# 2020 Annual Groundwater Monitoring and Corrective Action Report

Blue Pit

*Coyote Station Beulah, North Dakota* 

Prepared for Otter Tail Power Company

January 2021



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234 West Century Avenue Bismarck, ND 58503 701.255.5460 www.barr.com

# 2020 Annual Groundwater Monitoring and Corrective Action Report

### Blue Pit

## Coyote Station Beulah, North Dakota

# January 2021

# Contents

Executi	ve Summary	V
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
2.1	1.1 Documentation	3
2.1	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	6

### List of Tables

Table 1CCR Rule RequirementsTable 2Groundwater Analytical Data Summary

## 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

# **Executive Summary**

This summary provides an overview of the Groundwater Monitoring & Corrective Action Program Status as required by §257.94(e)(6). The CCR unit operated under the detection monitoring program described in §257.94 at the start and at the end of the 2020 annual reporting period. The monitoring program did not identify any statistically significant increases over background for any of the constituents listed in appendix III to the CCR Rule; therefore, constituents listed in appendix IV to the CCR Rule were not monitored and the corrective action provisions of the CCR Rule were not triggered.

# 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 2020 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 2020. The monitoring program did not identify any statistically significant increases over background for any of the constituents listed in appendix III to the CCR Rule; therefore, constituents listed in appendix IV to the CCR Rule were not monitored and the corrective action provisions of the CCR Rule were not triggered.

## 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.

#### **Content Required in Report** Location **CCR Rule Reference** Map showing the CCR unit and all monitoring wells that are part of the Section 2.1.1 Documentation; see Figure 1 §257.90(e)(1) groundwater monitoring system Discuss any new or decommissioned §257.90(e)(2) Section 2.1.2 Changes to Monitoring System monitoring wells Provide the number and date groundwater samples were collected, Section 2.2 Monitoring and Analytical Results §257.90(e)(3) and the monitoring (i.e., detection or assessment) Discuss any transition between §257.90(e)(4) Section 2.4 Key Activities for Upcoming Year monitoring programs Other information specified in §257.90 §257.90(e)(5) Other information not required in this report through §257.98 §257.90(e)(6) Overview at beginning of annual report **Executive Summary**

#### Table 1 CCR Rule Requirements

# 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 2020. 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 2021 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 2020.

## 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 2020 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. Results are summarized in Table 2.

# 2.3 Key Actions Completed/Problems Encountered

The following key actions were completed for the groundwater monitoring program during 2020:

- Completed semiannual detection monitoring sampling for each background and downgradient well.
- Evaluated monitoring results pursuant to §257.93(h).
- Evaluated elevated calcium concentrations identified in monitoring well BLUE 14 during the fall 2019 sampling event. Resampling on December 27, 2019 (Appendix A) resulted in a lower concentration that did not verify the exceedance.
- Determined that a statistically significant increase over background levels did not occur for the constituents listed in appendix III at any downgradient monitoring well during the semiannual detection monitoring sampling events.

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 2021:

- Evaluate analytical results from both 2021 semiannual detection monitoring events for statistically significant increases (SSIs) according to the Statistical Analysis Plan, Appendix B of the CCR Groundwater Sampling and Analysis Plan (McCain, 2017).
- Continue the detection monitoring program in accordance with the CCR Rule.

# Table 2Groundwater Analytical Data Summary<br/>Coyote Station<br/>Otter Tail Power Company

		Location	BLUE 6	BLUE 6	BLUE 7	BLUE 7	BLUE 13	BLUE 13	BLUE 14	BLUE 14	BLUE 15	BLUE 15	BLUE 16	BLUE 16
		Date	5/06/2020	10/13/2020	5/05/2020	10/12/2020	5/06/2020	10/13/2020	5/05/2020	10/14/2020	5/06/2020	10/13/2020	5/06/2020	10/13/2020
Parameter	Analysis Location	Units												
Appendix III Parameters														
Boron	Lab	mg/l	0.39	0.39	0.41	0.39	0.44	0.60	0.60	< 0.5	0.45	0.46	0.43	0.39
Calcium	Lab	mg/l	155	192	167	198	215	189	336	300	121	122	123	152
Chloride	Lab	mg/l	5.3	8.5	5.7	8.1	59.7	48.2	8.2	9.7	6.1	9.0	5.5	9.6
Fluoride	Lab	mg/l	0.18	0.17	0.19	0.15	0.32	0.24	0.13	0.11	0.20	0.17	0.20	0.17
рН	Field	pH units	6.59	6.68	6.56	6.67	6.74	6.86	6.64	6.76	6.68	6.67	6.61	6.66
Solids, total dissolved	Lab	mg/l	1540	2250	1680	1980	4720	5090	4600	4280	2260	2360	1600	2030
Sulfate, as SO4	Lab	ma/l	688	982	775	987	2800	2490	2420	2100	966	883	698	853

# 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 1

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: 8 Jan 20 Lab Number: 19-W5109 Work Order #:82-3671 Account #: 006106 Date Sampled: 27 Dec 19 10:53 Date Received: 27 Dec 19 12:48 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 5.9C ROI

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	27 Dec 19	HT
Field pH	6.72	s.u.	0.1	SM 4500 H+ B	27 Dec 19 10:53	DJN
Field Temperature	4.68	Degrees C	0.1	SM 2550B	27 Dec 19 10:53	DJN
Field Conductivity	4946	umhos/cm	1	EPA 120.1	27 Dec 19 10:53	DJN
Calcium - Total	254	mg/l	1.0	6010D	7 Jan 20 17:41	SZ

Approved by:

CC-9 Jan 2020 Claudite K. Canrep

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

MVTL

### MINNESOTA VALLEY TESTING LABORATORIES, INC.

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### **Quality Control Report**

ab ID: 19-W5109 Project: OTP C					e - Blue Pit CC	Blue Pit CCR Work Order: 201982-3671											
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
Calcium - Total mg/l	20.0	120	80-120	100	20W6q	51.4	149	98	75-125	149	149	98	0.0	20	-	-	< 1 < 1

Page: 1 of 1

Samples were received in good condition on 27 Dec 2019 at 1248.

Temperature upon receipt at the Bismarck laboratory was 5.9°C. Samples were received on ice and the temperature blank contained ice crystals.

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

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.

(. Canit O 9 Jan 2020 Approved by:



# Laboratories, Inc. 2616 E. Broadway Bismarck, ND 58501

Phone (701) 258-9720

# **Chain of Custody Record**

Project Name:			Event:				Work Order Number:							
ОТІ	P Coyote - Blue Pit C	CR		4	th Qtr 2019			82-3071						
Report To: Attn: Address: phone: email:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0 jhollen@otpco.com	0496	Carbon C Attn: Address:	<b>Copy:</b> Address:				Nam Pc N	e of S Arre	Samp In Wa	ler(s):	~		
	Sampl	e Informatio	n				Bot	tle Ty	ре		Fi	eld Para	meters	Analysis
Lab Number	Sample ID	Date	Time	Sample Tung	Appearance (Clear, Partly Cloudy, Cloudy)	1 liter	500mL Nitric 500cc.	250mL Sulfuric Ulturic			Temp (°C)	Spec. Cond.	Hd	Analysis Required
W5109	Blue 14	270col9	1053	GW	clear		x				4,68	4946	6.72	-
														See attached email

Comments:

Relinquished By:	Sample Condition:					
Name:	Date/Time	Location:	Temp (°C)			
1 C	27Dec19	CLogdn)				
yall	1248	Walk In #2	TM562 / TM588			
2 /		(	TM8057 Rot 5.9			

Rece	eived by:
Name:	Date/Time
Tag	27 Dec2019
land	1243
0	

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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 CCR

Sample Description: FB Blue

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1020 Work Order #:82-1084 Account #: 006106 Date Sampled: 6 May 20 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 2.6C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	7 May 20	SD
Lab, pH	* 6.0	s.u.	0.1	SM4500 H+ B	7 May 20 18:00	SD
Fluoride	< 0.1	mg/l	0.10	SM4500-F-C	7 May 20 18:00	SD
Sulfate	< 5	mg/l	5.00	ASTM D516-11	13 May 20 10:50	EV
Chloride	< 1	mg/l	1.0	SM4500-Cl-E	11 May 20 12:44	EV
Total Dissolved Solids	< 10	mg/l	10	I1750-85	7 May 20 15:52	CC
Calcium - Total	< 1	mg/l	1.0	6010D	11 May 20 12:48	SZ
Boron - Total	< 0.1	mg/l	0.10	6010D	12 May 20 14:48	SZ

\* Holding time exceeded

Approved by:

11 26 20 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 concentration of other analytes ! = Due to sample quantity + = Due to internal standard response 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 CCR

Sample Description: Blue 6

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1021 Work Order #:82-1084 Account #: 006106 Date Sampled: 6 May 20 10:25 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

#### PO #: 48895

Temp at Receipt: 2.6C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	6 50		0 1	EPA 200.2	7 May 20 6 May 20 10:25	SD JSM
Field pH Lab pH	6.59 * 7.1	s.u. s.u.	0.1	SM4500 H+ B	7 May 20 18:00	SD
Field Appearance	Clear		NA	SM 2110	6 May 20 10:25	JSM
Field Temperature	9.76	Degrees C	0.1	SM 2550B	6 May 20 10:25	JSM
Field Conductivity	2084	umhos/cm	1	EPA 120.1	6 May 20 10:25	JSM
Fluoride	0.18	mg/l	0.10	SM4500-F-C	13 May 20 18:00	EV
Sulfate	688	mg/l	1.0	SM4500-C1-E	11 May 20 13:24	EV
Total Dissolved Solids	1550	mg/l	10	I1750-85	7 May 20 15:52	CC
Calcium - Total	155	mg/l	1.0	6010D	11 May 20 12:48	SZ
Boron - Total	0.39	mg/l	0.10	6010D	12 May 20 14:48	SZ

\* Holding time exceeded

Approved by:

15May 2020 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016





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 CCR

Sample Description: Blue 7

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1022 Work Order #:82-1084 Account #: 006106 Date Sampled: 5 May 20 13:15 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 2.6C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	7 May 20	SD
Field pH	6.56	s.u.	0.1	SM 4500 H+ B	5 May 20 13:15	JSM
Lab, pH	* 7.1	s.u.	0.1	SM4500 H+ B	7 May 20 18:00	SD
Field Appearance	Clear		NA	SM 2110	5 May 20 13:15	JSM
Field Temperature	9.64	Degrees C	0.1	SM 2550B	5 May 20 13:15	JSM
Field Conductivity	2191	umhos/cm	1	EPA 120.1	5 May 20 13:15	JSM
Fluoride	0.18	mg/l	0.10	SM4500-F-C	7 May 20 18:00	SD
Sulfate	775	mg/l	5.00	ASTM D516-11	13 May 20 10:50	EV
Chloride	5.7	mg/l	1.0	SM4500-Cl-E	11 May 20 13:24	EV
Total Dissolved Solids	1660	mg/l	10	I1750-85	7 May 20 15:52	CC
Calcium - Total	167	mg/l	1.0	6010D	11 May 20 12:48	SZ
Boron - Total	0.41	mg/l	0.10	6010D	12 May 20 14:48	SZ

\* Holding time exceeded

Approved by:

15 May 2020 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

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#### 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 CCR

Sample Description: Blue 13

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1023 Work Order #:82-1084 Account #: 006106 Date Sampled: 6 May 20 9:45 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

#### PO #: 48895

Temp at Receipt: 2.6C

	As Receive Result	ed	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 Calcium - Total Boron - Total	6.74 * 7.4 Clear 9.88 4412 0.32 2800 59.7 4920 215 0.44	s.u. s.u. Degrees C umhos/cm mg/l mg/l mg/l mg/l mg/l mg/l	0.1 0.1 NA 0.1 1 0.10 5.00 1.0 10 1.0 0.10	EPA 200.2 SM 4500 H+ B SM4500 H+ B SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-11 SM4500-C1-E I1750-85 6010D 6010D	7 May 20 6 May 20 9:45 7 May 20 18:00 6 May 20 9:45 6 May 20 9:45 6 May 20 9:45 7 May 20 18:00 13 May 20 10:50 11 May 20 13:24 7 May 20 15:52 11 May 20 12:48 12 May 20 14:48	SD JSM SD JSM JSM SD EV EV EV CC SZ SZ

\* Holding time exceeded

Approved by:

Cc 15 May 2020 Clauditte K. Cantlo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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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 CCR

Sample Description: Blue 14

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1024 Work Order #:82-1084 Account #: 006106 Date Sampled: 5 May 20 15:40 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

PO #: 48895

Temp at Receipt: 2.6C

	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	6.64 * 7.2 Clear 10.0 5412 0.12 2420 8.2 4610	s.u. s.u. Degrees C umhos/cm mg/l mg/l mg/l mg/l	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 D516-11 SM4500-C1-E 11750-85	7 May 20 5 May 20 15:40 7 May 20 18:00 5 May 20 15:40 5 May 20 15:40 5 May 20 15:40 7 May 20 15:40 13 May 20 10:50 11 May 20 13:24 7 May 20 15:52	SD JSM SD JSM JSM SD EV EV EV CC
Calcium - Total Boron - Total	336 0.60	mg/l mg/l	1.0 0.10	6010D 6010D	11 May 20 13:48 12 May 20 14:48	SZ SZ

\* Holding time exceeded

Approved by:

15M24 2020 Clauditte K. Cantle

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016





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 CCR

Sample Description: Blue 15

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1025 Work Order #:82-1084 Account #: 006106 Date Sampled: 6 May 20 13:45 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

#### PO #: 48895

Temp at Receipt: 2.6C

	As Recei Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	7 May 20	SD
Field pH	6.68	s.u.	0.1	SM 4500 H+ B	6 May 20 13:45	JSM
Lab, pH	* 7.2	s.u.	0.1	SM4500 H+ B	7 May 20 18:00	SD
Field Appearance	Clear		NA	SM 2110	6 May 20 13:45	JSM
Field Temperature	10.4	Degrees C	0.1	SM 2550B	6 May 20 13:45	JSM
Field Conductivity	3037	umhos/cm	1	EPA 120.1	6 May 20 13:45	JSM
Fluoride	0.20	mg/l	0.10	SM4500-F-C	7 May 20 18:00	SD
Gulfate	966	mg/l	5.00	ASTM D516-11	13 May 20 10:50	EV
Chloride	6.1	mg/l	1.0	SM4500-C1-E	11 May 20 13:24	EV
Total Dissolved Solids	2260	mg/1	10	I1750-85	7 May 20 15:52	CC
Colgium - Total	121	$m\alpha/1$	1.0	6010D	11 May 20 13:48	SZ
Boron - Total	0.45	mg/l	0.10	6010D	12 May 20 14:48	SZ

\* Holding time exceeded

Approved by:

CC 15 May 2020 Clauditte K. Cantlo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

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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 CCR

Sample Description: Blue 16

Event and Year: Spring 2020

Report Date: 13 May 20 Lab Number: 20-W1026 Work Order #:82-1084 Account #: 006106 Date Sampled: 6 May 20 12:20 Date Received: 6 May 20 15:40 Sampled By: MVTL Field Services

#### PO #: 48895

Temp at Receipt: 2.6C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	7 May 20	SD
Field DH	6.61	s.u.	0.1	SM 4500 H+ B	6 May 20 12:20	JSM
Lab. pH	* 7.1	s.u.	0.1	SM4500 H+ B	7 May 20 18:00	SD
Field Appearance	Clear		NA	SM 2110	6 May 20 12:20	JSM
Field Temperature	11.0	Degrees C	0.1	SM 2550B	6 May 20 12:20	JSM
Field Conductivity	2170	umhos/cm	1	EPA 120.1	6 May 20 12:20	JSM
Fluoride	0.19	mg/l	0.10	SM4500-F-C	7 May 20 18:00	SD
Sulfate	695	mg/l	5.00	ASTM D516-11	13 May 20 10:50	EV
Chloride	5 5	mg/1	1.0	SM4500-Cl-E	11 May 20 13:24	EV
Total Dissolved Solids	1590	$m\alpha/1$	10	I1750-85	7 May 20 15:52	CC
Calgium - Total	123	$m\alpha/1$	1.0	6010D	11 May 20 13:48	SZ
Boron - Total	0.43	mg/l	0.10	6010D	12 May 20 14:48	SZ

\* Holding time exceeded

Approved by:

5 May 20 Do 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

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#### Page: 1 of 1

### **Quality Control Report**

Lab IDs: 20-W1020 to 20-W	1026	Pre	oject: OT	P Coyote	e - Blue CCR		Work Or	der: 202	082-1084	1							
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	105 108	80-120 80-120	$\begin{array}{c} 0.400 \\ 0.400 \\ 0.400 \\ 0.400 \end{array}$	20-D1424 20-W1021 20-W1022	0.35 0.39 0.41	0.70 0.81 0.83	88 105 105	75-125 75-125 75-125	0.70 0.81 0.83	0.71 0.79 0.81	90 100 100	1.4 2.5 2.4	20 20 20	- - -	-	< 0.1
Calcium - Total mg/l	20.0 20.0	112 111	80-120 80-120	100 100	20W1022q 20W1028q	167 24.4	249 122	82 98	75-125 75-125	249 122	250 122	83 98	0.4 0.0	20 20	- - -		< 1 < 1 < 1 < 1
Chloride mg/l	30.0 30.0 30.0 30.0	93 92 92 92	80-120 80-120 80-120 80-120	30.0 30.0	20-W1014 20-W1022	5.7 5.7	32.1 31.7	88 87	80-120 80-120	32.1 31.7	32.2 31.6	88 86	0.3 0.3	20 20	- - -	- - -	< 1 < 1 < 1 < 1
Fluoride mg/l	0.50	104	90-110	0.500 0.500	20-W1014 20-W1022	0.19 0.18	0.70 0.70	102 104	80-120 80-120	0.70 0.70	0.71 0.70	104 104	1.4 0.0	20 20	-	-	< 0.1 < 0.1
pH units	-	-	-	-	-	-	-	-	-	7.1 7.1	7.1 7.1	-	0.0 0.0	20 20	-	-	-
Sulfate mg/l	100	103	80-120	500	20-W1022	775	1250	95	80-120	1250	1280	101	2.4	20	-	-	< 5
Total Dissolved Solids mg/l	-	-	-	-	-	-	-		-	1550 1660	1700 1670	-	9.2 0.6	20 20	-	-	< 10

Samples were received in good condition on 6 May 2020 at 1540.

Temperature upon receipt at the Bismarck laboratory was 2.6°C.

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.

Approved by:

<u>C. Gurl</u> 15May 2020



Groundwater Assessment

Event: Spring 2020	
- [0	
Sample ID: Blue, 6	
Sampling Personal:	

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

 Weather Conditions:
 Temp:
 °F
 Wind:
 @
 Precip:
 Sunny / Partly Cloudy / Cloudy

 Well INFORMATION
 SAMPLING INFORMATION

 Well Locked?
 YES
 NO
 Purging Method:
 Bladder
 Control Settings:

Well Locked?	XES	NO		
Well Labeled?	VES	NO		
Casing Strait?	(YES	NO		
Grout Seal Intact?	YES	NO	Ń	ot Visible
Repairs Necessary?				
Casin	g Diameter:	2	11	
Water Level Be	efore Purge:	61.	03	ft
Total De	pth of Well:	79,	10	ft
W	ell Volume:		11.1	liters
Depth to To	op of Pump:	77	1,24	ft
Water Level Af	ter Sample:	6	9,90	ft
Measureme	nt Method:	Electric \	Nater Lev	vel Indicator

SAM	<b>PLING IN</b>
Bladder	
Bladder	
YES	(NO)
YES	NO)
	SAM Bladder Bladder YES YES

Control Setti	ings:
Purge: S	Sec.
Recover: / S	Sec.
PSI: 00	

Bottle List:	
2-1 Liter Raw	
2-500mL Nitric	
500mL Nitric (filtered)	
250mL Sulfuric	

FIELD READINGS

Stabilization Para	neters	Temp.	Spec.		DO	ORP	Turbidity	Watarlaya	Pumping	Liters	Appearance or Comment
(3 Consecutiv	e)	(°C)	Cond.	hu hu	(mg/L)	(mV)	(NTU)	vvaler Lever	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
5 May 2020	1055	Start of Wel	l Purge								
- •)	1100	9,30	2312	667	2.28	-0.3	71000.0	64.00	400.0	2000.0	Clarchy
	1110	9.29	2123	6.70	5,12	39,4	87.3	71.65	400.0	4000,0	Clear
	1120	9,19	2/40	6,71	251	38.4	113.0	78.13	400.0	4000.0	Both Clorde
	1130	9.47	2122	6.69	6,59	38.7	98.7	Pelow Pay	400.0	4000.0	Parthy claroly
		Purged	Dry			-					
692 2020	1020	Prosed	well to	clear li	*			61.14	100.0-	5000	
	1025	9,76	2084	6,59	1.05	64.4	19.0	65,90	100.0	500.0	Clean
			L								
	Well St	abilized?	YES	NÒ				Total Vo	lume Purged:	14500.0	Liters
Sample Date	Timo	Temp.	Spec.		I		Turbidity				Appearance or Comment
Sample Date	Time	(°C)	Cond.	pn			(NTU)				Clarity, Color, Odor, Ect.
68/2020	1025	9.76	2084	6.59			19.0				Cler
Comments:											
	I										



Groundwater Assessment

Wind:

Company:	OTP Coyote
Event:	Spring 2020
Sample ID:	Blue 7
Sampling Personal:	-length-

Sunny / Partly Cloudy / Cloudy

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720 Weather Conditions:

Temp:

60 °F

N@ 5-10

### SAMPLING INFORMATION

Precip:

WELL INFORMATION									
Well Locked?	(YES)	NO							
Well Labeled?	YES	NO							
Casing Strait?	(YES)	NO		-					
Grout Seal Intact?	YES	NO	Not	Visible					
Repairs Necessary?			$\subseteq$						
Casin	2'	1							
Water Level Be	efore Purge:	76	.5Z	ft					
Total De	pth of Well:	97	65	ft					
W	/ell Volume:	<b>D</b> aga Anara		liters					
Depth to To		-	ft						
Water Level Af	ter Sample:	78	3,67	ft					
Measureme	ent Method:	Electric W	/ater Leve	l Indicator					

<i>U/ 1111</i>	
Bladder	
Bladder	
YES	CON)
<b>YES</b>	NO
115/115	D
	Bladder Bladder YES YES

Bottle List:
2-1 Liter Raw
2-500mL Nitric
500mL Nitric (filtered)
250mL Sulfuric

1.6	
Control Se	ttings:
Purge: 5	Sec.
Recover: 2.5	Sec.
psi: 60	

### FIELD READINGS

Stabilization Para	imeters	Temp.	Spec.	24	DO	ORP	Turbidity	Water Lovel	Pumping	Liters	Appearance or Comment
(3 Consecuti	ve)	(°C)	Cond.	рп	(mg/L)	(mV)	(NTU)	vvaler Lever	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
5 May 2020	1153	Start of Wel	l Purge								
	1158	9,68	2260	6.62	3.04	19.6	41.9	78.62	200.0	1000.0	Clea
	1230	9.57	2214	6.65	2.51	12.6	46.8	78.70	200.0	6400.0	Clear
	1300	9,61	2200	6,59	2.54	15.3	11.8	78.65	200.0	6000.0	Clea
	1305	9.65	2193	6.58	2.42	16.1	10.5	78.67	2:0.0	100000	Char
	1310	9.62	2192	6.58	2.60	16.1	9.71	78.66	200,0	1000.D	Cha.
	1315	9,64	2191	6.56	2.50	16.2	9.16	78.65	200.0	1000.0	Clas
		Porget	Dr.								
		- ·									
	Well St	abilized?	YES	NO				Total Vo	lume Purged:	16,400.0	Liters
Coursel a Data		Temp.	Spec.		[		Turbidity			]	Appearance or Comment
Sample Date	lime	(°C)	Cond.	рн			(NTU)				Clarity, Color, Odor, Ect.
5 May 2020	1315	9.64	2191	6.56			9.16				Clear
Comments:				· · ·							
L											



# Field Da

Groundwater

tasheet			Company:		OTP Coyote			
			Event:		Spring 2020			
Assessn	nent		Sample ID:			Blue 15		
			Sampling F	Personal:		nota-		
Wind:	N	@ 5-10	>	Precip:	Sunny / Pa	rtly Cloudy / Cloud	у	
			SAN	1PLING IN	FORMATIO	DN .		
	Purging Me	ethod:	Bladder		1	Control Settin	ngs:	
	Sampling N	1ethod:	Bladder		]	Purge: 5	Sec.	
	Dedicated I	Equipment?	YES	(NO)		Recover: 15	Sec.	
			• • • • • • • • • • • • • • • • • • •		-	PSI: 110		
	Duplicate S	ample?	YES	NO				
	Duplicate S	ample ID:						
	r				7			
		Bottl	e List:		4			
	2-1 Liter Rav	v						
	2-500mL Nit	ric						
	500mL Nitric	(filtered)						
	250mL Sulfu	ric			J			
FI	ELD READIN	IGS	-					
DO	ORP	Turbidity	Mater Level	Pumping	Liters	Appearance or Co	mment	
(mg/L)	(mV)	(NTU)	water Lever	Rate	Removed	Clarity, Color, Od	or, Ect.	
±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbi	d, turbid	
4.SB	46.6	233.0	110.86	900,0	4000,0	Pathy Clareley		

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

......

Weather Conditions:	Temp:	50°F	Wind:	N@ 5-10	Precip:	Sunny / Partly Cloudy / Cloudy
WELL INFORMATION					SAMPLING IN	NEORMATION

WELL INFORMATION					
Well Locked?	YES	NO			
Well Labeled?	YES	NO			
Casing Strait?	YES	NO			
Grout Seal Intact?	YES	(NÒ	Not	Visible	
Repairs Necessary?					
Casin	g Diameter:	2"			
Water Level Be	efore Purge:	105,	79	ft	
Total De	pth of Well:	116.6	06	ft	
W	/ell Volume:	6.	7	liters	
Depth to To	op of Pump:	114.1	5	ft	
Water Level At	fter Sample:	·///.	85	ft	
Measureme	ent Method:	Electric W	ater Level	Indicator	

Stabilization Para	meters	Temp.	Spec.	лH	DO	ORP	Turbidity	Water Level	Pumping	Liters	Appearance or Comment
(3 Consecutiv	/e)	(°C)	Cond.	pir	(mg/L)	(mV)	(NTU)		Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
5 May 2020	1025	Start of Wel	Purge								
	1030	9,62	4214	6.64	4.58	46.6	233.0	110.86	400,0	2,000,0	Pathy Clarely
	1040	9.69	4075	6.61	6.44	62.7	187.0	113,72	400.0	4000,0	Parthy Chevely
	1045	9.63	4062	6.60	6.36	63.2	235.0	Below Pury	400.0	20000	Parthy Clouder
	_	Purge	& Dry								1 /
6 May 2020	0440	Project	ciell for	5 mm te	cles line			107.56			
Samole	0945	9.68	4412	6.74	5.50	87.3	69.6	108,40	100.0	50010	Clear
	Well S	tabilized?	YES	NO				Total Vo	lume Purged:	\$300.0	Liters
Sample Date	Timo	Temp.	Spec.	- H		ĺ	Turbidity			:	Appearance or Comment
Sample Date	inne	(°C)	Cond.	рп			(NTU)				Clarity, Color, Odor, Ect.
6 May 2020	0945	9.66	4412	6,74	5,50		69.6				Cher
Comments:											
	·							<u></u>			



Groundwater Assessment

°F

Wind:

Company:	OTP Coyote
Event:	Spring 2020
Sample ID:	Blue 14
Sampling Personal:	Jay Elen

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Weather Conditions:

@

Precip: Sunny / Partly Cloudy / Cloudy SAMPLING INFORMATION

WELL INFORMATION					
Well Locked?	(YES)	NO			
Well Labeled?	<b>YE</b> Ş	NO			
Casing Strait?	YES	NO			
Grout Seal Intact?	YES	NO	Not Visible		
Repairs Necessary?					
Casin	g Diameter:	2	<u>n</u>		
Water Level Be	efore Purge:	7=	F. YR ft		
Total De	pth of Well:	E :	7.00 ft		
W	ell Volume:		liters		
Depth to To	op of Pump:		ft		
Water Level At	ter Sample:		ft		
Measureme	ent Method:	Electric \	Water Level Indicator		

Temp:

Purging Method:	Bladder				
Sampling Method:	Bladder				
Dedicated Equipment?	YES	(NO)			
		~~~			
Duplicate Sample?	YES	NO			
Duplicate Sample ID:					
Bottle List:					
2-1 Liter Raw					

1	
	Purge: 5
	Recover: 25
	PSI: 50

Control Settings:

Sec. Sec.

25	50mL Sulfuric
FIELD	READINGS

2-500mL Nitric 500mL Nitric (filtered)

Stabilization Parameters		Temp.	Spec.		DO	ORP	Turbidity	Water Level	Pumping	Liters	Appearance or Comment	
(3 Consecutiv	/e)	] (°C)	Cond.	μn	(mg/L)	(mV)	(NTU)	water Lever	Rate	Removed	Clarity, Color, Odor, Ect.	
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid	
E.1 0020	1410	Start of Well	Start of Well Purge									
S Play 2000	1415	10,04	5541	6.65	6.18	-16.3	468.0	78,15	100.0	500.0	Closely	
	1445	9,93	5467	6.65	5.1	39.7	98-8	78,25	100.0	3000.0	clear	
	1500	9,97	5494	6.70	6.66	27.1	32.0	78,32	100.0	1500,0	Clear	
	ISIS	9.85	5480	6,66	6.39	29,2	1612	78.40	100.0	1500.0	Clear	
	1530	10.16	5431	6.64	6,25	30.7	7.84	78,37	100.0	1500.0	clean	
	1535	10:07	5419	6.64	6,18	30.1	8.01	78,39	10000	500.0	Clear	
	1540	10.00	5412	6,64	6.12	29,7	8,03	78.41	100.0	500.0	Clas	
		1										
			$\sim$ 2									
	Well St	abilized?	YES	NO				Total Vol	ume Purged:	9000.0	Liters	
		Temp.	Spec.				Turbidity			ł	Appearance or Comment	
Sample Date	lime	(°C)	Cond.	рн			(NTU)				Clarity, Color, Odor, Ect.	
5 May 2020	1540	10,00	5412	6.64			8.03				Cluar	
Comments:												
											5	
	•											

MVT			Field Datasheet							
2616 E. Broadway Ave, I	Bismarck, ND									
Phone: (701) 258	-9720									
Weather Condition	s:	Temp:	60 °F	Wind:	A C					
	WELL INF	ORMATIC	DN .		• • • •					
Well Locked?	(ES)	NO			Purging Meth					
Well Labeled?	YES	NO			Sampling Met					
Casing Strait?	YES	NO			Dedicated Equ					
Grout Seal Intact?	VES)	NO	Not Visible		L					

2"

75.09

~

-----75,27

\$7.8S

**Electric Water Level Indicator** 

ft ft

ft

ft

liters

Repairs Necessary?

Casing Diameter:

Well Volume:

Total Depth of Well:

Depth to Top of Pump:

Water Level After Sample: Measurement Method:

Stabilization Parameters

Water Level Before Purge:

	Company:		OTP Coyote						
ieer	Event:		Spring 2020						
nt	Sample ID	•	Blue 15						
	Sampling	Personal:	Jun Khan						
*									
1 @ 5-1	6	Precip:	Sunny / Partly Cloudy / Cloudy						
	SAN	<b>APLING IN</b>	IFORMATION						
Purging Method:	Bladder		Control Settings:						
Sampling Method:	Bladder		Purge: S Sec.						
Dedicated Equipment?	YES	NO	Recover: 75 Sec.						
			PSI: 50						
Duplicate Sample?	YES	(NO)							

Bottle List:	
2-1 Liter Raw	
2-500mL Nitric	
500mL Nitric (filtered)	
250mL Sulfuric	

Duplicate Sample ID:

#### DO ORP Turbidity

Stabilization Parameters		Temp.	Spec.	nH	DO	ORP	Turbidity	Mator Loval	Pumping	Liters	Appearance or Comment	
(3 Consecutiv	ve)	(°C)	Cond.	pn.	(mg/L)	(mV)	(NTU)	vvalei Levei	Rate	Removed	Clarity, Color, Odor, Ect.	
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid	
6M2 2020	1255	Start of Well Purge										
0 (	1200	10.97	3448	6,71	0,87	-19,0	552,0	75,18	10000	500,0	Pirthy Cloudy	
	1330	10,75	3040	6,67	0.67	74.4	6.61	75.26	100.0	3000,0	Clean	
	1335	10,52	3036	6.67	0.65	24.9	5,24	75.26	100.0	500, D	Clear	
	1340	10,47	3036	6,68	0,69	24.8	5.66	75,27	6.00.0	500.0	Cles-	
	1345	10,37	3037	6.68	0.67	73,8	4.25	75.27	100.0	500.0	Cles-	
						-						
	Well St	abilized?	YES	NO				Total Vol	ume Purged:	5000,0	Liters	
Comula Data	Time	Temp.	Spec.				Turbidity				Appearance or Comment	
Sample Date	lime	(°C)	Cond.	рн			(NTU)				Clarity, Color, Odor, Ect.	
6 May 2020	1345	10.37	3037	6.68			4.25				Che	
Comments:			₹ĵ									
	1											

**FIELD READINGS** 



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# **Field Datasheet**

Groundwater Assessment

Company:	OTP Coyote
Event:	Spring 2020
Sample ID:	Blue 1/2
Sampling Personal:	Jegeby

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

 Weather Conditions:
 Temp:
 CO °F
 Wind:
 W@ S-co
 Precip:
 Sunny / Partly Cloudy / Cloudy

 WELL INFORMATION
 SAMPLING INFORMATION

WELL INFORMATION										
Well Locked?	¥E\$	NO								
Well Labeled?	TES	NO								
Casing Strait?	YES	NO								
Grout Seal Intact?	/YES	NO	Not Visible							
Repairs Necessary?										
Casin	g Diameter:	2	11							
Water Level Be	efore Purge:	73	65 ft							
Total De	pth of Well:	97	,5& ft							
W	/ell Volume:		- liters							
Depth to To	op of Pump:		– ft							
Water Level At	fter Sample:	7	🐔 77 ft							
Measureme	ent Method:	Electric V	Vater Level Indicator							

Purging Method:	Bladder								
Sampling Method:	Bladder								
Dedicated Equipment?	YES	NO NO							
Duplicate Sample?	YES	(NO)							
Duplicate Sample ID:									
Bottle List:									
2-1 Liter Raw									

(		
	Control Settings:	
	Purge: 5	Sec.
	Recover: こS	Sec.
	PSI:	

2-1 Liter Raw
2-500mL Nitric
500mL Nitric (filtered)
250mL Sulfuric

FIELD READINGS

Stabilization Parameters		Temp.	Spec. Cond.	рН	DO	ORP	Turbidity Water Level	Pumping	Liters	Appearance or Comment		
(3 Consecutive)		(°C)			(mg/L)	(mV)	(NTU)	water Level	Rate	Removed	Clarity, Color, Odor, Ect.	
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid	
6 Pres 2020	1055	Start of Well Purge										
	1100	11.05	2227	6.65	1.51	21,6	568.0	73,60	100,0	500.0	Partly Cherly	
	1130	10.83	2177	6.61	0.93	43.7	103.0	73,79	100.0	3000.0	For they claring	
	1200	10,84	2182	6.61	1.16	49. C	37.7	73,75	100.0	3000.0	Clean	
	1210	10,95	2178	6,60	1,43	50.9	33.2	78,75	100,0	1000.D	Clear	
	1215	10,61	2175	6.61	1.49	48.1	30.7	75,76	1020	500,0	Close	
	1220	11,02	2170	6.61	1.50	45,8	29.2	75.76	100.0	500,0	Class	
						• -						
		<u> </u>										
	Well St	abilized?	(YES	NO				Total Vol	ume Purged:	<u>85ad.0</u>	Liters	
Comple Date	Time	Temp.	Spec.	للم			Turbidity				Appearance or Comment	
Sample Date	nne	(°C)	Cond.	рп			(NTU)				, Clarity, Color, Odor, Ect.	
6 May 2020	(220	11.02	2170	6.61			29.2				Clear	
Comments:											1	

MVTL			Fiel	d Da	atasl	neet	Company: Event:	OTP Coyote Spring 2020	: )
			Su	rface wat	er Assessm	ient	Sample ID:		Contact, Water Pool
2616 E. Broadway Ave, B	ismarck, ND						Sampling Per	rsonal:	Jun the
Phone: (701) 258	-9720								l
Veather Conditions	5:	Temp:		°F	Wind:	@	Pr	recip: Sunny / Pa	tly Cloudy / Cloudy
	SITE INFO	RMATION	1				SAMP	LING INFORMATIO	N
ource:	Pond					Sampling Method:	Grab		
						Bo	ttle List.		
						1 Liter Raw			
						500mL Nitric		<del>er H</del> Cl	
						250mL Sulfuric			
					CIC				
Comula Data	Time	Temp.	Spec.		DO	ORP			Appearance or Comment
Sample Date	Time	(°C)	Cond.	рн	(mg/L)	(mV)			Clarity, Color, Odor, Ect.
othy 2020	0950					1			
mmonte	I			1					

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

# **Chain of Custody Record**

Project Name:				Evont	appear de						Work Ord	or Numbor	
	OTP Covote	- Blue CCR	2	Event:			Snri	ing	2020				INRY
Report To: Attn: Address: Phone: Email:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0 jhollen@otpco.com	0496	<u> </u>	CC:			901		2020			By: Mth	Y
Lab Number	Sample ID	Date bate	lime	Semple	11 no 1400	500 Fan	Som Minic	Som Sincitation	lemo (°C)	Spec. Con.	5 Ha	<sup>4</sup> DDeenance	Analysis Required
W1020	FB Blue	6 May 2020	NA	GW	X	X		1	NA	NA	NA	NA	
150121	Blue 6	6 May 2020	1075	GW	X	x			9.76	2084	6,59	Clean	1
101032	Blue 7/MS7/MSD7	5 May 2020	1315	GW	3	3		$\square$	9.64	2191	6,56	Clear	
101023	Blue 13	6 May 2020	0945	GW	X	x			9.88	4412	6.74	Clear	1
101024	Blue 14	5 May 2020	1540	GW	X	x			10.00	5412	6,64	Clear	1
101025	Blue 15	6 May 2020	1345	GW	X	x		1	10.37	3037	668	Cha	
WIOZO	Blue 16	6 Man 2020	1220	GW	X	X			11.02	2170	6,61	Clear	OTP CCR App 3
													1
													1
													1
													1

Comments:

Relinquished By		Sample C	ondition Tol	Rec	eived By	
, Name	Date/Time	Location	Temp (°C)	Manne		Date/Time
	6 May 2020	togin	2.6	ININ ALL	(0)	Nay 2020
	1540	Walk In #2	7M562 DTM805	llol/m		J 1540
2						



1 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 CCR

Sample Description: FB Blue

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4034 Work Order #:82-2879 Account #: 006106 Date Sampled: 12 Oct 20 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

PO #: 48895

Temp at Receipt: 2.0C

	As Receiv Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion	+ 6 7	<i>a</i> . 11	0 1	EPA 200.2	15 Oct 20	HT HT
Lab, pH Fluoride	* 6.7 < 0.1	mg/l	0.10	SM4500-F-C	16 Oct 20 17:00	HT
Sulfate	< 5	mg/l	5.00	ASTM D516-11	21 Oct 20 9:34	SD SD
Chloride Total Dissolved Solids	< 10	mg/l	10	USGS 11750-85	16 Oct 20 16:15	HT
Calcium - Total	< 1	mg/l	1.0	6010D	16 Oct 20 11:44	MDE
Boron - Total	< 0.1	mg/1	0.10	6010D	19 000 20 13:00	54

\* Holding time exceeded

Approved by:

(C 5NIIY NOO Clauditte 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





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 CCR

Sample Description: Blue 6

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4035 Work Order #:82-2879 Account #: 006106 Date Sampled: 13 Oct 20 11:00 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

PO #: 48895

Temp at Receipt: 2.0C

EDA 200 2 15 Oct 20 HT	it RL Reference Analyzed Analyst
Metal Digestion       6.68       s.u.       0.1       SM 4500 H+ B       13 Oct 20 11:00       JSI         Field pH       * 6.8       s.u.       0.1       SM 4500 H+ B-11       15 Oct 20 17:00       HT         Lab, pH       * 6.8       s.u.       0.1       SM 4500 H+ B-11       15 Oct 20 11:00       JSI         Field Appearance       Clear       NA       SM 2110       13 Oct 20 11:00       JSI         Field Conductivity       2385       umhos/cm       1       EPA 120.1       13 Oct 20 11:00       JSI         Fluoride       0.17       mg/l       0.10       SM4500-F-C       16 Oct 20 18:00       HT         Sulfate       982       mg/l       5.00       ASTM D516-11       21 Oct 20 9:34       SD         Chloride       8.5       mg/l       2.0       SM4500-Cl-E-11       19 Oct 20 9:19       SD         Total Dissolved Solids       2250       mg/l       10       USGS I1750-85       16 Oct 20 16:15       HT         Calcium - Total       192       mg/l       1.0       6010D       16 Oct 20 11:44       MD         Boron - Total       0.39       mg/l       0.10       6010D       19 Oct 20 13:00       SZ	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

\* Holding time exceeded

Approved by:

(C 5N112020 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 int CERTIFICATION: ND # ND-00016

dilution as coded below: # = Due to concentration of other analytes + = Due to internal standard response

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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 CCR

Sample Description: Blue 7

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4036 Work Order #:82-2879 Account #: 006106 Date Sampled: 12 Oct 20 14:21 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

#### PO #: 48895

Temp at Receipt: 2.0C

	As Receiv Result	ved	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 Calcium - Total Boron - Total	6.67 * 6.9 Clear 9.97 2434 0.15 987 8.1 1980 198 0.39	s.u. s.u. Degrees C umhos/cm mg/l mg/l mg/l mg/l mg/l mg/l	0.1 0.1 NA 0.1 1 0.10 5.00 2.0 10 1.0 0.10	EPA 200.2 SM 4500 H+ B SM4500-H+-B-11 SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-11 SM4500-C1-E-11 USGS I1750-85 6010D 6010D	15 Oct 20 12 Oct 20 14:21 15 Oct 20 17:00 12 Oct 20 14:21 12 Oct 20 14:21 12 Oct 20 14:21 16 Oct 20 14:21 16 Oct 20 14:21 16 Oct 20 9:34 19 Oct 20 9:19 16 Oct 20 16:15 16 Oct 20 12:44 19 Oct 20 13:00	HT JSM HT JSM JSM HT SD SD HT MDE SZ

\* Holding time exceeded

Approved by:

10 5NOV 2020 Clauditte K. Cantle

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016





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 CCR

Sample Description: Blue 13

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4037 Work Order #:82-2879 Account #: 006106 Date Sampled: 13 Oct 20 9:40 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

PO #: 48895

Temp at Receipt: 2.0C

	As Receive Result	ed	Method RL	Method Reference	Date Anal	yzed		Analyst
Metal Digestion Field pH Lab, pH Field Appearance Field Temperature Field Conductivity Fluoride Sulfate Chloride Total Dissolved Solids	6.86 * 7.1 Clear 9.32 5446 0.24 2490 48.2 5090	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 2.0 10	EPA 200.2 SM 4500 H+ B SM4500-H+-B-11 SM 2110 SM 2550B EPA 120.1 SM4500-F-C ASTM D516-11 SM4500-C1-E-11 USGS I1750-85	15 0 13 0 13 0 13 0 13 0 13 0 13 0 14 0 21 0 19 0 16 0	ct     20       ct     20	9:40 17:00 9:40 9:40 17:00 9:34 9:19 16:15	HT JSM HT JSM JSM HT SD SD HT MDF
Calcium - Total Boron - Total	189 0.60	mg/l mg/l	0.10	6010D	10 C	ct 20	13:00	SZ

\* Holding time exceeded

Approved by:

10 5NOV 2020 Clauditte K. Cantlo

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

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5 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 CCR

Sample Description: Blue 14

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4038 Work Order #:82-2879 Account #: 006106 Date Sampled: 14 Oct 20 10:20 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

#### PO #: 48895

Temp at Receipt: 2.0C

	As Received Result	1	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	15 Oct 20	HT
Field pH	6.76	s.u.	0.1	SM 4500 H+ B	14 Oct 20 10:20	JSM
Lab. pH	* 7.0	s.u.	0.1	SM4500-H+-B-11	15 Oct 20 17:00	HT
Field Appearance	Clear		NA	SM 2110	14 Oct 20 10:20	JSM
Field Temperature	9.17	Degrees C	0.1	SM 2550B	14 Oct 20 10:20	JSM
Field Conductivity	5039	umhos/cm	1	EPA 120.1	14 Oct 20 10:20	JSM
Fluoride	0.11	$m\alpha/1$	0.10	SM4500-F-C	16 Oct 20 17:00	HT
gulfate	2100	$m\sigma/1$	5.00	ASTM D516-11	21 Oct 20 9:34	SD
Chloride	9.7	mg/1	2.0	SM4500-Cl-E-11	19 Oct 20 9:19	SD
Tetal Diggolyod Solida	4280	$m_{\rm cl}/1$	10	USGS 11750-85	16 Oct 20 16:15	HT
Total Dissolved Solids	300	$m_{\alpha}/1$	1.0	6010D	16 Oct 20 12:44	MDE
Boron - Total	< 0.5 @	mg/l	0.10	6010D	19 Oct 20 13:00	SZ

\* Holding time exceeded

Approved by:

5NOV2000 Clauditte K. Canto

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 con ! = Due to sample quantity + = Due to int # = Due to concentration of other analytes
+ = Due to internal standard response

# MVTL

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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 CCR

Sample Description: Blue 15

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4039 Work Order #:82-2879 Account #: 006106 Date Sampled: 13 Oct 20 14:15 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

#### PO #: 48895

Temp at Receipt: 2.0C

	As Recei <sup>.</sup> Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	15 Oct 20	HT
Field pH	6.67	s.u.	0.1	SM 4500 H+ B	13 Oct 20 14:15	JSM
Lab. pH	* 6.9	s.u.	0.1	SM4500-H+-B-11	15 Oct 20 17:00	HT
Field Appearance	Clear		NA	SM 2110	13 Oct 20 14:15	JSM
Field Temperature	11.0	Degrees C	0.1	SM 2550B	13 Oct 20 14:15	JSM
Field Conductivity	3226	umhos/cm	1	EPA 120.1	13 Oct 20 14:15	JSM
Fluoride	0.17	$m\alpha/1$	0.10	SM4500-F-C	16 Oct 20 17:00	HT
Gulfate	883	mg/1	5.00	ASTM D516-11	21 Oct 20 9:34	SD
Chloride	9.0	mg/1	2.0	SM4500-Cl-E-11	19 Oct 20 9:19	SD
Total Dissolved Solids	2360	$m\alpha/1$	10	USGS I1750-85	16 Oct 20 16:15	HT
Calgium - Total	122	$m\alpha/1$	1.0	6010D	16 Oct 20 12:44	MDE
Boron - Total	0.46	mg/1	0.10	6010D	19 Oct 20 13:00	SZ

\* Holding time exceeded

Approved by:

10 SNAV 7020 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

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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 CCR

Sample Description: Blue 16

Event and Year: Fall 2020

Report Date: 27 Oct 20 Lab Number: 20-W4040 Work Order #:82-2879 Account #: 006106 Date Sampled: 13 Oct 20 12:42 Date Received: 15 Oct 20 8:00 Sampled By: MVTL Field Service

#### PO #: 48895

Temp at Receipt: 2.0C

	As Receiv Result	ved	Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	15 Oct 20	HT
Field pH	6.66	s.u.	0.1	SM 4500 H+ B	13 Oct 20 12:42	JSM
Lab. pH	* 6.8	s.u.	0.1	SM4500-H+-B-11	15 Oct 20 17:00	HT
Field Appearance	Clear		NA	SM 2110	13 Oct 20 12:42	JSM
Field Temperature	10.8	Degrees C	0.1	SM 2550B	13 Oct 20 12:42	JSM
Field Conductivity	2540	umhos/cm	1	EPA 120.1	13 Oct 20 12:42	JSM
Fluoride	0.17	mg/l	0.10	SM4500-F-C	16 Oct 20 17:00	HT
Sulfate	853	mg/l	5.00	ASTM D516-11	21 Oct 20 9:34	SD
Chloride	9.6	mg/l	2.0	SM4500-Cl-E-11	19 Oct 20 9:19	SD
Total Dissolved Solids	2030	mg/l	10	USGS I1750-85	16 Oct 20 16:15	HT
Calcium - Total	152	mg/l	1.0	6010D	16 Oct 20 12:44	MDE
Boron - Total	0.39	mg/l	0.10	6010D	19 Oct 20 13:00	SZ

\* Holding time exceeded

Approved by:

1 5NOV 2020 Clauditte K. Canto

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

RL = Method Reporting Limit

CERTIFICATION: ND # ND-00016

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**MEMBER** ACIL

## **Ouality Control Report**

Lab IDs: 20-W4034 to 20-V	V4040	Pr	oject: OT	P Coyote	e - Blue CCR		Work Or	der: 202	082-2879	9							
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	0.20	90	80-120	0.400	20-W4036	0.39	0.75	90	75-125	0.75	0.76	92	1.3	20	-	-	<0.1 <0.1
Calcium - Total mg/l	20.0 20.0	118 114	80-120 80-120	500 100	20W4001q 20W4036q	244 198	750 280	101 82	75-125 75-125	750 280	740 289	99 91	1.3 3.2	20 20	- - -		<1 <1 <1 <1 <1
Chloride mg/l	30.0	97	80-120	30.0	20-W4036	8.1	37.4	98	80-120	37.4	37.2	97	0.5	20	-	-	< 2
Fluoride mg/l	0.50 0.50	102 100	90-110 90-110	0.500 0.500 0.500	20-W4036 20-W4038 20-W4059	0.15 0.11 0.10	0.61 0.65 0.59	92 108 98	80-120 80-120 80-120	0.61 0.65 0.59	0.62 0.71 0.62	94 120 104	1.6 8.8 5.0	20 20 20	-	-	< 0.1 < 0.1
pH units	-		-	-	-	-		-	-	6.9 7.0	7.1 7.1		2.9 1.4	20 20	-	-	-
Sulfate mg/l	100	102	80-120	500	20-W4036	987	1440	91	80-120	1440	1410	85	2.1	20	-	-	< 5
Total Dissolved Solids mg/l								-	-	1980 1960 3180	2000 1990 3250		1.0 1.5 2.2	20 20 20		- -	< 10 < 10

Samples were received in good condition on 15 Oct 2020 at 0800.

Temperature upon receipt at the Bismarck laboratory was 2.0°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.

For some analytes, the reported results were elevated due to additional dilutions required to minimize the effects of sample matrix. Approved by: 5NOV 3030 ٠

Page: 1 of 1



**Groundwater Assessment** 

	Company:		OTP Coyote		
•	Event:		Fall 2020		
	Sample ID	: ,	Blue	6	
	Sampling I	Personal:	In the		
				_	
5-10	>	Precip:	Sunny / Partly C	oudy/ Clo	oudy
	SAN	/IPLING IN	FORMATION		
d:	Bladder			Control Se	ettings:
od:	Bladder		Purge:	5	Sec.
pment?	YES	(NO)	Recove	er: 15	Sec.
			PSI:	BO	

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9720

Weather Conditio	ons:	Temp:	<u>50 °F</u>	Wind:	5@5~10	<u>۲ ۲</u>	recip:	Sunny / Pa	rtly cloudy / C	loudy
WELL INFORMATION						SAM	PLING IN	FORMATIO	N	
Well Locked?	YES	(NO)			Purging Method:	Bladder			Control	Settings:
Well Labeled?	(YES)	NO			Sampling Method:	Bladder			Purge: 5	Sec.
Casing Strait?	YES	NO			Dedicated Equipment?	YES	(NO)		Recover: iS	Sec.

Casing Stratts		<u> </u>	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casir	ng Diameter:	2"	
Water Level B	efore Purge:	65.8	S ft
Total De	epth of Well:	79,15	5 ft
v	Vell Volume:	8	2 liters
Depth to T	op of Pump:	72.5	FG ft
Water Level A	fter Sample:	72.	α <sub>o</sub> ft
Measurem	ent Method:	Electric W	ater Level Indicator

Sampling Method:	Bladder	
Dedicated Equipment?	YES	(NO)
Duplicate Sample?	YES	(NØ)
Duplicate Sample ID:		

Bottle List:	
2-1 Liter Raw	
2-500mL Nitric	
500mL Nitric (filtered)	
250mL Sulfuric	

#### FIELD READINGS

Stabilization Para	meters	Temp.	Spec.	11	DO	ORP	Turbidity	Mator Loval	Pumping	Liters	Appearance or Comment
(3 Consecutiv	/e)	(°C)	Cond.	рн	(mg/L)	(mV)	(NTU)	water Lever	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
17 Drt 2020	1136	Start of Well	Purge								
10000	1141	10,51	1988	6.68	0.29	70.8	214.16	68.60	300,0	1500,0	Slightly Turbled
	1201	11.04	2040	6.72	4.85	117.0	77.77	78.76	300.0	6000.0	Clear
	1211	11.35	2298	6.77	6,70	128.1	56.32	Below Ping	300.0	3000,0	Che
		Purged	Dry					Ĺ			
13052070	1055	Pinged	well for	v Simin	to clear	Ine			_		
1300. 0	1100	9.82	2385	6.68	5-52	191.4	43.04	Betan	200.0	1000.0	Slightly Turbid
						,		66.07			
	Well St	abilized?	YES	NO				Total Vol	lume Purged:	11,5000	Liters
		Temp.	Spec.				Turbidity				Appearance or Comment
Sample Date	lime	(°C)	Cond.	рн			(NTU)				Clarity, Color, Odor, Ect.
13 Oct 2020	1100	9.82	7385	6,68			43.04				Clear
Comments: Challed and the second seco											
	1 stight Gestrution in Well about 60 down. Your did not go allown Shaperty										
13 Oct 2		id to pu	ll pumper	due to	stuck c	heek bui	before	Perging 1	well Sar	Smin	



**Groundwater Assessment** 

Company:	OTP Coyote	
Event:	Fall 2020	
Sample ID:	Blue 7	
Sampling Personal:	-Jyth	

2616 E. Broadway Ave, Bismarck, ND

Weather Conditions:	9720 :	Temp:	60	°F	Wind:	<u>`</u> S	@ 5-10	)	Precip:	Sunny/Pa	artly Cloudy / Cloudy
1	WELLINFO	ORMATIO	N					SAM	IPLING IN	FORMATIO	ON
Well Locked?	(YES)	NO		······································	1	Purging Me	thod:	Bladder		]	Control Settings:
Well Labeled?	YES	NO	· · · · · · · · · · · · · · · · · · ·		1	Sampling M	lethod:	Bladder		1	Purge: Sec.
Casing Strait?	YES	NO		1	Dedicated E	Equipment?	YES	(NO)	1	Recover: 2.5 Sec.	
Grout Seal Intact?	YES	S NO Not Visible		1	Barton		~ ~ ~		_	PSI:	
Repairs Necessary?					]	Duplicate S	ample?	(YES	NO		
Casin	g Diameter:	2	**			Duplicate S	ample ID:	MSVV	ISD	1	
Water Level Be	efore Purge:	82.	62	ft						-	
Total De	pth of Well:			ft			Bottl	e List:			
W	ell Volume:	<u> </u>	-	liters	ł	2-1 Liter Raw	/	14			
Depth to To	op of Pump:			ft		2-500mL Niti	ric	1-50	Oml Nifih		
Water Level Af	ter Sample:	82.	.73	<u>ft</u>	]	500mL Nitric	: (filtered)				
Measureme	nt Method:	Electric \	Nater Level	Indicator	l	250mL Sulfu	ric			J	
					FIE	LD READIN	IGS				
Stabilization Paran	neters	Temp.	Spec.	۵W	DO	ORP	Turbidity	Water Level	Pumping	Liters	Appearance or Comment
(3 Consecutive	e)	(°C)	Cond.	μn	(mg/L)	(mV)	(NTU)	Water Level	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min	I	clear, slightly turbid, turbid
12 Oct 2020	1246	Start of Well	Purge			· · · · · · · · · · · · · · · · · · ·					
	1251	10.29	2321	6.72	0.12	12.2	104.93	82.74	100,0	500,0	Clear
	1311	10.05	2381	6,66	0.56	3.0	48.85	62.73	100.0	2000.0	Cles
	1331	10.22	7848	6.67	1.11	13.4	32,54	02.74	100.0	200.0	Olez
	1351	10.15	2009	6.66	2.64	19.8	29.86	82.62	1000	2000.0	Olin
	141(	10.12	2411	6. 10	2.73	25.7	25.61	02.68	100.0	200.0	Clear
	1416	10.06	2402	6.60	2.79	55.6	25.02	82,70	<u> 100.D</u>	500.0	Clear
	1421	9,97	2434	6.61	2.52	32.9	24.88	62.71	100.10	500.0	<u> </u>
					L						
						<b></b>				<b> </b>	
l		[			]		1	<u> </u>		00000	L
	Well Sta	abilized?	YES	NO				i otai voi	ume Purged:	<u> </u>	Liters
Sample Date	Time	Temp.	Spec.	pН			Turbidity				Appearance or Comment
		(°C)	Cond.			ļ					Clarity, Color, Odor, Ect.
12 Dct 2020	1421	9,97	2434	bibt			24.00				[ Clear
Comments:	120-27	1220 c	11.1.1 0	2. 1.1 Rh.	- lo .		·····	<u>.</u> ,		<del></del>	
	VOUCT	6	Heeter 4	rela ister					·····-		



**Groundwater Assessment** 

Company:	OTP Coyote
Event:	Fall 2020
Sample ID:	Blue ↓
Sampling Personal:	high

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-9	9720			00	M.C. al.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Draciny	Suppy / Dr	pthy Cloudy / Cloudy
Weather Conditions:		Temp:	40	-F	wind:	>	@>~(0		Precip:	Sunny Pa	intry Cloudy / Cloudy
,	WELL INFO	ORMATIO	V					SAN	IPLING IN	FORMATIC	ON
Well Locked?	ked? YES NO				Purging Me	thod:	Bladder			Control Settings:	
Well Labeled?	YES	(es no			Sampling M	lethod:	Bladder			Purge: 5 Sec.	
Casing Strait?	YES	NO	_	-		Dedicated E	Equipment?	YES	(NÒ)		Recover:15 Sec.
Grout Seal Intact?	YES	NO>	Not V	/isible						-	PSI: 100
Repairs Necessary?						Duplicate S	ample?	YES	NO	H	
Casin	g Diameter:	2	11			Duplicate S	ample ID:				
Water Level Be	efore Purge:	105	.54	ft	المتعقبين					-	
Total De	pth of Well:	1161	65	ft	·		Bottl	e List:			
W	/ell Volume:	6		liters		2-1 Liter Raw	/				
Depth to To	op of Pump:	114	12	ft		2-500mL Nit	ric			1	
Water Level Af	fter Sample:	113	,05	ft		500mL Nitric	: (filtered)				
Measureme	ent Method:	Electric \	Nater Level	Indicator		250mL Sulfu	ric			]	
					FIEI		IGS				
Stabilization Parar	neters	Temp.	Spec.	l	DO	ORP	Turbidity		Pumping	Liters	Appearance or Comment
(3 Consecutiv	e)	(°C)	Cond.	рн	(mg/L)	(mV)	(NTU)	water Level	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
0 01+20202	1056	Start of Well	Purge	· · · · · · · · · · · · · · · · · · ·							
120000	1101	10.25	4672	6,85	1.11	142.1	41.17	111.80	300.0	1500.0	Clear
	1121	10,88	45526	7.15	0.14	1.6	7.21	Below Puny	300.0	6000.0	Chier
		Proced	Dry								
13 Oct 2020	0935	Purged	ust ('	for Smi	h to cla	an Im		106.85	+00.0	500.0	Ctor.
	340	9,32	5446	6.86	1.50	77.6	2:05		20,0	1000.0	Cler
					ļ			L			· · · · ·
							<u> </u>				
	Well St	abilized?	YES	NO				Total Vo	lume Purged:	8500.0	Liters
		Temp.	Spec.		1		Turbidity				Appearance or Comment
Sample Date	lime	(°C)	Cond.	рн			(NTU)				Clarity, Color, Odor, Ect.
13000 2020	0940	9,32	5446	6.86			2.05				Clear
Comments:							······				
											······································

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# **Field Datasheet**

**Groundwater Assessment** 

Company:	OTP Coyote							
Event:	Fall 2020							
Sample ID:	Blue 14							
Sampling Personal:	Ser Hang							

2616 E. Broadway Ave, Bismarck, ND

Phone:	701) 258-972	'n
Phone.	101 200-312	-0

Weather Conditions	•	Temp:	40	۴	Wind:	N	@ 10-15	·	Precip:	Sunny / Pa	artly Cloudy Cloudy
	WELL INFO	ORMATIO	V					SAM	IPLING IN	FORMATI	ON
Well Locked?	YES-	NO				Purging Met	thod:	Bladder		]	Control Settings:
Well Labeled?	YES?	NO				Sampling M	ethod:	Bladder			Purge: 5 Sec.
Casing Strait?	TES	NO				Dedicated E	quipment?	YES	NO		Recover: 55 Sec.
Grout Seal Intact?	YES	NO	NO Not Visible						75	-	PSI:
Repairs Necessary?						Duplicate Sa	ample?	YES	<u>NO</u>		
Casir	g Diameter:	2	, ¥1			Duplicate Sa	ample ID:			]	
Water Level B	efore Purge:	79.9	3	ft						-	
Total De	pth of Well:			ft			Bottl	e List:			4
V	Vell Volume:			liters		2-1 Liter Raw	1			1	
Depth to T	op of Pump:			ft		2-500mL Nitr	ic				
Water Level A	fter Sample:			ft		500mL Nitric	(filtered)				
Measuremo	ent Method:	Electric \	Nater Level	Indicator		250mL Sulfur	ic			1	
					FIE	LD READIN	IGS				
Stabilization Para	meters	Temp.	Spec.		DO	ORP	Turbidity	Mator Loval	Pumping	Liters	Appearance or Comment
(3 Consecutiv	re)	(°C)	Cond.	рн	(mg/L)	(mV)	(NTU)	water Level	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
14 D.+2-20	19W	Start of Well	Purge								• • • • • • • • • • • • • • • • • • •
	0905	9.46	5297	6.77	3.24	64.4	104.67	B0,25	100:0	500.0	Clear
	0935	9.23	5068	6.78	8.31	129,5	58,35	87.11	(20.0	3002.0	Chin
	1005	9.27	5034	6.76	1.77	136.4	37.17	81.70	102,0	3200,0	Clean
	1010	9,17	5054	6.75	7.62	133.4	24.75	81.87	100,0	500,0	Clear
	1015	9.15	502B	6.75	7.42	130.0	21.77	81.98	100.0	500.0	Cles
	1020	9,17	5039	6.76	7.27	126.1	29,09	B2.16	0.0	5020	[ [losy
						1					
х. 	Well St	abilized?	YES	NO				Total Vol	ume Purged	: 6000,0	Liters
Sample Date	Time	Temp.	Spec.	pH			Turbidity				Appearance or Comment
		(°C)	Cond.	P''		<u> </u>	(NTU)			<u> </u>	Clarity, Color, Odor, Ect.
14 0.12020	1020	9.17	5039	16:76			29.09				Clear
Comments:		<u></u>						······			

1.12

 $\mathcal{D}_{\mathcal{L}}^{(n)}$ 



**Groundwater Assessment** 

Company:	OTP Coyote
Event:	Fall 2020
Sample ID:	Blue 15
Sampling Personal:	len Mon-

2616 E. Broadway Ave, Bismarck, ND

Phone: (701) 258-	9720	- <u></u>		<u></u>	NA/	<del>_</del>	0	<u></u>	Dragins	Suppy / De	the Cloudy
Weather Conditions	•	Temp:	50	<del>۲</del>	Wind:	7	@ 5~10		Precip:	Sunny / Pa	iruy cioudy / cioudy
	WELL INFO	ORMATIO	N		_			SAN	IPLING IN	FORMATIO	DN
Well Locked?	YES	NO				Purging Me	thod:	Bladder			Control Settings:
Well Labeled?	TES	NO				Sampling M	ethod:	Bladder			Purge: Sec.
Casing Strait?	TYES NO			1	Dedicated E	quipment?	YES	NO		Recover: 5 Sec.	
Grout Seal Intact?	YES NO Not Visible			4						PSI: 80	
Repairs Necessary?					4	Duplicate Sa	ample?	YES	(NØ	4	
Casin	g Diameter:	2	2"	- <u></u>	-	Duplicate Sa	ample ID:			J	
Water Level B	efore Purge:	-19,	·10	π	4	r				1	<b>*.</b>
Total De	pth of Well:		<u> </u>	π	4		Botti	e List:		-	
N N	/ell Volume:		<u> </u>	iiters	-	2-1 Liter Raw					
Depth to T	op of Pump:		- Mars	$\frac{\pi}{4}$	4	2-500mL Nitr					
Water Level A	rter Sample:	- 1-	1,08	It	4	500mL Nitric	(filtered)				
Measureme	ent Method:	Electric	water Level	inuicator	1	250mL Sultur				1	
					FIE	LD READIN	IGS				·····
Stabilization Parameters Temp. Spec.		DO	ORP Turbidity Wate		Water Level Pumping		Liters	Appearance or Comment			
(3 Consecutive) (°C) Cond.		(mg/L)	(mV)	(NTU)	Rate		Removed	Clarity, Color, Odor, Ect.			
Purge Date	Time		±5%	±0.1	±10%	±10 <5.0		(ft)	mL/Min	<u> </u>	clear, slightly turbid, turbid
13 Det 2027	1320	Start of Wel	Purge								
	1325	12.20	3221	6.86	2.98	4.4	37.00	49.0C	119200	500,0	Clear
	1355	10.63	2847	6.60	0.77	34.6 3.01		79,65	100,0	3000	Clear
	1405	11.09	3229	6.67	0,91	26,7 8,30		49.00	100.0	0,000	Clear
	1410	10.94	5225	603	0.03	27.6 6.24		+1.00	1000	>00.0	New
	1415	11.04	SLCG	6.61	0,12	27.0 5.04		<u>+9.6+</u>	100.0	20.0	Ules
				<u> </u>							
					+						
	<u> </u>				-						······
L	I Well St	L abilized?	YES)	NO	J	L	1	Total Vo	lume Purged	5500,0	Liters
Sample Data	Time	Temp.	Spec.	nH		T	Turbidity		fa.		Appearance or Comment
Sample Date	inne	(°C)	Cond.	<u> ни</u>			(NTU)			<u> </u>	Clarity, Color, Odor, Ect.
13 Oct 2000	1415	11.04	3226	6.67			5.04			L	Clear
Comments:											

			Fiol	d Da	Itach	noot		Company:		OTP Coyo	te
MVI					icasi			Event:		Fall 2020	
			G	roundwate	r Assessme	ent		Sample ID:	-		Blue 16
2616 E. Broadway Ave, I	Bismarck, ND							Sampling P	Personal:		the second secon
Phone: (701) 258	3-9720					······································					
Weather Condition	s:	Temp:	50	°F	Wind:	<u> </u>	@ 5-1	0	Precip:	Sunny / Pi	artly Cloudy / Cloudy
	WELL INFO	ORMATIO	N					SAN	<b>IPLING IN</b>	FORMATI	ON
Well Locked?	YES	NO			]	Purging Me	thod:	Bladder			Control Settings:
Well Labeled?	YES	NO				Sampling N	lethod:	Bladder		1	Purge: <u>Sec.</u>
Casing Strait?	YES	NO		*****	1	Dedicated I	Equipment?	YES	(NO)		Recover: $S \leq Sec.$
Grout Seal Intact?	YES	NO	Not	lisiple	4					Т	PSI: 60
Repairs Necessary?			. 17	<u>,                                    </u>		Duplicate S	ample?	YES		4	
Casi	ng Diameter:		<u></u>	4		Duplicate S	ample ID:		- 	1	
Water Level t	serore Purge:	<u></u>	.76	ft		r	Bott	a list.		7	
TotarD	Well Volume:			liters	4	2-1 Liter Raw				4	
Denth to Top of Pump:				-	2-500ml Nit	ric					
Water Level After Sample: 49.04 ft				500mL Nitric (filtered)							
Measurement Method: Electric Water Level Indicator			250mL Sulfu	ric							
					FIF		IGS	<u></u>		-	
Stabilization Para	ameters	Temp.	Spec.	l	DO	ORP	Turbidity		Pumping	Liters	Appearance or Comment
(3 Consecuti	ive)	(°C)	Cond.	рн	(mg/L)	(mV)	(NTU)	water Level	Rate	Removed	Clarity, Color, Odor, Ect.
Purge Date	Time		±5%	±0.1	±10%	±10	<5.0	(ft)	mL/Min		clear, slightly turbid, turbid
13 oct 2020	1122	Start of Wel	Purge		· · · · · · · · · · · · · · · · · · ·						· · · · · · · · · · · · · · · · · · ·
	1127	9,68	2501	6.97	3.10	91.5	350,83	79.03	100.0	502.0	Slightly Turbed
	1157	10,51	2526	6.67	0,59	63.3	100.57	79.06	102.0	3000,0	Clear
	1227	10,77	2536	6.6F	0.67	71.9	49.98	19.04	100,0	3000.10	<u>Alen</u>
	1232	10,85	2538	6.67	0.64	12.5	36.73	79.05	1017.0	500.0	liler
	1237	10.06	2530	6,66	0.60	+ 73.7	54.00	14,06	100.0	500	Upor
	1242	10.76	7540	6,60	0.56	+ + >13	37,00	1-1.00	100,0	50.0	Clear
							·				
						1				1	
	Well Sta	abilized?	(YÈS	NO				Total Vo	lume Purged	: BOD, 0	Liters
r		Temp	Spec.	<u> </u>	T	1	Turbidity	T	1	1	Appearance or Comment
Sample Date	Time	(°C)	Cond.	рН			(NTU)			1	Clarity, Color, Odor, Ect.

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

# **Chain of Custody Record**

OTP Coyote - Blue CCR         Fall 2020         SO- 28 TA           Report To:         Otter Tail Power Attn:         Josh Hollen Address:         CC:         Collected By:           Address:         PO Box 496 Fergus Falls, MN 56538-0496         CC:         So- 28 TA           Email:         ihollen@otpco.com         So         So           Mumber         Sample ID         So         So         So           Sample ID         So         So         So         So           VN VDS-4         FB Blue         Iz 0x12020         NA         GW X         NA         NA         NA         Analysis Required           VN VDS-4         FB Blue         Iz 0x12020         NA         GW X         NA         NA         NA         NA           VN VDS-4         FB Blue         Iz 0x12020         NA         GW X         NA         NA         NA         NA           VN VDS-5         Blue 6         Is 0x12020         MA         GW X         NA         NA         NA         NA           VN VDS-5         Blue 13         Is 0x12020         GW X         X         PI.62         Z585         6.6.6         Clax           VN VDS-5         Blue 13         Is 0x12020         GW X	Project Name:				Event:							Work Ord	er Number:	
Report To:       Otter Tail Power       CC:       Collected By:         Attn:       Josh Hollen       Address:       PO Box 496         Fergus Falls, MN 56538-0496       Fergus Falls, MN 56538-0496       Sample ID       Sample ID <th colspan="6">OTP Coyote - Blue CCR</th> <th></th> <th>Fa</th> <th>all 2</th> <th>2020</th> <th></th> <th colspan="3">PT 86 - 68</th>	OTP Coyote - Blue CCR							Fa	all 2	2020		PT 86 - 68		
Lab Number         Sample ID         <	Report To: Attn: Address: Phone: Email:	Otter Tail Power Josh Hollen PO Box 496 Fergus Falls, MN 56538-0496 jhollen@otpco.com										Collected	By:	✓.
W 4034       FB Blue       12 0+72020       NA       GW       X       X       NA       NA       NA       NA       NA         W 4035       Blue 6       13 0±72020       [100]       GW       X       X       9:62       2385       6:68       Clear         W 4035       Blue 7/MS7/MSD7       12 0±72020       H2 1       GW       3       3       1:977       2434       6:67       Clear         W 4057       Blue 13       13 0±72020       H2 1       GW       3       3       1:977       2434       6:67       Clear         W 4057       Blue 13       13 0±72020       0940       GW       X       X       9:32       5446       6:67       Clear         W 4035       Blue 14       14 0±72020       1020       GW       X       X       9:17       5039       6:76       Clear         W 4035       Blue 15       130±72020       14/5       GW       X       X       10:04       3226       6:67       Clear         W 4040       Blue 16       13 0±72020       1242       GW       X       10:76       25400       6:66       Clear         W 4040       Blue 16       13 0±72020 <t< td=""><td>Lab Number</td><td>Sample ID</td><td>Date</td><td>Time</td><td>Samou</td><td>The The</td><td>Son Raw</td><td>Soom Wiric</td><td>Com Chine Min</td><td>Temo Co.</td><td>Sole Co.</td><td>in Ha</td><td>ADDeed and</td><td>Analysis Required</td></t<>	Lab Number	Sample ID	Date	Time	Samou	The The	Son Raw	Soom Wiric	Com Chine Min	Temo Co.	Sole Co.	in Ha	ADDeed and	Analysis Required
W4035       Blue 6       13 0x+2500       1100       GW       X       X       9.82       2385       6.68       Cless         W40340       Blue 7/MS7/MSD7       12 0x+2520       H21       GW       3       3       9.82       2385       6.68       Cless         W40340       Blue 13       13 0x+2520       H21       GW       3       3       9.82       5446       6.67       Cless         W4057       Blue 13       13 0x+2520       0940       GW       X       X       9.32       5446       6.67       Cless         W4035       Blue 14       14 0x+2520       1020       GW       X       X       9.32       5446       6.67       Cless         W4035       Blue 15       13 0x+2520       1020       GW       X       X       9.17       5039       6x76       Cless         W4040       Blue 16       13 0x+2520       1242       GW       X       X       10.76       2540       6.66       Cless         W4040       Blue 16       13 0x+2520       1242       GW       X       10.76       2540       6.66       Cless         W4040       Blue 16       13 0x+2520       1242       <	W 4034	FB Blue	12 0.+ 2020	NA	GW	X	X		Τ	NA	NA	NA	NA	1
WHOSE       Blue 7/MSD7       12 0xt 2020       142 1       GW       3       3       9.97       2434       6.67       Cless         WHOST       Blue 13       130xt 2020       0940       GW       X       9.32       5446       6.67       Cless         WHOSS       Blue 14       140xt 2020       1020       GW       X       9.32       5446       6.67       Cless         WHOSS       Blue 14       140xt 2020       1020       GW       X       9.32       5446       6.67       Cless         WHOSS       Blue 15       130xt 2020       1020       GW       X       9.17       5039       6.76       Cless         WHOSS       Blue 15       130xt 2020       1415       GW       X       11.04       3226       6.67       Cless         WHOHO       Blue 16       130xt 2020       1242       GW       X       10.76       2540       6.66       Cless         WHOHO       Blue 16       130xt 2020       1242       GW       X       10.76       2540       6.66       Cless         WHOHO       Blue 16       130xt 2020       1242       10       10       10       10       10       10	W4035	Blue 6	13 20+2020	1100	GW	X	X			9.82	2385	6,68	Cle_	
Blue 13       IS 0c+2020       Oq 40       GW       X       X       9,32       5446       6.86       Clear         W40258       Blue 14       I4 0ct 2020       JO20       GW       X       X       9,17       5039       6.76       Clear         W40351       Blue 15       IS 0ct 2020       I4/5       GW       X       X       II.04       3226       6.67       Clear         W4040       Blue 16       IS 0ct 2020       I242       GW       X       X       II.04       3226       6.66       Clear         W4040       Blue 16       IS 0ct 2020       I242       GW       X       X       II.04       3226       6.66       Clear         W4040       Blue 16       IS 0ct 2020       I242       GW       X       X       II.04       3226       6.66       Clear         W4040       Blue 16       IS 0ct 2020       I242       GW       X       X       II.04       III.04       III.04       III.04<	WHOSE	Blue 7/MS7/MSD7	12 Dct 2020	1421	GW	3	3		Τ	9.97	2434	6.67	Cles-	1
W4028       Blue 14       14 0xt 2x20       1020       GW       X       Y       9,17       5039       6,76       Clear         W40391       Blue 15       130xt 2020       1415       GW       X       X       11.04       3226       6:67       Clear         W4040       Blue 16       130xt 2020       1242       GW       X       X       10.76       2540       6:66       Clear         W4040       Blue 16       130xt 2020       1242       GW       X       X       10.76       2540       6:66       Clear	W4057	Blue 13	130,+2020	0940	GW	X	X			9.32	5446	6.86	Cles	
W4039       Blue 15       I30+2020       I415       GW       X       X       II.04       3226       6.67       Clear         W4040       Blue 16       I30+2020       I242       GW       X       X       ID.76       2540       6.66       Clear         OTP CCR App 3	W4038	Blue 14	14 Oct 2020	1020	GW	X	X		T	9,17	5039	6.76	Cles	
W 4040         Blue 16         130ct 2020         1242         GW         X         IO.76         2540         6.66         Clear	W4039	Blue 15	1300+2020	1415	GW	X	X		$\top$	11.04	3226	6.67	Cles	
	W4040	Blue 16	130ct2020	1242	GW	X	X		$\top$	10.76	2540	6.66	Clear	OTP CCR App 3
									+					
									+		1			
							$\vdash$		+			1		
									1-		1			
									+					

Comments:

Relinquished By	Sample (	Condition	Received By			
Name	Date/Time	Location	Temp (°C)	Name	Date/Time	
1	15 Oct 2020 080	⊄Log In Walk In #2	TM562 / TM805	E-lydelan	15 Oct 2000 0800	
2				5		