-120 0.100 16W4753q < 0.0005 0.0923 92 75-125 0.4146 0.4316 108 4.0 20 < 0.0005 0.0160 96 80-120 16W4753q < 0.0005 0.400 0.4146 104 75-125 0.4444 0.4340 108 2.4 20 < 0.0005 0.400 16W4823q < 0.0005 0.4444 111 75-125 0.4352 0.4338 108 20 0.3 0.400 16W4827a < 0.0005 0.4352 109 75-125 0.4702 0.4384 110 7.0 20

< 0.0005 | 0.4702

< 0.0005 | 0.4828

118

121

75-125

75-125

0.4828

0.4804

120

0.5

20

MVTL

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Quality Control Report

Page: 2 of 4

Lab IDs: 16-W4822 to 16-W4828 Project: OTP Coyote CCR Blue Pit Oct 2016 Work Order: 201682-3437 Matrix Matrix Matrix MSD/ MSD/ LCS LCS LCS Matrix Matrix Spike Matrix Spike Spike Dup MSD/ **MSD** MSD/ Dup Known Known Spike Rec % Rec Spike Spike Orig Spike % Rec Rec Orig Dup Rec RPD Dup Rec % Rec Method Amt % Limits Amt ID Result Analyte Result % Limits Result Result % Limit (<) | (%) **RPD** Limits Blank Boron - Total mg/l 0.40 105 80-120 0.400 16-D4309 1.03 1.44 102 75-125 1.44 1.43 100 0.7 20 < 0.1 0.40 115 80-120 0.400 16-D4444 0.53 0.91 95 75-125 0.91 0.92 97 1.1 20 < 0.1 0.40 120 80-120 0.400 16-W4823 0.42 0.81 97 75-125 0.81 0.80 95 1.2 20 < 0.1 0.40 110 80-120 0.400 16-W4827 0.44 0.79 88 75-125 0.79 0.80 90 1.3 20 < 0.10.40 115 80-120 2.00 16-W4940 2.84 4.76 96 75-125 4.76 4.71 94 1.1 20 < 0.10.40 120 80-120 2.00 16-W4941 0.69 2.62 97 75-125 2.62 2.60 95 0.8 20 < 0.1 0.400 16-W5155 0.60 1.03 108 75-125 1.03 1.02 105 1.0 20 < 0.1 0.400 16-W5160 0.63 1.00 92 75-125 1.00 1.03 100 3.0 20 < 0.1 < 0.1 Cadmium - Total mg/l 0.0160 97 80-120 0.100 16W4753a 0.0009 0.0997 75-125 99 0.4352 0.4216 105 3.2 20 < 0.0005 0.0160 100 80-120 0.400 16W4753q 0.0009 0.4352 109 75-125 0.4232 0.4274 107 1.0 20 < 0.00050.400 16W4823q < 0.0005 | 0.4232 106 75-125 0.4106 0.4126 103 0.5 20 0.400 16W4827a < 0.0005 0.4106 103 75-125 0.4226 0.4060 101 4.0 20 0.400 16W4940a 0.0006 0.4226 106 75-125 0.4122 0.4072 102 1.2 20 0.400 16W4941a 0.0005 0.4122 103 75-125 Calcium - Total mg/l 110 20.0 80-120 200 16W4823a 202 384 91 75-125 384 388 93 1.0 20 < 1 20.0 106 80-120 200 16W4827q 158 342 92 75-125 342 353 98 3.2 20 < 1 < 1 < 1 Chloride mg/l 30.0 99 80-120 30.0 16-W4778 16.4 46.9 102 80-120 46.9 48.8 108 4.0 20 < 1 30.0 94 80-120 60.0 16-W4823 7.3 64.2 95 80-120 64.2 67.6 100 5.2 20 < 1 < 1 Chromium - Total mg/I 0.0160 99 80-120 0.100 16W4753q 0.0020 0.1006 99 75-125 0.3968 0.4018 100 1.3 20 < 0.002 0.0160 96 80-120 0.400 16W4753q 0.0020 0.3968 99 75-125 0.4176 0.4160 104 0.4 20 < 0.002 0.400 16W4823q < 0.002 0.4176 104 75-125 0.3960 0.3938 97 0.6 20 0.400 16W4827q 0.0045 0.3960 98 75-125 0.4020 95 0.3804 5.5 20 0.400 16W4940a < 0.002 0.4020 100 75-125 0.3928 0.3950 99 0.6 20 0.400 16W4941a < 0.002 0.3928 98 75-125

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Quality Control Report Lab IDs: 16-W4822 to 16-W4828

Project: OTP Coyote CCR Blue Pit Oct 2016

Page: 3 of 4

Work Order: 201682-3437

			Suggi Enill (S. Green State Constitution of the Constitution of th		O CCR Diac i	The second secon			la la casa de la composición de la comp			Work Order: 201082-3437					
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Cobalt - Total mg/l	0.0160 0.0160	101 97	80-120 80-120	0.100 0.400 0.400 0.400 0.400 0.400	16W4753q 16W4753q 16W4823q 16W4827q 16W4940q 16W4941q	0.0092 0.0092 < 0.002 < 0.002 0.0086 0.0048	0.1052 0.4082 0.4270 0.3898 0.4184 0.3998	96 100 107 97 102 99	75-125 75-125 75-125 75-125 75-125 75-125	0.4082 0.4270 0.3898 0.4184 0.3998	0.4158 0.4254 0.3824 0.3990 0.4052	102 106 96 98 100	1.8 0.4 1.9 4.7 1.3	20 20 20 20 20 20 20	-		< 0.002 < 0.002
Fluoride mg/I	0.50 0.50	104 104	90-110 90-110	0.500 0.500 0.500	16-W4823 16-W4827 16-D4326	0.18 0.19 0.26	0.68 0.71 0.72	100 104 92	80-120 80-120 80-120	0.18 0.71 0.72	0.18 0.71 0.72	102 104 92	0.0 0.0 0.0	20 20 20	-	-	< 0.1 < 0.1 < 0.1 < 0.1
Lead - Total mg/l	0.0160 0.0160	102 98	80-120 80-120	0.100 0.400 0.400 0.400 0.400 0.400	16W4753q 16W4753q 16W4823q 16W4827q 16W4940q 16W4941q	0.0058 0.0058 0.0028 0.0018 < 0.0005 0.0006	0.1021 0.4232 0.4228 0.3972 0.3906 0.3846	96 104 105 99 98 96	75-125 75-125 75-125 75-125 75-125 75-125	0.4232 0.4228 0.3972 0.3906 0.3846	0.4160 0.4230 0.3832 0.3834 0.3854	103 105 95 96 96	1.7 0.0 3.6 1.9 0.2	20 20 20 20 20 20 20			< 0.0005 < 0.0005
Lithium - Total mg/l	0.40 0.40	100 105	80-120 80-120	2.00 0.400 0.800 0.400	16-D4370 16-W4823 16-W4827 16-W4940	0.96 0.10 0.10 0.06	2.83 0.51 0.92 0.49	93 102 102 108	75-125 75-125 75-125 75-125	2.83 0.51 0.92 0.49	2.83 0.52 1.00 0.50	93 105 112 110	0.0 1.9 8.3 2.0	20 20 20 20 20	-	-	< 0.1 < 0.1 < 0.1
Mercury - Total mg/l	0.0020 0.0020	100 105	85-115 85-115	0.002 0.002 0.002 0.002	16-W4726 16-W4822 16-W4823 16-W4909	< 0.0002 < 0.0002 < 0.0002 < 0.0002	0.0018 0.0020 0.0020 0.0013	90 100 100 65	70-130 70-130 70-130 70-130	0.0018 0.0020 0.0020 0.0013	0.0019 0.0020 0.0020 0.0014	95 100 100 70	5.4 0.0 0.0 7.4	20 20 20 20 20	-		< 0.0002 < 0.0002

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Quality Control Report Lab IDs: 16-W4822 to 16-W4828

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Lab IDs: 16-W4822 to 16-V	V48Z8	Pì	oject: O	LP Coyot	e CCR Blue P		<u>5</u>	TIPE ALL OF THE ROOM	T			Wo	<u>rk Orde</u>	er: 201682	2-3437		
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Molybdenum - Total mg/l	0.1000	104	80-120	0.100 0.400 0.400 0.400 0.400 0.400	16-W4753Q 16-W4753Q 16-W4823Q 16-W4827Q 16-W4940Q 16-W4941Q	0.0038 0.0038 < 0.002 < 0.002 0.0058 0.0034	0.0933 0.3456 0.3960 0.3880 0.3934 0.3978	90 85 99 97 97 99	75-125 75-125 75-125 75-125 75-125 75-125	0.3456 0.3960 0.3880 0.3934 0.3978	0.3728 0.3980 0.3746 0.3900 0.3826	92 100 94 96 95	7.6 0.5 3.5 0.9 3.9	20 20 20 20 20 20	- - - -	- - - -	< 0.002
pH units		-		-	- - -	-	-	-	-	6.5 6.7 6.6 7.7	6.5 6.7 6.6 7.7		0.0 0.0 0.0 0.0	20 20 20 20 20	-	-	-
Selenium - Total mg/l	0.1000	94	80-120	0.400 0.400 0.400 0.400 0.400	16-W4753 16-W4823 16-W4827 16-W4940 16-W4941	<0.002 <0.002 <0.002 <0.002 <0.0530	0.3032 0.4550 0.4254 0.4386 0.5196	76 114 106 110 117	75-125 75-125 75-125 75-125 75-125	0.3032 0.4550 0.4254 0.4386 0.5196	0.3268 0.4228 0.4252 0.4192 0.5186	82 106 106 105 116	7.5 7.3 0.0 4.5 0.2	20 20 20 20 20 20	1 1 1	-	< 0.002
Sulfate mg/I	100 100	94 103	80-120 80-120	1000 100	16-W4823 16-M3471	888 6.95	1700 110	81 103	80-120 80-120	1700 110	1690 106	80 99	0.6	20 20	-	-	< 5 < 5
Thallium - Total mg/l	0.0160 0.0160	101 97	80-120 80-120	0.100 0.400 0.400 0.400 0.400 0.400	16W4753q 16W4753q 16W4823q 16W4827q 16W4940q 16W4941q	< 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005	0.4168 0.3930 0.3862	94 102 104 98 97 97	75-125 75-125 75-125 75-125 75-125 75-125	0.4066 0.4168 0.3930 0.3862 0.3866	0.4098 0.4210 0.3812 0.3860 0.3842	102 105 95 96 96	0.8 1.0 3.0 0.1 0.6	20 20 20 20 20 20	-	-	< 0.0005 < 0.0005
Total Dissolved Solids mg/l	<i>č</i> /	- (ρ <u>η</u> -		-	-	-	-	-	1580	1810	-	13.6	20	-	-	< 5

Approved by: ______ C. Chul U



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 6

Event and Year: Oct 2016

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Report Date: 4 Nov 16 Lab Number: 16-W4822 Work Order #:82-3437 Account #: 006106

Date Sampled: 18 Oct 16 8:11 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	19 Oct 16	ML
Lab, pH	* 6.6	s.u.	0.1	SM4500 H+ B	19 Oct 16 17:00	ML
Field pH	6.58	s.u.	0.1	SM 4500 H+ B	18 Oct 16 8:11	JSM
Field Appearance	Clear		NA	SM 2110	18 Oct 16 8:11	JSM
Field Temperature	9.49	Degrees C	0.1	SM 2550B	18 Oct 16 8:11	JSM
Field Conductivity	2543	umhos/cm	1	EPA 120.1	18 Oct 16 8:11	JSM
Fluoride	0.18	mg/l	0.10	SM4500-F-C	19 Oct 16 17:00	ML
Sulfate	856	mg/l	5.00	ASTM D516-07	21 Oct 16 15:36	EMS
Chloride	8.3	mg/l	1.0	SM4500-C1-E	20 Oct 16 15:55	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	26 Oct 16 13:00	EV
Total Dissolved Solids	1780	mg/1	5	I1750-B5	19 Oct 16 14:49	ML
Calcium - Total	198	mg/l	1.0	6010	20 Oct 16 13:14	SZ
Lithium - Total	< 0.1	mg/l	0.10	6010	28 Oct 16 9:11	SZ
Boron - Total	0.42	mg/1	0.10	6010	28 Oct 16 14:15	SZ
Antimony - Total	< 0.001	mg/1	0.0010	6020	25 Oct 16 19:47	CC
Arsenic - Total	< 0.002	mg/1	0.0020	6020	25 Oct 16 19:47	CC
Barium - Total	0.0482	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Chromium - Total	0.0055	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Cobalt - Total	< 0.002	mg/1	0.0020	6020	25 Oct 16 19:47	CC
Lead - Total	0.0018	mg/1	0.0005	6020	25 Oct 16 19:47	CC
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 15:06	CC
Selenium - Total	< 0.002	mg/1	0,0020	6020	26 Oct 16 18:46	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC

* Holding time exceeded

Approved by:

Clauditte K Cantep

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: \emptyset = Due to sample matrix # = Due to con ! = Due to sample quantity + = Due to int

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 7

Event and Year: Oct 2016

Page: 1 of 1

Report Date: 4 Nov 16 Lab Number: 16-W4823 Work Order #:82-3437 Account #: 006106

Date Sampled: 17 Oct 16 17:35 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receiv Result	ed	Method RL	Method Reference	Da An	te alyz	ed		Analyst
Metal Digestion				EPA 200.2	19	Oct	16	11-11-1	ML
Lab, pH	* 6.7	s.u.	0.1	SM4500 H+ B				17:00	ML
Field pH	6.55	s.u.	0.1	SM 4500 H+ B	17	Oct	16	17:35	JSM
Field Appearance	Clear		NA	SM 2110	17	Oct	16	17:35	JSM
Field Temperature	9.51	Degrees C	0.1	SM 2550B	17	Oct	16	17:35	JSM
Field Conductivity	2588	umhos/cm	1	EPA 120.1	17	Oct	16	17:35	JSM
Fluoride	0.18	mg/l	0.10	SM4500-F-C	19	Oct	16	17:00	ML
Sulfate	888	mg/l	5.00	ASTM D516-07	21	Oct	16	15:36	EMS
Chloride	7.3	mg/l	1.0	SM4500-C1-E	28	Oct	16	9:30	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	1	Nov	16	11:16	EV
Total Dissolved Solids	1580	mg/l	5	I1750-85	19	Oct	16	14:49	ML
Calcium - Total	202	mg/l	1.0	6010	20	Oct	16	13:14	SZ
Lithium - Total	< 0.1	mg/1	0.10	6010	28	Oct	16	9:11	SZ
Boron - Total	0.42	mg/1	0.10	6010	28	Oct	16	14:15	SZ
Antimony - Total	< 0.001	mg/1	0.0010	6020	25	Oct	16	19:47	CC
Arsenic - Total	0.0020	mg/l	0.0020	6020	25	Oct	16	19:47	CC
Barium - Total	0.0518	mg/l	0.0020	6020	25	Oct	16	19:47	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	25	Oct	16	19:47	CC
Cadmium - Total	< 0,0005	mg/l	0.0005	6020	25	Oct	16	19:47	CC
Chromium - Total	< 0.002	mg/1	0.0020	6020	25	Oct	16	19:47	CC
Cobalt - Total	< 0.002	mg/l	0.0020	6020	25	Oct	16	19:47	CC
Lead - Total	0.0028	mg/1	0.0005	6020	25	Oct	16	19:47	CC
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	26	Oct	16	15:06	CC
Selenium - Total	< 0,002	mg/1	0.0020	6020	26	Oct	16	18:46	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	25	Oct	16	19:47	CC

* Holding time exceeded

Approved by:

Claudette K Cantep

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:

= Due to sample matrix # = Due to come to sample quantity # = Due to interpret to the sample quantity # = Due

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 13

Event and Year: Oct 2016

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Report Date: 4 Nov 16 Lab Number: 16-W4824 Work Order #:82-3437 Account #: 006106

Date Sampled: 18 Oct 16 10:16 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receive Result	ed	Method RL	Method Reference	19 Oct 16 19 Oct 16 17:00 18 Oct 16 10:16 19 Oct 16 17:00 21 Oct 16 15:36 28 Oct 16 9:30 1 Nov 16 11:16 19 Oct 16 14:49 20 Oct 16 13:14 28 Oct 16 9:11 28 Oct 16 14:15 25 Oct 16 19:47 26 Oct 16 18:46	Analys	
Metal Digestion		1. W		EPA 200.2	19 Oct	L6	ML
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	19 Oct	16 17:00	ML
Field pH	6.89	s.u.	0.1	SM 4500 H+ B	18 Oct	16 10:16	JSM
Field Appearance	Partly Cl	oudy	NA	SM 2110	18 Oct :	16 10:16	JSM
Field Temperature	10.5	Degrees C	0.1	SM 2550B	18 Oct	16 10:16	JSM
Field Conductivity	6234	umhos/cm	1	EPA 120.1	18 Oct	16 10:16	JSM
Fluoride	0.26	mg/l	0.10	SM4500-F-C	19 Oct	16 17:00	ML
Sulfate	2140	mg/l	5.00	ASTM D516-07	21 Oct :	16 15:36	EMS
Chloride	35.5	mg/l	1.0	SM4500-C1-E	28 Oct 1	16 9:30	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	1 Nov	16 11:16	EV
Total Dissolved Solids	4620	mg/l	5	11750-85	19 Oct :	16 14:49	ML
Calcium - Total	134	mg/l	1.0	6010	20 Oct :	16 13:14	SZ
Lithium - Total	< 0.5 @	mg/l	0.10	6010	28 Oct 1	6 9:11	SZ
Boron - Total	0.81	mg/1	0.10	6010	28 Oct :	16 14:15	SZ
Antimony - Total	< 0.001	mg/1	0.0010	6020	25 Oct 1	6 19:47	CC
Arsenic - Total	0.0052	mg/l	0.0020	6020	25 Oct :	16 19:47	CC
Barium - Total	0.0279	mg/1	0.0020	6020	25 Oct :	6 19:47	CC
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	25 Oct :	6 19:47	CC
admium - Total	< 0.0005	mg/1	0.0005	6020	25 Oct :	6 19:47	CC
Chromium - Total	0.0023	mg/1	0.0020	6020	25 Oct :	6 19:47	CC
Cobalt - Total	< 0.002	mg/l	0.0020	6020	25 Oct :	6 19:47	CC
ead - Total	0.0015	mg/l	0.0005	6020	25 Oct :	6 19:47	CC
olybdenum - Total	< 0.002	mg/1	0.0020	6020	26 Oct :	6 15:06	CC
Selenium - Total	< 0.002	mg/l	0.0020	6020	26 Oct :	6 18:46	CC
Thallium - Total	< 0.0005	mg/1	0.0005	6020	25 Oct :	6 19:47	CC

* Holding time exceeded

Approved by:

Claudette K. Cantel

Claudette K. Carroli, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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

0 = Due to sample matrix # = Due to co

1 ** Due to sample quantity ** ** Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



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Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 14

Event and Year: Oct 2016

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Report Date: 4 Nov 16 Lab Number: 16-W4825 Work Order #:82-3437 Account #: 006106

Date Sampled: 18 Oct 16 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.10

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	19 Oct 16	ML
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	19 Oct 16 17:00	ML
Field pH	6.68	s.u.	0.1	SM 4500 H+ B	18 Oct 16 9:15	JSM
Field Appearance	Clear		NA	SM 2110	18 Oct 16 9:15	JSM
Field Temperature	9.83	Degrees C	0.1	SM 2550B	18 Oct 16 9:15	JSM
Field Conductivity	5024	umhos/cm	1	EPA 120.1	18 Oct 16 9:15	JSM
Fluoride	0.17	mg/1	0.10	SM4500-F-C	19 Oct 16 17:00	ML
Sulfate	1880	mg/l	5.00	ASTM D516-07	21 Oct 16 15:36	EMS
Chloride	8.8	mg/1	1.0	SM4500-C1-E	28 Oct 16 9:30	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	1 Nov 16 11:16	EV
Total Dissolved Solids	3870	mg/1	5	11750-85	19 Oct 16 14:49	ML
Calcium - Total	269	mg/l	1.0	6010	20 Oct 16 10:14	SZ
Lithium - Total	< 0.5 @	mg/l	0.10	6010	28 Oct 16 9:11	SZ
Boron - Total	0.70	mg/1	0.10	6010	28 Oct 16 15:15	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020	25 Oct 16 19:47	CC
Arsenic - Total	0.0028	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Barium - Total	0.0666	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	25 Oct 16 19:47	CC
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Chromium - Total	< 0.002	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Cobalt - Total	0.0043	mg/l	0.0020	6020	25 Oct 16 19:47	CC
lead - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
olybdenum - Total	0.0039	mg/l	0.0020	6020	26 Oct 16 15:06	CC
Selenium - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 18:46	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC

* Holding time exceeded

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to complete the property # = Due to interpret the property # = Due to interpret # = Due to interpre

CERTIFICATION: ND # ND-00016

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 15

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 4 Nov 16 Lab Number: 16-W4826 Work Order #:82-3437 Account #: 006106

Date Sampled: 17 Oct 16 14:03 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	19 Oct 16	ML
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	19 Oct 16 17:00	ML
Field pH	6.67	s.u.	0.1	SM 4500 H+ B	17 Oct 16 14:03	JSM
Field Appearance	Clear		NA	SM 2110	17 Oct 16 14:03	JSM
Field Temperature	9.76	Degrees C	0.1	SM 2550B	17 Oct 16 14:03	JSM
Field Conductivity	3205	umhos/cm	1	EPA 120.1	17 Oct 16 14:03	JSM
Fluoride	0.24	mg/l	0.10	SM4500-F-C	19 Oct 16 17:00	ML
Sulfate	963	mg/l	5.00	ASTM D516-07	21 Oct 16 15:36	EMS
Chloride	7.8	mg/1	1.0	SM4500-C1-E	28 Oct 16 9:30	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	1 Nov 16 11:16	EV
Total Dissolved Solids	2040	mg/1	5	I1750-85	19 Oct 16 14:49	ML
Calcium - Total	124	mg/l	1.0	6010	20 Oct 16 10:14	SZ
Lithium - Total	0.12	mg/l	0.10	6010	28 Oct 16 9:11	SZ
Boron - Total	0.48	mg/1	0.10	6010	28 Oct 16 15:15	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020	25 Oct 16 19:47	CC
Arsenic - Total	0.0123	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Barium - Total	0.0427	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Chromium - Total	< 0.002	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Cobalt - Total	< 0.002	mg/l	0.0020	6020	25 Oct 16 19:47	CC
Lead - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	26 Oct 16 15:06	CC
Selenium - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 18:46	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	25 Oct 16 19:47	CC

* Holding time exceeded

Approved by:

Claudette K Canteo

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:

a = Due to sample matrix
! = Due to sample quantity

- Due to concentration of other analytes + - Due to internal standard response



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Josh Hollen

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Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Blue 16

Event and Year: OCt 2016

Page: 1 of 1

Report Date: 4 Nov 16 Lab Number: 16-W4827 Work Order #:82-3437 Account #: 006106

Date Sampled: 17 Oct 16 12:55 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion		7.7		EPA 200.2	19 Oct 16	ML
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	19 Oct 16 18:00	ML
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	17 Oct 16 12:55	JSM
Field Appearance	Partly Cle	oudy	NA	SM 2110	17 Oct 16 12:55	JSM
Field Temperature	10.0	Degrees C	0.1	SM 2550B	17 Oct 16 12:55	JSM
Field Conductivity	2737	umhos/cm	1	EPA 120.1	17 Oct 16 12:55	JSM
Fluoride	0.19	mg/1	0.10	SM4500-F-C	19 Oct 16 18:00	ML
Sulfate	913	mg/1	5.00	ASTM D516-07	21 Oct 16 15:36	EMS
Chloride	10.8	mg/l	1.0	SM4500-C1-E	28 Oct 16 9:30	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	1 Nov 16 11:16	EV
Total Dissolved Solids	1930	mg/1	5	I1750-85	19 Oct 16 14:49	ML
Calcium - Total	158	mg/l	1.0	6010	20 Oct 16 10:14	SZ
Lithium - Total	0.10	mg/1	0.10	6010	28 Oct 16 9:11	SZ
Boron - Total	0.44	mg/1	0.10	6010	28 Oct 16 15:15	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020	26 Oct 16 11:07	CC
Arsenic - Total	0.0074	mg/l	0.0020	6020	26 Oct 16 11:07	CC
Barium - Total	0.0982	mg/1	0.0020	6020	26 Oct 16 11:07	CC
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	26 Oct 16 11:07	CC
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	26 Oct 16 11:07	CC
Chromium - Total	0.0045	mg/l	0.0020	6020	26 Oct 16 11:07	CC
Cobalt - Total	< 0.002	mg/1	0.0020	6020	26 Oct 16 11:07	CC
Lead - Total	0.0018	mg/l	0.0005	6020	26 Oct 16 11:07	CC
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 15:06	CC
Selenium - Total	< 0.002	mg/1	0.0020	6020	26 Oct 16 18:46	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	26 Oct 16 11:07	CC

* Holding time exceeded

Approved by:

Claudette

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:

= Due to sample matrix # = Due to concentration of other analytes

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



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Josh Hollen

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Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue Pit

Sample Description: Field Blank

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 4 Nov 16 Lab Number: 16-W4828 Work Order #:82-3437 Account #: 006106

Date Sampled: 18 Oct 16

Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C

	As Receiv Result	ved Method RL		Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	19 Oct 16	ML
Lab, pH	* 6.3	s.u.	0.1	SM4500 H+ B	19 Oct 16 18:00	ML
fluoride	< 0.1	mg/l	0.10	SM4500-F-C	19 Oct 16 18:00	ML
Sulfate	< 5	mg/l	5.00	ASTM D516-07	2 Nov 16 13:07	KMD
Chloride	< 1	mg/l	1.0	SM4500-C1-E	28 Oct 16 9:30	KMD
ercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	1 Nov 16 11:16	EV
otal Dissolved Solids	< 5	mg/1	5	11750-85	19 Oct 16 14:49	ML
alcium - Total	< 1	mg/l	1.0	6010	20 Oct 16 10:14	SZ
ithium - Total	< 0.1	mg/l	0.10	6010	28 Oct 16 9:11	SZ
oron - Total	< 0.1	mg/l	0.10	6010	28 Oct 16 15:15	SZ
ntimony - Total	< 0.001	mg/1	0.0010	6020	26 Oct 16 11:07	CC
rsenic - Total	< 0.002	mg/1	0.0020	6020	26 Oct 16 11:07	CC
arium - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 11:07	CC
eryllium - Total	< 0.0005	mg/1	0.0005	6020	26 Oct 16 11:07	CC
admium - Total	< 0.0005	mg/1	0.0005	6020	26 Oct 16 11:07	CC
hromium - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 11:07	CC
obalt - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 11:07	CC
ead - Total	< 0.0005	mg/l	0.0005	6020	26 Oct 16 11:07	CC
olybdenum - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 15:06	CC
Selenium - Total	< 0.002	mg/l	0.0020	6020	26 Oct 16 18:46	CC
hallium - Total	< 0.0005	mg/l	0.0005	6020	26 Oct 16 11:07	CC

* Holding time exceeded

Approved by:

Clauditte K. Canto

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:

= Due to sample matrix # = Due to con

! = Due to sample quantity * = Due to in





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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-3449
IML Lab Reference No/SDG: S1610375

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year Oct 2016

MVTL Laboratory Identifications: 16-W4927 through 16-W4933

IML Laboratory Identifications: S1610375-001 through S1610375-007

Page 1 of 2

Sample Identification	IML Laboratory #	MVTL Laboratory #
Blue 6	S1610375-001	16-W4927
Blue 7	S1610375-002	16-W4928
Blue 13	S1610375-003	16-W4929
Blue 14	S1610375-004	16-W4930
Blue 15	S1610375-005	16-W4931
Blue 16	\$1610375-006	16-W4932
Blue 8	n/a	Insufficient volume – no sample
Field Blank (FB)	\$1610375-007	16-W4933

I. RECEIPT

- All samples were received at the laboratory on 19 Oct 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 25 Oct 2016.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.



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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-3449
IML Lab Reference No/SDG: S1610375

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year Oct 2016

MVTL Laboratory Identifications: 16-W4927 through 16-W4933

IML Laboratory Identifications: \$1610375-001 through \$1610375-007

Page 2 of 2

III. METHODS

Approved methodology was followed for all sample analyses.

Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudyte auto DATE: 14 Dec 16

Claudette Carroll - MVTL Bismarck Laboratory Manager



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 6

Event and Year: Oct 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W4927 Work Order #:82-3449

Account #: 006106

Date Sampled: 18 Oct 16 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.58	s.u.	0.1	SM 4500 H+ B	18 Oct 16	8:11	JSM
Field Temperature	9.49	Degrees C	0.1	SM 2550B	18 Oct 16	8:11	JSM
Field Conductivity	2543	umhos/cm	1	EPA 120.1	18 Oct 16	8:11	JSM
Radium 226	See Attached Report				8 Nov 16		OL
Radium 228	See Attached Report				23 Nov 16		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

13Dec 16 Claudette K Cantes

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded helow: θ = Due to sample matrix θ = Due to continuous θ = Due to sample quantity θ = Due to int

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 7

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W4928 Work Order #:82-3449 Account #: 006106

Date Sampled: 17 Oct 16 17:35 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Field pH Field Temperature Field Conductivity Radium 226		s.u. Degrees C umhos/cm ached Report	0.1 0.1 1	SM 4500 H+ B SM 2550B EPA 120.1	17 Oct 16 17:35 17 Oct 16 17:35 17 Oct 16 17:35 8 Nov 16 24 Nov 16	JSM

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

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

Due to sample matrix

= Due to co

! = Due to sample quantity

Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 13

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W4929 Work Order #:82-3449

Account #: 006106

Date Sampled: 18 Oct 16 10:16 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.89	s.u.	0.1	SM 4500 H+ B	18 Oct 16 10:16	JSM
Field Temperature	10.5	Degrees C	0.1	SM 2550B	18 Oct 16 10:16	JSM
Field Conductivity	6234	umhos/cm	1	EPA 120.1	18 Oct 16 10:16	JSM
Radium 226	See Att	ached Report			8 Nov 16	OL
Radium 228		ached Report			24 Nov 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

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: \emptyset = Due to sample matrix \mathbb{H} = Due to con

! = Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 14

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W4930 Work Order #:82-3449 Account #: 006106

Date Sampled: 18 Oct 16 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

Field pH	As Received Result		Method RL	Method Reference	Date Analyzed		Analyst
	6.68	s.u.	0.1	SM 4500 H+ B	18 Oct 16	9:15	JSM
Field Temperature	9.83	Degrees C	0.1	SM 2550B	18 Oct 16	9:15	JSM
Field Conductivity	5024	umhos/cm	1	EPA 120.1	18 Oct 16	9:15	JSM
Radium 226	See Atta	ached Report			8 Nov 16		OL
Radium 228		ached Report			24 Nov 16		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

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:

© = Due to sample matrix # = Due to con
! = Due to sample quantity + = Due to int

publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

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Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 15

Event and Year: Oct 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W4931 Work Order #:82-3449 Account #: 006106

Date Sampled: 17 Oct 16 9:15 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH Field Temperature	6.67 9.76	s.u. Degrees C	0.1 0.1	SM 4500 H+ B SM 2550B	17 Oct 16 14:03 17 Oct 16 14:03 17 Oct 16 14:03	JSM
Field Conductivity Radium 226 Radium 228		umhos/cm ached Report ached Report	1	EPA 120.1	8 Nov 16 24 Nov 16	OL OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

@ = Due to sample matrix # = Due to con
! = Due to sample quantity + = Due to int

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Blue 16

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W4932 Work Order #:82-3449 Account #: 006106

Date Sampled: 17 Oct 16 12:55 Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Rece: Result	ived	Method RL	Method Reference	Date Analy	zed	Analyst
Field pH	6,62	s.u.	0.1	SM 4500 H+ B	17 Oc	16 12:55	JSM
Field Temperature	10.0	Degrees C	0.1	SM 2550B	17 Oc	16 12:55	JSM
Field Conductivity	2737	umhos/cm	1	EPA 120.1	17 Oc	16 12:55	JSM
Radium 226		ached Report			8 No	v 16	OL
Radium 228		ached Report			24 No	v 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to come to sample quantity # = Due to interpolated the sample quantity # = Due

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit RadChem

Sample Description: Field Blank (FB)

Event and Year: Oct 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W4933 Work Order #:82-3449 Account #: 006106

Date Sampled: 18 Oct 16

Date Received: 19 Oct 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Radium 226 Radium 228	See Attached Report See Attached Report			8 Nov 16 25 Nov 16	OL OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

© = Due to sample matrix # = Due to con
! = Due to sample quantity + = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response

Date: 12/1/2016

CLIENT:

MVTL Laboratories, Inc.

Project: 2

201682-3449

Lab Order:

S1610375

CASE NARRATIVE

Report ID: S1610375001

Samples 16-W4927 Blue 6, 16-W4928 Blue 7 (MS/MSD), 16-W4929 Blue 13, 16-W4930 Blue 14, 16-W4931 Blue 15, 16-W4932 Blue 16, and 16-W4933 Field Blank were received on October 25, 2016.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-001 ClientSample ID: 16-W4927 Blue 6

COC:

201682-3449

Date Reported

12/1/2016

Report ID

S1610375001

WorkOrder:

S1610375

CollectionDate: 10/18/2016 8:11:00 AM

FieldSampler:

DateReceived: 10/25/2016 2:33:00 PM

Matrix:

Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	мв
Radium 228	0.7	pCi/L		2	Ga-Tech	11/23/2016 2334	MB
Radium 228 Precision (±)	3.1	pCi/L			Ga-Tech	11/23/2016 2334	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

0 X Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

С Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-002

ClientSample ID: 16-W4928 Blue 7 (MS/MSD) COC:

201682-3449

Date Reported 12/1/2016

Report ID

S1610375001

WorkOrder:

CollectionDate: 10/17/2016 5:35:00 PM

S1610375

DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Matrix:

Water

Commonto

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	-1.3	pCi/L		2	Ga-Tech	11/24/2016 238	MB
Radium 228 Precision (±)	2.8	pCi/L			Ga-Tech	11/24/2016 238	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL М
- 0 Outside the Range of Dilutions
- Х Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-003

ClientSample ID: 16-W4929 Blue 13 COC:

201682-3449

Date Reported

12/1/2016

Report ID

S1610375001

WorkOrder:

S1610375

CollectionDate: 10/18/2016 10:16:00 AM

DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Matrix:

Water

Commonto

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	-2.0	pCi/L		2	Ga-Tech	11/24/2016 1151	MB
Radium 228 Precision (±)	3.0	pCi/L			Ga-Tech	11/24/2016 1151	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

O X Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-004

ClientSample ID: 16-W4930 Blue 14 COC:

201682-3449

Date Reported 12/1/2016

Report ID

S1610375001

WorkOrder:

S1610375

CollectionDate: 10/18/2016 9:15:00 AM DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	1.5	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.2	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	-6.2	pCi/L		2	Ga-Tech	11/24/2016 1456	MB
Radium 228 Precision (±)	3.0	pCi/L			Ga-Tech	11/24/2016 1456	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

0 X Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-005

ClientSample ID: 16-W4931 Blue 15 COC:

201682-3449

Date Reported

12/1/2016

Report ID

S1610375001

WorkOrder:

S1610375

CollectionDate: 10/17/2016 2:03:00 PM

DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Matrix:

Water

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.6	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	1.98	pCi/L		2	Ga-Tech	11/24/2016 1800	MB
Radium 228 Precision (±)	3.2	pCi/L			Ga-Tech	11/24/2016 1800	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- 0 Outside the Range of Dilutions
- Matrix Effect

RL - Reporting Limit

Calculated Value

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



Sample Analysis Report

MVTL Laboratories, Inc. Company:

2616 E Broadway Ave. Report ID

Bismarck, ND 58501

ProjectName: 201682-3449

Lab ID: S1610375-006 ClientSample ID: 16-W4932 Blue 16

COC: 201682-3449 Date Reported 12/1/2016

S1610375001

WorkOrder: S1610375

CollectionDate: 10/17/2016 12:55:00 PM DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Water Matrix:

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	-4.5	pCi/L		2	Ga-Tech	11/24/2016 2105	MB
Radium 228 Precision (±)	3.1	pCi/L			Ga-Tech	11/24/2016 2105	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

о Х Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

С Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

Reviewed by: 4

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3449

Lab ID:

S1610375-007

ClientSample ID: 16-W4933 Field Blank COC:

201682-3449

Date Reported 12/1/2016

Report ID

S1610375001

WorkOrder:

Matrix:

S1610375

CollectionDate: 10/18/2016

DateReceived: 10/25/2016 2:33:00 PM

FieldSampler:

Water

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	11/08/2016 1212	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	11/08/2016 1212	MB
Radium 228	-2.8	pCi/L		2	Ga-Tech	11/25/2016 009	MB
Radium 228 Precision (±)	3.5	pCi/L			Ga-Tech	11/25/2016 009	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- 0 Outside the Range of Dilutions
- Matrix Effect

RL - Reporting Limit

Calculated Value

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



Inter-Mountain Labs[,]

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

MVTL Laboratories, Inc.

S1610375

Work Order: Project:

201682-3449

Date: 12/1/2016

Report ID: S1610375001

Radium 228 by Ga/Tech	Sample Type MBLK	Units: pCi/L	
MB-399 (11/26/16 13:02)	RunNo: 141245	PrepDate: 11/07/16 14:00	BatchID: 12572
Analyte	Result	RL Spike Ref Sam	%REC % Rec Limits Qual
Total Radium 228	ND	1	
Radium 228 by Ga/Tech	Sample Type LCS	Units: pCi/L	
LCS-399 (11/23/16 14:21)	RunNo: 141245	PrepDate: 11/07/16 14:00	BatchID: 12572
Analyte	Result	RL Spike Ref Sam	%REC % Rec Limits Qual
Total Radium 228	35	1 39.1	89.8 61.3 - 120
Radium 228 by Ga/Tech	Sample Type LCSD	Units: pCi/L	
LCSD-399 (11/23/16 17:25)	RunNo: 141245	PrepDate: 11/07/16 14:00	BatchID: 12572
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual
Total Radium 228	41	1 35 14.8	104 20
Radium 228 by Ga/Tech	Sample Type MS	Units: pCi/L	
S1610375-002AMS (11/24/16 05:43)	RunNo: 141245	PrepDate: 11/07/16 14:00	BatchID: 12572
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qual
Total Radium 228	62	2 78.2 ND	79.7 64.3 - 120
Radium 228 by Ga/Tech	Sample Type MSD	Units: pCi/L	
S1610375-002AMSD (11/24/16 08:47)	RunNo: 141245	PrepDate: 11/07/16 14:00	BatchID: 12572
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual
Total Radium 228	65	2 62 3.77	82.8 20

Qualifiers:

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- 0 Outside the Range of Dilutions
- Spike Recovery outside accepted recovery limits
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- Matrix Effect



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Work Order:

Project:

MVTL Laboratories, Inc.

S1610375

201682-3449

Date: 12/1/2016

Report ID: S1610375001

Radium 226 in Water - Total by SM7500RA_B	Sample Type MBLK	Unit	s: pCi/L			
MB-1682 (11/08/16 12:12)	RunNo: 140673	PrepDate: 10/3	31/16 0:00	BatchID: 12505		
Analyte	Result	RL Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	ND	0.2				
Radium 226 in Water - Total by SM7500RA_B	Sample Type LCS	Units	s: pCi/L			
LCS-1682 (11/08/16 12:12)	RunNo: 140673	PrepDate: 10/3	31/16 0:00	Bato	hID: 12505	
Analyte	Result	RL Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	5.4	0.2 5.99		89.7	67.1 - 122	
Radium 226 in Water - Total by SM7500RA_B	Sample Type LCSD	Units	s: pCi/L			
LCSD-1682 (11/08/16 12:12)	RunNo: 140673	PrepDate: 10/3	31/16 0:00	Bato	:hID: 12505	
Analyte	Result	RL Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	5.9	0.2 5.4	8.91	98.0	20	
Radium 226 in Water - Total by SM7500RA_B	Sample Type MS	Units	: pCi/L			
S1610375-002AMS (11/08/16 12:12)	RunNo: 140673	PrepDate: 10/3	31/16 0:00	Bato	hID: 12505	
Analyte	Result	RL Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	12.8	0.2 12	0.3	105	65 - 131	
Radium 226 in Water - Total by SM7500RA_B	Sample Type MSD	Units	: pCi/L			
S1610375-002AMSD (11/08/16 12:12)	RunNo: 140673	PrepDate: 10/3	1/16 0:00	Bato	hID: 12505	
Analyte	Result	RL Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	12.0	0.2 12.8	6.25	98.0	20	

Qualifiers:

Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

S Spike Recovery outside accepted recovery limits

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect



2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Field Datasheet

Water Level

Jeren & Length	Company:	OTP - Coyote
	17 oct	2016

Well ID	Time	Depth to Water	Casing Diameter		Comments
Blue6	0852	64.04	2"		
Blue7	0859	B1.87	2"		
Blue8	0844	74.19	2"	76:46	Bottom
Blue13	6910	104,43	2"		
Blue14	0901	79,81	2"		
Blue15	0857	78,00	2"		
Blue16	0855	76.96	2"		
MW2s	0815	23,40	2"		
PondN3	OBU	11,70	2"		
Pond6	0825	17,05	2"		
Pond10	OB 23	20,40	2"	22,15	botton
Pond12	0817	36,66	2"		
Pond15s	0814	35.55	2"		
Pond16s	0820	38.21	2"		



Groundwater Assessment

Company:	OTP Coyote	*
Event:	2016	
Sample ID:	Blueb	
Sampling Personal:	leasing -	

Phone: (701) 258-9720

1 Holle. (101) 250-8	7720												
Veather Conditions:		Temp:	45 '	'F	Wind:	505~1	7		Precip:	Sun	nv / Partly C	loudy / Clo	υσλ
	Well Info	rmation						S	ampling I				<u> </u>
Well Locked?	Yés>	No				Purgi	ng Method:		dder		T	ntrol Setting	<u> </u>
Well Labeled?	(Yes	No				Sampli	ng Method:	Blac	dder		Purge:	<u> </u>	sec.
Casing Straight?	(Yes)	No				Dedica	ted Equip?:	Yes	(ab)		Recover:	25	sec.
Grout Seal Intact?	Yes	No	<not td="" vi<=""><td>sible</td><td></td><td></td><td>Sample?:</td><td>Yes</td><td>(No)</td><td></td><td>PSI:</td><td>11.</td><td><u> </u></td></not>	sible			Sample?:	Yes	(No)		PSI:	11.	<u> </u>
Repairs Necessary:						Duplicate	Sample ID:	-			Pumping R		mL/min
Casing	Diameter:		2"					·····		1			7772711111
Water Level Bef	ore Purge:	63	3.41	ft		F	Purge Date:	17 Oct	16	Time Purg	ing Began:	1015	@m/pm
Total W	Vell Depth:	·		ft		Well P	urged Dry?	Yes	No		Purged Dry:	1125	<am₀ pm<="" td=""></am₀>
We	ell Volume:	-		liters		Sa	ample Date:	18 Oct 1	<i>(</i> 2		f Sampling:	084	am/pm
Depth to Top	o of Pump:	7	5,35	ft									<u> </u>
Water Level After	er Sample:	7	3.01	ft	•	Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	nt Method:	Electric V	Vater Level I	ndicator		List:					A		
				- :-:	N								

Field Measurements

					I ICIU	Measure	11161112			
Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1020	9.67	2529	6.56	1.93	30,4	258,0	65,77	1800	Partly cloudy
2	1035	9,66	2471	6.53	1.64	54.6	35,0		3600	partly charly
3	1050	9,75	2470	6155	1,77	101.8	26.0	1	39 00	Clear
4	1100	9.84	Z469	6,55	1:95	63.5	20.7		2600	Clear
5	1110	10.34	2478	6.56	2,20	653	14.9	74.20	2000	Cles
6	1125	10,26	2482	6.57	2,22	B4.8		7585	3000	Clear
7						44		Topotespy	J3 0	
8										
9	0809	purged 12	ell les 2	iwn to d	lear (in			65,35	2000	
10	૦૬૫	9,49	2543	6.58	5.12	82.5	106.0	31.3		Portly Clarely
Stabilizadi	Voc	W.		.L 					1	

Stabilized: Yes Comments:

Total Volume Removed: 16,000 mL



Groundwater Assessment

Company:	OTP Coyote	*
Event:	2016	
Sample ID:	Blue 7	
Sampling Personal:	Jan gly_	

Measurement Method:

Phone: (701) 258-9	9720							Sampling F	ersonal:		Jely_		
	0720												
eather Conditions:		Temp:	45 °F		Wind:	light			Precip	· Sun	ny / Partly C	Cloudy Clo	
	Well Info	rmation						Sa		nformati		NOURSE CIO	uuy
Well Locked?	∠Y€S)	No				Purai	ng Method:		dder		T		
Well Labeled?		No								4		ntrol Setting	S
	-						ng Method:	Blac	dder	_	Purge:	5	sec.
Casing Straight?		No	· · · · · · · · · · · · · · · · · · ·			Dedicat	ted Equip?:	Yes	No		Recover:	25	sec.
Grout Seal Intact?	Yes	No	Not-Visible	2		Duplicate	Sample?:	X-es	No	1	PSI:		
pairs Necessary:						Duplicate:	Sample ID:	125/V	isd		Pumping R	ate: 200	mal /mai-
Casing	Diameter:		2"			•		1-3-1	- 32,5	J	i uniping K	ale. 200	mL/min
Water Level Bef	ore Purge:	R	1.10	ft		F	urge Date:	170ct	-16n	Time Dura	ing Began:	ww/2)	. (2)
	Vell Depth:		,,,,									1440	am/pm
				- 11			urged Dry?		(No)		Purged Dry:		am/pm
	ell Volume:			liters		Sa	mple Date:	17-Oct	16	Time of	f Sampling:	1735	am/ᢓඁ᠓
Depth to Top	p of Pump:			ft						···			
Water Level After	er Sample:	۶ <i>۱</i> /	. 30	ft		Bottle	CCR: 1L R	aw 500ml	Nitric 4 11	Nitrio			
	· · · · · · · · · · · · · · · · · · ·	··	<u> </u>				OOK. ILK	av, Journe	INILIO, 4-1L	INILIIC			

List:

Field Measurements

Electric Water Level Indicator

Stahi	lization	Temp	Spec.		DO	ORP		187-4	r	
		1	1			1	Turbidity		mL	Discription:
-	secutive)	(°C)	Cond.	РН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1445	9.73	2667	.6.62	202	21.7	66.6	BIJB	1000	Partly chardy
2	1455	9.66	7 569	6.61	1.69	16,0		81,20	2000	portly clarky
3	1510	9.64	2570	6.61	1.93	9.6		81.21	3000	party cloudy
4	1525	9,59	2576	6,60	1.96	1.3	217.0	81,22	3000	Party clouds
5	1540	9.59	2583	6,57	1.72	-5.4	108.0	81,21	3000	
6	1600	9,60	2566	6,38	1.95	-/3.0	55.1	81,22	4000	partly cloudy
7	1620	9.63	2588	6.57	1.97	-16.8	32.7	81,22	4000	partly Claudy
8	1640	9,61	2590	6,56	1.96	- 19,8	25.9	B1.22	4000	Refer Coog
9	1700	9.52	2590	6,56	1.96	-23,6	22.7	B1. 22	4000	Clear
10	1720	9.51	2589	6,55	1,95	-27.8		81.26	4000	Cles
abilized:	Xes	Nο					-t-13/-t		22.000	Clear

Total Volume Removed: 32,000 mL

Comments:

Continued on next page



Groundwater Assessment

Company:	OTP Coyote	*
Event:	2016	
Sample ID:	Rhee 7	
Sampling Personal:	Jengely-	
Date: 17 Oct	160	

Phone: (701) 258-9720

Field Measurements

Stabili	zation	1	I	1	rield Mea	I	15	I		
		Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
11	1725	252	2566	6,55	1.95	-29,6	17.7	81,25	1000	Clean
12	1730	9.51	2589	6.55	1.93	-29.9	18.2	81.26	1000	Cler
13	1435	9.51	2566	6.55	1.95	- 30.8		B1,28	tood	Clear
14								<u></u>		
15										
16										
17										
18										
19										
20										
21										
22										
23					-					
24										
25									-	
26										
27										
28										
29										
30										
tabilized:	(Yes	No	L	1	1	<u>L</u>	L	L	BC	

Sta	lid	ĺΖ	ed	i.

No

Total Volume Removed: <u>శ్రిక్రణ</u> mL

Comments:



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	HOB BluB
Sampling Personal:	Jern Hon-

Filone. (701) 256-8	9120						-						
Veather Conditions:		Temp:	45	°F	Wind:	SOS-W	>	***************************************	Precip	: Suni	ny / Partly C	loudy / Clo	udy
	Well Info	rmation						Sa	mpling l	nformatio	on		
Well Locked?	(E)	No	,			Purgii	ng Method:	Blad	der		Co	ntrol Setting	ıs
Well Labeled?		No				Sampli	ng Method:	Blad	der	1	Purge:	10	sec.
Casing Straight?	√es	No				Dedicat	ed Equip?:	Yes	No	1	Recover:	20	sec.
Grout Seal Intact?		(No)		Visible		Duplicate	Sample?:	Yes	No		PSI:	90	······
Repairs Necessary:	slight of	distriction in	r well			Duplicate	Sample ID:				Pumping R	ate: 200	mL/min
Casing	Diameter:		2"										
Water Level Bet	fore Purge:	10	4.43	<u></u> ft		F	urge Date:	170ct/k)	Time Purg	ging Began:	0925	@m/pm
Total V	Vell Depth:	-		ft		Well P	urged Dry?	(Yes)	No	Time F	ourged Dry:	1000	am/pm
W	ell Volume:	N/a		liters		Sa	mple Date:	18 Octil	>	Time o	f Sampling:	1016	æm y/pm
Depth to To	p of Pump:		2,30	ft									
Water Level Aft	er Sample:	Belo	w Pemp	ft	=	Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	. Nitric			
Measureme	nt Method:	Electric \	Nater Lev	el Indicator		List:						,	
				1									

Field Measurements

cutive)	(°C)	1			ORP	Turbidity	Water	mL	Discription:
	()	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
ე <i>§</i> }⊘	9.57	5185	6.56	4.39	147.4	3.83	107,00	1000	Cles
945	9.67	53418	6.65	2,99	93.1	68.9	110.54	3,000	Wastly cloudy
ර ගර	9.86	5672	6,77	2.76	741	80,2	112.30	3000	partly clarely
				· .					
				1					

				i .					
1013	paged w	ill for 3	rum to c	lear Time			106.15	3000	
1016	iasi	6234	6.89	762	61.8	216.0			partly clardy
<u> </u>	013	1945 9.67 200 9.86 1013 payed a	1013 payed will for 3	1013 payed will for 3 min to c	1013 payed all for 3 min to clear line 016 1051 6234 6.89 7.62	1013 payed all for 3 min to clear line 1016 1051 6234 6.89 7.62 61.8	1013 payed all for 3 min to clear line 016 1051 6234 6:89 7.62 61.8 216.0	1013 payed all for 3 min to clear line 106.15 016 1051 6234 6.89 7.62 61.8 216.0	1013 payed all for 3 min to clear line 106.15 3000 1016 1051 6234 6.89 7.62 61.8 216.0 —

Stabilized:

Comments:

- water level not statilizing - gurged well day



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	Blue 14
Sampling Personal:	Juny Phy

Phone: (701) 258-9	9720												
Weather Conditions:		Temp:	45 .	'F	Wind:	S@ 3-	~(0		Precip	: Sunn	y / Partly C	loudy (Clo	udy)
	Well Info	rmation						Sa	ampling l	nformatio			
Well Locked?	(Yes)	No				Purgi	ng Method:	Blac	dder		Co	ntrol Setting	ıs
Well Labeled?	Yes	No				Sampli	ng Method:	Blac	dder	-	Purge:		sec
Casing Straight?	(Yes	No				Dedica	ted Equip?:	Yes	(№ 0)	1		25/55	sec
Grout Seal Intact?	Yes	No	Not Vi	sib le		Duplicate	Sample?:	Yes	(NO)	1	PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:	مسوي		1	Pumpina R	ate: 200/10	mi /miرعد
Casing	Diameter:		2"										
Water Level Bef		7	9.70	ft			ourge Date:	le octi	6	Time Purgi	ng Began:	08 \$ 0	@m/pn
Total V	Vell Depth:		-	ft		Well F	urged Dry?	Yes	MD	Time Po	urged Dry:		am/pn
We	ell Volume:			liters		Sa	ample Date:	18 Oct 16	2	Time of	Sampling:	0915	æm/pn
Depth to Top	o of Pump:		-	ft									
Water Level After	er Sample:	₩	1.25	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremer	nt Method:	Electric	Water Level I	ndicator		List:							

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	OBUS	9,53	5072	6,73	817	-0,3	11.60	80,5B	1000	Clear
2	0850	9.47	5079	6,68	8,67	-2.3	5.41	80.83	HOUSE SOD	Clear
3	0855	9.76	5028	6.67	8.72	-3.2	4.42	80.94	i soci SCIO	Cle
4	0900	9.78	4995	6,68	8,69	-4.0	4.49	B0.94	500	clear
5	090S	9.89	300 R	6.69	8,66	-4.0	2.95	81.05	500	Clea
6	0910	9.89	5024	6.69	8,77	-6.4	2.91	81.10	500	Clear
7	0915	9.83	5024	6.68	8.≤8	-70	2.71	81.13	500	Clear
8										
9										
10										

Stabilized:

Total Volume Removed: 4000 mL

Comments:
Water lead not Statistizing
reduced purpling rate to 100 ml/min @ 0850



Groundwater Assessment

Company: OTP Coyote

Event: 2016

Sample ID: Blue (5)

Sampling Personal: Jeny flax

Phone: (701) 258-9720

, ,													
Weather Conditions:		Temp:	45 .	F	Wind:	Kigh+			Precip:	Sunr	ıv / Partly C	loudy / Elo	มีส <i>ิ</i> ง
1	Well Info	rmation						Sa		nformatio			
Well Locked?	Ves	No				Purgi	ng Method:	Blad				ntrol Setting	c
Well Labeled?	₩ e s	No					ng Method:	Blad			Purge:		sec.
Casing Straight?)Ces	No				·	ted Equip?:	Yes	/No>		Recover:		
Grout Seal Intact?	(Yes	No	Not Vis	sible			Sample?:	Yes	No		PSI:		sec.
Repairs Necessary:							Sample ID:				Pumping R	···	mL/min
Casing	Diameter:		2"								r amping re	atc. 200	111111111111111111111111111111111111111
Water Level Befo	ore Purge:	- 1	78. <i>0</i> 0	ft		F	Purge Date:	17oct	16	Time Purg	ing Began:	1333	am/@m
Total W	/ell Depth:	(ft		Well P	urged Dry?	Yes	(No)		urged Dry:		am/pm
We	II Volume:			liters		Sa	ample Date:	17 Oct			Sampling:	1403	am/øm
Depth to Top	of Pump:	•		ft			· · · · · · · · · · · · · · · · · · ·			1		<u> </u>	ampun
Water Level Afte	er Sample:	76	3,00	ft		Bottle	CCR: 1L Ra	aw 500ml	Nitric 4-11	Nitric			
Measuremen	t Method:	Electric W	/ater Level Ir	dicator		List:		,	THE TE	1410			
						****	<u> </u>					7 77	

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1338	19.97	3227	6,68	1.38	3,2	18,0	76.4	1000	Clas
2	1343	9.84	3266	6,68	1.37	1.9	8,38	78.06	1000	Clear
3	1348	9.81	3258	6:67	1,42	1.8	5.34	78,07	1600	Cles
4	1353	9.74	3250	6,67	1.48	1.1	3,87	78.10	1000	Cles
5	1358	19.75	3246	6.67	1.46	0.8	3.48	78.15	1000	clear
6	1403	9,76	3205	6.67	1,50	0.0	3.98	78.15	1000	Clea
7							1	10113	,,,,,,	CVe ₂
8										
9							 			
10										
tabilized:	Yes	No	_	J.,,		T	otal Volume	Removed:	6000	mL

Comments:



Groundwater Assessment

Company: **OTP Coyote** Event: 2016 Sample ID: Sampling Personal:

Phone: (701) 258-9	720						-	Jamping i	ersonai.	Jery	Meyer	· · · · · · · · · · · · · · · · · · ·	
· (1, 2-5 -	120											****	
Veather Conditions:		Temp:	45	°F	Wind:	light			Precip:	Sun	ny / Partly C	loudy CT	òudy
1	Well Info	rmation						S	ampling I	nformatio	on		
Well Locked?	(Yes)	No				Purgi	ng Method:		dder		T	ntrol Settin	as
Well Labeled?	(Pes)	No				Sampli	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	(PES)	No				Dedica	ted Equip?:	Yes	(NO)			25	sec.
Grout Seal Intact?	(Yes)	No	Not V	/isible		Duplicate	Sample?:	Yes	No		PSI:	60	TV1
Repairs Necessary:						Duplicate	Sample ID:	P			Pumping R	ate: <i>2e</i> o	mL/min
	Diameter:		2"							•			
Water Level Befo	ore Purge:	7	7.16	ft		F	Purge Date:	1700t	16	Time Purg	jing Began:	1140	∠ama/pm
Total W	/ell Depth:			ft			urged Dry?	Yes	(NO)	Time F	Purged Dry:		am/pm
We	II Volume:	-		liters		Sa	ample Date:	17 Oct 1	6	Time o	f Sampling:	1295	amun
Depth to Top	of Pump:			ft							······		t
Water Level Afte	er Sample:	<u> </u>	402	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric V	ater Level	Indicator		List:			*****	***************************************			
							*******	·····					

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	. ±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1145	10.14	2868	6.74	1:54	-35.4	71000	47.01	\$000	Tubid
2	1200	10.03	2726	6,61	1142	-15.2	154.0		3000	Partly Clardy
3	1295	10.01	2729	6,60	1,32	0,3	187,0	77,00	3000	Partly Cloudy
4	1230	10,02	2734	6.61	1.40	4.9	115.0	77.01	3000	Partly Clarely
5	1245	10,02	2734	6.61	1.41	8,5	135,0	77.05		Parth cloudy
6	1250	10,03	2735	6,61	1.42	9,1	126.0	77.04	1000	Pathy Clordy
7	1255	10,03	2737	6.62	1.41	9,7	121,0	77.03	100	Parth Clady
8								, , , , , , , , , , , , , , , , , , , ,		1014
9										
10								· · · · · · · · · · · · · · · · · · ·		

Stabilized: No

Total Volume Removed: 13000 mL

Comments:



Groundwater Assessment

Company:	OTP Coyote	is .
Event:	2016	
Sample ID:	Blue &	
Sampling Personal:	brem elen-	

						Sampling F	ersonal:	<u>Jeren</u>	1 klun-		
Phone: (701) 258-9	720										
Veather Conditions:		Temp:	°F	Wind:	- W		Precip	: Sun	ny / Partly C	loudy / Clo	udv
	Well Info	rmation				Sa		nformation			
Well Locked?	KES	No			Purging Method:		dder		1	ntrol Setting	is
Well Labeled?	Y@9	No			Sampling Method:	Blac	dder		Purge:		sec.
Casing Straight?	ମ ଚିତ୍ର	No			Dedicated Equip?:	Yes	400		Recover:	_	sec.
Grout Seal Intact?	Yes	No	Not Visible		Duplicate Sample?:	Yes	cN+0,	-	PSI:	<u> میں</u>	
Repairs Necessary:					Duplicate Sample ID:				Pumping Ra	ate:	mL/min
Casing	Diameter:		2"						<u> </u>		
Water Level Befo	ore Purge:		(.19 ft		Purge Date:			Time Purg	ing Began:		am/pm
Total W	/ell Depth:	7	6.46 ft		Well Purged Dry?	Yes	No	Time F	Purged Dry:		am/pm
We	II Volume:	l.	f liters		Sample Date:	17-0ct	16	Time o	f Sampling:	0844	@m/pm
Depth to Top	of Pump:		ft								
Water Level Afte	er Sample:		 ft		Bottle GCR: 1L F	Raw, 500mL	Nitric, 4-1L	_Nitric			
Measuremen	t Method:	Electric \	Water Level Indicator		List:		·				

Field Measurements

						ouou. c				
Stabilia		Temp	Spec.		DO	ORP	Turbidity	t	mL	Discription:
(3 conse		(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1								,		
2										
3										
4										
5					$\overline{}$					
6										
7				/						
8										
9										
10										
Stabilized:	Yes	No				T	otal Volume	Removed:	11	mL

Comments:

insufficient volume no saple



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page 1 of 1 .

	Phone: (701) 2 300) 279-6885	Fax: (701) 258-9724									2	201682-3449		
Company Nam	e and Address:			Account #	t:						Pho	one #:		
	M	VTL		Contact:							F	701-258-9720		
	_	<u>Broadway</u>		Contact.	Claud	iett	e				Fax #: For faxed report check box			
D.111.		<u>k, ND 58501</u>		Name of S							E-	mail: ccarroll@mvtl.com		
Billing Address	s (indicate if different	t from above):										For e-mail report check box		
	PO B	ox 249		Quote Nu	mber						Dat	te Submitted:		
	·	, MN 56073		Project Name/Number:							Dur	21-Oct-16 rchase Order #:		
						٠					ı uı	BL5701		
		Sample Information	4			Bottle Type				pe	Analysis			
	51610375													
							03	pa						
						ted	£	ials	Jar					
IML Lab Number	MVTL Lab Number	Office (O) I am	Sample	Date	Time	Untreated	1000 ml HNO3	VOC Vials Umpreserved	Glass .	ıer				
		Client Sample ID	Туре	Sampled	· · · · · · · · · · · · · · · · · · ·	5	9	25	ਲੁੱ	Other		Analysis Required		
001	16-W4927	Blue 6	GW	18-Oct-16	811		4					Ra226 & Ra228		
200	16-W4928	Blue 7 (MS/MSD)	GW	17-Oct-16	1735 -	12	4					Ra226 & Ra228		
003	16-W4929	Blue 13	GW	18-Oct-16	1016 🐔		4					Ra226 & Ra228		
504	16-W4930	Blue 14	GW	18-Oct-16	915		4					Ra226 & Ra228		
005	16-W4931	Blue 15	GW	1017/16	1403		4					Ra226 & Ra228		
00c	16-W4932	Blue 16 - 🤛	GW	1017/16	1255		4					Ra226 & Ra228		
007	16-W4933	Field Blank	GW	18-Oct-16			4					Ra226 & Ra228		
·														
			1				"		1			The state of the s		

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:		Temp:
T. Olson	21-Oct-16	1700		Kathy Borp	10,25.16	14:33	12.1.0
2.							15,20

2. Cor 25



Chain of Custody Record

Projec	t Name:			Name of Sampler(s):	
	OTP Coyote RadChe	em Blue Pit	Oct 2016	Jerenny Meyer	
Report To:	Otter Tail Power	Carbon Copy:	OTP	Work Order Number:	
Attn:	Paul Vukonich	Attn:	Josh Hollen	Work Order Number.	
Address:	PO Box 496	Address:		82 - 3449	
	Fergus Falls, MN 56538-0496	1.00		88 - 2747	
Email:	pvukonich@otpco.com	Email:	ihollen@otpco.com		

	Sample	e Informati	ion			Bottle Type	Fi	eld Para	ameters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Sample	1000 ml HNO ₃	Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Required
14927		18 Oct 1/2	0811	GW	Clea	4	9.49	2543	6.58	
1928	Blue 7/MS7/MSD7	170+16	1735	GW	Clear	12	9.51	2588	6.55	
14929	Blue 13	(8 Oct 16	1016	GW	partly cloudy	4	10.51	6234	6.89	
14930	Blue 14	180c+16	0915	GW	Cles	4	9.83	5024	6.68	
14931	Blue 15 17034	Marilor 1	1403	GW	Clear	4	9.76	3205	6.67	OTP CCR combined
V4932		1700+16	1255	GW	partly clindy	4	10.03	2737	6.62	RadChem
	Blue 8	170416	0844	GW	-		insuff	icet wi	ine	
14933	Field Blank	180CH6								

Comments: # 12 Oct 16 2

-	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	°C
1 (Mylly	Wellin#2	18:00+16	C. Jackson		190016	- ROI 1,10 TM SEB
2							
3							7



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-3812 IML Lab Reference No/SDG: S1611336

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Blue Pit CCR Radiochemistry

Event & Year Nov 2016

MVTL Laboratory Identifications: 16-W5684 through 16-W5690

IML Laboratory Identifications: S1611336-001 through S1611336-007

Page 1 of 1

Sample Identification	IML Laboratory #	MVTL Laboratory #
Field Blank B	S1611336-001	16-W5684
Blue 6	S1611336-002	16-W5685
Blue 7	S1611336-003	16-W5686
Blue 13	S1611336-004	16-W5687
Blue 14	S1611336-005	16-W5688
Blue 15	S1611336-006	16-W5689
Blue 16	S1611336-007	16-W5690

I. RECEIPT

- All samples were received at the laboratory on 16 Nov 2016 at 0800.
- · Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 0.8°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 18 Nov 2016.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- · Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: DATE: 10 Tan 17

Claudette Carroll - MVTL Bismarck Laboratory Manager



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Field Blank (FB)

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 4 Jan 17 Lab Number: 16-W5684 Work Order #:82-3812 Account #: 006106

Date Sampled: 15 Nov 16

Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Radium 226	See Attached Report			6 Dec 16	OL
Radium 228	See Attached Report			21 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto 10 JAN17

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: ψ = Due to sample matrix # = Due to continuous # = Due to sample quantity # = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 6

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 4 Jan 17 Lab Number: 16-W5685 Work Order #:82-3812 Account #: 006106

Date Sampled: 15 Nov 16 10:40 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.45	s.u.	0.1	SM 4500 H+ B	15 Nov 16 10:40	DJN
Field Temperature	9.52	Degrees C	0.1	SM 2550B	15 Nov 16 10:40	DJN
Field Conductivity	2548	umhos/cm	1	EPA 120.1	15 Nov 16 10:40	DJN
Radium 226	See Att	ached Report			6 Dec 16	OL
Radium 228		ached Report			21 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

0 = Due to sample matrix
: = Due to sample quantity

|| = Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 7

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 4 Jan 17 Lab Number: 16-W5686 Work Order #:82-3812 Account #: 006106

Date Sampled: 14 Nov 16 14:13 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	14 Nov 16 14:13	DJN
Field Temperature	9.76	Degrees C	0.1	SM 2550B	14 Nov 16 14:13	DJN
Field Conductivity	2690	umhos/cm	1	EPA 120.1	14 Nov 16 14:13	DJN
Radium 226	See Atta	ached Report			6 Dec 16	OL
Radium 228	See Atta	ached Report			21 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K. Canteo

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:

Oue to sample matrix
Due to continue to sample quantity
Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 13

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 4 Jan 17 Lab Number: 16-W5687 Work Order #:82-3812 Account #: 006106

Date Sampled: 15 Nov 16 11:33 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.54	s.u.	0.1	SM 4500 H+ B	15 Nov 16 11:33	DJN
Field Temperature	10.9	Degrees C	0.1	SM 2550B	15 Nov 16 11:33	DJN
Field Conductivity	5462	umhos/cm	1	EPA 120.1	15 Nov 16 11:33	DJN
Radium 226	See Atta	ached Report			6 Dec 16	OL
Radium 228	See Atta	ached Report			21 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to co
: = Due to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 14

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 4 Jan 17 Lab Number: 16-W5688 Work Order #:82-3812 Account #: 006106

Date Sampled: 14 Nov 16 16:40 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	14 Nov 16 16:40	DJN
Field Temperature	10.9	Degrees C	0.1	SM 2550B	14 Nov 16 16:40	DJN
Field Conductivity	5100	umhos/cm	1	EPA 120.1	14 Nov 16 16:40	DJN
Radium 226	See Atta	ached Report			6 Dec 16	OL
Radium 228	See Atta	ached Report			21 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

= Due to sample matrix # = Due to constitution as coded below:

= Due to sample quantity # = Due to interpretations # =

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 15

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 4 Jan 17 Lab Number: 16-W5689 Work Order #:82-3812 Account #: 006106

Date Sampled: 15 Nov 16 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.58	s.u.	0.1	SM 4500 H+ B	15 Nov 16	8:42	DJN
Field Temperature	9.16	Degrees C	0.1	SM 2550B	15 Nov 16	8:42	DJN
Field Conductivity	3401	umhos/cm	1	EPA 120.1	15 Nov 16	8:42	DJN
Radium 226	See Atta	ached Report			6 Dec 16		OL
Radium 228	See Atta	ached Report			22 Dec 16		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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: \emptyset = Due to sample matrix $\|$ = Due to co : \bot = Due to sample quantity \bot = Due to in

|| = Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR Radiochem

Sample Description: Blue 16

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 4 Jan 17 Lab Number: 16-W5690 Work Order #:82-3812 Account #: 006106

Date Sampled: 15 Nov 16 10:05 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	15 Nov 16 10:05	DJN
Field Temperature	9.65	Degrees C	0.1	SM 2550B	15 Nov 16 10:05	DJN
Field Conductivity	2842	umhos/cm	1	EPA 120.1	15 Nov 16 10:05	DJN
Radium 226	See Att	ached Report			6 Dec 16	OL
Radium 228		ached Report			22 Dec 16	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo 0 JAN17

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:

0 = Due to sample matrix
! = Due to sample quantity

- Due to concentration of other analytes + = Due to internal standard response



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 12/30/2016

CLIENT:

Lab Order:

MVTL Laboratories, Inc.

Project:

201682-3812

S1611336

CASE NARRATIVE

Report ID: S1611336001

Samples 16-W5684 Field Blank B, 16-W5685 Blue 6, 16-W5686 Blue 7, 16-W5687 Blue 13, 16-W5688 Blue 14, 16-W5689 Blue 15, and 16-W5690 Blue 16 were received on November 18, 2016.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141

40 CFR Part 50, Appendices B, J, L, and O

Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-001

ClientSample ID: 16-W5684 Field Blank B COC:

201682-3812

Date Reported 12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016

DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Comments

Result	Units	Qual	RL	Method	Date Analyzed/Init	
0.1	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1451	МВ
0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1451	МВ
-1.4	pCi/L		1	Ga-Tech	12/21/2016 415	WN
3.0	pCi/L			Ga-Tech	12/21/2016 415	WN
	0.1 0.1 -1.4	0.1 pCi/L 0.1 pCi/L -1.4 pCi/L	0.1 pCi/L 0.1 pCi/L -1.4 pCi/L	0.1 pCi/L 0.2 0.1 pCi/L -1.4 pCi/L 1	0.1 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B -1.4 pCi/L 1 Ga-Tech	0.1 pCi/L 0.2 SM 7500 Ra-B 12/06/2016 1451 0.1 pCi/L SM 7500 Ra-B 12/06/2016 1451 -1.4 pCi/L 1 Ga-Tech 12/21/2016 415

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-002 ClientSample ID: 16-W5685 Blue 6

COC:

201682-3812

Date Reported 12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016 10:40:00 AM 11/18/2016 11:23:00 AM

DateReceived: FieldSampler:

Matrix:

Water

Commente

Comments								
Result	Units	Qual	RL	Method	Date Analyzed/Init			
			'					
0.3	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1451	мв		
0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1451	мв		
0.1	pCi/L		1	Ga-Tech	12/21/2016 718	WN		
3.0	pCi/L			Ga-Tech	12/21/2016 718	WN		
	0.3 0.1 0.1	0.3 pCi/L 0.1 pCi/L 0.1 pCi/L	0.3 pCi/L 0.1 pCi/L 0.1 pCi/L	0.3 pCi/L 0.2 0.1 pCi/L 0.1 pCi/L 1	0.3 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B 0.1 pCi/L 1 Ga-Tech	0.3 pCi/L 0.2 SM 7500 Ra-B 12/06/2016 1451 0.1 pCi/L SM 7500 Ra-B 12/06/2016 1451 0.1 pCi/L 1 Ga-Tech 12/21/2016 718		

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

0 Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-003 ClientSample ID: 16-W5686 Blue 7

COC:

201682-3812

Date Reported

12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016 2:13:00 PM DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1451	МВ
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1451	MB
Radium 228	1.8	pCi/L		1	Ga-Tech	12/21/2016 1020	WN
Radium 228 Precision (±)	3.2	pCi/L			Ga-Tech	12/21/2016 1020	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Е Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions O

Matrix Effect

RL - Reporting Limit

С Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-004 ClientSample ID: 16-W5687 Blue 13

COC:

201682-3812

Date Reported

12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016 11:33:00 AM

DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1655	МВ
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1655	МВ
Radium 228	-0.8	pCi/L		1	Ga-Tech	12/21/2016 1926	WN
Radium 228 Precision (±)	3.0	pCi/L			Ga-Tech	12/21/2016 1926	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

С Calculated Value

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



nter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-005 ClientSample ID: 16-W5688 Blue 14

COC:

201682-3812

Date Reported 12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/14/2016 4:40:00 PM

DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Commonto

Result	Units	Qual	RL	Method	Date Analyzed/I	nit
-						
1.3	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1655	MB
0.2	pCi/L			SM 7500 Ra-B	12/06/2016 1655	MB
0.3	pCi/L		1	Ga-Tech	12/21/2016 2229	WN
3.7	pCi/L			Ga-Tech	12/21/2016 2229	WN
	1.3 0.2 0.3	1.3 pCi/L 0.2 pCi/L 0.3 pCi/L	1.3 pCi/L 0.2 pCi/L 0.3 pCi/L	1.3 pCi/L 0.2 0.2 pCi/L 0.3 pCi/L 1	1.3 pCi/L 0.2 SM 7500 Ra-B 0.2 pCi/L SM 7500 Ra-B 0.3 pCi/L 1 Ga-Tech	1.3 pCi/L 0.2 SM 7500 Ra-B 12/06/2016 1655 0.2 pCi/L SM 7500 Ra-B 12/06/2016 1655 0.3 pCi/L 1 Ga-Tech 12/21/2016 2229

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

О Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

С Calculated Value

Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-006

ClientSample ID: 16-W5689 Blue 15 COC:

201682-3812

12/30/2016

Date Reported Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016 8:42:00 AM

DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1655	МВ
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1655	МВ
Radium 228	-5.4	pCi/L		1	Ga-Tech	12/22/2016 132	WN
Radium 228 Precision (±)	3.5	pCi/L			Ga-Tech	12/22/2016 132	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

М Value exceeds Monthly Ave or MCL or is less than LCL

0 Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

С Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201682-3812

Lab ID:

S1611336-007

ClientSample ID: 16-W5690 Blue 16 COC:

201682-3812

Date Reported

12/30/2016

Report ID

S1611336001

WorkOrder:

S1611336

CollectionDate: 11/15/2016 10:05:00 AM

DateReceived: 11/18/2016 11:23:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	12/06/2016 1655	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	12/06/2016 1655	MB
Radium 228	2.3	pCi/L		1	Ga-Tech	12/22/2016 435	WN
Radium 228 Precision (±)	3.2	pCi/L			Ga-Tech	12/22/2016 435	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

0 Outside the Range of Dilutions

Matrix Effect

RL - Reporting Limit

Calculated Value

Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Work Order:

MVTL Laboratories, Inc.

S1611336

Project: 201682-3812

Date: 12/30/2016

Report ID: S1611336001

Radium 228 by Ga/Tech	Sample Type MBLK		Units	s: pCi/L			
MB-405 (12/20/16 10:04)	RunNo: 142088	B Pre	pDate: 12/0	01/16 14:00	Bate	chID: 12688	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	ND	1					
Radium 228 by Ga/Tech	Sample Type LCS		Units	s: pCi/L			
LCS-405 (12/20/16 13:06)	RunNo: 142088	B Pre	pDate: 12/0	1/16 14:00	Bato	chID: 12688	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	38	1	40.3		94.9	64.4 - 99.5	
Radium 228 by Ga/Tech	Sample Type LCSD		Units	: pCi/L			
LCSD-405 (12/20/16 16:08)	RunNo: 142088	Prep	Date: 12/0	1/16 14:00	Bato	hlD: 12688	
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Quai
Total Radium 228	40	1	38	4.02	98.8	20	
Radium 228 by Ga/Tech	Sample Type MS		Units	: pCi/L			
S1611336-003AMS (12/21/16 13:22)	RunNo: 142088	Prep	Date: 12/0	1/16 14:00	Bato	:hID: 12688	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	63	1	80.6	2	76.2	55 - 113	
Radium 228 by Ga/Tech	Sample Type MSD		Units	: pCi/L			
S1611336-003AMSD (12/21/16 16:24)	RunNo: 142088	Prep	Date: 12/0	1/16 14:00	Bato	:hID: 12688	
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	76	1	63	18.6	92.4	30	**********

Qualifiers:

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- O Outside the Range of Dilutions
- S Spike Recovery outside accepted recovery limits
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- X Matrix Effect ...



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Project:

Work Order:

MVTL Laboratories, Inc.

S1611336

201682-3812

Date: 12/30/2016

Report ID: S1611336001

Radium 226 in Water -	Sample Type MBLK	Uni	ts: pCi/L			
MB-1697 (12/06/16 14:51)	RunNo: 141513	PrepDate: 11	/29/16 0:00	Bate	chID: 12613	
Analyte	Analyte Result RL Spike F					
Radium 226	ND	0.2				
Radium 226 in Water -	Sample Type LCS	Uni	ts: pCi/L			
LCS-1697 (12/06/16 14:51)	RunNo: 141513	PrepDate: 11/	/29/16 0:00	Bato	chID: 12613	
Analyte	Result	RL Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6.0	0.2 5.89		101	67.1 - 122	
Radium 226 in Water -	Sample Type LCSD	Unit	s: pCi/L			
LCSD-1697 (12/06/16 14:51)	RunNo: 141513	PrepDate: 11/	29/16 0:00	Bato	hID: 12613	
Analyte	Result	RL Cond	%RPD	%REC	% RPD Limits	Qual
Radium 226	6.4	0.2 6.0	6.13	108	20	,
Radium 226 in Water -	Sample Type MS	Unit	s: pCi/L			
S1611336-003AMS (12/06/16 14:51)	RunNo: 141513	PrepDate: 11/	29/16 0:00	Bato	hID: 12613	
Analyte	Result	RL Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	12.3	0.2 11.8	0.3	102	65 - 131	
Radium 226 in Water -	Sample Type MSD	Unit	s: pCi/L			
S1611336-003AMSD (12/06/16 16:55)	RunNo: 141513	PrepDate: 11/	29/16 0:00	Bato	hID: 12613	
Analyte	Result	RL Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	12.5	0.2 12.3	1.52	104	20	-

Qualifiers:

- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- Analyzed by another laboratory
- 0 Outside the Range of Dilutions
- Spike Recovery outside accepted recovery limits
- Ε Value above quantitation range
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- Χ Matrix Effect



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page	1	οf	1	
raye	1	of	- 1	

	00) 279-6885	Fax: (701) 258-9724									2	201682-3812			
Company Nam	e and Address:			Account #:				····			Ph	one #:			
	'An	VTL		C								701-258-9720			
	MVTL Contact: 2616 E Broadway Claudette										Fax	Fax #:			
	<u>Bismarck</u>	, ND 58501		Name of Sa		erre					F	For faxed report check box mail: ccarroll@mvtl.com			
Billing Address	(indicate if different	from above):									-	For e-mail report check box			
	50.5	. 040		Quote Num	ber					•	Dat	te Submitted:			
		ox 249 . MN 56073		Designation of No.	At a							16-Nov-16			
	INCW GIIII	, IAI14 2001 2		Project Nar	ne/Number	;					Pur	chase Order#:			
		Sample Information		<u> </u>	······································	T	В	ottle	Tyr		<u> </u>	BL5728 Analysis			
5/16/133	6							Ottio	1,6,	-		Allalysis			
IML Lab						fed	ml HNO3	VOC Vials Umpreserved	Jar						
Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Untreated	1000 n	VOC V Umpre	Glass Jar	Other		Analysis Required			
Number	MVTL Lab Number 16-W5684	Client Sample ID Field Blank B	-	1		Untrea	u 0001 4	VOC V Umpre	Glass	Other		Analysis Required Ra226 & Ra228			
Number			Type	Sampled		Untrea	1000	VOC V Umpre	Glass	Other		Ra226 & Ra228			
Number OOL OOS	16-W5684	Field Blank B	Type GW	Sampled 15-Nov-16	Sampled	Untrea	0001 4 4	V DOC V	Glass	Other		Ra226 & Ra228 Ra226 & Ra228			
Number	16-W5684 16-W5685	Field Blank B Blue 6	GW GW	15-Nov-16	Sampled 1040	Untrea	0001 4 4		Glass	Other		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228			
Number OOL OOS	16-W5684 16-W5685 16-W5686	Field Blank B Blue 6 Blue 7	GW GW GW	Sampled 15-Nov-16 15-Nov-16 14-Nov-16	1040 1413 -	Untrea	4 4 4		Glass	Other		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228			
Number	16-W5684 16-W5685 16-W5686 16-W5687	Field Blank B Blue 6 Blue 7 Blue 13	GW GW GW GW	Sampled 15-Nov-16 15-Nov-16 14-Nov-16 15-Nov-16	1040 11413 1133	Untrea	4 4 4		Glass	Other		Ra226 & Ra228			
Number	16-W5685 16-W5686 16-W5687 16-W5688	Field Blank B Blue 6 Blue 7 Blue 13 Blue 14	GW GW GW GW GW	Sampled 15-Nov-16 15-Nov-16 14-Nov-16 15-Nov-16	1040 1413 1133 1640	Untrea	0001 4 4 4 4 4		Glass	Other		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228			
Number	16-W5685 16-W5686 16-W5687 16-W5688 16-W5689	Field Blank B Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW GW	Sampled 15-Nov-16 15-Nov-16 14-Nov-16 15-Nov-16 15-Nov-16	1040 1413 1133 1640 842	Untrea	0001 4 4 4 4 4		Glass	Other		Ra226 & Ra228			
Number	16-W5684 16-W5685 16-W5686 16-W5687 16-W5688 16-W5689	Field Blank B Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW GW GW GW	Sampled 15-Nov-16 15-Nov-16 14-Nov-16 15-Nov-16 15-Nov-16 15-Nov-16	1040 1413 1640 842 1005		4 4 4 4 4		Glass	Other		Ra226 & Ra228			

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:		Temp:
T. Olson	16-Nov-16	1700		Kathy Boys	11.18.16	11:23	8.4 <
2.				· · ·			8.6



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue 6	-
Sampling Perso	nal: Darren Nacsma	e

Phone: (701) 258-9720

Phone: (701) 258-9	9720						_						
Weather Conditions:		Temp:	48°F		Wind:/∕	W 5			Precip:	Sunn	ıy / Partly C	loudy / Clo	oudy
	Well Info	rmation	. 0					Sa	mpling I	nformatic	n		
Well Locked?	Yes	No				Purgir	ng Method:	Blad	der		Co	ntrol Settino	gs
Well Labeled?	(Yes	No				Sampli	ng Method:	Blad	der		Purge:	5	sec.
Casing Straight?	&es	No				Dedicat	ed Equip?:	Yes	MO	·	Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	Sample?:	Yes	ضØ		PSI:	uo	
Repairs Necessary:	4					Duplicate:	Sample ID:				Pumping Ra	ate: 200	mL/min
Casing	Diameter:		2"										
Water Level Bef	ore Purge:	P	(4.97	ft		F	urge Date:	1400	v16	Time Purg	ing Began:	0940	∕am/pm
Total V	Vell Depth:		79,15	ft		Well P	urged Dry?	Yes	No	Time F	urged Dry:	1035	@m/pm
We	ell Volume:		8 - 8	liters		Sa	mple Date:	15NOW	16	Time of	f Sampling:	1040	am/pm
Depth to To	p of Pump:		7 <i>5-1</i> 3	ft								.,	
Water Level Aft	er Sample:	7	4,73	ft		Bottle	500 m	L Nitric	1 Lite	er Raw			
Measuremer	nt Method:	Electric	Water Level In	dicator		List:	500 mL Nit	ric (filtered)	250 ml	Sulfiric			

Field Measurements

						illoaca, c				
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	0945	9,44	2551	6.51	0,73	51.9	248	66.20	1000	Tovard. arcy
2	0955	9,34	2508	6.49	0.48	55,3	56.4	69.58	2000	Partly closely class
3	1005	9:39	2509	6153	0.95	57-8	35.5	73.38	2000	c Ce_
4	1015	9.37	2511	6.55	1.12	60,4	24.1	74,53	2000	de
5	1025	9.49	2526	6.59	0,88	55.0	39.5	74.61	2000	ch
6	1035	9.61	2506	6,58	0.88	4018	64.4	75113	2000	er Partlyclerdy
7			,							
8	1035 PU	road	15Novil	for 5.	min. A	etore S	ampling	65,12	1000	
9	1040	9,52	2548	6.45	7.2.40	51.4	50,6	66.53	1000	Cler
10										

Stabilized: Yes No

Total Volume Removed: \(\frac{\lambda}{\lambda} \textit{\partial P \textit{\gamma}} mL

Comments:



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue 1	•
Sampling Person	al: Dallen	Nismaag

Phone: (701) 258-9720

Weather Conditions:		Temp:	<i>∱</i>		Wind:	8 15		Precip: / Sunny/Partly Cloudy / Cloudy					
	Well Info	rmation	J 0					Sampling Information					
Well Locked?	X GS	No				Purgii	ng Method:	Bladder			Control Se		s
Well Labeled?	¥æŝ	No				Sampli	ng Method:	Bladder			Purge:	5	sec.
Casing Straight?	X 98	No				Dedicat	ed Equip?:	Yes	No		Recover:	25	sec.
Grout Seal Intact?	Yes	No	Not-Visi	ole		Duplicate	Sample?:	(Jes)	No		PSI:		
Repairs Necessary:	ary:			Duplicate	e Sample ID: MS/MSD			Pumping R	ate: 200	mL/min			
Casing	g Diameter:		2"										
Water Level Bet	fore Purge:		81.67	ft		F	Purge Date:	14Nov	16	Time Purg	ing Began:	1143	am/pm
Total V	Well Depth:		· /	ft		Well P	urged Dry?	Yes (No)		Time Purged Dry:		<u> </u>	_am/pm
W	ell Volume:			liters		Sa	imple Date:	14NOV16		Time of Sampling		1413	am/pro
Depth to To	p of Pump:		95.02	ft				,					
Water Level Aft	ter Sample:		81.95	ft		Bottle	500 m	L Nitric	1 Lite	r Raw			
Measureme	nt Method:	Electric	Water Level Inc	licator		List:	500 mL Nit	ric (filtered)	250 ml	Sulfiric			
					_								

Field Measurements

Stabili	rotion	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	1		•	11		1			1	
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	1148	9,68	2760	6.62	0,94	24,9	48.5	81.90	1000	Slightlycloudy
2	1203	9,57	2713	6,63	0,35	6,9	65.4	81.96	3000	se
3	1928 M	34.65	2695	6.60	0,29	0.9	39.9	81,96	19000	cler
4	1238	9.65	2689	6.58	0,25	=3.1	26,5	81.97	4000	cler
5	1253	9.63	2685		0120	-5.6	20,5	81,96	4000	ch
6 130	31303	9.64	2685	6.58	0.20	-7,3	13,3	81.95	\$2000	Cleer
7	1313	9,65	2685	6.58	0.19	-8.7	13.1	81.95	2000	de
8	1318	9,68	2685	6,58	0,20	-9,2	12.3	81.95	1000	di
9	1323	9,67	2685	6.58	6120	-g,5	12,5	81,96	1000	CL_
10	1328	9,69	2686	6.58	0,19	-10,1	9,73	81,96	1000	de
Stabilized:	Yes	No)] т	otal Volume	Removed	l <u>+</u>	mL
Comments	1222		· I	'	1	1	1 1	'		
	4333	لسل					L			

Continued on next page



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	14e7
Sampling Personal:	Darren Nirswan
Date: 14Nov	16

Phone: (701) 258-9720

Field Messurements

Field Measurements											
Stabili		Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:	
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)		Removed	Clarity, Color, Odor, Ect.	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy	
11	1338	9,71	2686	6157	0,17	-10.5	8,22	81.96	2000	der	
12	1348	9,71	2689	6,57	0.18	-11.3	107.41	81,96	2000	de	
13	1358	9,72	2689	6:57	0017	-11:8		81.96	2000	cle cle cle cle	
140314 H	1303	9,72	26.89	6,57	0,18	-12,0	5,22	81.96	1000	de	
140815 K	1308	9,74	2690	6,57	0,17	-12,3	5.38	81.96	1000	ch	
16	1413	9,76	2690	6.57	0019	7215	5,25	81,96	1000	de	
17											
18		1									
19											
20											
21							1				
22											
23											
24											
25			1								
26											
27							1				
28											
29			<u> </u>								
30											

Stabilized: Comments: Yes

No

Total Volume Removed: 32, 200 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	AWBlue 13	
Sampling Pers	onal: Darren Nicswac	1/
	, tr, , , , , , , , , , , , , , , , , ,	9

Phone: (701) 258-9720

(, 0 .) 200 0.	- 20												*
Weather Conditions:		Temp:	50	°F	Wind:	NWS	>		Precip:	Sunr	y / Partly C	loudy / Clo	udy
\	Well Info	rmation	•					Sa	mpling lr	formation	on		
Well Locked?	Yes)	No				Purgir	urging Method: Bladder			Со	ntrol Setting	s	
Well Labeled?	X es	No				Samplin	Sampling Method:		der		Purge:	250	sec.
Casing Straight?	Yes	No				Dedicat	ed Equip?:	Yes	△N 0		Recover:	ンン	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	1		PSI:	~	
Repairs Necessary:	Sligh	+ obstr	uction	inwell		Duplicate:	Sample ID:				Pumping R	ate: 200	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	/	05.18	ft		Purge Date:		14NOULL		Time Purg	ing Began:	1055	@m/pm
Total W	ell Depth:	ſ	16,68	ft		Well P	urged Dry?	Yes	No	Time F	urged Dry:	1125	am/pm
We	ll Volume:	J	7:1	liters		Sa	mple Date:	15NOV	16	Time of	Sampling:	1133	am∕pm
Depth to Top	of Pump:	1)	1.28	ft								,	
Water Level Afte	r Sample:	il	1,28	ft		Bottle	500 ml	L Nitric	1 Lite	r Raw	1-50 en	KN	
Measuremen	t Method:	Electric V	Vater Lev	el Indicator		List:	500 mL Nit	ric (filtered)	250 mL	Sulfiric	4-16 N	/	

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	1100	9,79	5709	6.56	2,27	620	106	117.68	1000	Postly Clarks
2	1115	9,76	5791	1.73	1,23	27,1	166	111,18	3000	Partyclasy
3	4120	9,77	5370	6.60	1.86	3916	203	111.28	2000	Though
4	1125	, ,			1.36	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
5		·								
6										
7										
8										
9	1128	Pur	red li	re to	(4			104.97		,
10	1133	10,57	5462	6154	2,32	68,4	722	105.82	1000	Tu-5, d
Stabilized:	Yes	(No				, T	otal Volume	Removed:	6000	mL

Comments:



Groundwater Assessment

Company:	OTP Coyote	OTP Coyote									
Event:	2016	k									
Sample ID:	B/42 14		+								
Sampling Perso	nal De Cart	AlTecare									

Phone: (701) 258-9720

Phone: (701) 258-9	720												+
Weather Conditions:		Temp:	60	°F	Wind: 🖋	5 5			Precip:	Suni	y / Partly C	loudy / Clo	udy
	Well Info	rmation						S	ampling l	nformation	on		
Well Locked?	Yes	No				Purgir	ng Method:	Bla	dder		Со	ntrol Setting	ıs
Well Labeled?	Yes	No				Samplii	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No				Dedicat	ed Equip?:	Yes	(No		Recover:	25	55 sec.
Grout Seal Intact?	Yes	No	Not \	/isible)		Duplicate	Sample?:	Yes	(No	1	PSI:	50	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate:206	mL/min
Casing	Diameter:		2"							_		100	
Water Level Bef	ore Purge:	_	79.99	, ft		F	urge Date:	14Nou	16	Time Purg	ing Began:	1550	am/pm
Total V	Vell Depth:			ft		Well P	urged Dry?	Yes	(Mo	Time F	Purged Dry:	<u> </u>	am/pm
We	ell Volume:		,	liters		Sa	mple Date:	14NOU	16	Time o	f Sampling:	1640	am/pm
Depth to To	p of Pump:	82	,23	ft								70.	
Water Level After	er Sample:	81.	29	ft		Bottle	500 m	L Nitric	1 Lite	er Raw			
Measuremer	nt Method:	Electric \	Nater Leve	I Indicator		List:	500 mL Nit	ric (filtered) 250 ml	_ Sulfiric			
				E ' 1	h.d								

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	1555	16.67	5028	6,63	0.84	8.9	16.6	80.64	1000	Char
2	1605	10.86	3148	6.62	0153	10,2	9.17	80.89	2000	B-
3	1610	10,60	5102	6,63	0.53	8.4	7.05	81,01	1000	de
4	1615	10,47	5092	6,64	0,46	7.1	5.09	81,09	1000	w
5	1620	10,37	5097	6,65	0,46	\$506	4.90	81.22	1000	Chy
6	1625	10,97	5088	615	0,45	4,3	4.95	81.21	500	Clu
7	1630	11.11	5080	6.66	0,43	2.1	4.17	81,21	500	de
8	1635	11,06	508	6,65	0.44	1,1	4.02	81.21	500	a
9	1640	10,89	5100		On 45	40,2	3.95	81,21	500	dr
10	6						-			
0.1.1. 1	W1	N1 -							6 00	

Stabilized: (Yes) No

Total Volume Removed: \$\int \text{000} mL

Comments:

, 620 changed the min so we pursed at 100 ml.



Groundwater Assessment

OTP Coyote Company: Event: 2016 Sample ID: Sampling Personal:

Phone: (701) 258-9720

Weather Conditions:		Temp:	43 °F		Wind:	Light	_		Precip:	Sunr	y / Partly C	loudy / Clo	udy			
,	Well Info	rmation				,,,,,		Sampling Information								
Well Locked?	Yes	No				Purgii	ng Method:	Blado	ler		Co	ntrol Setting	s			
Well Labeled?	Yes	No				Samplii	ng Method:	Blado	ler		Purge:	5	sec.			
Casing Straight?	Yes	No	No			Dedicat	ed Equip?:	Yes	No		Recover:	25	sec.			
Grout Seal Intact?	Yes	No Not Visible			Duplicate	Sample?:	Yes 190			PSI:	60					
Repairs Necessary:						Duplicate	Sample ID:		··		Pumping R	ate: ೨೭೦	mL/min			
Casing	Diameter:		2"													
Water Level Befo	ore Purge:		78,94	ft		F	urge Date:	:15NOV16		Time Purg	ing Began:	0802	@n/pm			
Total W	/ell Depth:			ft		Well P	urged Dry?	´Yes No>		Time Purged Dry:			am/pm			
We	ell Volume:			liters		Sa	mple Date:	15NOV	16	Time of	f Sampling:	0842	am/pm			
Depth to Top	of Pump:	. ×	1,98	ft												
Water Level After Sample: 79,12		79:12	ft		Bottle 500 mL		L Nitric	1 Lite	r Raw	4160	N					
Measuremen	t Method:	Electric	Water Level Indi	cator		List:	500 mL Ni	tric (filtered)	250 mL	Sulfiric -		i e				
				Eiold	Magaure	monto			·							

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рΗ	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	1807	9,15	3502	6.56	0.67	35.8	25,6	79.04	1000	Class
2	8817	9.11	3418	6.57	0,38	22,2	9.10	79.12	2000	di
3	0827	9,04	3401	6.5-8	0,77	1916	4.89	79,19	2000	Ch_
4	0832	9,08	3401	6,58	0,34	18,1	2,26	74.10	1000	dr
5	0837	9.14	3401	6,58	0,34	18,2	2,12	79,08	100.0	M
6	0842	Pelb	3401	6.58	0,35	1804	2,08	79,12	1000	Cler
7				,		-			1	
8										
9										
10									((000	

Stabilized: Yes No Comments:

Total Volume Removed: 5000 mL



Groundwater Assessment

Company: OTP Coyote

Event: 2016

Sample ID: Blue Ib

Sampling Personal: Davien Wissway

Phone: (701) 258-9720

Phone: (701) 258-97	720						-						
Weather Conditions:		Temp:	40 °F		Wind:	NWI	0		Precip:	Sunn	y / Partly C	loudy / Clo	udy
\	Well Info	rmation	•					Saı	mpling li	nformatio	n		
Well Locked?	Yes	No				Purgi	ng Method:	Blade	der		Со	ntrol Settino	gs
Well Labeled?	¥es	No				Sampli	ng Method:	Blade	der		Purge:	5	sec.
Casing Straight?	Ves	No	and the second section of the section of th			Dedica	ted Equip?:	Yes	(N/O)		Recover:	3,5	sec.
Grout Seal Intact?	Yes	No	Not Visib	łe		Duplicate	Sample?:	Yes	(No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:	~			Pumping R	ate: 200	mL/min
Casing	Diameter:		2"		i								
Water Level Befo	ore Purge:	,	78:09	ft		F	Purge Date:	15NOV	16	Time Purg	ing Began:	6910	@m/pm
Total W	/ell Depth:			ft		Well P	urged Dry?	Yes	(No)	Time P	urged Dry:		am/pm
We	ll Volume:			liters		Sa	ample Date:	15Nov	4	Time of	Sampling:	1005	-(am/pm
Depth to Top	of Pump:		14,85	ft									
Water Level Afte	er Sample:		78,11	ft		Bottle	500 m	L Nitric	1 Lite	r Raw			
Measuremen	t Method:	Electric	Water Level Indi	cator		List:	500 mL Nit	t ric (filtered)	_250 ml	-Sulfiric -			
					_		•					·	

Field Measurements

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 con	secutive)	(°C)	Cond.	⊸ pH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		
1	0915	9.60	3063	6,97	0,55	~13.1	948	78.11	1000	Turbid, Gre-
2	0930	9.63	82948	6.76	0,30	-39.6	505	78.11	7003000	Tribid, grel
3	0945	9,51	2846	6,57	0,30	2.3	135	78,11	3000	Partly Cloudy
4	0950	9.60	2840	6.56	0,30	11.5	199	78.11	1000	PC
5	0955	9164	2841	6.56	0,26	17:0	184	7811	1000	PC
6	1000	9,65	2843	6,56	0,25	19,4	187	78,11	1000	PC
7	1005	9.65	2842	6,56	0,23	21,5	192	78111	1000	PC
8										
9										
10										

Stabilized: Yes No

Comments:

Total Volume Removed: 11000 mL



Chain of Custody Record

Projec	t Name:			Name of Sampler(s):	1-	
	OTP Coyote RadChe	em Blue	Nov2016	Darlen	NIESWaag	
Report To:	Otter Tail Power	Carbon Copy:	OTP	Work Order Number:		
Attn:	Paul Vukonich	Attn:	Josh Hollen	Work Order Hambers		
Address:	PO Box 496	Address:			012-3017	
	Fergus Falls, MN 56538-0496			. 1	80 2010	
Email:	pvukonich@otpco.com	Email:	ihollen@otpco.com			

	Sampl	e Informati	on			Bottle Type			eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type		1000 ml HNO ₃		Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Required
W5684		15NoulL	NA	W	USNOW			NA	NA	NA	
W9685	Blue 6	15/00/16	1040	GW		4		952	2548	6.45	
W5686	Blue 7/MS7/MSD7	14Nov16	1413	GW		12		9.76	2690	6,57	
WS487	Blue 13	15Noul6	1133	GW		4		10.87	5462	6.54	
W5688	Blue 14	14Nov16	1640	GW		4		10.89	5100	6.66	OTP CCR combined
W5689	Blue 15	15Noulb	0842	GW		4		9.16		6,58	RadChem
W5690	Blue 16	15Noulb	1005	GW		4		9,65	2842	6.56	
				-							

Comments:

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	°C
1	Dan Nin	walkin2	15/0016	C. CANTO	1	500 800	ROT 0.8
2							TM588
3							15Nov1600



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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201682-3817

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year Nov 2016

MVTL Laboratory Identifications: 16-W5695 through 16-W5701

Page 1 of 2

Sample Identification	MVTL Laboratory #
Field Blank (FB)	16-W5695
Blue 6	16-W5696
Blue 7	16-W5697
Blue 13	16-W5698
Blue 14	16-W5699
Blue 15	16-W5700
Blue 16	16-W5701

RECEIPT

- All samples were received at the laboratory on 16 Nov 2016 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 0.8°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201682-3817

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

Nov 2016

MVTL Laboratory Identifications:

16-W5695 through 16-W5701

Page 2 of 2

IV. ANALYSIS

- All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.
 - For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.
 - For some analytes, the reported results were elevated due to instrument performance at the lower limit of quantitation (LLOQ).
 - Recovery for one selenium matrix spike was outside of the acceptable limits. Recovery of the matrix spike duplicate was acceptable. RPD for the recoveries of the matrix spike/matrix spike duplicate was acceptable. No further action was taken.
 - One selenium matrix spike duplicate recovery was outside the acceptable limits. Recovery
 for the matrix spike was acceptable. RPD for the recoveries of the matrix spike duplicate and
 the matrix spike was within limits. No further action was taken.

All laborato	ry data has been appro	oved by MVTL Laborat	tories.	
SIGNED:	Claudette	ante	DATE:	14 Dec 16
Clau	idette Carroll - MVTL F	Bismarck Laboratory N	Manager	

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Quality Control Report

Page: 1 of 3

Lab IDs: 16-W5695 to 16-W5701 Project: OTP Coyote Blue CCR Work Order: 201682-3817 Matrix Matrix Matrix MSD/ MSD/ LCS LCS LCS Matrix Matrix Spike Matrix Dup Spike Spike MSD/ **MSD** MSD/ Dup Known Known % Rec Spike Rec Spike Spike Orig Spike Rec % Rec Orig Dup Dup Rec **RPD** Rec % Rec Method % Amt Limits ID Amt Result Result % Limits Result Analyte Result % **RPD** Limit (<) (%) Limits Blank Antimony - Total mg/l 0.1000 100 80-120 0.400 16W5697q < 0.001 0.4170 75-125 104 0.4170 0.3882 97 7.2 20 < 0.001 0.400 16W5739q < 0.001 0.4306 108 75-125 0.4306 0.4172 104 3.2 20 0.400 16W5805q < 0.001 0.4376 109 75-125 0.4376 0.4404 110 0.6 20 0.400 < 0.001 16W5806q 0.4392 110 75-125 0.4392 0.4498 112 2.4 20 Arsenic - Total mg/l 0.1000 107 80-120 0.400 16W5697q < 0.002 0.4460 112 75-125 0.4460 0.4298 107 3.7 20 < 0.002 0.400 16W5739q < 0.002 0.4484 112 75-125 0.4484 0.4378 109 2.4 20 0.400 16W5805q < 0.002 0.4522 113 75-125 0.4522 0.4448 111 1.6 20 0.400 16W5806q < 0.002 0.4342 109 75-125 0.4342 0.4730 118 8.6 20 Barium - Total mg/l 97 0.1000 80-120 0.400 16W5697q 0.0357 0.4126 94 75-125 0.4126 0.4062 93 1.6 20 < 0.002 0.400 16W5739q 0.0355 0.4316 99 75-125 0.4316 0.4306 99 0.2 20 0.400 16W5805q 0.0109 0.4160 101 75-125 0.4160 0.4210 103 1.2 20 0.400 16W5806q 0.0200 0.4302 103 75-125 0.4302 0.4348 104 20 1.1 Beryllium - Total mg/l 0.1000 102 80-120 0.400 16W5697q < 0.0005 0.4130 103 75-125 0.4130 0.4032 101 2.4 20 < 0.0005 0.400 16W5739q < 0.0005 0.4240 106 75-125 0.4240 0.4234 106 0.1 20 0.400 16W5805q < 0.0005 0.4246 106 75-125 0.4246 0.4260 106 0.3 20 0.400 16W5806q < 0.0005 | 0.4364 109 75-125 0.4364 0.4542 114 4.0 20 Boron - Total mg/l 0.40 108 80-120 20.0 16-D4679 17.8 36.8 95 75-125 36.8 37.7 100 2.4 20 < 0.1 0.40 80-120 112 0.400 16-W5697 0.37 0.73 90 75-125 0.73 92 0.74 1.4 20 < 0.1 < 0.1 Cadmium - Total mg/l 0.1000 105 80-120 0.400 16W5697a < 0.0005 0.4174 104 75-125 0.4174 0.3956 99 5.4 20 < 0.0005 0.400 16W5739a 0.0006 0.4296 107 75-125 0.4296 0.4148 104 3.5 20 0.400 16W5805q < 0.0005 0.4150 104 75-125 0.4150 0.4148 104 0.0 20 0.400 16W5806q < 0.0005 0.4426 111 75-125 0.4426 0.4598 115 3.8 20 Calcium - Total mg/l 20.0 107 80-120 100 16W5693q 183 259 76 75-125 259 259 76 0.0 20 < 1 20.0 106 80-120 100 16W5697q 185 269 84 75-125 269 270 85 0.4 20 < 1 500 75-125 16W5705q 182 630 90 630 620 88 20 1.6 < 1 < 1

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Quality Control Report

Page: 2 of 3

Lab IDs: 16-W5695 to 16-W5701 Project: OTP Coyote Blue CCR Work Order: 201682-3817 Matrix Matrix Matrix MSD/ MSD/ LCS LCS LCS Matrix Matrix Spike Matrix Spike Spike Dup MSD/ MSD MSD/ Dup Known Known Spike Rec % Rec Spike Spike Orig Spike Rec % Rec Orig Dup Rec RPD Dup Rec % Rec Method % Limits ID Amt Amt Result Result % Limits Result Result % RPD Analyte Limit (<) (%) Limits Blank Chloride mg/l 30.0 89 80-120 60.0 16-W5693 6.5 64.3 96 80-120 64.3 65.4 98 1.7 20 < 1 30.0 87 80-120 60.0 16-W5697 6.6 64.4 96 80-120 64.4 63.5 95 1.4 20 < 1 Chromium - Total mg/l 94 0.1000 80-120 0.400 16W5697q < 0.002 0.3802 95 75-125 0.3802 0.3698 92 2.8 20 < 0.002 0.400 16W5739q < 0.002 0.3928 98 75-125 0.3928 93 0.3736 5.0 20 0.400 16W5805q < 0.002 0.3948 99 75-125 0.3948 0.3992 100 20 1.1 0.400 16W5806q < 0.002 0.3842 96 75-125 0.3842 0.3990 100 3.8 20 _ Cobalt - Total mg/l 0.1000 94 80-120 0.400 < 0.002 16W5697a 0.3862 75-125 0.3862 0.3726 93 3.6 20 < 0.002 16W5739a 0.400 0.0097 0.4000 98 75-125 0.4000 0.3960 97 1.0 20 0.400 16W5805q < 0.002 0.4036 101 75-125 0.4036 0.3958 99 2.0 20 0.400 16W5806q < 0.002 0.3916 98 75-125 0.3916 0.4136 103 20 5.5 Fluoride mg/l 0.50 110 90-110 0.500 16-W5693 0.18 0.72 108 80-120 < 0.1 < 0.1 110 0.0 20 < 0.1 0.500 16-W5697 0.19 0.72 106 80-120 0.72 0.74 110 2.7 20 < 0.1 Lead - Total mg/1 95 0.1000 80-120 0.400 16W5697q < 0.0005 0.3724 93 75-125 0.3724 0.3586 90 3.8 20 < 0.0005 0.400 16W5739q < 0.0005 0.3722 93 75-125 0.3722 0.3692 92 0.8 20 0.400 16W5805a < 0.0005 0.3732 93 75-125 0.3732 0.3720 93 0.3 20 0.400 16W5806q < 0.0005 | 0.3964 99 75-125 101 0.3964 0.4040 1.9 20 Lithium - Total mg/l 0.40 102 80-120 4.00 16-D4679 4.82 1.11 93 75-125 0.48 0.49 94 2.1 20 < 0.1 105 80-120 0.40 0.400 16-W5697 < 0.1 0.49 122 75-125 0.49 0.47 118 4.2 20 < 0.1 < 0.1 Mercury - Total mg/l 0.0020 105 85-115 0.002 16-W5603 < 0.00020.0014 70 70-130 0.0014 0.0014 70 0.0 20 < 0.0002 0.002 16-W5702 < 0.0002 0.0019 95 70-130 0.0019 0.0020 100 5.1 20 Molybdenum - Total mg/l 0.1000 91 80-120 0.400 16W5697q < 0.002 0.3914 98 75-125 0.3914 0.3744 94 4.4 20 < 0.002 0.400 16W5739q 0.0063 0.4402 108 75-125 0.4402 0.4320 106 1.9 20 0.400 16W5805q 0.0128 75-125 0.4840 118 0.4840 0.4844 118 0.1 20 0.400 16W5806a 0.0063 0.4554 112 75-125 0.4554 0.4690 116 2.9 20 pH units 8.4 8.4 0.0 20 6.6 6.4 3.1 20

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Matrix Matrix MSD/

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Quality Control Report Lab IDs: 16-W5695 to 16-W5701

Project: OTP Coyote Blue CCR

Page: 3 of 3

Analyte	Spike Amt	LCS Rec %	% Rec Limits	Matrix Spike Amt	Matrix Spike ID	Spike Orig Result	Matrix Spike Result	Spike Rec %	Spike % Rec Limits	Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	100 PM 100 PM	Known Rec (%)	Known % Rec Limits	Method Blank
Selenium - Total mg/l	0.1000	114	80-120	0.400 0.400 0.400 0.400	16-W5697 16-W5739 16-W5805 16-W5806	< 0.01 < 0.01 < 0.01 < 0.01	0.4708 0.5016 0.5236 0.4796	118 125 131 120	75-125 75-125 75-125 75-125	0.4708 0.5016 0.5236 0.4796	0.4212 0.4852 0.4828 0.5096	105 121 121 127	11.1 3.3 8.1 6.1	20 20 20 20 20		1	< 0.002
Sulfate mg/l	100 100	104 102	80-120 80-120	1000 1000	16-W5693 16-W5697	1070 1070	1980 1990	91 92	80-120 80-120	1980 1990	2080 2040	101 97	4.9 2.5	20 20	5	-	<5 <5
Thallium - Total mg/l	0.1000	97	80-120	0.400 0.400 0.400 0.400	16W5697q 16W5739q 16W5805q 16W5806q	< 0.0005 < 0.0005 < 0.0005 < 0.0005	0.3796 0.3756 0.3724 0.3966	95 94 93 99	75-125 75-125 75-125 75-125	0.3796 0.3756 0.3724 0.3966	0.3646 0.3750 0.3718 0.4014	91 94 93 100	4.0 0.2 0.2 1.2	20 20 20 20 20	4		< 0.0005
Total Dissolved Solids mg/l			-	:		1	:			1960 2000	2010 2010	5	2.5 0.5	20 20	-		<5

Matrix



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR

Sample Description: Field Blank B

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W5695 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16

Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Anal		Analyst
Metal Digestion		17.9		EPA 200.2	16 N	ov 16	svs
Lab, pH	* 6.6	s.u.	0.1	SM4500 H+ B	16 N	ov 16 17:00	SVS
Fluoride	< 0.1	mg/l	0.10	SM4500-F-C	16 N	ov 16 17:00	SVS
Sulfate	< 5	mg/l	5.00	ASTM D516-07	9 D	ec 16 13:00	KMD
Chloride	< 1	mg/l	1.0	SM4500-C1-E	29 N	ov 16 13:00	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	17 N	ov 16 11:18	EV
Total Dissolved Solids	< 5	mg/l	5	I1750-85	16 N	ov 16 13:50	CC
Calcium - Total	< 1	mg/1	1.0	6010	23 N	ov 16 11:00	SZ
Lithium - Total	< 0.1	mg/1	0.10	6010	1 D	c 16 9:08	SZ
Boron - Total	< 0.1	mg/l	0.10	6010	30 N	ov 16 11:15	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020	5 D	ec 16 13:44	CC
Arsenic - Total	< 0.002	mg/l	0.0020	6020	5 D	ec 16 13:44	CC
Barium - Total	< 0.002	mg/1	0.0020	6020	5 D	ec 16 13:44	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	5 D	c 16 13:44	CC
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	5 D	ec 16 13:44	CC
Chromium - Total	< 0.002	mg/l	0.0020	6020	5 D	c 16 13:44	CC
Cobalt - Total	< 0.002	mg/l	0.0020	6020	5 D	ec 16 13:44	CC
Lead - Total	< 0.001 ^	mg/1	0.0005	6020	5 D	ec 16 13:44	CC
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	5 D	ec 16 13:44	CC
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7 D	ec 16 11:33	CC
Thallium - Total	< 0.0005	mg/1	0.0005	6020	5 D	c 16 13:44	CC

^{*} Holding time exceeded

Approved by:

Clauditte K Canteo

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:

= Due to sample matrix # = Due to compared to the control of the co

= Due to concentration of other analytes + = Due to internal standard response

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



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR

Sample Description: Blue 6

Event and Year: Nov 2016

1 of 1 Page:

Report Date: 13 Dec 16 Lab Number: 16-W5696 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16 10:40 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Dat	ce alyze	ed		Analyst	
Metal Digestion			7.0	EPA 200,2	970,75	Nov			svs	
Lab, pH	* 6.6	s.u.	0.1	SM4500 H+ B				17:00	svs	
Field pH	6.45	s.u.	0.1	SM 4500 H+ B		LINC. A		10:40	DJN	
Field Temperature	9.52	Degrees C	0.1	SM 2550B	100			10:40	DJN	
Field Conductivity	2548	umhos/cm	1	EPA 120.1	97.5			10:40	DJN	
Fluoride	0.19	mg/l	0.10	SM4500-F-C		100,000,000	20,00	17:00	SVS	
Sulfate	1030	mg/l	5.00	ASTM D516-07				13:00	KMD	
Chloride	6.4	mg/l	1.0	SM4500-C1-E				13:00	KMD	
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1				11:18	EA	
Total Dissolved Solids	1910	mg/l	5	11750-85				13:50	CC	
Calcium - Total	187	mg/1	1.0	6010				11:00	SZ	
Lithium - Total	< 0.1	mg/1	0.10	6010	10 / 10	Dec		9:08	SZ	
Boron - Total	0.38	mg/1	0.10	6010	3.0	Nov	16	11:15	SZ	
Antimony - Total	< 0.001	mg/l	0.0010	6020	-	1000		13:44	CC	
Arsenic - Total	< 0.002	mg/l	0.0020	6020				13:44	CC	
Barium - Total	0.0316	mg/l	0.0020	6020	5	Dec	16	13:44	CC	
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec	16	13:44	CC	
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec	16	13:44	CC	
Chromium - Total	< 0.002	mg/1	0.0020	6020				13:44	CC	
Cobalt - Total	< 0.002	mg/l	0.0020	6020	5	Dec	16	13:44	CC	
Lead - Total	< 0,001 ^	mg/1	0.0005	6020	5	Dec	16	13:44	CC	
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	5	Dec	16	13:44	CC	
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7	Dec	16	11:33	CC	
Thallium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec	16	13:44	CC	

^{*} Holding time exceeded

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to con : = Due to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response

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



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR

Sample Description: Blue 7

Event and Year: Nov 2016

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Report Date: 13 Dec 16 Lab Number: 16-W5697 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16 14:13 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Dat Ana	e lyzed		Analyst
Metal Digestion		5.11		EPA 200.2	7707	Nov 16	hes.17	svs
Lab, pH	* 6.6	s.u.	0.1	SM4500 H+ B		Nov 16		svs
Field pH	6.57	s.u.	0.1	SM 4500 H+ B		Nov 16		DJN
Field Temperature	9.76	Degrees C	0.1	SM 2550B		Nov 16	ED 2 5 (C) C)	DJN
Field Conductivity	2690	umhos/cm	1	EPA 120.1	14	Nov 16	14:13	DJN
Fluoride	0.19	mg/l	0.10	SM4500-F-C	16	Nov 16	17:00	svs
Sulfate	1070	mg/1	5.00	ASTM D516-07	9	Dec 16	13:30	KMD
Chloride	6.6	mg/l	1.0	SM4500-C1-E	29	Nov 16	13:30	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	17	Nov 16	11:18	EV
Total Dissolved Solids	2000	mg/1	5	I1750-85	16	Nov 16	13:50	CC
Calcium - Total	185	mg/l	1.0	6010	23	Nov 16	11:00	SZ
Lithium - Total	< 0.1	mg/l	0.10	6010	1	Dec 16	9:08	SZ
Boron - Total	0.37	mg/1	0.10	6010	3.0	Nov 16	11:15	SZ
Antimony - Total	< 0.001	mg/1	0.0010	6020	5	Dec 16	13:44	CC
Arsenic - Total	< 0.002	mg/1	0.0020	6020	5	Dec 16	13:44	CC
Barium - Total	0.0357	mg/1	0.0020	6020	5	Dec 16	13:44	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec 16	13:44	CC
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec 16	13:44	CC
Chromium - Total	< 0.002	mg/l	0.0020	6020	5	Dec 16	13:44	CC
Cobalt - Total	< 0.002	mg/1	0.0020	6020	5	Dec 16	13:44	CC
Lead - Total	< 0.001 ^	mg/l	0.0005	6020	5	Dec 16	13:44	CC
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	5	Dec 16	13:44	CC
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7	Dec 16	11:33	CC
Thallium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec 16	13:44	CC

^{*} Holding time exceeded

Approved by:

Claudette K Cantep

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RD - Method Reporting Limit

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



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue CCR

Sample Description: Blue 13

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W5698 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16 11:33 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	- 1			EPA 200.2	16 Nov 16	svs
Lab, pH	* 7.1	s.u.	0.1	SM4500 H+ B	16 Nov 16 17:00	svs
Field pH	6.54	s.u.	0.1	SM 4500 H+ B	15 Nov 16 11:33	DJN
Field Temperature	10.9	Degrees C	0.1	SM 2550B	15 Nov 16 11:33	DJN
Field Conductivity	5462	umhos/cm	1	EPA 120.1	15 Nov 16 11:33	DJN
Fluoride	0.26	mg/l	0.10	SM4500-F-C	16 Nov 16 17:00	SVS
Sulfate	2600	mg/l	5.00	ASTM D516-07	9 Dec 16 13:00	KMD
Chloride	30.0	mg/l	1.0	SM4500-C1-E	29 Nov 16 13:00	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	17 Nov 16 11:18	EV
Total Dissolved Solids	4700	mg/l	5	11750-85	16 Nov 16 13:50	CC
Calcium - Total	156	mg/l	1.0	6010	23 Nov 16 12:00	SZ
Lithium - Total	< 0.5 @	mg/l	0.10	6010	1 Dec 16 9:08	SZ
Boron - Total	0.66	mg/l	0.10	6010	30 Nov 16 11:15	SZ
Antimony - Total	0.0011	mg/l	0.0010	6020	5 Dec 16 13:44	CC
Arsenic - Total	0.0110	mg/l	0.0020	6020	5 Dec 16 13:44	CC
Barium - Total	0.1298	mg/l	0.0020	6020	5 Dec 16 13:44	CC
Beryllium - Total	0.0006	mg/1	0.0005	6020	5 Dec 16 13:44	CC
Cadmium - Total	0.0006	mg/l	0.0005	6020	5 Dec 16 13:44	CC
Chromium - Total	0.0278	mg/l	0.0020	6020	5 Dec 16 13:44	CC
Cobalt - Total	0.0040	mg/l	0,0020	6020	5 Dec 16 13:44	CC
Lead - Total	0.0355	mg/l	0.0005	6020	5 Dec 16 13:44	CC
Molybdenum - Total	0.0020	mg/1	0.0020	6020	5 Dec 16 13:44	CC
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7 Dec 16 11:33	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	5 Dec 16 13:44	CC

^{*} Holding time exceeded

Approved by:

Claudette K Canto

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: # = Due to sample matrix # = Due to co

: - Due to sample quantity

= Due to concentration of other analytes + = Due to internal standard response

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



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Project Name: OTP Coyote Blue CCR

Sample Description: Blue 14

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W5699 Work Order #:82-3817 Account #: 006106

Date Sampled: 14 Nov 16 16:40 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyze	d	Analyst
Metal Digestion	75-75			EPA 200.2	16	Nov	16	svs
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	16	Nov	16 17:00	SVS
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	14	Nov	16 16:40	DJN
Field Temperature	10.9	Degrees C	0.1	SM 2550B	14	Nov	16 16:40	DJN
Field Conductivity	5100	umhos/cm	1	EPA 120.1	14	Nov	16 16:40	DJN
Fluoride	0.17	mg/1	0.10	SM4500-F-C	1.6	Nov	16 17:00	svs
Sulfate	2350	mg/1	5.00	ASTM D516-07	9	Dec	16 13:00	KMD
Chloride	8.1	mg/1	1.0	SM4500-C1-E	29	Nov	16 13:00	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	17	Nov	16 11:18	EV
Total Dissolved Solids	4010	mg/l	5	I1750-85	16	Nov	16 13:50	CC
Calcium - Total	251	mg/1	1.0	6010	23	Nov	16 12:00	SZ
Lithium - Total	< 0.5 @	mg/l	0.10	6010	1	Dec	16 9:08	SZ
Boron - Total	0.55	mg/l	0.10	6010	30	Nov	16 11:15	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020	5	Dec	16 13:44	CC
Arsenic - Total	0.0028	mg/l	0.0020	6020	5	Dec	16 13:44	CC
Barium - Total	0.0548	mg/l	0.0020	6020	5	Dec	16 13:44	CC
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec	16 13:44	CC
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec	16 13:44	CC
Chromium - Total	< 0.002	mg/1	0.0020	6020	5	Dec	16 13:44	CC
Cobalt - Total	0.0037	mg/l	0.0020	6020	5	Dec	16 13:44	CC
Lead - Total	< 0.001 ^	mg/1	0.0005	6020	5	Dec	16 13:44	CC
Molybdenum - Total	0.0040	mg/l	0.0020	6020	5	Dec	16 13:44	CC
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7	Dec	16 11:33	CC
Thallium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec	16 13:44	CC

^{*} Holding time exceeded

Approved by:

Clauditte K Canteo 14 Dec 16

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

Rt - Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below: $\theta = Due$ to sample matrix # = Due to compare the sample matrix

! = Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response

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



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Project Name: OTP Coyote Blue CCR

Sample Description: Blue 15

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W5700 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Dal	te alyze	bd	Analyst	
Metal Digestion			No. 10.	EPA 200.2		Nov	T 17 10 10 10 10 10 10 10 10 10 10 10 10 10	svs	_
Lab, pH	* 6.8	s,u.	0.1	SM4500 H+ B	16	Nov	16 17:00	SVS	
Field pH	6.58	s.u.	0.1	SM 4500 H+ B		Nov		77.7	
Field Temperature	9.16	Degrees C	0.1	SM 2550B	15	Nov	16 8:42		
Field Conductivity	3401	umhos/cm	1	EPA 120.1	15	Nov	16 8:42		
Fluoride	0.24	mg/l	0.10	SM4500-F-C	16	Nov	16 17:00	svs	
Sulfate	1160	mg/1	5.00	ASTM D516-07	9	Dec	16 13:30	KMD	
Chloride	8.0	mg/1	1.0	SM4500-C1-E	29	Nov	16 13:00	KMD	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	17	Nov	16 11:18	EV	
Total Dissolved Solids	4400	mg/l	5	I1750-85	16	Nov	16 13:50	CC	
Calcium - Total	129	mg/1	1.0	6010	23	Nov	16 12:00	SZ	
Lithium - Total	0.11	mg/1	0.10	6010	1	Dec	16 9:08	SZ	
Boron - Total	0.44	mg/l	0.10	6010	30	Nov	16 11:15		
Antimony - Total	< 0.001	mg/1	0.0010	6020	5	Dec	16 13:44	CC	
Arsenic - Total	0.0126	mg/l	0.0020	6020	5	Dec	16 13:44	CC	
Barium - Total	0.0365	mg/1	0.0020	6020	5	Dec	16 13:44	CC	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec	16 13:44	CC	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	5	Dec	16 13:44	CC	
Chromium - Total	< 0.002	mg/l	0.0020	6020	5	Dec	16 13:44	CC	
Cobalt - Total	< 0.002	mg/1	0.0020	6020	5	Dec	16 13:44	CC	
Lead - Total	< 0.001 ^	mg/1	0.0005	6020	5	Dec	16 13:44	CC	
Molybdenum - Total	0.0023	mg/l	0.0020	6020	5	Dec	16 13:44	CC	
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	7	Dec	16 11:33	CC	
Thallium - Total	< 0.0005	mg/1	0.0005	6020	5	Dec	16 13:44	CC	

^{*} Holding time exceeded

Approved by:

Clauditte K Cante

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:

= Due to sample matrix # = Due to complete the control of the contr

= Due to concentration of other analytes
+ = Due to internal standard response

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



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Project Name: OTP Coyote Blue CCR

Sample Description: Blue 16

Event and Year: Nov 2016

Page: 1 of 1

Report Date: 13 Dec 16 Lab Number: 16-W5701 Work Order #:82-3817 Account #: 006106

Date Sampled: 15 Nov 16 10:05 Date Received: 16 Nov 16 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.8C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed		Analys	t
Metal Digestion	7 ()			EPA 200.2	16 Nov 16	11.00	svs	
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	16 Nov 16		svs	
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	15 Nov 16		DJN	
Field Temperature	9.65	Degrees C	0.1	SM 2550B	15 Nov 16		DJN	
Field Conductivity	2842	umhos/cm	1	EPA 120.1	15 Nov 16		DJN	
Fluoride	0.22	mg/l	0.10	SM4500-F-C	16 Nov 16		svs	
Sulfate	1100	mg/l	5.00	ASTM D516-07	9 Dec 16		KMD	
Chloride	8.6	mg/1	1.0	SM4500-C1-E	29 Nov 16	13:00	KMD	
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	17 Nov 16		EA	
Total Dissolved Solids	2050	mg/l	5	11750-85	16 Nov 16	13:50	CC	
Calcium - Total	165	mg/l	1.0	6010	23 Nov 16	12:00	SZ	
Lithium - Total	< 0.1	mg/l	0.10	6010	1 Dec 16		SZ	
Boron - Total	0.40	mg/l	0.10	6010	30 Nov 16		SZ	
Antimony - Total	< 0.001	mg/l	0.0010	6020	5 Dec 16	13:44	CC	
Arsenic - Total	0.0074	mg/1	0.0020	6020	5 Dec 16		CC	
Barium - Total	0.1316	mg/l	0.0020	6020	5 Dec 16		CC	
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	5 Dec 16		CC	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	5 Dec 16		CC	
Chromium - Total	0.0086	mg/1	0.0020	6020	5 Dec 16	13:44	CC	
Cobalt - Total	0.0024	mg/1	0.0020	6020	5 Dec 16	13:44	CC	
Lead - Total	0.0026	mg/1	0.0005	6020	5 Dec 16		CC	
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	5 Dec 16	13:44	CC	
Selenium - Total	< 0.01 ^	mg/1	0.0020	6020	7 Dec 16	11:33	CC	
Thallium - Total	< 0.0005	mg/l	0.0005	6020	5 Dec 16	13:44	CC	

^{*} Holding time exceeded

Approved by:

Claudite K. Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

= Due to concentration of other analytes
+ = Due to internal standard response

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



Weather Conditions:

Field Datasheet

Groundwater Assessment

°F

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue 6	* *
Sampling Persor	al: Darren Na esza	ñ-e

(Sunny / Partly Cloudy / Cloudy

sec.

mL/min

@m/pm @m/pm @m/pm

Precip:

Phone: (701) 258-9720

Temp:

		Well Info	rmation				<u> </u>		Sa	mpling l	nformatio)n		
We	ll Locked?	Yes	No			•	Purai	ng Method:	Blad		IIOIIIIGUE		ntrol Setti	inae
Wei	l Labeled?	(Ves	No					ng Method:	Blad			Purge:		iiiys
Casing	g Straight?	&es	No					ed Equip?:	Yes	₫	,	Recover:		-23
Grout S	eal Intact?	Yes	No	Not V	isible .			Sample?:	Yes	(NO)		PSI:	260	ارب
Repairs Ne	ecessary:							Sample ID:				Pumping R		
	Casing	Diameter:		2"			,					r umping rv	alc.	
Wate	er Level Bet	fore Purge:	6	4.97	ft		F	urge Date:	1400	V66	Time Purg	ing Began	0940	7)
	Total V	Vell Depth:		9,15	. ft			urged Dry?	Yes	No		urged Dry:	1033	
	W	ell Volume:		808	liters			mple Date:	15 May	1/		Sampling:	1048	(
	Depth to To	p of Pump:	7	25.13	ft				1713	/ 2	1	OGINPIII I GI	1010	
Wate	er Level Aft	er Sample:	70	4,73	ft		Bottle	500 m	L Nitric	1 l ite	r Raw			
IV.	1easureme	nt Method:	Electric \	Nater Level	Indicator		List:		tric (filtered)		. Sulfiric			-
							I		(2001112	Camino			
Ctobili	zation	Tomn	<u> </u>			Measure								
1	zation ecutive)	Temp (°C)	Spec. Cond.	1.1	DO	ORP	Turbidity	Water	mL.		Discription:			
SEQ#	Time	(0)	±5%	pH ±0.1	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity	, Color, Od	or, Ect.		
1	0945	9,44	2551	ZO.1	±10%	±20 mV	±10%	0.25 ft	163.63.5	- () ·	n		I	
2	0955	9 34	2508	6,5	0,78	55.3	248	66.20	1000	Partly clas	SOrcy		l	
3	1005	9/39	2500	9 33	0.95	57-8	35,5	69.58	2000		clea		1	
4	1015	937	25/1	1	1.12	60,4	24,1	74,53	2000	c Ce				
.5	1025	9:49	2526	2:53	0,88	55.0	39.5	74,61	2000 2000	_ ch_				
6	1035	9.61	2506	658	0.88	40,8	64.4	75,13	2000	ch	On all 1	1		
7				2750	00	7-10	0 07	1300	6.618-0		Partlycle	eidly		
8	1035 PU	road	15Novel	for 5	min l	etore s	arma (1)m	65,12	1000			/		
9	1040	9,52	2548		7-2,40	51.4	30,1	6653	1800	Cler				
10					1 / 1	(, E		0.00	,	Car			İ	
Stabilized:	Yes	(No)				T	otal Volume	Removed:	11,000	mL			I	
Comments	::								11/000					

Wind:Nw



Groundwater Assessment

Company:	OTP Coyote		
Event:	2016		
Sample ID:	B/100 7		g &
Sampling Person	nal:	NESSINGAG	

							_	Sampling Pe	rsonal: 🔏	1 1/10m	[11/1/	Waac	7
Phone: (701) 258-9	9720						_		7	, , , ,	γ		*
Weather Conditions:		Temp:	/\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	=	Wind:	8 15			Precip:	Sunn	y Partly C	loudy / Clo	udv
	Well Info	··	0					Sar	·	nformatio		noday / Olo	uuy
Well Locked?	Xes	No				Purgi	ng Method:	Blado				ntrol Setting	s
Well Labeled?	¥ æ \$	No					ng Method:	Blado	der		Purge:	₹	sec.
Casing Straight?	Xes-	No				Dedica	ted Equip?:	Yes	No)		Recover:	25	sec.
Grout Seal Intact?	Yes	No	Not-Vis	sīble .		Duplicate	Sample?:	(Yes)	No		PSI:		
Repairs Necessary:		<u> </u>	,			Duplicate	Sample ID:	ms/ms	50		Pumping R	ate: 20カ	mL/min
Casing	Diameter:		2"						<u></u>	.l i			
Water Level Bef	ore Purge:		81.67	ft		F	Purge Date:	14NOV	16	Time Purg	ing Began:	1143	(am/pm
Total V	Vell Depth:		' ~	ft		Well P	urged Dry?	Yes	(No)	Time P	urged Dry:		am/pm
We	ell Volume:			liters		Sa	ample Date:	14NOVI		Time of	Sampling:	1413	am/gr
Depth to To	p of Pump:		9502	ft									
Water Level After	er Sample:		11.95	ft		Bottle	500 m	L Nitric	1 Lite	r Raw			
Measuremer	nt Method:	Electric \	Water Level Ir	ndicator		List:	500 mL Nit	tric (filtered)		Sulfiric			
	•			Field	Measure	ements							

Stabili:	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	,±0.1	±10%	±20 mV	±10%	0.25 ft		
1	1148	9,68	2760	6.62	0,94	24,9	48.5	81.90	1000	Stightlycloudy
2	1203	9157	2713	6,63	0,75	600	15.4	81.96	3000	< c
3	127812	39.65	2695	6.60	0,29	0.9	39.9	81,96	19000	cles
4	1238	9.65	26.89	6,58	0,25	=3,1	26,5	81.97	4000	cler
5	1253	9,63	2685	6.58	0,20	-5.6	20,5	81,96	4000	ch
6 130	730	9,64	2685	6.58	0.20	-7.3	13,3	81.95	\$2000	Class
7	1313	9,65	2685	6.59	0.19	-8.7	1301	81.95	2000	dr-
8	1308	9,68	2685	6,58	0,20	-9,2	12.3	81.95	1000	ll_
9	1323	9,67	2685	6.58	6,20	1-9,5	12,5	81,96	1000	CL
10	1328	9,69	2686	6.58	Only	-10,1	9,73	81.96	1000	u_
Stabilized:	/Yes	No			}		otal Volume	·		mL,
Comments	122	1	' I	'	۱ ,	1				
	4733					-		/		

Continued on next page



Groundwater Assessment

Company:	OTP Coyote	
Event:	_. 2016	
Sample ID: /	3/4e7 /	
Sampling Persona	1: Darran Nis	Swan -
Date: 14/Vo	VIB	Salar Si

Phone: (701) 258-9720

16 14/3 9.76 2690 6.57 0.19 42.5 5.25 81.96 1000 chr 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No	<u> </u>				F	ield Mea	suremen	ts			
SEQ# Time					nU		l .	,			·
11 1338 9,71 2686 6,57 0,17 -10,5 8,22 8,96 2000 Classes Classes			(0)							Removed	Clarity, Color, Odor, Ect.
12		1270	971								clear, partly cloudy, cloudy
12 1798 771 2689 6.37 0.18 -11.3 187.41 81.96 2000 cle 13 1358 9,72 2689 6.57 0.17 -11.8 5,16 81.96 2000 cle 10314 17309 7.72 2689 6.51 0.18 -12.0 5,22 91.96 1000 cle 10815 11309 9,71 2690 6.57 0.17 -12.3 5,38 81.96 1000 cle 116 1413 9.76 2690 6.57 0.19 +215 5,25 81.16 1000 cle 117 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19		1720	1001					8,22		2000	Cles
17 18 19 20 21 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 200 mL	12	1348			6,57	0.18	-113	107.41	8/196	2000	de
17 18 19 20 21 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 200 mL		1358	9,72		6257	0017	-11:8	5,16	81.96	2000	l_
17 18 19 20 21 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 200 mL	1403 14 F	1303		, ,	6,57	0,18	-1200				de
17 18 19 20 21 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 200 mL	140815 K	1308		2690	6,57	0117	-12,3				Ch -
17 18 19 20 21 21 22 23 24 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 200 mL	16	1413	9,76	2690	6.57		1215	100	81.96		Ch -
19 20 21 21 22 23 24 25 26 27 28 29 30 Yes No Total Volume Removed: 32 900 mL	17										
20	18										
21	19										
22	20										
23 24 24 25 25 26 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 900 mL	21										
24 25 25 30 28 30 Stabilized: Yes No Total Volume Removed: 32 700 mL	22										
24 25 25 30 28 30 Stabilized: Yes No Total Volume Removed: 32 700 mL	23										
25											
26 27 27 28 29 30 Stabilized: Yes No Total Volume Removed: 32 900 mL											
27											
28 29 30 Stabilized: Yes No Total Volume Removed: 32 900 mL											
29 30 Stabilized: Yes No Total Volume Removed: 32 700 mL											
30 Stabilized: Yes No Total Volume Removed: 32 700 mL											
Stabilized: Yes No Total Volume Removed: 32 900 mL											
Total volume Removed. 12 4700 mL		Yes	No.	<u> </u>	<u></u>						
	Comments		110	•			Т	otal Volume	Removed:	34,000	mL



10 Stabilized:

Comments:

Yes

No

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	ATTVB (we13	b 4
Sampling Per	rsonal: Darren Nicswaan	

Phor	ne: (701) 258-9	9720								., ,				3*
Weather C	onditions:		Temp:	50	°F	Wind:	NWS			Precip:	Suni	ny / Partly C	loudy / Clo	udv
		Well Info	rmation						Sa	mpling Info		,		
We	ell Locked?	Yes	No				Purair	ng Method:	Blad			T	ntrol Setting	<u> </u>
We	ll Labeled?	Yes	No					ng Method:	Blad			Purge:	ZFO	sec.
Casin	g Straight?	Yes	No					ed Equip?:	Yes	₩ _Q		Recover:	シン	sec.
	Seal Intact?	Yes	(Ng	Not V	/isible		Duplicate	' '	Yes	No		PSI:		300.
Repairs No	ecessary:	5/16/			-awell		Duplicate S		163	ZIVO -		Pumping R	ata: 2.00	mL/min
	Casing	Diameter:	<u> </u>	2"	101 1011		Dapiloate (Jampie ID.				rumping ix	ale. 240	11111/1/1111
Wate	er Level Bef	fore Purge:		105.18	ft		P	urge Date:	14200	///	ime Purc	ing Began:	105C	@m/pm
	Total V	Vell Depth:	ſ	16,68	ft			urged Dry?	Hes	No No		Purged Dry:	1125	amlpm
	We	ell Volume:	ζ_	7.1	liters			mple Date:	15 NOV			f Sampling:	1,3	am/pm
	Depth to To	p of Pump:	1)	1.28	ft			mpic bate.	13700	C 15	111100	· camping.	1/20	eamppin
Wat	er Level Aft	er Sample:	i i	1,28	ft		Bottle	500 m	L Nitric	1 Liter F	Saw	1-5000	cn.	
N	/leasuremer	nt Method:	Electric \	Water Level	Indicator		List:		tric (filtered)	250 mL S		4-16 A		
								000 1112 1111	ino (miorca)	200 1112 0	diffic	1 7 70		
						Measure	·							
	ization secutive)	Temp (°C)	Spec.		DO	ORP	Turbidity	Water	mL		scription			
SEQ#	Time	(0)	Cond.	pH ±0.1	(mg/L) ±10%	(mV)	(NTU)	Level (ft)	Removed	Clarity, C	Color, Od	or, Ect.		
1	1100	9,79	5909	156	2.77	±20 mV	±10%	0.25 ft	2000	0 1/ 11	, .			
2	1115	4,76	5791	100	1,23	27,1	106	107.68	1000	Partly Cl		•		
3	430	9,77	5370	10 PM	11/5	39,6	203	111.28	2000	partyce				
4	1125		5210	6.00	1.00	-2-11.6	1009	111,00	2000	Thoult	//			
5														
6														
7														
8								,			·			
	1	1 //		1				· · · · · · · · · · · · · · · · · · ·		L			1	

Total Volume Removed: 6000 mL



Groundwater Assessment

Company:		OTP Co	yote		
Event:		2016			
Sample ID:	BI	US	14		÷ f.
Sampling Perso	onal.	Dec	10-1	ALTECOLOGI	

2616 E. Broadway Ave, E Phone: (701) 258			0.00		A336331	nent		Sample ID:	ersonal:	al ! Dasse.	T Nie	SWAAS	
Weather Conditions	•	Temp:	60	°F	Wind: ع	~ ~~~			Dracin	6	215-4-5		\$
	Well Info				33,10. 9	7_7		0	Precip:			loudy / Clo	uay
Well Locked?	· , · · · · · · · · · · · · · · · · · ·	No				D				nformatio		4.p.,	
Well Labeled?		No					ng Method:					ntrol Setting	s
Casing Straight?		No					ng Method:				Purge:	<u></u>	sec.
Grout Seal Intact?		No	CKTO+ V	'isible)			ed Equip?:		(No		Recover:		sec.
Repairs Necessary:	1		NOT A	isible)			Sample?:	Yes	(No		PSI:	50,	
	g Diameter:		2"			Duplicate:	Sample ID:		-] [Pumping R		سL/mir
Water Level Be		-						1 10 1				100	
	Well Depth:		79.95	· tti			Purge Date:) YNOU	16	Time Purg	ing Began:	1550	am/pm
	· · · · · · · · · · · · · · · · · · ·	<u> </u>	,	ft		Well P	urged Dry?		<u>(No</u>	Time P	urged Dry:	<u> </u>	-am/pm
	/ell Volume:	\$0		liters		Sa	mple Date:	14NOV	16	Time of	Sampling:	1640	am/pm
	op of Pump:	82		ft								10	
Water Level At		810	29	ft		Bottle	500 m	L Nitric	1 Lit∈	r Raw			
Measureme	ent Method:	Electric \	Water Level	Indicator		List:	500 mL Ni	tric (filtered)	250 mL	Sulfiric			
				Field	Measure	mante							
Stabilization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		P3 1 11			
(3 consecutive)	(°C)	Cond.	рH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed		Discription: , Color, Odd			
SEQ# Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	rcmoved	Clarity	, Color, Ode	Л, ⊑∪ι.		
1 1555	16.67	5028	6,63	0.84	8.9	16.6	80,64	1000					

					ı iciu	weasure	ments			
1	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		Signify, Color, Coor, Ect.
1	1555	18.67	5028	6.63	0.84	89	11/	80,64	1000	
2	1605	10.86	5148	6.62	0,53	100	919	6-1	1000	C/Ea
3	1610	10,60	5/02	1/12		10,4	10/	80.89	2000	Ch
4	12/5	10,47		6167	0253	8:4	1,05	81,01	1000	de
5	1620		5092	6,64	0,46	121	5,09	8/109	1000	cu
	}' \ 	10,37	5097	6:65	0,46	\$506	4.90	81.22	1000	(()
6	1625	10,97	5088	615	0,45	4,3	4.95	81.21	500	ch
7	1630) (1	5080	6.66	0,43	2.1	4.17	8/21	500	
8	1635	11,06	508		0.44	1,1	4.02	81.21	500	de
9	1640	10,89	3100	111	0a45			11001		Ch
10		1070	2100	6,66	Va 75	40,2	3,95	81,21	500	dr
Stabilized:	(Vac)	N		<u> </u>	<u> </u>		9	<u> </u>		
	\	No	•			T	otal Volume	Removed:	8.000	mL,
Comments	s: <u> </u>								" "	•

, 620 changed the min so we prosed at 100 ml.



Stabilized:

Comments:

Yes

No

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote	
Event:	2016	
Sample ID:	Blue 15	ji ti
Sampling Perso	nal: Darren Wiesu	-Greg

Phor	ne: (701) 258-9	9720						•	1 0	<i>y</i>	2 CJ N ! - 11	V 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Weather C	onditions:	· · · · · · · · · · · · · · · · · · ·	Temp:	43	°F	Wind:	1-10/07			Precip:	Sunr	y / Partly (Cloudy / Clo	way.
		Well Info	rmation				- 190 (1		Sa	····	nformatio		Jiouay / Cio	oudy
We	Il Locked?	(Xes)	No				Durgin	ng Method:	Blad		Inormatic			
	ll Labeled?	Yes	No					ng Method:					ontrol Setting	
Casin	g Straight?	Yes	No					ed Equip?:	Blad	No No		Purge:	25	sec.
	eal Intact?	Yes	No	Not V	/isible		Duplicate		Yes Yes	700 0io.		Recover:		sec.
Repairs Ne	ecessary:			1100	101016		Duplicate S		res	78/0		PSI:	60	.,.
· · · · · · · · · · · · · · · · · · ·	Casino	Diameter:		2"			Duplicate	sample ID.	,			Pumping R	Rate: <u>උඋ</u> 0	mL/min
Wate	er Level Bet			D 94	ft			urge Date:	1-26	,,,,	Time Pura	ing Began:	0802	(25-1
	Total V	Vell Depth:	<u> </u>		ft.			urged Dry?	15 NOU Yes	No>		ourged Dry:	1	@m/pm
		ell Volume:			liters			mple Date:		7NO2		f Sampling:		am/pm
	Depth to To	p of Pump:	X	1.98	ff		Ja	mpie Date.	15NOV	16	Time of	i Samping.	0096	am/pm
	er Level Aft			79.17	ff		Bottle	500 m	L Nitric	1 Lito	r Raw	4160	<i>a</i> / T	
1/	/leasuremer	nt Method:	Electric \	Water Level	Indicator		List:		tric (filtered)	***************************************	-Sulfiric-	7/20		
								OOO-IIIL IVI	tric (intered)	2-1111-1-1-1-1				
						Measure	ements							
1	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription:]	
SEQ#	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity	, Color, Od	or, Ect.		
3EQ#		G 1	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft						
2	0807	9,15	3502	6.56	0.67	35.8	25.6	79.04	1000	Clock	· 1			
3	0817	9,11	3418	6,57	0,38	22,2	9.10	79,12	2000	ale				
	0827	9,04	3401	653	0,77	1916	14,89	79,19	2000	Ch_	_]	
4	1000	1.0	3401	6,50	0,34	18,	2,26	79,10	1000	ch			_	
5	0837	9.14	3401	6,58	0234	1812	2,12	79,08	100.0	de				
6 7	0842	-1016	3401	6,58	0.35	1804	2,08	79,12	1000	Clean			_	
									L .					
8														
10	1 / \	1	l .	1	1	l	1	1	1	I			1	

Total Volume Removed: 5000 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2016
Sample ID:	Blue 16
Sampling Personal:	Darren Wiesway

Phone: (701) 258-9720

Weather C	onditions:	~	Temp:	40	°F	Wind:	NW/18)		Precip:	Sunr	iv / Partly C	Cloudy / Clo	udv
		Well Info	rmation				Y		Sa		nformatio			
We	ll Locked?	Yes)-	No				Purair	ng Method:	Blad				ntrol Setting	19
We	ll Labeled?	Yes	No					ng Method:	Blad			Purge:	5	sec.
Casin	g Straight?	(Ves	No					ed Equip?:	Yes	(NG)		Recover:	25	sec.
Grout S	eal Intact?	Yes	No	(Not V	İsible			Sample?:	Yes	(N))		PSI:	60	300.
Repairs Ne	ecessary:	V						Sample ID:	700			ļ	ate: 200	mL/min
	Casing	Diameter:		2"			- aprioato	campio ib.			1	r umping iv	ale. 200	1016/11111
Wate	er Level Bet	ore Purge:		78:0	9 ft			urge Date:	15NOV	11	Time Pura	ing Began:	6911	@m/pm
	Total V	Vell Depth:		<u> </u>	ft			urged Dry?	Yes	(No)		urged Dry:	0 110	am/pm
	W	ell Volume:			liters				15No0	77		f Sampling:	1005	am/pm
	Depth to To	p of Pump:	9	4.85	ft		- 00	mpio Date.	1300	, ,6	111100	Camping.	100	-Саширііі
Wat	er Level Aft	er Sample:		ZRII	ft		Bottle	500 m	L Nitric	1 [itc	r Raw	<u> </u>		
J.	/leasureme	nt Method:	Electric \	Nater Level	Indicator				tric (filtered)		-Sulfiric			
		L				J		1000 IIIE TVI	are (mereu)	<u>,-2-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1</u>	ounnic			
					Field	Measure	ements							
1	ization	Temp	Spec.		DO	ORP	Turbidity	F .	mL		Discription			
SEQ#	ecutive)	(°C)	Cond.	. pH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity	/; Color, Od	or, Ect.		
	7ime	0.0	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft						
2	0930	9.63	3063	6,97	0,55	13.1	948	7011	1000	TUrb.	1982-			
3	0945	9.63	820148	6,76	0,30	-39.6	505	78.11	1 00 3000	10/20				
4	0950	9.60	2846	6457	0.30	2,3	135	78/11	3000	Parth	clouby			
5	0955	9664	2840	656	0,30	11.5	199	78.11	1000	PC]	
6	1000	9,60	2841	6,56	0,26	17:0	184	78.11	1000	PC				
7	1005	9,65	2842	6,56		19,4	11/1/	78,11	1000	PC				
8	700)	71.05	2012	6.50	0.23	2115	192	78111	1000	PC				
9						<u> </u>								
10													-	
Stabilized:	Yes	No		<u> </u>	1	<u> </u>	iotal Volume	Damaria	11000	1			1	
Comments	, 		•			1	otal Volume	removed:	11,000	.mL				



Chain of Custody Record

Projec	ct Name:			Name of Sampler(s):	. /
	OTP Coyote C	CR Blue	Nov2016	Darren 1	Nieswaag
Report To:	Otter Tail Power	Carbon Copy:	OTP	Work Order Number:	
Attn:	Paul Vukonich	Attn:	Josh Hollen	Work Grace Namber.	0- 2017
Address:	PO Box 496	Address:			47-3811
	Fergus Falls, MN 56538-0496				00
Email:	pvukonich@otpco.com	Email:	jhollen@otpco.com		

	Sampl	e Informati	on			Bottle	Туре	Fie	eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	500 ml HNO	1 liter		Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Required
WBOB	Field Blank B	15Noulb	NA	W	X	X		NA	NA	NA	
WS196	Blue 6	15Novello	1040	GW	Х	х	A THE STATE OF THE	9.52	2548	6.45	
W5697	Blue 7/MS7/MSD7	14 Novil	1413	GW	3	3		9.76	2690	6.57	OTD CCD List
W5698	Blue 13 15 Mon	HAY ISNOVI)	1133	GW	Х	X		10,87	5462	6.54	OTP CCR List. No RadChem.
W5499	Blue 14	14No/16	1640	GW	Х	X		10,89	5100	6.66	V1- 1019 - 1000
W5760	Blue 15	15Nov16	0842	GW	X	X		9.16	3401	6.58	
WSTU	Blue 16	15Noulb	1005	GW	Х	Х		9.65	2842	6.56	
									(F)		

Comments:

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	°C
1	Dana N.Jon	walkin 2	150016	C. Cantle		16 NV 16	ROI 0.8
2						3	TM588
3							15Nov66



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-0259
IML Lab Reference No/SDG: 51702064

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Pond CCR Radiochemistry

Event & Year Feb 2017

MVTL Laboratory Identifications: 17-W252 through 17-W258

IML Laboratory Identifications: S1702064-001 through S1702064-007

Page 1 of 1

Sample Identification	IML Laboratory #	MVTL Laboratory #
Field Blank (FB)	\$1702064-001	17-W252
Blue 6	S1702064-002	17-W253
Blue 7	\$1702064-003	17-W254
Blue 13	S1702064-004	17-W255
Blue 14	S1702064-005	17-W256
Blue 15	S1702064-006	17-W257
Blue 16	\$1702064-007	17-W258

I. RECEIPT

- All samples were received at the laboratory on 3 Feb 2017 at 800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 7 Feb 2017.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laborator	y data has been approv	ed by MVTL Laborato	ries.	
SIGNED:	Claudette	antel	DATE: 20 FB 17	
Clau	dette Carroll - MVTL Bis	marck Laboratory Ma	nager	



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Paul Vukonich Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Field Blank (FB)

Event and Year: February 2017

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W252 Work Order #:82-0259 Account #: 006106

Date Sampled: 2 Feb 17

Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Field Appearance	d	NA	SM 2110		
Radium 226	See Attached Report			14 Feb 17	OL
Radium 228	See Attached Report			15 Feb 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K. Cantep

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: \emptyset = Due to sample matrix # \times Due to conduct to the property of the

* Due to concentration of other analytes + * Due to internal standard response



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Paul Vukonich Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 6

Event and Year: February 2017

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W253 Work Order #:82-0259 Account #: 006106

Date Sampled: 2 Feb 17 12:30 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.53 s.u.	0.1	SM 4500 H+ B	2 Feb 17 12:30	DJN
Field Appearance	Partly Cloudy	NA	SM 2110	2 Feb 17 12:30	DJN
Field Temperature	6.13 Degrees C	0.1	SM 2550B	2 Feb 17 12:30	DJN
Field Conductivity	2641 umhos/cm	1	EPA 120.1	2 Feb 17 12:30	DJN
Radium 226	See Attached Report			14 Feb 17	OL
Radium 228	See Attached Report			15 Feb 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Cantes

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:

@ = Due to sample matrix # = Due to co

! * Due to sample guantity * * Due to in

- Due to concentration of other analytes + - Due to internal standard response



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Paul Vukonich Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 7

Event and Year: February 2017

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W254 Work Order #:82-0259 Account #: 006106

Date Sampled: 1 Feb 17 16:35 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Rece: Result	ived	Method RL	Method Reference	Da t Ana	e lyze	d	Analyst
Field pH	6,65	s.u.	0.1	SM 4500 H+ B	2	Feb	17 16:35	DJN
Field Appearance	Partly (Cloudy	NA	SM 2110				
Field Temperature	7.42	Degrees C	0.1	SM 2550B	2	Feb	17 16:35	DJN
Field Conductivity	2657	umhos/cm	1	EPA 120.1	2	Feb	17 16:35	DJN
Radium 226	See Atta	ached Report			14	Feb	17	OL
Radium 228	See Atta	ached Report			16	Feb	17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

= Due to sample matrix # = Due to co

! = Due to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W255 Work Order #:82-0259 Account #: 006106

Date Sampled: 2 Feb 17 13:39 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

Paul Vukonich Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 13

Event and Year: February 2017

	As Recei Result	ved	Method Method RL Reference		Date Anal	Analyst	
Field pH	6.78	s.u.	0.1	SM 4500 H+ B	2 F	eb 17 13:39	DJN
Field Appearance	Cloudy		NA	SM 2110	2 F	eb 17 13:39	DJN
Field Temperature	4.64	Degrees C	0.1	SM 2550B	2 F	ab 17 13:39	DJN
Field Conductivity	6231	umhos/cm	1	EPA 120.1	2 F	eb 17 13:39	DJN
Radium 226	See Atta	ched Report			14 F	eb 17	OL
Radium 228	See Atta	ched Report			16 F	eb 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette

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:

= Due to sample matrix # = Due to concentration of other analytes

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



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Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 14

Event and Year: February 2017

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W256 Work Order #:82-0259 Account #: 006106

Date Sampled: 2 Feb 17 11:15 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.54	s.u.	0.1	SM 4500 H+ B	2 Feb 17 11:15	DJN
Field Appearance	Partly (Cloudy	NA	SM 2110	2 Feb 17 11:15	DJN
Field Temperature	7.70	Degrees C	0.1	SM 2550B	2 Feb 17 11:15	DJN
Field Conductivity	5326	umhos/cm	1	EPA 120.1	2 Feb 17 11:15	DJN
Radium 226	See Atta	ached Report			14 Feb 17	OL
Radium 228		ached Report			16 Feb 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudite K Canto

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:

= Due to sample matrix | # = Due to core
! = Due to sample quantity + = Due to inf

= Due to concentration of other analytes
+ = Due to internal standard response



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Paul Vukonich Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496 Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W257 Work Order #:82-0259 Account #: 006106

Date Sampled: 2 Feb 17 17:45 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 15

Event and Year: February 2017

	As Received Result		Method RL	Method Reference	Date Analyzed	
Field pH	6.53	s.u.	0.1	SM 4500 H+ B	2 Feb 17 17:45	DJN
Field Appearance	Clear		NA	SM 2110	2 Feb 17 17:45	DJN
Field Temperature	8.47	Degrees C	0.1	SM 2550B	2 Feb 17 17:45	DJN
Field Conductivity	3417	umhos/cm	1	EPA 120.1	2 Feb 17 17:45	DJN
Radium 226	See Atta	ched Report		7,440, 700, 200, 200	15 Feb 17	OL
Radium 228	See Atta	ched Report			16 Feb 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canteo

C 208617

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit



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Paul Vukonich

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote RadChem Blue 2017

Sample Description: Blue 16

Event and Year: February 2017

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W258 Work Order #:82-0259 Account #: 006106

2 Feb 17 16:03 Date Sampled: Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Recei Result	Lved	Method RL	Method Reference	Date Analyze	đ	Analyst
Field pH	6.47	s.u.	0.1	SM 4500 H+ B	2 Feb	17 16:03	DJN
Field Appearance	Partly (Cloudy	NA	SM 2110	2 Feb	17 16:03	DJN
Field Temperature	8.68	Degrees C	0.1	SM 2550B	2 Feb	17 16:03	DJN
Field Conductivity	2956	umhos/cm	1	EPA 120.1	2 Feb	17 16:03	DJN
Radium 226	See Atta	ched Report			15 Feb	17	OL
Radium 228		ached Report			16 Feb	17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudite K Canto

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:

= Due to sample matrix # = Due to concentration of other analytes

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

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 2/17/2017

CLIENT:

MVTL Laboratories, Inc.

Project:

201782-0259

Lab Order:

S1702064

CASE NARRATIVE

Report ID: S1702064001

Samples 17-W252 Field Blank, 17-W253 Blue 6, 17-W254 Blue 7, 17-W255 Blue 13, 17-W256 Blue 14, 17-W257 Blue 15, and 17-W258 Blue 16 were received on February 7, 2017.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0259

Lab ID:

S1702064-001 ClientSample ID: 17-W252 Field Blank

COC:

201782-0259

Date Reported 2/17/2017

Report ID

S1702064001

WorkOrder:

S1702064

CollectionDate: 2/2/2017

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	02/14/2017 1644	MB
Radium 226 Precision (±)	0.04	pCi/L			SM 7500 Ra-B	02/14/2017 1644	MB
Radium 228	0.6	pCi/L		1	Ga-Tech	02/15/2017 2021	WN
Radium 228 Precision (±)	1.3	pCi/L			Ga-Tech	02/15/2017 2021	WN

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range E

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-0259 S1702064-002

ClientSample ID: 17-W253 Blue 6

201782-0259

Date Reported 2/17/2017

Report ID

S1702064001

WorkOrder:

S1702064

CollectionDate: 2/2/2017 12:30:00 PM

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

COC:

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Analyses	Roout				Metriou		
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	02/14/2017 1644	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	02/14/2017 1644	MB
Radium 228	1.3	pCi/L		1	Ga-Tech	02/15/2017 2326	WN
Radium 228 Precision (±)	1.3	pCi/L			Ga-Tech	02/15/2017 2326	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range E

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

С Calculated Value

Analyzed at IML Gillette laboratory G

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0259

Lab ID:

S1702064-003 ClientSample ID: 17-W254 Blue 7

COC:

201782-0259

Date Reported

2/17/2017

Report ID

S1702064001

WorkOrder:

S1702064

CollectionDate: 2/1/2017 4:35:00 PM

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

Comments							
Analyses	Result	Units	Qual	RL.	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	02/14/2017 1644	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	02/14/2017 1644	MB
Radium 228	1.4	pCi/L		1	Ga-Tech	02/16/2017 231	WN
Radium 228 Precision (±)	1.4	pCi/L			Ga-Tech	02/16/2017 231	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: *All*

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-0259 S1702064-004

ClientSample ID: 17-W255 Blue 13 COC:

201782-0259

WorkOrder:

Date Reported

Report ID

S1702064 CollectionDate: 2/2/2017 1:39:00 PM

2/17/2017

S1702064001

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix: Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	02/14/2017 1644	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	02/14/2017 1644	MB
Radium 228	-0.6	pCi/L		1	Ga-Tech	02/16/2017 1145	WN
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	02/16/2017 1145	WN

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range Ε

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions О

Matrix Effect

Reviewed by: ________

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0259

Lab ID:

S1702064-005 ClientSample ID: 17-W256 Blue 14

COC:

201782-0259

Date Reported

2/17/2017

Report ID

S1702064001

WorkOrder:

S1702064

CollectionDate: 2/2/2017 11:15:00 AM

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

Commente

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total		,					
Radium 226	2.7	pCi/L		0.2	SM 7500 Ra-B	02/14/2017 1644	MB
Radium 226 Precision (±)	0.2	pCi/L			SM 7500 Ra-B	02/14/2017 1644	MB
Radium 228	0.3	pCi/L		1	Ga-Tech	02/16/2017 1448	WN
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	02/16/2017 1448	WN

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range Ε

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory G

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

MVTL Laboratories, Inc. Company:

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-0259 S1702064-006

ClientSample ID: 17-W257 Blue 15 201782-0259

Date Reported

2/17/2017

Report ID

S1702064001

WorkOrder:

S1702064

CollectionDate: 2/2/2017 5:45:00 PM

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

Comments

COC:

Comments								
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	1.0	pCi/L		0.2	SM 7500 Ra-B	02/15/2017 828	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	02/15/2017 828	MB	
Radium 228	0.5	pCi/L		1	Ga-Tech	02/16/2017 1752	WN	
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	02/16/2017 1752	WN	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Е Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit Spike Recovery outside accepted recovery limits

RL - Reporting Limit

С Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

0 Outside the Range of Dilutions

Matrix Effect

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-0259 S1702064-007

COC:

ClientSample ID: 17-W258 Blue 16 201782-0259

Report ID

2/17/2017 S1702064001

WorkOrder:

Date Reported

S1702064

CollectionDate: 2/2/2017 4:03:00 PM

DateReceived: 2/7/2017 11:00:00 AM

FieldSampler:

Matrix:

Water

Commente

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Allalyses	Result	Onits	Quai	NL	ivietriou	Date Allalyzeu/i	mı	
Radionuclides - Total								
Radium 226	0.7	pCi/L		0.2	SM 7500 Ra-B	02/15/2017 828	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	02/15/2017 828	MB	
Radium 228	-0.5	pCi/L		1	Ga-Tech	02/16/2017 2058	WN	
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	02/16/2017 2058	WN	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range Ε

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

0 Outside the Range of Dilutions

Matrix Effect

Reviewed by: <u>a</u>

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: MVTL Laboratories, Inc.

Date: 2/17/2017

Work Order: S1702064

Report ID: S1702064001

Project: 201782-0259

Radium 228 by Ga/Tech	Sample Type MBLK			Units	: pCi/L			
MB-416 (02/14/17 16:40)	RunNo:	RunNo: 143176			5/17 0:00	Bato		
Analyte	Res	ult	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	N)	1					
Radium 228 by Ga/Tech	Sample Type LCS			Units	: pCi/L			
LCS-416 (02/14/17 19:44)	RunNo:	143176	PrepD	ate: 02/1	5/17 0:00	Bato	hiD 12844	
Analyte	Res	ult	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	3	3	1	40.3		95.3	64.4 - 99.5	
Radium 228 by Ga/Tech	Sample Type LCSD			Units	: pCi/L			
LCSD-416 (02/14/17 22:49)	RunNo:	143176	PrepDate: 02/15/17 0:00		Bato			
Analyte	Res	ult	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	3	3	1	38	0.461	94.9	20	
Radium 228 by Ga/Tech	Sample Type MS			Units	: pCi/L			
S1702064-003AMS (02/16/17 05:36)	RunNo:	143176	PrepDate: 02/15/17 0:00		5/17 0:00	Bato	hID 12844	
Analyte	Res	ult	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	2	3	1	40.3	1	66.8	55 - 113	
Radium 228 by Ga/Tech	Sample Type MSD	Sample Type MSD		Units	: pCi/L			
S1702064-003AMSD (02/16/17 08:41)	RunNo:	RunNo: 143176		ate: 02/1	5/17 0:00	Bato	hID 12844	
Analyte	Res	ult	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	2	3	1	28	2.34	65.2	30	

Qualifiers: B Analyte d

B Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

ND Not Detected at the Reporting LimitR RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

S Spike Recovery outside accepted recovery limits



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: MVTL Laboratories, Inc.

Date: 2/17/2017

Work Order:

S1702064

Report ID: S1702064001

Project: 201782-0259

Radium 226 in Water -	Sample Type MBLK	Units: pCi/L	
MB-1718 (02/14/17 16:44)	RunNo: 143093	PrepDate: 02/08/17 0:00	BatchID 12837
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	ND	0.2	
Radium 226 in Water -	Sample Type LCS	Units: pCi/L	
LCS-1718 (02/14/17 16:44)	RunNo: 143093	PrepDate: 02/08/17 0:00	BatchID 12837
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	6.1	0.2 5.89	103 67.1 - 122
Radium 226 in Water -	Sample Type LCSD	Units: pCi/L	
LCSD-1718 (02/14/17 16:44)	RunNo: 143093	PrepDate: 02/08/17 0:00	BatchID 12837
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qua
Radium 226	6.5	0.2 6.1 7.38	111 20
Radium 226 in Water -	Sample Type MS	Units: pCi/L	
S1702064-003AMS (02/14/17 16:44)	RunNo: 143093	PrepDate: 02/08/17 0:00	BatchID 12837
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	5.9	0.2 5.89 0.3	94.0 65 - 131
Radium 226 in Water -	Sample Type MSD	Units: pCi/L	
S1702064-003AMSD (02/14/17 16:44)	RunNo: 143093	PrepDate: 02/08/17 0:00	BatchiD 12837
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qua
Radium 226	6.4	0.2 5.9 8.88	103 20

Qualifiers:

- B Analyte detected in the associated Method Blank
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- X Matrix Effect

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- O Outside the Range of Dilutions
- S Spike Recovery outside accepted recovery limits



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501 Phone: (701) 258-9720

Chain of Custody Record

Dago	4	~*	4	
Page	. 1	of	-1	

Toll Free: (8	300) 279-6885	Fax: (701) 258-9724									201782-0259		
Company Nam	ne and Address:		Account #: Phone #:					Phone #:					
	ħΛ	VTL							701-258-9720				
		Broadway		Contact:	C1	.1 - 14	_				Fax #:		
	Bismarck		Name of S	Claud	etti	e				For faxed report check box			
Billing Addres	s (indicate if different	I vaine or c	zampiei.						E-mail: ccarroll@mvtl.com For e-mail report check box				
	<u>PO B</u>		Quote Nu	mber						Date Submitted:			
									3-Feb-17				
		Project Na	ame/Numb	er:					Purchase Order #:				
					т					BL5780			
	T	Sample Information		T	T		В	ottle	Ту	pe	Analysis		
5170206	14												
							103	/ed					
IML Lab								ials	s Jar		Analysis Required		
1	M///TL Lab Number	Olivert Over 1 1D	Sample	Date	Time	frea	00 11	C V	388				
Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	1	Unfreated	1000 ml HNO3	VOC Vials Umpreserved	Glass	Other	Analysis Required		
Number OD I	MVTL Lab Number 17-W252	Client Sample ID Field Blank	1 -		1	Untrea	1000 u	VOC V Umpre	Glass		Analysis Required Ra226 & Ra228		
Number OO I OO Z			Туре	Sampled	1	Untrea	1	VOC V Umpre	Glass				
Number Ol OZ O3	17-W252	Field Blank	Type GW	Sampled 2-Feb-17	Sampled	Untrea	4	VOC V Umpre	Glass		Ra226 & Ra228		
Number OO I OO Z	17-W252 17-W253	Field Blank Blue 6	GW GW	Sampled 2-Feb-17 2-Feb-17	Sampled 1230	Untrea	4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number	17-W252 17-W253 17-W254	Field Blank Blue 6 Blue 7	GW GW GW	2-Feb-17 2-Feb-17 1-Feb-17	1230 1635	Untrea	4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number 001 002 003 004 005 006	17-W252 17-W253 17-W254 17-W255	Field Blank Blue 6 Blue 7 Blue 13	GW GW GW GW	2-Feb-17 2-Feb-17 1-Feb-17 2-Feb-17	1230 1635 1339	Untrea	4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number	17-W252 17-W253 17-W254 17-W255 17-W256	Field Blank Blue 6 Blue 7 Blue 13 Blue 14	GW GW GW GW	2-Feb-17 2-Feb-17 1-Feb-17 2-Feb-17 2-Feb-17	1230 1635 1339 1115	Untrea	4 4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number 001 002 003 004 005 006	17-W252 17-W253 17-W254 17-W255 17-W256 17-W257	Field Blank Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	Sampled 2-Feb-17 2-Feb-17 1-Feb-17 2-Feb-17 2-Feb-17	1230 1635 1339 1115 1745	Untrea	4 4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number 001 002 003 004 005 006	17-W252 17-W253 17-W254 17-W255 17-W256 17-W257	Field Blank Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	Sampled 2-Feb-17 2-Feb-17 1-Feb-17 2-Feb-17 2-Feb-17	1230 1635 1339 1115 1745	Untrea	4 4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		
Number 001 002 003 004 005 006	17-W252 17-W253 17-W254 17-W255 17-W256 17-W257	Field Blank Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	Sampled 2-Feb-17 2-Feb-17 1-Feb-17 2-Feb-17 2-Feb-17	1230 1635 1339 1115 1745	Untrea	4 4 4 4	VOC V Umpre	Glass		Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228		

comments: All results must be reported as a numerical value. Use 17-W254 as MS & MSD sample.

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:		Temp:
T. Olson	3-Feb-17	1700		hathy Bar	2.7.17	IIAh	z.Z.C
2.							1.5 °C



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue-6	
O	0	

Phone: (701) 258-9720

								-				7		
Weather Conditions:		Temp:		′°F		Wind:	W9			Precip:	Sunny	/ Partly C	loudy / Clo	udy
	Well Info	rmation	<i>v</i> (Sa	ampling l	nformatio	n		
Well Locked?	Yes	No					Purg	ing Method:	Bla	dder		Co	ntrol Setting	s
Well Labeled?	Yes	No					Sampl	ling Method:	Bla	dder		Purge:	26	sec.
Casing Straight?	Yes	No					Dedica	ated Equip?:	Yes	No		Recover:	4	· sec.
Grout Seal Intact?	Yes	No	-(ot Visib	le		Duplicate	e Sample?:	Yes	No		PS1:	7	
Repairs Necessary:	ary:			Duplicate	Sample ID:			F	Pumping R	ate:2 <i>ෑං/ </i>	mL/min			
Casing	Diameter:		2'	•										
Water Level Bef	ore Purge:		66	. 11	ft		,	Purge Date:	1 Feb 1	7	Time Purgir	ng Began:	0937	ami/pm
Total W	Vell Depth:			•	ft		Well F	Purged Dry?	Xes	No	Time Pu	ırged Dry:	(002	am/pm
We	ell Volume:		7		liters		S	ample Date:	2501	7	Time of	Sampling:	1050	Carrier March
Depth to Top	o of Pump:	И	74c	l b	ft								1230	
Water Level Afte	er Sample:		74.1	6	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremer	nt Method:	Electric	Water L	evel Indic	ator		List:							

Field Measurements

	lielu Measurements											
Stabi	Stabilization Temp		Spec.		DO	ORP	Turbidity	Water	mL	Discription:		
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy		
1	0942	5,74	2583	6,40	5.93	74.0	298	69,14	1000	Tultid		
2	0952	6.06	2586	6,54	3.92	67,5	123	71,58	2000	turkid		
3	1002	5-63	2591	6.02	4.27	\$ 13,0	718	74.16	2000	Slightly turb-d		
4	ì			' /			1010	,				
5												
6												
7												
8	1225								:			
9	1025	84	rach "	5 Mini	to ((10/ 10	ح/	66,87		, 6		
10 123	1450	613	2641	1.53	6,94	6.94	93.4	67,43	500	Slightly Thrid		
Stabilized		(No	-		6.94	59.7 TO	otal Volume	Removed:	5000	mL /		
Comment	s: 🕢				8							

Had to collect Samples, not enough water to stablize.



Groundwater Assessment

Company:	OTP Coyote	
Event:	<i>2</i> 017	
Sample ID:	Blue 7	
Sampling Person	al: Da com Nicsway	

2616 E. Broadway Ave, Bismarck, ND Phone: (701) 258-9720

11.1		~			147 1	N. 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.			_			
Weather Conditions:		Temp:	<u>/ > °F</u>		Wind:	10 W 70		Precip:	Sunny	//Partly C	Cloudy)/ Clou	dy
1	Well Info	rmation	, ,				S	ampling l	nformation	1		
Well Locked?	Xes	No				Purging Method:	Bla	dder		Со	ntrol Settings	
Well Labeled?	Yes	No				Sampling Method:	Bla	dder 🦯	[Purge:	56 4	f sec.
Casing Straight?	Æes	No				Dedicated Equip?:	Yes	No		Recover:	450	sec.
Grout Seal Intact?	Yes	No	Not Visi	błe		Duplicate Sample?:	Yes	No		PSI:	(<u> </u>	
Repairs Necessary:	•	· · · · · · · · · · · · · · · · · · ·				Duplicate Sample ID:	M57/	msp 7	P	umping R	ate:	mL/min
Casing	Diameter:		2"								1	
Water Level Befo	ore Purge:	8	(3.60	ft		Purge Date:	1506	17	Time Purgin	g Began:	1445	am/pm
Total W	ell Depth:	9	17,74	ft		Well Purged Dry?	``Yes	(SA)	Time Pu	rged Dry:		am/pm
We	ll Volume:		8 18	liters		Sample Date:	1805	17	Time of S	Sampling:	1635	am/p͡m
Depth to Top	of Pump:	,		ft								
Water Level Afte	r Sample:	8	3,63	ft		Bottle CCR: 1L F	Raw, 500mL	Nitric, 4-1L	Nitric			
Measurement	t Method:	Electric '	Water Level Ind	licator		List:						

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1450	7.21	2524	6.86	3,10	1-1.7	1.51	83.62	500	1916,0
2	1505	7.64	25 19	6,84	1,33	- O. 4	220	63,63	1500	Ters-d
3	1535	7,70	2643	PF 6.67	p.70	一张 7	147	8.3.63	3000	Trygid
4	1605	7.14	2650	6067	0,64	A3:1	105	83.63	3000	Factor Shighty tol
5	1615	6.68	2636	6,67	0,76	3,6	103	8363	1000	ST
6	1620	746	265	07E866	10.68	312	82.5	83.63	500	ERST
7	1625	7,02	2670	6.67	0666	7,0	75.2	83.63	500	CARLO ST
8	1630	7,40	2662	6.65	0.62	2.2	73.1	83663	500	TEST ST
9	1635	7,42	2657	6.65	0.61	2,3	70.1	8363	500	ELIP ST
10										
10							<u> </u>		/ 1 60	

Stabilized: Yes No
Comments:

Total Volume Removed: _____mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blace	13
Sampling Personal:	DA Wen	1/2006

Phone: (701) 258-9720

Weather (Conditions	•	Temp:	<u> </u>	°F	Wind:	W15			Precip	: Sunny	//Partly C	loudy / Cle	oudy
		Well Inf	ormation						Sa	· · · · · · · · · · · · · · · · · · ·	nformation			July
W	ell Locked?	Ves	No]	Purgi	ing Method:		dder			ntrol Setting	
We	ll Labeled?	Yes	No					ing Method:		der	†	Purge:	26	gs se
Casin	ng Straight?	Yes	No					ted Equip?:	Yes	NØ	1	Recover:	4	
Grout S	Seal Intact?	Yes	No	(Not	Visible			Sample?:	Yes	No	†	PSI:		se
Repairs N	ecessary:							Sample ID:				umping Ra	to: 200/	mL/m
	Casing	g Diameter:		2"							1 1	amping re	ite	
Wat	er Level Be	fore Purge:		105.0	5 ft		F	Purge Date:	1F66	17	Time Purging	Began:	1024	am/p
	Total V	Nell Depth:		116.19	₹ ft			urged Dry?	1-(No		ged Dry:		
	W	ell Volume:		6.9	liters			ample Date:		····	Time of Sa		1200	
	Depth to To	p of Pump:	1	11,33	ft				10.001	/				am/pi
Wat	er Level Aft	er Sample:	1	11.33	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric 4-11	Nitric		~6×60	
N.	/leasureme	nt Method:	Electric	Water Leve	Indicator		List:				11110			
						'								
		7	T 0	I		Measure								
	ization ecutive)	Temp (°C)	Spec. Cond.	กม	DO (ma/l.)	ORP	Turbidity	1	_ mL		Discription:			
SEQ#	Time	(0)	±5%	pH ±0.1	(mg/L) ±10%	(mV) ±20 mV	(NTU) ±10%	Level (ft)	Removed		, Color, Odor,			
1	1029	4.73	5362	642	6.02	83.7	194	0.25 ft	# (008		oartly cloudy, clo	oudy		
2	1039	512	3237	637	3.54	887.4	158	109,72	\$1000	Tulbig	<u> </u>			
3	1949	5,73	5231	6,37	4.79	88,1	119	110.83	2000 2000	In/bi				
4	11059	5:66	5487	6,50	3.63	88.9	7/7	117033	2000	Tarki				
5			7 " 1		7.07	0.01	//-/	111:33	200	Tursi				
6														
7														
8								2 10	D.54					
9	1334	Pu,	gad f	0/5/	nin.			107.54	7					
10		4,69	6231	6.78	7.08	42,5	832	106.43	500	1116	i d		M	
Stabilized:	Yes	(No				To	tal Volume	Removed:	1 2000	mL 7000				
Comments	:	•						•	of and					
		Had.	to call	ect Sa	myles ni	× 2	1 .6	· 1/-	(1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -					
		1,0=	, , , , ,		. 0 D NO	" thoy	th wat	TY	to bling	יס				
								>	120.128					



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 15	
Sampling Person	onal: Darren Niesman	
		E

Phone: (701) 258-9720

1 Holic. (101) 230-0	7720						-				<u> </u>		
Weather Conditions:		Temp:	40	°F	Wind:	ws			Precip:	Sur	ny)/ Partly C	loudy / Clo	oudy
	Well Info	rmation						S	ampling I	71			· · · · · · · · · · · · · · · · · · ·
Well Locked?	Yes)	No				Purgi	ng Method:		ıdder		1	ntrol Setting	os
Well Labeled?	X es	No				Sampli	ng Method:	Bla	dder		Purge:	Ef	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	(No)		Recover:	56	sec.
Grout Seal Intact?	Yes	No	NotV	isible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate:/カの	mL/min
Casing	Diameter:		2"							•			
Water Level Bef	ore Purge:	-76		ft		F	Purge Date:	2 Feb	17	Time Pur	ging Began:	1700	am/pm
Total W	/ell Depth:		7,90	ft		Well P	urged Dry?	Yes	No	Time	Purged Dry:		am/pm
We	Il Volume:		5,1	liters		Sa	ample Date:	2006	17	Time o	of Sampling:	1745	am/pm
Depth to Top	of Pump:	830	79	ft							<u> </u>		•
Water Level Afte	er Sample:	80	2.68	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric V	Nater Level I	Indicator		List:					***************************************		
				Fiold	Moseuro	monte					***************************************		

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1705	6.96	3603	6.60	5.5	8:8	86.9	80c68	500	Slightly Twois
2	1725	8.59	3428	6153	0684	3,2	10,4	80,68	2000	Chi
3	1730	869	2421	4,56	0,89	3,5	7,99	80,68	500	Cl
4	1735	8.46	2420	6,5-3	0185	2,8	7.50	80168	500	2
5	1740	8:47	3420	6,53	0.83	318	7.93	80.68	500	a-
6	1740	8,47	34/7	6.53	0.80	4,1	724	8018	500	Cl-
7			,				1,54	0-0-0		
8										
9										
10										
01 1 11 1	1 84	A.I.					·	***************************************		

Stabilized: / No Comments:

Total Volume Removed: 4500 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	· Blue 14	
Compling Do	roonal: ()	10-

Phone: (701) 258-9720

					,							
Weather Conditions:		Temp:	Ĺ °F	Wind:/	Var 2	0		Precip	: Suni	ny Partly C	Cloudy / Clo	ud v
	Well Info	ormation					Sampling Information					
Well Locked?	<u>Ye</u> s	Nø			Purgi	ng Method:		dder			ntrol Setting	s
Well Labeled?	¥es	No			Sampli	ng Method:	Bla	dder		Purge:	5-0	sec.
Casing Straight?	Æes	No			Dedica	ted Equip?:	Yes	NO		Recover:	4	sec.
Grout Seal Intact?	Yes	No	NotVisible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Necessary:					Duplicate	Sample ID:				Pumping R	ate: /00	mL/min
Casing	Diameter:		2"						-			
Water Level Befo	ore Purge:		8to 80.22 ft		F	Purge Date:	1 Feb	.17	Time Purg	ing Began:	1120	@m/pm
Total W	Vell Depth:		87,00 ft		Well P	urged Dry?	Yes	No	Time F	urged Dry:		am/pm
We	ell Volume:		4,2 liters		Sa	ample Date:	11=06	17	Time of	Sampling:	1310	am/pm
Depth to Top	of Pump:		84,07 ft								-	
Water Level Afte	er Sample:		82,33 ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric \	Water Level Indicator		List:	-						
			Field	Measure	ments							

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
<u>.</u> 1	1125	6,49	5287	6.63	4,51	10,9	445	80,51	500	Slightly two
2	1110	7,49	532(6.65	2,50	-7.4	40.3	80.88	1500	ST ST
3	1155	7.92	5401	6.65	1,58	-6.4	36,7	80.98	1500	cha ST
4	1211)	7,61	5421	6,65	1,55	ースと	27,0	81,09	1500	de st
5	1225	770	5399	6,64	1,48	-29	18,5	81.38	1500	d 5T
6	12-40	7.87	5342	6.69	1.30	-5.9	9,75	81.50	1500	Glen ST
7	1255	8013	5303	6.63	1.30	-802	6,38	81,49	1500	de CT
8	1.300	8.08	5307	6,6)	1,21	-8,8	5,38	81,54	500	de ST
9	1305	8113	3304	6,654.	1.27	1-121	5.02	81,62	500	Sto ST
10	1710	8,09	5301	6269.64	1.27	-10,9	5,04	81,65	500	St 55
tabilizad:	(VOE)	No	·			, T	otal Makuma	D 1-	11 000	1

Total Volume Removed: // ,000 mL

Comments:

that that trouble with pump during sampling. Pulled the pump chansed blatter and tubbing still didn't work. I think it was the sand in the well clogging up the check ball.



Groundwater Assessment

Company:	OTP Co	oyote	
Event:	2017		
Sample ID:	Blue 14		
Sampling Pe	rsonal: A code	Niger	

2616 E. Broadway Ave, Bismarck, ND Phone: (701) 258-9720

			,				-						
Weather Conditions:		Temp:	١٠ ا	=	Wind:	w11			Precip	: Suni	ny)/ Partly Clo	udy / Clo	udy
	Well Info	rmation						S	ampling	Information	on		
Well Locked?	Yes	Nø				Purgi	ng Method:	Bla	dder		Contr	ol Setting	s
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:	6	sec.
Casing Straight?	Yes	No		7		Dedica	ted Equip?:	Yes	No	1	Recover:	57	sec.
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	Sample?:	Yes	No)		PSI:		,,
Repairs Necessary:						Duplicate	Sample ID:	_		1	Pumping Rate	e: / 00	mL/min
Casing	Diameter:		2"							-			
Water Level Bef	ore Purge:	۶	50.09	ft		J	Purge Date:	2Febl	Ø17	Time Purg	ing Began:	935	am/pm
Total W	Vell Depth:		77.86	ft		Well F	urged Dry?	Yes	No	Time F	urged Dry:		am/pm
We	ell Volume:		4.3	liters		Sa	ample Date:	2 Feb	17	Time of	Sampling:	11.5	(and/pm
Depth to Top	o of Pump:	8	4,38	ft			······································						
Water Level Afte	er Sample:	8	3a34	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremer	nt Method:	Electric	Water Level In	dicator		List:			·····				
				Field	Measure	ments							

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:		
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy		
1	9940	6,09	5214	6,93	9.03	19,2	71000	80,89	500	Twoid		
2	A11010	7.68	5295	6,75	7,63	34.1	409	81,19	3000	Tarkel		
3	1040	6,19	5323	6.59	7.48	56.8	59.7	81.88	3000	Stightly tobal Olog		
-4	1050	8.70	5353	6,56	4,64	44.8	74.7	82.10	1000	ST Story ST		
5	1055	7.79	5339	6,55	4.46	42,1	76.0	82:35	500	ST Class ST		
6	1100	7,93	5329	£ \$ 46.54	14.32	39.1	753	82.44	500	ST STW ST		
7	1105	7,99	5337	6.5 4.	3.87	35.5	71.57	82,58	500	ST THEY ST		
8	1110	7,81	5330	ل الم	3,78	32,4	70,1	82.63	500	ST STEW ST		
9	1115	7,70	5326	1,54	3.5R	22.8	68,3	82069	500	STN apr ST		
10				O								
	(سید/								16/6/20			

Stabilized: Tes No

Total Volume Removed: 10,000 mL

Comments: Washt working this Moraning so changed tubing and worked,

En 18cb17 had the well stablized and equipment quiet working. The sand in the well stopped the check ball then I also, changed tubing,



Groundwater Assessment

Company:	OTP Coy	rote	
Event:	2017		
Sample ID:	Blue 16		
,	sonal: Darren	Nicswaas	

Phone: (701) 258-9720

Weather Conditions:		Temp:	/2 °F		Wind:	W10			Precip:	\$unr	Partly C	Cloudy / Clo	udy
	Well Info	rmation	(S	ampling l	nformation	on		
Well Locked?	Yes)	No				Purgi	ng Method:	Bla	dder		Co	ntrol Setting	s
Well Labeled?	Xes	No				Sampli	ng Method:	Bla	dder		Purge:	4	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	№		Recover:	56	sec.
Grout Seal Intact?	Yes	No	◯Not Visi	ble		Duplicate	Sample?:	Yes	No		PSI:	<u> </u>	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: 100	mL/min
Casing	Diameter:		2"									7-0	
Water Level Befo	ore Purge:		79,87	ft		F	Purge Date:	2 Feb,	7	Time Purg	ing Began:	1443	am/pm
Total W	ell Depth:	4	77.58	ft		Well P	urged Dry?	Yes-	CNO	Time F	urged Dry:		am/pm
Wel	ll Volume:		11.0	liters		Sa	ample Date:	2 Feb.	7	Time of	Sampling:	1603	am/pm
Depth to Top	of Pump:	9	1,52	ft					,				
Water Level Afte	r Sample:		79,95	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measurement	t Method:	Electric \	Water Level Inc	licator		List:		·	· · · · · · · · · · · · · · · · · · ·				

Field Measurements

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1448	7,70	2916	6,51	3,81	4.9	71060	79,90	500	Twoid
2	1508	8154	2939	6,47	1,22	1001	707	79.93	2000	Torbid.
3	1538	8.84	29 59	6.45	0,90	13,9	103	19.93	3000	fort Sizhol tobal
4	1553	8.85	295k	6,46	0.83	138	99,2	A 79.93	1500	ST
5	1558	8,80	2958	1.47	0.85	13,6	97.8	79.93	59D	
6	1603	8,68	29.56	6,47	0.85	13.7	91,7	79,93		51
7						177				
8										
9	/									
10										
01 1 22 1	// 2//	N1 -					·		12	

No

Total Volume Removed: Story mL

Comments:

Laboratories, Inc. 2616 E. Broadway Bismarck, ND 58501 Phone (701) 258-0720

Chain of Custody Record

RadChem

Projec	t Name:						Nan	ne of S	Sampler(s):			
	OTP Coyote	RadChem	Blu	ıe	2017			Da	Men 1	Vies	wang	
Report To: Attn: Address:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0	2406	Carbon C Attn: Address:		OTP Josh Hollen		Wo		er Number:	126	9	
Email:	pvukonich@otpco.com	7430	Email:		jhollen@otpco.co	m			001	000	1	
	Samp	le Informat	ion			E	Bottle T	уре	F	ield Par	ameters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type		1000 ml HNO ₃			Field Temperature	Field Spec. Cond.	Field pH	Analysis Required
W252	Field Blank (FB)	2 Feb/7	NA	W		X			NA	NA	NA	
N253	Blue 6	2 Feb 17	1230	GW	Slightly cloudy	4			6.13	2641	6.53	
Wa54	Blue 7/MS7/MSD7	18ch17	1635	GW	Slightly cloudy				7,42	2657	6.65	
W255	Blue 13	2 Feb/7	1339	GW	Cloudy	4			4,64	6231	6.78	
Wash	Blue 14	2Feb17	1115	GW	Slightly cloudy	4			7:70	5326	6.54	CTD CCD
Wa57	Blue 15	25-617	1745	GW	char	4			8,47	6.53	6.53	OTP CCR combined

Blue 16

W258

Blue 15 Spec. Cond. 3417

1603 GW

	Transferred by:	Sample Condition	Date/Time	Received by:	Sample Condition	Date/Time	°C
1	Jane Nies	Valkinz	2 Fz6 17 2024	Unil animan		03F6B11 8LD	- ROI II
2				1			TM588
3							- 2 Febr 7 DN





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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-0260

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year Feb 2017

MVTL Laboratory Identifications: 17-W259 through 17-W265

Page 1 of 2

Sample Identification	MVTL Laboratory #
Field Blank (FB)	17-W259
Blue 6	17-W260
Blue 7	17-W261
Blue 13	17-W262
Blue 14	17-W263
Blue 15	17-W264
Blue 16	17-W265

I. RECEIPT

- All samples were received at the laboratory on 3 Feb 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - o Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-0260

Client:

Ottertail Power Company

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CCR Blue Pit

Event & Year

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Event & rear

Feb 2017

MVTL Laboratory Identifications:

17-W259 through 17-W265

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IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.

 For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.

Recovery for one selenium matrix spike duplicate was outside of the acceptable limits.
 Recovery of the matrix spike was acceptable.
 RPD for the recoveries of the matrix spike/matrix spike duplicate was acceptable.
 No further action was taken.

The recoveries for three selenium matrix spike/matrix spike duplicate were outside the acceptable limits. RPD for the recoveries was within limits. Poor recoveries were determined to be due to sample matrix. Data was accepted based on acceptable recovery of the LCS. No further action was taken.

The recoveries for three lithium matrix spike/matrix spike duplicate were outside the acceptable limits. RPD for the recoveries was within limits. Poor recoveries were determined to be due to sample matrix. Data was accepted based on acceptable recovery of the LCS. No further action was taken.

All laboratory data has been approved by MVTL Laboratories.

SIGNED:

DATE:

27F6317

Claudette Carroll - MVTL Bismarck Laboratory Manager

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Page: 1 of 3

Quality Control Report

Lab IDs: 17-W259 to 17-W265 Project: OTP Coyote CCR Blue 2017 Work Order: 201782-0260

Lab IDS: 17-W 239 to 17-W 2	MET MANUFACTURE CONTROL CONTRO	I I	ojeci. O i	1 Coyote	CCR Blue 20	1/	VOLK OI	uer: 201	782-0260	<u> </u>							
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	110	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.001 < 0.001 < 0.001	0.4432 0.4194 0.4172	111 105 104	75-125 75-125 75-125	0.4432 0.4194 0.4172	0.4308 0.4158 0.4186	108 104 105	2.8 0.9 0.3	20 20 20	-	-	< 0.001 < 0.001
Arsenic - Total mg/l	0.1000	107	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.002 0.0064 < 0.002	0.4456 0.4266 0.4158	111 105 104	75-125 75-125 75-125	0.4456 0.4266 0.4158	0.4378 0.4236 0.4234	109 104 106	1.8 0.7 1.8	20 20 20	-		< 0.002 < 0.002
Barium - Total mg/l	0.1000	105	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	0.0439 0.0761 0.0289	0.4364 0.4734 0.4210	98 99 98	75-125 75-125 75-125	0.4364 0.4734 0.4210	0.4378 0.4644 0.4304	98 97 100	0.3 1.9 2.2	20 20 20	-	-	< 0.002 < 0.002
Beryllium - Total mg/l	0.1000	115	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.0005 < 0.0005 < 0.0005	0.4584 0.4506 0.4756	115 113 119	75-125 75-125 75-125	0.4584 0.4506 0.4756	0.4454 0.4492 0.4778	111 112 119	2.9 0.3 0.5	20 20 20	-	-	< 0.0005 < 0.0005
Boron - Total mg/l	0.40 0.40	100 100	80-120 80-120	0.400 0.400 0.400	17-W261 17-W265 17-W298	0.35 0.36 0.20	0.77 0.78 0.61	105 105 102	75-125 75-125 75-125	0.77 0.78 0.61	0.76 0.78 0.63	102 105 108	1.3 0.0 3.2	20 20 20	-	-	< 0.1 < 0.1 < 0.1
Cadmium - Total mg/l	0.1000	111	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.0005 < 0.0005 < 0.0005	0.4442 0.4220 0.4126	111 106 103	75-125 75-125 75-125	0.4442 0.4220 0.4126	0.4384 0.4144 0.4240	110 104 106	1.3 1.8 2.7	20 20 20	-	-	< 0.0005 < 0.0005
Calcium - Total mg/l	20.0	102	80-120	100 500 500 500 5000 100 500 500	17-M156 17-M165 17-M167 17-M169 17-M154 17-M171 17W237q 17W261q	47.4 332 755 11.0 2530 78.6 164 148	145 830 1240 555 7200 173 660 640	98 100 97 109 93 94 99 98	75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125	660 640	630 660	93 102	4.7 3.1	20 20	-	-	< 1 < 1 < 1

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Page: 2 of 3

Quality Control Report
Lab IDs: 17-W259 to 17-W265

ab IDs: 17-W259 to 17-W265 Project: OTP Coyote CCR Blue 2017 Work Order: 201782-0260

					CCR Blue 2	Matrix		Matrix	782-026 Matrix	MSD/				MSD/			
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Spike Orig Result	Matrix Spike Result	Spike Rec %	Spike % Rec Limits	Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Chloride mg/l	30.0 30.0 30.0	83 83 84	80-120 80-120 80-120	30.0 30.0	17-W282 17-W261	5.6 5.1	31.5 31.1	86 87	80-120 80-120	31.5 31.1	30.1 28.4	82 78	4.5 9.1	20 20	-	-	< 1 < 1 < 1
Chromium - Total mg/l	0.1000	100	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.002 0.0039 < 0.002	0.3930 0.3728 0.3724	98 92 93	75-125 75-125 75-125	0.3930 0.3728 0.3724	0.3812 0.3756 0.3728	95 93 93	3.0 0.7 0.1	20 20 20	-	-	< 0.002 < 0.002
Cobalt - Total mg/l	0.1000	102	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.002 < 0.002 < 0.002	0.3978 0.3806 0.3802	99 95 95	75-125 75-125 75-125	0.3978 0.3806 0.3802	0.3882 0.3836 0.3802	97 96 95	2.4 0.8 0.0	20 20 20		-	< 0.002 < 0.002
Fluoride mg/l	0.50	106	90-110	0.500 0.500	17-W260 17-W261	0.21 0.25	0.69 0.73	96 96	80-120 80-120	0.69 0.73	0.70 0.74	98 98	1.4 1.4	20 20	-	-	< 0.1 < 0.1
Lead - Total mg/l	0.1000	96	80-120	0.400 0.400 0.400	17-W261 17-W265 17-W298	< 0.0005 0.0009 < 0.0005	0.3708 0.3776 0.3734	93 94 93	75-125 75-125 75-125	0.3708 0.3776 0.3734	0.3724 0.3730 0.3964	93 93 99	0.4 1.2 6.0	20 20 20	-	-	< 0.0003
Lithium - Total mg/l	0.40 0.40 0.40	100 100 102	80-120 80-120 80-120	0.400 0.200 0.400 0.200 0.400 0.400 0.200	17-W239 17-W239 17-W261 17-W261 17-W265 17-W298 17-W265	0.51 0.51 0.12 0.12 0.14 0.04 0.14	1.09 0.75 0.68 0.37 0.71 0.54 0.39	145 120 140 125 142 125 125	75-125 75-125 75-125 75-125 75-125 75-125 75-125	1.09 0.75 0.68 0.37 0.71 0.54 0.39	1.04 0.73 0.68 0.36 0.72 0.54 0.39	132 110 140 120 145 125 125	4.7 2.7 0.0 2.7 1.4 0.0 0.0	20 20 20 20 20 20 20 20 20	- - - - -	-	< 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1
Mercury - Total mg/l	0.0020	95	85-115	0.002 0.002 0.002	A2179 17-W236 17-W261	< 0.0002 < 0.0002 < 0.0002	0.0017 0.0018 0.0018	85 90 90	70-130 70-130 70-130	0.0017 0.0018 0.0018	0.0019 0.0018 0.0018	95 90 90	11.1 0.0 0.0	20 20 20	-	-	< 0.0002
Molybdenum - Total mg/l	0.1000	109	80-120	0.400 0.400 0.400	17W261q 17W265q 17W298q	< 0.002 < 0.002 0.0039	0.4340 0.4292 0.4404	108 107 109	75-125 75-125 75-125	0.4340 0.4292 0.4404	0.4358 0.4278 0.4546	109 107 113	0.4 0.3 3.2	20 20 20	-	-	< 0.002 < 0.002
pH units	-	-	-	_	P4	_	_	_	_	7.4	7.4		0.0	20		_	_

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Quality Control Report

Lab IDs: 17-W259 to 17-W265 Project: OTP Coyote CCR Blue 2017

Work Order: 201782-0260

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %		MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Selenium - Total mg/l	0.1000 0.1000 0.1000	111 110 109	80-120 80-120 80-120	0.100 0.400 0.400 0.400 0.400	17-W307Q 17-W308 17-W261 17-W265 17-W298	0.0610 < 0.002 < 0.002 < 0.002 0.0025	0.1848 0.5362 0.4762 0.5202 0.5122	124 134 119 130 127	75-125 75-125 75-125 75-125 75-125	0.1848 0.5362 0.4762 0.5202 0.5122	0.1906 0.5344 0.4884 0.5302 0.5498	130 134 122 133 137	3.1 0.3 2.5 1.9 7.1	20 20 20 20 20 20	- - -	- - -	< 0.002 < 0.002
Sulfate mg/l	100	108	80-120	1000	17-W261	875	1750	88	80-120	1750	1750	88	0.0	20	-	-	< 5
Thallium - Total mg/l	0.1000	97	80-120	0.400 0.400 0.400	17-W261 17-W265 17-W298	< 0.0005 < 0.0005 < 0.0005	0.3796	95 95 96	75-125 75-125 75-125	0.3796 0.3796 0.3826	0.3812 0.3826 0.4000	95 96 100	0.4 0.8 4.4	20 20 20	-	-	< 0.0005
Total Dissolved Solids mg/l	-	-	-	-	_	-	-	-	-	1910	1920	-	0.5	20	-	-	< 10

Approved by: C. Canifo
37FE317



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote CCR Blue 2017

Sample Description: Field Blank

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W259 Work Order #:82-0260 Account #: 006106

Date Sampled: 2 Feb 17

Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Da! Ana	ce alyzed		Analyst
Metal Digestion				EPA 200.2	3	Feb 1	7	svs
Lab, pH	* 6.1	s.u.	0.1	SM4500 H+ B	3	Feb 1	7 17:00	SVS
Fluoride	< 0.1	mg/1	0.10	SM4500-F-C	3	Feb 1	7 17:00	SVS
Sulfate	< 5	mg/1	5.00	ASTM D516-07	10	Feb 1	7 8:53	EMS
Chloride	< 1	mg/l	1.0	SM4500-C1-E	9	Feb 1	7 11:14	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	7	Feb 1	7 11:27	EV
Total Dissolved Solids	< 10	mg/1	10	I1750-85	3	Feb 1	7 14:26	SVS
Calcium - Total	< 1	mg/1	1.0	6010	9	Feb 1	7 9:44	KMD
Lithium - Total	< 0.1	mg/l	0.10	6010	15	Feb 1	7 13:15	KMD
Boron - Total	< 0.1	mg/l	0.10	6010	14	Feb 1	7 10:31	KMD
Antimony - Total	< 0.001	mg/l	0,0010	6020	14	Feb 1	7 9:50	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Barium - Total	< 0.002	mg/1	0.0020	6020	14	Feb 1	7 9:50	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb 1	7 9:50	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	14	Feb 1	7 9:50	KMD
Chromium - Total	< 0.002	mg/l	0,0020	6020	14	Feb 1	7 9:50	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	15	Feb 1	7 17:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	14	Feb 1	7 9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb 1	7 12:15	KMD
Thallium - Total	< 0.0005	mg/1	0,0005	6020	15	Feb 1	7 17:45	KMD

* Holding time exceeded

Approved by: Claudette K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

= Due to concentration of other analytes + = Due to internal standard response



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 6

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W260 Work Order #:82-0260 Account #: 006106

Date Sampled: 2 Feb 17 12:30 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Da i	ce alyzed		Analyst
Metal Digestion		1.1		EPA 200.2	3	Feb 1	7	SVS
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	3	Feb 1	7 17:00	svs
Field pH	6.53	s.u.	0.1	SM 4500 H+ B	2	Feb 1	7 12:30	DJN
Field Appearance	Partly Cl	oudy	NA	SM 2110	2	Feb 1	7 12:30	DJN
Field Temperature	6.13	Degrees C	0.1	SM 2550B	2	Feb 1	7 12:30	DJN
Field Conductivity	2641	umhos/cm	1	EPA 120.1	2	Feb 1	7 12:30	DJN
Fluoride	0.21	mg/l	0.10	SM4500-F-C	3	Feb 1	7 17:00	SVS
Sulfate	1010	mg/l	5.00	ASTM D516-07	10	Feb 1	7 8:53	EMS
Chloride	5.9	mg/l	1.0	SM4500-C1-E	9	Feb 1	7 11:14	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	7	Feb 1	7 11:27	EV
Total Dissolved Solids	1980	mg/1	10	I1750-85	3	Feb 1	7 14:26	svs
Calcium - Total	200	mg/1	1.0	6010	9	Feb 1	7 9:44	KMD
Lithium - Total	0.14	mg/l	0.10	6010	15	Feb 1	7 13:15	KMD
Boron - Total	0.38	mg/l	0.10	6010	14	Feb 1	7 10:31	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	14	Feb 1	7 9:50	KMD
Arsenic - Total	0.0056	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Barium - Total	0.0959	mg/l	0.0020	6020	1.4	Feb 1	7 9:50	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	14	Feb 1	7 9:50	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb 1	7 9:50	KMD
Chromium - Total	0.0184	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Cobalt - Total	0.0074	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Lead - Total	0.0092	mg/1	0.0005	6020	15	Feb 1	7 17:45	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	14	Feb 1	7 9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb 1	7 12:15	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	15	Feb 1	7 17:45	KMD

* Holding time exceeded

Approved by:

Claudette K Cantep

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:

= Due to sample matrix # = Due to concentration of other analytes

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



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 7

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W261 Work Order #:82-0260 Account #: 006106

Date Sampled: 1 Feb 17 16:35 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receiv Result	ed	Method RL	Method Reference	Date Analyz	ed	Analyst
Metal Digestion			-	EPA 200.2	3 Feb	17	svs
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	3 Feb	17 17:00	SVS
Field pH	6.65	s.u.	0.1	SM 4500 H+ B	2 Feb	17 16:35	DJN
Field Appearance	Slightly	Cloudy	NA	SM 2110	2 Feb	17 16:35	DJN
Field Temperature	7.42	Degrees C	0.1	SM 2550B	2 Feb	17 16:35	DJN
Field Conductivity	2657	umhos/cm	1	EPA 120.1	2 Feb	17 16:35	DJN
Fluoride	0.25	mg/l	0.10	SM4500-F-C	3 Feb	17 17:00	SVS
Sulfate	875	mg/1	5.00	ASTM D516-07	10 Feb	17 8:53	EMS
Chloride	5.1	mg/l	1.0	SM4500-C1-E	9 Feb	17 11:14	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	7 Feb	17 11:27	EV
Total Dissolved Solids	1910	mg/l	10	I1750-85	3 Feb	17 14:26	svs
Calcium - Total	148	mg/l	1.0	6010	9 Feb	17 9:44	KMD
Lithium - Total	0.12	mg/1	0.10	6010	15 Feb	17 13:15	KMD
Boron - Total	0.35	mg/1	0.10	6010	14 Feb	17 10:31	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	14 Feb	17 9:50	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	14 Feb	17 9:50	KMD
Barium - Total	0.0439	mg/1	0.0020	6020	14 Feb	17 9:50	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	14 Feb	17 9:50	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	14 Feb	17 9:50	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	14 Feb	17 9:50	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	14 Feb	17 9:50	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	15 Feb	17 17:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	14 Feb	17 9:50	KMD
Selenium - Total	< 0.002	mg/l	0.0020	6020	15 Feb	17 10:50	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	15 Feb	17 17:45	KMD

* Holding time exceeded

Approved by:

Claudite K Canto

278617

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:

> Due to sample matrix # > Due to come to sample quantity # > Due to interpret to the sample quantity # > Due

= Due to concentration of other analytes + = Due to internal standard response



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 13

Event and Year: February 2017

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W262 Work Order #:82-0260 Account #: 006106

Date Sampled: 2 Feb 17 13:39 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

Metal Digestion	As Received Result		Method RL	Method Reference	Date Analyzed				Analyst
		A.A		EPA 200.2	3.	Feb	17		svs
Lab, pH	* 7,4	s.u.	0.1	SM4500 H+ B	3	Feb	17 1	17:00	SVS
Field pH	6.78	s.u.	0.1	SM 4500 H+ B	2	Feb	17 1	13:39	DJN
Field Appearance	Cloudy		NA	SM 2110	2	Feb	17 1	13:39	DJN
Field Temperature	4.64	Degrees C	0.1	SM 2550B	2	Feb	17 1	13:39	DJN
Field Conductivity	6231	umhos/cm	1	EPA 120.1	2	Feb	17 1	13:39	DJN
Fluoride	0.29	mg/l	0.10	SM4500-F-C	3	Feb	17 1	17:00	SVS
Sulfate	2700	mg/1	5.00	ASTM D516-07	10	Feb	17	8:53	EMS
Chloride	27.9	mg/1	1.0	SM4500-C1-E	9	Feb	17 1	11:14	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	7	Feb	17 1	11:27	EV
Total Dissolved Solids	4820	mg/l	10	I1750-85	3	Feb	17 1	14:26	SVS
Calcium - Total	138	mg/l	1.0	6010	9	Feb	17	9:44	KMD
Lithium - Total	0.27	mg/l	0.10	6010	15	Feb	17 1	13:15	KMD
Boron - Total	0.54	mg/1	0.10	6010	14	Feb	17 1	10:31	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	14	Feb	17	9:50	KMD
Arsenic - Total	0.0074	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Barium - Total	0.0587	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	14	Feb	17	9:50	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb	17	9:50	KMD
Chromium - Total	0.0075	mg/1	0:0020	6020	14	Feb	17	9:50	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Lead - Total	0.0071	mg/l	0.0005	6020	15	Feb	17 1	17:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb	17 1	10:50	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	15	Feb	17 1	17:45	KMD

* Holding time exceeded

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to conduct to sample quantity # = Due to in

= Due to concentration of other analytes + = Due to internal standard response



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 14

Event and Year: February 2017

1 of 1 Page:

Report Date: 20 Feb 17 Lab Number: 17-W263 Work Order #:82-0260 Account #: 006106

Date Sampled: 2 Feb 17 11:15 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed				Analyst
Metal Digestion			T-0.7	EPA 200.2	3	Feb 17			svs
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	3	Feb	17	17:00	SVS
Field pH	6.54	s.u.	0.1	SM 4500 H+ B	2	Feb	17	11:15	DJN
Field Appearance	Partly Cloudy		NA	SM 2110	2	Feb	17	11:15	DJN
Field Temperature	7,70	Degrees C	0.1	SM 2550B	2	Feb	17	11:15	DJN
Field Conductivity	5326	umhos/cm	1	EPA 120.1	2	Feb	17	11:15	DJN
Fluoride	0.19	mg/1	0.10	SM4500-F-C	3	Feb	17	17:00	SVS
Sulfate	2400	mg/1	5.00	ASTM D516-07	10	Feb	17	8:53	EMS
Chloride	6.7	mg/1	1.0	SM4500-C1-E	9	Feb	17	11:14	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	7	Feb	17	11:27	EV
Total Dissolved Solids	4190	mg/1	10	I1750-85	3	Feb	17	14:26	SVS
Calcium - Total	257	mg/1	1.0	6010	9	Feb	17	9:44	KMD
Lithium - Total	< 0.2 @	mg/l	0.10	6010	15	Feb	17	14:15	KMD
Boron - Total	0.44	mg/1	0.10	6010	14	Feb	17	10:31	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	14	Feb	17	9:50	KMD
Arsenic - Total	0.0028	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Barium - Total	0.0716	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	14	Feb	17	9:50	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb	17	9:50	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Cobalt - Total	0.0044	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	15	Feb	17	17:45	KMD
Molybdenum - Total	0.0033	mg/1	0.0020	6020	1.4	Feb	17	9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb	17	10:50	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	15	Feb	17	17:45	KMD

* Holding time exceeded

Approved by:

Clauditte K Canteo

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: \emptyset = Due to sample matrix \emptyset = Due to continuous \emptyset = Due to sample quantity \emptyset + = Due to int

= Due to concentration of other analytes
+ = Due to internal standard response



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 15

Event and Year: February 2017

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W264 Work Order #:82-0260 Account #: 006106

2 Feb 17 11:15 Date Sampled: Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receiv Result	ed	Method RL	Method Reference	Da An	te alyz	ed		Analyst
Metal Digestion				EPA 200.2	3	Feb	17	57,35	svs
Lab, pH	* 7.1	s.u.	0.1	SM4500 H+ B	3	Feb	17	17:00	svs
Field pH	6.53	B.u.	0.1	SM 4500 H+ B	2	Feb	17	17:45	DJN
Field Appearance	Clear		NA	SM 2110	2	Feb	17	17:45	DJN
Field Temperature	8.47	Degrees C	0.1	SM 2550B	2	Feb	17	17:45	DJN
Field Conductivity	3417	umhos/cm	1	EPA 120.1	2	Feb	17	17:45	DJN
Fluoride	0.23	mg/l	0.10	SM4500-F-C	3	Feb	17	17:00	svs
Sulfate	1190	mg/l	5.00	ASTM D516-07	10	Feb	17	8:53	EMS
Chloride	6.3	mg/1	1.0	SM4500-C1-E	9	Feb	17	11:14	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	7	Feb	17	11:27	EV
Total Dissolved Solids	2380	mg/l	10	11750-85	3	Feb	17	14:26	SVS
Calcium - Total	124	mg/1	1.0	6010	9	Feb	17	9:44	KMD
Lithium - Total	0.16	mg/l	0.10	6010	15	Feb	17	14:15	KMD
Boron - Total	0.43	mg/l	0.10	6010	14	Feb	17	10:31	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	14	Feb	17	9:50	KMD
Arsenic - Total	0.0137	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Barium - Total	0.0357	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb	17	9:50	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb	17	9:50	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	15	Feb	17	17:45	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	1.4	Feb	17	9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb	17	10:50	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	15	Feb	17	17:45	KMD

* Holding time exceeded

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to co

! = Due to sample quantity + = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



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Project Name: OTP Coyote CCR Blue 2017

Sample Description: Blue 16

Event and Year: February 2017

Page: 1 of 1

Report Date: 20 Feb 17 Lab Number: 17-W265 Work Order #:82-0260 Account #: 006106

Date Sampled: 2 Feb 17 16:03 Date Received: 3 Feb 17 8:00

Sampled By: Client

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receiv Result	ed	Method RL	Method Reference	Da An	te alyz	ed		Analyst
Metal Digestion	12.114			EPA 200.2	3	Feb	17		svs
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	3	Feb	17	17:00	SVS
Field pH	6.47	s.u.	0.1	SM 4500 H+ B	2	Feb	17	16:03	DJN
Field Appearance	Partly Cl	oudy	NA	SM 2110	2	Feb	17	16:03	DJN
Field Temperature	8.68	Degrees C	0.1	SM 2550B	2	Feb	17	16:03	DJN
Field Conductivity	2956	umhos/cm	1	EPA 120.1	2	Feb	17	16:03	DJN
Fluoride	0.25	mg/l	0.10	SM4500-F-C	3	Feb	17	17:00	svs
Sulfate	1170	mg/l	5.00	ASTM D516-07	10	Feb	17	8:53	EMS
Chloride	8.1	mg/1	1.0	SM4500-C1-E	9	Feb	17	11:56	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	7	Feb	17	11:27	EV
Total Dissolved Solids	2160	mg/1	10	I1750-85	3	Feb	17	14:26	SVS
Calcium - Total	162	mg/l	1.0	6010	9	Feb	17	9:44	KMD
Lithium - Total	0.14	mg/1	0.10	6010	15	Feb	17	14:15	KMD
Boron - Total	0.36	mg/l	0.10	6010	14	Feb	17	10:31	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	14	Feb	17	9:50	KMD
Arsenic - Total	0.0064	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Barium - Total	0.0761	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	14	Feb	17	9:50	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	14	Feb	17	9:50	KMD
Chromium - Total	0.0039	mg/l	0.0020	6020	14	Feb	17	9:50	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Lead - Total	0.0009	mg/1	0.0005	6020	15	Feb	17	17:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	14	Feb	17	9:50	KMD
Selenium - Total	< 0.002	mg/1	0.0020	6020	15	Feb	17	10:50	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	15	Feb	17	17:45	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	15	Feb	17	17:45	K

* Holding time exceeded

Approved by:

Claudette K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	814e-6
Sampling Pers	onal: Parren Wiesway

Phone: (701) 258-9720

, ,								-						
Weather Conditions:		Temp:		∕ °F		Wind:	N9			Precip:	Sunny	/ Partly C	loudy / Clo	udy
,	Well Info	rmation	· (Sa	ampling l	nformatio	n		
Well Locked?	Yes	No					Purgi	ng Method:	Blac	der		Со	ntrol Setting	s
Well Labeled?	Yes	No					Sampli	ng Method:	Blac	der		Purge:	26	sec.
Casing Straight?	Yes	No					Dedica	ted Equip?:	Yes	No		Recover:	4	sec.
Grout Seal Intact?	Yes	No	1	Vot Visib	īe		Duplicate	Sample?:	Yes	No		PSI:	7	
Repairs Necessary:							Duplicate	Sample ID:			F	Pumping Ra	ate:200/102	mL/min
Casing	Diameter:		2'	1							_		/	
Water Level Befo	ore Purge:		66	. [[ft		′ F	Purge Date:	1 Feb 1	7	Time Purgir	ig Began:	0937	æmi∕pm
Total W	/ell Depth:				ft		Well P	urged Dry?	Xes)	No	Time Pu	rged Dry:	1002	am/pm
We	li Volume:		<u> </u>		liters		Sa	ample Date:	2561	7	Time of \$	Sampling:	1050	ant of
Depth to Top	of Pump:		<u> 24 c</u>	<i>l</i>	ft								1230	3-7
Water Level Afte	r Sample:	r.,	740	6	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric \	Nater L	.evel Indi	cator		List:							
					-									

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	19942	5,74	2583	6,40	5.93	74.0	298	69,14	1000	Tultid
2	0952	6.06	2586	6,54	3.92	67,5	123	71,58	2000	turkid
3	1002	5-63	2591	6.02	4.27	# 13,0	718	74.16	2000	Slightly turbed
4	V			()			1010			
5										
6										
7								***************************************		
8	1225									
9	1025	Py	1948	Min,	to ((10/ 10	શ્⁄	66,87		
10 23 (1650	6113	2641	1.53	6,94	6.94	93.4	67,43	500	Slighty Thris
Stabilized:		(No	•		6.94.	59,7 TO	otal Volume	Removed:	5000	mL
Comments	s: '\\	_			v	- /				

Had to collect Samples, not enough water to stablize.



Groundwater Assessment

Company:	OTP Coyote	
Event:	<i>2</i> 017	
Sample ID:	Blue 7	
Sampling Persor	nal: De ven Niesway	

2010	L. Dibauv	ay A	ve, L	Jisinaick,	ND
	Phone: ((701)	258	-9720	

							·						
Weather Conditions:		Temp:		V	/ind:	NW	20		Precip:	Sunn	y / Partly C	loudy)/ Clou	idy
	Well Info	rmation				•		Sa	ampling I	nformatio	n		
Well Locked?	Yes	No				Purg	ing Method:	Blac	lder		Co	ntrol Settings	;
Well Labeled?	Yes	No				Sampl	ing Method:	Blac	lder _		Purge:	560	f sec.
Casing Straight?	Xes	No				Dedica	ted Equip?:	Yes	No		Recover:	450	sec.
Grout Seal Intact?	Yes	No	Not Visi	błe		Duplicate	e Sample?:	Yes	No		PSI:	1	
Repairs Necessary:	•					Duplicate	Sample ID:	M57/1	7507		Pumping Ra	ate: +のつ	mL/min
Casing	Diameter:		2"									(
Water Level Befo	ore Purge:	8	3.60	ft			Purge Date:	1506	17	Time Purgi	ng Began:	1445	am/pm
Total W	/ell Depth:	9	7,74	ft		Well F	Purged Dry?	ͺͺͺͺͺϓes	(NB)	Time P	urged Dry:		am/pm
We	ell Volume:		8 18	liters		S	ample Date:	1F05	/7	Time of	Sampling:	1635	am/pm
Depth to Top	of Pump:			ft									
Water Level Afte	er Sample:	5	3.63	ft		Bottle	CCR: 1L Ra	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric V	Vater Level Ind	licator		List:							
				Field Mea	sure	ements							

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1450	7.21	2524	6.86	3,10	1-1.7	1.51	83.62	500	14/9.d
2	1505	7,64	25 19	6,84	1,33	- O. 4	220	63,63	1500	Tub-d
3	1535	7,70	2643	St 6.67	p.70	一3(7	147	8.3,63	3000 .	Tuysid
4	1605	7.14	2650	6067	0,64	3.1	105	83.63	3000	Factor Shighty to
5	1615	6.68	2636	6,67	0,76	3,6	103	87.63	1000	ST
6	1,620	746	265	0 E866	10.68	312	82.5	83.63	500	EPOST.
7	1625	7,02	2670	6.67	0166	3,0	75.2	83.63	500	CARLO ST
8	1630	7,40	2662	6.65	0.62	2.2	73.1	8363	500	Tto &T
9	1.635	7,42	2657	6.65	0.61	2,3	70.1	83.63	500	ELP ST
10										

Stabilized: Yes No
Comments:

Total Volume Removed: _____ mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	p. B/ae 13
Sampling Personal:	Darren Nieswaa

Phone: (701) 258-9720

Weather	Conditions	•	Temp:	: 21	°F	Wind:	W15			Precip	: Sunny //Pa	artiv C	loudy / Clo	udv
		Well Inf	ormation						Sa	· · · · · · · · · · · · · · · · · · ·	nformation	urtiy O	loudy / Cio	udy
W	ell Locked?	Ves	No]	Purai	ing Method:		dder	Indination			
	ell Labeled?		No			1		ing Method:		dder	- I		ntrol Setting	
	ng Straight?	 ___	No					ted Equip?:		Mø.		ourge:	26	sec
	Seal Intact?	 	No	Not '	Visible	1		Sample?:	Yes	No	Red	cover:		sec
Repairs N			<u> </u>	1 (<i></i>			Sample ID:	162			PSI:	1 200	
	Casing	g Diameter:		2"			Варновто	Cample ID.	<u> </u>] [Pump	oing Ra	ate: 200/	mL/mi
Wat	er Level Be	T	-	105.0	5 ft		F	ourge Date:	1FC6	17	Time Purging Be	agan:	102//	
		Well Depth:		116-19	2 ft			urged Dry?	 	/ / No	Time Purged		1024	am/pr
		ell Volume:		160916	liters			ample Date:	, <u> </u>	1	Time of Samp		1309	9 am/pr
	Depth to To	p of Pump:	1	11,33	ft			mpio Dato.	CIULI	/	Time or camp	omig.	150 [am/pr
Wa	ter Level Afl	ter Sample:	,	11.33	ft		Bottle	CCR: 1L F	aw, 500mL	Nitric 4-11	Nitric		- MEASURE	
	Measureme	nt Method:	Electric	Water Level	Indicator		List:		, 0001112	741d10, 4 1L	Titalo			
		,,,,,,				· 	_	1					<u> </u>	
Ct-L:	lization	Temp	Snoo	Т		Measure			-	<u>,</u>				
i	secutive)	(°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity	1	mL D	<u> </u>	Discription:			
SEQ#	Time	(0)	±5%	±0.1	±10%	±20 mV	(NTU) ±10%	0.25 ft	Removed		r, Color, Odor, Ect			
1	1829	473	5362	642	6.02	83.7	194	106,98	\$1000	Tush:	oartly cloudy, cloudy <i>I</i>	/		
2	1039	512	5037	637	5.54	187.4	158	109.72		Tolb	\			
3	1949	5,73	5231	6,37	4.79	8811	119	110.83	2000	Tarki				
4	11059	5066	5487	6.50	3.63	88.9	7/7	11,7053	2000	Tursi				
5								111111111111111111111111111111111111111		1000				
6												$\overline{}$		
7														
8	122:	-/2							V57					
9	1334	1600		0/5/	nin			164.5 T) 		1			
10	1339	4,64	6231	6,78	7.08	42,5	832	106.43	500	1116	50		M	
Stabilized:		(No		_		To	otal Volume	Removed:	14,000	mL 7000	>			
Comments	5 :		,		•				a pad					
		Had.	to coll	lect Sa	myes no	Y enov	ul mat	ch to a	allect +	'Ó'				
					_ ,	, 0 -	JVC V - 50	5	tablize,					
									,					



Groundwater Assessment

Company:	OTP Coyote	•	
Event:	2017		
Sample ID:	· Blue 14		
Sampling Pore	onal: 0 - 11 -	10-	_

Phone: (701) 258-9720

1 110/10: (101) 200 0	7120					_							
Weather Conditions:		Temp:	· °F	Wind:/	VW 2	0		Precip	: <i>(</i>	Sunny	Y Partly C	Cloudy / Clo	ıdy
	Well Infe	ormation			•			Sampling I	nform	nation	/		
Well Locked?	<u>Ye</u> s	NØ.			Purgii	ng Method:		adder				ntrol Setting	3
Well Labeled?	Yes	No			Samplii	ng Method:	BI	adder	1		Purge:	50	sec.
Casing Straight?	Xes	No			Dedicat	ed Equip?:	Yes	NO	1		Recover:	y	sec.
Grout Seal Intact?	Yes	No	NotVisible		Duplicate	Sample?:	Yes	Nô	1		PSI:		
Repairs Necessary:					Duplicate:	Sample ID:			1	Pi	umping R	ate: /00	mL/min
Casing	Diameter:		2"						_			<u>(</u>	
Water Level Befo	ore Purge:		\$4080,22 ft		F	urge Date:	1 Fe	617	Time	Purging	Began:	1120	am/pm
Total W	Vell Depth:		87,00 ft		Well P	urged Dry?	Yes	No	Ti	me Pur	ged Dry:		am/pm
We	ell Volume:		4,2 liters		Sa	mple Date:	1 /= e.	617	Tir	ne of Sa	ampling:	1.310	am/pm
Depth to Top	o of Pump:		84,07 ft							*******		-	
Water Level Afte	er Sample:		82,33 ft		Bottle	CCR: 1L R	aw, 500m	L Nitric, 4-1L	Nitric				
Measuremen	nt Method:	Electric '	Water Level Indicator		List:								

Field Measurements

						mousuic				
Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1125	6.49	5287	6,63	4,51	119	445	80,51	500	Con Blightly trust
2	1140	7,49	532(6.65	2,50	-7.4	40.3	80.88	1000	ST ST
3	1155	7.92	5401	6.65	1,58	1-6.4	36,7	80.98	1500	ctor ST
4	1211)	7,61	5421	6,65	1,55	一3.2	27,0	81,09	1500	da ST
5	1225	770	5399	6,64	1,48	-2,9	18,5	81.38	1500	de ST
6	12-40	7.87	5342	6,69	1.30	-5.9	9,75	81.50	1500	Chen ST
7	1255	8013	5303	6.63	1.30	-8,2	6,38	81.49	1500	de (T
8	1380	8.08	5307	6,65	1,21	-8,8	5,38	81,54	500	Cle ST
9	1305	8,13	3304	6,604.	1.27	- 10.1	5.02	81,62	500	Sta ST
10	1310	8,09	5301	6.69.64	1.27	-10,9	5,04	81,65	500	d 51
Stabilized:	(Yes)	No	-	•		To	otal Volume	Removed:	11,000	mL
			•							

Comments:

that that trouble with pump during sampling. Pulled the pump chansed blatter and tubbing still didn't work. I think it was the sand in the well clogging up the check ball.



Groundwater Assessment

Company:	OTP Co	yote	
Event:	2017		
Sample ID:	Blue 14		
O 15 D	, ,	1/	

Phone: (701) 258-9720

Weather Conditions:		Temp:	4	°F	Wind:	wll			Precip): Suni	ny)/ Partly C	loudy / Clo	udv
,	Well Info	rmation						Sa	ampling	Information	7		
Well Locked?	Yes	Nø				Pur	ging Method:		dder		·	ntrol Settino	ıs
Well Labeled?	Yes	No				Sam	pling Method:	Blac	dder	1	Purge:	6	sec.
Casing Straight?	Yes	No		20		Dedic	cated Equip?:	Yes	NO	1	Recover:	54	sec.
Grout Seal Intact?	Yes	No	/Not \	/isible		Duplica	ite Sample?:	Yes	No	1	PSI:		
Repairs Necessary:						Duplicat	e Sample ID:	_		1	Pumping Ra	ate: / D A	mL/min
Casing	Diameter:		2"					*.i	***************************************	4	<u> </u>	()	
Water Level Befo	ore Purge:	8	50,09	ft			Purge Date:	2 Febl	017	Time Purg	ing Began: /	P)935	am/pm
Total W	/ell Depth:	Š	7000	ft		Well	Purged Dry?		No	Time F	urged Dry:		am/pm
We	II Volume:		4.3	liters			Sample Date:	2 Febr	17		Sampling:	111.5	(apri/pm
Depth to Top	of Pump:	8	4,38	ft					M				<u> </u>
Water Level Afte	er Sample:	8	3a34	ft		Bottle	CCR: 1L R	aw, 500mL	Nitric, 4-1L	Nitric			
Measuremen	t Method:	Electric \	Nater Level	Indicator		List:							
,				Field I	Measure	ments							

		·								
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1		6,09	5214	6,93	9.03	19,2	71000	80,88	500	Twoid
2	A11010	7.68	5295	6,75	7.63	34.1	409	81,19	3000	TWIN
3	1040	0,19	5323	6.59	7.48	56.8	59.4	81.88	3000	Stightly to be a Oleo
-4	1050	8.70	5353	6,56	4,64	44.8	74.7	82.10	1000	ST Stear ST
5	1055	7.79	5339	6.55	4.46	42,1	76.0	82:35	500	ST Class ST
6	1100	7,93	537.a	K- F46.54	14.32	39.1	753	82.44	500	FF Fla ST
7	1105	7,99	5337	6.5 4	3.87	35.5	71.57	K2,58	500	ST THEN ST
8	1710	7,81	5330	4,54	3,78	32,4	70.1	82.63	500	ST SEW ST
9	1115	7,70	5326	1,54	3.50	22.8	68,3	82069	500	STR about ST
1.0				O						
	-/\								16 6 0	

Stabilized: Tes No

Comments: Washt working this Moraning so sharped tusing and worked, On 1Feb17 had the well stablized and equipment quiet working, the sand in the well stopped the check ball then I also changed tubing,



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	01,016	

Phone: (701) 258-9720

			,							<u> </u>		
Weather Conditions:		Temp:	(G °F	Wind:	ws			Precip:	Sunr	ny)/ Partly C	Cloudy / Clo	oudv
	Well Info	rmation					S	ampling l	//		-	
Well Locked?	Y/es)	No			Purg	ing Method:		dder			ntrol Setting	ne e
Well Labeled?	Xes	No				ing Method:		dder		Purge:	E4	sec.
Casing Straight?	Yes	No				ted Equip?:	Yes	(Ne)		Recover:	56	sec.
Grout Seal Intact?	Yes	No	Not Visible			e Sample?:	Yes	NO		PSI:		300.
Repairs Necessary:			,		Duplicate	Sample ID:				Pumping R		mL/min
Casing	Diameter:		2"			· · · · · · · · · · · · · · · · · · ·			i	T GAMPING TO	atc.700	11112/111181
Water Level Befo	ore Purge:	7	9.61	ft		Purge Date:	2 Feb	17	Time Purg	ing Began:	1700	am/pm
Total W	/ell Depth:	8	7,90	ft		urged Dry?	Yes	Noi		urged Dry:	100	am/pm
We	ell Volume:		5.1	liters		ample Date:	2506			Sampling:	1745	am/pm
Depth to Top	of Pump:	830	79	ft							<u>د ۲</u> ۲ ۲ ۲	atti/puri
Water Level Afte	er Sample:	80	2.68	ft	Bottle	CCR: 1L R	aw. 500mL	Nitric, 4-1L	Nitric		——————————————————————————————————————	
Measuremen	t Method:	-	Water Level Indica	itor	List:				14410		· · · · · · · · · · · · · · · · · · ·	
				Cald Ba		<u> </u>						

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1705	6.96	3603	6.60	5.51	8.8	86.9	80068	500	Slightly Twois
2	1725	8.59	3428	6153	1084	3,2	10,4	80,68	2000	Chi -
3	1730	869	2421	6,56	0,89	3,5	7,99	80.68	500	
4	1735	8.46	2420	6,5-3	0185	3.8	7.50	80,68	500	a de la companya della companya della companya de la companya della
5	1740	8:47	3420	6,53	0.83	3/8	7.93	80.68	500	cu
6	1740	8,47	3417	6.53	0.80	4.7	7724	80.68	500	el-
7			, , , , , , , , , , , , , , , , , , , ,				1,61	0000		
8										
9										
10										
Ot-1 ::: 1	1 1	AT -								

Stabilized: Yes No
Comments:

Total Volume Removed: <u>4500</u> mL



Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**

Event: 2017

Sample ID:

Darren Nieswaas Sampling Personal:

Weather Conditions: Temp: Wind: Precip: \$unny Partly Cloudy / Cloudy Well Information Sampling Information Well Locked? Yes No Purging Method: Bladder Control Settings Yes Well Labeled? No Sampling Method: Bladder Purge: sec. Yes Casing Straight? No Dedicated Equip?: Yes 56 Recover: sec. Grout Seal Intact? Yes **Not Visible**∕ No Duplicate Sample?: Yes No PSI: Repairs Necessary: Duplicate Sample ID: Pumping Rate: 100 mL/min Casing Diameter: 2" Water Level Before Purge: Purge Date: 2 Time Purging Began: Feb. am/pm Total Well Depth: Well Purged Dry? No Time Purged Dry: Yesam/pm Well Volume: Sample Date: 2 Feb / 7 Time of Sampling: liters 1603 am/pm Depth to Top of Pump: ft Water Level After Sample: Bottle CCR: 1L Raw, 500mL Nitric, 4-1L Nitric List: Measurement Method: **Electric Water Level Indicator**

Field Measurements

						incasa c	11101110			
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1448	7,70	2916	6.51	3,81	4.9	71060	79.90	500	Twoid
2	1508	8054	2939	6,47	1,22	1001	707	79.93	2000	Torbid
3	1538	8.89	2959	6.45	0,90	13,9	103	19.93	3000	Fut Sizhell-trod
4	1553	8.85	295 k	6,46	0,83	138	99.7	979.93	1500	ST
5	1558	8,80	2958	1.47	0.85	13,6	97.8	79.93	<u> </u>	(7
6	1603	8:68	29.56	6,47	0.85	13.7	91,7	79,93		ST
7										
8										
9										
10										
Stabilized:	Yes	No				To	otal Volume	Removed:	8.000	mL

Comments:

Total Volume Removed: 5,000



Chain of Custody Record

Projec	t Name:							Name	of Sar	mpler(s):			
	OTP Coyote	CCR	Blu	ue .	2017			6)a//	in Ni	15~6	as	
Report To: attn: address:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0	0496	Carbon C Attn: Address:		OTP Josh Hollen			1000		Number:	026	/	
mail:	pvukonich@otpco.com	le Informat	Email:		jhollen@otpco.co	<u>om</u>	-	ttle Typ		-	-I-I D	ameters	4
Lab Number	Sample ID	Date	Time	Sample Type		500 ml His	17			Field Temperature °C	Field Spec. Cond.	Field pH	Analysis Analysis Required
Na59	Field Blank (FB)	2 Feb 17	NA	w		X	X			NA	NA	NA	, mayora Kaqanaa
Nabo	Blue 6	2 Feb 17	1230	GW	Slightly cloudy	X	X			6.13	2641	6.53	
Nabl	Blue 7/MS7/MSD7	1Feb17	1635	GW	Slightly cloudy	3	3			7.42	2657	6,65	OTD CCD List
Naba	Blue 13	2 Feb17	1339	GW	cloudy	X	X			4.64	6231	6,78	OTP CCR List. No RadChem.
Nala3	Blue 14	2Feb17	1115	GW	5 lightly clocky	X	X			7,70	5326		*
Na64	Blue 15	2F417	1745	GW	clear	Х	X			8.47	6.53		6,53
Nalis	Blue 16	2Feb17	1603	GW	Slightly cloudy	X	X			8,68	295.6	6.47	

	Transferred by:	Sample Condition	Date/Time	A Received by:	Sample Condition	Date/Time	° C
1	Dan Vin	walkinz	2 Feb 17 2024	(Inall smonns	7	03 PER N	- ROJ 1.1
2				0- 9 - 0			-TM588
3							- 2Feb 17





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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-0465

Client: Ottertail Power Company

Location: **Coyote Station** Project Identification: **CCR Blue Pit Event & Year** Feb 2017

MVTL Laboratory Identifications: 17-W552 through 17-W558

Page 1 of 2

Sample Identification	MVTL Laboratory #
Field Blank (FB)	17-W552
Blue 6	17-W553
Blue 7	17-W554
Blue 13	17-W555
Blue 14	17-W556
Blue 15	17-W557
Blue 16	17-W558

l. RECEIPT

- All samples were received at the laboratory on 1Mar 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 0.4°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

HOLDING TIMES II.

With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

METHODS 111.

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-0465

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

Feb 2017

MVTL Laboratory Identifications:

17-W552 through 17-W558

Page 2 of 2

SIGNED:

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.

- For some analytes, the reported results were elevated due to instrument performance at the lower limit of quantitation (LLOQ).
- For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.
- Recovery for one selenium total matrix spike duplicate was outside of the acceptable limits.
 Recovery of the matrix spike was acceptable.
 RPD for the recoveries of the matrix spike/matrix spike duplicate was acceptable.
 No further action was taken.
- Recovery for one manganese dissolved matrix spike was outside of the acceptable limits.
 Recovery of the matrix spike duplicate was acceptable. RPD for the recoveries of the matrix spike/matrix spike duplicate was acceptable. No further action was taken.

DATE:

ZIMariT

All laboratory data has been approved by MVTL Laboratories.

Claudette Carroll - MVTL Bismarck Laboratory Manager

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Page: 1 of 4

Quality Control Report
Lab IDs: 17-W552 to 17-W558

Lab IDs: 17-W552 to 17-W			oject: OT	I Coyott	Diac i it		SUSSIGNATION OF THE SUSSION OF		782-046		nosti i mano mano mano mano mano mano mano mano	75 (5 H) H (6 H) 6 H (7 H) 7 H	I missources a succession of	no e como	AUSTRALISM CONTRACTOR	felfastetensmannsværetragg	Lateras was marked mind minds
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	105	80-120	0.400 0.400	17W554q 17W573q	< 0.001 < 0.001	0.4142 0.4210	104 105	75-125 75-125	0.4142 0.4210	0.4166 0.4290	104 107	0.6 1.9	20 20	-	-	< 0.001
Arsenic - Dissolved mg/l	0.1000	104	80-120	0.100 0.100	17W496q 17W554q	< 0.002 < 0.002	0.1092 0.0977	109 98	75-125 75-125	0.1092 0.0977	0.1086 0.1076	109 108	0.6 9.6	20 20	-	-	< 0.002
Arsenic - Total mg/l	0.1000	99	80-120	0.400 0.400	17W554q 17W573q	< 0.002 < 0.002	0.4162 0.4246	104 106	75-125 75-125	0.4162 0.4246	0.4238 0.4416	106 110	1.8 3.9	20 20	-	-	< 0.002
Barium - Dissolved mg/l	0.1000	104	80-120	0.100 0.100	17W496q 17W554q	< 0.002 0.0309	0.1099 0.1243	110 93	75-125 75-125	0.1099 0.1243	0.1106 0.1290	111 98	0.6 3.7	20 20	, 	-	< 0.002
Barium - Total mg/l	0.1000	97	80-120	0.400 0.400	17W554q 17W573q	0.0395 0.0289	0.4274 0.4376	97 102	75-125 75-125	0.4274 0.4376	0.4360 0.4456	99 104	2.0 1.8	20 20	-	-	< 0.002
Beryllium - Total mg/l	0.1000	96	80-120	0.400 0.400	17W554q 17W573q	< 0.0005 < 0.0005	0.4158 0.4184	104 105	75-125 75-125	0.4158 0.4184	0.4096 0.4346	102 109	1.5 3.8	20 20	-	-	< 0.000.
Boron - Dissolved mg/l	0.40	108	80-120	0.300 0.300	17-W554 17-W606	0.38 0.49	0.70 0.76	107 90	75-125 75-125	0.70 0.76	0.70 0.72	107 77	0.0 5.4	20 20	-	-	< 0.1 < 0.1 < 0.1
Boron - Total mg/l	0.40	105	80-120	0.400	17-W554	0.38	0.76	95	75-125	0.76	0.78	100	2.6	20	_	-	< 0.1 < 0.1
Cadmium - Dissolved mg/l	0.1000	109	80-120	0.100 0.100	17W496q 17W554q	< 0.0005 < 0.0005		115 92	75-125 75-125	0.1149 0.0920	0.1126 0.1038	113 104	2.0 12.1	20 20	-	-	< 0.000
Cadmium - Total mg/l	0.1000	108	80-120	0.400 0.400	17W554q 17W573q	< 0.0005 0.0006	0.4218 0.4182	105 104	75-125 75-125	0.4218 0.4182	0.4126 0.4386	103 110	2.2 4.8	20 20	-	-	< 0.000
Calcium - Total mg/l	20.0 20.0	107 105	80-120 80-120	100 500	17-W554 17W576q	156 520	253 1020	97 100	75-125 75-125	253 1020	254 1060	98 108	0.4 3.8	20 20	- - - -	- - -	< 1 < 1 < 1 < 1
Chloride mg/l	30.0 30.0 30.0	89 89 90	80-120 80-120 80-120	30.0 30.0 30.0	17-W554 17-W555 17-W568	7.0 32.0 68.4	33.8 63.7 99.3	89 106 103	80-120 80-120 80-120	33.8 63.7 99.3	32.4 64.8 97.5	85 109 97	4.2 1.7 1.8	20 20 20			< 1 < 1 < 1

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Quality Control Report

Lab IDs: 17-W552 to 17-W5	800	Pr	oject: OI	P Coyote	-Blue Pit		Work Or	der: 201	782-0463	5							
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Chromium - Dissolved mg/l	0.1000	97	80-120	0.100 0.100	17W496q 17W554q	< 0.002 < 0.002	0.1020 0.0865	102 86	75-125 75-125	0.1020 0.0865	0.1000 0.0932	100 93	2.0 7.5	20 20	-	-	< 0.002
Chromium - Total mg/l	0.1000	93	80-120	0.400 0.400	17W554q 17W573q	< 0.002 0.0041	0.3700 0.3876	92 96	75-125 75-125	0.3700 0.3876	0.3760 0.3934	94 97	1.6 1.5	20 20	-	- 1	< 0.002
Cobalt - Total mg/l	0.1000	93	80-120	0.400 0.400	17W554q 17W573q	< 0.002 0.0055	0.3748 0.3894	94 96	75-125 75-125	0.3748 0.3894	0.3786 0.3976	95 98	1.0 2.1	20 20	_	-	< 0.002
Conductivity (EC) umhos/cm	-	-	-	-	-	-	-	-	-	5307 1	5290 1	-	0.3	20 20	-	-	-
Fluoride mg/l	0.50 0.50	106 110	90-110 90-110	0.500 0.500	17-W555 17-W573	0.27 0.29	0.81 0.72	108 86	80-120 80-120	0.81 0.72	0.81 0.77	108 96	0.0 6.7	20 20	-	-	< 0.1 < 0.1 < 0.1 < 0.1
Iron - Dissolved mg/l	0.40	108	80-120	1.00	17W554q	0.40	1.34	94	75-125	1.34	1.33	93	0.7	20	-	-	< 0.1
Lead - Dissolved mg/l	0.1000	104	80-120	0.100 0.100	17W496q 17W554q	< 0.0005 < 0.0005	0.1128 0.0845	113 84	75-125 75-125	0.1128 0.0845	0.1125 0.0938	112 94	0.3 10.4	20 20	-	-	< 0.0005
Lead - Total mg/l	0.1000	97	80-120	0.400 0.400	17W554q 17W573q	< 0.0005 0.0011	0.3660 0.3640	92 91	75-125 75-125	0.3660 0.3640	0.3626 0.3734	91 93	0.9	20 20	-	-	< 0.0005
Lithium - Total mg/l	0.40 0.40	102 100	80-120 80-120	0.400	17-W554	0.10	0.58	120	75-125	0.58	0.57	118	1.7	20	- - -	-	< 0.1 < 0.1 < 0.1
Magnesium - Total mg/l	20.0 20.0	108 108	80-120 80-120	100 500	17-W554 17W576q	93.1 450	196 950	103 100	75-125 75-125	196 950	198 985	105 107	1.0 3.6	20 20	-	-	<1 <1 <1 <1
Manganese - Dissolved mg/l	0.40	110	80-120	1.00	17W554q	0.28	1.26	98	75-125	1.26	1.20	92	4.9	20		-	< 0.05 < 0.05

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Quality Control Report
Lab IDs: 17-W552 to 17-W558

Lab IDs: 17-W552 to 17-W5	58	Pr	oject: OT	P Coyote	e-Blue Pit		Work Or	der: 201	782-046	5							
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Manganese - Dissolved mg/l	0.1000	97	80-120	0.100 0.100	17W496q 17W554q	< 0.001 0.2796	0.1020 0.4235	102 144	75-125 75-125	0.1020 0.4235	0.0999 0.3884	100 109	2.1	20 20	_	-	< 0.001
Mercury - Dissolved mg/l	0.0020	100	85-115	0.002	17-W554	< 0.0002	0.0019	95	70-130	0.0019	0.0019	95	0.0	20	-	_	< 0.0002
Mercury - Total mg/l	0.0020	105	85-115	0.002 0.002	17-W554 17-W558	< 0.0002 < 0.0002		100 90	70-130 70-130	0.0020 0.0018	0.0020 0.0019	100 95	0.0	20 20		-	< 0.0002
Molybdenum - Dissolved mg/l	0.1000	109	80-120	0.200 0.100 0.100	17-W422Q 17W496q 17W554q	< 0.004 < 0.002 < 0.002	0.2051 0.1158 0.0936	103 116 94	75-125 75-125 75-125	0.2051 0.1158 0.0936	0.2118 0.1134 0.1054	106 113 105	3.2 2.1 11.9	20 20 20	-	- -	< 0.002
Molybdenum - Total mg/l	0.1000 0.1000	92 87	80-120 80-120	0.400 0.400 0.400 0.400	17W554q 17W573q 17-W490 17-W573	< 0.002 0.0034 0.0025 0.0030	0.4142 0.4362 0.3818 0.3966	104 108 95 98	75-125 75-125 75-125 75-125	0.4142 0.4362 0.3818 0.3966	0.4228 0.4504 0.3892 0.4024	106 112 97 100	2.1 3.2 1.9 1.5	20 20 20 20 20	-	-	< 0.002 < 0.002
Nitrate-Nitrite as N mg/l	0.50 0.50	106 108	90-110 90-110	1.00 1.00	17-W430 17-W554	1.19 < 0.1	2.26 0.95	107 95	90-110 90-110	2.26 0.95	2.21 0.95	102 95	2.2	20 20	-	-	< 0.1 < 0.1
pH units	-	-	-	-	-	-		-	-	6.1 7.0	6.0 7.1	-	1.7	20 20	-	-	-
Phosphorus as P - Total mg/l	0.50	96	90-110	1.00 1.00 1.00	17-D615 17-W554 17-W568	8.47 0.05 0.51	9.46 1.11 1.57	99 106 106	90-110 90-110 90-110	9.46 1.11 1.57	9.52 1.05 1.53	105 100 102	0.6 5.6 2.6	20 20 20	-	-	< 0.1
Potassium - Total mg/l	10.0 10.0	98 97	80-120 80-120	20.0 100	17-W554 17W576q	11.0 14.2	32.8 114	109 100	75-125 75-125	32.8 114	33.3 120	112 106	1.5 5.1	20 20	-	-	< 1 < 1 < 1
Selenium - Dissolved mg/l	0.1000	118	80-120	0.200 0.100 0.100	17-W422Q 17W496q 17W554q	0.1300 < 0.005 < 0	0.3706 0.1239 0.1090	120 124 109	75-125 75-125 75-125	0.3706 0.1239 0.1090	0.3659 0.1170 0.1173	118 117 117	1.3 5.7 7.3	20 20 20	- - -		< 0.002

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Page: 4 of 4

Quality Control Report Lab IDs: 17-W552 to 17-W558

Lab IDs: 17-W552 to 17-W558 Project: OTP Coyote-Blue Pit Work Order: 201782-0465

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	der: 201 Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Selenium - Total mg/l	0.1000	105	80-120	0.400 0.400	17W554q 17W573q	< 0.002 0.0641	0.4600 0.5422	115 120	75-125 75-125	0.4600 0.5422	0.4536 0.5662	113 126	1.4 4.3	20 20	-	-	< 0.002
Silver - Dissolved mg/l	0.1000	109	80-120	0.100 0.100	17W496q 17W554q	< 0.0005 < 0.0005	0.1139 0.0803	114 80	75-125 75-125	0.1078 0.1139 0.0803	0.1072 0.1123 0.0904	106 112 90	0.6 1.4 11.8	20 20 20		-	< 0.0005
Sodium - Total mg/l	20.0 20.0	105 104	80-120 80-120	100 500	17-W554 17W576q	393 277	470 775	77 100	75-125 75-125	470 775	474 805	81 106	0.8 3.8	20 20	- - -	-	<1 <1 <1 <1
Sulfate mg/l	100 100 100 100	91 105 103 99	80-120 80-120 80-120 80-120	100 1000 1000	17-W496 17-W554 17-D736	< 5 750 984	92.4 1660 1880	92 91 90	80-120 80-120 80-120	92.4 1660 1880	104 1630 1890	104 88 91	11.8 1.8 0.5	20 20 20	- - -	- - -	< 5 < 5 < 5 < 5
Thallium - Total mg/l	0.1000	97	80-120	0.400 0.400	17W554q 17W573q	< 0.0005 < 0.0005	0.3750 0.3708	94 93	75-125 75-125	0.3750 0.3708	0.3752 0.3808	94 95	0.1 2.7	20 20	-	-	< 0.0005
Total Alkalinity mg/l CaCO3	410	92	90-110	410 410	17-W554 17-W557	603 798	990 1174	94 92	80-120 80-120	990 1174	981 1176	92 92	0.9	20 20	94	80-120	< 20 < 20
Total Dissolved Solids mg/l		-	-	-	_	_	-	-	-	2150	2120	-	1.4	20	-	_	< 10

Approved by:	< autl
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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: FB Blue

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 17 Mar 17 Lab Number: 17-W552 Work Order #:82-0465 Account #: 006106

Date Sampled: 28 Feb 17 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyze	ed		Analyst
Metal Digestion	ALC: TOTAL			EPA 200.2	1	Mar	17	h siziri	svs
pH	* 6.2	units	0.1	SM4500 H+ B	1	Mar	17	17:00	svs
Field Appearance	Clear		NA	SM 2110	28	Feb	17		DJN
Fluoride	< 0.1	mg/1	0.10	SM4500-F-C	1	Mar	17	17:00	SVS
Sulfate	< 5	mg/1	5.00	ASTM D516-07	3	Mar	17	13:26	EMS
Chloride	< 1	mg/l	1.0	SM4500-C1-E	2	Mar	17	9:28	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	3	Mar	17	12:09	EV
Total Dissolved Solids	< 10	mg/1	10	I1750-85	1	Mar	17	14:09	SVS
Calcium - Total	< 1	mg/l	1.0	6010	7	Mar	17	14:26	KMD
Lithium - Total	< 0.1	mg/1	0.10	6010	10	Mar	17	13:13	KMD
Boron - Total	< 0.1	mg/1	0.10	6010	9	Mar	17	13:37	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	8	Mar	17	9:30	KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Barium - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Selenium - Total	< 0.01 ^	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Thallium - Total	< 0.0005	mg/l	0,0005	6020	8	Mar	17	9:30	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Canto DIMA, 17

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

= Due to concentration of other analytes
+ = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 6

Event and Year: Feb 2017

Page: 1 of 5

Report Date: 17 Mar 17 Lab Number: 17-W553 Work Order #:82-0465 Account #: 006106

Date Sampled: 27 Feb 17 17:20 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receiv Result	ed	Method RL	Method Reference	Da An	te alyz	ed		Analyst
Metal Digestion	77 77		1.0	EPA 200.2	1.	Mar	17	144	SVS
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	27	Feb	17	17:20	DJN
рн	* 6.9	units	0.1	SM4500 H+ B	1	Mar	17	17:00	SVS
Field Appearance	Cloudy		NA	SM 2110	27	Feb	17	17:20	DJN
Field Temperature	8.20	Degrees C	0.1	SM 2550B	27	Feb	17	17:20	DJN
Field Conductivity	2656	umhos/cm	1	EPA 120.1	27	Feb	17	17:20	DJN
Fluoride	0.19	mg/1	0.10	SM4500-F-C	1	Mar	17	17:00	SVS
Sulfate	1070	mg/1	5.00	ASTM D516-07	3	Mar	17	13:26	EMS
Chloride	7.5	mg/1	1.0	SM4500-C1-E	2	Mar	17	9:28	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	3	Mar	17	12:09	EV
Total Dissolved Solids	1980	mg/l	1.0	11750-85	1	Mar	17	14:09	SVS
Calcium - Total	213	mg/1	1.0	6010	7	Mar	17	14:26	KMD
Lithium - Total	0.13	mg/l	0.10	6010	10	Mar	17	13:13	KMD
Boron - Total	0.45	mg/l	0.10	6010	9	Mar	17	13:37	KMD
Antimony - Total	< 0.001	mg/l	0,0010	6020	8	Mar	17	9:30	KMD
Arsenic - Total	0.0096	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Barium - Total	0.1511	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Beryllium - Total	0.0007	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Cadmium - Total	0.0009	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Chromium - Total	0.0316	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Cobalt - Total	0.0138	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Lead - Total	0,0169	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Selenium - Total	< 0.01 ^	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Cantep

DIMAIN

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:

= Due to sample matrix # = Due to conduct to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 7

Event and Year: Feb 2017

2 of 5 Page:

Report Date: 17 Mar 17 Lab Number: 17-W554 Work Order #:82-0465 Account #: 006106

Date Sampled: 27 Feb 17 13:35 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receiv	ed	Method RL	Method Reference		te alyz	ed		Analyst	
Metal Digestion		True I	-171	EPA 200.2		Mar		dir.ect	svs	-
Field pH	6.77	B.u.	0.1	SM 4500 H+ B				13:35	DJN	
pH	* 7.1	units	0.1	SM4500 H+ B	1	Mar	17	17:00	SVS	
Field Appearance	Clear		NA	SM 2110	27	Feb	17	13:35	DJN	
Field Temperature	7.30	Degrees C	0.1	SM 2550B	27	Feb	17	13:35	DJN	
Field Conductivity	2626	umhos/cm	1	EPA 120.1	27	-	1000	13:35	DJN	
Fluoride	0.23	mg/l	0.10	SM4500-F-C	1	Mar	17	17:00	SVS	
Sulfate	750	mg/1	5.00	ASTM D516-07	3	Mar	17	14:20	EMS	
Chloride	7.0	mg/l	1.0	SM4500-C1-E	2	Mar	17	9:28	EMS	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	3	Mar	17	12:09	EV	
Total Dissolved Solids	1850	mg/1	10	I1750-85	1	Mar	17	14:09	svs	
Calcium - Total	156	mg/1	1.0	6010	7	Mar	17	14:26	KMD	
Lithium - Total	0.10	mg/l	0.10	6010	10	Mar	17	13:13	KMD	
Boron - Total	0.38	mg/l	0.10	6010	9	Mar	17	13:37	KMD	
Antimony - Total	< 0.001	mg/l	0.0010	6020	8	Mar	17	9:30	KMD	
Arsenic - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Barium - Total	0.0395	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	В	Mar	17	9:30	KMD	
Chromium - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Cobalt - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Lead - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD	
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD	
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Thallium - Total	< 0.0005	mg/l	0.0005	6020	В	Mar	17	9:30	KMD	

^{*} Holding time exceeded

Approved by:

Clauditte K. Cantlo

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:

© = Due to sample matrix # = Due to con

! = Due to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 13

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 17 Mar 17 Lab Number: 17-W555 Work Order #:82-0465 Account #: 006106

Date Sampled: 28 Feb 17 10:15 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receive Result	ed	Method RL	Method Reference	Da! Ana	e alyze	ed		Analyst
Metal Digestion	100		10 V	EPA 200.2		Mar		Je 1/3	svs
Field pH	6.80	s.u.	0.1	SM 4500 H+ B	and the same of			10:15	DJN
pH	* 7.2	units	0.1	SM4500 H+ B	1			17:00	svs
Field Appearance	Partly Cle	oudy	NA	SM 2110	28	Feb	17	10:15	DJN
Field Temperature	4.43	Degrees C	0.1	SM 2550B	28	Feb	17	10:15	DJN
Field Conductivity	5574	umhos/cm	1	EPA 120.1	28	Feb	17	10:15	DJN
Fluoride	0.27	mg/1	0.10	SM4500-F-C	1			17:00	svs
Sulfate	1990	mg/1	5.00	ASTM D516-07	3	Mar	17	14:20	EMS
Chloride	32.0	mg/1	1.0	SM4500-C1-E	2	Mar	17	10:31	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	-	E (4.50.00)		12:09	EV
Total Dissolved Solids	4730	mg/l	10	I1750-85	1	Mar	17	14:09	SVS
Calcium - Total	232	mg/1	1.0	6010	7	Mar	17	14:26	KMD
Lithium - Total	0.26	mg/1	0.10	6010	10	Mar	17	13:13	KMD
Boron - Total	0.52	mg/1	0.10	6010	9	Mar	17	13:37	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	8	Mar	17	9:30	KMD
Arsenic - Total	0.0041	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Barium - Total	0.0360	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Chromium - Total	0.0044	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Lead - Total	0.0037	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	14:20	KMD
Selenium - Total	< 0.01 ^	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD

High percent error is most likely due to the sediment present in the sample.

Approved by:

Clauditte K. Cantep

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:

= Due to sample matrix # = Due to concentration of other analytes

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

^{*} Holding time exceeded

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 14

Event and Year: Feb 2017

Page: 1 of 1

Report Date: 17 Mar 17 Lab Number: 17-W556 Work Order #:82-0465 Account #: 006106

Date Sampled: 28 Feb 17 12:23 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receiv Result	ed	Method RL	Method Reference	Dat Ana	e alyze	d		Analys
Metal Digestion	21/1		mA Can	EPA 200.2	1	Mar	17		svs
Field pH	6.55	s.u.	0.1	SM 4500 H+ B	28	Feb	17 1	12:23	DJN
DH	* 7.0	units	0.1	SM4500 H+ B	1	Mar	17 1	17:00	svs
Field Appearance	Clear		NA	SM 2110	28	Feb	17 1	12:23	DJN
Field Temperature	7.07	Degrees C	0.1	SM 2550B	28	Feb	17 1	12:23	DJN
Field Conductivity	5320	umhos/cm	1	EPA 120.1	28	Feb	17 1	12:23	DJN
Fluoride	0.14	mg/1	0.10	SM4500-F-C	2	Mar	17 1	17:00	SVS
Sulfate	2210	mg/1	5.00	ASTM D516-07	17	Mar	17	8:46	EMS
Chloride	8.5	mg/1	1.0	SM4500-C1-E	2	Mar	17 1	LO:31	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	3	Mar	17 1	12:09	EV
Total Dissolved Solids	4170	mg/l	10	11750-85	1	Mar	17 1	14:09	SVS
Calcium - Total	302	mg/1	1.0	6010	7	Mar	17 1	15:26	KMD
Lithium - Total	< 0.2 @	mg/1	0.10	6010	10	Mar	17 1	13:13	KMD
Boron - Total	0.56	mg/1	0.10	6010	9	Mar	17 1	13:37	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	8	Mar	17	9:30	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Barium - Total	0.0433	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
lead - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17 1	14:20	KMD
Selenium - Total	< 0.01 ^	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Canteo

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:

= Due to sample matrix

! = Due to sample quantity

= Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 15

Event and Year: Feb 2017

Page: 4 of 5

Report Date: 17 Mar 17 Lab Number: 17-W557 Work Order #:82-0465 Account #: 006106

Date Sampled: 28 Feb 17 17:28 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyz	ed		Analyst	
Metal Digestion		3. 1		EPA 200.2	1	Mar	17	Earl Card	svs	_
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	28	Feb	17	17:28	DJN	
pH	* 7.0	units	0.1	SM4500 H+ B	1	Mar	17	17:00	svs	
Field Appearance	Clear		NA	SM 2110	28	Feb	17	17:28	DJN	
Field Temperature	6.70	Degrees C	0.1	SM 2550B	28	Feb	17	17:28	DJN	
Field Conductivity	3488	umhos/cm	1	EPA 120.1	28	Feb	17	17:28	DJN	
Fluoride	0.21	mg/1	0.10	SM4500-F-C	2	Mar	17	17:00	SVS	
Sulfate	1050	mg/1	5.00	ASTM D516-07	3	Mar	17	14:20	EMS	
Chloride	8.0	mg/l	1.0	SM4500-C1-E	2	Mar	17	10:31	EMS	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	3	Mar	17	12:09	EV	
Total Dissolved Solids	2450	mg/1	10	I1750-85	1	Mar	17	14:09	SVS	
Calcium - Total	134	mg/1	1.0	6010	7	Mar	17	15:26	KMD	
Lithium - Total	0.14	mg/l	0.10	6010	10	Mar	17	13:13	KMD	
Boron - Total	0.47	mg/l	0.10	6010	9	Mar	17	13:37	KMD	
Antimony - Total	< 0.001	mg/l	0.0010	6020	8	Mar	17	9:30	KMD	
Arsenic - Total	0.0123	mg/1	0.0020	6020	8	Mar	17	9:30	KMD	
Barium - Total	0.0349	mg/1	0.0020	6020	8	Mar	17	9:30	KMD	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD	
Chromium - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Cobalt - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD	
Lead - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD	
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	14:20	KMD	
Selenium - Total	< 0.01 *	mg/l	0.0020	6020	8	Mar	17	9:30	KMD	
Thallium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD	
				0.400						

^{*} Holding time exceeded

Approved by:

Claudette K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

Rt - Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below: 0 = Due to sample matrix H = Due to co : Due to sample quantity + = Due to in

- Due to concentration of other analytes
+ - Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 16

Event and Year: Feb 2017

5 of 5 Page:

Report Date: 17 Mar 17 Lab Number: 17-W558 Work Order #:82-0465 Account #: 006106

Date Sampled: 28 Feb 17 15:35 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.4C ROI

Metal Digestion Field pH	6,58	11.0							
Field pH	6,58			EPA 200.2	1	Mar	17		svs
13 2 2 3 1 7 NO 1 8 1 7		s.u.	0.1	SM 4500 H+ B		(0.000)	-	15:35	DJN
pH	* 7.0	units	0.1	SM4500 H+ B				17:00	svs
Field Appearance	Clear		NA	SM 2110				15:35	DJN
Field Temperature	5.87	Degrees C	0.1	SM 2550B	28	Feb	17	15:35	DJN
Field Conductivity	2968	umhos/cm	1	EPA 120.1	28	Feb	17	15:35	DJN
Fluoride	0.20	mg/l	0.10	SM4500-F-C	2	Mar	17	17:00	svs
Sulfate	1040	mg/1	5.00	ASTM D516-07	3	Mar	17	14:20	EMS
Chloride	10.1	mg/l	1.0	SM4500-C1-E	2	Mar	17	10:31	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	3	Mar	17	12:09	EV
Total Dissolved Solids	2150	mg/1	10	11750-85	1	Mar	17	14:09	SVS
Calcium - Total	175	mg/l	1.0	6010	7	Mar	17	15:26	KMD
Lithium - Total	0.12	mg/1	0.10	6010	10	Mar	17	13:13	KMD
Boron - Total	0.40	mg/l	0.10	6010	9	Mar	17	13:37	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	8	Mar	17	9:30	KMD
Arsenic - Total	0.0056	mg/1	0.0020	6020	.8	Mar	17	9:30	KMD
Barium - Total	0.0610	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	9:30	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	8	Mar	17	9:30	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	8	Mar	17	14:20	KMD
Selenium - Total	< 0.01 ^	mg/l	0.0020	6020	8	Mar	17	9:30	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	8	Mar	17	9:30	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Canteo

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:

= Due to sample matrix # = Due to continuous # = Due to in

= Due to concentration of other analytes + = Due to internal standard response

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



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Rline 6	

Phone: (701) 258-9720

Event:	2017	
Sample ID:	Rlue 6	
Sampling Pers	sonal: Dancen	Page

sec. sec.

am/pm am/pm am/pm

Weather (Conditions	s 1	Temp:	15	۴F	Wind:	NEIO			Precip:	Sunny / Partly	Cloudy / Ck	oudv
		Well Inf	ormation	<u>-</u>					Sa		nformation	-10ddy / 1010	- inner
W	ell Locked?	Yes	No]	Purgi	ng Method:		dder		ontrol Setting	~~
We	ell Labeled?	Yes	No					ng Method:		der	Purge:	Junor Semul	38
Casir	ng Straight?	Yes	No		-			ted Equip?:		MD)	Recover:		
Grout S	Seal Intact?	Yes	No	N6t)	/isibłè			Sample?:	Yes	√N ₀	PSI:		
Repairs N	ecessary:		~			1		Sample ID:	۵		<u> </u>	ı Rate∫STO Af-	, m
		g Diameter:		2"		1	•				I Li diliping i	CO CO STORE	-0"
Wat	er Level Be	fore Purge:		65.85	ft		F	Purge Date:	27 Fel	157	Time Purging Began:	1945	á
	Total \	Well Depth:			ft			urged Dry?		No	Time Purged Dry:	1870	(au
Well Volume: liters									2-72-0		Time of Sampling:	1720	
	Depth to To		L 0	108	ft	1	·		1 /	- i - i	<u> </u>	1120	
	ter Level Aff		1/ Maren	14,08	ft		Bottle	1L Raw. 50	00mL Nitric.	500mL Nitr	ic (filtered), 250mL Sul	firic	
1	Measureme	nt Method:	Electric	Water Level	Indicator	1	List:	4 - 1L Nitri			io (intorod); Zoomie od	1110	
					T-1-1-1	- 						***************************************	
Stabil	lization	Temp	Spec.		DO	Measure				,··		•	
	secutive)	(°C)	Cond.	рH	(mg/L)	ORP (mV)	Turbidity (NTU)	Water	mL	1	Discription: , Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	Removed		İ		
1	0950	UK40	2640	6,54	3.46	<u> </u>	39.7	67.30	750	clear, p	partly cloudy, cloudy		
2	1000	4,64	2649	6,55	1/18	841	34.0	69,00	1500	Cly			
3	1010	4,55	2654	655	1154	82,9	28 8	70,72	1500	Cla		,	
4	1015	3,93	2658	6.61	\$2.27	8512	2913	7108	750	a	-		
5	10:30	606	2645	6,56	3,03	7500	107	73,02	2250		otly tulis		
6	1040	5.65	2649	6,56	0.79	50,8	129	74,08	1500	Same of the same o			
7						V - 0							
8	1-15	1		- /									
10	1715		ed 277		for 5	min		66.63			,		
Stabilized:	7-2-30	18,20	2652	6,52	7.32	-40k	782-	6747	500	Tulb	K		
Comments		- NG	-			T	otal Volume	Removed:	8250	mL	· ~		
Comments	>. }	the in	Co -1-	. 4 1./ .	()	,		_			le, that		
	Min	rec / U	reausa,	s, the	- 96 - 11	re at	1015 6	teavoc i	ota son	m.11 h.	la that		
X		15 why	1 the it	Whity	1.5 high	ax 103	o, Itad	to no	1. A	000 (718)	it, Thou		
A -		,		/	7.7.1		•	, 0 ,,,,,,,	" The p	me to	×. X		
Μ	1.	when	50001		1	^		,					
Ĺ	V	T. 1. 1. 1.	word h		hose w	ray th	102 en	So had	(to s	nave po	one to Unthan	^	
		1011 0114	and Chief of	715h att	V Fract	₹ =		U.	· *	/	my to Unthan	r	25



Company:	OTP Coyote			
Event:	2017			
Sample ID:	1N018 22 -	Blad	7	

	L		Ground	dwater	Assessr	nent		Sample ID: ANAN ALL Black							
2616 E. Broadway Ave, Bis	smarck, ND							Sampling Pe	rsonal: 🔏	Dason,	Ar Cons	(
Phone: (701) 258-9	9720						_								
Weather Conditions:		Temp:	73 °F		Wind: /	d: NE 10 Precip: Sunny / Partly Cloudy 10							ı'dy)		
			,		Sampling Information										
Well Locked?	∠Yes)	No				Purging M	lethod:	Blad	der		Co	ntrol Settings	S		
Well Labeled?	Xes	No				Sampling M	lethod:	Blad	der		Purge:	·5	sec		
Casing Straight?	Xes	No	-			Dedicated E	quip?:	Yes	No?		Recover:	55	sec		
Grout Seal Intact?	Yes	No	Not Visi	ble		Duplicate Sar	nple?:	Yes>	No		PSI:				
Repairs Necessary:		-				Duplicate Sam	ple ID:	MS/MS	D		Pumping R	ate: /০০	mL/mir		
Casing	Diameter:		2"					/ /							
Water Level Bef	fore Purge:		32,84	ft		Purge	e Date:	21 Feb	17	Time Purg	ing Began:	1210	am/p͡m		
Total V	Vell Depth:		1980-margings	ft		Well Purge	d Dry?	Yes	(No)	Time F	ourged Dry:		am/pn		
W∈	ell Volume:	L		liters		Sample	e Date:	21Fe51	7	Time of Sampling: 1335 am/g					
Depth to Tor	Depth to Top of Pump: 95.00 f		ft							·····		•			
Water Level After Sample: 92,86 ft			ft			Raw, 50	0mL Nitric,	500mL Ni	tric (filtered)	, 250mL Sult	iric ·				
Measurement Method: Electric Water Level Indicator				List: 4 -	1L Nitrio										
								•							

Field Measurements

	1 icid incusurements												
Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:			
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.			
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10% 0.25 ft			clear, partly cloudy, cloudy			
1	1215	6,72	2517	4.99	1355	42,9	238	V2.85	500	Tubid.			
2	1295	6.84	2528	1.88	11:44	LHILE	210	8255	2000	Tulsid			
3	1305	7.29	257	6,78	9,92	25-9	76.9	82.85	7000	'elen			
4	1320	7/14	2595	6,77	9.97	23,7	€1, ₹	82.83	1500	clar			
5	1325	7114	2603	6.77	9.96	234	58, 3	52.85	500	ce			
6	1330	7,27	2601	6,76	9,91	22,9	541	82.85	500	Per			
7	1335	7,30	2626	6,77	9:85	22.9	56,3	82.85	500	Ce_			
8													
9							教 族						
10							(siller)						

Stabilized: / (Yes / No Comments:

Total Volume Removed: 4500 mL

There were a few air bubbles coming up the line and that is swhy I think the DD was a little high, cheaked everything it booked fine don't know why it was doing that. Recalibrated at 1235 abodid a rending out of the supercup still was the same for she DO.



Groundwater Assessment

Company:	OTP Coyote		
Event:	2017		
Sample ID:	MW13		
	. (1 00	A / ^ -	

OTP Covote

Phone: (701) 258-9	720						-			SPLE V			
Weather Conditions:		Temp:	15 °F		Wind:	ET			Precip	: Sunr	ny / Partly C	loudy / Élo	udy
	Well Info	rmation	, w					Sampling Information					A COMPANY
Well Locked?	(Yes	No				Purg	ing Method:	Bla	dder		Со	ntrol Setting	s
Weil Labeled?	Yes	No				Sampl	ing Method:	Bla	dder		Purge:	5	sec
Casing Straight?	¹ ⊻ es	No				Dedica	ted Equip?:	Yes	cNO		Recover:	25	sec
Grout Seal Intact?	Yes	No Not Visible			Duplicate	e Sample?:	Yes	∠No		PSI:		,	
Repairs Necessary:	Necessary:				Duplicate	Sample ID:	٠			Pumping R	ate: <i>z&() / (</i>	OmL/mir	
Casing	Diameter:		2"										
Water Level Bef	ore Purge:		04.31	ft			Purge Date:	2780	517	Time Purg	ing Began:	1111	@m/pn
Total W	/ell Depth:	1		ft		Well F	Purged Dry?	Yes	> No	Time F	urged Dry:	1146	(am/pr
We	ell Volume:			liters		S	ample Date:	28F86	17	Time of	f Sampling:	1015	/am/pn
Depth to Top	of Pump:	. 11	12,90	ft								•	
Water Level Afte	Water Level After Sample: 1/2,40		ft		Bottle	1L Raw, 50	00mL Nitrio	, 500mL Nit	ric (filtered),	250mL Sul	firic		
Measurement Method: Electric Water Level Indicator				dicator		List:	4 - 1L Nitri	3					
				Field	Measur	ements							

					1 1014	HOUGHIO	11101110			
Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	$(mV)^{-}$	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1116	4.64	5172	L. 30	4.51	1005	219	106.58	1000	Tulbid
2	1126	5,29	4902	6:28	2091	177.9	51.5	110.91	2000	Clean
3	1136	2142	Ygay	6,28	3.38	1475	37.7	112.06	2000	den
4	1146	31	2-185	6.41	2,22	13819	29,3	112,90	2000	Chi -
5		1110	· ·	1.27		1		7, 6		
6										
7										
8										
9	1010	and the latter of the latter o	دا الله المستحدد	(i) 5	min. h	enf-61-6	Sande	11.5.73		
10	1015	4,43	5574	6.50	7.32		102	_	500	51 des 42 510
tabilized:	Yes	(No					otal Volume	Removed:	7200	ml (de

Comments:

Movertee group to unthous morning had to bring hose up and



Groundwater Assessment

Company:	OTP Coyote

Event: 2017

Sample ID:

Sampling Personal:

Phone: (701) 258-9720 Weather Conditions: 7,2 °F Temp: Wind: Precip: Sunny / Partly Cloudy (Cloudy Well Information Sampling Information **Yes** Well Locked? No Purging Method: Bladder Control Settings Well Labeled? < Yes No Sampling Method: Bladder Purge: sec Yes Casing Straight? No Dedicated Equip?: Yes No) Recover sec. Grout Seal Intact? Yes No. Not Visible Duplicate Sample?: (No) Yes PSI: Repairs Necessary: Duplicate Sample ID: Pumping Rate: / 0 (mL/min Casing Diameter: Water Level Before Purge: Time Purging Began: Purge Date: am/pm Total Well Depth: Well Purged Dry? (No) Yes Time Purged Dry: am/pm Well Volume: liters Sample Date: 2 ا کمیصرا Time of Sampling: 1223 am/pm Depth to Top of Pump: Water Level After Sample: 1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfiric Bottle Measurement Method: Electric Water Level Indicator List: 4 - 1L Nitric

Field Measurements

		, <u></u>			1 1014	Micasule	IIICIIIG			
	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	pH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time	<u> </u>	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
11	1128	7,22	5288	6,61	2,86	137.7	140	80.11	500	5/89ATIV TWS:X
2	143	7.17	5389	6.61	0,82	17-7	56,8	80.42	1500	*_ 1 W
3	1154	7.26	5415	610	0.35	558	1540,0	0.71	1590	-Clear
4	1200	7.15	5357	2000	0,32	49.5	24,4	21).84	1000	Cles -
5	1213	7,09	5331	6,56	0,33	48.6	18.6	20,91	500	Mar
6	1218	6,94	5325	1.55	0,33	48.7	17.7	80,92	500	Úr.
7	1223	7,07	5320	6,55	2 34	48.2	18.1	80,97	500	Chame
8	,					7.21	7,3. (3000	>00	
9 ·										
10	-									
Stahilized:	(Yes /	No			L	<u> </u>		L	F 60 1- 000	

Comments:

Total Volume Removed: 6000 mL



Groundwater Assessment

Company: **OTP Coyote** Event: 2017

Phone: (701) 258-9720

Weather Conditions:

Sample ID: Darren Sampling Personal:

Veather Conditions: Temp: 25°F				F	Wind:	E10			Precip	: Sunny / Partly Cloudy Cloudy			
	Well Info	······································			11	<u>C 10</u>		loudy (Clo	uay				
			1			Sampling Information							
Well Locked?	Yes)	No				Purging I	Method:	Blac	lder		Cor	ntrol Setting	S
Well Labeled?	Yes	No				Sampling I	Method:	Blac	lder	1	Purge:	<u> </u>	sec
Casing Straight?	Yes	No				Dedicated	Equip?:	Yes	No	† -	Recover:	55	sec
Grout Seal Intact?	Yes	No	Not Vis	sible)		Duplicate Sa		Yes	NO	1 -	PSI:		
Repairs Necessary:	1					Duplicate Sar					umping Ra	ate: /00	mL/mir
Casing	Diameter:		2"					4.		ــــــــــــــــــــــــــــــــــــــ	umping rec	10. 700	1112/11111
Water Level Befo	ore Purge:	_\/	79,78	ft		Purc	e Date:	28 Fu	417	Time Purging	g Began:	1643	am/p/n
Total W	/ell Depth:			ft		Well Purg		Yes	NG)	Time Pur			am/pn
We	ll Volume:	* .	<u> </u>	liters				28 Fz 61		Time of S		1728	am/pn
Depth to Top	of Pump:	8	1.88	ft				- 0 - 0 - 1		1	ampinig.	1760	ampi
Water Level Afte	er Sample:		79.84	ft		Bottle 1L	Raw 50	Oml Nitric	500ml Nitr	ria (filtarad) 2	EOmal Culti	u: a	·····
Measurement Method: Electric Water Level Indicator			dicator		Bottle 1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfiric List: 4 - 1L Nitric								
					i								

Field Measurements

			,			measure	1110116			
	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time	,	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1648	6269	3477	6.60	1,55	15.9	46.3	79.84	500	cez
2	1658	6.62		6.60	0-60	6,8	14,2	79,84	1000	du
3	1708	6.69	3480	6.61	12,44	4.05	11.7-	79.84	1000	dy~
4	1713	1.56	3485	6,61	0,40	1.9	7,76	79,84	500	ds -
5	1718	6.63	3482	6.11	0040	3.3	474	79,84	500	Q
6	1723	6152	3487	6,6	0,40	3.8	4.55	79.84	506	cilear
7	1728	6,70	3488	6.62	0,37	81.7	4,42	79.84	500	Chen
8					· · · · · · · · · · · · · · · · · · ·	12 12	1115	1	30	CVEL C
9										
10										
Stabilizad:	Voc	No			L		L		L , ,	

Stabilized: / Yes Comments:

Total Volume Removed: 4500 mL



Groundwater Assessment

Company:	OTP Coyote	}	
Event:	2017		
Sample ID:	ea Blue	16	
Sampling Person	ial Dornan	Brace Contraction	and in the

2616 E. Broadway Ave, Bi	smarck, ND						_	Sampling I	Personal:	Darrer	N/105	nacen	
Phone: (701) 258-9	9720				,		•				-		
Weather Conditions:		Temp:	25	°F	Wind:	E10			Precip	: Sun	ny / Partly C	loudy/Clou	idy
	Well Info	rmation						S	ampling I	nformation	on		
Well Locked?	(Yes)	No				Purgi	ing Method:	Bla	dder		Coi	ntrol Settings	3
Well Labeled?	(Yes	No				Sampli	ing Method:	Bla	dder		Purge:	2	sec
Casing Straight?	(es)	No				Dedica	ted Equip?:	Yes	(No)		Recover:	53	sec
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	e Sample?:	Yes	-€Nø		PSI:	·	
Repairs Necessary:		•				Duplicate	Sample ID:	Manage and Manage and			Pumping Ra	ate: 00	mL/mir
Casing	Diameter:		2"									l l	
Water Level Bef	ore Purge:	X	7.41	<i>78.79</i> ft		F	Purge Date:	28 Fes	617	Time Purg	ging Began:	1345	am/p͡n
Total V	Vell Depth:	ن. مــ	, ,	ft		Well P	urged Dry?	Yes	(No)	Time F	Purged Dry:		am/pn
We	ell Volume:	Perqu		liters		Sa	ample Date:	28Feb	j = 1	Time o	f Sampling:	.1535	am/pñ
Depth to Top	p of Pump:	· 7.	1,23	ft									
Water Level Afte	er Sample:		8182	_ ft		Bottle	1L Raw, 50	0mL Nitric	, 500mL Nit	ric (filtered)	, 250mL Sulf	iric	
Measuremer	nt Method:		-	el Indicator		List:	4 - 1L Nitrio	>					
. • • • • • • • • • • • • • • • • • • •													

Field Measurements

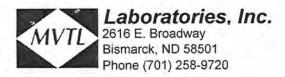
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1350	4,20	2451	6.60	6,73	28.7	7/000	78,80	500	C/budy
2	1410	6,77	2954	6.08	6,45	-11,1	71000	7881	2000	cloudy
3	1430	6,02	2945	6.57	0.46	513	767	78.80	2000	Cloude
4	1450	6000	2938	6,58	0,32	1,9	251	78.82	2000.	to pattly Cloudy
5	1505	5,89	2957	6,58	0,57	7,6	126	78.82	1500	Partly cloudy
6	1515	6:06	2969	6,58	0,44	10,6	89,6	78.82	1000	Partly Clock
7	1525	6-01	2960	6,58	0-35	9,2	60,2	78.82	1000	Clar 1
8	1530	5,95	2964	6,58	0,37	9.6	59.0	78.82		-a_
9	1535	5.87	2968	6,58	0,37	8,9	55.5	78.82	500	di_
10					, ,					

Stabilized: Yes No

Total Volume Removed: _____mb0 __mL

Comments:

115: 28 Feb17 Dr



Chain of Custody Record

Project Name:		Event:		Work Order Number:	
OTP Coyote - Blue Pit			Feb 2017	82-0468	
Report To: Attn: Address:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	OTP Josh Hollen	Name of Sampler(s): Darren Wieswarg	
phone:	pvukonich@otoco.com		ihollen@otpco.com		

	Samp	le Informatio	n				Bottle Type			Field Parameters			Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appes (Clear, Cloudy,	1 liter	500mL Nitric	250m:L Sulfric		Temp (°C)	Spec. Cond.	Hd	Analysis Required
W553	FB Blue	28Feb17	NA	W	Clear	Х	X X	111111111111111111111111111111111111111		NA	NA	NA	
W553	Blue 6	27Feb17	1720	GW	Cloudy	Х	X X	X		8,20	2656	6,62	
W554	Blue 7/MS7/MSD7	27F0517	1335	GW	Clear	3	3 3	3		7.30	2626	6.77	
W555	Blue 13	28/26/17	1015	GW	Partly Oudy	Х	XX	X	1111	4.43	5574	6.80	
N556	Blue 14	2856617	1223	GW	clear	Х	XX	X		7.07	5320	6.55	OTP Coyote List 1 + OTP
W557	Blue 15	28 Feb17	1728	GW	clew	Х	XX	X	H	6.70	3488	6,62	Coyote List A
W558	Blue 16	28Fe517	1535	GW	Clear	Х	XX	X		5,87	2968	6.58	

Comments:

Relinquished By:	Sample Condition:			
Name:	Date/Time	Location:	Temp (°C)	
1 Dan Ving	28Fc617 2006	Log In	₹M562 TM588	
2			ROI 0.4	

Receive	ed by:
/ Name:	Date/Time
11. 10	OlMarch 17
Unail Simonson	800
7	0.4°C RC
	male



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com



CASE NARRATIVE - AMENDED 19 MAY 17 (MVTL Lab # Blue 16)

MVTL Lab Reference No/SDG: 201782-0466
IML Lab Reference No/SDG: S1703036

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: CCR Radiochemistry

Event & Year Mar 2017

MVTL Laboratory Identifications: 17-W559 through 17-W565

IML Laboratory Identifications: \$1703036-001 through \$1703036-007

Page 1 of 1

IML Laboratory #	MVTL Laboratory #
S1703036-001	17-W559
S1703036-002	17-W560
S1703036-003	17-W561
51703036-004	17-W562
51703036-005	17-W563
S1703036-006	17-W564
\$1703036-007	17-W565
	\$1703036-001 \$1703036-002 \$1703036-003 \$1703036-004 \$1703036-005 \$1703036-006

I. RECEIPT

- All samples were received at the laboratory on 1 Mar 2017 at 800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 14.1°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 3 Mar 2017.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudette Carroll - MVTL Bismarck Laboratory Manager

DATE: 19 M2417



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page: 1 of 1

Report Date: 4 May 17 Lab Number: 17-W559 Work Order #:82-0466 Account #: 006106

Date Sampled: 28 Feb 17 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

Temp at Receipt: 14.1C

PO #: 48895

Project Name: OTP Coyote-Blue Pit

Fergus Falls MN 56538-0496

Otter Tail Power Co.

Sample Description: FB Blue

Josh Hollen

PO Box 496

Event and Year: Feb 2017

As Received Method Method Date Analyst Result RL Reference Analyzed 20 Apr 17 OL Radium 226 See Attached Report Radium 228 See Attached Report 27 Mar 17 OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 6

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 4 May 17 Lab Number: 17-W560 Work Order #:82-0466 Account #: 006106

Date Sampled: 27 Feb 17 17:20 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.62 s.v	1.	0.1	SM 4500 H+ B	27 Feb 17 17:20	DJN
Field Appearance	Cloudy		NA	SM 2110	27 Feb 17 17:20	DJN
Field Temperature		rees C	0.1	SM 2550B	27 Feb 17 17:20	DJN
Field Conductivity	2656 umb	nos/cm	1	EPA 120.1	27 Feb 17 17:20	DJN
Radium 226	See Attached F	Report			27 Mar 17	OL
Radium 228	See Attached F				27 Mar 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

= Due to concentration of other analytes
+ = Due to internal standard response



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Page:

1 of 1

Report Date: 4 May 17 Lab Number: 17-W561 Work Order #:82-0466

Account #: 006106

Date Sampled: 27 Feb 17 13:35

Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 7

Event and Year: Feb 2017

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.77	s.u.	0.1	SM 4500 H+ B	27 Feb 17 13:35	DJN
Field Appearance	Clear		NA	SM 2110	27 Feb 17 13:35	DJN
Field Temperature	7.30	Degrees C	0.1	SM 2550B	27 Feb 17 13:35	DJN
Field Conductivity	2626	umhos/cm	1	EPA 120.1	27 Feb 17 13:35	DJN
Radium 226	See Atta	ched Report			27 Mar 17	OL
Radium 228	See Atta	ched Report			27 Mar 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to concentration of other analytes

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



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 13

Event and Year: Feb 2017

Page: 1 of 1

Report Date: 4 May 17 Lab Number: 17-W562 Work Order #:82-0466 Account #: 006106

Date Sampled: 28 Feb 17 10:15 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst	
Field pH	6.80	s.u.	0.1	SM 4500 H+ B	28 Feb 17 10:15	DJN	
Field Appearance	Partly (loudy	NA	SM 2110	28 Feb 17 10:15	DJN	
Field Temperature	4.43	Degrees C	0.1	SM 2550B	28 Feb 17 10:15	DJN	
Field Conductivity	5574	umhos/cm	1	EPA 120.1	28 Feb 17 10:15	DJN	
Radium 226	See Atta	ched Report			27 Mar 17	OL	
Radium 228	See Atta	ched Report			28 Mar 17	OL	
		A CHARLES OF THE PARTY OF THE P					

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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: ϕ = Due to sample matrix # = Due to code # = Due to sample quantity # = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 14

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 4 May 17 Lab Number: 17-W563 Work Order #:82-0466 Account #: 006106

Date Sampled: 28 Feb 17 12:23 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.55	s.u.	0.1	SM 4500 H+ B	28 Feb 17 12:23	DJN
Field Appearance	Clear		NA	SM 2110	28 Feb 17 12:23	DJN
Field Temperature	7.07	Degrees C	0.1	SM 2550B	28 Feb 17 12:23	DJN
Field Conductivity	5320	umhos/cm	1	EPA 120.1	28 Feb 17 12:23	DJN
Radium 226	See Attached Report				27 Mar 17	OL
Radium 228	See Attached Report				28 Mar 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

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:

Due to sample matrix | ### Due to conduct to the property | ### Due to in the property | ### Due to in the property | ### Due to in the property | ### Due to in the property | ### Due to in the property | #### Due t

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 15

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 4 May 17 Lab Number: 17-W564 Work Order #:82-0466

Account #: 006106

Date Sampled: 28 Feb 17 17:28 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	28 Feb 17 17:28	DJN
Field Appearance	Clear		NA	SM 2110	28 Feb 17 17:28	DJN
Field Temperature	6.70	Degrees C	0.1	SM 2550B	28 Feb 17 17:28	DJN
Field Conductivity	3488	umhos/cm	1	EPA 120.1	28 Feb 17 17:28	DJN
Radium 226	See Atta	ched Report			27 Mar 17	OL
Radium 228		ched Report			29 Mar 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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:

© = Due to sample matrix # = Due to continuous to the property of the p

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 16

Event and Year: Feb 2017

1 of 1 Page:

Report Date: 4 May 17 Lab Number: 17-W565 Work Order #:82-0466 Account #: 006106

Date Sampled: 28 Feb 17 15:35 Date Received: 1 Mar 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 14.1C

	As Recei	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.58	s.u.	0.1	SM 4500 H+ B	28 Feb 17 15:35	DJN
Field Appearance	Clear		NA	SM 2110	28 Feb 17 15:35	DJN
Field Temperature	5.87	Degrees C	0.1	SM 2550B	28 Feb 17 15:35	DJN
Field Conductivity	2968	umhos/cm	1	EPA 120.1	28 Feb 17 15:35	DJN
Radium 226	See Atta	iched Report			27 Mar 17	OL
Radium 228	See Atta	ched Report			29 Mar 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudetta

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:

= Due to sample matrix # = Due to conduct to sample quantity + = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



Date: 4/24/2017

CLIENT:

Lab Order:

MVTL Laboratories, Inc.

CASE NARRATIVE

Project:

201782-0466

S1703036

Report ID: S1703036001

Samples 17-W559 FB Blue, 17-W560 Blue 6, 17-W561 Blue7/MS7/MSD7, 17-W562 Blue 13, 17-W563 Blue 14, 17-W564 Blue 15, and 17-W565 Blue 16 were received on March 3, 2017.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012

ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-001 ClientSample ID: 17-W559 FB Blue

COC:

201782-0466

Date Reported 4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/28/2017

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	nit
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	04/20/2017 928	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	04/20/2017 928	MB
Radium 228	-0.5	pCi/L		1	Ga-Tech	03/27/2017 1712	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	03/27/2017 1712	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range Ε

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory G

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-002 ClientSample ID: 17-W560 Blue 6

COC:

201782-0466

Date Reported 4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/27/2017 5:20:00 PM

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix:

Water

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1119	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1119	MB
Radium 228	-2.0	pCi/L		1	Ga-Tech	03/27/2017 2016	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	03/27/2017 2016	MB

These results apply only to the samples tested.

Qualifiers:

- В Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Н Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit ND
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-003

COC:

ClientSample ID: 17-W561 Blue7/MS7/MSD7

201782-0466

4/24/2017

Date Reported Report ID

S1703036001

WorkOrder:

S1703036

Water

CollectionDate: 2/27/2017 1:35:00 PM

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix:

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.2	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1119	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1119	MB
Radium 228	1.1	pCi/L		1	Ga-Tech	03/27/2017 2320	MB
Radium 228 Precision (±)	1.3	pCi/L			Ga-Tech	03/27/2017 2320	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-004

ClientSample ID: 17-W562 Blue 13 COC:

201782-0466

Date Reported

4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/28/2017 10:15:00 AM

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix:

Water

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.2	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1428	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1428	MB
Radium 228	-1.5	pCi/L		1	Ga-Tech	03/28/2017 832	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	03/28/2017 832	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range E

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory L

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-005 ClientSample ID: 17-W563 Blue 14

COC:

201782-0466

Date Reported

4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/28/2017 12:23:00 PM

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix:

Water

Comments

Result	Units	Qual	RL	Method	Date Analyzed/I	nit
0.7	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1428	MB
0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1428	MB
-1.8	pCi/L		1	Ga-Tech	03/28/2017 1136	MB
1.5	pCi/L			Ga-Tech	03/28/2017 1136	MB
	0.7 0.1 -1.8	0.7 pCi/L 0.1 pCi/L -1.8 pCi/L	0.7 pCi/L 0.1 pCi/L -1.8 pCi/L	0.7 pCi/L 0.2 0.1 pCi/L -1.8 pCi/L 1	0.7 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B -1.8 pCi/L 1 Ga-Tech	0.7 pCi/L 0.2 SM 7500 Ra-B 03/27/2017 1428 0.1 pCi/L SM 7500 Ra-B 03/27/2017 1428 -1.8 pCi/L 1 Ga-Tech 03/28/2017 1136

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range Е
- Н Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit ND
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-006 ClientSample ID: 17-W564 Blue 15

COC:

201782-0466

Date Reported

4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/28/2017 5:28:00 PM

DateReceived:

3/3/2017 11:12:00 AM

FieldSampler:

Matrix: Water

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1428	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1428	MB
Radium 228	-0.7	pCi/L		1	Ga-Tech	03/29/2017 912	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	03/29/2017 912	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range Ε

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0466

Lab ID:

S1703036-007 ClientSample ID: 17-W565 Blue 16

COC:

201782-0466

Date Reported

4/24/2017

Report ID

S1703036001

WorkOrder:

S1703036

CollectionDate: 2/28/2017 3:35:00 PM

DateReceived: 3/3/2017 11:12:00 AM

FieldSampler:

Matrix: Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total					•••		
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	03/27/2017 1428	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	03/27/2017 1428	MB
Radium 228	0.3	pCi/L		1	Ga-Tech	03/29/2017 1216	MB
Radium 228 Precision (±)	1.4	pCi/L			Ga-Tech	03/29/2017 1216	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range Е
- Н Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- С Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: Work Order:

Project:

MVTL Laboratories, Inc.

S1703036

201782-0466

Date: 4/24/2017

Report ID: S1703036001

Radium 228 by Ga/Tech	Sample Type MBLK		Units	: pCi/L			
MB-424 (03/25/17 13:08)	RunNo: 144300	PrepDa	ate: 03/1	5/17 12:00	Bato	hID 12988	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	ND	1				,	
Radium 228 by Ga/Tech	Sample Type LCS		Units	: pCi/L			
LCS-424 (03/25/17 16:11)	RunNo: 144300	PrepDa	ate: 03/1	5/17 12:00	Bato	hID 12988	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	37	1	40.1		91.6	65.9 - 132	
Radium 228 by Ga/Tech	Sample Type MS		Units	: pCi/L			
MS-424 (03/25/17 22:19)	RunNo: 144300	PrepDa	ate: 03/1	5/17 12:00	Bato	hiD 12988	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	42	1	40.1	2	102	65.9 - 132	
S1703036-003AMS (03/28/17 02:24)	RunNo: 144300	PrepDa	ate: 03/1	5/17 12:00	Bato	hID 12988	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	26	1	40.1	1	62.6	50 - 139	
Radium 228 by Ga/Tech	Sample Type MSD		Units	: pCi/L			
MSD-424 (03/26/17 01:23)	RunNo: 144300	PrepDa	ate: 03/1	5/17 12:00	Bato	hID 12988	
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	44	1	42	3.27	105	20	

Qualifiers:

- Analyte detected in the associated Method Blank В
- Analyzed at IML Gillette laboratory G
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- Matrix Effect

- Ε Value above quantitation range
- Holding times for preparation or analysis exceeded Н
- Analyzed by another laboratory L
- 0 Outside the Range of Dilutions
- Spike Recovery outside accepted recovery limits



ANALYTICAL QC SUMMARY REPORT

CLIENT:

Project:

Work Order:

MVTL Laboratories, Inc.

S1703036

201782-0466

Date: 4/24/2017

Report ID: S1703036001

Radium 226 in Water -	Sample Type MBLK	Units: pCi/L			
MB-1728 (03/27/17 11:19)	RunNo: 144273	PrepDate: 03/20/17 0:00	BatchID 12974		
Analyte	Result	RL Spike Ref Sar	np %REC % Rec Limits Qual		
Radium 226	ND	0.2			
Radium 226 in Water -	Sample Type LCS	Units: pCi/L			
LCS-1728 (03/27/17 11:19)	RunNo: 144273	PrepDate: 03/20/17 0:00	BatchID 12974		
Analyte	Result	RL Spike Ref Sar	np %REC % Rec Limits Qual		
Radium 226	5.8	0.2 5.89	99.0 67.1 - 122		
Radium 226 in Water -	Sample Type LCSD	Units: pCi/L			
LCSD-1728 (03/27/17 11:19)	RunNo: 144273	PrepDate: 03/20/17 0:00	BatchID 12974		
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual		
Radium 226	5.4	0.2 5.8 8.50	90.9 20		
Radium 226 in Water -	Sample Type MS	Units: pCi/L			
S1703036-003AMS (03/27/17 11:19)	RunNo: 144273	PrepDate: 03/20/17 0:00	BatchID 12974		
Analyte	Result	RL Spike Ref Sar	np %REC % Rec Limits Qual		
Radium 226	6.1	0.2 5.89 0.2	99.9 65 - 131		
Radium 226 in Water -	Sample Type MSD	Units: pCi/L			
S1703036-003AMSD (03/27/17 14:28)	RunNo: 144273	PrepDate: 03/20/17 0:00	BatchID 12974		
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual		
Radium 226	5.3	0.2 6.1 13.7	86.5 20		

Qualifiers:

Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

S Spike Recovery outside accepted recovery limits



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page 1 of 1 .

Toll Free: (8	Phone: (701) 2 00) 279-6885	258-9720 Fax: (701) 258-9724				····					201782-0466		
	e and Address:	1 dxt (101) 200 5124		Account #	•	Phone #:							
		<u>VTL</u> Broadway		Contact:	Claud	lette	····		· · · · · · · · · · · · · · · · · · ·		701-258-9720 Fax #: For faxed report check box		
Billing Address		c, ND 58501		Name of Sampler:					E-mail: ccarroll@mvtl.com For e-mail report check box				
		30x 249		Quote Nur	nber						Date Submitted: 1-Mar-17		
	New Ulm	<u>, MN 56073</u>		Project Name/Number: Purchase Order #:				Purchase Order #: BL5804					
		Sample Information		Bottle Type				ottle	Ту	Analysis			
\$170303 IML Lab Number	MVTL Lab Number	Client Sample ID	Sample Type	Date Sampled	Time Sampled	Untreated	1000 ml HNO3	VOC Vials Umpreserved	Glass Jar	Other	Analysis Required		
201	17-W559	FB Blue	GW	28-Feb-17	NA		4				Ra226 & Ra228		
202	17-W560	Blue 6	GW	27-Feb-17	1720		4				Ra226 & Ra228		
• 003	17-W561	Blue7/MS7/MSD7	GW	27-Feb-17	1335		12				Ra226 & Ra228		
004	17-W562	Blue 13	GW	28-Feb-17	1015		4	~~~~			Ra226 & Ra228		
205	17-W563	Blue 14	GW	28-Feb-17	1223		4				Ra226 & Ra228		
206	17-W564	Blue 15	GW	28-Feb-17	1728		4				Ra226 & Ra228		
007	17-W565	Blue 16	GW	28-Feb-17	1535		4				Ra226 & Ra228		
Comments: All	results must be repo	orted as a numerical value	. Use 17-W	561 as MS	/MSD						z coolers		

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:		Temp:
A. Simonson	1-Mar-17	1700		Kathy Boup	3.3.17	11:12	8.62
2.				1			8.9:1



Groundwater Assessment

Company:	OTP	Coyote		
Event:	2017			
Sample ID:	Rline	6		

Phone: (701) 258-9	9720								. ,				
Weather Conditions:		Temp:	/5°F		Wind:	NE10			Precip	Suni	ny / Partly C	loudy / Clo	ıdy
	Well Info	rmation	•					S	ampling l	nformatio	on	And the state of t	
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder		Co	ntrol Setting	S
Well Labeled?	Yes	No				Sampli	ing Method:	Bla	dder]	Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	MO		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visi	ibłė		Duplicate	Sample?:	Yes	100		PSI:	Andrew Marie 1 american	
Repairs Necessary:			-			Duplicate	Sample ID:	<i>4</i> -			Pumping R	ate/SOA-	_mL/min
Casing	Diameter:		2"									114	
Water Level Bef	ore Purge:		65.85	ft		F	Purge Date:	27 Fer	17	Time Purg	ing Began:	0945	am/pm
Total V	Vell Depth:			ft		Well P	urged Dry?	Yes	No	Time F	urged Dry:	1070	@m/pm
We	ell Volume:			liters		Sa	ample Date:	2-76-2	6/7	Time of	Sampling:	1720	am/pm
Depth to Top	o of Pump:	74	1.08	ft									
Water Level Afte	er Sample:		74.08	ft		Bottle	1L Raw, 50	00mL Nitric	500mL Niti	ric (filtered),	250mL Sulf	iric	
Measuremer	nt Method:	Electric	Water Level Inc	dicator		List:	4 - 1L Nitrio	<u> </u>					
	T			Field N	/leasure	ments	-						

l leid Measurements												
Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:		
(3 cons	secutive)	(°C)	Cond.	рH	(mg/L) (mV)		(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy		
1	0950	490	2640	6.59	3.46	1128	39.7	67.39	750	dr.		
2	1000	4,64	2649	6,55	1,18	841	34,0	69,0R	1500	Clyn		
3	1010	4.55	2654	656	1154	829	28.8	70,72	1500	Clar		
4	1015	3,93	2658	6,61	\$2,27	8512	29,3	71.98	750	a		
5	1030	6.06	2645	6.56	3,03	7500	197	73,02	2250	& Stantly tutil		
6	1040	5.65	2649	6,56	0.79	508	129	74,08	1500			
7												
8				_								
9	1715	lurs	4271	at 17	For 5	nin		66.63	,	*		
10	1720	8,20	265k	6.62	7,32	·4016	752	6747	550	Tulbia		
<u> </u>				-					/ · ·			

Stabilized:

Total Volume Removed: \$250 mL

Comments:

It to readjust the air line at 1015 breave of a small hole, that is why the turbity is higher 1030, Itad to move the purp to xix, when sample the hose was frozen so had to move pump to Unthan Turbity was high after that



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	anni Al Blac 7	
Sampling D	organal: A A A	

Phone: (701) 258-9720

Phone: (701) 258-9	720						_						
Weather Conditions:		Temp:	<u>フォ °F</u>		Wind:	NE10			Precip	o: Sunn y	y / Partly C	loudy Clou	ıdy
!	Well Info	rmation						Sa	mpling	Informatio	n		
Well Locked?	(Yes)	No				Purgi	ng Method:	Blad	der		Соі	ntrol Settings	3
Well Labeled?	Xes	No				Sampli	ng Method:	Blad	der		Purge:	5	sec.
Casing Straight?	Xes	No				Dedica	ted Equip?:	Yes	₩ō>] .[Recover:	55	sec.
Grout Seal Intact?	Ŷes	No	Not Vis	ible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Necessary:					Duplicate	Sample ID:	ms/m	SO		Pumping Ra	ate: /ರಾ	mL/min	
Casing	Diameter:		2"										
Water Level Befo	ore Purge:		82,84	ft		F	Purge Date:	21 Fc6	17	Time Purgir	ng Began:	1210	am/pm
Total W	/ell Depth:			ft		Well P	urged Dry?	Yes	10 0	Time Pu	urged Dry:	François La Lista de Participa de La Constitución d	-am/pm
We	II Volume:	ı		liters		Sa	ample Date:	21Fe51	7	Time of	Sampling:	1335	am/pm
Depth to Top	of Pump:		95.00	ft									
Water Level Afte	r Sample:		82.86	ft		Bottle	1L Raw, 50	0mL Nitric,	500mL Ni	tric (filtered), 2	250mL Sulf	iric	
Measuremen	t Method:	Electric	Water Level In	dicator		List:	4 - 1L Nitrio	>					
				C: ald l	M								

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1215	6,72	2517	6,99	1355	42,9	238	\$2.85	500	Twid.
2	1295	6.84	2528	6.88	11,44	Hels	210	8285	2000	TUISIA
3	1305	7.29	2587	6,78	9,92	25.9	76.9	82.85	3000	'cley
4	1320	7,14	2595	6,77	9.97	23,7	61.3	82.85	1500	der
5	1325	7114	2603	6,77	9.96	234	58, 3	52.85	500	il.
6	1330	7,27	2601	6,76	9,91	22,9	541	82.85	500	Der
7	1335	7.30	2626	6,77	9:85	22.9	56,3	82.85	500	le -
8	,									
9										
10		-							-03 (1)	

Stabilized:/ Yes / No

Total Volume Removed: <u>タチクク</u> mL

Comments:

There were a few air bubbles coming up the line and that is suby I think the DD was a little high, cheacted everything it booked fine don't know why it was doing that. Recalibrated at 1235 also did a rending out of the sup cup still was the Same, for the DD.



Group	dwater	Accor	emonf
Groun	owater	Asses	smeni

Company:	OTP Coyote	
Event:	2017	
Sample ID:	MW13	
Sampling Pe	rsonal: Jallan	Nieswan

Phor	ne: (701) 258-9	9720												
Weather C	onditions:		Temp:	15	°F	Wind:	ET			Precip:	Sunny	/ Partly C	loudy / Élo	udy
		Well Info	rmation						Sa	mpling l	nformation		· ·	and the same of th
We	ell Locked?	(Yes	No				Purgii	ng Method:	Blad	lder		Coi	ntrol Setting	js
Wel	ll Labeled?	Yes	No				Samplii	ng Method:	Blad	lder		Purge:	5	sec
Casin	g Straight?	Yes	No				Dedicat	ed Equip?:	Yes	⊲NØ		Recover:	25	sec
Grout S	eal Intact?	Yes	No	Not V	/isible		Duplicate	Sample?:	Yes	∠Nto		PSI:		<i></i>
Repairs Ne	ecessary:	· · · · · · · · · · · · · · · · · · ·					Duplicate:	Sample ID:		,	Pu	umping Ra	ate: z@{)/[_് നL/mir
	Casing	Diameter:	-	2"										
Wate	er Level Bef	fore Purge:		04.31	ft		F	ourge Date:	27F15	. (7	Time Purging		<u> </u>	@m/pm
	Total V	Vell Depth:	ft.			Well P	urged Dry?	Yes	No	Time Pur		1146	(am/pm	
	We	ell Volume:	liters				Sa	mple Date:	28Fe61	7	Time of Sa	ampling:	1015	am/pm
	Depth to To	p of Pump:		12,90	ft			1						
Wate	er Level Aft	er Sample:		2,90	ft		Bottle			500mL Nitr	ric (filtered), 25	50mL Sulf	iric	
N	<u>leasuremer</u>	nt Method:	Electric \	Nater Level	Indicator		List:	4 - 1L Nitri	<u>c</u>					
					Field	Measure	ments							
Stabili	zation	Temp	Spec.		DO	ORP	Turbidity		mL		Discription:			
	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed		, Color, Odor,		•	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, p	partly cloudy, clo	oudy		
1)116	4.64	5172	6.38	4.51	100,5	219	106.55	1000	Ju/61				
2	1126	5,29	4902	6,28	2,91	177.9	5/.5	110.91	2000	clea				
3	1136	2,42	4994	6,28	3.38	1475	37.7	112.06	2000	day				
4	1146	3,78	5185	6.41	2,22	133.9	29,3	112,90	2000	de				
5		1 - (1 0			1		1	1'				1		

Stabilized: Comments:

10

1010

Yes

Movethe gump to unthan! morning had to bring hox up and

500

Total Volume Removed: 7000 mL



Groundwater Assessment

Company:	OTP Coyo	te
Event:	2017	
Sample ID:	B/4214	-
Sampling Per	sonal: Darren	Niesuma 1

Phone: (701) 258-9720

							_						W
Weather Conditions:		Temp	: 22 °F		Wind:	ES			Precip	: Sun	ny / Partly C	loudy / Clo	udy
	Well Info	rmatior	ı			ing and the second		Sa	ampling I	nformati	on	Manage Nation of the Control of the	
Well Locked?	Yes	No				Purgin	g Method:	Blac	lder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Samplin	g Method:	Blac	lder		Purge:	.5	sec.
Casing Straight?	Yes	No				Dedicate	ed Equip?:	Yes	No	1	Recover:	55	sec
Grout Seal Intact?	Yes	No	Not Visil	ole		Duplicate :	Sample?:	Yes	(No)	1	PSI:	53	
Repairs Necessary:		FENGINEERING GEORGE	Advisors of Ad Calaborators granters.			Duplicate S	ample ID:		Processing and Proces	1	Pumping Ra	ate: / Up	mL/min
Casing	Diameter:		2"							_			
Water Level Bef	ore Purge:		79.83	ft		Pt	urge Date:	28Fc	617	Time Purg	ging Began:	1123	am/pm
Total V	Vell Depth:			ft		Well Pu	rged Dry?	Yes	(No>	Time f	Purged Dry:	Name a rest of the parties of the pa	am/pm
We	ell Volume:		Mark Company of a company	liters		San	nple Date:	28 mcs 1	77	Time o	f Sampling:	1223	am/pm
Depth to Top	o of Pump:		84,58	ft			-	'			***************************************		
Water Level Afte	er Sample:		81.36	ft		Bottle	1L Raw, 50	0mL Nitric,	500mL Nit	ric (filtered)	, 250mL Sulf	īric	
Measuremer	nt Method:	Electric	Water Level Ind	icator		List:	4 - 1L Nitric						
				Field	Measur	ements						***************************************	

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	_±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1 1/28 7,22 5288		6,61 2,86		133.7	140	80.11	500	5/ightly twoid	
2	1143	7.17	5389	6.61	0,82	67.7	56,8	8042	1500	Cha-
3	1150	7.26	5415	E IN	0.35	55.8	540.0	8271	1590	de-
4	1208	7.15	5357	6,57	0,32	49,5	24,4	20,89	1000	cler-
5	1213	7.09	5331	656	0,33	0,33 4816		20,91	500	Har
6	1218	6.94	5725	6.55	0,33	48.7	17,7	80.42	500	CL_
7	1223	7,07	5320	6,55	0.34	48,2	18,1	80.97	500	cl
8						7 2 1 -		•		
9										
10										

Stabilized: Yes No

Total Volume Removed: 6,000 mL

Comments:

28Fib17pm



Groundwater Assessment

Company: OTP Coyote

Event: 2017

Sample ID: 3/4x /5

Sampling Personal: Davin Wiesway

Phone: (701) 258-9720

Phone: (701) 258-9	720												
Weather Conditions:		Temp:	25°F	:	Wind:	E10			Precip:	Sunr	ny / Partly C	loudy Clo	udy
•	Well Info	rmation						Sa	mpling l	nformatio	n		
Well Locked?	Yes	No				Purg	ing Method:	Blad	der		Со	ntrol Setting	S
Well Labeled?	Yes	No				Sampl	ling Method:	Blad	der		Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ated Equip?:	Yes	No		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Vis	ible)		Duplicate	e Sample?:	Yes	(NO)		PSI:	~	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: //00	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	<u> </u>	9,78	ft			Purge Date:	28 Fos	417	Time Purg	ing Began:	1643	am/pm
Total W	ell Depth:	\ -		ft		Well F	Purged Dry?	Yes	NG)	Time P	urged Dry:		_am/pm
We	ll Volume:	\ \ -	ノ	liters		S	ample Date:	28 Fz 61	7	Time of	Sampling:	1728	am/pm
Depth to Top	of Pump:	8	1.88	ft								*	
Water Level Afte	r Sample:		79.84	ft		Bottle	1L Raw, 50	00mL Nitric,	500mL Nitr	ric (filtered),	250mL Sulf	firic	
Measurement	t Method:	Electric V	Nater Level In	dicator		List:	4 - 1L Nitrio	>					
												3	

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1648	6069	3477	6.60	1,55	15.9	46.3 79.84		500	cer
2	1658	6.62	3484	6.60	0-60	6,8	14.2	14.2 79.84 1000		dr
3	1708	6.69	3480	6.61	0,44	4.5	11,2	79.84	1000	cly
4	1713	1 56	3485	6,61	0,40 1.9 7,76 79		79,84	500	dr	
5	1718	6.63	3482	6,61	0,40	3,3	4.74	79,84	500	e_
6	1723	6152	3487	6,61	0,40	3,8	4.55	79.84	500	Lear
7	1728	6,70	3488	6.62	0.37	81.7	4,42	79.84	500	Chear
8									Ĭ,	
9										
10										

Stabilized: Yes No

Comments:

Total Volume Removed: 4500 mL



Groundwater Assessment

Company:	OTP Coyote	2
Event:	2017	
Sample ID:	on Blue	16
Sampling Persor	nal: Darren	Nichacon

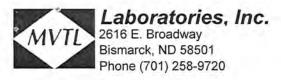
Phone: (701) 258-9	720						_						
Weather Conditions:		Temp:	25	°F	Wind:	E10			Precip	: Sunı	ny / Partly C	loudy / Clou	ıdy
	Well Info							Sa	ampling	nformatio	on		
Well Locked?	(Yes)	No				Purgi	ng Method:	Blac	dder		Co	ntrol Settings	3
Well Labeled?	(Jes	No					ng Method:	Blac	dder	1	Purge:	5	sec.
Casing Straight?	Yes	No				<u> </u>	ted Equip?:	Yes	N F⊙		Recover:	53	sec.
Grout Seal Intact?	Yes	No	Not V	isible			Sample?:	Yes	₹Ñ∂	1	PSI:		
Repairs Necessary:	103						Sample ID:	~		1	Pumping R	ate: 00	mL/min
	Diameter:		2"									ŀ	
Water Level Bef		X4	211	79.79 ft		F	Purge Date:	28 Fcs	17	Time Purg	jing Began:	1345	am@m
	Vell Depth:) <u>* 1 49 </u>	ft		Well P	urged Dry?	Yes	(NO)	Time F	ourged Dry:		am/pm
	ell Volume:	Earth C		liters		Sa	ample Date:	28Feb	19	Time of	f Sampling:	1535	am/pm
Depth to Top		c 1	1,23	ft					·············		***************************************		
Water Level After			78182	ft		Bottle	1L Raw, 50	00mL Nitric,	500mL Nit	ric (filtered)	, 250mL Sul	firic	
Measuremer			Water Level	Indicator		List:	4 - 1L Nitrio						
	***			Field	Moocura	monte							

Field Measurements

	Tield Medautements													
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:				
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.				
SEQ#	Time	,	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy				
1	1350	4,20	2481	6.60	6.73 28.7		7/000	78.80	500	Cleudy				
2	14/0	6,77	2954	6.08	6,45	-11,1	71000 78.81		2000	Cloudy				
3	1420	6.02	2945	6,57	0,46	5,3	767	78.80	2000	Cloudy				
4	1450	6,00	2938	6,58	0,32	0,32 1,9 25		78.82	2000	15t Pattly Cloudy				
5	1505	5,89	2957	6.58	0,57	7,6	146	78.82	1500	Partly cloudy				
6	1515	6.06	2964	6,58	0,44"	18-10,6	8916	78.82	1000	Partly clocky				
7	1525	6.01	2960	6,58	0,35	9,2	60,2	78.82		Clar 1				
8	1530	5.95	2964	6,58	0.37	9.6		78.82	500	can				
9	1535	5,87	2968	6,58	0,37	8.9	55.5	78.82	500	de				
10														

Total Volume Removed: 1/000 mL

Stabilized: Yes No
Comments: 28 Feb/7



Chain of Custody Record

Project Nam	ie:	Event:		Work Order Number:	
	OTP Coyote - Blue Pit		Feb 2017	82-0466	
Report To: Attn: Address:	Otter Tail Power Paul Vukonich PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	OTP Josh Hollen	Name of Sampler(s): Darren Meswaag	
phone: email:	pvukonich@otpco.com		ihollen@otpco.com		

	Samp	le Informatio	n			Bo	ttle Type	F	eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	1 liler Nitric		Temp (°C)	Spec. Cond.	Hd	Analysis Required
W559	FB Blue	28 Feb17	NA	W	cher	4		NA	NA	NA	
W560	Blue 6	275-617	1720	GW	Cloudy	4		8,20	2656	6.62	
W561	Blue 7/MS7/MSD7	27 Feb17	1335	GW	clear	12		7.30	2626	6,77	
W562	Blue 13	28 Feb 17	1015	GW	Partly cloudy	4		4.43	5574	6.80	
W563	Blue 14	38 Feb 17	1223	GW	clear	4		7.07	5320	6.55	Rad 226 & Rad 228
W564	Blue 15	28 Feb. 7	1728	GW	Clear	4		6,70	3488	6.62	Nau 220 & Nau 220
W565	Blue 16	28Feb17	1535	GW	clear	4		5.87	2968	6.58	

Comments:

¥ ==	Relinquished By:		Sample Condition:					
	Name:	Date/Time	Location:	Temp (°C)				
1	Dane Nins	28 Feb17 2006	(og In) Walk In #2	TM5627TM588				
2	9 7		6	tombient) 41 (

Recei	ived by:
↑ Name:	Date/Time
mad Simonson	Ol March 17
	14.1°C TMS62





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April 21, 2017

Otter Tail Power Company Attn: Josh Hollen P.O. Box 496 Fergus Falls, MN 56538-0496

RE: Coyote Station Groundwater Sampling - April 2017

Dear Mr. Hollen,

From March 29 – April 5, 2017, MVTL Laboratories' Field Services division collected groundwater samples from wells with sufficient volume at the Coyote Station near Beulah, ND. The six wells from the Blue Pit, and six wells from the Slag Pond site were purged and sampled at a low rate with a bladder pump. The wells were found to be in good condition. Well POND10 had an insufficient volume to collect a sample. Samples collected were placed on ice and then transported back to the MVTL laboratory in Bismarck, ND for analysis.

Thank you for your trust and support of our services. If you have any questions, please call me at (800) 279-6885.

Sincerely,

Jeremy Meyer

MVTL Field Services



WO# 82-0805 82-0801

OTP Coyote Station

Blue Pit

Attn: Josh Hollen

PO Box 496

Fergus Falls, MN 56538-0496

WELL ID	PURGE DATE	START PURGE TIME	SAMPLE DATE	TIME OF SAMPLE	WATER LEVEL START (FT)	TOTAL DEPTH (FT)	WATER LEVEL END (FT)	VOLUME IN WELL (Liters)	VOLUME REMOVED (mL)	SAMPLE METHOD	TE M P (°C)	EC	рН	Turb. NTU	SAMPLE APPEARANCE OR COMMENT
Blue6	3-Apr-17	11:13	4-Apr-17	12:49	62.49	79.12	70.22	10.2	9500.0	Bladder	8.88	2631	6.64	285.00	partly cloudy
Blue7	3-Apr-17	12:12	3-Apr-17	13:12	79.80	NA	79.85	NA	6000.0	Bladder	9.95	2659	6.57	35.70	clear
Blue13	3-Apr-17	10:02	4-Apr-17	11:53	103.85	116.70	111.25	7.9	10500.0	Bladder	8.79	5243	6.61	33.70	clear
Blue14	4-Apr-17	13:30	4-Apr-17	14:45	78.79	NA	79.88	NA	7500.0	Bladder	8.62	5178	6.66	4.95	clear
Blue15	5-Apr-17	12:52	5-Apr-17	13:37	76.45	NA	76.58	NA	4500.0	Bladder	9.26	3740	6.66	2.00	clear
Blue16	5-Apr-17	10:35	5-Apr-17	12:00	75.22	NA	75.29	NA	8500.0	Bladder	9.02	2803	6.62	18.50	clear
the state of the s															
													<u> </u>		



OTP Coyote Station

Slag Pond

Attn: Josh Hollen

PO Box 496

Fergus Falls, MN 56538-0496

WO# 82-0783 82-0743

82-0742

WELL ID	PURGE DATE	START PURGE TIME	SAMPLE DATE	TIME OF SAMPLE	WATER LEVEL START (FT)	TOTAL DEPTH (FT)	WATER LEVEL END (FT)	VOLUME IN WELL (Liters)	VOLUME REMOVED (mL)	SAMPLE METHOD	TEMP (°C)	EC	рН	Turb. NTU	SAMPLE APPEARANCE OR COMMENT
Pond6	29-Mar-17	8:25	29-Mar-17	8:50	17.62	18.81	below pump	0.7	2500.0	Bladder	9.23	4643	7.02	0.72	clear
PondN3	29-Mar-17	13:18	29-Mar-17	15:08	11.78	37.07	15.62	15.6	11000.0	Bladder	12.78	5121	6.67	122.00	parly cloudy
Pond10	NA	NA	29-Mar-17	8:14	21.64	22,11	NA	0.3	NA	NA	NA	NA	NA	NA	insufficient volume for sampling
Pond12	30-Mar-17	9:37	30-Mar-17	10:27	37.50	40.10	38.49	1.6	5000.0	Bladder	9.65	3487	7.15	1.61	clear
Pond16S	30-Mar-17	11:25	30-Mar-17	12:25	39.28	48.85	40.25	5.9	6000.0	Bladder	10.04	3112	6.87	42.60	clear
MW2S	29-Mar-17	11:27	29-Mar-17	12:17	23.20	36.60	28.55	8.3	5000.0	Bladder	10.36	4816	6.97	1.57	clear
							;								



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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-0801

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year Apr 2017

MVTL Laboratory Identifications: 17-W789 through 17-W795

Page 1 of 2

Sample Identification	MVTL Laboratory #
Field Blank (FB)	17-W789
Blue 6	17-W790
Blue 7	17-W791
Blue 13	17-W792
Blue 14	17-W793
Blue 15	17-W794
Blue 16	17-W795

I. RECEIPT

- All samples were received at the laboratory on 5 Apr 2017 at 1533.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-0801 Client: Ottertail Power Company

Location: Coyote Station Project Identification: **CCR Blue Pit**

Apr 2017 **Event & Year** 17-W789 through 17-W795 **MVTL Laboratory Identifications:**

Page 2 of 2

IV. **ANALYSIS**

All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.

o For some metals, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.

For some analytes, the reported results were elevated due to instrument performance at the lower limit of quantitation (LLOQ).

All laboratory data has been approved by MVTL Laboratories.

DATE: SIGNED:

Claudette Carroll - MVTL Bismarck Laboratory Manager

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Page: 1 of 3

Quality Control Report
Lab IDs: 17-W789 to 17-W795

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.001 < 0.001 < 0.001	0.3938 0.4078 0.3954	98 102 99	75-125 75-125 75-125	0.3938 0.4078 0.3954	0.4062 0.4226 0.4168	102 106 104	3.1 3.6 5.3	20 20 20	-	-	< 0.001
Arsenic - Total mg/l	0.1000	106	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 < 0.002 < 0.002	0.4124 0.4266 0.4158	103 107 104	75-125 75-125 75-125	0.4124 0.4266 0.4158	0.4222 0.4326 0.4292	106 108 107	2.3 1.4 3.2	20 20 20		-	< 0.002
Barium - Total mg/l	0.1000	103	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 0.0440 0.0290	0.3762 0.4290 0.4074	94 96 95	75-125 75-125 75-125	0.3762 0.4290 0.4074	0.3824 0.4384 0.4252	96 99 99	1.6 2.2 4.3	20 20 20	-	-	< 0.002
Beryllium - Total mg/l	0.1000	108	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.0005 < 0.0005 < 0.0005	0.4294	103 107 106	75-125 75-125 75-125	0.4118 0.4294 0.4258	0.4052 0.4398 0.4460	101 110 112	1.6 2.4 4.6	20 20 20	-		< 0.0003
Boron - Total mg/l	0.40 0.40	110 108	80-120 80-120	0.400 0.400 0.400	17-W775 17-W791 17-W801	< 0.1 0.40 0.22	0.43 0.81 0.63	108 102 102	75-125 75-125 75-125	0.43 0.81 0.63	0.43 0.80 0.64	108 100 105	0.0 1.2 1.6	20 20 20	-	-	< 0.1 < 0.1 < 0.1 < 0.1 < 0.1
Cadmium - Total mg/l	0.1000	104	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.0005 < 0.0005 0.0006	0.3984 0.4090 0.3892	100 102 97	75-125 75-125 75-125	0.3984 0.4090 0.3892	0.4040 0.4226 0.4090	101 106 102	1.4 3.3 5.0	20 20 20	-	- - -	< 0.0005
Calcium - Total mg/l	20.0 20.0	106 108	80-120 80-120	1000 100 100 100 100 100	17M537q 17M539q 17M541q 17W769q 17W791q 17W796q	2010 23.9 50.3 3.6 192 94.5	2900 121 139 98.5 272 184	89 97 89 95 80 90	75-125 75-125 75-125 75-125 75-125 75-125	121 98.5 272 184	119 97.5 269 185	95 94 77 90	1.7 1.0 1.1 0.5	20 20 20 20 20	-	- - - -	< 1 < 1 < 1 < 1

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Page: 2 of 3

Quality Control Report Lab IDs: 17-W789 to 17-W795

ab IDs: 17-W789 to 17-W795 **Project:** OTP Coyote Blue Pit CCR

Work Order: 201782-0801

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Chloride mg/l	30.0 30.0 30.0	80 80 80	80-120 80-120 80-120	30.0	17-W791	8.1	34.3	87	80-120	34.3	36.7	95	6.8	20	- - -	-	< 1 < 1 < 1
Chromium - Total mg/l	0.1000	99	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 < 0.002 < 0.002	0.3762 0.3808 0.3676	94 95 92	75-125 75-125 75-125	0.3762 0.3808 0.3676	0.3810 0.3884 0.3852	95 97 96	1.3 2.0 4.7	20 20 20	- - -	- - -	< 0.002
Cobalt - Total mg/l	0.1000	99	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 < 0.002 < 0.002	0.3766 0.3778 0.3718	94 94 93	75-125 75-125 75-125	0.3766 0.3778 0.3718	0.3802 0.3900 0.3800	95 98 95	1.0 3.2 2.2	20 20 20			< 0.002
Fluoride mg/l	0.50 0.50 0.50	110 102 100	90-110 90-110 90-110	0.500 0.500 0.500 0.500	17-M510 17-W775 17-W791 17-W818	0.98 < 0.1 0.16 0.41	1.44 0.55 0.68 0.93	92 110 104 104	80-120 80-120 80-120 80-120	1.44 0.55 0.68 0.93	1.44 0.55 0.68 0.93	92 110 104 104	0.0 0.0 0.0 0.0	20 20 20 20	- - -	- - -	< 0.1 < 0.1 < 0.1 < 0.1
Lead - Total mg/l	0.1000	105	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.0005 < 0.0005 < 0.0005	0.3992	101 100 98	75-125 75-125 75-125	0.4050 0.3992 0.3938	0.4016 0.4070 0.4178	100 102 104	0.8 1.9 5.9	20 20 20	-	-	< 0.000
Lithium - Total mg/l	0.40	112	80-120	0.400 0.400	17-W775 17-W791	< 0.1 0.10	0.45 0.56	112 115	75-125 75-125	0.45 0.56	0.45 0.55	112 112	0.0 1.8	20 20		-	< 0.1 < 0.1 < 0.1
Mercury - Total mg/l	0.0020	100	85-115	0.100 0.002	17-M541 17-W791	< 0.01 < 0.0002	0.1048 0.0019	105 95	70-130 70-130	0.1048 0.0019	0.1038 0.0020	104 100	1.0 5.1	20 20	-	-	< 0.000
Molybdenum - Total mg/l	0.1000	102	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 < 0.002 0.0035	0.3900 0.4174 0.4068	98 104 101	75-125 75-125 75-125	0.3900 0.4174 0.4068	0.4026 0.4304 0.4334	101 108 107	3.2 3.1 6.3	20 20 20	-	-	< 0.002
pH units	-	-	-	-	-	-	-	-	-	9.6 6.9	7.9 6.8	-	19.4 1.5	20 20	-	-	-

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Quality Control Report

Lab IDs: 17-W789 to 17-W795 Project: OTP Coyote Blue Pit CCR Work Order: 201782-0801

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Selenium - Total mg/l	0.1000	111	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.002 < 0.002 0.0032	0.4650 0.4572 0.4510	116 114 112	75-125 75-125 75-125	0.4650 0.4572 0.4510	0.4420 0.4448 0.4656	110 111 116	5.1 2.7 3.2	20 20 20	9-0		< 0.002
Sulfate mg/l	100 100	89 103	80-120 80-120	500 200	17-W791 17-W796	932 106	1360 298	86 96	80-120 80-120	1360 298	1370 304	88 99	0.7 2.0	20 20	÷	1	< 5 < 5
Thallium - Total mg/l	0.1000	109	80-120	0.400 0.400 0.400	17W775q 17W791q 17W801q	< 0.0005 < 0.0005 < 0.0005	0.4210 0.4172 0.4070	105 104 102	75-125 75-125 75-125	0.4210 0.4172 0.4070	0.4170 0.4238 0.4330	104 106 108	1.0 1.6 6.2	20 20 20	0 0	4.4	< 0.0005
Total Dissolved Solids mg/l	ě.	2		5		1	ŽI.		12	2010 1100	2010 1180		0.0 7.0	20 20	8	*	< 10 < 10

Approved by: Cantle



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: FB Blue

Event and Year: April 2017

Report Date: 14 Apr 17 Lab Number: 17-W789 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion		7-1-	77.5	EPA 200.2	5 Apr 17	svs
Lab, pH	* 6.1	s.u.	0.1	SM4500 H+ B	5 Apr 17 17	00 SVS
Fluoride	< 0.1	mg/1	0.10	SM4500-F-C	6 Apr 17 17	00 SVS
Sulfate	< 5	mg/1	5.00	ASTM D516-07	7 Apr 17 9	50 EMS
Chloride	1.5	mg/1	1.0	SM4500-C1-E	13 Apr 17 11	35 EMS
Mercury - Total	< 0,0002	mg/1	0.0002	EPA 245.1	10 Apr 17 12	09 EV
Total Dissolved Solids	< 10	mg/l	10	I1750-85	7 Apr 17 14	26 SVS
Calcium - Total	< 1	mg/1	1.0	6010	11 Apr 17 12	01 SZ
Lithium - Total	< 0.1	mg/l	0.10	6010	10 Apr 17 14	30 KMD
Boron - Total	< 0.1	mg/1	0.10	6010	12 Apr 17 15	29 KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	11 Apr 17 11	00 KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11	00 KMD
Barium - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11	00 KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11	00 KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11	00 KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17 11	00 KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11	00 KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11	00 KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11	00 KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	11 Apr 17 11	00 KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11	00 KMD

^{*} Holding time exceeded

Approved by:

Clauditte K Canto

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: $\emptyset = Due$ to sample matrix # = Due to code to sample quantity # = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 6

Event and Year: April 2017

2 of 7 Page:

Report Date: 14 Apr 17 Lab Number: 17-W790 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 12:49 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Dat Ana	e lyzed		Analyst
Metal Digestion	7 51			EPA 200.2	5	Apr 1	7	svs
Field pH	6.64	s.u.	0.1	SM 4500 H+ B	5	Apr 1	7 12:49	JSM
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	5	Apr 1	7 17:00	SVS
Field Appearance	Partly Clo	oudy	NA	SM 2110	5	Apr 1	7 12:49	JSM
Field Temperature	8.88	Degrees C	0.1	SM 2550B	5	Apr 1	7 12:49	JSM
Field Conductivity	2631	umhos/cm	1	EPA 120.1	5	Apr 1	7 12:49	JSM
Fluoride	0.19	mg/l	0.10	SM4500-F-C	6	Apr 1	7 17:00	SVS
Sulfate	938	mg/l	5.00	ASTM D516-07	7	Apr 1	7 9:50	EMS
Chloride	7.0	mg/l	1,0	SM4500-C1-E	13	Apr 1	7 11:35	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	10	Apr 1	7 12:09	EV
Total Dissolved Solids	1970	mg/l	10	11750-85	7	Apr 1	7 14:26	SVS
Calcium - Total	201	mg/l	1.0	6010	11	Apr 1	7 12:01	SZ
Lithium - Total	0.10	mg/l	0.10	6010	10	Apr 1	7 14:30	KMD
Boron - Total	0.41	mg/l	0.10	6010	12	Apr 1	7 15:29	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	11	Apr 1	7 11:00	KMD
Arsenic - Total	0.0035	mg/l	0.0020	6020	11	Apr 1	7 11:00	KMD
Barium - Total	0.0758	mg/l	0.0020	6020	11	Apr 1	7 11:00	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	11	Apr 1	7 11:00	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	11	Apr 1	7 11:00	KMD
Chromium - Total	0.0106	mg/l	0.0020	6020	11	Apr 1	7 11:00	KMD
Cobalt - Total	0.0058	mg/l	0.0020	6020	11	Apr 1	7 11:00	KMD
Lead - Total	0.0066	mg/l	0.0005	6020			7 11:00	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	11	Apr 1	7 11:00	KMD
Selenium - Total	< 0.005 ^	mg/l	0.0020	6020	11	Apr 1	7 11:00	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	11	Apr 1	7 11:00	KMD

^{*} Holding time exceeded

Approved by:

Claudette

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 int

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 7

Event and Year: April 2017

Page: 3 of 7

Report Date: 14 Apr 17 Lab Number: 17-W791 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 13:12 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	7.794			EPA 200.2	5 Apr 17	svs
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	5 Apr 17 13:1	2 JSM
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	5 Apr 17 17:0	0 SVS
Field Appearance	Clear		NA	SM 2110	5 Apr 17 13:1	2 JSM
Field Temperature	9.95	Degrees C	0.1	SM 2550B	5 Apr 17 13:1	2 JSM
Field Conductivity	2659	umhos/cm	1	EPA 120.1	5 Apr 17 13:1	2 JSM
Fluoride	0.16	mg/l	0.10	SM4500-F-C	11 Apr 17 17:0	0 SVS
Sulfate	932	mg/l	5.00	ASTM D516-07	7 Apr 17 9:5	0 EMS
Chloride	8.1	mg/l	1.0	SM4500-C1-E	13 Apr 17 11:3	5 EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	10 Apr 17 12:0	9 EV
Total Dissolved Solids	2010	mg/1	10	I1750-85	7 Apr 17 14:2	6 SVS
Calcium - Total	192	mg/1	1.0	6010	11 Apr 17 12:0	1 SZ
Lithium - Total	< 0.1	mg/1	0.10	6010	10 Apr 17 14:3	0 KMD
Boron - Total	0.40	mg/1	0.10	6010	12 Apr 17 16:2	9 KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	11 Apr 17 11:0	0 KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11:0	0 KMD
Barium - Total	0.0440	mg/l	0.0020	6020	11 Apr 17 11:0	0 KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17 11:0	0 KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17 11:0	0 KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17 11:0	0 KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11:0	0 KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17 11:0	0 KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17 11:0	
Selenium - Total	< 0.005 ^	mg/l	0.0020	6020	11 Apr 17 11:0	
Thallium - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17 11:0	

^{*} Holding time exceeded

Approved by:

Clauditte K Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 13

Event and Year: April 2017

Report Date: 14 Apr 17 Lab Number: 17-W792 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 11:53 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyze	â	Analyst	
Metal Digestion	3.70	N.C. (EPA 200.2	5	Apr	17	SVS	-
Field pH	6.61	s.u.	0.1	SM 4500 H+ B	5	Apr	17 11:53	JSM	
Lab, pH	+ 7.2	s.u.	0.1	SM4500 H+ B	5	Apr	17 17:00	svs	
Field Appearance	Clear		NA	SM 2110	5	Apr	17 11:53	JSM	
Field Temperature	8.79	Degrees C	0.1	SM 2550B	5	Apr	17 11:53	JSM	
Field Conductivity	5243	umhos/cm	1	EPA 120.1	5	Apr	17 11:53	JSM	
Fluoride	0.24	mg/l	0.10	SM4500-F-C	11	Apr	17 17:00	svs	
Sulfate	2440	mg/l	5.00	ASTM D516-07	7	Apr	17 10:41	EMS	
Chloride	43.7	mg/l	1.0	SM4500-C1-E	13	Apr	17 11:35	EMS	
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	10	Apr	17 12:09	EV	
Total Dissolved Solids	4640	mg/1	10	I1750-85	7	Apr	17 14:26	SVS	
Calcium - Total	154	mg/l	1.0	6010	11	Apr	17 13:01	SZ	
Lithium - Total	0.22	mg/l	0.10	6010	10	Apr	17 14:30	KMD	
Boron - Total	0.55	mg/l	0.10	6010	12	Apr	17 15:29	KMD	
Antimony - Total	< 0.001	mg/l	0.0010	6020	11	Apr	17 11:00	KMD	
Arsenic - Total	0.0026	mg/1	0.0020	6020	11	Apr	17 11:00	KMD	
Barium - Total	0.0168	mg/1	0.0020	6020	11	Apr	17 11:00	KMD	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	11	Apr	17 11:00	KMD	
Cadmium - Total	< 0.0005	mg/l	0.0005	6020			17 11:00	KMD	
Chromium - Total	< 0.002	mg/l	0.0020	6020	11	Apr	17 11:00	KMD	
Cobalt - Total	< 0.002	mg/l	0.0020	6020			17 11:00	KMD	
Lead - Total	0.0009	mg/l	0.0005	6020	11	Apr	17 11:00	KMD	
Molybdenum - Total	< 0,002	mg/1	0.0020	6020			17 11:00	KMD	
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	11	Apr	17 11:00	KMD	
Thallium - Total	< 0.0005	mg/l	0.0005	6020			17 11:00	KMD	

^{*} Holding time exceeded

Approved by:

Claudette K Cantep

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: θ = Due to sample matrix # = Due to co

! - Due to sample quantity

= Due to concentration of other analytes
= Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 14

Event and Year: April 2017

Report Date: 14 Apr 17 Lab Number: 17-W793 Work Order #:82-0801

Account #: 006106

Date Sampled: 5 Apr 17 14:45 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed		Analyst
Metal Digestion	.776.56	2017		EPA 200.2	5 Apr 17	100	SVS
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	5 Apr 17	14:45	JSM
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	5 Apr 17	17:00	SVS
Field Appearance	Clear		NA	SM 2110	5 Apr 17	14:45	JSM
Field Temperature	8.62	Degrees C	0.1	SM 2550B	5 Apr 17	14:45	JSM
Field Conductivity	5178	umhos/cm	1	EPA 120.1	5 Apr 17	14:45	JSM
Fluoride	< 0.1	mg/l	0.10	SM4500-F-C	11 Apr 17	17:00	svs
Sulfate	1850	mg/l	5.00	ASTM D516-07	7 Apr 17		EMS
Chloride	8.2	mg/1	1.0	SM4500-C1-E	13 Apr 17	11:35	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	10 Apr 17		EV
Total Dissolved Solids	4110	mg/l	10	I1750-85	7 Apr 17	14:26	SVS
Calcium - Total	274	mg/1	1.0	6010	11 Apr 17		SZ
Lithium - Total	< 0.2 @	mg/1	0.10	6010	10 Apr 17	14:30	KMD
Boron - Total	0.53	mg/l	0.10	6010	12 Apr 17	15:29	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	11 Apr 17	11:00	KMD
Arsenic - Total	0,0042	mg/1	0.0020	6020	11 Apr 17	11:00	KMD
Barium - Total	0.0322	mg/l	0,0020	6020	11 Apr 17	11:00	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17		KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17	11:00	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17	11:00	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17	11:00	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17	11:00	KMD
Molybdenum - Total	0.0021	mg/l	0.0020	6020	11 Apr 17	11:00	KMD
Selenium - Total	< 0.005 *	mg/l	0.0020	6020	11 Apr 17		KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17	11:00	KMD

^{*} Holding time exceeded

Approved by:

Clauditte K Canteo

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 internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 15

Event and Year: April 2017

Report Date: 14 Apr 17 Lab Number: 17-W794 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 13:37 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	1.146	E I I	0.00	EPA 200.2	5 Apr 17	svs
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	5 Apr 17 13:37	JSM
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	5 Apr 17 17:00	SVS
Field Appearance	Clear		NA	SM 2110	5 Apr 17 13:37	JSM
Field Temperature	9.26	Degrees C	0.1	SM 2550B	5 Apr 17 13:37	JSM
Field Conductivity	3740	umhos/cm	1	EPA 120.1	5 Apr 17 13:37	JSM
Fluoride	0.15	mg/l	0.10	SM4500-F-C	11 Apr 17 17:00	SVS
Sulfate	1300	mg/l	5.00	ASTM D516-07	7 Apr 17 10:41	EMS
Chloride	6.8	mg/l	1.0	SM4500-C1-E	13 Apr 17 11:35	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	10 Apr 17 12:09	EV
Total Dissolved Solids	2710	mg/l	10	I1750-85	7 Apr 17 14:26	svs
Calcium - Total	168	mg/l	1.0	6010	11 Apr 17 13:01	SZ
Lithium - Total	0.14	mg/1	0.10	6010	10 Apr 17 14:30	KMD
Boron - Total	0.46	mg/l	0.10	6010	12 Apr 17 16:29	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	11 Apr 17 11:00	KMD
Arsenic - Total	0.0136	mg/l	0.0020	6020	11 Apr 17 11:00	KMD
Barium - Total	0.0376	mg/l	0.0020	6020	11 Apr 17 11:00	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11:00	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11:00	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	11 Apr 17 11:00	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17 11:00	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	11 Apr 17 11:00	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	11 Apr 17 11:00	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	11 Apr 17 11:00	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	11 Apr 17 11:00	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit CCR

Sample Description: Blue 16

Event and Year: April 2017

Report Date: 14 Apr 17 Lab Number: 17-W795 Work Order #:82-0801 Account #: 006106

Date Sampled: 5 Apr 17 12:00 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Anal	yzed	Analyst	
Metal Digestion	1.11	3.7		EPA 200.2	5 A	pr 17	svs	-
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	5 A	pr 17 12:00	JSM	
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	5 A	pr 17 17:00	SVS	
Field Appearance	Clear		NA	SM 2110	5 A	pr 17 12:00	JSM	
Field Temperature	9.02	Degrees C	0.1	SM 2550B	5 A	pr 17 12:00	JSM	
Field Conductivity	2803	umhos/cm	1	EPA 120.1	5 A	pr 17 12:00	JSM	
Fluoride	0.16	mg/1	0.10	SM4500-F-C	11 A	pr 17 17:00	SVS	
Sulfate	935	mg/1	5.00	ASTM D516-07	7 P	pr 17 10:41	EMS	
Chloride	7.5	mg/1	1.0	SM4500-C1-E	13 A	pr 17 11:35	EMS	
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	10 P	pr 17 12:09	EV	
Total Dissolved Solids	1950	mg/1	10	I1750-85		pr 17 14:26		
Calcium - Total	160	mg/1	1.0	6010	11 A	pr 17 13:01	SZ	
Lithium - Total	0.11	mg/l	0.10	6010	10 A	pr 17 14:30	KMD	
Boron - Total	0.40	mg/1	0.10	6010		pr 17 16:29		
Antimony - Total	< 0.001	mg/1	0.0010	6020	11 A	pr 17 11:00	KMD	
Arsenic - Total	0.0055	mg/l	0.0020	6020	11 A	pr 17 11:00	KMD	
Barium - Total	0.0554	mg/l	0.0020	6020	11 A	pr 17 11:00	KMD	
Beryllium - Total	< 0.0005	mg/l	0.0005	6020		pr 17 11:00		
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	11 A	pr 17 11:00	KMD	
Chromium - Total	< 0.002	mg/l	0.0020	6020	11 A	pr 17 11:00	KMD	
Cobalt - Total	< 0.002	mg/l	0.0020	6020	11 A	pr 17 11:00	KMD	
Lead - Total	< 0.0005	mg/1	0.0005	6020		pr 17 11:00		
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	11 A	pr 17 11:00	KMD	
Selenium - Total	< 0.005 *	mg/l	0.0020	6020		pr 17 11:00		
Thallium - Total	< 0.0005	mg/l	0.0005	6020	11 A	pr 17 11:00	KMD	

^{*} Holding time exceeded

Approved by:

Clauditte

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

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



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 6
Sampling Personal:	Jeren Man

Phone: (701) 258-9	1720												
Weather Conditions:		Temp: 45 °F		Wind:	NOS~10	№ 5~ <i>(</i> 0 Precip			Sunny / Partly Cloudy / Cloudy				
	Well Info	rmation						Sa	ımpling l	nformatio	n		
Well Locked?	Yes	No				Purging Me	ethod:	Blac	lder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampling Me	ethod:	Blac	lder		Purge:	5/5	sec.
Casing Straight?	(Yes)	No				Dedicated E	quip?:	Yes	₩		Recover:	25/55	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate Sam	ple?:	Yes	® o		PSI:	50/	
Repairs Necessary:						Duplicate Samp	ole ID:		-		Pumping R	ate: 200/10	೦ mL/min
Casing	Diameter:		2"						2				
Water Level Before Purge:		62,49 ft			Purge Date:		3 Apr 11	7-	Time Purgi	ing Began:	1113	@m/pm	
Total Well Depth:		79.12' ft			Well Purged Dry?		Yes	No	Time Purged Dry:		1150	@m/pm	
Well Volume:		10,2 liters			Sample Date:		4 Apr 17		Time of	Sampling:	1249	am/pm	
Depth to Top	o of Pump:	7:1	,32	ft									
Water Level After Sample:		70,22 ft			Bottle 1L Raw, 500mL Nitric, 4-1L Nitric			4-1L Nitric					
Measurement Method:		Electric Water Level Indicator				List:	st:						
				: -1.1									

Field Measurements

Stabil	Stabilization Temp		Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	11113	9,42	2670	6.58	1,30	55,4	224.0	63.90	1000.0	Partly Clordy
2	i123	9,34	266(6,58	1.46	53.6	131,0	65.60	/000.J	Partly Cloudy
3	1128	9,34	2625	6,58	2,37	54.2	82.4	67.31	1000.0	clear
4	1143	9,59	2641	6.58	1,26	60.6	41.1	71,22	3 8 00,0	Clem
5	1158	9.76	2627	6,62	1,85	60.0	41.+265	Belowfung	300010	Cles
6								,		
7										
8										
9	(244	Purpol arel	for 5min	to Cles	r line			63,15	500.0	
10	1249	8.હ્	2631	6164	4.58	88.7	2BS,0			Partly Clordy

(Ng) Stabilized: Yes

Total Volume Removed: º∫∞.o mL

Comments:



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 7	
Sampling Personal:	Jerry Mayor	

Phone: (701) 258-9	720												
Weather Conditions:		Temp:	50 °F	=	Wind:	NO5-	10		Precip	Sunny/ P	artly C	loudy / Clou	ıdy
	Well Info	rmation						Sa	ımpling l	nformation			
Well Locked?	(es	No				Purgi	ng Method:	Blac	lder		Co	ntrol Setting:	5
Well Labeled?	Ves	No				Sampli	ng Method:	Blac	lder	F	ourge:	5	sec
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	(ND)	Re	cover:	55	sec
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:	MS/MS	5 D	Pum	ping R	ate: /00	mL/mir
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	7	9.60	ft		F	Purge Date:	3 Apr 17	}	Time Purging Be		1212	am/pin
Total W	/ell Depth:	•		ft		Well P	urged Dry?	Yes	No	Time Purged	d Dry:		am/pn
We	ll Volume:	-		liters		Sa	ample Date:	3 AV 17	-	Time of Sam	pling:	1312	am/pn
Depth to Top	of Pump:	~		ft									
Water Level Afte			79.85	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremen	t Method:	Electric W	ater Level In	dicator		List:							

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1217	10.19	2675	6,54	7,30	38.7	35,6	79,92	500,0	Clea
2	1222	9.84	2671	6.56	1, ((28,7	74.8	79.92	500,0	Clear
3	1237	10,14	2651	6,60	1.19	1910	75,8	79.90	1500,0	Clea
4	1242	10.34	2656	6,58	1,26	17.1	56.6	79.89	500,0	Clear
5	1257	10,54	2658	6.58	1,46	17.2	45.3	79.87	1500,0	Clem
6	1302	10.24	2647	6,57	1,54	17.3	38.6	79,85	5∞,0	Cles
7	1307	10.23	2653	6.57	1.55	16.4	37.2	79.85	500,0	Clen
8	1312	9,95	2659	6.57	1.58	14.8	35,7	79.85	500.0	Cless
9										
10										

Stabilized: (Yes) No

Total Volume Removed: 6000,0 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 13	
Sampling Personal:	Jary player	

Phone: (701) 258-9720

Phone: (701) 258-9	720												
Weather Conditions:		Temp:	45 °F	-	Wind:	N 85-	10		Precip	: Sunr	y/ Partly (Cloudy / Clo	udy
	Well Info	rmation						s	ampling	Informatio	on		
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:	5/5	sec.
Casing Straight?	(es)	No				Dedica	ted Equip?:	Yes	(Nø		Recover:	25/55	sec.
Grout Seal Intact?	Yes	(No)	Not Vis	ible		Duplicate	Sample?:	Yes	€		PSI:	100	
Repairs Necessary:						Duplicate	Sample ID:		_		Pumping R	ate: 200/100	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	10	3.85	ft		F	Purge Date:	3 April	(7	Time Purg	ing Began:	1002	ám∕pm
Total W	/ell Depth:	116	, 70	ft		Well P	urged Dry?	Yes	No	Time F	Purged Dry:	1052	@m/pm
We	ell Volume:		.9	liters		Sa	ample Date:	4 AT 1:	7	Time of	Sampling:	1153	(am/pm
Depth to Top	of Pump:	115	.13	ft					,				
Water Level Afte	er Sample:	111	.25	ft		Bottle	1L Raw, 50	00mL Nitric	, 4-1L Nitric				
Measuremen	t Method:	Electric V	Vater Level In	dicator		List:		-					
	•		No.	-									

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1007	9,55	4957	6.82	11.19	୧୨.୬	71000	106.50	106.50,00	o Cloudy
2	1012	9.63	4863	6.86	11.04	96.(71000	108,10	/000. _O	Cloudy
3	1017	7.55	4804	6.83	11.51	108.9	71000	110.20	1000.0	Cloudy
4	1032	9,72	4707	6.40	6.90	148,2	231.0	114.40	3000.0	Partly Clouding
5	1047	10.02	5951	6.91	1,94	115,2	126.0	BelowPung	3000.0	Partly Cloudy
6	1052	9,99	6076	6,97	1,56	7012	89.9	Below Pur	1000,0	clea
7										
8										
9	1148	evered will	for Smin	to clear	line			106,85	Seo	
10	1153	8,79	5243	6.61	₹,38	99.1	33,7	-	_	Clear

Stabilized: Yes No

Total Volume Removed: 10,500.0 mL

Comments:

42- 3Aer 17



Groundwater Assessment

Company:	OTP Coyote							
Event:	2017							
Sample ID:	Blue 14							
Sampling Personal:	leng ply							

Phone: (701) 258-9720

Weather Conditions:		Temp:	45 °1	=	Wind:	N@	5-10		Precip:	Sunr	ıy / Partly C	loudy Clo	udy
	Well Info	rmation						S	ampling l	nformatio	n		
Well Locked?	Yes	No				Purg	ing Method:	Bla	dder		Со	ntrol Setting	IS .
Well Labeled?	(es	No				Sampl	ing Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	No		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Vis	sible		Duplicate	e Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: <i>10</i> 0	mL/min
Casing	Diameter:		2"	-		•							
Water Level Bef	ore Purge:	7	B,79	ft			Purge Date:	4 Apr	17	Time Purg	ing Began:	1330	am/pm
Total W	Vell Depth:			ft		Well F	Purged Dry?	Yes	(No)	Time P	urged Dry:		am/pm
We	ell Volume:	-		liters		Sa	ample Date:	4April	7	Time of	Sampling:	1445	am/pm
Depth to Top	of Pump:	,		ft				ı					
Water Level Afte	er Sample:	79	9,88	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremen	nt Method:	Electric W	later Level Ir	ndicator		List:					,		
					•	5 ~						_	

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 соля	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1335	8,19	5188	6.69	2,37	47.7	62.3	79.10	500,0	Clear
2	1350	8,39	5235	6,68	1,64	38.1	35.7	79,21	1500,0	Clear
3	1405	8,50	5257	6,68	1,65	36.6	23,9	79,28	1500.0	Clear
4	1410	8,55	52 52	6,68	1.62	37,0	20.9	79,35	500,0	Cles
5	1415	8,52	\$241	6,66	1,55	37.0	13,5	79.41	200.0	Clear
6	1430	8,70	5211	6.67	1,58	34.4	6.34	79,58	1500,0	Clear
7	1435	8,69	5199	6,66	1,65	34.7	5,12	79.65	500.0	Clear
8	1440	8,58	5190	6,66	1,60	33,4	5.19	79,75	500.0	Clear
9	1445	8.62	5178	6,66	1,59	32,2	4.95	79,83	500,0	clear
10										

Stabilized: Yes No

Total Volume Removed: 7500,0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 15
Sampling Personal:	Jeren Huse

Phone: (701) 258-9720

1 Holle: (701) 230-31	720												
Weather Conditions:		Temp:	S0 °F		Wind:	505-	10		Precip:	Suni	Partly C	Cloudy / Clo	udy
•	Well Info	rmation						Sa	ampling I	nformation	on		
Well Locked?	(Yes	No				Purg	ing Method:	Blac	ider		Co	ntrol Setting	s
Well Labeled?	∕(Ye)s	No				Sampl	ing Method:	Blac	ider		Purge:	5	sec
Casing Straight?	X es	No				Dedica	ated Equip?:	Yes	(N)o		Recover:	55	sec
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	e Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: 100	mL/mir
Casing	Diameter:		2"							-			
Water Level Befo	re Purge:	7	6,45	ft			Purge Date:	5 Apr 1	7	Time Purg	ing Began:	1252	am/on
Total W	ell Depth:			ft		Well F	Purged Dry?	Yes	No	Time F	urged Dry:	-	am/pm
Wel	ll Volume:			liters		S	ample Date:	5A11	7	Time of	Sampling:	1337	am/ph
Depth to Top	of Pump:	-		ft									
Water Level Afte	r Sample:	-	H6,5B	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measurement	t Method:	Electric W	ater Level In	dicator		List:					·		
						_			, a		·		

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1257	9.34	3682	6.67	1,59	29,4	19.5	76,65	500,0	Clear
2	1302	9.33	3724	6,66	1.14	24,0	16.5	76.62	500,0	Clear
3	1307	9,33	3731	6.66	1.12	-21,5	9.80	76,55	S00, D	Clear
4	1312	9:42	3738	6,66	1.03	2019	603	76,54	500,0	Clear
5	1317	9.31	3735	6,66	1.02	20,9	4,34	76,52	500,0	Clear
6	1322	9,56	3729	6,66	1,03	21.2	3,43	76,52	500,0	clear
7	1327	9,48	3 739	6,66	1.03	ZI, 6	z.39	76.58	500,0	Clear
8	1332	9,14	3734	6,66	1.00	21,1	2.02	76.55	500,0	Clear
9	1337	9.26	3740	6,66	1103	21.5	2.00	76,55	500,0	Clear
10										

Stabilized: (Yes) No

Total Volume Removed: <u></u>45の.0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 16
Sampling Personal:	Jerry plan-

Phone: (701) 258-9720

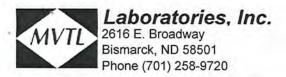
Weather Conditions:		Temp:	45 °F		Wind:	505	-10		Precip:	Sunny/	Partly C	loudy / Clo	udy
	Well Info	rmation						Sa	ımpling lı	nformation			
Well Locked?	Ves	No	***************************************			Purg	ing Method:	Blac	lder		Со	ntrol Setting	s
Well Labeled?	(Ves	No				Sampl	ing Method:	Blac	lder		Purge:	5	sec
Casing Straight?	(Les	No				Dedica	ted Equip?:	Yes	(No)	F	Recover:	22	sec
Grout Seal Intact?	Yes	(No)	Not Visi	ble		Duplicate	e Sample?:	Yes	Мo		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:			Pu	mping R	ate: /00	mL/mir
Casing	Diameter:		2"							-		***	4
Water Level Bef	ore Purge:	•	75.22	ft			Purge Date:	5 April	1	Time Purging	Began:	103 S	am/pm
Total V	Vell Depth:			ft		Well F	urged Dry?	Yes	No	Time Purg	ged Dry:		am/pm
We	ell Volume:			liters		Sa	ample Date:	54,1	7-	Time of Sa	ampling:	1200	am/pm
Depth to Top	o of Pump:			ft									
Water Level Afte	er Sample:	•	75,29	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremer	nt Method:	Electric V	Vater Level Ind	licator		List:							

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1040	8,67	2926	6.75	1,33	10.7	303.0	75,28	5యం	Pertly Cloudy
2	1055	8,97	Z825	6.64	0,73	7.6	410.0	75,35	1500.0	Partly Clovely
3	1100	9,08	2815	6.63	0,73	10.7	276.0	75,31	500.0	Partly Cloudy
4	1105	8,99	2812	6.63	0,73	11.8	213.0	75,30	500,0	Partly Claroly
5	1120	8,98	2802	6,62	0,75	18,0	88.7	75.31	IS∞0.0	Cles
6	1150	9,18	2803	6.61	1,15	Z8.8	20,2	75,30	300,0	Clea
7	1155	9,12	2003	6.62	1.07	29,8	19.3	75,31	500,0	Clea
8	1200	9,02	2803	6.62	1.11	30,4	18,5	75.31	5თ.ე	Cler
9										
10										

Stabilized: Yes No

Total Volume Removed: €500,0 mL



Chain of Custody Record

Project Nam	e:	Event:	Work Order Number:	77
	OTP Coyote - Blue Pit	April 2017	82-0801	
Report To: Attn: Address: phone:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s): Jeremy Mayer	
email:	jhollen@otpco.com			

	Sample Information							tle T	уре		F	ield Para	ameters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	1 liter	500ml Nitric				Temp (°C)	Spec. Cond	i Ha	Analysis Required
W789	FB Blue	5 Apr 17	NA	W		Х	Х				NA	NA	NA	
W790	Blue 6	4 Apr 17	1249	GW	Partly Cloudy	X	X		4		8,88	2631	6.64	
W791	Blue 7/MS7/MSD7	3 Apr 17	1312	GW	Clear	3	3		7		9.95	2659	6.57	
W792	Blue 13	4 Apr 17	1153	GW	Clear	Х	Х				8.79	5243	6.61	
W793	Blue 14	4 Apr 17	1445	GW	Clear	Х	Х				8.62	5178	6,66	OTD Courts List 1
W794	Blue 15	5 Apr 17	1337	GW	Clear	Х	Х			11	9.26	3740	6.66	OTP Coyote List 1
W795	Blue 16	5Apr 17	1200	GW	Clear	Х	Х		-		9.02	2803	6.62	
				-			13 2						E = 1	

Relinquished By:		Sample Condition:					
Name:	Date/Time	Location:	Temp (°C)				
1 7 chy-	5 Av 17 [533	Log In Walk In #2	TM562 / TM588				

Received	d by:
Name:	Date/Time
111000110-	5A002017
Much	1533



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CASE NARRATIVE - AMENDED 11 JUL 2017 (Receipt date IML)

MVTL Lab Reference No/SDG: 201782-0805 IML Lab Reference No/SDG: S1704140

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Blue Pit CCR Radiochemistry

Event & Year Apr 2017

MVTL Laboratory Identifications: 17-W811 through 17-W817

IML Laboratory Identifications: S1704140-001 through S1704140-007

Page 1 of 2

Sample Identification	IML Laboratory #	MVTL Laboratory #
FB Blue	S1704140-001	17-W811
Blue 6	S1704140-002	17-W812
Blue 7	S1704140-003	17-W813
Blue 13	S1704140-004	17-W814
Blue 14	S1704140-005	17-W815
Blue 15	S1704140-006	17-W816
Blue 16	S1704140-007	17-W817

I. RECEIPT

- All samples were received at the laboratory on 5 Apr 2017 at 1533.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 10.0°C (ambient).
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 11 Apr 2017.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.



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CASE NARRATIVE - AMENDED 11 JUL 2017 (Receipt date IML)

MVTL Lab Reference No/SDG:	201782-0805
IMI Lab Reference No/SDG:	\$1704140

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Blue Pit CCR Radiochemistry

Event & Year Apr 2017

MVTL Laboratory Identifications: 17-W811 through 17-W817

IML Laboratory Identifications: S1704140-001 through S1704140-007

Page 2 of 2

V. REPORTING

 The case narrative was amended on 11 Jul 17 to change the sample receipt date at IML from 3 Mar 2017 to 11 Apr 2017.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudate Can't

DATE: 1/JULI

Claudette Carroll - MVTL Bismarck Laboratory Manager



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: FB Blue

Event and Year: April 2017

1 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W811 Work Order #:82-0805 Account #: 006106 Date Sampled: 5 Apr 17

Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

Method Method Date As Received Analyst Reference Analyzed RL Result OL 2 May 17 See Attached Report Radium 226 27 Apr 17 OL Radium 228 See Attached Report

Approved by:

Clauditta K Canto

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: \emptyset = Due to sample matrix \sharp = Due to co \sharp = Due to sample quantity * = Due to in

= Due to concentration of other analytes + = Due to internal standard response



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 6

Event and Year: April 2017

2 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W812 Work Order #:82-0805 Account #: 006106

Date Sampled: 4 Apr 17 12:49 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece Result	ived	Method RL	Method Reference	Da t Ana	ce alyze	ed		Analyst
Field pH	6.64	s.u.	0.1	SM 4500 H+ B	4	Apr	17 1	12:49	JSM
Field Temperature	8.88	Degrees C	0.1	SM 2550B	4	Apr	17 3	12:49	JSM
Field Conductivity	2631	umhos/cm	1	EPA 120.1	4	Apr	17	12:49	JSM
Radium 226	See Att	ached Report			2	May	17		OL
Radium 228		ached Report			27	Apr	17		OL

Approved by:

Claudette K Canto

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: θ = Due to sample matrix θ = Due to conduct to sample quantity θ = Due to int

publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 7

Event and Year: April 2017

3 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W813 Work Order #:82-0805 Account #: 006106

Date Sampled: 3 Apr 17 13:12 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece: Result	ived	Method RL	Method Reference	Date Anal	zed	Analyst
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	3 A	or 17 13:12	JSM
Field Temperature	9.95	Degrees C	0.1	SM 2550B	3 A	or 17 13:12	JSM
Field Conductivity	2659	umhos/cm	1	EPA 120.1	3 A	or 17 13:12	JSM
Radium 226	See Atta	ached Report			2 M	ay 17	OL
Radium 228		ached Report			27 A	or 17	OL

Approved by:

Claudette K Cantep

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:

* Due to sample matrix # * Due to come to sample quantity # * Due to interpret to the sample quantity # * Due

= Due to concentration of other analytes + = Due to internal standard response



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 13

Event and Year: April 2017

4 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W814 Work Order #:82-0805 Account #: 006106

Date Sampled: 4 Apr 17 11:53 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.61	s.u.	0.1	SM 4500 H+ B	4 Apr 17 11:53	JSM
Field Temperature	8.79	Degrees C	0.1	SM 2550B	4 Apr 17 11:53	JSM
Field Conductivity	5243	umhos/cm	1	EPA 120.1	4 Apr 17 11:53	JSM
Radium 226		ched Report			2 May 17	OL
Radium 228		ached Report			27 Apr 17	OL

Approved by:

Claudette

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:

= Due to sample matrix # = Due to con

! = Due to sample quantity + = Due to interpretation.

= Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 14

Event and Year: April 2017

5 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W815 Work Order #:82-0805 Account #: 006106

Date Sampled: 4 Apr 17 14:45 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	4 Apr 17 14:4	JSM
Field Temperature	8,62	Degrees C	0.1	SM 2550B	4 Apr 17 14:4!	JSM
Field Conductivity	5178	umhos/cm	1	EPA 120.1	4 Apr 17 14:4!	JSM
Radium 226	See Att	ached Report			2 May 17	OL
Radium 228		ached Report			29 Apr 17	OL

Approved by

Claudette

1C 19Mey 17

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: \emptyset = Due to sample matrix # = Due to con # = Due to sample quantity # = Due to int

- Due to concentration of other analytes + - Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 15

Event and Year: April 2017

6 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W816 Work Order #:82-0805 Account #: 006106

Date Sampled: 5 Apr 17 13:37 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6,66	s.u.	0.1	SM 4500 H+ B	5 Apr 17 13:37	JSM JSM
Field Temperature	9,26	Degrees C	0.1	SM 2550B EPA 120.1	5 Apr 17 13:37 5 Apr 17 13:37	JSM
Field Conductivity Radium 226	3740 See Att	umhos/cm ached Report	1	EPA 120.1	2 May 17	OL
Radium 228	See Att	ached Report			29 Apr 17	OL

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to compared matrix # = Due to in the compared matrix # =

= Due to concentration of other analytes + = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CERTIFICATE of ANALYSIS = CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote Blue Pit

Sample Description: Blue 16

Event and Year: April 2017

7 of 7 Page:

Report Date: 18 May 17 Lab Number: 17-W817 Work Order #:82-0805 Account #: 006106

Date Sampled: 5 Apr 17 12:00 Date Received: 5 Apr 17 15:33 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	5 Apr 17 12:00	JSM
Field Temperature	9.02	Degrees C	0.1	SM 2550B	5 Apr 17 12:00	JSM
Field Conductivity	2803	umhos/cm	1	EPA 120.1	5 Apr 17 12:00	JSM
Radium 226	See Atta	ached Report			2 May 17	OL
Radium 228		ached Report			29 Apr 17	OL

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to con

! = Due to sample quantity + = Due to in

= Due to concentration of other analytes
+ = Due to internal standard response



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 5/5/2017

CLIENT:

MVTL Laboratories, Inc.

Project:

Lab Order:

201782-0805

S1704140

CASE NARRATIVE

Report ID: S1704140001

Samples 17-W811 FB Blue, 17-W812 Blue 6, 17-W813 Blue 7, 17-W814 Blue 13, 17-W815 Blue 14, 17-W816 Blue 15, and 17-W817 Blue 16 were received on April 11, 2017.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Qualifiers by sample

S1704140-003 - Radium 228 by Ga/Tech/Total Radium 228 - RPD outside accepted recovery limits

Reviewed by:



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-0805 S1704140-001

ClientSample ID: 17-W811 FB Blue

COC:

201782-0805

Date Reported 5/5/2017

Report ID

S1704140001

WorkOrder:

S1704140

CollectionDate: 4/5/2017

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix:

Water

Comments							1	
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB	
Radium 226 Precision (±)	0.04	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB	
Radium 228	0.5	pCi/L		1	Ga-Tech	04/28/2017 648	MB	
Radium 228 Precision (±)	1.4	pCi/L			Ga-Tech	04/28/2017 648	MB	

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Ε Value above quantitation range
- Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: 201782-0805

 Lab ID:
 \$1704140-002

 ClientSample ID:
 17-W812 Blue 6

 COC:
 201782-0805

Date Reported 5/5/2017

Report ID \$1704140001

WorkOrder: S1704140

CollectionDate: 4/4/2017 12:49:00 PM DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix: Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	nit
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB
Radium 228	2.1	pCi/L		1	Ga-Tech	04/28/2017 952	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	04/28/2017 952	MB

These results apply only to the samples tested.

Qualifiers:

B Analyte detected in the associated Method Blank

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

ND Not Detected at the Reporting Limit

S Spike Recovery outside accepted recovery limits

RL - Reporting Limit

C Calculated Value

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

M Value exceeds Monthly Ave or MCL or is less than LCL

O Outside the Range of Dilutions

X Matrix Effect

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave. Bismarck, ND 58501

ProjectName:

201782-0805 S1704140-003

COC:

Lab ID:

ClientSample ID: 17-W813 Blue 7

201782-0805

Date Reported 5/5/2017

Report ID

S1704140001

WorkOrder:

S1704140

CollectionDate: 4/3/2017 1:12:00 PM

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments								
Analyses	Result Uni		s Qual		Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	0.16	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB	
Radium 228	0.0	pCi/L		1	Ga-Tech	04/28/2017 1255	MB	
Radium 228 Precision (±)	1.4	pCi/L			Ga-Tech	04/28/2017 1255	MB	

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range
- Holding times for preparation or analysis exceeded Н
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0805

Lab ID:

S1704140-004 ClientSample ID: 17-W814 Blue 13

COC:

201782-0805

Date Reported 5/5/2017

Report ID

S1704140001

WorkOrder:

S1704140

CollectionDate: 4/4/2017 11:53:00 AM

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix: Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	nit
Radionuclides - Total							
Radium 226	0.16	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB
Radium 228	-0.4	pCi/L		1	Ga-Tech	04/28/2017 2208	MB
Radium 228 Precision (±)	1.3	pCi/L			Ga-Tech	04/28/2017 2208	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: *all*

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0805

Lab ID:

S1704140-005 ClientSample ID: 17-W815 Blue 14

COC:

201782-0805

Date Reported 5/5/2017

Report ID

S1704140001

WorkOrder:

S1704140

CollectionDate: 4/4/2017 2:45:00 PM

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	ts Qual RL Meth		Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB
Radium 228	1.2	pCi/L		1	Ga-Tech	04/29/2017 112	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	04/29/2017 112	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank В

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit ND

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave. Bismarck, ND 58501

ProjectName:

201782-0805

ClientSample ID: 17-W816 Blue 15

S1704140-006

201782-0805

Date Reported 5/5/2017

S1704140001

WorkOrder:

Report ID

S1704140

CollectionDate: 4/5/2017 1:37:00 PM

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix: Water

Comments

Lab ID:

COC:

Analyses Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total						
Radium 226 0.3	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB
Radium 226 Precision (±) 0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB
Radium 228 -1.3	pCi/L		1	Ga-Tech	04/29/2017 416	MB
Radium 228 Precision (±) 1.3	pCi/L			Ga-Tech	04/29/2017 416	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-0805

Lab ID:

S1704140-007 ClientSample ID: 17-W817 Blue 16

COC:

201782-0805

Date Reported 5/5/2017

Report ID

S1704140001

WorkOrder:

S1704140

CollectionDate: 4/5/2017 12:00:00 PM

DateReceived: 4/11/2017 11:29:00 AM

FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	05/02/2017 1502	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	05/02/2017 1502	MB
Radium 228	0.7	pCi/L		1	Ga-Tech	04/29/2017 721	MB
Radium 228 Precision (±)	1.4	pCi/L			Ga-Tech	04/29/2017 721	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
 - Value above quantitation range
- Н Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Work Order:

Project:

MVTL Laboratories, Inc.

S1704140

201782-0805

Date: 5/5/2017

Report ID: S1704140001

Radium 228 by Ga/Tech	Sample Type MBLK		Units	: pCi/L			
MB-430 (04/26/17 11:52)	RunNo: 145297	Prep[Date: 04/1	7/17 14:00	Bato	hID 13102	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	ND	1					
Radium 228 by Ga/Tech	Sample Type LCS		Units	: pCi/L			
LCS-430 (04/26/17 14:57)	RunNo: 145297	Prep[Date: 04/1	7/17 14:00	Bato	hlD 13102	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	39	1	40.1		98.1	65.9 - 132	
Radium 228 by Ga/Tech	Sample Type LCSD		Units	: pCi/L			
LCSD-430 (04/26/17 18:01)	RunNo: 145297	Prep[Date: 04/1	7/17 14:00	Bato	hID 13102	
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	41	1	39	3.17	101	20	
Radium 228 by Ga/Tech	Sample Type MS		Units	: pCi/L			
S1704140-003AMS (04/28/17 15:59)	RunNo: 145297	Prep[Date: 04/1	7/17 14:00	Bato	hID 13102	
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228	25	1	40.1	ND	62.8	50 - 139	
Radium 228 by Ga/Tech	Sample Type MSD		Units	: pCi/L			
S1704140-003AMSD (04/28/17 19:04)	RunNo: 145297	PrepD	Date: 04/1	7/17 14:00	Bato	hID 13102	
Analyte	Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228	35	1	25	31.3	86.1	20	R

Qualifiers: B Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

Spike Recovery outside accepted recovery limits



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Work Order:

MVTL Laboratories, Inc.

S1704140

Project: 201782-0805

Date: 5/5/2017

Report ID: S1704140001

Radium 226 in Water -	Sample Type MBLK		Units:	pCi/L			
MB-1743 (05/02/17 12:23)	RunNo: 145424	PrepDate	: 04/2	5/17 0:00	Bato	hID 13112	
Analyte	Result	RL S	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	ND	0.2					
Radium 226 in Water -	Sample Type LCS		Units:	pCi/L			
LCS-1743 (05/02/17 12:23)	RunNo: 145424	PrepDate	: 04/2	5/17 0:00	Bato	:hID 13112	
Analyte	Result	RL S	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6.6	0.2	5.89		112	67.1 - 122	
Radium 226 in Water -	Sample Type MS		Units:	pCi/L			
MS-1743 (05/02/17 12:23)	RunNo: 145424	PrepDate	: 04/25	5/17 0:00	Bato	hID 13112	
Analyte	Result	RL S	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6.3	0.2	5.89	ND	106	65 - 131	
S1704140-003AMS (05/02/17 15:02)	RunNo: 145424	PrepDate	: 04/25	5/17 0:00	Bato	:hID 13112	
Analyte	Result	RL S	Spike	Ref Samp	%REC	% Rec Limits	Qual
Radium 226	6.6	0.2	5.89	ND	111	65 - 131	
Radium 226 in Water -	Sample Type MSD		Units:	pCi/L			
MSD-1743 (05/02/17 12:23)	RunNo: 145424	PrepDate:	: 04/25	5/17 0:00	Bato	hID 13112	
Analyte	Result	RL C	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	6.5	0.2	6.3	3.70	110	20	
S1704140-003AMSD (05/02/17 15:02)	RunNo: 145424	PrepDate:	: 04/25	5/17 0:00	Bato	hID 13112	
Analyte	Result	RL C	Conc	%RPD	%REC	% RPD Limits	Qual
Radium 226	6.0	0.2	6.6	8.48	102	20	

Qualifiers:

B Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

Spike Recovery outside accepted recovery limits



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page	1	of	1	
. ~ 5		O ,		

Toll Ergo: (S	Phone: (701) 258-9720 Toll Free: (800) 279-6885										201782-0805
Company Nam	## Toll Free: (800) 279-6885 Fax: (701) 258-9724 ##: ### Account #:										
	.o a.i.a /\aa/055;			Account #	f:						Phone #:
	<u>M</u>	<u>VTL</u>		Contact:							701-258-9720 Fax #:
		<u>Broadway</u>			Claud	lette	е				For faxed report check box
Rilling Address	Bismarci	Name of S	Sampler:						E-mail: ccarroll@mvtl.com		
Dining Address	s (indicate if different	t from above):									For e-mail report check box
	PO F	Box 249		Quote Nu	mber						Date Submitted:
		. MN 56073		Project Na	ame/Numbe	or.					7-Apr-17 Purchase Order #:
						.					BL5828
<u></u>	1	Sample Information					В	ottle	Tyı	oe	Analysis
91704	4140								T .		
							33	9			
						9	1000 ml HNO3	VOC Vials Umpreserved	<u>_</u>		
IML Lab			Sample	Date	Time	Untreated	Ξ	Via	s Jar	<u></u>	
Number	Barrer					<u></u>	2	0 4	2	13	
Number	MVTL Lab Number	Client Sample ID	Туре	Sampled	Sampled	5	É	N U	1 35	= =	Analysis Required
Number (17-W811	Client Sample ID FB Blue	Type GW	Sampled 5-Apr-17	Sampled NA	Cn	4	O m n	Glass	Other	Analysis Required Ra226 & Ra228
				· · · · · · · · · · · · · · · · · · ·		Curt		ON Um	Gle	Ott	Ra226 & Ra228
00.1	17-W811	FB Blue	GW	5-Apr-17	NA.	Unt	4	ON Mn	Gla	Off	Ra226 & Ra228 Ra226 & Ra228
00 L 00Z	17-W811 17-W812	FB Blue Blue 6	GW GW	5-Apr-17 4-Apr-17	NA 1249	Unt	4	OV Um	Gle	Otl	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
002	17-W811 17-W812 17-W813	FB Blue Blue 6 Blue 7	GW GW	5-Apr-17 4-Apr-17 3-Apr-17	NA 1249 1312	Unt	4 4	OV EU	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
002 003 004	17-W811 17-W812 17-W813 17-W814	FB Blue Blue 6 Blue 7 Blue 13	GW GW GW	5-Apr-17 4-Apr-17 3-Apr-17 4-Apr-17	NA 1249 1312 1153	Unt	4 4 4	O _A	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
00 1 002 003 004 005	17-W811 17-W812 17-W813 17-W814 17-W815	FB Blue Blue 6 Blue 7 Blue 13 Blue 14	GW GW GW GW	5-Apr-17 4-Apr-17 3-Apr-17 4-Apr-17	NA 1249 1312 1153 1445	Unt	4 4 4 4	ω _Λ	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
002 003 004 005 006	17-W811 17-W812 17-W813 17-W814 17-W815 17-W816	FB Blue Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	5-Apr-17 4-Apr-17 3-Apr-17 4-Apr-17 4-Apr-17 5-Apr-17	NA 1249 1312 1153 1445 1337	Unt	4 4 4 4	O/ EU	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
002 003 004 005 006	17-W811 17-W812 17-W813 17-W814 17-W815 17-W816	FB Blue Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	5-Apr-17 4-Apr-17 3-Apr-17 4-Apr-17 4-Apr-17 5-Apr-17	NA 1249 1312 1153 1445 1337	Unt	4 4 4 4	O A	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228
002 003 004 005 006 007	17-W811 17-W812 17-W813 17-W814 17-W815 17-W816 17-W817	FB Blue Blue 6 Blue 7 Blue 13 Blue 14 Blue 15	GW GW GW GW GW	5-Apr-17 4-Apr-17 3-Apr-17 4-Apr-17 5-Apr-17 5-Apr-17	NA 1249 1312 1153 1445 1337 1200		4 4 4 4	OV EU	Gle	Ott	Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228 Ra226 & Ra228

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Temp:
T. Olson	7-Apr-17	1700		Im Suhit	4/11/17 1:20	11.40
2.						



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 6
Sampling Personal:	Jeren Hen

Phone: (701) 258-9720

•							-						
Weather Conditions:		Temp:	45	°F	Wind:	NO5~1	9		Precip:	Sunn	y / Partly C	loudy / Clou	ıdy
•	Well Info	rmation						Sa	ampling l	nformatio	n		
Well Locked?	X'es)	No				Purgin	g Method:	Blac	der		Co	ntrol Setting:	5
Well Labeled?	Yes	No				Samplin	g Method:	Blac	der		Purge:	5/5	sec.
Casing Straight?	(Yes)	No				Dedicate	ed Equip?:	Yes	₩		Recover:	25/55	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	® o		PSI:	50/	
Repairs Necessary:						Duplicate S	Sample ID:				Pumping Ra	ate: 260/100	mL/min
Casing	Diameter:		2"							_			
Water Level Befo	ore Purge:	T L	2.49	ft		Р	urge Date:	3 April	7-	Time Purgi	ng Began:	1113	am/pm
Total W	/ell Depth:		79.12	ft		Well Pu	rged Dry?	(Yes)	No	Time P	urged Dry:	1158	amp/pm
We	Il Volume:	ı	0,2	liters		Sar	nple Date:	4 Apr 17		Time of	Sampling:	1249	am/pm
Depth to Top	of Pump:	74	1,32	ft									
Water Level Afte	er Sample:	A	0,22	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremen	t Method:	Electric V	Vater Leve	el Indicator		List:							

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity		mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1118	9,42	2670	6.58	1,30	55,4	224,0	63,90	1000.0	Partly Clordy
2	1123	9,34	266(6,58	1.46	53.6	131,0	65,60	<i>[00</i> 0.∂	Partly Cloudy
3	1128	9,34	2625	6.58	237	54.2	82.4	67.31	1000.0	Clear
4	1143	9,59	2641	6.58	1,26	60:6	41.1	71,22	3 \$ 00,0	Clem
5	1158	9.76	2627	6,62	1,85	60.0	41+265	BelowPorg	3000'0	Cles
6					•			`		
7										
8										
9	(244	Purpol wel	for Smin	to Cles				63,15	500.0	
10	1249	8,88	2631	664	4.58	88.7	265,0		<u> </u>	Partly Clorch

Stabilized: Yes

Total Volume Removed: <u>9ς∞.o</u> mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 7	
Sampling Personal:	Jerry Mayor	

											1 (00)00		
Phone: (701) 258-9	9720						,					***************************************	
Veather Conditions:		Temp:	50	°F	Wind:	N 05-1	O		Precip:	8ún	ny/ Partly C	loudy / Cl	oudy
	Well Info	rmation						S	ampling I	nformati	on		
Well Locked?		No				Purgii	ng Method:	Bla	dder		Co	ntrol Settin	gs
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No				Dedicat	ed Equip?:	Yes	(ND)		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate:	Sample ID:	MS/M	2 D		Pumping R	ate: /00	mL/min
Casing	Diameter:		2"							•			
Water Level Bef	ore Purge:		9.60	ft		F	urge Date:	3 Apr 1	7	Time Purg	ging Began:	1212	am pin
Total V	Vell Depth:	6.		ft		Well P	urged Dry?	Yes	No	Time F	Purged Dry:		am/pm
We	ell Volume:	•		liters		Sa	mple Date:	3 AV 17		Time o	f Sampling:	1312	am/pm
Depth to Top	o of Pump:	-		ft									
Water Level After	er Sample:		79,85	ft		Bottle	1L Raw, 50	00mL Nitric,	4-1L Nitric				
Measuremen	nt Method:	Electric W	ater Leve	l Indicator		List:							
											<u> </u>		

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1217	10.19	2675	6,54	7,30	38.7	35,6	79,92	500,0	Clea
2	1222	9.84	2671	6.56	1, 11	28.7	74.8	79,92	500,0	Clear
3	1237	10,14	2651	6,60	1.19	1910	75.8	7990	1500,0	Clea
4	1242	10,34	2656	6.58	1,26	17.1	56.6	79,89	500.0	Clear
5	1257	10,54	2658	6.58	1.46	17.2	45.3	79.87	1500,0	Clem
6	1302	10.24	2647	6,57	1,54	17.3	38.6	79,85	500,0	Cles
7	1307	10.23	2653	6.57	1.55	16.4	37.2	79.85	500,0	Clear
8	1312	9,95	2659	6.57	1,58	14.6	35,7	79.85	500.0	Clear
9										
10										
VE 1 712 C	W-55	B.1 -						·	<u> </u>	

Stabilized: Yes No

Total Volume Removed: 6000,0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 13
Sampling Personal:	Jan planer

Phone: (701) 258-9720

1 Hone. (101) 230-3120						
Veather Conditions:	Temp:	45 °F	Wind: N = 5-10	Precip:	Sunny / Partly Cloudy / Cloud	lv

	Well Info	rmation		
Well Locked?	Yes	No		
Well Labeled?	Ves	No		
Casing Straight?	(es)	No		
Grout Seal Intact?	Yes	(No)	Not V	/isible
Repairs Necessary:				
Casing	Diameter:		2"	
Water Level Bef	ore Purge:	l	3.85	ft
Total V	Vell Depth:	11	6,70	ft
We	ell Volume:		7.9	liters
Depth to To	p of Pump:	11.	5, 13	ft
Water Level Aft	er Sample:	111	:25	ft
Measuremer	nt Method:	- Electric	Water Level	Indicator

N @ 2-10	Precip	Sunny / Partly Cloudy / Cloudy
	Sampling I	nformation
Purging Method:	Bladder	Control Settings
Sampling Method:	Bladder	Purge: 5 / 5 sec.
Dedicated Equip?:	Yes (Nø	Recover: 25/55 sec.
Duplicate Sample?:	Yes ∰o	PSI: 100
Duplicate Sample ID:		Pumping Rate: 200/100 mL/min
Purge Date:	3 Apr 1 17	Time Purging Began: 1002 (am/pm
Well Purged Dry?	∕Yes No	Time Purged Dry: /652 @m/pm
Sample Date:	4Ar 17	Time of Sampling: / 5 3 am/pm
Bottle 1L Raw, 50	00mL Nitric, 4-1L Nitric	
List:		

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1007	9,55	4957	6.82	11.19	85.0	71000	106,50	106.50,000	o Cloudy
2	1012	9.63	4863	6.86	11.04	96.(71000	108.10	٥٠٥٥١/	Claudy
3	1017	7.55	4804	6.83	11,51	108.9	00017	110.20	1000.0	Cloudy
4	1032	9.72	4707	6.40	6.90	148,2	231,0	114.40	3000,0	Partly Clardy
5	1047	10.02	5951	691	1,94	115,2	126.0	BelowPorg	3000,0	Partly Cloudy
6	1052	7,99	6076	6,97	1,56	7012	89,9	Below Pur	1000,0	clea
7										
8										
9	1148	every well	for Simila	to clear	line			106,85	500	
10	1153	8,79	5243	6.61	₹,38	99.1	33,7		-	Clear

Stabilized: Yes (No)

Total Volume Removed: 10,月の0.0 mL

Comments:

42-3A-17



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 14,
Sampling Personal:	Jen ply

Phone: (701) 258-9720

1 Holle: (701) 200 C	3120						-						
Weather Conditions:		Temp:	45°F	=	Wind:	NO	5-10		Precip:	Suni	ny / Partly (Cloudy (Clot	ıdy
	Well Info	rmation						Sa	ampling l	nformatio	on		
Well Locked?	Yes	No				Purg	ing Method:	Blac	dder		Co	ntrol Settings	3
Well Labeled?	(es	No				Sampl	ing Method:	Blac	dder		Purge:	5	sec.
Casing Straight?	(Ýe)s	No				Dedica	ted Equip?:	Yes	(No)		Recover:	55	sec.
Grout Seal Intact?	Yes	No	NetVis	ible		Duplicate	e Sample?:	Yes	No		PSI:	60	
Repairs Necessary:						Duplicate	Sample ID:				Pumping R	ate: 100	mL/min
Casing	Diameter:		2"	•		-							
Water Level Bet	fore Purge:	7-7	78,79	ft			Purge Date:	4 Apr	17	Time Purg	jing Began:	1330	am/pm
Total V	Vell Depth:			ft		Well F	Purged Dry?	Yes	(No)	Time F	Purged Dry:		am/pm
We	ell Volume:			liters		S	ample Date:	4April	<u> </u>	Time o	f Sampling:	1445	am/pm
Depth to To	p of Pump:			ft				υ 					
Water Level Aft	er Sample:	7	9.88	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremer	nt Method:	Electric V	Vater Level In	dicator		List:							
						r							

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1335	8(19	5188	6,69	2,37	47.7	62.3	79.10	500,0	Clear
2	1350	8,39	5235	6.68	1,64	38.1	35.7	79,21	1500,0	Clear
3	1405	ც,≤0	5257	6,68	1,65	36.6	23,9	79,28	1500,0	Cles
4	1410	8,55	52 52	6,68	1.62	37.0	20.9	79,35	500.0	Cles
5	1415	8,52	\$241	6,66	1,55	37.0	13,5	79,41	500.0	Clear
6	1430	8,70	5211	6.67	1.58	34.4	6.34	79,58	1500,0	Clear
7	1435	8,69	5199	6,66	1,65	34.7	5,12	79.65	500.0	Clear
8	1440	୫,5ଟ	5190	6,66	1,60	33.4	5.19	79.75	500.0	Clear
9	1445	8.62	5178	6,66	1,59	32,2	4.95	79,83	500.0	clear
10					,					

Stabilized: Yes

No

Total Volume Removed: 7500,0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 15
Sampling Personal:	Jerry Henry

Phone:	(701)	258-9720	

Phone: (701) 258-9	720										*		
Weather Conditions:		Temp:	50 °1	_	Wind:	505-1	ಲ		Precip:	Suni	ny/ Partly (Cloudy / Clo	ıdy
	Well Info	rmation						Sa	ımpling I	nformatio	on		
Well Locked?	(Yes	No				Purgi	ng Method:	Blac	lder		Co	ntrol Settings	 S
Well Labeled?	/Yes	No				Sampli	ng Method:	Blac	lder		Purge:	5	sec.
Casing Straight?	X es	No				Dedica	ted Equip?:	Yes	(N)o		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	Sample?:	Yes	No		PSI:	6O	
Repairs Necessary:				;		Duplicate	Sample ID:				Pumping R	ate: 100	mL/min
Casing	Diameter:		2"	:									
Water Level Befo	ore Purge:	7	6.45	ft		F	Purge Date:	5 Apr 1	7	Time Purg	ing Began:	1252	am@m
Total W	Vell Depth:			ft		Well P	urged Dry?	Yes	No	Time F	ourged Dry:		am/pm
We	ell Volume:	•		liters		Sa	mple Date:	5A1	7	Time o	f Sampling:	1337	am/pm
Depth to Top	of Pump:	-		ft				•					
Water Level After	er Sample:		46,5B	ft		Bottle	1L Raw, 50	0mL Nitric,	4-1L Nitric				
Measuremen	t Method:	Electric W	ater Level In	dicator		List:							

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1257	9.34	3682	6.67	1,59	29,4	19.5	76,65	500,0	Clear
2	1302	9.33	3724	6,66	1.14	24,0	16.5	76,62	500,0	Clear
3	1307	9,33	3731	6,66	1.12	. 21,5	9.80	76,55	500,0	Clear
4	1312	9:42	3738	6,66	1.03	2019	6.03	76,54	500,0	Cler
5	1317	9.31	3735	6,66	1.02	20,9	4.34	76,52	500,0	cler
6	1322	9,56	3729	6,66	1,03	21.2	3.43	76,52	500,0	clear
7	1727	9.48	3 739	6,66	1.03	21,6	Z.39	76.58	500,0	Clear
8	1332	9,14	3734	6,66	1.00	21,1	2.02	76,55	500,0	Clea
9	1337	9.26	3740	6,66	1103	21.5	2.00	76,55	500,0	Clear
10										

Stabilized: No Total Volume Removed: 45の.0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 16
Sampling Personal:	· love sho

Phone: (701) 258-9720

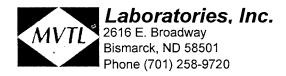
Phone: (701) 258-9	9720												
leather Conditions:		Temp:	45	°F	Wind:	5 @ \$	-10		Precip:	Sun	ny) Partly (Cloudy / Clo	oudy
	Well Info	rmation						Sa	ımpling l	nformation	on		
Well Locked?		No				Purg	ing Method:	Blac	lder		Co	ontrol Setting	as
Well Labeled?		No				Sampl	ing Method:	Blac	lder		Purge:		sec.
Casing Straight?	Ves	No				Dedica	ted Equip?:	Yes	(No)		Recover:		sec.
Grout Seal Intact?	Yes	(No)	Not \	/isible		Duplicate	e Sample?:	Yes	Mo		PSI:	60	
epairs Necessary:						Duplicate	Sample ID:				Pumping R		mL/min
Casing	Diameter:		2"							•		*	*****
Water Level Bef	ore Purge:	4	75,22	ft			Purge Date:	5 April	1	Time Purg	ing Began:	103 S	am∕pm
Total V	Vell Depth:			ft		Well F	Purged Dry?	Yes	No	Time F	ourged Dry:		am/pm
We	ell Volume:		-	liters		Sa	ample Date:	5Ap 1=	7-	Time o	f Sampling:	1200	am/pm
Depth to Top	o of Pump:	<u>-</u>		ft									
Water Level Afte	er Sample:		75,29	ft		Bottle	1L Raw, 50	00mL Nitric,	4-1L Nitric				
Measuremer	nt Method:	Electric V	/ater Level	Indicator		List:							

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1040	8,67	2926	6.75	1,33	10.7	303.0	75,28	500,0	Partly Claudy
2	1055	8,97	2825	6.64	0,73	7.6	410,0	75,35	1500.0	Partly Clovely
3	1100	9,08	2815	6,63	0,73	10.7	276.0	75,31	500.0	Partly Cloudy
4	1105	8,99	2812	6.63	0,73	11.18	213,0	75,30	500,0	Partly Cloudy
5	1120	8,98	2802	6,62	0,75	18,0	88,7	75.31	ISOO.D	Clear
6	1150	9,18	2803	6.61	1,15	28.8	20,2	75,30	300,0	Clear
7	1155	9,12	2003	6.62	1.07	29,8	19.3	75,31	500,0	Clea
8	1200	9,02	2803	6.62	1.11	30,4	18,5	75.31	Soo.D	Cler
9								<u> </u>		
10							***************************************			

Stabilized: Ves No
Comments:

Total Volume Removed: \$500,0 mL



Chain of Custody Record

				Control of the Contro
Project Nam	e:	Event:	Work Order Number:	0. 2015
	OTP Coyote - Blue Pit	April 2017		82 - 0805
Report To: Attn: Address:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s): Jeremy Layer	
email:	ihollen@otpco.com		'	

	Sampl	e Informatio	n	, i sulateti			Bott	le T	уре	Capa a Fi	eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	¹ Iller Nitric				Temp (°C)	Spec. Cond.	Ha	Analysis Required
M811	FB Blue	5Apr 17	NA	W		4				NA	NA	NA	
W812	Blue 6	4Apr 17	1249	GW		4				8.88	2631	6.64	
W813	Blue 7/MS7/MSD7	3Apr 17	1312	GW		12				9,95	2659	6.57	
M814	Blue 13	4 Ap, 17	1153	GW		4				8,79	5243	6.61	
W85	Blue 14	4Apr 17	1445	GW		4				8,62	517B	6,66	Rad 226 & Rad 228
W816	Blue 15	5.Apr 17	1337	GW		4				9.26	3740	6,66	1\au 220 & 1\au 220
W817	Blue 16	5Ap, 17	1200	GW		4				9.02	2803	6,62	

Comments: * SAp 17 d-

ı	Relinquished By:	ing selection of the se	Sample Condition:							
	Nam _j e:	Date/Time	Location:	Temp (°C)						
	1 Myer	5Apr17 1533	Log fir Walk In #2	TM562 /(TM588)						
ſ	2									

Received by:					
Name:	Date/Time				
(C	5 Apr 17				
- Canty	1533				



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-1297

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

May 2017

MVTL Laboratory Identifications:

17-W1822 through 17-W1828

Page 1 of 2

Sample Identification	MVTL Laboratory # 17-W1822					
Field Blank (FB)						
Blue 6	17-W1823					
Blue 7	17-W1824					
Blue 13	17-W1825					
Blue 14	17-W1826					
Blue 15	17-W1827					
Blue 16	17-W1828					

I. RECEIPT

- All samples were received at the laboratory on 18 May 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 3.5°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-1297

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

May 2017

MVTL Laboratory Identifications:

17-W1822 through 17-W1828

Page 2 of 2

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.

 For some analyses, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.

For some analytes, the reported results were elevated due to instrument performance at the lower limit of quantitation (LLOQ).

All laboratory data has been approved by MVTL Laboratories.

SIGNED:

Guill

DATE:

12Jun)7

Claudette Carroll - MVTL Bismarck Laboratory Manager

MVTL

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Page: 1 of 2

Quality Control Report

Lab IDs: 17-W1822 to 17-W1828 Project: OTP Coyote - Blue Pit - CCR Work Order: 201782-1297

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000 0.1000	102 100	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.001 < 0.001	0.4234 0.4276	106 107	75-125 75-125	0.4234 0.4276	0.4116 0.4200	103 105	2.8 1.8	20 20	-	-	< 0.001 < 0.001
Arsenic - Total mg/l	0.1000 0.1000	97 98	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.002 < 0.002	0.4268 0.4238	107 106	75-125 75-125	0.4268 0.4238	0.4064 0.4298	102 107	4.9 1.4	20 20	-	_	< 0.002 < 0.002
Barium - Total mg/l	0.1000 0.1000	93 93	80-120 80-120	0.400 0.400	17W1824q 17W1834q	0.0370 0.0137	0.4142 0.3956	94 95	75-125 75-125	0.4142 0.3956	0.4152 0.3860	95 93	0.2 2.5	20 20	-	-	< 0.002 < 0.002
Beryllium - Total mg/l	0.1000 0.1000	106 108	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.0005 < 0.0005	0.4430 0.4322	111 108	75-125 75-125	0.4430 0.4322	0.4330 0.4248	108 106	2.3 1.7	20 20	-	-	< 0.0005 < 0.0005
Boron - Total mg/l	0.40 0.40 0.40	108 108 105	80-120 80-120 80-120	0.400 0.400	17-W1824 17-W1834	0.40 0.28	0.79 0.66	98 95	75-125 75-125	0.79 0.66	0.82 0.66	105 95	3.7 0.0	20 20	-	- - - -	< 0.1 < 0.1 < 0.1 < 0.1 < 0.1
Cadmium - Total mg/l	0.1000 0.1000	108 106	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.0005 < 0.0005	0.4266 0.4368	107 109	75-125 75-125	0.4266 0.4368	0.4218 0.4296	105 107	1.1	20 20	-	-	< 0.0005 < 0.0005
Calcium - Total mg/l	20.0 20.0	112 114	80-120 80-120	500 100 100 500	17W1815q 17W1820q 17W1824q 17W1834q	635 60.0 196 605	1110 159 292 1130	95 99 96 105	75-125 75-125 75-125 75-125	1110 159 292 1130	1080 161 290 1100	89 101 94 99	2.7 1.2 0.7 2.7	20 20 20 20 20	- - - -	- - - -	< 1 < 1 < 1 < 1 < 1
Chloride mg/l	30.0 30.0 30.0	91 91 88	80-120 80-120 80-120	30.0	17-W1824	6.7	36.2	98	80-120	36.2	35.0	94	3.4	20	-	-	< 1 < 1
Chromium - Total mg/l	0.1000 0.1000	94 94	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.002 < 0.002	0.3844 0.3798	96 95	75-125 75-125	0.3844 0.3798	0.3606 0.3774	90 94	6.4 0.6	20 20	-	-	< 0.002 < 0.002
Cobalt - Total mg/l	0.1000 0.1000	94 93	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.002 < 0.002	0.3838 0.3810	96 95	75-125 75-125	0.3838 0.3810	0.3608 0.3778	90 94	6.2 0.8	20 20	-	-	< 0.002 < 0.002

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Page: 2 of 2

Quality Control Report

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Fluoride mg/l	0.50 0.50	98 100	90-110 90-110		17-W1824	0.17	0.67	100	80-120	0.67	0.67	100	0.0	20	-	-	< 0.1 < 0.1
Lead - Total mg/l	0.1000 0.1000		80-120 80-120		17W1824q 17W1834q	0.0008 < 0.0005	0.3712 0.3756	93 94	75-125 75-125		0.3766 0.3704	94 93	1.4 1.4	20 20	- 1	-	< 0.0005 < 0.0005
Lithium - Total mg/l	0.40 0.40	105 110	80-120 80-120	1	17-M1125 17-W1824 17-W1834	< 0.1 0.10 0.44	0.50 0.55 0.91	125 112 118	75-125 75-125 75-125	0.55	0.54 0.92	110 120	1.8	20 20	-	- - -	< 0.1 < 0.1 < 0.1 < 0.1
Mercury - Total mg/l	0.0020	100	85-115	0.002 0.002	17-W1824 17-W1936	< 0.0002 < 0.0002	0.0020 0.0020	100 100	70-130 70-130		0.0020 0.0019	100 95	0.0 5.1	20 20	-	-	< 0.0002
Molybdenum - Total mg/l	0.1000 0.1000	101 101	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.002 < 0.002	0.4126 0.4300	103 108	75-125 75-125	0.4126 0.4300	0.4210 0.4118	105 103	2.0 4.3	20 20	_	-	< 0.002 < 0.002
pH units	-	-	1	-	-	-	-	-	-	7.8 9.4	8.0 9.4	-	2.5 0.0	20 20	-	-	-
Selenium - Total mg/l	0.1000 0.1000	110 113	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.005 0.1302	0.4658 0.5928	116 116	75-125 75-125	0.4658 0.5928	0.4346 0.5764	109 112	6.9 2.8	20 20	-	-	< 0.002 < 0.002
Sulfate mg/l	100 100	100 96	80-120 80-120	5000 500 1000	17-W1815 17-W1820 17-W1824	3940 633 1050	8600 1060 1940	93 85 89	80-120 80-120 80-120	8600 1060 1940	8420 1050 1950	90 83 90	2.1 0.9 0.5	20 20 20	-	- - -	< 5 < 5
Thallium - Total mg/l	0.1000 0.1000	93 95	80-120 80-120	0.400 0.400	17W1824q 17W1834q	< 0.0005 < 0.0005	0.3770 0.3776	94 94	75-125 75-125	0.3770 0.3776	0.3792 0.3744	95 94	0.6 0.9	20 20	-	-	< 0.0005 < 0.0005
Total Dissolved Solids mg/l			1 1 1	-	- - - -	- - - -	- - - -	- - - -	- - - -	2300 1980 4870 4660 2370	2250 1960 5000 4640 2250		2.2 1.0 2.6 0.4 5.2	20 20 20 20 20 20	- - - -	- - - -	<10 <10 <10 <10 <10

Approved by: (. Gw. 10)



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: FB Blue

Page: 1 of 1

Report Date: 7 Jun 17 Lab Number: 17-W1822 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 Date Received: 18 May 17 8:00

Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

* 6.2							
* 6.2			EPA 200.2	18 Ma	y 17	E. J. C. T	svs
	s.u.	0.1	SM4500 H+ B	18 Ma	y 17	18:00	SVS
< 0.1	mg/l	0.10	SM4500-F-C	18 Ma	y 17	18:00	SVS
	mg/l	5.00	ASTM D516-07	25 Ma	y 17	15:55	KMD
< 1	mg/l	1.0	SM4500-C1-E	1 51	n 17	13:22	EMS
< 0.0002	mg/1	0.0002	EPA 245.1	25 Ma	y 17	11:34	EV
< 10	mg/1	10	I1750-85	19 Ma	y 17	14:18	SVS
< 1	mg/l	1.0	6010	30 Ma	y 17	14:09	SZ
< 0.1	mg/1	0.10	6010	19 Ma	y 17	13:05	KMD
< 0.1	mg/l	0.10	6010	19 Ma	y 17	16:37	KMD
< 0.001	mg/l	0.0010	6020	6 Ju	n 17	11:00	KMD
< 0.002	mg/1	0.0020	6020	6 J1	n 17	11:00	KMD
< 0.005 ^	mg/l	0.0020	6020	6 Ju	n 17	11:00	KMD
< 0.0005	mg/1	0.0005	6020	6 Ju	n 17	11:00	KMD
< 0.0005	mg/1	0.0005	6020	6 Ju	n 17	11:00	KMD
< 0.002	mg/1	0.0020	6020	6 J1	n 17	11:00	KMD
< 0.002	mg/1	0.0020	6020	6 Ju	n 17	11:00	KMD
< 0.0005	mg/l	0.0005	6020	6 J1	n 17	11:00	KMD
< 0.002		0.0020	6020	6 Ju	n 17	11:00	KMD
100 100 100 A 250 D 1 1 1 2 1		0.0020	6020	6 Ju	n 17	11:00	KMD
< 0.0005	mg/1	0.0005	6020	6 Ju	n 17	11:00	KMD
	<pre>< 0.1 < 5 < 1 < 0.0002 < 10 < 1 < 0.1 < 0.1 < 0.001 < 0.0005 < 0.0005 < 0.0005 < 0.0002 < 0.0005 < 0.0002 < 0.0005 < 0.0002 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005 < 0.0005</pre>	<pre> 0.1</pre>	<pre></pre>	<pre></pre>	<pre></pre>	<pre></pre>	<pre></pre>

^{*} Holding time exceeded

Approved by:

Clauditte K Canto

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: θ = Due to sample matrix π = Due to co

: = Due to sample quantity

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 6

1 of 6 Page:

Report Date: 7 Jun 17 Lab Number: 17-W1823 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 7:10 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	18 May 17	svs
Field pH	6.65	s.u.	0.1	SM 4500 H+ B	17 May 17 7:10	JSM
Lab, pH	* 7.1	s.u.	0.1	SM4500 H+ B	18 May 17 18:00	SVS
Field Appearance	Clear		NA	SM 2110	17 May 17 7:10	JSM
Field Temperature	9.27	Degrees C	0.1	SM 2550B	17 May 17 7:10	JSM
Field Conductivity	2572	umhos/cm	1	EPA 120.1	17 May 17 7:10	JSM
Fluoride	0.17	mg/l	0.10	SM4500-F-C	18 May 17 18:00	SVS
Sulfate	864	mg/l	5.00	ASTM D516-07	25 May 17 15:55	KMD
Chloride	6.3	mg/1	1.0	SM4500-C1-E	1 Jun 17 13:22	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	25 May 17 11:34	EV
Total Dissolved Solids	1830	mg/l	10	11750-85	19 May 17 14:18	SVS
Calcium - Total	191	mg/l	1.0	6010	30 May 17 14:09	SZ
Lithium - Total	0.10	mg/l	0.10	6010	19 May 17 13:05	KMD
Boron - Total	0.40	mg/1	0.10	6010	19 May 17 16:37	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	6 Jun 17 11:00	KMD
Arsenic - Total	< 0.002	mg/1	0.0020	6020	6 Jun 17 11:00	KMD
Barium - Total	0.0277	mg/1	0.0020	6020	6 Jun 17 11:00	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	6 Jun 17 11:00	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	6 Jun 17 11:00	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	6 Jun 17 11:00	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	6 Jun 17 11:00	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	6 Jun 17 11:00	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	6 Jun 17 11:00	KMD
Selenium - Total	< 0.005 ^		0.0020	6020	6 Jun 17 11:00	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	6 Jun 17 11:00	KMD

^{*} Holding time exceeded

Approved by:

Clauditte K. Cantep

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:

= Due to sample matrix # = Due to con

! = Due to sample quantity # = Due to int

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 7

2 of 6 Page:

Report Date: 7 Jun 17 Lab Number: 17-W1824 Work Order #:82-1297 Account #: 006106

Date Sampled: 16 May 17 19:25 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion Field pH Lab, pH Field Appearance Field Temperature Field Conductivity Fluoride Sulfate Chloride Mercury - Total Total Dissolved Solids Calcium - Total Lithium - Total Boron - Total Antimony - Total Arsenic - Total Barium - Total Beryllium - Total Cadmium - Total Chomium - Total Chobalt - Total Lead - Total Molybdenum - Total	Result 6.50 7.2 Clear 9.53 2566 0.17 1050 6.7 < 0.0002 1980 196 0.10 0.40 < 0.001 < 0.002 0.0370 < 0.0005 < 0.0005 < 0.0002 < 0.0002 0.0002 0.0002	s.u. begrees C umhos/cm mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/		Reference EPA 200.2 SM 4500 H+ B SM4500 H+ B SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-07 SM4500-C1-E EPA 245.1 I1750-85 6010 6010 6010 6020 6020 6020 6020 6020	Analyzed 18 May 17 16 May 17 19:25 18 May 17 18:00 16 May 17 19:25 16 May 17 19:25 16 May 17 19:25 18 May 17 18:00 25 May 17 16:55 1 Jun 17 13:22 25 May 17 14:18 30 May 17 14:18 30 May 17 14:09 19 May 17 13:05 19 May 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00	SVS JSM SVS JSM JSM SVS KMD EMS EV SVS SZ KMD KMD KMD KMD KMD KMD KMD KMD KMD KMD
Selenium - Total Thallium - Total	< 0.005 ^	mg/l mg/l	0.0020	6020 6020	6 Jun 17 11:00 6 Jun 17 11:00	

^{*} Holding time exceeded

Approved by:

Clauditte K. Canto

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:

= Due to sample matrix # = Due to co

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

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 13

Page: 3 of 6

Report Date: 7 Jun 17 Lab Number: 17-W1825 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 6:20 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C

Metal Digestion 7.01 s.u. 0.1 Field pH 7.6 s.u. 0.1 Lab, pH * 7.6 s.u. 0.1 Field Appearance Clear NA Field Temperature 9.12 Degrees C 0.1 Field Conductivity 6225 umhos/cm 1 mg/l 0.10	EPA 200.2 SM 4500 H+ B SM4500 H+ B SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-07	18 May 17 17 May 17 6:20 18 May 17 18:00 17 May 17 6:20 17 May 17 6:20 17 May 17 6:20 18 May 17 18:00 25 May 17 16:55	SVS JSM JSM JSM SVS
Fluoride 0.27 mg/l 0.10 Sulfate 2480 mg/l 5.00 Chloride 35.6 mg/l 1.0 Mercury - Total < 0.0002 mg/l 0.000 Total Dissolved Solids 4870 mg/l 10 Calcium - Total 159 mg/l 1.0 Lithium - Total < 0.2 mg/l 0.10 Boron - Total 0.52 mg/l 0.10 Antimony - Total 0.001 mg/l 0.001 Arsenic - Total 0.0023 mg/l 0.002 Barium - Total 0.0023 mg/l 0.002 Barium - Total 0.0149 mg/l 0.002 Cadmium - Total 0.0005 mg/l 0.000 Cadmium - Total 0.0005 mg/l 0.000 Chromium - Total 0.0002 mg/l 0.000 Chad - Total 0.0013 mg/l 0.000 Cobalt - Total 0.0013 mg/l 0.000 Cobalt - Total 0.0013 mg/l 0.000 Selenium - Total 0.002 mg/l 0.000 Total 0.002 mg/l 0.000 Total 0.002 mg/l 0.000 Total 0.0005 mg/l 0.000 Total 0.0005 mg/l 0.0000 Total 0.0005 mg/l 0.0000 Total 0.0005 mg/l 0.0000 Total 0.0005 mg/l 0.0000	11750-85 6010 6010 0 6020 0 6020 0 6020 5 6020 0 6020 5 6020 0 6020 0 6020 0 6020	1 Jun 17 13:22 25 May 17 14:13 19 May 17 14:13 30 May 17 15:09 19 May 17 14:00 20 May 17 9:19 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00	EW EWS EV S SZ KMD KMD KMD KMD KMD KMD KMD KMD KMD KMD

^{*} Holding time exceeded

Approved by:

Claudette K Cantes

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:

= Due to sample matrix # = Due to concentration of other analytes

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

CERTIFICATION: ND # ND-00016

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.

[&]quot; Elevated result due to instrument performance at the lower limit of quantification (LLOQ).



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 56538-0496 Fergus Falls MN

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 14

Page: 4 of 6

Report Date: 7 Jun 17 Lab Number: 17-W1826 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 12:20 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C

Metal Digestion EPA 200.2 18 May 17 SVS Field pH 6.61 s.u. 0.1 SM 4500 H+ B 17 May 17 12:20 JSM Lab, pH 7.4 s.u. 0.1 SM4500 H+ B 18 May 17 12:20 JSM Field Appearance Clear NA SM 2110 17 May 17 12:20 JSM Field Temperature 9.15 Degrees C 0.1 SM 2550B 17 May 17 12:20 JSM Field Conductivity 5179 umhos/cm 1 EPA 120.1 17 May 17 12:20 JSM Fluoride 0.14 mg/1 0.10 SM4500-F-C 18 May 17 16:55 KMD Sulfate 2290 mg/1 0.10 SM4500-F-C 18 May 17 16:55 KMD Chloride 8.8 mg/1 0.10 SM4500-F-C 18 May 17 16:55 KMD Mercury - Total 8.8 mg/1 0.0002 EPA 245.1 25 May 17 13:22 EMS Total Dissolved Solids 4240 mg/1 0.0002 EPA 245.1 25 May 17 14:05 </th <th></th> <th>As Receive Result</th> <th>d</th> <th>Method RL</th> <th>Method Reference</th> <th>Date Analyzed</th> <th>Analyst</th>		As Receive Result	d	Method RL	Method Reference	Date Analyzed	Analyst
Selenium - Total < 0.005 mg/l 0.0020 6020 6 Jun 17 11:00 KMD	Field pH Lab, pH Field Appearance Field Temperature Field Conductivity Fluoride Sulfate Chloride Mercury - Total Total Dissolved Solids Calcium - Total Lithium - Total Boron - Total Antimony - Total Arsenic - Total Barium - Total Beryllium - Total Cadmium - Total Cadmium - Total Cadmium - Total Chromium - Total Cobalt - Total Lead - Total	Result 6.61 7.4 Clear 9.15 5179 0.14 2290 8.8 < 0.0002 4240 318 < 0.2 @ 0.53 < 0.001 0.0041 0.0402 < 0.0005 < 0.0005 0.0022 0.0025 < 0.0005	s.u. s.u. Degrees C umhos/cm mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/	0.1 0.1 NA 0.1 1 0.10 5.00 1.0 0.0002 10 1.0 0.10 0.10 0.0010 0.0020 0.0020 0.0025 0.0025 0.0020 0.0020	EPA 200.2 SM 4500 H+ B SM4500 H+ B SM 2110 SM 2550B EFA 120.1 SM4500-F-C ASTM D516-07 SM4500-C1-E EPA 245.1 11750-85 6010 6010 6010 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020 6020	18 May 17 17 May 17 12:20 18 May 17 12:20 17 May 17 12:20 17 May 17 12:20 17 May 17 12:20 18 May 17 12:20 18 May 17 12:20 18 May 17 16:55 1 Jun 17 13:22 25 May 17 14:18 30 May 17 14:18 30 May 17 14:18 30 May 17 14:05 20 May 17 9:15 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00 6 Jun 17 11:00	SVS JSM SVS JSM JSM SVS KMD EMS EV SVS SZ KMD KMD KMD KMD KMD KMD KMD KMD KMD KMD

^{*} Holding time exceeded

Approved by:

Claudette K Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 15

5 of 6 Page:

Report Date: 7 Jun 17 Lab Number: 17-W1827 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 10:26 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C

^{*} Holding time exceeded

Approved by:

Clauditte K. Cantep

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote - Blue Pit

Sample Description: Blue 16

Page: 6 of 6

Report Date: 7 Jun 17 Lab Number: 17-W1828 Work Order #:82-1297 Account #: 006106

Date Sampled: 17 May 17 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
			400			-12
Metal Digestion	- L W			EPA 200.2	18 May 17	SVS
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	17 May 17 9:10	JSM
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	18 May 17 18:00	svs
Field Appearance	Clear		NA	SM 2110	17 May 17 9:10	JSM
Field Temperature	9.75	Degrees C	0.1	SM 2550B	17 May 17 9:10	JSM
Field Conductivity	2677	umhos/cm	1	EPA 120.1	17 May 17 9:10	JSM
Fluoride	0.19	mg/l	0.10	SM4500-F-C	18 May 17 18:00	svs
Sulfate	993	mg/l	5.00	ASTM D516-07	25 May 17 16:55	KMD
Chloride	9.7	mg/l	1.0	SM4500-C1-E	1 Jun 17 13:22	EMS
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	25 May 17 11:34	EV
Total Dissolved Solids	1930	mg/l	10	11750-85	19 May 17 14:18	SVS
Calcium - Total	164	mg/1	1.0	6010	30 May 17 15:09	SZ
Lithium - Total	0.10	mg/1	0.10	6010	19 May 17 14:05	KMD
Boron - Total	0.40	mg/l	0.10	6010	20 May 17 9:15	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	6 Jun 17 12:00	KMD
Arsenic - Total	0.0061	mg/1	0.0020	6020	6 Jun 17 12:00	KMD
Barium - Total	0.0515	mg/l	0.0020	6020	6 Jun 17 12:00	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	6 Jun 17 12:00	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	6 Jun 17 12:00	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	6 Jun 17 12:00	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	6 Jun 17 12:00	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	6 Jun 17 12:00	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	6 Jun 17 12:00	KMD
Selenium - Total	< 0.005 ^	mg/l	0.0020	6020	6 Jun 17 12:00	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	6 Jun 17 12:00	KMD

^{*} Holding time exceeded

Approved by:

Clauditte K Cantep

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:

@ = Due to sample matrix # = Due to con
! = Due to sample quantity + = Due to in

= Due to concentration of other analytes

CERTIFICATION: ND # ND-00016

+ = Due to internal standard response

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



Groundwater Assessment

Phone: (701) 258-9720

Company:	OTP Coyote
Event:	2017
Sample ID:	Bhe 6
Sampling Personal:	Jeng play -

NAC-11 1 - 5 41			Sunny / Partly C	loudy Cloudy	
Well Information		Sampling I	nformation		
Well Locked? Yes No	Purging Method:	Bladder	Со	ntrol Settings	
Well Labeled? Yes No	Sampling Method:	Bladder	Purge:		sec.
Casing Straight? Ves No	Dedicated Equip?:	Yes (No)	Recover:	22	sec.
Grout Seal Intact? Yes No Not Visible	Duplicate Sample?:	Yes (No)	PSI:	g0	
Repairs Necessary:	Duplicate Sample ID:		Pumping R	ate:200/ mL	L/min
Casing Diameter: 2"					
Water Level Before Purge: (2164 ft	Purge Date:	16 May 17	Time Purging Began:	0725	n/pm
Total Well Depth: — ft	Well Purged Dry?	Yes No	Time Purged Dry:	0830 an	ற⁄pm
Well Volume: liters	Sample Date:	17 My 17	Time of Sampling:	0710 an	p/pm
Depth to Top of Pump: そん,90 ft		•			
Water Level After Sample: 71,52 ft	Bottle 1L Raw, 50	0mL Nitric, 500mL Nitr	ric (filtered), 250mL Sulf	iric	
Measurement Method: Electric Water Level Indicator	List: 4 - 1L Nitric				

Field Measurements

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 con	secutive)	(°C)	Cond.	рH	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	0730	10.14	5262	6,35	6.99	46.8	794.0	64,53	1000.0	Turbid
2	0750	9,74	2506	6,40	7,03	63.5	14.5	70,78	4000,0	Clea
3	0800	9.71	2505	6,42	4.11	84.0	7.65	74.10	2000.0	Cles
4	0810	9.67	2484	6.52	6.92	67.2	77.7	75.61	2000.0	Clear
5	0820	9.68	2428	6,56	6.95	153.070	153,0	76,20	2000.O	8th Partly Cloudy
6	0830	9.67	2422	6055	717	70,2		Below Purp	5000, D	PC
7										
8										
9	0705	Purged us	Il for	Smin +	o clear t	he line		63.55	500.0	
10	0710	9.27	2572	6.65	691	182.5	7607	_	-	Clear

Stabilized: Yes No

Total Volume Removed: BSSO 0 mL

Comments:

Left pump in well while it was rechanging



Phone: (701) 258-9720

Field Datasheet

Event: 2017 **Groundwater Assessment** Blue 7 Sample ID: Sampling Personal:

OTP Coyote

Company:

60 °F Sunny / Rartly Cloudy / Cloudy **Weather Conditions:** Temp: Wind: NO5-10 Precip: **Well Information** Sampling Information No Purging Method: Well Locked? Yes Bladder **Control Settings** Yes Purge: 5 Well Labeled? No Sampling Method: Bladder sec Recover: 55 Yes Yes Casing Straight? No Dedicated Equip?: (NO) sec PSI: 80 (Yes Not Visible **Grout Seal Intact?** Yes No Duplicate Sample?: No MS/MSD Repairs Necessary: Duplicate Sample ID: Pumping Rate: 100 mL/min Casing Diameter: 80,07 Time Purging Began: Water Level Before Purge: Purge Date: 1820 am/pm ft NO Time Purged Dry: Yes Total Well Depth: ft Well Purged Dry? am/pm 16 May 17 1925 Time of Sampling: Well Volume: liters Sample Date: am/pm Depth to Top of Pump: ft 80,22 Water Level After Sample: Bottle 1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfiric List: Measurement Method: **Electric Water Level Indicator** 4 - 1L Nitric

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1825	[0,03	2598	6.51	11,38	71.6	32.3	80,20	500.00	Clea
2	1830	9,73	2577	6.41	5,85	61.4	72.9	80,18	500,0	Cler
3	1840	9,58	2568	6,44	5,15	48,2	80.6	80,23	1000,0	Clear
4	1845	9.52	2566	6.46	4,95	40.7	65.2	80,20	500.0	Clear
5	1855	9,54	2566	6,48	4.79	30,7	42,7	80.21	1000.0	Clea
6	1945	9.61	2567	6,50	4,52	14.0	15.9	80,22	2000,0	Clea
7	1920	9,57	2566	6,50	4.57	10.7	13.2	80,21	500.0	Clea
8	1925	9,53	2566	6,50	4,48	9.1	12.3	80,23	500.0	Cles
9										
10					1					

Stabilized: (Yes No Total Volume Removed: 6500,0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 13
Sampling Personal:	Ser di

Phone: (701) 258-9720

							_						
Weather Conditions:		Temp:	50	°F	Wind:	NO5-1	0		Precip	: Sunny / P	artly C	loudy (Clo u	dy)
	Well Info	rmation						S	ampling I	nformation			
Well Locked?	Yes)	No				Purgir	g Method:	Blac	der		Cor	ntrol Settings	
Well Labeled?	Ves	No				Samplin	g Method:	Blac	der		Purge:	7/7	sec.
Casing Straight?	Yes	No				Dedicate	ed Equip?:	Yes	No	Re	ecover: 2	23 /53	sec.
Grout Seal Intact?	Yes	No	Not \	Visible		Duplicate	Sample?:	Yes	No		PSI:	90	
Repairs Necessary:						Duplicate S	Sample ID:	ــ		Pum	ping Ra	ite: 200/100	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	1	03,20	ft		Р	urge Date:	16 May 1	·7	Time Purging B	Began:	0840	@m/pm
Total W	/ell Depth:	-		ft		Well Pu	rged Dry?	(Yes)	No	Time Purge	d Dry:	0920	ama/pm
We	ll Volume:			liters		Sai	nple Date:	17 May 1	7	Time of Sam	npling:	062E	@n/pm
Depth to Top	of Pump:	114	1.97	ft									
Water Level Afte	er Sample:	11	2,25	ft		Bottle	1L Raw, 50	0mL Nitric,	500mL Nit	ric (filtered), 250r	nL Sulfi	ric	
Measuremen	t Method:	Electric V	Nater Leve	I Indicator		List:	4 - 1L Nitric						
	-												

Field Measurements

lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
0845	10.56	5491	667	10:77	140.3	907,0	105.11	1600.0	Turbid
0900	9.79	4638	6.23	8,14	191.9	25.6	111.85	3000.0	clear
0910	10,06	4653	6.25	7.99	192.5	226.0	114118	2000,0	Partly Cloudy
0920	10.20	4932	6.41	7.87	192.4	324.0	Below Purp	20000	PC
							•		
0615	Purged	well for	5 min h	e clear lin	lu.		104.73	500,00	
0620	912	6225	7.01	10.13	242,7	14.6			Clear
	5 coutive) Time 08.45 09.00 09.10 09.20	Secutive) (°C) Time 0845 10.56 0900 9.39 0910 10.20 0920 10.20	Secutive) (°C) Cond. Time ±5% OB 45 10.56 5491 OP 00 9.79 4638 OP 10 10.20 4653 OP 20 10.20 4732	Secutive) (°C) Cond. pH Time ±5% ±0.1 OBUS 10.56 5491 6.67 O900 9.99 4636 6.23 O910 10.20 4653 6.25 O920 10.20 4732 6.41	Secutive) (°C) Cond. pH (mg/L) Time	Secutive) (°C) Cond. pH (mg/L) (mV) Time	Secutive) (°C) Cond. pH (mg/L) (mV) (NTU) Time	Secutive) (°C) Cond. pH (mg/L) (mV) (NTU) Level (ft) Time	Secutive) (°C) Cond. pH (mg/L) (mV) (NTU) Level (ft) Removed Time

Stabilized: Yes No

Total Volume Removed: もいい mL

Comments:

left pump in well durning recharge



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 14	
Sampling Personal:	Jen Mar	

Phone: (701) 258-9720

							-						
Weather Conditions:	<u> </u>	Temp:	50 °F		Wind:	NOSTIO			Precip	: Sun	ny / Partly C	lously / Clo	udy
,	Well Info	rmation						Sa	ampling	Informati	on		
Well Locked?	<i>Y</i> €9	No				Purging N	/lethod:	Blac	lder		Co	ntrol Setting	s
Well Labeled?	√es	No				Sampling N	/lethod:	Blac	lder		Purge:	7	sec.
Casing Straight?	(es	No				Dedicated I	Equip?:	Yes	Ø\$o		Recover:	53	sec.
Grout Seal Intact?	Yes	No	Not Visil	ole		Duplicate Sar	nple?:	Yes	No	7	PSI:	80	
Repairs Necessary:		-d				Duplicate San	ple ID:	_			Pumping R	ate: 🖊 🗸 🗁	mL/min
Casing	Diameter:		2"										
Water Level Bef	ore Purge:	7	7.08	ft		Purg	e Date:	17 May	17	Time Purg	ging Began:	1/15	@m/pm
Total W	Vell Depth:	*		ft		Well Purge	ed Dry?	Yes	MO	Time F	Purged Dry:		am/pm
We	ell Volume:			liters		Sampl	e Date:	17 Men	7	Time o	f Sampling:	1220	am/pm
Depth to Top	o of Pump:		- 85,19	ft									
Water Level Afte	er Sample:	Be	lakes Pump	ft		Bottle 1L	Raw, 50	0mL Nitric,	500mL Ni	ric (filtered)	, 250mL Sulf	firic	
Measuremen	nt Method:	Electric W	ater Level Ind	icator		List: 4 -	1L Nitric						
					Massina								

Field Measurements

	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL D	Discription:
(3 соля	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1120	9,57	5342	6.67	6,22	5814	33,7	81.63	500,0	Clea
2	1140	9,33	5250	6,63	4.92	44.9	75,7	B2.47	2000,0	Clear
3	1150	9.26	5256	6,63	4,79	47.3	46.7	82.98	[000,0	Clea
4	1200	9,17	5223	6,62	4.64	41.5	13.7	83,42	1000,0	Cler
5	1210	9,20	5215	662	4.5%	34,4	6.84	83,68	1000.0	Clear
6	1215	9.24	5195	6.61	4.54	31.0	6:57	83,99	500,0	Clear
7	1220	9,15	5179	6.61	4,50	37.9	6,43	84.25	San O	Clas
8										
9										
10										

Stabilized: Yes No Total Volume Removed: 6500,0 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 15	
Sampling Personal:	Jerry player	

Phone: (701) 258-9720

Weather Conditions:		Temp:	50	°F	Wind:	NO5~1	0		Precip	Suni	ny / Partly (Cloudy /Clo	oudy
	Well Info	rmation	_					Sa	ampling I	nformatio	on		
Well Locked?	Xes	No				Purgin	g Method:	Blac	der		Co	ntrol Setting	gs
Well Labeled?	Yes.	No				Samplin	g Method:	Blac	dder		Purge:	7	sec.
Casing Straight?	Tes	No				Dedicate	ed Equip?:	Yes	(Ng)		Recover:	53_	sec.
Grout Seal Intact?	(es)	No	Not Vi	sible		Duplicate S	Sample?:	Yes	Ν̈́ο		PSI:	80	
Repairs Necessary:						Duplicate S	ample ID:]	Pumping R	ate: 100	mL/min
Casing	Diameter:		2"				-			-			
Water Level Bef	fore Purge:	-	46.96	ft		Pi	ırge Date:	17 9 lon	17	Time Purg	ing Began:	1001	@m/pm
Total V	Vell Depth:		_	ft		Well Pu	rged Dry?	Yes	(Ng)	Time F	urged Dry:		am/pm
We	ell Volume:			liters		San	nple Date:	17 May	17	Time of	Sampling:	1026	@m/pm
Depth to To	p of Pump:			ft				•					
Water Level After	er Sample:	8	50.71	ft		Bottle 1	1L Raw, 50	0mL Nitric,	500mL Niti	ric (filtered),	250mL Sul	firic	
Measuremer	nt Method:	Electric '	Water Level I	ndicator		List:	4 - 1L Nitric	;					
	•	***************************************				-							

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1006	9,47	3280	6.62	5.31	44.9	8,22	60,60	520,0	Clear
2	1011	9,44	3292	6.63	5.01	41.3	8.09	80.61	Sao.o	Clear
3	1046	9,40		6,62	4.86	36.5	5.51	80,65	5000	Clean
4	1021	9,34	3282	6,62	4.66	31,5	5,31	80.66	500.0	Clea
5	1026	9.36			4,62	30.1	5,23	80.67	500.0	Clear
6										
7										
8										·
9						·				
10										

Stabilized: Yes No

Total Volume Removed: 2500:0 mL



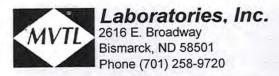
Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Bluelb	
Sampling Personal:	Jery May-	

			0,0	Juliuwatel	A33633	IIICIIL		Sample ID.		D	تعاص		
2616 E. Broadway Ave, Bis	smarck, ND							Sampling F	ersonal:	Jerry			
Phone: (701) 258-9	9720												
Weather Conditions:		Temp:	45	°F	Wind:	とのち~	10		Precip:	Sun	ny / Partly C	loudy Clo	oudy
	Well Info	rmation						Sa	ampling I	nformati	on		
Well Locked?	Xes/	No				Purgi	ing Method:	Blac	ider		Co	ntrol Setting	gs
Well Labeled?	Ves	No				Sampli	ing Method:	Blac	der		Purge:	Z -	sec.
Casing Straight?	<u>(e)</u>	No				Dedica	ted Equip?:	Yes	(F)		Recover:	53	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	(Ma)		PSI:	80	
Repairs Necessary:						Duplicate	Sample ID:		-		Pumping R	ate: <i>10</i> 0	mL/min
Casing	Diameter:		2"							-			
Water Level Bef	ore Purge:	7	5,82	- ft		Į.	Purge Date:	17 May	17	Time Purg	jing Began:	080S	am/pm
Total W	Vell Depth:	•		ft		Well F	urged Dry?	Yes	NO	Time F	Purged Dry:		am/pm
We	ell Volume:	a		liters		Sa	ample Date:	170h	17	Time o	f Sampling:	0910	@m/pm
Depth to Top	of Pump:			ft									
Water Level Afte	er Sample:	7	16.05	ft		Bottle	1L Raw, 50	00mL Nitric,	500mL Nitr	ic (filtered)	, 250mL Sulf	iric	
Measuremen	nt Method:	Electric W	ater Leve	l Indicator		List:	4 - 1L Nitri	C					
				Field	Measure	ements							

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 con	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	OBIO	9.69	2829	6.71	5.74	26.0	448,0	75.92	500,0	Portly Closely (PC)
2	OE BO	9.74	2686	6,56	5.06	32,5	240.0	76:02	2000.0	PC
3	0850	9.72	2674	6,56	4173	42.1	42.7	75.95	2000	cles
4	0855	9.75	2675	6.56	4.68	42,0	34,0	76.02	500,0	Cles
5	900	9.76	2676	6,56	4.61	42,0	25,8	75.95	500.0	clear
6	0905	9.75	2676	6.56	4.39	42.0	21,5	75.95	500,0	Clea
7	0910	9.75	2677	6.56	4.55	41.4	27,3	76.01	500.0	cles
8										
9										
10										
Ot = 1: 11:1	(75-)	NI -							ICMA	

Stabilized: No Total Volume Removed: 6500 mL



Chain of Custody Record

Project Name:		Event:	Work Order Number:
	OTP Coyote - Blue Pit	May 2017	00-1291
Report To: Attn: Address:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s):
phone:	ihallen@atnca.com		

	Sample Information					Bottle Type		Field Parameters			Analysis		
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	1 liter	500mL Nitric	250mL Nitric (filtered)		Temp (°C)	Spec. Cond.	Ha	Analysis Required
WRZZ	FB Blue	17 May 17	NA	W	_	Х	X >	(X		NA	NA	NA	
121823	Blue 6	17 May 17	0710	GW	Clear	Х	X X	(X		9,27	2572	6,65	
171371	Blue 7/MS7/MSD7	16 May 17	1925	GW	Clear	3	3 3	3 3		9.53	2566	6,50	
1.31825	Blue 13	17 May 17	0620	GW	Clear	Х	x >	(X		9,12	6225	7.01	
131821-	Blue 14	17 May 17	1220	GW	Clear	Х	x >	(X		9,15	5179	6.61	OTP Coyote List 1 + OTP
W1327	Blue 15	17 May 17	1026	GW	Clear	X		(X		9.36	3285	6.62	Coyote List A
W1829	Blue 16	17 May 17	-	GW	Clear	Х	_	(X		9,75	2677	6,56	

Relinquished By:	Relinquished By:			
Name:	Date/Time	Location:	Temp (°C)	
1- 1	18 May 17	Login	1 3.5	
7,00	6747	Walk In #2	TM562 (TM588	
2				

Date/Time
18May 2017
- 08 W



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CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-1314
IML Lab Reference No/SDG: S1705435

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Blue Pit CCR Radiochemistry

Event & Year May 2017

MVTL Laboratory Identifications: 17-W1854 through 17-W1860

IML Laboratory Identifications: S1705435-001 through S1705435-007

Page 1 of 1

Sample Identification	IML Laboratory #	MVTL Laboratory #
FB Blue	\$1705435-001	17-W1854
Blue 6	S1705435-002	17-W1855
Blue 7	S1705435-003	17-W1856
Blue 13	\$1705435-004	17-W1857
Blue 14	S1705435-005	17-W1858
Blue 15	S1705435-006	17-W1859
Blue 16	S1705435-007	17-W1860

I. RECEIPT

- All samples were received at the laboratory on 18 May 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 3.5°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 23 May 2017.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laborator	ry data has been appro	ved by lvivit tabora	tories.	
SIGNED:	Claudette	ante	DATE:	HJULIT
Clau	dette Carroll - MV/TLB	ismarck Laboratory	Manager	



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: FB Blue

Event and Year: May 2017

1 of 1 Page:

Report Date: 5 Jul 17 Lab Number: 17-W1854 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17

Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Received Result	Method Method RL Reference		55 1 5 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Date Analyzed	Analyst
Radium 226	See Attached Report			13 Jun 17	OL		
Radium 228	See Attached Report			10 Jun 17	OL		

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

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:

= Due to sample matrix # = Due to continuous for the pure to interpret the pure to inte

= Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 6

Event and Year: May 2017

Page: 1 of 1

Report Date: 5 Jul 17 Lab Number: 17-W1855 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17 7:10 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.65 s.u.		0.1	SM 4500 H+ B	17 May 17	7:10	JSM
Field Appearance	Clear		NA	SM 2110	17 May 17	7:10	JSM
Field Temperature	9.27	Degrees C	0.1	SM 2550B	17 May 17	7:10	JSM
Field Conductivity	2572	umhos/cm	1	EPA 120.1	17 May 17	7:10	JSM
Radium 226	See Attached Report		7	2001	13 Jun 17		OL
Radium 228	The state of the s	ched Report			10 Jun 17		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Clauditte K Canto

16 11 JULIT

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

|| = Due to concentration of other analytes + = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 7

Event and Year: May 2017

1 of 1 Page:

Report Date: 5 Jul 17 Lab Number: 17-W1856 Work Order #:82-1314 Account #: 006106

Date Sampled: 16 May 17 19:25 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.50	s.u.	0.1	SM 4500 H+ B	16 May 17 19:25	JSM
Field Appearance	Clear		NA	SM 2110	16 May 17 19:25	JSM
Field Temperature	9.53	Degrees C	0.1	SM 2550B	16 May 17 19:25	JSM
Field Conductivity	2566	umhos/cm	1	EPA 120.1	16 May 17 19:25	JSM
Radium 226		ched Report			13 Jun 17	OL
Radium 228		ached Report			10 Jun 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

1 IJVLI7 Clauditte K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

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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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 13

Event and Year: May 2017

Page: 1 of 1

Report Date: 5 Jul 17 Lab Number: 17-W1857 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17 6:20 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed		Analyst
Field pH Field Appearance Field Temperature Field Conductivity Radium 226 Radium 228		s.u. Degrees C umhos/cm ched Report	0.1 NA 0.1	SM 4500 H+ B SM 2110 SM 2550B EPA 120.1	17 May 17 17 May 17 17 May 17 17 May 17 13 Jun 17	6:20 6:20 6:20 6:20	JSM JSM JSM OL OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo

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: \emptyset = Due to sample matrix \emptyset = Due to constant \emptyset = Due to sample quantity \emptyset + = Due to interpretable \emptyset

= Due to concentration of other analytes + = Due to internal standard response

CERTIFICATION: ND # ND-00016

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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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 14

Event and Year: May 2017

1 of 1 Page:

Report Date: 5 Jul 17 Lab Number: 17-W1858 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17 12:20 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.61	s.u.	0.1	SM 4500 H+ B	17 May 17 12:20	JSM
Field Appearance	Clear		NA	SM 2110	17 May 17 12:20	JSM
Field Temperature	9.15	Degrees C	0.1	SM 2550B	17 May 17 12:20	JSM
Field Conductivity	5179	umhos/cm	1	EPA 120.1	17 May 17 12:20	JSM
Radium 226	20210	ched Report			13 Jun 17	OL
Radium 228		ached Report			11 Jun 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canteo 11 JULIT

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:

Due to sample matrix

Due to complete the sample quantity

Due to interpretation

Due to interpretation

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= Due to concentration of other analytes
+ = Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 15

Event and Year: May 2017

1 of 1 Page:

Report Date: 5 Jul 17 Lab Number: 17-W1859 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17 10:26 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	17 May 17 10:26	JSM
Field Appearance	Clear		NA	SM 2110	17 May 17 10:26	JSM
Field Temperature	9.36	Degrees C	0.1	SM 2550B	17 May 17 10:26	JSM
Field Conductivity	3285	umhos/cm	1	EPA 120.1	17 May 17 10:26	JSM
Radium 226		ched Report			13 Jun 17	OL
Radium 228		ched Report			11 Jun 17	OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K. Cantel

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:

© = Due to sample matrix

! = Due to sample quantity

= Due to internal standard response



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Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 16

Event and Year: May 2017

1 of 1 Page:

Report Date: 5 Jul 17 Lab Number: 17-W1860 Work Order #:82-1314 Account #: 006106

Date Sampled: 17 May 17 9:10 Date Received: 18 May 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 3.5C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	17 May 17	9:10	JSM
Field Appearance	Clear		NA	SM 2110	17 May 17	9:10	JSM
Field Temperature	9.75	Degrees C	0.1	SM 2550B	17 May 17	9:10	JSM
Field Conductivity	2677	umhos/cm	1	EPA 120.1	17 May 17	9:10	JSM
Radium 226		ched Report			13 Jun 17		OL
Radium 228		ched Report			28 Jun 17		OL

OL = Analysis performed by an Outside Laboratory.

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to continue to sample quantity # = Due to in

= Due to concentration of other analytes + = Due to internal standard response



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 7/3/2017

CLIENT: MVTL Laboratories, Inc.

Project: 201782-1314 **Lab Order:** \$1705435

CASE NARRATIVE

Report ID: S1705435001

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O

Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012 ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-1314 S1705435-001

ClientSample ID: 17-W1854 FB Blue

COC:

201782-1314

Date Reported

7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Comments

Comments								
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1251	MB	
Radium 226 Precision (±)	0.04	pCi/L			SM 7500 Ra-B	06/13/2017 1251	MB	
Radium 228	-4.4	pCi/L		1	Ga-Tech	06/10/2017 1640	MB	
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	06/10/2017 1640	MB	

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Holding times for preparation or analysis exceeded Н
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory G
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by: *All*

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: Lab ID:

201782-1314 S1705435-002

ClientSample ID: 17-W1855 Blue 6

COC:

201782-1314

Date Reported 7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017 7:10:00 AM

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Comments

Result	Units	Qual	RL	Method	Date Analyzed/Init		
0.3	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1251	MB	
0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1251	MB	
-2.4	pCi/L		1	Ga-Tech	06/10/2017 1943	MB	
1.5	pCi/L			Ga-Tech	06/10/2017 1943	MB	
	0.3 0.1 -2.4	0.3 pCi/L 0.1 pCi/L -2.4 pCi/L	0.3 pCi/L 0.1 pCi/L -2.4 pCi/L	0.3 pCi/L 0.2 0.1 pCi/L -2.4 pCi/L 1	0.3 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B -2.4 pCi/L 1 Ga-Tech	0.3 pCi/L 0.2 SM 7500 Ra-B 06/13/2017 1251 0.1 pCi/L SM 7500 Ra-B 06/13/2017 1251 -2.4 pCi/L 1 Ga-Tech 06/10/2017 1943	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

С Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: <u>A</u>

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1314

Lab ID:

S1705435-003 ClientSample ID: 17-W1856 Blue 7

COC:

201782-1314

Date Reported 7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/16/2017 7:25:00 PM

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	0.19	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1251	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1251	MB	
Radium 228	0.2	pCi/L		1	Ga-Tech	06/10/2017 2246	MB	
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	06/10/2017 2246	MB	

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range Е
- Holding times for preparation or analysis exceeded Н
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
 - Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1314

Lab ID:

S1705435-004 ClientSample ID: 17-W1857 Blue 13

COC:

201782-1314

Date Reported 7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017 6:20:00 AM

DateReceived:

5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Commante

Result	Units	Qual	RL	Method	Date Analyzed/Init		
0.16	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1503	MB	
0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1503	MB	
-1.2	pCi/L		1	Ga-Tech	06/11/2017 755	MB	
1.4	pCi/L			Ga-Tech	06/11/2017 755	МВ	
	0.16 0.1 -1.2	0.16 pCi/L 0.1 pCi/L -1.2 pCi/L	0.16 pCi/L 0.1 pCi/L -1.2 pCi/L	0.16 pCi/L 0.2 0.1 pCi/L -1.2 pCi/L 1	0.16 pCi/L 0.2 SM 7500 Ra-B 0.1 pCi/L SM 7500 Ra-B -1.2 pCi/L 1 Ga-Tech	0.16 pCi/L 0.2 SM 7500 Ra-B 06/13/2017 1503 0.1 pCi/L SM 7500 Ra-B 06/13/2017 1503 -1.2 pCi/L 1 Ga-Tech 06/11/2017 755	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory G

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: *All*

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1314

Lab ID:

S1705435-005 ClientSample ID: 17-W1858 Blue 14

COC:

201782-1314

Date Reported 7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017 12:20:00 PM

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler: Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1503	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1503	MB
Radium 228	-0.4	pCi/L		1	Ga-Tech	06/11/2017 1059	MB
Radium 228 Precision (±)	1.5	pCi/L			Ga-Tech	06/11/2017 1059	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Ε Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1314

Lab ID:

S1705435-006 ClientSample ID: 17-W1859 Blue 15

COC:

201782-1314

Date Reported

7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017 10:26:00 AM

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Comments

Comments								
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init		
Radionuclides - Total								
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1503	MB	
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1503	MB	
Radium 228	0.7	pCi/L		1	Ga-Tech	06/11/2017 1402	MB	
Radium 228 Precision (±)	1.3	pCi/L			Ga-Tech	06/11/2017 1402	MB	

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Ε Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: *All*

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

> 2616 E Broadway Ave. Bismarck, ND 58501

ProjectName:

201782-1314

Lab ID:

S1705435-007 ClientSample ID: 17-W1860 Blue 16

COC:

201782-1314

Date Reported 7/3/2017

Report ID

S1705435001

WorkOrder:

S1705435

CollectionDate: 5/17/2017 9:10:00 AM

DateReceived: 5/23/2017 12:17:00 PM

FieldSampler:

Matrix:

Water

Analyses	Result Units Qual F		RL	Method	Date Analyzed/Init		
,, y = 0	T T T T T T T T T T T T T T T T T T T		- Quui			Date Analyzeu/	
Radionuclides - Total							
Radium 226	0.19	pCi/L		0.2	SM 7500 Ra-B	06/13/2017 1503	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	06/13/2017 1503	MB
Radium 228	-1.3	pCi/L		1	Ga-Tech	06/28/2017 1608	MB
Radium 228 Precision (±)	2.5	pCi/L			Ga-Tech	06/28/2017 1608	MB

These results apply only to the samples tested.

Qualifiers:

- Analyte detected in the associated Method Blank
- Value above quantitation range Ε
- Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory G
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7

Report ID: S1705435001



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: MVTL Laboratories, Inc.

MVTL Laboratories, Inc.

Date: 7/3/2017
S1705435

Page 10: \$1705435

Work Order: \$1705435 **Project:** 201782-1314

Radium 228 by Ga/Tech	Sample Type MBLK		Units: pCi/L				
MB-442 (06/09/17 07:05)	RunNo: 146784	Prep[Date: 05/31/17 14:00	Bat	chID 13271		
Analyte	Result	RL	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	ND	1					
MB-443 (06/27/17 09:36)	RunNo: 147448	Prep	Date: 06/05/17 14:00	Bat	chID 13359	•	
Analyte	Result	RL	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	ND	1					
Radium 228 by Ga/Tech	Sample Type LCS		Units: pCi/L				
LCS-442 (06/09/17 10:08)	RunNo: 146784	Prep	PrepDate: 05/31/17 14:00 BatchiD 13271				
Analyte	Result	RL	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	43	1	40.1	108	65.9 - 132		
LCS-443 (06/27/17 12:39)	RunNo: 147448	PrepD	Date: 06/05/17 14:00	Bate	chID 13359		
Analyte	Result	RL	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	49	1	40.1	121	65.9 - 132		
Radium 228 by Ga/Tech	Sample Type LCSD		Units: pCi/L				
LCSD-442 (06/09/17 13:11)	RunNo: 146784	PrepD	Date: 05/31/17 14:00	Bate	hlD 13271		
Analyte	Result	RL	Conc %RPD	%REC	% RPD Limits	Qual	
Total Radium 228	45	1	43 4.95	113	20		
Radium 228 by Ga/Tech	Sample Type MS		Units: pCi/L				
S1705435-003AMS (06/11/17 01:49)	RunNo: 146784	PrepD	Date: 05/31/17 14:00	Bato	hID 13271		
Analyte	Result	RL	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	40	1	40.1 ND	100	50 - 139		
MS-443 (06/27/17 18:45)	RunNo: 147448	PrepD	Date: 06/05/17 14:00	Bato	hID 13359		
Analyte	Result	RL .	Spike Ref Samp	%REC	% Rec Limits	Qual	
Total Radium 228	45	1	40.1 ND	111	50 - 139		
Radium 228 by Ga/Tech	Sample Type MSD		Units: pCi/L				
MSD-443 (06/27/17 21:48)	RunNo: 147448	PrepD	Pate: 06/05/17 14:00	Bato	BatchID 13359		
Analyte	Result	RL .	Conc %RPD	%REC	% RPD Limits	Qual	

Qualifiers: B Analyte detected in the associated Method I

G Analyzed at IML Gillette laboratory

Total Radium 228

44

1

45

1.33

110

20

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

S Spike Recovery outside accepted recovery limits



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Project:

Work Order:

MVTL Laboratories, Inc.

S1705435

201782-1314

Date: 7/3/2017

Report ID: S1705435001

Radium 226 in Water -	Sample Type MBLK	Units: pCi/L		
MB-1758 (06/13/17 12:50)	RunNo: 146860	PrepDate: 06/05/17 0:00	BatchID 13287	
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qual	
Radium 226	ND	0.2		
Radium 226 in Water -	Sample Type LCS	Units: pCi/L		
LCS-1758 (06/13/17 12:50)	RunNo: 146860	PrepDate: 06/05/17 0:00	BatchID 13287	
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qual	
Radium 226	5.2	0.2 6.41	80.6 67.1 - 122	
Radium 226 in Water -	Sample Type LCSD	Units: pCi/L		
LCSD-1758 (06/13/17 12:50)	RunNo: 146860	PrepDate: 06/05/17 0:00	BatchID 13287	
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual	
Radium 226	6.2	0.2 5.2 18.5	97.1 20	
Radium 226 in Water -	Sample Type MS	Units: pCi/L		
S1705435-003AMS (06/13/17 15:03)	RunNo: 146860	PrepDate: 06/05/17 0:00	BatchID 13287	
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qual	
Radium 226	6.2	0.2 6.41 ND	96.2 65 - 131	
Radium 226 in Water -	Sample Type MSD	Units: pCi/L		
S1705435-003AMSD (06/13/17 15:03)	RunNo: 146860	PrepDate: 06/05/17 0:00	BatchID 13287	
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qual	
Radium 226	6.0	0.2 6.2 2.84	93.5 20	

Qualifiers:

В Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

Χ Matrix Effect Е Value above quantitation range

Н Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

0 Outside the Range of Dilutions

Spike Recovery outside accepted recovery limits



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501

Chain of Custody Record

Page 1 of 1 .

	Phone: (701) 2 300) 279-6885	Fax: (701) 258-9724									201782-1314		
Company Nam	e and Address:			Account #	:	-		***************************************			Phone #:		
	M	VTL		Contact:							701-258-9720 Fax #:		
		Broadway		Contact.	Claud	lette	<u>.</u>				For faxed report check box		
		<u>c, ND 58501</u>		Name of S							E-mail: ccarroll@mvt	l.com	
illing Address	s (indicate if different	from above):									For e-mail report check box		
	PO B	Sox 249		Quote Nur	nber						Date Submitted:		
		, MN 56073		Project Na	me/Numbe	· [19-May-17 Purchase Order #:		
											BL5878		
, , , , , , , , , , , , , , , , , , ,		Sample Information					В	ottle	Ту	ре	Analysis		
S17054, IML Lab Number	MVTL Lab Number	Olivert O. J. J. D.	Sample	Date	Time	Untreated	1000 ml HNO3	VOC Vials Umpreserved	Glass Jar	Other			
***************************************		Client Sample ID	Туре	Sampled	Sampled	5	2	<u> </u>	<u>ö</u>	ŏ	Analysis Require	<u>əd</u>	
001	17-W1854	FB Blue	GW	17-May-17	NA	ļ	4		<u> </u>	ļ	Ra226 & Ra228	3	
002	17-W1855	Blue 6	GW	17-May-17	710		4				Ra226 & Ra228	3	
<u>_003</u> _	17-W1856	Blue 7	GW	16-May-17	1925		12				Ra226 & Ra228	3	
<u> </u>	17-W1857	Blue 13	GW	17-May-17	620		4				Ra226 & Ra228	3	
005	17-W1858	Blue 14	GW	17-May-17	1220		4				Ra226 & Ra228	 3	
<u> </u>	17-W1859	Blue 15	GW	17-May-17	1026		4				Ra226 & Ra228	3	
007	17-W1860	Blue 16	GW	17-May-17	910		4				Ra226 & Ra228	3	
omments: All	results must be repo	orted as a numerical valu	e. Use W185	66 for all QC	purposes						7		

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:		Temp:
T. Olson	19-May-17	1700		Kath u Broup	5.23.17	12:17	17.6
2.				1			[8.]



Groundwater Assessment

Company:	OTP Coyote						
Event:	2017	_					
Sample ID:	Blue 6	_					
Sampling Personal:	Jeny May	_					

Phone: (701) 258-9720

Phone: (701) 258-	9720											
										•		
Weather Conditions:		Temp:	50	°F	Wind:	N @570		Precip	: Sun	nv / Partly (Cloudy (Clo	Budve
	Well Info	rmation					5	Sampling				
Well Locked?	Yes	No				Purging Method		adder	<u> </u>		ontrol Setting	
Well Labeled?	E	No				Sampling Method	i: Bla	adder		Purge:		sec
Casing Straight?	(es	No				Dedicated Equip?		(No)	1	Recover:	55	***************************************
Grout Seal Intact?	Yes	No	Not	∀isible		Duplicate Sample?:		(No)	1		80	sec
Repairs Necessary:						Duplicate Sample ID			┪	Pumping R		mL/mir
Casing	Diameter:		2"					······································	J	i uniping is	iale.2007	11111/11111
Water Level Bef	fore Purge:	62	.64	ft		Purge Date	: 16 Mar	/7-	Time Puro	ing Began:	0725	am/pm
Total V	Vell Depth:			ft		Well Purged Dry		 		Purged Dry:	0830	@m/pm
We	ell Volume:	***************************************	_	liters		Sample Date				f Sampling:	0710	
Depth to To	p of Pump:	7(2,90	ft			1			- Camping.	07.0	@m⁄pm
Water Level After	er Sample:		1.52	ft		Bottle 1L Raw.	500ml Nitrio	, 500mL Nit	ric (filtered)	250ml Sul	firia	
Measuremer	nt Method:			I Indicator		List: 4 - 1L Nit		, COUITL THE	ne (intereu),	ZJOITE Sui	IIIIC	

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	0730	10.14	5762	6,35	6,99	46.8	794.0	64,55	1000.0	Torbel
2	0750	9,74	2506	6,40	7.03	63.5	14.5	70,78	4000,0	Clea
3	0800	19.71	2505	6,42	7.11	84.0	7.65	74.10	2000.0	Cles
4	0810	9.67	2484	6.52	6.92	67.2	77.7	75.61	2000.0	Clear
5	0820	9.68	2428	6,56	6.95	153.070	153,0	76,20	2000.0	84 Parthy Cloudy
6	0830	9.67	2422	606/55	717	7012	178,0	Below Pump	Z050, O	PP Charles
7							, , 0, 0			R. C
8										
9	0.705	Purged we	11 For	Smin +	o clear f	he line		63.55	S00,0	
10	0410	9.27	2572	6.65	6.91	182.5	Z607	-	30010	Clear

Stabilized: Yes (No)

Total Volume Removed: 💆🕬 👌 mL

Comments:

Left pring in well while it was recharging



Groundwater Assessment

Company:	OTP Coyote							
Event:	2017							
Sample ID:	Blue 7							
Sampling Personal:	Jem Hen							

Phone: (701) 258-9	720						_						
Weather Conditions: Temp: 60 °F			Wind: Ne5-10				Precip:	: Sunny / Rartly Cloudy / Cloudy					
	Well Info	rmation						Sampling Information					
Well Locked?	Yes	∕Ño				Purgi	ing Method:	Blac	lder		Co	ontrol Setting	js
Well Labeled?	Yes	No	No			Sampli	ing Method:	Bladder			Purge:	5	sec.
Casing Straight?	Y (Fee	No				Dedica	ted Equip?:	Yes	(M)		Recover:	Ss	sec.
Grout Seal Intact?	Yes	No	NotVis	ible		Duplicate	e Sample?:	(es	No		PSI:	80	
Repairs Necessary:						Duplicate	Sample ID:	MS/M:	2 D		Pumping R	late: (00	mL/min
Casing	Diameter:		2"							-			
Water Level Bef	ore Purge:	B(0.07	ft		F	Purge Date:	16 May 1	7	Time Purg	jing Began:	1820	am/pm
Total W	/ell Depth:			ft		Well F	urged Dry?	Yes	(Vo)	Time F	ourged Dry:		am/pm
We	ell Volume:	ے.		liters		Sample Date:		16 May 1	7	Time of Sampling		1925	am/pm
Depth to Top	of Pump:			ft									
Water Level After	er Sample:	B	0,22	ft		Bottle	ottle 1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfiric						
Measuremen	t Method:	Electric \	Nater Level In	dicator		List:							

Field Measurements

(3 consecutive SEQ # Tin 1 / じょう 1 / じょう 2 / じょう	ne [0,03 0 9,73		pH ±0.1 6,51	(mg/L) ±10%]1,38	(mV) ±20 mV 71.6	(NTU) ±10% 32.3	Level (ft) 0.25 ft ໃປ, 2 <i>O</i>	Removed S್ಯಾರ	Clarity, Color, Odor, Ect. clear, partly cloudy, cloudy
1 /875 2 /830	5 [0,03 0 9,73	2598 2577	6.51	11,38	71.6			500 0	
2 [830	0 9.73	2577		1 -	 	32.3	RD, 20	500 0	(1)
			6.41	5 RS				ان بهاد	1 42
	0 9.58			1310	61.4	72.9	80.18	500,0	Cles
3 184		2568	6,44	5,15	48,2	€0.6	80,23	(000)	Clear
4 184	(5 9,52	2566	6.46	4,95	40.7	65.2	80,20	500,0	Clea
5 ¦එ≶	5 9,54	2566	6,48	4.79	30,7	42.7	80.21	1000,0	Clea
6 19\$	9.61	2567	6,50	4,52	14.0	15,9	80,22	2000,0	Clea
7 192	10 9,57	2566	6,50	4.57	10.7	13.2	80,21	500.0	Clea
8 ing.	5 9,53	2566	6,50	4.48	9.1	12.3	80,23	500.0	Clean
9									
10								· · · · · · · · · · · · · · · · · · ·	

Stabilized: Yes No Total Volume Removed: 6500, 0 mL



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 13
Sampling Personal:	Ser di -

Phone: (701) 258-9720

Phone: (701) 258-9	720						_				, , , , , , , , , , , , , , , , , , , ,		
Weather Conditions:		Temp:	5్ల	°F	Wind:	NOS-10			Precip:	Suni	ny / Partly (Cloudy (Ctou	ıdv
	Well Info	rmation						Sa	ampling I	nformatio			
Well Locked?	Yes)	No				Purging Met	thod:	Blac	lder		Co	ntrol Settings	3
Well Labeled?	Ves .	No				Sampling Met	thod:	Blac	lder		Purge:		sec.
Casing Straight?	Yes	No				Dedicated Eq	uip?:	Yes	No		Recover:	23 /53	sec.
Grout Seal Intact?	Yes	(No/	Not	Visible		Duplicate Samp	le?:	Yes	(No				
Repairs Necessary:						Duplicate Sample	e ID:	۷				ate: 200/100	mL/min
Casing	Diameter:		2"							•			
Water Level Bef	ore Purge:		03,20	ft		Purge I	Date:	16 May 1	7	Time Purg	ing Began:	0840	am/pm
Total W	/ell Depth:	<u>~</u>		ft		Well Purged	Dry?	(Ŷes	No		urged Dry:	0920	am/pm
We	ell Volume:	old.		liters		Sample D	Date:	17 May 1	7	Time of	Sampling:	0620	an/pm
Depth to Top	of Pump:	11	(197	ft									<u> </u>
Water Level Afte	er Sample:	ll.	2.25	ft		Bottle 1L Ra	w, 50	0mL Nitric,	500mL Nitr	ic (filtered).	250mL Sul	firic	
Measuremen	t Method:	Electric V	Vater Leve	l Indicator		List: 4 - 1L							
				Field I	Maa								

Field Measurements

						moacaic				
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	0845	10.56	5491	6167	10.77	140.3	907.0	105.11	1000.0	Turkiel
2	0900	9.79	4638	6.23	8,14	191.9	22.6	Illies	3000.0	Clear
3	0910	10,06	4653	6.25	7.99	192.5	226-0	114118	2000.0	Partly Cloudy
4	0920	10.20	4932	6.41	7.87	192.4	324.0	Below Pup	20000	PC
5										
6										
7										
8										
9	0615	Parged	well for	5 mh L	e clear lin	w.		104.73	500,0	
10	0620	912	6223	7.01	10.13	242,7	14.6	1.5		Clear
Stabilized:	Yes	(No			•	To	otal Volume	Removed:	62000	mL

Comments:

lest purp in well durning recharge



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Blue 14
Sampling Personal:	Leng Many

Prione: (701) 258-972	20										e .		
Weather Conditions:		Temp:	50 °F		Wind:	Nos	(0)		Precip	: Sun	ny / Partly C	foundy / Clo	udv
N	/ell Info	rmation						Sa	ampling	Informati			
Well Locked?	<i>Y</i> €9	No				Purg	ing Method:	Blac	dder		Co	ntrol Setting	s
Well Labeled?	Yes	No				Sampl	ing Method:	Blac	dder	1	Purge:	7	sec
Casing Straight?	(eş	No				Dedica	ted Equip?:	Yes	Ø6		Recover:	53	sec
Grout Seal Intact?	Yes	No	Not Visib	le		Duplicate	Sample?:	Yes	No		PSI:	80	
Repairs Necessary:					,	Duplicate	Sample ID:				Pumping R		mL/mir
Casing D	iameter:		2"							-	<u> </u>		
Water Level Before	e Purge:	7	<u>9.08</u>	ft			ourge Date:	17 May	17	Time Purg	ing Began:	1115	am/pm
Total We	Il Depth:	<u> </u>		ft		Well F	urged Dry?	Yes	MO	Time F	ourged Dry:		am/pm
Well '	Volume:			liters		Sa	ample Date:	17 Men	7	Time o	f Sampling:	1220	am/gm
Depth to Top o	of Pump:		- 85,19	ft									
Water Level After	Sample:	Be	lake Pump	ft		Bottle	1L Raw, 50	00mL Nitric,	500mL Nit	ric (filtered)	250mL Sulf	iric	
Measurement N	Method:	Electric W	ater Level Indi	cator		List:	4 - 1L Nitric						
				Field I	Moseuro	monto							

Fleid Weasurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10% [×]	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1120	9,57	5342	6.67	6,22	5614	33,7	Bl:63	500,0	Cles
2 .	1140	9,33	5250	6.63	4.92	44.9	75,7	82.47	2000,0	Class
3	1150	9.26	5256	6.63	4,79	47.3	46.7	82.98	[000,0	Clea
4	1200	9,17	5253	6.62	4.64	41.5	13.7	83,42	1000,0	Clea
5	1210	9,20	5215	662	4.5%	34,4		83,68	100010	Clea
6	1215	9.24	5195	6.60	4.54	31.0	6:57	83,99	Saoro	Clear
7	[220	9,15	\$179	6.61	4,50	17.9	6,43	84.25	Sev. 0	Cla
8									-	
9										
10										

Stabilized: Yes No Total Volume Removed: 6500,0 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 15	
Sampling Personal:	Jers plane	

Phone: (701) 258-9720

. ,						-						
Weather Conditions:	Temp:	50	°F	Wind:	NOS-	~10		Precip	: Sunny	/ Partly C	loudy /Clo	oudv
Well Inf	ormation						Sa	ampling I	nformation			
Well Locked? Yes	No				Purg	ing Method:		dder			ntrol Settino	18
Well Labeled?	No				Sampl	ling Method:	Blac	dder		· Purge:	<u> </u>	sec
Casing Straight?	No				Dedica	ated Equip?:	Yes	Ø.	1 -	Recover:	₹ ₹	sec
Grout Seal Intact? (es)	No	Not	Visible		Duplicate	e Sample?:	Yes	Νο		PSI:	<u> </u>	
Repairs Necessary:					Duplicate	Sample ID:			Pı	·L	ate: 100	mL/mir
Casing Diameter		2"							J (111111111111111111111111111111111111111
Water Level Before Purge	7	6.96	ft			Purge Date:	17 8 lon	17	Time Purging	Began:	1001	@m/pm
Total Well Depth		-	ft		Well F	Purged Dry?	Yes	(ND)	Time Purg			am/pm
Well Volume	-	-	liters		S	ample Date:	17 May	17	Time of Sa	ampling:	1026	@n/pm
Depth to Top of Pump			ft									Carry pri
Water Level After Sample		0.71	ft		Bottle	1L Raw, 50	0mL Nitric,	500mL Nitr	ic (filtered), 25	0mL Sulf	iric	
Measurement Method:	Electric V	Vater Leve	el Indicator		List:	4 - 1L Nitric			(
			Field I	Measure	ments							

						11.0u0u. 0				
Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1006	9.47	3240	6.62	5.31	44.9	8,22	60,60	520,0	Clear
2	10 ll	વ,વર્પ	3292	6.63	5.01	41.3	8.09	80.61	500.0	Cleve
3	i0\$b	9.40		6,62	4.86	36.5	5.51	80.65	500,0	Clear
4	1021	9,34	3282	6,62	4.66	31,5	5,31	80.66	500.0	Cles
5	1026	9.36			4,62	30.1	5,23		50.0	Clear
6										
7										
8										
9										
10										

Stabilized: No Total Volume Removed: 2 \$00,0 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Bluello	
Sampling Personal:	Jerry May-	

Phone: (701) 258-9720

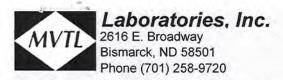
							-						
Weather Conditions:		Temp:	45	°F	Wind:	とのかつ	0		Precip	: Sun	ny / Partly C	loudy Clo	udy
	Well Info	rmation					1	S	ampling I	Information	on		
Well Locked?	Xes7	No				Purgin	ng Method:	Bla	dder		Co	ntrol Setting	is
Well Labeled?	Yes	No				Samplin	ng Method:	Bla	dder	1	Purge:	7-	sec.
Casing Straight?	(e)	No				Dedicate	ed Equip?:	Yes	(Vi)	1	Recover:	53	sec.
Grout Seal Intact?	Yes	No	Not	Visible		Duplicate	Sample?:	Yes	(Np	1	PSI:	40	
Repairs Necessary:						Duplicate S	Sample ID:	-	-	1	Pumping R		mL/min
Casing	Diameter:		2"							!	<u> </u>		
Water Level Bef	ore Purge:	7	<u>45,82</u>	-	ft	Р	urge Date:	17 Hoy	17	Time Purg	ing Began:	08oS	am⁄pm
Total W	Vell Depth:		-		ft	Well Pu	rged Dry?	Yes	NO	Time F	Purged Dry:		am/pm
We	ell Volume:			lite	rs	Sar	mple Date:	17 ch		Time o	f Sampling:	0910	@m/pm
Depth to Top	p of Pump:	-			ft						1		
Water Level Afte	er Sample:	-	76,03		ft	Bottle	1L Raw, 50	0mL Nitric	500mL Nit	ric (filtered),	250mL Sulf	iric	
Measuremen	nt Method:	Electric W	/ater Leve	el Indicator		1	4 - 1L Nitric						

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	CBIO	9.69	2829	6.71	5.74	26.0	448,0	75.92	500.0	Partly Cloudy (PC)
2	०६३०	9,74	2606	6,56	5.06	35.2	240.0	76.02	2000.0	PC
3	0850	9.72	2674	6.56	4173	42. i	42.7	75.95	20000	Cles
4	0855	9.75	2675	6.56	4,68	42:0	34.0	76.02	500,0	Clea
5	900	9.76	2676	6,56	4.61	42,0	25,8	75.95	500.0	clas
6	0905	9,75	2676	6.56	4.59	42.0	21.5	75.95	500.0	Clea
7	0910	9.75	2677	6.56	4,55	41.4	27.3	76.01	500.0	cla
8										
9										
10										
Ctobilizade	Não)	No				·			10000	

Stabilized: Yes No

Total Volume Removed: 6500,0 mL



Chain of Custody Record

Project Nam	ne:	Event:	Work Order Number:	
	OTP Coyote - Blue Pit	May 2017	82-1314	
Report To: Attn: Address:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s):	
phone: email:	jhollen@otpco.com		T L	

	Sample Information							Fi	ield Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	1 liter Nitric		Temp (°C)	Spec. Cond.	Ha	Analysis Required
W1864	FB Blue	17May 17	NA	W		4		NA	NA	NA	
W1855	Blue 6	17May 17	0710	GW	Clear	4		9.27	2572	6.65	
W1856	Blue 7/MS7/MSD7	16 May 17	1925	GW	Clear	12		9,53	2566	6.50	
W1857	Blue 13	17May 17	0620	GW	Clear	4		9,12	6225	7.01	
W1858	Blue 14	17May 17	(220	GW	Clear	4		9,15	5179	6.61	Ded 226 8 Ded 228
W1839	Blue 15	17 May 17	1026	GW	Clear	4		9.36	3285	6.62	Rad 226 & Rad 228
W1860	Blue 16	17 May 17	0910	GW	Clear	4		9.75	2677	6.56	

Relinquished By:		Sar	mple Condition:
Name:	Date/Time	Location:	Temp (°C)
Mark	18 May 17	(log In) Walk In #2	R61 35 TM562/7M588
2			

	Name:	Date/Time
100	1	18 May 17 800
Woel	Omorraon	0



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-1651

Client: Ottertail Power Company

Location: Coyote Station
Project Identification: CCR Blue Pit
Event & Year June 2017

MVTL Laboratory Identifications: 17-W2436 through 17-W2442

Page 1 of 2

Sample Identification	MVTL Laboratory #
Field Blank (FB)	17-W2436
Blue 6	17-W2437
Blue 7	17-W2438
Blue 13	17-W2439
Blue 14	17-W2440
Blue 15	17-W2441
Blue 16	17-W2442

I. RECEIPT

- All samples were received at the laboratory on 21 Jun 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- · Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 1.1°C.
- All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.

II. HOLDING TIMES

 With the exception of laboratory pH, all holding times were met for both preparation and analysis unless noted here.

III. METHODS

- · Approved methodology was followed for all sample analyses.
 - Methods 6010D and Method 6020B were used to analyze the metals.



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CASE NARRATIVE

MVTL Lab Reference No/SDG:

201782-1651

Client:

Ottertail Power Company

Location:

Coyote Station

Project Identification:

CCR Blue Pit

Event & Year

June 2017

MVTL Laboratory Identifications:

17-W2436 through 17-W2442

Page 2 of 2

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted here and/or flagged on the individual analytical laboratory report.

 For some analyses, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix.

o For some analytes, the reported results were elevated due to instrument performance at the lower limit of quantitation (LLOQ).

 One sulfate matrix spike duplicate recovery was outside the acceptable limits. Recovery for the matrix spike was acceptable. RPD for the recoveries of the matrix spike duplicate and the matrix spike was within limits. No further action was taken.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudate Cauth DATE: 6 JUL 17

Claudette Carroll - MVTL Bismarck Laboratory Manager

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 58502 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com

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Page: 1 of 2

Quality Control Report
Lab IDs: 17-W2436 to 17-W2442

Lab IDs: 17-W2436 to 17-	., , , , ,	T .	oject: OT	Coyou	Bidern		WOLK OI	T CONTRACTOR OF THE PARTY OF TH	782-165		District Colonia	CASSA DO CASA				Les terres de la tradición	Burga Bial Processors
Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Antimony - Total mg/l	0.1000	98	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.001 < 0.001 < 0.001	0.3906 0.4132 0.4158	98 103 104	75-125 75-125 75-125	0.3906 0.4132 0.4158	0.4090 0.4384 0.4412	102 110 110	4.6 5.9 5.9	20 20 20	-	-	< 0.001
Arsenic - Total mg/l	0.1000	96	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.002 < 0.002 < 0.002	0.3900 0.4276 0.4178	98 107 104	75-125 75-125 75-125	0.3900 0.4276 0.4178	0.4102 0.4398 0.4384	103 110 110	5.0 2.8 4.8	20 20 20	-	-	< 0.002
Barium - Total mg/l	0.1000	92	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	0.0374 0.0162 0.0085	0.4064 0.3808 0.3726	92 91 91	75-125 75-125 75-125	0.4064 0.3808 0.3726	0.4048 0.4050 0.4028	92 97 99	0.4 6.2 7.8	20 20 20	-	-	< 0.002
Beryllium - Total mg/l	0.1000	107	80-120	0.400 0.400 0.400	17-W2438 17-W2476 17-W2497	< 0.0005 < 0.0005 < 0.0005	0.4136	102 103 107	75-125 75-125 75-125	0.4078 0.4136 0.4284	0.4176 0.4142 0.4384	104 104 110	2.4 0.1 2.3	20 20 20	-	-	< 0.000
Boron - Total mg/l	0.40	100	80-120	0.400	17-W2438	0.39	0.78	98	75-125	0.78	0.78	98	0.0	20	-	-	< 0.1 < 0.1
Cadmium - Total mg/l	0.1000	102	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.0005 < 0.0005 < 0.0005	0.4002	98 100 103	75-125 75-125 75-125	0.3932 0.4002 0.4108	0.4032 0.4222 0.4280	101 106 107	2.5 5.4 4.1	20 20 20	-	-	< 0.000
Calcium - Total mg/l	20.0 20.0	112 111	80-120 80-120	100 500 500	17W2407q 17W2417q 17W2438q	111 162 204	207 660 700	96 100 99	75-125 75-125 75-125	207 660 700	205 660 705	94 -100 100	1.0 0.0 0.7	20 20 20	-	- - -	<1 <1 <1 <1
Chloride mg/l	30.0	87	80-120	60.0	17-W2438	7.0	59.8	88	80-120	59.8	60.0	88	0.3	20	-	-	< 1
Chromium - Total mg/l	0.1000	96	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.002 < 0.002 < 0.002	0.3546 0.3914 0.3774	89 98 94	75-125 75-125 75-125	0.3546 0.3914 0.3774	0.3712 0.3994 0.3978	93 100 99	4.6 2.0 5.3	20 20 20	-	-	< 0.002
Cobalt - Total mg/l	0.1000	95	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.002 < 0.002 < 0.002	0.3658 0.3864 0.3782	91 97 95	75-125 75-125 75-125	0.3658 0.3864 0.3782	0.3772 0.4010 0.3974	94 100 99	3.1 3.7 5.0	20 20 20	-	-	< 0.002

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Page: 2 of 2

Quality Control Report

Lab IDs: 17-W2436 to 17-W2442

Project: OTP Coyote-Blue Pit

Work Order: 201782-1651

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Fluoride mg/l	0.50 0.50	104 104	90-110 90-110	0.500	17-W2438	0.19	0.71	104	80-120	0.71	0.71	104	0.0	20	-	-	< 0.1 < 0.1
Lead - Total mg/l	0.1000	93	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.0005 < 0.0005 < 0.0005	0.3660	89 92 92	75-125 75-125 75-125	0.3550 0.3660 0.3664	0.3568 0.3908 0.3912	89 98 98	0.5 6.6 6.5	20 20 20	-	-	< 0.0005
Lithium - Total mg/l	0.40	105	80-120	0.400	17-W2438	0.10	0.52	105	75-125	0.52	0.55	112	5.6	20	-	-	< 0.1 < 0.1
Mercury - Total mg/l	0.0020	100	85-115	0.100 0.002 0.002 0.002	17-M1524 17-W2439 17-W2475 17-W2479	< 0.01 < 0.0002 < 0.0002 < 0.0002	0.0991 0.0019 0.0020 0.0019	99 95 100 95	70-130 70-130 70-130 70-130	0.0991 0.0019 0.0020 0.0019	0.1003 0.0019 0.0020 0.0019	100 95 100 95	1.2 0.0 0.0 0.0	20 20 20 20 20		- - -	< 0.0002
Molybdenum - Total mg/l	0.1000	99	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.002 < 0.002 < 0.002	0.3682 0.3906 0.3920	92 98 98	75-125 75-125 75-125	0.3682 0.3906 0.3920	0.3964 0.4224 0.4302	99 106 108	7.4 7.8 9.3	20 20 20	-	-	< 0.002
pH units	_	-	-	-	-	-	-	_	-	9.0	8.9	-	1.1	20	-	-	_
Selenium - Total mg/l	0.1000	111	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.005 0.1768 0.1814	0.4222 0.6154 0.6312	106 110 112	75-125 75-125 75-125	0.4222 0.6154 0.6312	0.4440 0.6206 0.6574	111 111 119	5.0 0.8 4.1	20 20 20	-	-	< 0.002
Sulfate mg/l	100 100	92 94	80-120 80-120	2000 1000	17-W2438 17-W2442	787 934	2670 1750	94 82	80-120 80-120	2670 1750	2720 1710	97 78	1.9 2.3	20 20	-	_	< 5 < 5
Thallium - Total mg/l	0.1000	92	80-120	0.400 0.400 0.400	17W2438q 17W2476q 17W2497q	< 0.0005 < 0.0005 < 0.0005	0.3520 0.3634 0.3616	88 91 90	75-125 75-125 75-125	0.3520 0.3634 0.3616	0.3568 0.3808 0.3858	89 95 96	1.4 4.7 6.5	20 20 20	-	-	< 0.0005
Total Dissolved Solids mg/l	- - -	-	-	-	-	-	-	-	1	1970 2020	1990 2010	-	1.0 0.5	20 20	-	-	< 10 < 10

Approved by: C. GUTO 6 JUL 17



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: FB Blue

Event and Year: June 2017

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PO #: 48895

Report Date: 3 Jul 17 Lab Number: 17-W2436 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

Temp at Receipt: 1.1C ROI

	As Receive Result	ed.	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion			to Million	EPA 200.2	21 Jun 17	CS
Lab, pH	* 8.2	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Fluoride	< 0.1	mg/1	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	< 5	mg/1	5,00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	< 1	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	< 10	mg/l	10	11750-85	21 Jun 17 14:42	svs
Calcium - Total	< 1	mg/1	1.0	6010	23 Jun 17 11:53	SZ
Lithium - Total	< 0.1	mg/1	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	< 0.1	mg/l	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mq/1	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Thallium - Total	< 0.0005	mg/l	0,0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Claudette K. Cantlo

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:

= Due to sample matrix # = Due to con
! = Due to sample quantity + = Due to int

= Due to concentration of other analytes + = Due to internal standard response

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 6

Event and Year: June 2017

Report Date: 3 Jul 17 Lab Number: 17-W2437 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion		4.77	- A.V.	EPA 200.2	21 Jun 17	CS
Field pH	6.59	s.u.	0.1	SM 4500 H+ B	20 Jun 17 7:37	DJN
Lab, pH	* 6.7	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Field Appearance	Cloudy		NA	SM 2110	20 Jun 17 7:37	DJN
Field Temperature	10.4	Degrees C	0.1	SM 2550B	20 Jun 17 7:37	DJN
Field Conductivity	2564	umhos/cm	1	EPA 120.1	20 Jun 17 7:37	DJN
Fluoride	0.18	mg/1	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	825	mg/1	5.00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	6.6	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	1950	mg/1	10	11750~85	21 Jun 17 14:42	svs
Calcium - Total	201	mg/1	1.0	6010	23 Jun 17 12:53	SZ
Lithium - Total	< 0.1	mg/l	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	0.37	mg/1	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	0.0310	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	0.0025	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^		0.0020	6020	27 Jun 17 16:45	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Claudette K. Canteo 6JULI7

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 7

Event and Year: June 2017

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Report Date: 3 Jul 17 Lab Number: 17-W2438 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 16:11 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion			1674	EPA 200.2	21 Jun 17	CS
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	20 Jun 17 16:11	DJN
Lab, pH	* 6.7	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Field Appearance	Clear		NA	SM 2110	20 Jun 17 16:11	DJN
Field Temperature	10.6	Degrees C	0.1	SM 2550B	20 Jun 17 16:11	DJN
Field Conductivity	2748	umhos/cm	1	EPA 120.1	20 Jun 17 16:11	DJN
Fluoride	0.19	mg/l	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	787	mg/1	5.00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	7.0	mg/l	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	1970	mg/1	10	I1750-85	21 Jun 17 14:42	SVS
Calcium - Total	204	mg/1	1.0	6010	23 Jun 17 12:53	sz
Lithium - Total	0.10	mg/1	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	0.39	mg/1	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	0.0374	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Clauditte K Cantle

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:

= Due to concentration of other analytes

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

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 13

Event and Year: June 2017

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Report Date: 3 Jul 17 Lab Number: 17-W2439 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	- F. 17	E & Cod	100 100	EPA 200.2	21 Jun 17	CS
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	20 Jun 17 8:43	DJN
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Field Appearance	Partly Clo	oudy	NA	SM 2110	20 Jun 17 8:43	DJN
Field Temperature	11.2	Degrees C	0.1	SM 2550B	20 Jun 17 8:43	DJN
Field Conductivity	5481	umhos/cm	1	EPA 120.1	20 Jun 17 8:43	DJN
Fluoride	0.30	mg/l	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	2400	mg/l	5.00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	35.0	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	5330	mg/l	10	11750-85	21 Jun 17 14:42	svs
Calcium - Total	141	mg/1	1.0	6010	23 Jun 17 12:53	SZ
Lithium - Total	0.21	mg/1	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	0.46	mg/l	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	0.0028	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	0.0160	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	0.0033	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	0.0007	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Thallium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Clauditte K Canteo

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: 0 = Due to sample matrix H = Due to co

! - Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response

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



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Page: 5 of 7

Report Date: 3 Jul 17 Lab Number: 17-W2440 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 14:25 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 14

Event and Year: June 2017

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion		5 10		EPA 200.2	21 Jun 17	CS
Field pH	7.26	s.u.	0.1	SM 4500 H+ B	20 Jun 17 14:25	DJN
Lab, pH	* 7.5	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Field Appearance	Partly Clo	oudy	NA	SM 2110	20 Jun 17 14:25	DJN
Field Temperature	11.5	Degrees C	0.1	SM 2550B	20 Jun 17 14:25	DJN
Field Conductivity	5334	umhos/cm	1	EPA 120.1	20 Jun 17 14:25	DJN
Fluoride	0.16	mg/1	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	2120	mg/1	5.00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	8.5	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	4120	mg/l	10	I1750-85	21 Jun 17 14:42	svs
Calcium - Total	281	mg/1	1.0	6010	23 Jun 17 12:53	SZ
Lithium - Total	< 0.2 @	mg/l	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	0.49	mg/l	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/1	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	0.0035	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	0.0926	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	0.0066	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	0.0029	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	0.0014	mg/1	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	0.0027	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Thallium ~ Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Claudette K Cunter

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:

= Due to sample matrix # = Due to concentration of other analytes

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

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen

Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 15

Event and Year: June 2017

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Report Date: 3 Jul 17 Lab Number: 17-W2441 Work Order #:82-1651 Account #: 006106

Date Sampled: 20 Jun 17 12:28 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	777	34.70		EPA 200.2	21 Jun 17	CS
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	20 Jun 17 12:28	DJN
Lab, pH	* 6.8	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS
Field Appearance	Clear		NA	SM 2110	20 Jun 17 12:28	DJN
Field Temperature	11.6	Degrees C	0.1	SM 2550B	20 Jun 17 12:28	DJN
Field Conductivity	3601	umhos/cm	1	EPA 120.1	20 Jun 17 12:28	DJN
Fluoride	0.20	mg/1	0.10	SM4500-F-C	21 Jun 17 17:00	CS
Sulfate	1040	mg/1	5.00	ASTM D516-07	22 Jun 17 13:28	EMS
Chloride	8.1	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV
Total Dissolved Solids	2460	mg/1	10	I1750-85	21 Jun 17 14:42	SVS
Calcium - Total	138	mg/l	1.0	6010	23 Jun 17 12:53	SZ
Lithium - Total	0.13	mg/1	0.10	6010	27 Jun 17 13:17	KMD
Boron - Total	0.44	mg/l	0.10	6010	26 Jun 17 12:13	KMD
Antimony - Total	< 0.001	mg/l	0.0010	6020	27 Jun 17 16:45	KMD
Arsenic - Total	0.0118	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Barium - Total	0.0312	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Beryllium - Total	< 0.0005	mg/l	0.0005	6020	28 Jun 17 9:45	KMD
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD
Chromium - Total	< 0.002	mg/l	0.0020	6020	27 Jun 17 16:45	KMD
Cobalt - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Lead - Total	< 0.0005	mg/l	0.0005	6020	27 Jun 17 16:45	KMD
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Selenium - Total	< 0.005 ^	mg/1	0.0020	6020	27 Jun 17 16:45	KMD
Thallium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD

^{*} Holding time exceeded

Approved by:

Claudite K Canto

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:

@ = Due to sample matrix # = Due to co
: = Due to sample quantity + = Due to in

= Due to concentration of other analytes + = Due to internal standard response

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



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Page:

CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 16

Event and Year: June 2017

Report Date: 3 Jul 17 Lab Number: 17-W2442 Work Order #:82-1651 Account #: 006106

7 of 7

Date Sampled: 20 Jun 17 11:00 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 1.1C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst	
Metal Digestion		7.7.	T. //	EPA 200.2	21 Jun 17	CS	
Field pH	6.53	s.u.	0.1	SM 4500 H+ B	20 Jun 17 11:00	DJN	
Lab, pH	* 6.B	s.u.	0.1	SM4500 H+ B	21 Jun 17 17:00	CS	
Field Appearance	Partly Clo	oudy	NA	SM 2110	20 Jun 17 11:00	DJN	
Field Temperature	12.7	Degrees C	0.1	SM 2550B	20 Jun 17 11:00	DJN	
Field Conductivity	2850	umhos/cm	1	EPA 120.1	20 Jun 17 11:00	DJN	
Fluoride	0.21	mg/l	0.10	SM4500-F-C	21 Jun 17 17:00	CS	
Sulfate	934	mg/1	5.00	ASTM D516-07	22 Jun 17 13:45	EMS	
Chloride	7.8	mg/1	1.0	SM4500-C1-E	3 Jul 17 15:27	KMD	
Mercury - Total	< 0.0002	mg/1	0.0002	EPA 245.1	23 Jun 17 11:15	EV	
Total Dissolved Solids	2020	mg/1	10	I1750-85	21 Jun 17 14:42	SVS	
Calcium - Total	164	mg/l	1.0	6010	23 Jun 17 12:53	SZ	
Lithium - Total	0.11	mg/1	0.10	6010	27 Jun 17 13:17	KMD	
Boron - Total	0.40	mg/1	0.10	6010	26 Jun 17 12:13	KMD	
Antimony - Total	< 0.001	mg/1	0.0010	6020	27 Jun 17 16:45	KMD	
Arsenic - Total	0.0061	mg/1	0.0020	6020	27 Jun 17 16:45	KMD	
Barium - Total	0.0800	mg/1	0.0020	6020	27 Jun 17 16:45	KMD	
Beryllium - Total	< 0.0005	mg/1	0.0005	6020	28 Jun 17 9:45	KMD	
Cadmium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD	
Chromium - Total	0.0048	mg/1	0.0020	6020	27 Jun 17 16:45	KMD	
Cobalt - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD	
Lead - Total	0.0010	mg/l	0.0005	6020	27 Jun 17 16:45	KMD	
Molybdenum - Total	< 0.002	mg/1	0.0020	6020	27 Jun 17 16:45	KMD	
Selenium - Total	< 0.005 ^	mg/l	0.0020	6020	27 Jun 17 16:45	KMD	
Thallium - Total	< 0.0005	mg/1	0.0005	6020	27 Jun 17 16:45	KMD	

^{*} Holding time exceeded

Approved by:

Clauditte K Canteo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL - Method Reporting Limit

= Due to concentration of other analytes + = Due to internal standard response

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



Comments:

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote			
Event:	2017			
Sample ID: Blue	6.			
Sampling Personal	Darron	21/-	_	

Phone: (701) 258-9	720										•			
Weather Conditions:		Temp:	50 °F		Wind:	-19h			Precip:	1	Sunny) Partly C	Cloudy / Clo	udy
	Well Info	rmation					,	S	ampling lı	nform	nati or	ı 1		
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder			Co	ntrol Setting	s
Well Labeled?	(Yes	No				Sampli	ng Method:	Bla	dder			Purge:	· s~	sec.
Casing Straight?	Xes	No				Dedica	ted Equip?:	Yes				Recover:	25	sec.
Grout Seal Intact?	Xes	No	Not Visit	le		Duplicate	Sample?:	Yes	(No)			PSI:	·	
Repairs Necessary:						Duplicate	Sample ID:				P	umping R	ate:2-00	mL/min
Casing	Diameter:		2"											
Water Level Befo	ore Purge:		3.62	ft		F	Purge Date:	19 Jun	e17	Time	Purgin	g Began:	0845	a∰/pm
Total W	/ell Depth:			ft			urged Dry?	Yes	No			rged Dry:	0945	am/pm
We	ell Volume:			liters		Sa	mple Date:	207m	217	Tir	me of S	Sampling:	0737	am/pm
Depth to Top	of Pump:	7	777	ft										
Water Level After	er Sample:	7/	98	ft		Bottle	1L Raw, 50	00mL Nitric	, 4 - 1L Nitric	;				
Measuremen	t Method:	Electric \	Nater Level Indi	cator		List:								
				Field I	Measure	ements								

Stabil	ization	Temp	Spec. DO O				Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	19855	10,32	2592	6,58	0,75	546	955	4616	1000	Coudr
2	0910	12.18	2519	55	0.37	68 I	191	71122	3000	Partly Claudy
3	0975	10 29	2524	6.58	1,44	76.7	115	75.03	3000	farty Clouds
4	9940	10,37	2519	La I	1,14	56.0	240	76,82	3000	Partly Clarke
5	0945	10,48	25/2	663	1.61	54,4	260	77,22	(800	for Cloudy, grey
6		7			. 01	•		Button		
7										
8										
9	0732	14-62	d Give	tor 50	nin B	fores	andy		64,55	
10	0737	1234	2564	6159	5.42	2815	7/000	65.66	65-62	500 Cloudy, grey
Stabilized:	Yes	No				To	otal Volume	Removed:	11,000	mL JJ



Groundwater Assessment

Company:	OTP Coyot	e	
Event:	2017		
Sample ID:	Blue 7		
Sampling Pe	rsonal: Decem	Nickman	

									62	AAACO	1 1-2	11000	The state of the s
Phone: (701) 258-9	720									-0,	, -		
Weather Conditions:	d	Temp:	AX °F		Wind:	Cham	<i></i>		Precip	: Suni	ny / Partly (Cloudy / Clo	udy
,	Well Info	rmation	00			- 7 - 6 /		Sa	ampling l	nformatio	on		
Well Locked?	(Yes)	No				Purgi	ng Method:	Blac	lder		Co	ontrol Setting	s
Well Labeled?	Yes	No				Sampli	ing Method:	Blac	lder]	Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	4 0		Recover:	25-800	sec.
Grout Seal Intact?	Yes	No	Not Visi	ble		Duplicate	Sample?:	Yes	No		PSI:	1	
Repairs Necessary:						Duplicate	Sample ID:	Ms/n	250		Pumping R	Rate: 200	mL/min
Casing	Diameter:		2"					• /					
Water Level Befo	ore Purge:	5	71.18	ft		F	Purge Date:	20 June	17	Time Purg	ing Began:	1526	am/pm
Total W	ell Depth:	L		ft		Well F	urged Dry?	Yes	(No	Time F	urged Dry:		am/p m
We	li Volume:			liters		Sa	ample Date:	200	17	Time of	Sampling:	1611	am/pm
Depth to Top	of Pump:		74,66	ft					- /				
Water Level Afte	r Sample:	8	1.27	ft		Bottle	1L Raw, 50	00mL Nitric,	4 - 1L Nitri	c 43	<u> </u>		
Measuremen	t Method:	Electric	Water Level Ind	licator		List:				•			
				Field	Measure	ements							

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	F	clear, partly cloudy, cloudy
1	1531	11,00	2737	6,53	95.61	95.4	70,0	8/21	\ (200 0	Cle_
2	1541	10.47	2710	6153	0,21	56.1	35.9	01.32	2000	de
3	1551	10,51	2757	6,51	017	50,8	20,9	81,28	2000	da
4	1501	10058	2750	6.49	0,15	45,7	140	21,28	2000	d
5	1406	10.51	2749	6,49	0,65	44.3	14.7	81,26	1000	de
6	1611	10,58	2748	6,49	0,14	42,4	148	21,27	1000	ch
7	HOLLA	,	• •		•)			
8	700-0									
9						•				
10										

Stabilized: Yes No

Total Volume Removed: 9000 mL



Comments:

No

Field Datasheet

Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 13	
Sampling Persor	al: Pallen Niel	

Phone: (701) 258-9720

							J L /	<u> </u>				*		_
Weather C	Conditions:		Temp:	<u> </u>	°F	Wind:	Link	γT		Precip:	Sunr	າy)/ Partly (Cloudy / Clo	udy
		Well Info	ormation					,	Sa	ımpling l	nformatio	on		
We	ell Locked?	Yes	No				Purgir	ng Method:	Blad	lder		C	ontrol Setting	s
We	ll Labeled?	XES	No				Samplin	ng Method:	Blad	lder		Purge:	ĵ,	sec.
Casin	g Straight?	Y98	No				Dedicat	ed Equip?:	Yes	No		Recover:	25	sec.
Grout S	Seal Intact?	Yes	(No)	_ ► Not V	isible		Duplicate	Sample?:	Yes	NO		PSI:	1	
Repairs No	ecessary:						Duplicate :	Sample ID:				Pumping R	Rate: 200	mL/min
	Casing	Diameter:		2"								500	ale 100	
Wate	er Level Bet	fore Purge:		103.6	/ ft		P	urge Date:	195ne	17	Time Purg	ing Began:	1003	am/pm
	Total V	Vell Depth:			ft		Well P	urged Dry?	Yes	No	Time F	urged Dry:	1038	/am/pm
	We	ell Volume:			liters		Sa	mple Date:	20 wel	17	Time of	Sampling:	0843	am/pm
	Depth to To	p of Pump:	j	14,42	ft									
Wat	er Level Aft	er Sample:	17	0.06	ft		Bottle	1L Raw, 50	00mL Nitric,	4 - 1L Nitri	С			
Į,	Measuremer	nt Method:	Electric \	Nater Level	Indicator		List:							
					Field	Measure	ments							
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription:			
(3 cons	secutive)	(°C)	Cond.	рΗ	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity	, Color, Ode	or, Ect.		
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear,	partly cloudy,	cloudy		
1	1008	11:54	5129	637	156	15014	10	10712	1000	Parti	yclod	V		
2	1023	11./3	Q 4898	6.28	1,77	169,9	540	111.52	3000	ple	<u>~ /</u>			
3	1038	11158	4846	6,31	1.47	178,9	228	114,42	3000	Portly	clord			
4		, , ,	•		•					/				
5														
6														
1 7	[1				!		1				l	

Total Volume Removed:



Groundwater Assessment

Company:	OTP Coyote
Event:	2017
Sample ID:	Plue 14
Compling Doroot	notivo -

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9	720										
Weather Conditions:		Temp:	61 °F	Wind:	walnt		Precip	Suni	ny / Partiv C	Toucky / Clou	dy
	Well Info	rmation				5	Sampling Information				
Well Locked?	Yes	No			Purging Method	: Bla	adder		Co	ntrol Settings	
Well Labeled?	Yes	No			Sampling Method	: Bla	adder		Purge:		sec.
Casing Straight?	Yes	No			Dedicated Equip?	: Yes	(NO		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visible		Duplicate Sample?:	Yes	₩0		PSI:		
Repairs Necessary:					Duplicate Sample ID	:			Pumping R	ate: <i> D [</i>]	mL/min
	Diameter:		2"							L	
Water Level Bef	ore Purge:	77	9.64 ft		Purge Date	:20 to	no/7	Time Purg	ing Began:	1330	am/poth
	/ell Depth:		_ ft		Well Purged Dry	? Yes	No	Time F	Purged Dry:		am/pm
We	ell Volume:		liters		Sample Date	: 20 7	ed -	Time o	f Sampling:	1425	am/pm)
Depth to Top	of Pump:	83.	63 ft								
Water Level After	er Sample:	81	1,84 ft		Bottle 1L Raw,	500mL Nitri	c, 4 - 1L Nitri	С			
Measuremen	t Method:	Electric Wa	iter Level Indicator		List:						

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time	1	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1335	12,14	5430	6.80	6.11	200,8	107	80,14	500	Partly Cloudy
2	1255	12.08	5918	67.03	8,37	59,3	119	10,48	2000	Pathy cloudy
3	1465	11.00	5430	36.81	6,28	68.3	1600	\$A\$1,24	1000	Cloudy Pasty Cloudy
4	1410	11.45	5411	67,04	B.55	721	170	81,34	500	Partly/ louk
5	1415	11.16	5363	7,18	9.81	49.6	175	11.41	500	Partly Cloudy
6	1420	11.44	5353	7124	10,00	426	169	81,48	500	Parthe Cloudy
7	1425	1147	5334	7026	9,95	41.5	180	8150	500	Partly [soudy
8										, - /
9										
10									F2× 12	

Stabilized: Yes No

Total Volume Removed: 5500 mL



Groundwater Assessment

°F

Temp:

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue15	
Sampling Persor	nal: Danca Mesi	in

Sunny / Partly Cloudy/ Cloudy

sec.

mL/min

(am)pm

ampm

Precip:

Phone: (701) 258-9720

Weather Conditions:

		Well Info	rmation	- /			- / - • •		Sa	mpling l	nformation		
We	ell Locked?	Yes	No No				Purgir	ng Method:	Blad	der		Co	ntrol Settings
Wel	Il Labeled?	Yes	No				Samplii	ng Method:	Blad	der		Purge:	5
Casin	g Straight?	Xes	No			:	Dedicat	ed Equip?:	Yes	No		Recover:	55
Grout S	Seal Intact?	Yes	No	Not V	'isible		Duplicate	Sample?:	Yes	₩	<u> </u>	PSI:	
Repairs Ne	ecessary:						Duplicate:	Sample ID:] Pu	umping R	ate:
	Casing	Diameter:		2"									
Wate	er Level Bet	fore Purge:		78,14	ft		F	Purge Date:	20 The	17	Time Purging	g Began:	11586
	Total V	Vell Depth:	- E-		ft		Well P	urged Dry?		(A)	Time Pur	<u> </u>	
	We	ell Volume:	U		liters		Sa	mple Date:	207	1-7	Time of Sa	ampling:	1228
I	Depth to To	p of Pump:	7	0.71.	ft								•
Wate	er Level Aft	er Sample:		18124	ft		Bottle	1L Raw, 50	00mL Nitric,	4 - 1L Nitri	С		
N	/leasuremei	nt Method:	Electric \	Water Level	Indicator		List:						
					Fiold	Measure	monte						
Ctabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription:		
1	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)		Clarity	, Color, Odor,	Ect.	
SEQ#	Time	()	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft			partly cloudy, clo		
1	1203	12.32	3685	6.55	1.09	670	46.2	18,21	500	Ca			
2	1208	11.57	3622	6.55	10,69	62,0	13,3	78,30	500	cG			
3	1213	11,80	3607	6,56	0,51	857,2	7.63	78,23	500	dr			
4	1218	11,63	3402	6,56	0.38	54.1	4.33	78,24	500	ch			
5	1223	11,51	3593	6.57	0137	51.9	4,17	78,23	500	d			
6	1228	11,55	\$ 3601	b057	0,35	49,9	4.03	78,23	500	d			•
7													
8													
9													
10								<u> </u>	0.00				
Stabilized:		No				T	otal Volume	Removed:	<u> 5000</u>	mL			
Comments	: /\												

Wind: /



Groundwater Assessment

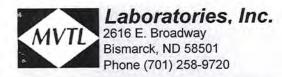
Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blueth	
0 1 0		100

•								Cumping	i Cisonai.	min	1 // 12	20-5-	
Phone: (701) 258-9	720								4				
<u> </u>													
Weather Conditions:		Temp:	6/°F		Wind:	N5			Precip:	Sunr	ıy / Partly C	Cloudy / Clou	ıdy
•	Well Info	rmation	,					S	ampling l	nformatio	on 🖳		
Well Locked?	Yes	No				Purgi	ng Method:	Bla	Bladder		Co	ntrol Settings	3
Well Labeled?	Yes	No				Sampli	ing Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	Nø		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visi	ible		Duplicate	Sample?:	Yes	No		PSI:		
Repairs Necessary:						Duplicate	Sample ID:	V			Pumping R	ate: /	mL/min
Casing	Diameter:		2"									· ·	
Water Level Befo	ore Purge:	7	7,21	ft		Purge Date:		20 T	iel 7	Time Purging Began: 095		0950	am∕pm
Total W	/ell Depth:			ft		Well P	urged Dry?	Yes	€ Nto	Time P	urged Dry:		am/pm
We	ll Volume:			liters		Sa	ample Date:	20 Jun	e17	Time of	Sampling:	1100	a m∕pm
Depth to Top	of Pump:	9	628	ft									
Water Level Afte	er Sample:	7	7,2%	ft		Bottle	1L Raw, 50	00mL Nitric	, 4 - 1L Nitrio)			
Measurement	t Method:	Electric V	Vater Level Inc	dicator		List:							
_				Field	Measure	ments							

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1955	12.82	2981	6,77	478	47.8	809	77.24	500	Cloud y grey
2	1015	12.43	28 99	6,59	0.55	28,8	486	-1.22	2000	Charles
3	1035	12,30	2845	6.53	0,34	448	90,7	77,22	2000	Partly/North
4	1050	12,78	2851	653	0,26	422	130	77,22	1500	Party clouds
5	1055	12,86	7842	6,54	0,24	Z3,2	133	77,22	500	Partly clocked
6	1100	12,73	2850	6,53	0,25	53.9	128	77.26	500	Participal
7	11950	(•				,			70,7
8										/
9										
10										

Stabilized: No Comments:

Total Volume Removed: フクロロ mL



Chain of Custody Record

Project Name:		Event:	Work Order Number:
OTP Coyote - Blue Pit		June 2017	02-1601
Report To: Attn: Address:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s): Parren Mieswaag
phone:	ihollen@otnco.com		

	Samp	le Informatio	n			Bottle Ty	ре	Field Parameters	Analysis	
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partly Cloudy, Cloudy)	500mL Nitric		Temp (°C) Spec. Cond. PH	Analysis Required	
Wayale	FB Blue	20 June 17	NA	W		x x		NA NA NA		
Wa437	Blue 6	20 June 17	0737	GW	Cloudy)	x x		10.39 2564 6,59		
Wa438	Blue 7/MS7/MSD7	20 June 17	1611	GW	clear :	3 3		10.58 2748 6.49		
W2439	Blue 13	20 Tyrel 7	0843	GW	Partly Cloudy >	x x		11.18 5481 6,49		
W2440	Blue 14	20 June 17	1425	GW	Party Cloudy ?	x x		1147 5334 7,26	OTP Coyote List 1	
MAYYI	Blue 15	20 June 17		GW	dear ;	x x		11,55 3601 6.57	on objeto zion	
Wayya	Blue 16	20 June (7	1100	GW	Partly cloudy ?	x x		12,73 2850 6.53		

Relinquished By:		Sample Condition:			
Name:	Date/Time	Location:	Temp (°C)		
1 Da-11-	20 met 7	Log In	KOJ 1, f TM562/TM588		
2					

Received by:							
Name:	Date/Time						
Mal Simmon	alduren 800						
THE CHILDREN	1						



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CASE NARRATIVE

MVTL Lab Reference No/SDG: 201782-1652 IML Lab Reference No/SDG: S1706439

Client: Ottertail Power Company

Location: Coyote Station

Project Identification: Blue Pit CCR Radiochemistry

Event & Year Jun 2017

MVTL Laboratory Identifications: 17-W2443 through 17-W2449

IML Laboratory Identifications: S1706439-001 through S1706439-007

Page 1 of 1

Sample Identification	IML Laboratory #	MVTL Laboratory #
FB Blue	S1706439-001	17-W2443
Blue 6	S1706439-002	17-W2444
Blue 7	S1706439-003	17-W2445
Blue 13	S1706439-004	17-W2446
Blue 14	S1706439-005	17-W2447
Blue 15	S1706439-006	17-W2448
Blue 16	S1706439-007	17-W2449

I. RECEIPT

- All samples were received at the laboratory on 21 Jun 2017 at 0800.
- Samples were collected and hand delivered by MVTL Field Service personnel to the laboratory.
- Samples were received on ice and evidence of cooling had begun.
 - Temperature of samples upon receipt was 18.4°C.
- No other exceptions on sample receipt were encountered on this sample set unless noted here.
- All samples requiring radiochemistry analysis were sent via courier to Inter-Mountain Labs (IML) for analysis there. Samples were received at IML on 23 Jun 2017.
 - All samples were properly preserved unless noted on the individual analytical laboratory report or on the IML Case Narrative.

II. HOLDING TIMES

 All holding times were met for both preparation and analysis unless noted on the individual analytical laboratory report or on the IML Case Narrative.

III. METHODS

- Approved methodology was followed for all sample analyses.
 - Please refer to the IML Case Narrative for more information regarding methodology.

IV. ANALYSIS

 All acceptance criteria was met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/matrix duplicates unless noted on the individual analytical laboratory report or on the IML Case Narrative.

All laboratory data has been approved by MVTL Laboratories.

SIGNED: Claudate amily

Claudette Carroll - MVTL Bismarck Laboratory Manager



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page:

1 of 7

CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls 56538-0496 MN

Project Name: OTP Coyote-Blue Pit

Sample Description: FB Blue

Event and Year: June 2017

Radium 226

Radium 228

Report Date: 7 Aug 17 Lab Number: 17-W2443 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 Date Received: 21 Jun 17

Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

As Received Method Method Date Analyst Result RL Reference Analyzed See Attached Report 24 Jul 17 OL 17 Jul 17 OL See Attached Report

Approved by:

Claudette K Canteo

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:

@ = Due to sample matrix # = Due to co
! = Due to sample quantity + = Due to in

CERTIFICATION: ND # ND-00016

= Due to concentration of other analytes + = Due to internal standard response



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 6

Event and Year: June 2017

2 of 7 Page:

Report Date: 7 Aug 17 Lab Number: 17-W2444 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 7:37 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Receir Result	ved	Method RL	Method Reference	Dat Ana	Analyst		
Field pH	6.59	s.u.	0.1	SM 4500 H+ B	20	Jun 17	7:37	DJN
Field Appearance	Cloudy		NA	SM 2110	20	Jun 17	7:37	DJN
Field Temperature	10.4	Degrees C	0.1	SM 2550B	20	Jun 17	7:37	DJN
Field Conductivity	2564	umhos/cm	1	EPA 120.1	20	Jun 17	7:37	DJN
Radium 226		ched Report		100000000000000000000000000000000000000	24	Jul 17		OL
Radium 228		ched Report			7.0	Jul 17		OL

Approved by:

Clauditte K Canteo

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:

Due to sample matrix ## Due to compare the compared with the compa

= Due to concentration of other analytes * = Due to internal standard response



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3 of 7 Page:

CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 7

Event and Year: June 2017

Report Date: 7 Aug 17 Lab Number: 17-W2445 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 16:11 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

					Analyst
6.49	s.u.	0.1	SM 4500 H+ B	20 Jun 17 16:11	DJN
Clear		NA	SM 2110	20 Jun 17 16:11	DJN
10.6	Degrees C	0.1	SM 2550B	20 Jun 17 16:11	DJN
2748	umhos/cm	1	EPA 120.1	20 Jun 17 16:11	DJN
See Atta	ched Report			24 Jul 17	OL
				17 Jul 17	OL
	Clear 10.6 2748 See Atta	Clear 10.6 Degrees C	Clear NA 10.6 Degrees C 0.1 2748 umhos/cm 1 See Attached Report	Clear NA SM 2110 10.6 Degrees C 0.1 SM 2550B 2748 umhos/cm 1 EPA 120.1 See Attached Report	Clear NA SM 2110 20 Jun 17 16:11 10.6 Degrees C 0.1 SM 2550B 20 Jun 17 16:11 2748 umhos/cm 1 EPA 120.1 20 Jun 17 16:11 See Attached Report 24 Jul 17

Approved by:

Claudette K Canto

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:

= Due to sample matrix # = Due to conduct to sample quantity + = Due to interpretations of the property of the proper

= Due to concentration of other analytes
+ = Due to internal standard response



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2 North German St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 13

Event and Year: June 2017

4 of 7 Page:

Report Date: 7 Aug 17 Lab Number: 17-W2446 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 8:43 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed		Analyst
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	20 Jun 17	8:43	DJN
Field Appearance	Partly (Cloudy	NA	SM 2110	20 Jun 17	8:43	DJN
Field Temperature	11.2	Degrees C	0.1	SM 2550B	20 Jun 17	8:43	DJN
Field Conductivity	5481	umhos/cm	1	EPA 120.1	20 Jun 17	8:43	DJN
Radium 226		iched Report			24 Jul 17		OL
Radium 228		ched Report			18 Jul 17		OL

Approved by:

Clauditte K Canteo

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:

@ = Due to sample matrix # = Due to conduct to sample quantity # = Due to interpret to the conduct

- Due to concentration of other analytes + - Due to internal standard response



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496 Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Event and Year: June 2017

Sample Description: Blue 14

5 of 7 Page:

Report Date: 7 Aug 17 Lab Number: 17-W2447 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 14:25 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece Result	ived	Method RL	Method Reference	Date Analyzed	Analyst	
Field pH	7,26	s.u.	0.1	SM 4500 H+ B	20 Jun 17 14:25	DJN	
Field Appearance	Partly	Cloudy	NA	SM 2110	20 Jun 17 14:25	DJN	
Field Temperature	11.5	Degrees C	0.1	SM 2550B	20 Jun 17 14:25	DJN	
Field Conductivity	5334	umhos/cm	1	EPA 120.1	20 Jun 17 14:25	DJN	
Radium 226	See Att	ached Report			24 Jul 17	OL	
Radium 228		ached Report			18 Jul 17	OL	

Approved by:

Claudette K. Cantes

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: 0 = Due to sample matrix # = Due to cont ! = Due to sample quantity # = Due to int

publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

= Due to concentration of other analytes
+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

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



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CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co. PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 15

Event and Year: June 2017

6 of 7 Page:

Report Date: 7 Aug 17 Lab Number: 17-W2448 Work Order #:82-1652 Account #: 006106

Date Sampled: 20 Jun 17 12:28 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece: Result	As Received Result		Method Reference	Date Analyzed	Analyst	
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	20 Jun 17 12:28	DJN	
Field Appearance	Clear		NA	SM 2110	20 Jun 17 12:28	DJN	
Field Temperature	11.6	Degrees C	0.1	SM 2550B	20 Jun 17 12:28	DJN	
Field Conductivity	3601	umhos/cm	1	EPA 120.1	20 Jun 17 12:28	DJN	
Radium 226	See Atta	ached Report			24 Jul 17	OL	
Radium 228		ached Report			18 Jul 17	OL	

Approved by:

Clauditte K Cantep

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:

= Due to sample matrix # = Due to complete to sample quantity # = Due to interpret to the sample quantity # = Due to interpret the sample quantity # = Du

= Due to concentration of other analytes
+ = Due to internal standard response



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7 of 7 Page:

CERTIFICATE of ANALYSIS - CCR

Josh Hollen Otter Tail Power Co.

PO Box 496

Fergus Falls MN 56538-0496

Project Name: OTP Coyote-Blue Pit

Sample Description: Blue 16

Event and Year: June 2017

Report Date: 7 Aug 17 Lab Number: 17-W2449 Work Order #:82-1652

Account #: 006106

Date Sampled: 20 Jun 17 11:00 Date Received: 21 Jun 17 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: Ambient

	As Rece: Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Field pH	6.53	s.u.	0.1	SM 4500 H+ B	20 Jun 17 11:00	DJN
Field Appearance	Partly (Cloudy	NA	SM 2110	20 Jun 17 11:00	DJN
Field Temperature	12.7	Degrees C	0.1	SM 2550B	20 Jun 17 11:00	DJN
Field Conductivity	2850	umhos/cm	1	EPA 120.1	20 Jun 17 11:00	DJN
Radium 226	See Atta	ached Report		1,000,000,000	24 Jul 17	OL
Radium 228	See Atta	ached Report			18 Jul 17	OL

Approved by:

Claudette K Cantep

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:

@ ** Due to sample matrix # = Due to con! = Due to sample quantity + = Due to int

= Due to concentration of other analytes
+ = Due to internal standard response



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Date: 7/27/2017

CLIENT:

MVTL Laboratories, Inc.

Project:

201782-1652

Lab Order:

S1706439

ASTM approved and recognized standards

CASE NARRATIVE

Report ID: S1706439001

Samples 17-W2443 FB Blue, 17-W2444 Blue 6, 17-W2445 Blue 7, 17-W2446 Blue 13, 17-W2447 Blue 14, 17-W2448 Blue 15, and 17-W2449 Blue 16 were received on June 23, 2017.

All samples were received and analyzed within the EPA recommended holding times, except those noted below in this case narrative. Samples were analyzed using the methods outlined in the following references:

"Standard Methods For The Examination of Water and Wastewater", approved method versions Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition 40 CFR Parts 136 and 141 40 CFR Part 50, Appendices B, J, L, and O Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 1



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1652

Lab ID:

S1706439-001 ClientSample ID: 17-W2443 FB Blue

COC:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017

DateReceived: 6/23/2017 11:42:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/l	nit
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 1648	MB
Radium 226 Precision (±)	0.04	pCi/L			SM 7500 Ra-B	07/24/2017 1648	MB
Radium 228	-3.0	pCi/L		1	Ga-Tech	07/17/2017 1152	МВ
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	07/17/2017 1152	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded Н

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 1 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave. Bismarck, ND 58501

ProjectName:

201782-1652

Lab ID:

S1706439-002 ClientSample ID: 17-W2444 Blue 6

COC:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017 7:37:00 AM

DateReceived: 6/23/2017 11:42:00 AM

FieldSampler:

Matrix:

Water

Commente

Comments							
Analyses	Result	Units	Qual	Qual RL	Method	Date Analyzed/Ini	
Radionuclides - Total							
Radium 226	0.4	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 1648	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 1648	MB
Radium 228	0.6	pCi/L		1	Ga-Tech	07/17/2017 1455	MB
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	07/17/2017 1455	MB

These results apply only to the samples tested.

Qualifiers:

Analyte detected in the associated Method Blank

Ε Value above quantitation range

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

С Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL М

Outside the Range of Dilutions

Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 2 of 7



Inter-Mountain Labs

1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company: MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName: 201782-1652

 Lab ID:
 \$1706439-003

 ClientSample ID:
 17-W2445 Blue 7

 COC:
 201782-1652

Report ID S1706439001

Date Reported 7/27/2017

WorkOrder: S1706439

CollectionDate: 6/20/2017 4:11:00 PM **DateReceived:** 6/23/2017 11:42:00 AM

FieldSampler:

Matrix: Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/Init	
Radionuclides - Total							-
Radium 226	0.2	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 2026	МВ
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 2026	MB
Radium 228	-1.0	pCi/L		1	Ga-Tech	07/17/2017 1757	MB
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	07/17/2017 1757	MB

These results apply only to the samples tested.

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- C Calculated Value
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- M Value exceeds Monthly Ave or MCL or is less than LCL
- O Outside the Range of Dilutions
- X Matrix Effect

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 3 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1652

Lab ID:

S1706439-004

ClientSample ID: 17-W2446 Blue 13 COC:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017 8:43:00 AM

DateReceived: 6/23/2017 11:42:00 AM

FieldSampler:

Matrix:

Water

Comments

Analyses	Result	Units	Qual	al RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.1	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 2026	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 2026	MB
Radium 228	-2.0	pCi/L		1	Ga-Tech	07/18/2017 306	MB
Radium 228 Precision (±)	1.7	pCi/L			Ga-Tech	07/18/2017 306	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range

Н Holding times for preparation or analysis exceeded

Analyzed by another laboratory

Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 4 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801

ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1652

Lab ID:

S1706439-005 ClientSample ID: 17-W2447 Blue 14

COC:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017 2:25:00 PM

DateReceived:

6/23/2017 11:42:00 AM

FieldSampler:

Matrix:

Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.5	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 2026	МВ
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 2026	MB
Radium 228	-0.9	pCi/L		1	Ga-Tech	07/18/2017 609	MB
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	07/18/2017 609	MB

These results apply only to the samples tested.

Qualifiers:

В Analyte detected in the associated Method Blank

Value above quantitation range

Holding times for preparation or analysis exceeded

Analyzed by another laboratory

ND Not Detected at the Reporting Limit

Spike Recovery outside accepted recovery limits

RL - Reporting Limit

Calculated Value

Analyzed at IML Gillette laboratory

Analyte detected below quantitation limits

М Value exceeds Monthly Ave or MCL or is less than LCL

Outside the Range of Dilutions

Matrix Effect

Reviewed by: A

Wade Nieuwsma, Assistant Laboratory Manager

Page 5 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave. Bismarck, ND 58501

ProjectName:

201782-1652

S1706439-006 ClientSample ID: 17-W2448 Blue 15

COC:

Lab ID:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017 12:28:00 PM

DateReceived:

6/23/2017 11:42:00 AM

FieldSampler:

Matrix: Water

Comments

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/In	
Radionuclides - Total							
Radium 226	0.3	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 2026	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 2026	MB
Radium 228	-3.2	pCi/L		1	Ga-Tech	07/18/2017 912	MB
Radium 228 Precision (±)	1.6	pCi/L			Ga-Tech	07/18/2017 912	MB

These results apply only to the samples tested.

Qualifiers:

- В Analyte detected in the associated Method Blank
 - Value above quantitation range
- Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by:

Wade Nieuwsma, Assistant Laboratory Manager

Page 6 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Sample Analysis Report

Company:

MVTL Laboratories, Inc.

2616 E Broadway Ave.

Bismarck, ND 58501

ProjectName:

201782-1652

Lab ID:

S1706439-007 ClientSample ID: 17-W2449 Blue 16

COC:

201782-1652

Date Reported 7/27/2017

Report ID

S1706439001

WorkOrder:

S1706439

CollectionDate: 6/20/2017 11:00:00 AM

DateReceived:

6/23/2017 11:42:00 AM

FieldSampler:

Matrix:

Water

Commonte

Comments							
Analyses	Result	Units	Qual	RL	Method	Date Analyzed/I	nit
Radionuclides - Total							
Radium 226	0.2	pCi/L		0.2	SM 7500 Ra-B	07/24/2017 2026	MB
Radium 226 Precision (±)	0.1	pCi/L			SM 7500 Ra-B	07/24/2017 2026	MB
Radium 228	-2.4	pCi/L		1	Ga-Tech	07/18/2017 1215	MB
Radium 228 Precision (±)	1.7	pCi/L			Ga-Tech	07/18/2017 1215	MB

These results apply only to the samples tested.

Qualifiers:

- В Analyte detected in the associated Method Blank
- Value above quantitation range
- Н Holding times for preparation or analysis exceeded
- Analyzed by another laboratory
- Not Detected at the Reporting Limit
- Spike Recovery outside accepted recovery limits

RL - Reporting Limit

- Calculated Value
- Analyzed at IML Gillette laboratory
- Analyte detected below quantitation limits
- Value exceeds Monthly Ave or MCL or is less than LCL М
- Outside the Range of Dilutions
- Matrix Effect

Reviewed by: All

Wade Nieuwsma, Assistant Laboratory Manager

Page 7 of 7



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

Work Order:

MVTL Laboratories, Inc.

S1706439

Project: 201782-1652

Date: 7/27/2017

Report ID: S1706439001

Radium 228 by Ga/Tech	Sample Type	MBLK		Units	: pCi/L			
MB-448 (07/16/17 11:28)	F	RunNo: 148120	PrepD	ate: 07/0	5/17 14:00	Bato	hID 13447	
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228		ND	1					
Radium 228 by Ga/Tech	Sample Type	LCS		Units	: pCi/L			
LCS-448 (07/16/17 14:30)	R	tunNo: 148120	PrepD	ate: 07/0	5/17 14:00	Bato	hID 13447	
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228		36	1	39.3		92.5	65.9 - 132	
Radium 228 by Ga/Tech	Sample Type	LCSD		Units	: pCi/L			
LCSD-448 (07/16/17 17:33)	RunNo: 148120		PrepD	PrepDate: 07/05/17 14:00			:hID 13447	
Analyte		Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228		43	1	36	17.3	110	20	
Radium 228 by Ga/Tech	Sample Type	MS	Units: pCi/L					
S1706439-003AMS (07/17/17 21:00)	R	unNo: 148120	PrepD	ate: 07/0	5/17 14:00	Batc	hID 13447	
Analyte		Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Total Radium 228		32	1	39.3	ND	81.9	50 - 139	
Radium 228 by Ga/Tech	Sample Type	MSD		Units	: pCi/L			
S1706439-003AMSD (07/18/17 00:03)	R	unNo: 148120	PrepDa	ate: 07/0	5/17 14:00	Batc	hID 13447	
Analyte		Result	RL	Conc	%RPD	%REC	% RPD Limits	Qual
Total Radium 228		33	1	32	3.67	85.0	20	-1.00

Qualifiers:

Analyte detected in the associated Method Blank

G Analyzed at IML Gillette laboratory

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

X Matrix Effect

E Value above quantitation range

H Holding times for preparation or analysis exceeded

L Analyzed by another laboratory

O Outside the Range of Dilutions

S Spike Recovery outside accepted recovery limits



1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT:

MVTL Laboratories, Inc.

S1706439

Work Order: Project:

201782-1652

Date: 7/27/2017

Report ID: S1706439001

Radium 226 in Water -	Sample Type MBLK	Units: pCi/L	
MB-1771 (07/24/17 16:47)	RunNo: 148238	PrepDate: 07/19/17 0:00	BatchID 13467
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	ND	0.2	
Radium 226 in Water -	Sample Type LCS	Units: pCi/L	
LCS-1771 (07/24/17 16:47)	RunNo: 148238	PrepDate: 07/19/17 0:00	BatchID 13467
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	5.9	0.2 6.41	92.0 67.1 - 122
Radium 226 in Water -	Sample Type LCSD	Units: pCi/L	
LCSD-1771 (07/24/17 16:47)	RunNo: 148238	PrepDate: 07/19/17 0:00	BatchID 13467
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qua
Radium 226	6.0	0.2 5.9 0.813	92.8 20
Radium 226 in Water -	Sample Type MS	Units: pCi/L	
S1706439-003AMS (07/24/17 20:26)	RunNo: 148238	PrepDate: 07/19/17 0:00	BatchID 13467
Analyte	Result	RL Spike Ref Samp	%REC % Rec Limits Qua
Radium 226	6.2	0.2 6.41 0.2	92.9 65 - 131
Radium 226 in Water -	Sample Type MSD	Units: pCi/L	
S1706439-003AMSD (07/24/17 20:26)	RunNo: 148238	PrepDate: 07/19/17 0:00	BatchID 13467
Analyte	Result	RL Conc %RPD	%REC % RPD Limits Qua
Radium 226	6.5	0.2 6.2 5.04	97.9 20

Qualifiers:

- B Analyte detected in the associated Method Blank
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- X Matrix Effect

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- O Outside the Range of Dilutions
- S Spike Recovery outside accepted recovery limits



LABORATORIES, Inc. 2616 E Broadway Ave Bismarck, ND 58501 Phone: (701) 258-9720

Chain of Custody Record

Page	1	of	1	

Toll Free: (8	00) 279-6885	Fax: (701) 258-9724									201782-1652			
Company Nam	e and Address:			Account #				Phone #:						
-	n a	VT1			·						701-258-9720			
•		<u>VTL</u> <u>Bro</u> adway		Contact:	Classa	Fax #:								
		c, ND 58501		Name of S		ette					For faxed report check box E-mail: ccarroll@mvtl.com			
Billing Address	s (indicate if different	from above):		Ivallie of 5	ampier.					E-mail: ccarroll@mvtl.com For e-mail report check box				
	50.5			Quote Nur	nber						Date Submitted:			
		MN 50073									21-Jun-17			
	New Oim	<u>, MN 56073</u>		Project Na	me/Numbe	r:					Purchase Order #:			
		Sample Information		L		Ι		_441_	т		BL5905			
		Campic information		1				ottle	<u> y</u>	pe	Analysis			
517064	7 9													
3.,00	31						Š	ved						
IML Lab				_		ated	ᄪ	/ials	Jar					
Number	MVTL Lab Number	Client Sample ID	Sample	Date	Time	Untreated	00	VOC Vials Umpreserved	Glass	Other				
			Туре	Sampled	Sampled	5	10	<u>> 5</u>	<u>ত</u>	ō	Analysis Required			
501	17-W2443	FB Blue	GW	20-Jun-17	NA		4			<u> </u>	Ra226 & Ra228			
002	17-W2444	Blue 6	GW	20-Jun-17	737		4				Ra226 & Ra228			
<u>~3</u>	17-W2445	Blue 7	GW	20-Jun-17	1611		12				Ra226 & Ra228			
204	17-W2446	Blue 13	GW	20-Jun-17	843		4				Ra226 & Ra228			
<u> </u>	17-W2447	Blue 14	GW	20-Jun-17	1425		4				Ra226 & Ra228			
900	17-W2448	Blue 15	GW	20-Jun-17	1228		4				Ra226 & Ra228			
007	17-W2449	Blue 16	GW	20-Jun-17	1100		4				Ra226 & Ra228			
Comments		orted as a numerical value						·····						

Transferred by:	Date:	Time:	Sample Condițion:	Received by:	Date:		Temp:
T. Olson	21-Jun-17	1700	Intact	Koetry Boun	6.23.17	11:42	20.5
2.							20.4



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID: Blue	6	
Sampling Persona	al: Darren	Wilson

Phone: (701) 258-9	720						•						and and
Weather Conditions:		Temp:	50 °F		Wind:	-19h	1		Precip:	Sunn	y) Partly C	Cloudy / Clo	oudy
,	Well Info	rmation						S	ampling In	form ati ó	n		
Well Locked?	(Yes)	No				Purgi	ng Method:	Bla	dder		Co	ntrol Setting	gs
Well Labeled?	(Yes	No		-		Sampli	ng Method:	Bla	dder		Purge:	Š	sec
Casing Straight?	&Yes	No				Dedica	ted Equip?:	Yes	(No)	Ī	Recover:	23	sec
Grout Seal Intact?	¥es	No	Not Visib	le		Duplicate	Sample?:	Yes	(No)		PSI:		
Repairs Necessary:						Duplicate	Sample ID:			Ī	Pumping R	ate:2-00	mL/mir
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	6	3,62	ft		F	Purge Date:	19 Jun	e (7)	Time Purgir	ng Began:	0845	a∰/pm
Total W	ell Depth:		-	ft		Well F	urged Dry?	Yes	No	Time Pu	urged Dry:	0985	am/pn
We	ll Volume:			liters		Sa	ample Date:	207m	e 17	Time of	Sampling:	のファ	Zana/pm
Depth to Top	of Pump:	7	777	ft							•		
Water Level Afte	r Sample:	7/.	98	ft		Bottle	1L Raw, 50	00mL Nitric	, 4 - 1L Nitric				
Measuremen	t Method:	Electric V	ater Level Indic	cator		List:			· · · · · · · · · · · · · · · · · · ·				
				Field Me		monto							

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	19855	10,32	2592	6,58	0,75	546	955	6616	1000	Coudro
2	0910	12.18	2519	6.53	0,37	68.I	191	71122	3000	Partly Clarence
3	0975	in 29	2524	6.58	1,44	76.7	115	75.03	3000	Party Clouds
4	9940	10,37	2519	661	114	56.0	240	76.82		Partly (Could
5	0945	10,48	25/2	6.63	1,61	54.4	260	77,22	(000	for Cloudy, grey
6		7			1.01			Button		
7						1.				
8										
9	0732	Pura	d Cine	for To	nin B	fore s	andr		64,55	
10	0737	12-34	2564	6159	5.42	2815	7/00%	65,66	65-63	soo Cloudy, gray
Stabilized:	Yes	(No			,	To	otal Volume	Removed:	11,000	• • • • • • • • • • • • • • • • • • • •

Comments:



Groundwater Assessment

Company:	OTP Coyo	te	
Event:	2017		
Sample ID:	18/4e 7		
O	À /	1	

2010 2: 51002110, 7110, 510								Sampling F	CISUIIAI.	& SERIN	1 123	(Caren	-Missission.
Phone: (701) 258-97	Phone: (701) 258-9720						•			C0			
Weather Conditions:		Temp:	A X°F		Wind:	Crahi	·		Precip:	Sunn	ıy İ Partiy C	cloudy / Clo	udy
1	Well Info	rmation	00			, , ,		Sa	mpling In	formatio	on		
Well Locked?	Yes	No				Purgi	ing Method:	Blac	lder		Co	ntrol Setting	S
Well Labeled?	Yes	No				Sampl	ing Method:	Blac	lder		Purge:	5	sec
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	₩		Recover:	25-50	sec
Grout Seal Intact?	Yes	No	Not Visil	île		Duplicate	e Sample?:	< Yes ≥ू	No		PSI:		
Repairs Necessary:						Duplicate	Sample ID:	MS/N	2511		Pumping R	ate: 2 00	mL/mir
Casing	Diameter:		2"										
Water Level Befo	ore Purge:		? I. IR	ft			Purge Date:	20 June	.17	Time Purg	ing Began:	1526	am/pn
Total W	ell Depth:		``	ft		Well F	Purged Dry?	Yes	(No)	Time P	urged Dry:		—am/pm
We	Il Volume:			liters		Sa	ample Date:	200 Ten	. 17	Time of	Sampling:	1661	am/pm
Depth to Top	of Pump:		74.66	ft									
Water Level Afte	r Sample:	- 8	1.27	ft		Bottle	1L Raw, 50	00mL Nitric,	4 - 1L Nitric	13			
Measuremen	t Method:	Electric \	Water Level Ind	icator		List:				•			
				Field	Measure	ements							

	Tiota moderation										
Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:	
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.	
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	t.	clear, partly cloudy, cloudy	
1	1531	11,20	2737	6,53	95.61	95.4	700	01.21	1000	CC	
2	1541	16,47	2710	6,53	0,21	56.1	35.9	61,32	2000	de	
3	1551	10,51	2757	6,51	017	5008	20,9	81.28	2000	d	
4	150	10058	2750	6.49	0015	45,7	140	81,28	2000	Cl	
5	1606	10.51	2749	6,40	0,65	44,3	14.7	81,25	1000	ch-	
6	1611	10,58	2748	6,49	0,14	42,4	14.8	81,27	1000	ch_	
7	Thila	~	, ,			, ,					
8	, , , ,			:							
9						,					
10											
	7								(1:00)6		

Total Volume Removed: 9000 mL



Groundwater Assessment

54 °F

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue 13	
Sampling Perso	nal Od Con Niver	

Phone: (701) 258-9720

Weather 0	Conditions:		Temp:	<u>54</u>	°F	Wind:	1201	γT		Precip:	Sunr	າ້y)/ Partly (Cloudy / Clo	udy
		Well info	ormation					7	Sa	mpling I	nformatio	on		
W	ell Locked?	Yes	No				Purgii	ng Method:	1	lder			ontrol Setting	s
W∈	ll Labeled?	XES	No				Sampli	ng Method:	Blac	lder		Purge:	Ŝ	sec.
Casir	g Straight?	YES	No				Dedicat	ed Equip?:	Yes	No		Recover:	25	sec.
Grout S	Seal Intact?	Yes	(NO)	_ Not ∨	isible		Duplicate	Sample?:	- Yes	NO		PSI:		·
Repairs N	ecessary:						Duplicate	Sample ID:	_			Pumping F	Rate: එං	mL/min
	Casing	g Diameter:		2"							•		m/ 100	
Wat	er Level Be	fore Purge:		103.6	/ ft		F	urge Date:	195ne	217	Time Purg	ing Began:	1003	am/pm
	Total \	Well Depth:		,	ft			urged Dry?		No	Time F	urged Dry:	1038	/am/pm
	W	ell Volume:			liters		Sa	mple Date:	20 we	17	Time of	Sampling:	0843	am/pm
	Depth to To	p of Pump:	j	14,42	ft									
Wat	er Level Aft	er Sample:	1	0.06	ft		Bottle	1L Raw, 5	00mL Nitric,	4 - 1L Nitri	C			
ſ	Measureme	nt Method:	Electric \	Nater Level	Indicator		List:							
					Field	Measure	ements							
Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	mL		Discription:			
	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	<u> </u>	, Color, Od			
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear,	partly cloudy,	cloudy		
1	1008	11,54	5129	637	1.56	15014	111	10712	1000	Parti	yclod	·		
2	1023	11/2	184498	628	1.77	1699	14 D	111.52	3000	Me		/		

Stabilized: Yeś Comments:

8 9 10



Groundwater Assessment

Company:	OTP Coyo	ote	
Event:	2017		
Sample ID:	Blue	14	
Sampling Person	nal: Data	and Ferrica Co	

Phone: (701) 258-9	720											\leq	
Weather Conditions:		Temp:	61.	F	Wind:	LiGIN	r		Precip:	Sunr	ny / Partiy C	Hourdy / Clou	dy
1	Well Info	rmation	U					S	ampling I	nformatio	on 🗀	$\overline{}$	
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder		Co	ntrol Settings	
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:		sec.
Casing Straight?	Yes	No		- Carolina C		Dedica	ted Equip?:	Yes	€NO		Recover:	55	sec.
Grout Seal Intact?	Yes	No /	Not Vi	sible		Duplicate	Sample?:	Yes	NO		PSi:		
Repairs Necessary:						Duplicate	Sample ID:	٠			Pumping R	ate: <i> </i>	mL/min
Casing	Diameter:		2"									<i>U</i>	
Water Level Befo	ore Purge:	7	79.64	ft		F	Purge Date:	20 tin	1017	Time Purg	ing Began:	1330	am/pm
Total W	/ell Depth:	l)	ft			urged Dry?	Yes	No	Time F	Purged Dry:		am/pm
We	II Volume:	_		liters		Sa	ımple Date:	207/		Time of	f Sampling:	1425	am/pm
Depth to Top	of Pump:	8.	3,63	ft									
Water Level Afte	er Sample:	Š	1.84	ft		Bottle	1L Raw, 50	00mL Nitric	, 4 - 1L Nitri	2			
Measuremen	t Method:	Electric \	Nater Level I	ndicator		List:							
					Magaura	monto							

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1335	12,14	5430.	6.80	6,11	200,8	107	80,14	500	Partly Cloudy
2	1255	12.08	5918	6703	8,37	59,3	119	70,48	2000	Partly cloudy
3	1465	11.00	5430	906.81	6,28	68.3	1600	JA281,24	1000	Charlasty Cloudy
4	1410	11.45	5411	67,04	B.55	721	170	\$1,34	500	Partly lower
5	1415	11.16	5363	7,18	9.81	49.6	175	01,41	500	Partly Cladby
6	1420	11.44	5353	7124	10,00	42.6	169	81,48	500	Parthe Clouds
7	1425	1147	5334	7026	9,95	4105	180	8150	500	Partil Floudal
8										, ,
9										
10									() () () () () () () () () ()	

Stabilized: Yes No Total Volume Removed: 5500 mL



Groundwater Assessment

Company:	OTP Coyote	
Event:	2017	
Sample ID:	Blue15	
Sampling Perso	nal: Danca Allesin	

Phone: (701) 258-9	720												
Weather Conditions:		Temp:	66 °F		Wind:	Light			Precip	Suni	ny / Partly C	loudy// Clou	idy
	Well Info	rmation				~ igri t		Sa	ampling I	nformatio	on		
Well Locked?	Yes	No				Purgi	ng Method:	Blac	der		Co	ntrol Settings	j.
Well Labeled?	Yes	No				Sampli	ng Method:	Blac	der		Purge:	.5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Yes	No No		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Vis	ible		Duplicate	Sample?:	Yes	< N €		PSI:		
Repairs Necessary:						Duplicate	Sample ID:				Pumping Ra	ate:	mL/min
Casing	Diameter:		- 2"										
Water Level Bef	ore Purge:		78.14	ft		I	Purge Date:	20 The	17	Time Purg	ing Began:	1158	am/pm
Total W	Vell Depth:			ft			urged Dry?	Yes	(A)g	Time F	Purged Dry:	The second secon	am/pm
We	ell Volume:	-	<u>, </u>	liters		Sa	ample Date:	2007	1-7	Time o	f Sampling:	1228	am/pm
Depth to Top	o of Pump:	9	n. 71.	ft								,	
Water Level Afte	er Sample:		78,24	ft		Bottle	1L Raw, 50	00mL Nitric,	4 - 1L Nitri	С			
Measuremen	nt Method:		Water Level In	dicator		List:							

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 conse	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	1203	12.32	3685	6.55	109	670	46.2	18,21	500	Ca_
2	1208	1157	3622	6.55	0,69	62,0	13,3	78.30	500	CC_
3	1213	11.80	3607	6,56	0,51	857,2	7.63	78,23	500	dr
4	1218	11,63	3602	6,56	0.38	541	4.33	78,27	500	classic
5	1223	11,51	3593	6.57	0,37	51.9	4,17	78,23	500	de
6	1228	11.55	\$ 3601	657	0,35	4919	4.03	78,23	500	Cl
7			, O ,					•		
8										
9										
10										

Stabilized: No Comments:

Total Volume Removed: 3000 mL



Groundwater Assessment

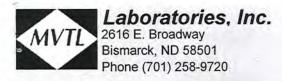
Company:	OTP Coyote	<u> </u>	
Event:	2017		
Sample ID:	Blueth		
Compling Dor	acral:	A / - C.	

_								Quilipinig i	Cisonai.	171111111111111111111111111111111111111	1 // 1-0	3000	
Phone: (701) 258-9	720						•		7	 			
Neather Conditions:		Temp:	6/°F		Wind:	15			Precip:	Sunr	ny / Partly C	Cloudy / Clou	dy
,	Well Info	rmation	• (S	ampling l	nformatio	on 🖳		
Well Locked?	Yes	No				Purgi	ng Method:	Bla	dder		Co	ntrol Settings	;
Well Labeled?	Yes	No				Sampli	ng Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No		~~a		Dedica	ted Equip?:	Yes	(Nø		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visil	ε σία		Duplicate	Sample?:	Yes	(No		PSI:	Comments of the Party of the Pa	
Repairs Necessary:		The same of the sa				Duplicate	Sample ID:				Pumping R	ate: / ე _ර	mL/min
Casing	Diameter:		2"										
Water Level Befo	ore Purge:	7	7,21	ft		F	ourge Date:	20 Tu	vel 7	Time Purg	ing Began:	0950	am∕pm
Total W	/ell Depth:			ft		Well F	urged Dry?	Yes	, NO	Time F	urged Dry:		am/pm
We	ll Volume:			liters		Sa	ample Date:	20 Jun	e17	Time of	f Sampling:	1100	am⁄pm
Depth to Top	of Pump:	9	(,28	ft					7				
Water Level Afte	er Sample:	7	7,2%	ft		Bottle	1L Raw, 50	00mL Nitric	, 4 - 1L Nitri	3			
Measuremen	t Method:	Electric V	Vater Level Ind	icator		List:							
				Field	Measure	ements					•		

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Removed	Clarity, Color, Odor, Ect.
SEQ#	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft		clear, partly cloudy, cloudy
1	N955	12.82	2981	6,77	478	47.8	809	77.24	500	Cloudy garey
2	1015	12.43	28 99	6,59	0:55	28,8	486	-1.22	2000	Chockling
3	1035	12,30	2840	6.53	0,34	448	90,7	77,22	2000	Partly Cloudy
4	1050	12,78	2851	653	0,26	422	130	77,22	1500	Party close
5	1055	12.86	7842	6,54	0,24	23,2	133	77,22	500	Partly clother
6	1100	12,73	2850	6,53	0,25	53.9	128	77.26	(00	Partherlack
7	11050			<i></i>		·	7			79,01
8										
9										
10										

No

Total Volume Removed: 7000 mL



Chain of Custody Record

Project Name:		Event:	Work Order Number:			
	OTP Coyote - Blue Pit	June 2017	8d-1652			
Report To: Attn: Address:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496	Carbon Copy: Attn: Address:	Name of Sampler(s): Parten Nieswaag			
phone: email:	ihollen@otpco.com					

Sample Information							Bottle Type		eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Type	Appearance (Clear, Partiy Cloudy, Cloudy)	1 liter Nitric		Temp (°C)	Spec. Cond.	Hd	Analysis Required
W2443	FB Blue	20June 17	NA	W	-	4		NA	NA	NA	
MJ444	Blue 6	20 June 17	0737	GW	Cloudy	4		10.39	2564	6,59	
wayys	Blue 7/MS7/MSD7	2056ne(7	1611	GW	clear	12		10,58	2748	6,49	
Mayyb	Blue 13	2054117	0843	GW	Partly Cloudy	4		11.18	5481	6.49	
wa447	Blue 14	20 June 17	1425	GW	Party Cloudy	4		11.47	5334	7,26	Rad 226 & Rad 228
W2448	Blue 15	2054ne17	1228	GW	clear	4		11,55	7001	6.57	Nau 220 & Nau 220
wa449	Blue 16	20 June 17	1100	GW	Partly cloudy	4		12,73	2850	6.53	

Comments:

Relinquished By:	Sample Condition:				
Name:	Date/Time	Location	Temp (°C)		
1 Pani	20Ju/7	Walk In #2	TM502 / TM588		
2					

Received	d by:
/\ Name:	Date/Time
Ungel Simoneon	21 June 17 800