2019 Annual Groundwater Monitoring and Corrective Action Report

Blue Pit

Coyote Station Beulah, North Dakota

Prepared for Otter Tail Power Company

January 2020



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Contents

1.0	Introduction	1
1.1	Purpose	1
1.2	Status of the Groundwater Monitoring and Corrective Action Program	1
1.3	CCR Rule Requirements	1
2.0	Groundwater Monitoring and Corrective Action Program	3
2.1	Groundwater Monitoring System	3
2.7	1.1 Documentation	3
2.7	1.2 Changes to Monitoring System	3
2.2	Monitoring and Analytical Results	3
2.3	Key Actions Completed/Problems Encountered	3
2.4	Key Activities for Upcoming Year	4
3.0	References	5

List of Tables

 Table 1
 CCR Rule Requirements

List of Figures

Figure 1 Blue Pit Location

List of Appendices

Appendix A Laboratory Reports and Field Sheets

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 the Coyote Station (Coyote), located near Beulah, North Dakota. Coyote is a coal-fired electrical generating plant, operation of which results in coal combustion residuals (CCR) as a by-product. The Blue Pit is an existing CCR landfill at Coyote 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 Blue Pit is shown on Figure 1.

This 2019 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the Blue Pit at Coyote. The Blue Pit is currently in detection monitoring as described by §257.94 of the CCR Rule.

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 in 2017, as documented in the 2017 Annual Groundwater Monitoring and Corrective Action Report, Blue Pit Area (Barr, 2018). The detection monitoring program, which is the evaluation of groundwater monitoring data for statistically significant increases (SSIs) over background levels for the constituents listed in Appendix III to the CCR Rule, began on October 17, 2017 and continued through 2019.

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 1CCR 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 Blue Pit for 2019. 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 2020 are described in Section 2.4.

2.1 Groundwater Monitoring System

2.1.1 Documentation

Figure 1 shows an aerial image of the Blue Pit and all upgradient (background) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring system, as required by §257.90(e)(1). Further details on the monitoring system and the Blue Pit 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 2019.

2.2 Monitoring and Analytical Results

Groundwater samples were collected during two semiannual sampling events. A total of 12 groundwater samples (six monitoring wells and two sampling events) were collected and analyzed for the constituents listed in Appendix III (Part 257) in 2019 under the detection monitoring program, consistent with the requirements of § 257.94(c). Dates of sampling are reported on the field data sheets and analytical laboratory reports are presented in Appendix A.

2.3 Key Actions Completed/Problems Encountered

The following key actions were completed for the groundwater monitoring program during 2019:

- Completed semiannual detection monitoring sampling for each background and downgradient well.
- Evaluated monitoring results pursuant to § 257.93(h).
- Identified elevated concentrations of calcium in monitoring well BLUE 14 during the fall 2019 sampling event. Evaluation of these results will continue in 2020.
- Determined that a statistically significant increase over background levels did not occur for the constituents listed in Appendix III at any downgradient monitoring well other than calcium at BLUE 14 during the semiannual detection monitoring sampling events. Monitoring well BLUE 14 was resampled in December 2019.

Problems were not encountered during the reporting period.

2.4 Key Activities for Upcoming Year

The following key groundwater monitoring program activities are planned for 2020:

- Statistically evaluate the resampling analytical results from monitoring well BLUE 14 for an SSI for calcium.
- Evaluate analytical results from both 2020 semiannual detection monitoring events for statistically significant increases (SSIs) according to the CCR Groundwater Sampling and Analysis Plan (McCain, 2017).
- Continue the detection monitoring program in accordance with the CCR Rule.

3.0 References

- Barr, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report, Coyote Station Blue Pit Area. Prepared for Otter Tail Power Company. January 2018.
- 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





Page: 1 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1677 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Recei Result	.ved	Method RL	Method Reference	Date Analyze	Analyst	
Metal Digestion	1			EPA 200.2	6 Jun	19	SVS
Lab, pH	* 6.3	s.u.	0.1	SM4500 H+ B	7 Jun	19 17:00	SVS
Fluoride	< 0.1	mg/l	0.10	SM4500-F-C	7 Jun	19 17:00	SVS
Sulfate	< 5	mg/l	5.00	ASTM D516-07	6 Jun	19 10:50	EV
Chloride	< 1	mg/l	1.0	SM4500-Cl-E	11 Jun	19 8:31	EMS
Total Dissolved Solids	< 10	mg/l	10	I1750-85	7 Jun	19 10:03	SVS
Calcium - Total	< 1	mg/l	1.0	6010D	17 Jun	19 15:30	SZ
Boron - Total	< 0.1	mg/l	0.10	6010D	19 Jun	19 11:41	SZ

* Holding time exceeded

Approved by:

Cr Clauditte 1JN 19 K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

- - -





Page: 2 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1678 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 10:35 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Recei Result	As Received Result		Method Reference	Date Analyzed		Analyst
Metal Digestion				EPA 200.2	6 Jun 19)	SVS
Field pH	6.62	s.u.	0.1	SM 4500 H+ B	5 Jun 19	10:35	DJN
Lab, pH	* 7.0	s.u.	0.1	SM4500 H+ B	7 Jun 19	17:00	SVS
Field Appearance	Cloudy		NA	SM 2110	5 Jun 19	10:35	DJN
Field Temperature	14.0	Degrees C	0.1	SM 2550B	5 Jun 19	10:35	DJN
Field Conductivity	2390	umhos/cm	1	EPA 120.1	5 Jun 19	10:35	DJN
Fluoride	0.20	mg/l	0.10	SM4500-F-C	7 Jun 19	17:00	SVS
Sulfate	739	mg/l	5.00	ASTM D516-07	6 Jun 19	10:50	EV
Chloride	5.9	mg/l	1.0	SM4500-Cl-E	11 Jun 19	8:31	EMS
Total Dissolved Solids	1710	mg/l	10	I1750-85	7 Jun 19	10:03	SVS
Calcium - Total	155	mg/l	1.0	6010D	17 Jun 19	16:30	SZ
Boron - Total	0.41	mg/l	0.10	6010D	19 Jun 19	9 11:41	SZ

* Holding time exceeded

Approved by:

Cr JUL 19 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit





Page: 3 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1679 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 12:11 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	6 Jun 19	SVS
Field pH	6.44	s.u.	0.1	SM 4500 H+ B	5 Jun 19 12:11	DJN
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	7 Jun 19 17:00	SVS
Field Appearance	Clear		NA	SM 2110	5 Jun 19 12:11	DJN
Field Temperature	11.3	Degrees C	0.1	SM 2550B	5 Jun 19 12:11	DJN
Field Conductivity	2464	umhos/cm	1	EPA 120.1	5 Jun 19 12:11	DJN
Fluoride	0.20	mg/l	0.10	SM4500-F-C	7 Jun 19 17:00	SVS
Sulfate	817	mg/l	5.00	ASTM D516-07	10 Jun 19 8:48	EV
Chloride	6.0	mg/l	1.0	SM4500-Cl-E	11 Jun 19 9:05	EMS
Total Dissolved Solids	1820	mg/l	10	I1750-85	7 Jun 19 10:03	SVS
Calcium - Total	167	mg/l	1.0	6010D	17 Jun 19 16:30	SZ
Boron - Total	0.43	mg/l	0.10	6010D	19 Jun 19 11:41	SZ

* Holding time exceeded

Approved by:

6 1JUL 19 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 CERTIFICATION: ND # ND-00016

CERTIFICATION: ND # ND-00018





Page: 4 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1680 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 9:45 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Receiv Result	As Received Result		Method Reference	Date Analyze	Analyst	
Metal Digestion				EPA 200.2	6 Jun	19	SVS
Field pH	6.77	s.u.	0.1	SM 4500 H+ B	5 Jun	19 9:45	DJN
Lab, pH	* 7.4	s.u.	0.1	SM4500 H+ B	7 Jun	19 17:00	SVS
Field Appearance	Cloudy		NA	SM 2110	5 Jun	19 9:45	DJN
Field Temperature	11.4	Degrees C	0.1	SM 2550B	5 Jun	19 9:45	DJN
Field Conductivity	5737	umhos/cm	1	EPA 120.1	5 Jun	19 9:45	DJN
Fluoride	0.29	mg/l	0.10	SM4500-F-C	7 Jun	19 17:00	SVS
Sulfate	2300	mg/l	5.00	ASTM D516-07	10 Jun	19 8:48	EV
Chloride	25.3	mg/l	1.0	SM4500-Cl-E	11 Jun	19 9:05	EMS
Total Dissolved Solids	4600	mg/l	10	I1750-85	7 Jun	19 10:03	SVS
Calcium - Total	94.5	mg/l	1.0	6010D	17 Jun	19 16:30	SZ
Boron - Total	< 0.5 @	mg/l	0.10	6010D	19 Jun	19 11:41	SZ

* Holding time exceeded

Approved by:

JUL 19 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit





Page: 5 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1681 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 14:04 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

As Res		s Received lesult		Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	6 Jun 19	SVS
Field pH	6.58	s.u.	0.1	SM 4500 H+ B	5 Jun 19 14:04	DJN
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	7 Jun 19 17:00	SVS
Field Appearance	Clear		NA	SM 2110	5 Jun 19 14:04	DJN
Field Temperature	14.0	Degrees C	0.1	SM 2550B	5 Jun 19 14:04	DJN
Field Conductivity	4832	umhos/cm	1	EPA 120.1	5 Jun 19 14:04	DJN
Fluoride	0.14	mg/l	0.10	SM4500-F-C	7 Jun 19 17:00	SVS
Sulfate	1890	mg/l	5.00	ASTM D516-07	10 Jun 19 8:48	EV
Chloride	13.9	mg/l	1.0	SM4500-Cl-E	11 Jun 19 9:05	EMS
Total Dissolved Solids	3800	mg/l	10	I1750-85	7 Jun 19 10:03	SVS
Calcium - Total	250	mg/l	1.0	6010D	17 Jun 19 16:30	SZ
Boron - Total	0.60	mg/l	0.10	6010D	19 Jun 19 11:41	SZ

* Holding time exceeded

Approved by:

CC JU 19 Clauditte 1 K. Cantep

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit





Page: 6 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1682 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 16:57 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Receive Result	ed	Method RL	Method Reference	Da An	te alyzeo	1	Analyst
Metal Digestion				EPA 200.2	6	Jun 1	L9	SVS
Field pH	6.49	s.u.	0.1	SM 4500 H+ B	5	Jun 1	L9 16:57	DJN
Lab, pH	* 6.9	s.u.	0.1	SM4500 H+ B	7	Jun 1	L9 18:00	SVS
Field Appearance	Clear		NA	SM 2110	5	Jun :	L9 16:57	DJN
Field Temperature	14.7	Degrees C	0.1	SM 2550B	5	Jun 1	L9 16:57	DJN
Field Conductivity	3573	umhos/cm	1	EPA 120.1	5	Jun 3	L9 16:57	DJN
Fluoride	0.19	mg/l	0.10	SM4500-F-C	7	Jun :	L9 18:00	SVS
Sulfate	1170	mg/l	5.00	ASTM D516-07	10	Jun 1	19 8:48	EV
Chloride	8.7	mg/l	1.0	SM4500-Cl-E	11	Jun 3	19 9:05	EMS
Total Dissolved Solids	2580	mg/l	10	I1750-85	7	Jun :	19 10:03	SVS
Calcium - Total	133	mg/l	1.0	6010D	17	Jun 1	19 16:30	SZ
Boron - Total	0.55	mg/l	0.10	6010D	19	Jun 3	19 11:41	SZ

* Holding time exceeded

Approved by:

1C IJUL A Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016





Page: 7 of 7

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: 2nd Qtr 2019

Report Date: 20 Jun 19 Lab Number: 19-W1683 Work Order #:82-1321 Account #: 006106 Date Sampled: 5 Jun 19 15:39 Date Received: 6 Jun 19 8:00 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.0C ROI

	As Received Result	1	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	6 Jun 19	SVS
Field pH	6.57	s.u.	0.1	SM 4500 H+ B	5 Jun 19 15:39	DJN
Lab, pH *	7.0	s.u.	0.1	SM4500 H+ B	7 Jun 19 18:00	SVS
Field Appearance	Clear		NA	SM 2110	5 Jun 19 15:39	DJN
Field Temperature	16.2	Degrees C	0.1	SM 2550B	5 Jun 19 15:39	DJN
Field Conductivity	2367	umhos/cm	1	EPA 120.1	5 Jun 19 15:39	DJN
Fluoride	0.22	mg/l	0.10	SM4500-F-C	7 Jun 19 18:00	SVS
Sulfate	701	mg/l	5.00	ASTM D516-07	10 Jun 19 8:48	EV
Chloride	5.6	mg/l	1.0	SM4500-Cl-E	11 Jun 19 9:05	EMS
Total Dissolved Solids	1680	mg/l	10	I1750-85	7 Jun 19 10:03	SVS
Calcium - Total	120	mg/l	1.0	6010D	17 Jun 19 16:30	SZ
Boron - Total	0.43	mg/l	0.10	6010D	19 Jun 19 11:41	SZ

* Holding time exceeded

Approved by:

CC 1 JU 19 Clauditte K. Canrep

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

MVTL

Ouality Control Report

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 1

Lab IDs: 19-W1677 to 19-W1683 Project: OTP Coyote - Blue Pit CCR Work Order: 201982-1321 Matrix Matrix Matrix MSD/ LCS LCS LCS MSD Matrix Matrix Spike Matrix Spike Spike Dup MSD/ Spike Rec % Rec Spike Orig Spike Spike Rec % Rec Rec Orig Dup D Analyte Amt % Limits Amt Result Result % Limits Result Result % Boron - Total mg/l 0.40 105 80-120 0.400 19-W1679 0.43 0.86 0.86 108 75-125 0.84102 0.40105 80-120 0.400 19-W1683 0.43 0.84 102 75-125 0.84 0.85 105 80-120 2.00 113 0.40105 19-W1708 0.34 2.78122 75-125 2.782.60Calcium - Total mg/l 20.0 98 80-120 500 19W1661a 595 115 75-125 1170 1170 1180 117 20.099 80-120 100 19W1679a 262 95 262 167 75-125 269 102 95 100 19W1686q 164 259 75-125 259 263 99 30.0 95 80-120 30.0 19-D1759 47.8 75.2 91 75.2 Chloride mg/l 80-120 76.3 95 30.0 94 80-120 30.0 19-W1679 6.0 32.9 90 80-120 32.9 34.8 96 92 30.0 80-120 30.0 19-W1686 6.1 33.3 91 80-120 33.3 33.6 92 30.0 91 80-120 Fluoride mg/l 0.50 104 90-110 0.500 19-W1679 0.20 0.72 104 80-120 0.72 0.72104 0.50 106 90-110 0.500 19-W1686 0.20 0.72 104 80-120 0.72 0.73 106 0.500 19-W1693 0.11 0.61 100 80-120 0.61 0.61 100 pH units 8.4 8.4 --. -

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Samples were received in good condition on 6 Jun 2019 at 0800.

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Temperature upon receipt at the Bismarck laboratory was 5.0°C. Samples were received on ice and evidence of cooling had begun.

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All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.

All holding times were met.

Total Dissolved Solids mg/l

Sulfate mg/l

Approved methodology was followed for all sample analyses.

All acceptance criteria were met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/duplicates unless noted here.

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

Approved by: <u>C, Caus</u> () 1 JUL 19



Field Datasheet

Groundwater Assessment

Company:	OTP Coyote	
Event:	2nd Qtr 2019	
Sample ID:	Blueb	
Sampling Persor	nal: Darren Altsuraas	

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Weather Conditions:		Temp:	65 °F		Wind:	South 1	10		Precip	: /Sún j	y / Partly C	Cloudy / Clo	oudy
	Well Infe	ormation				υ -	Sampling Information						
Well Locked?	Yes	NO		-		Purging	Method:	Blac	lder		Co	ntrol Settin	gs
Well Labeled?	Yes	No				Sampling	Method:	Blac	dder		Purge:	5	sec.
Casing Straight?	Jes	No				Dedicated	Equip?:	Yes	(No)		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visi	ible		Duplicate Sa	ample?:	Yes	No		PSI:		
Repairs Necessary:						Duplicate Sa	mple ID:		~				
Casing	Diameter:		<u>~</u> 2"										
Water Level Befo	ore Purge:		61,13	ft		Pur	ge Date:	4Tm	.19	Time Purg	ing Began:	1540	am/pm
Total W	/ell Depth:	-	79,10	ft		Well Purg	ged Dry?	Yes	No	Time F	Purged Dry:	1635	am/pm
We	Il Volume:	•	11,1	liters		Sam	ole Date:	5 June	19	Time of	f Sampling:	1035	amp
Depth to Top	of Pump:		75.69	ft					,			-	
Water Level Afte	er Sample:		67:13	ft		Bettle 11	_ Raw, 50	0mL Nitric,	500mL Nit	tric (filtered),	250mL Sul	furic	
Measurement Method: Electric Water Level Indicator			List: 1L Raw, 500mL Nitric										
Field Measurements													

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рΗ	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1545	12.08	2639	6,76	0,80	261	71000	62,53	200	/000	cloudy
2	1555	10,11	2592	6,52	0,56	T815	601	67,36	200	2000	clear
3	1605	10.63	2568	6.01	2,13	12.5	324	71,51	200	2000	Cle.
4	1620	10,60	2000	6.62	2,13	9.1	10.5	74,63	200	3000	Chi .
5	1625	10-84	22,07	6.FI	0180	-9,2	201	75,69	200	3000	Parthy cloudy
6	1095	1000	510	~~~~~~			292	Bel-w	• •		
7								Pump			
8									1edar,	/	
9	1030	PNCM	d line	For 5	min		1	(100	500	
10	10.35	KURT	23 90	6.62	2163	-206.1	654	~		<u> </u>	Cloudy
Stabilized:	Yes	(No)	Ì		v 5	Τı,	otal Volume	Removed:	1,500	mL	
Comments	SI	$\overline{\bigcirc}$	•						1/		





Groundwater Assessment

Company:	OTP Coyote
Event:	2nd Qtr 2019
Sample ID:	Blue 7
Sampling Persor	al Arren Nie (whay
	ph. / / /

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Wind: South (Sunny /)Partly Cloudy / Cloudy 7 °F Precip: Temp: 15 Weather Conditions: Sampling Information Well Information **Control Settings** ≤¥és Purging Method: Bladder Well Locked? No 5 Yes Sampling Method: Bladder Purge: sec Well Labeled? No abbing 25 Tes No Dedicated Equip?: Yes) Recover: sec. Casing Straight? No FFF Duplicate Sample?: Yes Not Visible PSI: Grout Seal Intact? Yes No Duplicate Sample ID: Repairs Necessary: N41) 2" Casing Diameter: Time Purging Began: Purge Date: 5 June 19 2 ampm ,60 Water Level Before Purge: ft Time Purged Dry: Well Purged Dry? Yes Nø am/pm Total Well Depth: ft Time of Sampling: 121 Sample Date: 5 June (9 19. am/pm Well Volume: liters ft Depth to Top of Pump: 1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfuric 7 ft Bottle Water Level After Sample: F-+ List: 1L Raw, 500mL Nitric Measurement Method: **Electric Water Level Indicator**

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(ŃTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1126	11.80	2472	657	5,55	-253,9	48,0	78.66	180	900	Clear
2	1146	11.02.	2466	6.49	4.02	-225,4	38,3	78,67	180	@ 3600	Cler
3	1151	11.25	2467	6,44	3,58	-224,7	18,0	78.67	-180	900	cle_
4	1156	11. 3.7	2462	6.44	3.44	-224.6	14,5	78,67	-180	900	ch
5	1201	11.35	2458	6.44	3,40	- 222.3	11.1	78.67	180	900	ch
6	17.06	1131	2466	6.43	3,38	-2230	12,0	78.67	180	900	d
7	1211	11,29	2464	6,44	13.21	-223,2	11.2	78.65	1800	900	ch
8		(I.			CALL AND	too	-90-	
, 9											
10	$T \in \mathcal{N}$										
Stabilized:	Yes/	No				То	otal Volume	Removed:	1,000	mL	
<u></u>	1/		-						2		

Comments: 🗸



Field Datasheet

Groundwater Assessment

Wind:

W

	Company:	OTP Coyo	te		
	Event:	2nd Qtr 20	19		
	Sample ID:	Slue	13		
	Sampling Personal:	alden	NIS	inaag	
	<i>F</i>	$-\partial$			
	Precip	Śun	y Partly C	Cloudy / C	loudy
	Sampling I	nformatio	on		
lethod:	Bladder		Co	ntrol Settir	ıgs
lethod:	Bladder		Purce	5	sec

Weather Conditions:		Temp:	<u> </u>	
•	Well Info	ormation	00	
Well Locked?	Yes	No		
Well Labeled?	tes	No		
Casing Straight?	Tes	No		
Grout Seal Intact?	Yes	No	Not Visible	e
Repairs Necessary:	· —			
Casing	Diameter:		2"	
Water Level Bef	ore Purge:	/	05.49	ft
Total V	Vell Depth:	/	16.65	ft
We	ell Volume:		6.9	liters
Depth to To	p of Pump:	/	10,75	ft
Water Level Aft	er Sample:		0.75 TOP	ft
Measuremer	nt Method:	Electric	Water Level Indic	ator

		<u> </u>	in ping i	monnau					
Purgii	ng Method:	Blac	dder		Co	ontrol Setting	5		
Samplin	ng Method:	Blac	dder		Purge:	5	sec.		
Dedicat	ed Equip?:	Yes	No Tu	52-	Recover:	55	sec.		
Duplicate	Sample?:	Yes	NO	-1	PSI:	(20			
Duplicate :	Sample ID:	~			2007Th	bottle			
F	Purge Date:	4Tin	.19	Time Purg	ing Began:	1450	am/pm		
Well P	urged Dry?	Yes	No	Time P	Purged Dry:	1525	am/om		
Sa	mple Date:	CTIM	.19	Time of	f Sampling:		am/pm		
Bottle	1L Raw, 50	0mL Nitric,	500mL Nitr	ic (filtered),	250mL Sul	furic			
List:	1L Raw, 50	aw, 500mL Nitric							

Field Measurements

Stabi	lization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 con	secutive)	(°C)	Cond.	рΗ	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1455	12,00	5680	6.77	1,06	53,2	52.3	107,93	200	1000	ch-
2	1516	15.37	5712	6,87	4,45	51.6	70,1	109,51	200-	4000	rla-
3	1525	13,71	5766	6.80	1119	43.8	342	110,75	20030	2,000	cloudy
4		1						Below		20	010119
5								8 Clair			1
6											
7											
8											
9	0940	Py	reid	lice	for	Simia		1	Filse		
10	0945	1135	5737	6,77	2.83	-208,1	2776)	100	500	flandy
Stabilized	Stabilized: Yes No Total Volume Removed: 6500 mL										
Comment	Comments:										

Had Fromble with the pump around 1510 pulled and reserve

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720





Groundwater Assessment

Company:	OTP Coyote
Event:	2ŋ,d Qtr 2019
Sample ID:	13/44/4
Sampling Person	nal: Darren Nissmace

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Weather Conditions:		Temp:	S(°F		Wind:	South We	st 15		Precip	Sun	ny/ Partly C	Cloudy / Clo	oudy
<u></u>	Well Info	ormation	0				,	S	ampling I	nformatio	on		
Well Locked?	Yes	No				Purg	ing Method:	Bla	dder		Co	ntrol Setting	<u>js</u>
Well Labeled?	Yes	No				Sampl	ing Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Nes	No				Dedica	ated Equip?:	ves	NoTAL	bild	Recover:	55	sec.
Grout Seal Intact?	Yes	No	/ Not Vis	ible		Duplicate	e Sample?:	Yes	_NG'		PSI:	~	
Repairs Necessary:						Duplicate	Sample ID:						
Casing	Diameter:		2"										
Water Level Bef	fore Purge:	7	7,52	ft			Purge Date:	5 J414	=19	Time Purg	ging Began:	1314	ampn
Total V	Vell Depth:	8	6.98	ft		Well F	Purged Dry?	Yes	1	Time F	Purged Dry:		am/pm
We	ell Volume:	5	, 9	liters		S	ample Date:	5 Jun	219	Time o	f Sampling:		am/pm
Depth to To	p of Pump:			ft									
Water Level Aft	er Sample:	1	8134	ft		Bottle	1L Raw, 50	0mL Nitric	, 500mL Niti	ric (filtered)	, 250mL Sul	furic	
Measuremer	nt Method:	Electric	Water Level In	dicator	:	List:	1L Raw, 50	0mL Nitric					
Measuremer	nt Method:	Electric	Water Level In	dicator	:	List:	1L Raw, 50	0mL Nitric			, 001		

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1319	15,45	5308	6.79	0,53	312,4	2201	78,09	100	500	Clar
2	1334	14.22	5702	6,72	0.15	-220,1	59.4	78,22	100	1500	clen
3	1349	14.30	\$4874	6.57	0,24	-221,1	26,8	76,32	100	1500	da
4	1354	1414	4844	6,65	B1.81	-223,2	10.8	78.32	100	500	Clear
5	1359	14,02	4833	660	0.85	-222.6	10,1	18,32	100	500	an
6	1404	13,99	4832	6.58	0,90	-221,0	9,81	78,32	100	500	ch
7	1		10 9	01000							
8											
9											
10	\square										
Stabilized:	Yes	No				Тс	otal Volume	Removed:	5000	mL	



Weather Conditions:

Field Datasheet

ft

ft

ft

liters

Electric Water Level Indicator

2616 E.	Broadway	Ave,	Bismarck,	ND
---------	----------	------	-----------	----

Phone: (701) 258-9720

Well Locked?

Well Labeled?

Casing Straight? Grout Seal Intact?

Repairs Necessary:

Casing Diameter:

Total Well Depth:

Depth to Top of Pump:

Measurement Method:

Water Level After Sample:

Well Volume:

Water Level Before Purge:

		rieiu Da	ala51	lieel	Event: 2nd Qtr 2019							
		Groundwate	r Assess	ment	Sample ID: <u>Blue 15</u> Sampling Personal: <u>Darran Wiesinkag</u>							
ismarck, ND 9720		_										
	Temp:	85 °F	Wind:	Sw 10		Precip	: Sun	ny / Partly C	loudy / Clo	oudy		
Well Info	rmation	00			Sa	ampling	Informatio	Śn				
Yes /	No		1	Purging Method:	Bla	dder		Coi	ntrol Setting	<u>js</u>		
Ves	No			Sampling Method:	Bla	dder		Purge:	5	sec.		
Yes	No			Dedicated Equip?:	Tes	Con Iu	abbits	Recover:	.55	sec.		
(Yes)	No	Not Visible		Duplicate Sample?:	Yes	NO		PSI:	-			
~				Duplicate Sample ID:	۷							
Diameter:		2"										
fore Purge:		75,18 f	t	Purge Date:	STIAN	e19	Time Purg	ing Began:	1622	am/pm		

Well Purged Dry?

Bottle List:

Ng

1L Raw, 500mL Nitric, 500mL Nitric (filtered), 250mL Sulfuric

Yes

Sample Date: 5 June (9

1L Raw, 500mL Nitric

Company:

OTP Coyote

Time Purged Dry:

Time of Sampling:

am/pm

am/pro

Field Measurements

Stabil	lization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0,1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1627	15,79	3756	6,677	0,69	-26811	26.3	75,28	100	500	Clew
2	16312	14.46	3626	6131	0,17	-2967	6.89	75,34	100	1000	ca
3	1642	14,36	3602	6.47	0,20	-256.0	4.50	75,30	100	500	ch
4	16217	14.88	3579	6,45	0.15	-237.1	3,10	75,32	100	500	Clur
5	1652	14.64	3583	6,48	0,20	-226.4	2,79	75,33	100	500	Clim
6	1657	14.13	3573	6,49	0.25	-2/9,3	2,76	75,33	j00	500	chi
7		, ,							′		
8											
9	$\square \frown$										
10	$\left \right\rangle$										
Stabilized	: //Yes/	No				Тс	otal Volume	Removed:	3500	mL	
									75	-	

Comments: 🔨 🦯



Field Datasheet

Groundwater Assessment

Company:	OTP Coyote
Event:	2nd Qtr 2019
Sample ID:	Blue 15
Sampling Perso	nal: Marie Nieswans

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

			~							dia	<u> </u>		
Weather Conditions:		Temp:	: XZ°F		Wind:	Southn	rest 10		Precip	: (s	unny BPartly	Cloudy / Clo	udy
١	Well Info	ormation				Sampling Information							
Well Locked?	Yes	No				Purg	ing Method:	Bla	dder	[Co	ontrol Setting	js
Well Labeled?	<i>Ve</i> s	No				Sampl	ing Method:	Bla	dder		Purge:	5	sec.
Casing Straight?	Yes	No				Dedica	ted Equip?:	Ves	No Tul	bing	Recover:	ζ×	sec.
Grout Seal Intact?	Yes	No	Not Visi	ble		Duplicate	e Sample?:	Yes	(No		PSI:		
Repairs Necessary:	~~~					Duplicate	Sample ID:	\mathcal{C}	-				
Casing I	Diameter:		2"										
Water Level Befo	re Purge:	~	73,65	ft		I	Purge Date:	5 Tune	19	Time P	urging Began:	1449	am/pm
Total W	ell Depth:		97.58	ft		Well F	Purged Dry?	Yes	KIQ	Tim	ne Purged Dry:		am/pm
Wel	I Volume:		14:8	liters		Sa	ample Date:	5 June	19	Tim	e of Sampling:	1539	am/pm
Depth to Top	of Pump:			ft									
Water Level After	r Sample:		73.68	ft		Bottle	1L Raw, 50	0mL Nitric	500mL Nitr	ric (filtere	ed), 250mL Sul	furic	
Measurement	Method:	Electric	Water Level Ind	icator		List:	1L Raw, 50	0mL Nitric					

Field Measurements

Stabil	ization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	secutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1454	17,74	2364	6.76	0,91	-301,8	228	73.66	100	500	Partly Cloudy
2	1514	16.59	2365	6.56	2,01	-267.6	87.9	73,66	100	2000	Clear /
3	1524	1636	2364	6.56	1.70	-7,33,2	68.3	13,66	100	1000	clear
4	1529	16,06	2365	6.58	0,73	-230,8	65.3	73.68	100	500	char
5	1534	16.09	23677	6,58	0.78	-623,3	65.1	73.67	100	500	cl.
6	1539	16.23	2367	6:57	0,81	-224,04	60.0	73.66	100	500	ch
7	,								4		
8											
9											
10											
Stabilized:	Yes /	No	Total Volume Removed: <u>5000</u> mL								



Chain of Custody Record

Project Name:	1	Event:					Wo	Work Order Number:						
OTP Coyote - Blue Pit C	CR		21	nd Qtr 2019								82-	130	21
Report To: Otter Tail Power Attn: Josh Hollen Address: PO Box 496 Fergus Falls, MN 56538-0 phone: email: jhollen@otpco.com	0496	Carbon C Attn: Address:	ору:				Na	me of	of Sa	ample 1en Tr-Ol	er(s):			
Sampl	e Informatio	on E				Bot	tle 1	Тур	е		Fi	eld Para	ameters	a Analysis
Lab Number Sample ID Sample ID FB Blue Sample ID FB Blue Sample ID Blue 6 Sample ID Blue 6 Sample ID Blue 6 Sample ID Blue 6 Sample ID Blue 6 Sample ID Blue 6 Sample ID Blue 13 Sample ID Blue 13 Sample ID Blue 13 Sample ID Sample ID Blue 13 Sample ID Sample ID Sampl	5 June 19 5 June 19	и	$ \begin{array}{c c} & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & $	Appearance Appearance Cloudy, Cloudy, Cloudy, Cloudy,	X X X X X X 1//ier	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	250ml of 250ml of 11 (11 (etc.)	aufuric			× 1, 29 × 1, 29 1, 29	NA 2340 2464 5732 4832 3573 2367	Fa NA 6.62 6.44 6.77 6.58 6.57 6.57	Analysis Required

Relinquished By:		Sar	mple Condition:		Received by:				
Name:	Date/Time	Location:	Temp (°C)		Name:	Date/Time			
1 Pan Man	5 June 19	Log In	TM562 TM588	- 1	TINGSA	6202019			
2	1030	Avain III #2	ROZ 510	-		0800			





Page: 1 of 7

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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4535 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion Lab, pH Fluoride Sulfate Chloride Total Dissolved Solids Calcium - Total Boron - Total	* 6.6 < 0.1 < 5 < 1 10 < 1 < 0.1	s.u. mg/l mg/l mg/l mg/l mg/l	0.1 0.10 5.00 1.0 10 1.0 0.10	EPA 200.2 SM4500 H+ B SM4500-F-C ASTM D516-07 SM4500-C1-E I1750-85 6010D 6010D	6 Nov 19 6 Nov 19 17:00 6 Nov 19 17:00 13 Nov 19 8:40 8 Nov 19 13:15 13 Nov 19 10:12 20 Nov 19 8:42	EMS CC CC EMS EV HT SZ SZ
Boron - Total	< 0.1	mg/1	0.10	80100	20 100 19 0.12	01

TDS result was reanalyzed in duplicate.

* Holding time exceeded

Approved by:

26NOV19 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit





Page: 2 of 7

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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4536 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 10:40 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	6 Nov 19	EMS
Field pH	6.64	s.u.	0.1	SM 4500 H+ B	5 NOV 19 10:40	
Lab, pH	* 7.3	s.u.	0.1	SM4500 H+ B	6 NOV 19 17:00	
Field Appearance	Clear		NA	SM 2110	5 Nov 19 10:40) JSM
Field Temperature	7.70	Degrees C	0.1	SM 2550B	5 Nov 19 10:40) JSM
Field Conductivity	2098	umhos/cm	1	EPA 120.1	5 Nov 19 10:40) JSM
Fluoride	0.20	mg/l	0.10	SM4500-F-C	6 Nov 19 17:00) CC
Sulfate	664	mg/l	5.00	ASTM D516-07	13 Nov 19 8:40) EMS
Chloride	6.4	mg/1	1.0	SM4500-C1-E	8 Nov 19 11:34	EV EV
Total Dissolved Solids	1570	mg/l	10	I1750-85	8 Nov 19 13:1	5 HT
Calcium - Total	166	mg/l	1.0	6010D	13 Nov 19 10:12	2 SZ
Boron - Total	0.40	mg/l	0.10	6010D	20 Nov 19 8:42	2 SZ

* Holding time exceeded

Approved by:

a 26NOV19 Clauditte K. Cantle

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit





Page: 1 of 1

Amended 11 Dec 19 (Calcium) - 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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4537 Work Order #:82-3201 Account #: 006106 Date Sampled: 4 Nov 19 14:37 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C ROI

	As Received Result		ved	Method RL	Method Reference	Date Analyzed	Analyst	
Metal Digestion					EPA 200.2	6 Nov 19	EMS	
Field pH		6.57	s.u.	0.1	SM 4500 H+ B	4 Nov 19 14:37	JSM	
Lab, pH	*	7.3	s.u.	0.1	SM4500 H+ B	6 Nov 19 17:00	CC	
Field Appearance		Clear		NA	SM 2110	4 Nov 19 14:37	JSM	
Field Temperature		8.37	Degrees C	0.1	SM 2550B	4 Nov 19 14:37	JSM	
Field Conductivity		2356	umhos/cm	1	EPA 120.1	4 Nov 19 14:37	JSM	
Fluoride		0.21	mg/l	0.10	SM4500-F-C	6 Nov 19 17:00	CC	
Sulfate		778	mg/l	5.00	ASTM D516-07	13 Nov 19 9:01	EMS	
Chloride		7.1	mg/l	1.0	SM4500-Cl-E	8 Nov 19 11:34	EV	
Total Dissolved Solids		1740	mg/l	10	I1750-85	8 Nov 19 13:15	HT	
Calcium - Total		174	$m\alpha/1$	1.0	6010D	13 Nov 19 10:12	SZ	
Boron - Total		0.38	mg/l	0.10	6010D	20 Nov 19 8:42	SZ	

* Holding time exceeded

10 1 Da 19 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 sample matrix # = Due to concentration of other analytes ! = Due to sample quantity + = Due to internal standard response CERTIFICATION: ND # ND-00016





4 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 CCR

Sample Description: Blue 13

Event and Year: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4538 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 10:25 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion Field pH Lab, pH Field Appearance Field Temperature Field Conductivity Fluoride Sulfate Chloride	7.11 * 7.8 Clear 7.05 6866 0.28 3070 34.2	s.u. s.u. Degrees C umhos/cm mg/l mg/l mg/l	0.1 0.1 NA 0.1 1 0.10 5.00 1.0	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 T1750-85	6 Nov 19 5 Nov 19 10:25 6 Nov 19 10:25 5 Nov 19 10:25 5 Nov 19 10:25 5 Nov 19 10:25 6 Nov 19 10:25 6 Nov 19 17:00 13 Nov 19 9:01 8 Nov 19 11:34 8 Nov 19 13:15	EMS JSM CC JSM JSM CC EMS EV HT
Calcium - Total Boron - Total	142	mg/l mg/l	1.0 0.10	6010D 6010D	13 Nov 19 10:12 20 Nov 19 9:42	SZ SZ

* Holding time exceeded

Approved by:

CC 26 NOV19 Clauditte 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

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Page: 5 of 7

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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4539 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 15:05 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C ROI

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	6 Nov 19	EMS
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	5 Nov 19 15:05	JSM
Lab, pH	* 7.4	s.u.	0.1	SM4500 H+ B	6 Nov 19 17:00	CC
Field Appearance	Clear		NA	SM 2110	5 Nov 19 15:05	JSM
Field Temperature	6.92	Degrees C	0.1	SM 2550B	5 Nov 19 15:05	JSM
Field Conductivity	5178	umhos/cm	1	EPA 120.1	5 Nov 19 15:05	JSM
Fluoride	0.13	mg/l	0.10	SM4500-F-C	6 Nov 19 17:00	CC
Sulfate	2300	mg/l	5.00	ASTM D516-07	13 Nov 19 9:01	EMS
Chloride	11.0	mg/l	1.0	SM4500-Cl-E	8 Nov 19 11:34	EV
Total Dissolved Solids	4510	mg/l	10	I1750-85	8 Nov 19 13:15	HT
Calcium - Total	350	mg/l	1.0	6010D	13 Nov 19 11:12	SZ
Boron - Total	0.62	mg/l	0.10	6010D	20 Nov 19 9:42	SZ

* Holding time exceeded

Approved by:

Clauditte ZGNEV19 K. Canto

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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Page: 6 of 7

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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4540 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 13:25 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C ROI

2	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion Field pH Lab, pH Field Appearance Field Temperature Field Conductivity Fluoride Sulfate Chloride Total Dissolved Solids	6.63 * 7.4 Clear 7.88 3168 0.21 959 9.1 2460	s.u. s.u. Degrees C umhos/cm mg/1 mg/1 mg/1 mg/1	0.1 0.1 NA 0.1 1 0.10 5.00 1.0 10	EPA 200.2 SM 4500 H+ B SM4500 H+ B SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-07 SM4500-C1-E I1750-85	6 Nov 19 5 Nov 19 13:25 6 Nov 19 13:25 5 Nov 19 13:25 5 Nov 19 13:25 6 Nov 19 13:25 6 Nov 19 13:25 6 Nov 19 13:25 8 Nov 19 12:08 8 Nov 19 12:15	EMS JSM CC JSM JSM JSM CC EMS EV HT
Calcium - Total Boron - Total	136 0.44	mg/l mg/l	1.0 0.10	6010D 6010D	13 Nov 19 11:12 20 Nov 19 9:42	SZ SZ

* Holding time exceeded

Approved by:

CC 26NIV19 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016





Page: 7 of 7

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: 4th Qtr 2019

Report Date: 20 Nov 19 Lab Number: 19-W4541 Work Order #:82-3201 Account #: 006106 Date Sampled: 5 Nov 19 12:15 Date Received: 5 Nov 19 16:50 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 0.6C ROI

	As Received Result	l	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion		1		EPA 200.2	6 Nov 19	EMS
Field pH	6.63	s.u.	0.1	SM 4500 H+ B	5 Nov 19 12:15	JSM
Lab, pH *	7.3	s.u.	0.1	SM4500 H+ B	6 Nov 19 17:00	CC
Field Appearance	Clear		NA	SM 2110	5 Nov 19 12:15	JSM
Field Temperature	8.60	Degrees C	0.1	SM 2550B	5 Nov 19 12:15	JSM
Field Conductivity	2054	umhos/cm	1	EPA 120.1	5 Nov 19 12:15	JSM
Fluoride	0.22	mg/l	0.10	SM4500-F-C	6 Nov 19 17:00	CC
Sulfate	580	mg/l	5.00	ASTM D516-07	13 Nov 19 9:01	EMS
Chloride	6 4	$m\alpha/1$	1.0	SM4500-Cl-E	8 Nov 19 12:08	EV
Tetal Diagolyod Solida	1500	mg/1	10	T1750-85	8 Nov 19 13:15	HT
Calcium - Total	115	mg/l	1.0	6010D	13 Nov 19 11:12	SZ
Boron - Total	0.40	mg/l	0.10	6010D	20 Nov 19 9:42	SZ

* Holding time exceeded

Approved by:

11 Claudithe K. Canrep ZENOVIA

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

Page: 1 of 1

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MEMBER ACIL

Quality Control Report – Amended 11 Dec 19

o IDs: 19-W4535 to 19-W4541 Project: OTP Coyote-Blue Pit CCR Work Order: 201982-3201																	
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
Boron - Total mg/l	0.40 0.40	102 100	80-120 80-120	0.400 0.400 0.400	19-D3774 19-W4537 19-W4671	0.34 0.38 < 0.1	0.72 0.75 0.47	95 92 118	75-125 75-125 75-125	0.72 0.75 0.47	0.74 0.75 0.46	100 92 115	2.7 0.0 2.2	20 20 20			< 0.1 < 0.1 < 0.1 < 0.1
Calcium - Total mg/l	20.0 20.0	110 110	80-120 80-120	500 500	19W4537q 19W4547q	870 715	1300 1140	86 85	75-125 75-125	1300 1140	1290 1140	84 85	0.8 0.0	20 20			<1 <1 <1 <1
Chloride mg/l	30.0 30.0 30.0 30.0	98 99 97 96	80-120 80-120 80-120 80-120	30.0 30.0	19-W4537 19-W4574	7.1 63.3	36.2 94.8	97 105	80-120 80-120	36.2 94.8	36.3 94.9	97 105	0.3 0.1	20 20		-	<1 <1 <1 <1
Fluoride mg/l	0.50	92	90-110	0.500	19-W4537	0.21	0.73	104	80-120	0.73	0.73	104	0.0	20	-		< 0.1 < 0.1
pH units	-	-	-	-	-	-	-	-	-	7.6 7.3	7.7 7.3	-	1.3 0.0	20 20	-	-	-
Sulfate mg/l	100 100	94 116	80-120 80-120	100 500	19-W4535 19-W4537	< 5 778	99.9 1250	100 94	80-120 80-120	99.9 1250	107 1290	107 102	6.9 3.1	20 20	-	-	< 5 < 5
Total Dissolved Solids mg/l	-	-	-	-	-	-	-	-	-	2460 4080	2450 4160	-	0.4 1.9	20 20	-	-	< 10

Samples were received in good condition on 5 Nov 2019 at 1650.

Temperature upon receipt at the Bismarck laboratory was 0.6°C. Samples were received on ice and evidence of cooling had begun.

All samples were properly preserved unless noted here and/or flagged on the individual analytical laboratory report.

With the exception of pH, all holding times were met.

Approved methodology was followed for all sample analyses.

All acceptance criteria were met for calibration, method blanks, laboratory control samples, laboratory fortified matrix/duplicates unless noted here.

Field blank (19-W4535) had a result for TDS at the reporting limit. The sample was rechecked, in duplicate, and result was verified. •

Reporting

Per email dated 5 Dec 19 from Dana Pasi, Barr, the raw data for the calcium result on Blue 7 was reviewed. It was determined that a factor of 5 dilution error was mistakenly applied to the sample result. An amended • report has been issued. C. Canit O 11 Da 19

Approved by:

Claudette Carroll

From:	Dana B. Pasi <dpasi@barr.com></dpasi@barr.com>
Sent:	Thursday, December 5, 2019 3:41 PM
То:	Julie Crispin; Claudette Carroll
Subject:	FW: EDD'S FOR 201982-3201 OTP COYOTE -Blue Pit CCR November 2019
Attachments:	2019 OTP FALL FIELD.pdf; 201982-3201 OTP COYOTE BLUE CCR.pdf; EFWEDD_
	201982-3201.zip

Hello,

After review of this data report for OTP Coyote, we are hoping you can take a second look at a result. When we compare historical results we have a considerable increase for Calcium in Blue 7; it went from ~180 mg/l the last few years to 870 mg/l this time. The other parameters did not fluctuate that much. Thank you for looking in to this!

Dana B. Pasi

Environmental Scientist Minneapolis, MN office: 952.832.2756 cell: 612.229.6109 DPasi@barr.com www.barr.com



If you no longer wish to receive marketing e-mails from Barr, respond to communications@barr.com and we will be happy to honor your request.

From: Julie Crispin <<u>icrispin@mvtl.com</u>>
Sent: Wednesday, November 27, 2019 8:55 AM
To: Barr Data Management <<u>BarrDM@barr.com</u>>; 'Josh Hollen' <<u>ihollen@otpco.com</u>>; Justin Soberaski
<<u>JSoberaski@barr.com</u>>; Margaret S. Treanor <<u>MTreanor@barr.com</u>>; 'pvukonich@otpco.com'
<<u>pvukonich@otpco.com</u>>; Barr Data Management <<u>BarrDM@barr.com</u>>;
Cc: Claudette Carroll <<u>ccarroll@mvtl.com</u>>; Jesse Hedlund <<u>ihedlund@mvtl.com</u>>; Mary Hames <<u>mhames@mvtl.com</u>>;
Steve Bowen <<u>sbowen@mvtl.com</u>>;
Subject: EDD'S FOR 201982-3201 OTP COYOTE -Blue Pit CCR November 2019

Good day, please see the attached EDD's for WO# 201982-3201. This is for CCR.

Thank you-

Julie Crispin





Field Datasheet

Groundwater Assessment

Company:	OTP Coyote
Event:	4th Qtr 2019
Sample ID:	Blue b
Sampling Personal:	Jerry Mayor

Phone: (701) 258-9720

Weather Conditions:		Temp:	20 °F	Wind:	N 05-10		Precip	: Sunr	y / Partly C	loudy Clo	oudy	
	Well Info	rmation			Sampling Information							
Well Locked?	Yes	No2			Purging Method	Bla	dder		Co	ntrol Settin	gs	
Well Labeled?	(Yeś	No			Sampling Method	Bla	dder		Purge:	5	sec.	
Casing Straight?	Yes	No			Dedicated Equip?	Yes	No		Recover:	55	sec.	
Grout Seal Intact?	Yes	No	Not Visible		Duplicate Sample?:	Yes	No		PSI:	<u>BD</u>		
Repairs Necessary:					Duplicate Sample ID							
Casing	Diameter:		2"									
Water Level Bef	ore Purge:	58	2.46 ft		Purge Date	FXW	19	Time Purg	ing Began:	1154	<u>(ani/pm</u>)	
Total V	Vell Depth:	P	. <i>10</i> ft		Well Purged Dry	Yes	No	Time F	Purged Dry:	1259	am/pm	
We	ell Volume:	· · ·	12,7 liters		Sample Date	: SNarl	9	Time of	Sampling:	1040	am/pm	
Depth to Top	p of Pump:		74BO ft									
Water Level Afte	er Sample:		61,86 ft		Bottle							
Measuremer	nt Method:	Electric V	Vater Level Indicator		List: 1L Raw, 8	00mL Nitric						

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:	
(3 consi	ecutive)	(°C)	Cond.	Hq	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.	
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy	
1	119	2.43	2404	6.65	2.93	4.9	100.0	59,02	2000	1000,0	Clear	
2	1719	8 79	2326	6.64	3.20	19.10	124.0	67.32	200.0	4000,0	Birthy Chudy	
2	1730	8.1.1	2746	6,67	2,48	223	40.0	77.50	200.0	4000.0	Clear	
<u> </u>	120	0.01	2710	6/07	2.20	37.2	732.0	74,80	200:0	4020	Ster Parthy Cloudy	
4	1631		200-	VIC	-: 10	<u> </u>	01/2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
5			•<									
6												
7												
8										relinge		
	1035	P. Ant	11 Rev	Smin	do res	the line		59.02	200,0	0.0001		
10	1020	170	2093	6,64	802	45.0	2317	60,92	-	Pasta part	Clea	
Stabilized:	Yes	N9	Total Volume Removed: 14,000,0 mL									



Field Datasheet

Groundwater Assessment

Company:	OTP Coyote
Event:	4th Qtr 2019
Sample ID:	Blue,7
Sampling Personal:)every lage

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Weather Conditions:		Temp:	30 °F		Wind:	N@S-	-10		Precip	Sunr	ny / Partly C	Joudy / Clo	udy
	Well Info	rmation				Sampling Information							
Well Locked?	× 200	No				Purgir	ng Method:	Blac	lder		Co	ntrol Setting	IS
Well Labeled?	Ares	No				Samplin	ng Method:	Blac	der		Purge:	5	sec.
Casing Straight?	(Yes	No				Dedicat	ed Equip?:	Yes	No		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visi	plè		Duplicate	Sample?:	Yes	No	-	PSI:	30	
Repairs Necessary:			\sim			Duplicate	Sample ID:	MS/F	1SD				
Casing	Diameter:		2"									18:0	
Water Level Bef	ore Purge:	71	634	ft		F	Purge Date:	4 No	119	Time Purg	ing Began:	1312	am/pm
Total V	Vell Depth:	9	7,63	ft		Well P	urged Dry?	, Yes	NO	Time F	Purged Dry:		am/pm
We	ell Volume:	***		liters		Sa	mple Date:	45 No	119	Time of	f Sampling:	1437-	am/pm
Depth to To	p of Pump:	•		ft									
Water Level Aft	er Sample:	e	76.45	ft		Bottle							
Measuremer	nt Method:	Electric V	Vater Level Ind	licator		List: 1L Raw, 500mL Nitric							

Field Measurements

Stobili	ration	Temn	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
Stabin.		(°C)	Cond	nH	(ma/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
(3 cons	Timo	(0)	+5%	+0.1	+10%	+20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
SEQ#	Time	4 3 : (1070	<u> </u>	11. 43	24.3	100	71 117	(CDD	7500	Clear
1	1317	6.54	2355	16 +6		lois	60.0	+6,7+	130,0	TJUO	
2	1342	814	2359	1. CF	1.15	IU.S	69.6	76.38	150.0	4500.0	Clear
2	11102	8,75	7 281	1.57	1.03	10.9	40.3	76.45	150.0	3000.0	Clear.
	TUT	272	00011	0, - 1	1.05	0.1	24.6	210,40	150,0	1500.0	Cle
4	1717	6.73	12337	6.60	110,5	0.7	110	1011	100-	15-0-	
5	1477	B.47	2.353	6,60	1.04	6.2	161L	76.41	12010	1200.0	Clear
6	1432	859	2350	6,60	1.05	6.0	163	76.45	150,0	750.0	Clear
	1: (27	0.27	7272	1.32	1.02	1.7	15.3	76.43	1500	750.0	Clean
/	1457	613T	6356	6:31	110-		1200	14.12	1		
8											
9				1						L	
10									1	-	
10	1	I	<u> </u>	1				Demensional	127.500		
Stabilized:	Xes)	No				1	otai volume	e Kemovea:	16,750,0		

Stabilized: /Yes)





Groundwater Assessment

Company:	OTP Coyote
Event:	4th Qtr 2019
Sample ID:	Rive B
Sampling Personal:	Jerry Player

Weather Conditions:		Temp:	20.1	F	Wind:	Nas	~ı0		Precip	: Suni	ny / Partly C	Cloudy / ETC	oudy
	Well Info	ormation	<u></u>					Sa	ampling	nformatio	on		
Well Locked?	Yes	No	T			Purg	ing Method:	Blac	lder		Co	ontrol Settin	gs
Well Labeled?	(Yes	No				Sampl	ing Method:	Blac	lder		Purge:	5	sec.
Casing Straight?	Yes	No	-			Dedica	ated Equip?:	Yes	(No		Recover:	10	sec.
Grout Seal Intact?	Yes	(No)	Not Vis	sible		Duplicate	e Sample?:	Yes	No		PSI:	100	
Repairs Necessary:						Duplicate	Sample ID:	~					
Casing	Diameter:		2"					. 8					
Water Level Befo	ore Purge:	l	104.19	ft			Purge Date:	ゆきょ	~19	Time Purg	ing Began:	1057	- @ind/pm
Total W	ell Depth:	l	16.65	ft		Well F	Purged Dry?	Nes	Ńo	Time F	Purged Dry:	1142	am/pm
We	Il Volume:		77	liters		S	ample Date:	SNO	119	Time of	Sampling:	1025	@m/pm
Depth to Top	of Pump:	11	3.78	ft					L. L				
Water Level Afte	r Sample:		11.16	ft		Bottle							
Measurement Method: Electric Water Level Indicator				List: 1L Raw, 500mL Nitric									

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	ecutive)	(°C)	Cond.	рН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1102	8,65	6794	7.06	3.24	=39.9	571.0	106.90	200.0	1000.0	Parthy Clarchy
2	1172	7.35	6691	7.02	3.52	-18,6	469.0	110.57	200.0	4020.0	Porthy Clarky
3	112	6,77	6734	7.05	4.26	-10.6	378.0	113,78	200.0	4000.0	Parting Claushy
4	_										
5											
6											
7											
8										rechange	
9	1020	Puned	well for	Sim F	p clar	the line	-	108.52	200,0	See	
10	1025	7,05	6866	7.11	4.50	101.2	1050	110.21		10000	Clim
Stabilized:	Yes	(ND)		• • • • • • • • • • • • • • • • • • •		T	otal Volume	Removed:	100000-	mL	

Comments:

10,000.0



Field Datasheet

Groundwater Assessment

Company:	OTP Coyote
Event:	4th Qtr 2019
Sample ID:	Blue 14
Sampling Personal:	Jany Hey
	~ (' •

Sunny / Partly Cloudy / Cloudy

Weather Conditions:		Temp:	25°F		Wind:	202	1710
	Well Infor	rmation					
Well Locked?	Tes	No				Purg	ing Meth
Well Labeled?	Yes	No				Sampl	ing Meth
Casing Straight?	Yes	No		~		Dedica	ted Equ
Grout Seal Intact?	Yes	No	Not-Visibi	é		Duplicate	e Sample
Repairs Necessary:						Duplicate	Sample
Casing	Diameter:		2"				
Water Level Bef	ore Purge:		74.68	ft			Purge D
Total V	Vell Depth:		BT.OD	ft		Well F	Purged E
We	ell Volume:			liters		Sa	ample D
Depth to Top	o of Pump:			ft			
Water Level Aft	er Sample:		75:64	ft		Bottle	
Measuremer	nt Method:	Electric V	Nater Level Indic	ator		List:	1L Rav

Sampling Information											
Purgir	ng Method:	Bladder			Co	ontrol Setting	s				
Samplir	ng Method:	Blac	lder]	Purge:	5	sec.				
Dedicat	ed Equip?:	Yes	(Nộ		Recover:	55	sec.				
Duplicate	Sample?:	Yes	TNO		PSI:	70					
Duplicate \$	Sample ID:	\sim	<u>.</u> 24								
P	urge Date:	5 Nov	19	Time Purging Began:		1345	am/pm				
Well P	urged Dry?	Yes	(No)	Time F	Purged Dry:		am/pm				
Sa	mple Date:	5 North	-9	Time of	f Sampling:	1505	am/pm				
			-								
Bottle					<u>.</u>		-				
List:	1L Raw, 50	0mL Nitric		· •							

Precip:

Field Measurements

Stabili	ization	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 cons	(3 consecutive) (°C) Cond.		Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1350	6.53	5121	GITS	5,34	5.7	129.0	75,22	100.0	500.0	Party Clardy
2	1420	7.08	5176	6,65	X.1.52	12.2	124,0	75,50	100.0	3000.0	Partly Clardy
3	1450	7.32	5167	6,64	1.52	1929	29.3	75,56	100,0	3000.0	Clear
4	11155	la Blo	5169	6,66	1,58	18,4	30,7	75.62	[1070	50000	(les-
5	1500	6,89	5177	6.66	1.63	18.9	28,9	75.62	100.0	50.0	Clear .
6	1505	6.92	5178	Gillo	1.68	19.5	27.6	75.63	100.0	50.0	Clen
7		2.7-	3,10		/						
8											
9			<u> </u>								
10											
Stábilized:	Yes	Total Volume Removed: R, 000, O mL									

Stabilized: (Yes

.*

Total Volume Removed: $\mathcal{B}, \mathcal{W}, \mathcal{O}$ mL



Groundwater Assessment

25 °F

Company:	OTP Coyote	
Event:	4th Qtr 2019	
Sample ID:	Rhe 15	
Sampling Personal:	Jery May-	

2616	F	Broadway		Rismarck	ND
2010	⊑.	Diganwa	y Ave,	DISITIATOR,	IND.

MVT

Weather Conditions:

Phone: (701) 258-9720

Wind: 5 @5つひ

Precip: Sunny / Partly Cloudy / Cloudy

Well Information										
Well Locked?	(es	No								
Well Labeled?	Yes	No								
Casing Straight?	Kes	No								
Grout Seal Intact?	Pes	No	ble							
Repairs Necessary:										
Casing	Diameter:		2"							
Water Level Bet	fore Purge:	72.51								
Total V	Vell Depth:	87.85								
W	ell Volume:									
Depth to To	p of Pump:									
Water Level Aft	er Sample:		72.62	ft						
Measureme	nt Method:	Electric	Water Level Ind	licator						

Temp:

		Sa	mpiing i	monnauc	ווכ		
Purgin	g Method:	Blad	der		Co	ntrol Setting	<u>js</u>
Samplin	g Method:	Blad	der		Purge:	5	sec.
Dedicate	d Equip?:	Yes	(NO)		Recover:	55	sec.
Duplicate S	Sample?:	Yes	A		PSI:	90	
Duplicate S	ample ID:	<u> </u>					
				_			
Ρι	urge Date:	5 Nov 19		Time Purging Began:		1235	am/pm
Well Pu	rged Dry?	Yes	No	Time Purged Dry:			am/pm
San	nple Date:	5 Nov	19	Time of	f Sampling:	1325	am/m
Bottle							
List:	1L Raw, 50	0mL Nitric					

Field Measurements

Stabili	zation	Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 consecutive)		(°C)	Cond.	pH	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time		±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1240	6.00	3342	6.67	5.17	13.9	37.5	72.74	1002	5000	Clear
2	1210	8,07	3176	6157	2.08	23.4	11.7	72.63	100,0	3000.0	Clear
3	1315	7.76	3180	6,63	1.74	22.5	9.01	72.60	100.0	500.0	Clear
4	1320	7.7%	3182	6.63	1.79	22.9	8.62	72,61	100.0	500.0	Clean
5	1325	7.88	3168	6.63	1.79	23,2	8.42	72.63	100.0	500.0	den
6											
7											
8											
9											
10											
Stabilized:	(Yes)	No	_	Total Volume Removed: <u>う</u> のの. mL							



Groundwater Assessment

Company:	OTP Coyote	_					
Event:	4th Qtr 2019						
Sample ID:	Bhe 16	_					
Sampling Personal:	Jerry Her-	_					

2616	F	Broadway		Rismarck	NΠ
2010	∟.	Dibauway	nve,	Dismaick,	nu

Depth to Top of Pump:

Measurement Method:

Water Level After Sample:

MVT

993 293 2

Phone: (701) 258-97	720		ĥ			_				·		
Weather Conditions:		Temp:	کې °F		Wind:	505-10		Precip:	Sunny /	/ Partly C	loudy /Ch	ънdу
Well Information							Sampling Information					~
Well Locked?	Yes	No				Purging Method:	Blado	ler		Co	ntrol Setting	gs
Well Labeled?	Yes)	No				Sampling Method:	Blado	ler		Purge:	5	sec.
Casing Straight?	Yes	No				Dedicated Equip?:	Yes	Nô)		Recover:	55	sec.
Grout Seal Intact?	Yes	No	Not Visi	ble		Duplicate Sample?:	Yes	MQ		PSI:	90	
Repairs Necessary:						Duplicate Sample ID:	<u> </u>	_				
Casing	Diameter:		2"									
Water Level Befo	ore Purge:	F	150	ft		Purge Date:	5 Nor 4	j T	ime Purging	Began:	1055	amjpm
Total W	ell Depth:	93	h60	ft		Well Purged Dry?	Yes	No	Time Purg	ged Dry:	······	am/pm
We	Il Volume:			liters		Sample Date:	SNW10	1	Time of Sa	ampling:	tris	am/pm

Bottle

List: 1L Raw, 500mL Nitric

Field Measurements

ft

ft

70.66

Electric Water Level Indicator

Stabilization		Temp	Spec.		DO	ORP	Turbidity	Water	Pumping	mL	Discription:
(3 consecutive)		(°C)	Cond.	pН	(mg/L)	(mV)	(NTU)	Level (ft)	Rate	Removed	Clarity, Color, Odor, Ect.
SEQ #	Time	``	±5%	±0.1	±10%	±20 mV	±10%	0.25 ft	mL/min		clear, partly cloudy, cloudy
1	1100	7.46	2068	6.68	3.95	48.0	739.0	70,55	100.0	500.0	Forther Clarchy
2	1130	8,44	204B	6,60	0.87	43.8	137.0	70,54	100.0	300.0	Partly Clarding
3	1200	8.63	ZOSE	6162	0.72	43.9	88.1	70,65	100.0	3000.0	Clear
4	1205	BSS	2051	6,63	0.70	43,4	77.5	70.65	140.0	500.0	Clean
5	1210	8.67	2052	6.63	0.70	43.5	72.4	70.67	100.0	5000	cles
6	1215	8,60	2054	6.63	0.71	43.4	75,2	70.65	100.0	500.0	Cliz
7											
8											
. 9											
10											
Stabilized: Yes No Total Volume Removed: 8000,0 mL											

Stabilized: (Yes)

Total Volume Removed: 2000, mL



Chain of Custody Record

Project Name:	Event:					Work Order Number: 82-320/							
OTP Coyote - Blue	4th Qtr 2019												
Report To: Otter Tail Power Attn: Josh Hollen Address: PO Box 496 Fergus Falls, MN 5 phone:	Carbon Copy: Attn: Address:				Name of Sampler(s): Jarenny Wayer								
	on Bo				Bot	tle 1	tle Type Field Parameters Anal					Analysis	
Lab Number Sample ID W4535 FB Blue W4532 Blue 6 W4537 Blue 7/MS7/MS W4539 Blue 13 W4539 Blue 14 W4539 Blue 15 W4540 Blue 15	5 Nor 19 5 Nor 19	NA 1040 1437- 1025 1505 1325 1215	$ \begin{array}{ c c c c c } & & & & & & \\ \hline & & & & & & \\ & & & & &$	Appearance (Clear, Party Cloudy, Cloudy, Cloudy,	X X X X X X I Iffer	X X X	250ml C filtered			(3) aug NA 7.70 8.37 7.05 6.92 7.88 8.60	PLOS S B NA 2096 2356 6866 5176 3168 2054	Fa NA 6.64 6.57 7.11 6.66 6.63 6.63	Analysis Required OTP CCR Appendix 3

Comments:

NB 6Nbs 19 (A)

Relinguished By:		Sam	ple Condition:	Received by:				
Name:	Date/Time	Location:	Temp (°C)	Name:	Date/Time			
	- EN2/19	Log In	-B-1 0.6	AR I.	S NOJ 19			
	1650	Walk In #2	7M562 / TM588	NOrchman	1650			
2			-)					