

Wajed Shah

Drinking Water Officer Office of Drinking Water Environment and Climate Change Unit B – 284 Reimer Avenue Steinbach, MB R5G 0R5

March 21, 2025

Mr. Shah,

Re: 2024 Kleefeld Public Water System Report

Please find attached our annual Public Water System Report for the Community of Kleefeld.

This report will be posted on our website at **www.hanovermb.ca** by March 31, 2025 and hard copies will made available from our R.M.'s office at 28 Westland Drive in Mitchell, Manitoba. We will also notify residents that this report is available through our Facebook page.

If you have any questions or concerns, please contact Rob Driedger.

Sincerely,

la den

Rob Driedger, C.E.T. Manager of Engineering & Utilities Phone: 204-346-7121 E-Mail: rob.driedger@hanovermb.ca

Kleefeld Public Water System Annual Report

2024

Rural Municipality of Hanover March 1, 2025

Kleefeld Public Water System Annual Report 2024

March 1, 2025

Name of Public Water System: Kleefeld Public Water System

Name of legal owner: The Rural Municipality of Hanover

Contact: Rob Driedger, C.E.T., Manager of Engineering & Utilities Phone: (204) 346-7121 E-Mail: rob.driedger@hanovermb.ca

Website: www.hanovermb.ca

Water Systems Emergency #: (204) 326-4488

Name of Operators: Barry Broesky, Utility Operator, Class II Phone: (204) 371-0484 E-Mail: barry.broesky@hanovermb.ca

> Rob Friesen, Utility Operator, Class II Phone: (204) 371-8236 E-Mail: rob.friesen@hanovermb.ca

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Introduction

The 2024 Annual Report for the Town of Kleefeld summarizes the Water utility's ability to produce safe potable water and to meet Provincial regulations.

1. Description of Water System

The Kleefeld Public Water System provides potable drinking water to approximately 2090 residents within the community. Treated water produced at the water plant meets all aesthetic objectives as set forth in the Guidelines for *Canadian Drinking Water Quality*.

1.1 Water Supply Source

The Kleefeld Public Water System receives groundwater from one main drilled well as a well as a back-up well. Both wells draw from a water source at roughly 170 feet to 180 feet below the ground surface. Then main well in use at the time produces water at approximately 8.0 L/sec and this raw water is pumped to the water treatment plant reservoir. The raw water does contain some iron and manganese that it picks up in the rock aquifer.

1.2 Intake Structures

Not applicable.

1.3 Water Treatment Process

As the raw water enters the water treatment plant it is immediately treated with Chlorine and UV for disinfection along with HIB-5, which is an iron sequester which keeps any iron particles from settling out of the water causing staining in the piping. Once treated, the water is then stored in a 600,000 litre reservoir from where it can then be distributed throughout the watermain system.

1.4 Distribution System

Treated water from the reservoir is pumped through the mains into the distribution system via a 3hp jockey pump, 2-10hp duty pumps and a 30hp duty fire pump. The pumps distribute the water at pressures of around 55psi through 50mm, 100mm, 150mm, 200mm and 250mm watermains throughout the community. The watermains currently consists of either an AC or poly high density pipe construction.

1.5 Storage Reservoirs

As indicated above the storage reservoir is 600,000 litre concrete reservoir.

1.6 Number of Connections, Population Served and Types of Water Users

There are currently has 587 water connections with an estimated population in the community of 2090 people.

1.7 Classification and Certification

The Kleefeld Water Treatment Plant is classified as a Class 1 Water Treatment Facility and is currently operated by three utility operators with certification under the Environmental Act's Water and Wasterwater Facility Operators Regulation. *(See Appendix A – Operator Certification)*

In addition the plant is regulated under license number PWS-21-655-01 and complies with The Drinking Water Safety Act.

2. Disinfection System in Use

2.1 Type of Disinfection System Used

The Kleefeld Public Water System disinfects by adding 12% sodium hypochlorite solution to the water via a chlorinator pump. This produces a monochloramination disinfection that is complimented by two Ultra Violet Reactors that were installed in the summer of 2020.

2.2 Equipment Redundancy and Monitoring Requirements

As required by the *Drinking Water Safety Act*, the Kleefeld Public Water System ensures continuous disinfection as maintained at the plant by keeping stock of all spare parts required for the chlorinator. In addition, a complete spare chlorinator is kept at the plant.

Disinfectant residuals are monitored daily at the water treatment plant and periodically in the distribution system and recorded on the appropriate monitoring forms. Monthly monochloramine and UV report forms are sent to the regional Drinking Water Officer at the end of each month.

2.3 Disinfectant Residual Overall Performance Results

For 2024, the Kleefeld Public Water System was compliant in the audited time period. 100% of the daily monochloramine residual tests taken in 2024 were over the 0.3 mg/L limit.

3. List of Water Quality Standards

The Province of Manitoba has adopted a number of water quality standards from the *Guidelines for Canadian Drinking Water Quality*, developed by Health Canada. The parameters are health-based and they express the maximum acceptable concentration for a groundwater supply source. Concentration values in excess constitute a health-related issue and require corrective actions. The results for the Kleefeld Public Water System are summarized in the following table. It should be noted that of the four Barium tests taken from the mid-point of the distribution system, and the Nitrate Nitrite sample from a dead end with in the distribution system, during 2024. The general chemistry results were taken in 2023.

SOURCE	PARAMETER	STANDARD	FREQUENCY	TEST RESULTS
	Total Coliform	No TC	Bi-Weekly	100%
	E. Coli	No EC	Bi-Weekly	100%
GROUND WATER	Monochloramine	A monochloramine residual of at least 0.3 mg/L at all times at any point in the distribution system	Daily	100%
	Ultraviolet Disinfection	95% of water produced per month is disinfected within validated conditions	Continuous monitoring of UV dosage for each operating UV unit	100%
	Barium	2.0 mg/l	One sample taken Quarterly at the mid-point in the distribution system each year	1.8
	Nitrate	45 mg/l	One sample taken during July or August every year at a dead	0.0438
	Nitrite	3 mg/l	end sampling location in the distribution system	0.0174

Table : 1 Water	Quality Results
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SOURCE	PARAMETER	STANDARD	FREQUENCY	TEST RESULTS
	Arsenic	Less then or equal to 0.01 mg/L		raw – 3.46 µg/L treated – 2.06 µg/L
	Benzene	Less then or equal to 0.005 mg/L		raw - <0.00050 mg/L
	Ethylbenzene	Less then or equal to 0.14 mg/L	-	raw - <0.00050 mg/L
R	Flouride	Less then or equal to 1.5 mg/L	-	raw - 0.307 mg/L
VATI	Lead	Less then or equal to 0.005 mg/L in the water distribution system	One Raw and one	raw -< 0.050 μg/L
V D V	Manganese	Less then or equal to 0.12 mg/L	once every three	reated - <0.050 µg/L raw – 2.99 µg/L
ROUI	Trichloroethylene	Less then or equal to 0.005 mg/L	were taken Aug. 2023)	treated – 2.07 μg/L raw - <0.00050 mg/L
ס	Tetrachloroethylene	Less then or equal to 0.01 mg/L		raw - <0.00050 mg/L
_	Toluene	Less then or equal to 0.06 mg/L		raw - <0.00050 mg/L
	Total Xylenes	Less then or equal to 0.09 mg/L		raw - <0.00050 mg/L
	Uranium	Less then or equal to 0.02 mg/L		raw - <0.000010 treated - <0.000010

Table : 2 Water Quality Results General Chemistry

4. Water System Failures and Corrective Actions in 2024

August 15 we had a depressurization of the Water Distribution system. A result of our distribution pumps not turning back on when the generator started. We believe that the pumps did not turn on because of a setting issue on the VFDs that has since been recitfied. While sampling the distribution system we had two failed results that were due to rain water contaminating the samples we took at outside taps. After resampling at the same locations and getting the required results back we were able to lift the boil water advisory August 21, 2024

5. Additional Records Required

See appendix for Boil Water Notices and Rescind letters

6. Drinking Water Safety Order on your System and Actions Taken in Response

None

7. Warnings Issues or Charges Laid on the System in Accordance with the Drinking Water Safety Act

None

8. Water Quality Advisories

None

9. Major Expenses Incurred in 2024

Instillation of new truck fill station at the Kleefeld WTP at a cost of \$50,000.00

10. Future System Expansion and/or Increased Population

The community of Kleefeld continues to see rapid growth. Developments in the West and North side of town continue to expand and will grow in 2025. There has also been a permit taken out for a new development on the south side of Kleefeld. Brookridge Meadows Subdivision by Kleefeld Developments was issued a permit to construct or alter public water system on December 30th 2024. The permit is located in Appendix H. The R.M of Hanover with the assistance of Friesen Drillers has applied for a new Water Rights License with the province and we are waiting a response.

11. Appendix

- a. Operators Certification
- b. Testing Summary
- c. Analyses
- d. Operating License for Public Water System
- e. Monochloramine and UV Reports
- f. Incident Advisory Notification Plan
- g. Boil Water Documentation
- h. Construction Permits

<u>Appendix A</u>

Operator Certification

Water and Wastewater Facility Operators Certification Program

This is to certify

Barry A. Broesky

has qualified as aWater TreatmentClass IIWater DistributionClass IIWastewater TreatmentClass IIWastewater CollectionClass II

Operator

in accordance with the Water and Wastewater Facility Operators Regulation under The Environment Act.

Dated at Winnipeg, Manitoba this 7th day of April 2020.

 Certificate No.:
 2009-312

 Expires:
 2025 April 7

 Operator ID:
 00107

S Koilen

Director Manitoba Conservation and Climate

Certificate is the property of Manitoba Conservation and Climate and must be surrendered upon request.



Water and Wastewater Facility Operators Certification Program

This is to certify

Robert J. Friesen

has qualified as a

Water Treatment	Class II
Water Distribution	Class II
Wastewater Treatment	Class II
Wastewater Collection	Class II

Operator

in accordance with the Water and Wastewater Facility Operators Regulation under The Environment Act.

Dated at Winnipeg, Manitoba this 9th day of December 2020.

 Certificate No.:
 2015-260

 Expires:
 2025 December 9

 Operator ID:
 02505

S. Koilen

Director Manitoba Conservation and Climate

Certificate is the property of Manitoba Conservation and Climate and must be surrendered upon request.



Appendix B

Testing Summary

		Batch				Langie			Anious an	Ministriants		Page 1	eld Tents		Microbiological Tests		Total Matals
	Received Data	15ke	Evaluation		Matria	Sample Name	Sampling Date	ALSIO	Nitrate (as N) mg/L	INitrite (as N) mg/L	amphoneia, frant, field rog/L	Chiprine, mono, field mg/L	Chiorine, total, Reid reg/L	Tamperature, as recailed %	Collineme, Emberichia coli (1, coli) MPN/100ml	Collinson, Inital MPN/100ms	Bariam, total ur/L
VP2400719-001 (1)	10-01-3034	104.00	Within Limit		Water/Drinking Water	SLEFFELD 1 - NAW	09-01-2024	WP3400719-001						15.3	d	19	
W2400719-002 [1]	10/01-2024	104.00	Water Limit		Water/Drinking Water	KLEEFELD 2 - TREATED	09-01-3034	WP2400719-003						15.3	d	41	
M/2400719-003 (1)	10-01-2034	104.00	Within Limit	0.11	Waber/Drinking Waber	KLECFELD 3 - DISTRIBUTION @ Main Street	09-01-2024	WP3400719-003				1.55	80	15.3	d	4	
W0401761-001(1)	26-01-2024	104.00	Within Simit	-	Water/Drinking Water	KLEEFED1-MW	23-01-2224	WP2401755-001						13.1	d	la	
492401761-002(1)	24-01-3034	104.00	Within Limit		Water/Orining Water	KLEEFELD 2 - TREATED	23-01-2024	WP3#01761-002						11.1	d	la	
W2401261-003(1)	24-01-2024	104.00	Within Limit	-	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION & Main SE	13-01-2024	W#2401761-003			0.00	3.10	4.6	13.1	d	d	
P2402945-001 (1)	27-02-2024	104.00	Within Limit		Water/Drinking Water	GEFEFELD 1 - RAW	06-02-3034	W72402945-001			122			12.7	d	d	1
W2402945-002 (1)	07-03-2034	104.00	Within Limit	-	Water/Drinking Water	DEFETID 2-TREATED	06-07-3034	WP2402545-002						127	d	a	
W2402345-003 [1]	07-00-2034	104.00	Within Linut		Water/Crinking Water	KLEEFELD 3 - DISTRIBUTION & MAIN STREET	06-03-3034	WP2403945-003			0.07	2.98	42	12.7	d	4	
(1) 100-001 (1)	21-03-3034	104.00	Within Limit		Water/Drinking Water	CITITIO1 - NAW	20-03-3034	WF3404120-001	100					9.9	d	d	
92404120-002(1)	21-02-0004	104.00	Within Limit		Water/Drinking Water	CLEEFELD 2 - TREATED	20-02-2034	W#3404130-002			-			9.9	d	d	
W2404120-003 (1)	25-02-2024	104.00	Within Limit		Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION & MAIN STREET	20-02-2024	W#2404120-003			0.09	2.05	112	6.0	d	1	
111 206-212-022111	06-03-2024	104.00	Wittin Limit		Water/Crinking Water	CITERIO L RAW	(5-03-3034	W21405412-001			4.14	2.00	1	114	a data	6	+
(1) C00-214-206419	06-03-3034	104.00	Within Cimit	-	Water/Drinking Water	CATHLO 2. TREATED	05.03.3034	W01405412-002			2-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3			11.0	La	L.	
P2405412-003(1)	06-03-3034	104.00	Within Limit		Water/Dricklog Water	CLEEPELD & DISTRIBUTION & MANN ST	05.03.0014	W22405412-003			0.10	1.63	16	11.0	4	10	1
111100.05430.001	35-01-2034	104.00	Within Limit		Water/Disking Water	CUTTED1. SAW	10,01,0014	WIRNAMENT AND			1.10	1.00		111	4	1.4	
STANESED (002 (1)	30.05.3034	104.00	Millio Lund		Water Dicking Water	CUTERID 2. TREATED	10.08.3014	W20406583.000								1	
ET 4005.83 (033 (1)	30.01.3034	100.00	Safet in Limit		Winter Palaking Water	NUTRICAL OFTEN DON & COTTONNOOD IN	Lan con sonta	HER PROPERTY AND				6.94			2	RI	
	An or wate	10000	Advante Visula		Waterr Criming West	CONTRACTOR AND	10000000	WP2800382 003				0.74	1.22	18.5	G.	11	
1240/019/001(1)	03-04-2024	10000	Witchin Links		water/Unineing water	ALE PELO 1 - NAW	103-04-2024	W#2807619-001						15.4	d	Id	
P240/L19002(1)	03-04-2024	104.00	Witten Line		Water/Uninting Water	ALDELD 2 - INCASED	02-08-2228	Mh3#01618-001					1	15.4	g	id	
e-240/619-00111	0304-2024	1104.00	WORK LINK	-	Waterronnaing water	KLEPTLD 3 - DSTRIBUTION @ MAIN ST	02-06-2036	W#9807019-003			0.04	1.88	111	13.0	q	10	
P2408833-001(1)	17-04-2024	106.00	Within Limit		Water/Drinking Water	CLEEPELD 1 - MAW	116-04-2024	W#3406633-001						14.8	4	d	-
#7408833-003 (1)	17-54-2024	1104.00	Within Limit	-	Water/Drinking Water	CLEFELD 2 - TREATED	26-04-3024	W72406813-007						14.8	9	4	4
VP2408833-003 (1)	17-06-2024	104.00	Within Limit	-	Water/Drinking Water	KLEFELD 3- DETRIBUTION @	16-04-2004	WP0408833-003			0.14	1.07	4.1	14.8	4	-1	4
VP2409230-001(1)	23-04-2024	104.00	Within Linst	-	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION & KLEEFELD PARK	22-04-2024	WP2409230-003			0,15	2.80	3.8	6.1	d	41	
#P2425402-001(1)	26-04-2024	104.00	Within Limit	-	Water/Drinking Water	KLEEFELD & - DISTRIBUTION & KLEEFELD PARK	23-04-2024	WP3409402-001			0.16	2.73	2.4	16.8	4	4	
P2410031-001 [1]	01-05-3034	104.00	Within Limit		Water/Orinking Water	KLEEFELO3 · KAW	30-04-2024	WP2410031-001						15.6	9	-1	
(P2410031-002 (1)	01-05-2024	104.00	Within Limit		Water/Orinking Water	KLEEFELD 2 - TREATED	30-04-2024	WP2430033-002						15.6	d	1	4
#2410031-003 [1]	01-05-2024	104.00	Within Limit	1.1	Water/Drinking Water	KLEFFELD 3 - DISTRIBUTION & MAIN ST	30-04-2034	WP3410031-003			0.09	2.91	3.6	15.8	4	4	1
#2411821-001(1)	15-05-2024	104.00	Within Limit		Water/Drinking Water	KLEEFELD 1 - RAW	14-05-2024	WP2#11821-001						17.6	d.	41	
WP2411821-002(1)	15-05-2024	104.00	Within Limit		Water/Drinking Water	KLEEFELD 2 - THEATED	14-05-2024	WP2411821-002						17.6	4	4	
#2411831-003-(1)	15-05-2024	104.00	Within Limit	-	Water/Drinking Water	KLEEPELD 3 - DISTRIBUTION & Main St	14-05-2024	W92411621-003			0.04	3.37	45	17,6	4	41	
P2413603-001(1)	29-05-2024	104.00	Within Limit		Water/Drinking Water	KLEFELD 1 - RAW	28-05-2024	WP2413603-001					6	20,9	d	0	
(P2413603-002 (1)	29-05-2024	504.00	Within Limit	1.000	Water/Drinking Water	KLEEFELD 2 - THEATED	28-05-2024	W72413603-002						20.0	d	6	
(1) £00.600£142%	25-05-2024	104.00	Within Limit	-	Weter/Dricking Water	KLEEFELD 3 - DISTRIBUTION @ MAIN ST	28-05-2024	WP2413603-003			0.21	2.44	3.5	20.9	4	-d	
P2419978-001(1)	19-08-2034	104.00	Within Limit		Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION @ 35 Beck Cove	19-08-2034	WP2419975-001			0.00	2.71	17	20.2	4	41	
P2419982-001(1)	19-06-2024	101.00	Within Limit	1000	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION @ 27 Bechi Cove	19-06-2024	WP2459982-001			0.00	2.65	19.	20.6	4	a	-
#2413984-001 (1)	19-08-2024	104.00	Within Limit		Water/Drinking Water	KLEEFELD 3 - DISTRUBUTION @ 22 ASPEN DRIVE	19-06-2034	WP2459964-001			0.00	1.38	3.1	21.5	P	41	
#2419985-001(1)	15-06-2024	104.00	Within Limit	-	Water/Drinking Water	KLEIFELD 3 - DISTRIBUTION &	19-08-2024	W92419985-001			003	2.49	2.8	20.8	d	b	
P2419963-001(1)	19-06-2024	104.00	Within Limit	-	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION @ 34 Aspen Bay	18-08-3034	WP2419983-001			0.00	2.13	3.3	20.8	a	41	
#2419980-001 (1)	16-06-2024	104.00	Within Link		Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION @ 16 Appen Ray	19-08-3034	WP3#19980-001			0.00	2.15	4.1	20.8	D	a	
P2420086-001 (1)	20-08-2024	106.00	Within Limit	< 100 J	Water/Drinking Water	KLEEFELD 3 - DISTRUBUTION @ 27 BECKI COVE	20-06-3034	WP3420080-001			0.00	2.73	4.7	18.4	D	a	
P2420081-001(1)	20-08-2024	104.00	Within Limit		Water/Orinking Water	KLEFELD 3 - DISTRIBUTION @ 35 BECKI COVE	20-08-2024	WP3#20081-005			0.00	2.90	4.9	18.3	41	la l	
#2420082-001(1)	20-08-2024	104.00	Within Limit	-	Water/Drinking Water	KLEFFELD 3 - DISTRIBUTION (# RESERVOIR #3	20-08-2024	WP2420082-001						16.8	d	4	
P2420068-001 (T)	30-06-2024	104.00	Within Limit	_	Water/Drinking Water	REFERENCE - DISTRIBUTION OF 16 ASPEN BAY	20/06-2024	W72430084-005				2.11	43	169	1		
P2420085-001 (1)	20-08-3024	104.00	Within Limit		Water/Dricking Water	NUMERIND 3 - DISTRIBUTION & 21 BEOD COVE	20-08-2034	WP2420089-001			0.00	3.88	44	104	61		
P2420090-001(1)	29-08-3034	104.00	Within Limit		Water/Drinking Water	REFERENCE - DISTRIBUTION & 24 ASPEN DAY	20,06,2004	w21c00ic.001			0.00	1.46	4.9	20.2		La.	
524200712-001 (1)	30-08-3024	104.00	Within Limit		Water (Trinking Water	ALFREND 3. DISTRIBUTION OF 12 ASIEN BAY	20.05.2034	W00000000000			200	1.10	10	144			
P2422236-001/11	18.09.3034	Beating PAST	An free	1.000	WaterMater	Elected 1. Distribution days and	12.00.3034	W01432314 /00	loores.	0.0174		1.10	20.	1972	p+	24	
\$2422245-001 (1)	07-10-2014	Figurate in Parts	A loss		Wester Allater	Freehold 1 - Row	01.10.2034	United and a cont		persona -							1000
1112021243-002/11	05.10.1014	Perstela PART	ALC		Witness Ashirt	English 7. Tourist	100.100.0000	MEDICAL STATE AND									100
11 (00, 141,000,000	05.18.3034	Finaleit, Date	An low		Cation of Balance	Provided T. Planck store and some & 55 birsts Re-	101 10 2000	W-2623263-003									1840
	A4.40.4258	Louise has	diam range		Turniture	weeven a - weatowaan mid-point in 22 Alben say	143-34-61/34	WY28232834003									11800

is Summer Altren Almeite Consider

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Ouracan Kizefet	Electeria samples												
		and the second second	Batch	Contraction of the later	A CHARTER	Sample			Field Tests	and a second second	Microbiological Tests		
	Received Data	Sha	A dol	Evaluation	Matrix	Sample Name	Sempling Date	ammonia, free, field mg/L	Chlorine, mooo, field mg/l.	Chierine, total, field mg/l.	Coliforms, Eacherichia coli (E. coli) MPN/100mL	Collforms, total MPN/100ml	
03883	12-06-2024	104.00	104.00	within Limit	Water/Drinking Water	KLEEFELD 1 - RAW	11-06-2024				4	<1	
D3683	12-05-2024	104.00	104.00	Within Limit	Water/Drinking Water	RLEEFELD 2 - TREATED	11-06-2024				4	D	
03883	12-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFEED 3 - DISTRUBUTION @ Main Street	11-06-2024	0.00	2.72	3.8	A	b	
D4824	26-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 1 - MAW	25-06-2024				d	4	
D4824	26-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	ELEFELD 2 - TREATED	25-06-2024				D	P	
04824	26-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	RLEEFELD 3 - DISTRUBUTION @ Main St	25-06-2524	0.06	2.68	4.0	A	4	
05729	10-07-2024	104.00	104.00	Within Limit	Water/Orinking Water	KLEEFELD 1 - RAW	06-02-2024	6	0.000		4	d.	
05729	10-07-2024	104.00	104.00	Within Limit	Water/Drinking Water	RLEEFELD 2 - TREATED	06-02-2024	-			d	d	
05729	10-07-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFEED 3 - DISTRIBUTION @ MAIN STREET	06-02-2024	0.00	2.92	5.2	a	d	
D6538	24-07-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 1 - NAW	23-07-2024				d	d	
06538	24-07-2024	104.00	104.00	Within Limit	Water/Drinking Water	RLEEFELD 2 - TREATED	23-07-2024				a	a	
Dessa	24-07-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFELD 3 - DISTRIBUTION @ MAIN STREET	23-07-2024	0.01	3.11	44	d	4	
07520	08-08-2024	104.00	104.00	Within Limit	Water/Drinking Water	ALEEFELD 1 - Reservoir Cleaning Cell #2	07-08-2024	-			d	d	
07520	08-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 2 - Neservoir Cleaning Cell #2	07-08-2024				d	4	
07934	14-08-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 1 - Reservoir cleaning Cell #1	14-08-2024				0	0	
D7934	14-08-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 2 - Reservoir cleaning Cell #1	14-08-2024				d	4	
08454	21-08-2024	104.00	104.00	Wahin Limit	Water/Drinking Water	KLEEFELD 1 - RAW	20-08-2024				4	1	
D8464	21-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 2 - TREATED	20-08-2024				d	a	
D8464	21-06-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION @ MAIN ST	20-06-2024	0.00	1.59	2.0	4	d	
D\$340	04-09-2024	104.00	104.00	Within Limit	Water/Drinking Water	XLEEFELD 1 - NAW	03-09-2024				d	1	
05340	04-09-2024	104,00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 2 - TREATED	03-09-2024				d	4	
09340	04-09-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION # MAIN ST	03-09-2024	0.00	1.14	14	d	1	
D10227	18-09-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 1 - NAW	17-09-3034				a	4	
010227	18-09-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFERD 2 - TREATED	17-09-2024				d	4	
010227	18-09-2024	104.00	104.00	Within Limit	Water/Drinking Water	RIFFFELD 3 - DISTRUBUTION & MAIN ST	17-09-2024	0.00	135	10	4		
D10987	02-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFEFELD 1 - BAW	01-10-2024	1200			1		
D10987	02-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFEED 2 - TREATED	01-10-2024				0		
010987	02-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEFELD 3 - DISTRIBUTION # Main St	01-10-2024	0.00	271	14	4	1	
D11655	15-10-2014	104.00	104.00	Within Limit	Water/Drinking Water	ID SEEFELD 2 - BAW	15-10-2024					13	
D11655	15-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	KLETEELD 2 - TREATED	11-10-2026				1	Ci.	
011655	16-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	REFERENCE - DISTRIBUTION & MAIN ST	15.10-2024	0.00	1.41	3.1	4	12	
012332	30-10-2014	104.00	104.00	Within Limit	Water/Drinking Water	ELEFFELD 1 - RAW	28-10-2024	1.00	1.41		4	4	
012332	30-10-2024	104.00	104.00	Within Limit	Water/Drinking Water	KIEFEED 2 - THEATED	29-10-2014				4	2	
012332	30-10-2024	104.00	104.00	Within Limit	Water/Trinking Water	ELECTRICAL OVERHITICAL & MAIN ST.	39 10 2024	10.4	1.20	10	4	4	
013016	13-11-2024	104.00	104.00	Within Limit	Water/Drinking Water	PIECESID T. HAW	12 11 2024	0.4	LIV	3.0	4	4	
013016	13-11-2024	104.00	104.00	Within Limit	Water Thisking Water	INTERIO 2 THEATED	12-11-2024				1		
013016	11.11.2024	104.00	104.00	Within Limit	Water /Drinking Water	CONTRACT A CONTRACTOR OF MADE IT	12-11-2024	0.00	1.12	1.2	d	Q	
013745	27-11-2024	104.00	104.00	Within Limit	Water/Drinking Water	FITTEELD 1 - DATA BOTTON OF MORE ST	34.11.3034	0.00	137	1.0	4	a	
0117245	27.11.2024	104.00	104 00	Within Limit	Water This lies Water	NECTED 2 TRANS	10-11-104*				4	4	
013745	22.21.3004	104.00	104.00	Within Limit	Water/Drinking Water	INCOMENTATION AND A AND A	29-11-2024	10.00			4	4	
014384	11.13.3024	104.00	104.00	Within Limit	Water/Drinking Water	KLEEPELD 3+ UNSTREADTION OF MARY ST	20-11-2024	0.00	1.0	14	4	D	
014394	11.13.3074	104.00	104.00	within Limit	Water/Orinking Water	ALECTELD 1 - NAW	10-12-2024		-		4	4	
1114384	11.13.3034	104.00	104.00	Within Limit	Water/Drinking Water	INCEPTED 2 - TREATED	10-12-2024		1.30		4	4	
014890	23.12.3024	104.00	104.00	Within Limit	Water Phile his Mater	INTERFELD A + DISTRIBUTION @ MAIN ST	10-12-2024	0.00	1.0	2.1	a	D	
01/899	21.17.2024	104.00	104.00	Within Linit	Water/orthling Water	NEEPELD 1 - MAN	22-12-2024		-		q	q	
01/890	21.12.2024	104.00	104.00	Within Links	Water Thisking Water	Incention a - Incented	22-12-2024	10.00			a	a	
to round	10.000	104,00	Manu -	within third	Water/UniAting Water	INTELECTOR A COLUMN TION OF MAIN ST	22-12-2024	0.00	1.66	0.2	a	4	
		-											
									1				

Appendix C

Analyses



CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	WDDDDDDDD	-	
Work Order	WP2320500	Page	3 1 of 6
Client	Manitoba Conservation & Climate	Laboratory	ALC Environmental Milester
Contact	: Sarah Belisle		ALS Environmental - winnipeg
Addrose		Account Manager	Sheriza Rajack-Ahamed
Address	14 Fultz Boulevard	Address	1329 Niakwa Road East, Unit 12
	Winnipeg MB Canada R3Y 0L6		Winning Manitoba Canada P212T4
Telephone	204 945 5776	Telephone	+1 20/ 255 0720
Project	104.00	Date Samples Received	
PO		Date Opripies Received	23-Aug-2023 10:09
C-O-C number		Date Analysis Commenced	: 23-Aug-2023
Sampler		Issue Date	30-Aug-2023 08:03
Site			
	Kleefeld- PWS 104.00 Op Id: 7793		
Quote number	WTP Chemistry		
No_of samples received	4		
No. of samples analysed	4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11,

Signatories	Position	Laboratory Department	
Gerry Vera	Analyst	Organics Winning Manitoha	
Lee McTavish			
Lee McTavish		Metals Winnipeg Manitoba	
Matthew Bouch			
		morganics, winnipeg, Manitoba	



No Breaches Found

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis, Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non -infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	Description
	no units
%	percent
% T/cm	% transmittance per centimetre
µg/L	micrograms per litre
μS/cm	microsiemens per centimetre
AU/cm	absorbance units per centimetre
CU	colour units (1 cu = 1 mg/l pt)
meq/L	milliequivalents per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



Matrix: Water	sample ID	KLEEFELD 1 - RAW WELL 1	KLEEFELD 1 - RAW WELL 2 - BACKUP	KLEEFELD 2 - TREATED	KLEEFELD 3 - DISTRIBUTION MID-POINT 22 ASPEN BAY			0		
	22-Aug-2023 09:45	22-Aug-2023 10:00	22-Aug-2023 10:15	22-Aug-2023 14:00						
			Sub-Matrix	Water	Water	Water	Water			
Analyte	CAS Number	Method/Lab	Unit	WP2320500-001	WP2320500-002	WP2320500-003	WP2320500-004			
Physical Tests			S. SAL	Art and the second						
Absorbance, UV (@ 254nm)		E404/WP		0.101	0.0890	0.104		in the second		
Alkalinity, bicarbonate (as CaCO3)		E290/WP	mg/L	362	363	363				
Alkalinity, carbonate (as CaCO3)		E290/WP		<1.0	<1.0	<1.0				
Alkalinity, hydroxide (as CaCO3)		E290/WP	mg/L	<1.0	<1.0	<1.0	2002			44144
Alkalinity, total (as CaCO3)		E290/WP		362	363	363				
Colour, true		E329/WP	CU	13.3	6.3	5.5				
Conductivity		E100/WP	1 1	639	636	659	1.2222	1222		
Hardness (as CaCO3), from total Ca/Mg		EC100A/WP	mg/L	317	322	316				
Langelier index (@ 4°C)		EC105A/WP	1 1	0.474	0.484	0.547			24.5	
Langelier index (@ 60°C)	-	EC105A/WP	-	1.24	1.25	1.31			·	
рН		E108/WP	1 1	7.79	7,79	7.86				
Solids, total dissolved [TDS]		E162-L/WP	mg/L	371	370	354				
Turbidity		E121/WP		22.3	19.5	1,10				
pH, saturation (@ 4°C)		EC105A/WP	pH units	7.32	7.30	7.31				
Transmittance, UV (@ 254nm)		E404/WP		79.2	81.5	78.7	2000		(<u>111</u>)	1000
pH, saturation (@ 60°C)		EC105A/WP	pH units	6.55	6.54	6.55				
Anions and Nutrients		the here the	Sec. Mar	A the second second		1.2.2.1.1.2.	Star 1			
Ammonia, total (as N)	7664-41-7	E303/WP		1.20	1.12	0.638	-			*****
Bromide	24959-67-9	E235.Br-L/WP	mg/L	<0.050	<0.050	<0.050			(and)	
Chloride	16887-00-6	E235.CI-L/WP		4.13	4,13	11.6				
Fluoride	16984-48-8	E235.F/WP	mg/L	0.307	0.302	0.299				
Nitrate (as N)	14797-55-8	E235.NO3-L/WP		<0.0050	<0.0050	0.0354		-		Same Contraction
Nitrite (as N)	14797-65-0	E235.NO2-L/WP	mg/L	<0.0010	<0.0010	0.0159				
Sulfate (as SO4)	14808-79-8	E235.SO4/WP		<0.30	<0.30	<0.30		10000	(3449)	2 4446 2
Organic / Inorganic Carbon					A STATES			,		
Carbon, dissolved organic [DOC]		E358-L/WP	mg/L	4.81	4.90	5.00		-		

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Matrix: Water	KLEEFELD 1 - RAW WELL 1	KLEEFELD 1 - RAW WELL 2 - BACKUP	KLEEFELD 2 - TREATED	KLEEFELD 3 - DISTRIBUTION MID-POINT 22 ASPEN BAY						
	Sampling date/time			22-Aug-2023 09:45	22-Aug-2023 10:00	22-Aug-2023 10:15	22-Aug-2023 14:00			
			Sub-Matrix	Water	Water	Water	Water	1.000		()))))))
Analyte	CAS Number	Method/Lab	Unit	WP2320500-001	WP2320500-002	WP2320500-003	WP2320500-004			(<u>2011-80</u>)
Organic / Inorganic Carbon			1200				ALC: NO CONT			
Carbon, total organic [TOC]	••••	E355-L/WP		4.99	4.82	4.27			()	
Ion Balance				14 - Star - Star						•
Anion sum		EC101A/WP	meq/L	7.37	7.39	7.60			I	
Cation sum (total)		EC101A/WP		7.70	7.76	7.89				
lon balance (cations/anions)		EC101A/WP	%	104	105	104			()	
Ion balance (APHA)	2000	EC101A/WP		2.19	2.44	1.87				
Total Metals		The state of the second	12 V	Sals Alexander			12 12 10			
Aluminum, total	7429-90-5	E420/WP	µg/L	<3.0	123	<3.0	<3.0		-	
Antimony, total	7440-36-0	E420/WP		<0.10	<0.10	<0.10	<0.10		2	
Arsenic, total	7440-38-2	E420/WP	µg/L	3.46	3.66	2.06	1.40	****		
Barium, total	7440-39-3	E420/WP		2030	2040	1820	1850		0.0000	
Beryllium, total	7440-41-7	E420/WP	µg/L	<0.020	<0.020	<0.020	<0.020			
Bismuth, total	7440-69-9	E420/WP		<0.050	<0.050	<0.050	<0.050			
Boron, total	7440-42-8	E420/WP	µg/L	143	144	149	144			1000
Cadmium, total	7440-43-9	E420/WP		<0.0050	<0.0050	<0.0050	<0.0050		1.000	
Calcium, total	7440-70-2	E420/WP	µg/L	65400	66800	65100	66100			
Cesium, total	7440-46-2	E420/WP		0.013	0.028	0.010	0.013		2 003 0 ⁵⁷	
Chromium, total	7440 - 47-3	E420/WP	µg/L	<0.50	1.87	<0.50	<0.50		(1 11)	
Cobalt, total	7440-48-4	E420/WP		<0.10	0,29	<0.10	<0.10			())
Copper, total	7440-50-8	E420/WP	µg/L	<0,50	0.61	83.8	24.6	5550.	1)	-
iron, total	7439-89-6	E420/WP		2040	2200	897	504		(analas)	(2112)
Lead, total	7439-92-1	E420/WP	µg/L	<0.050	0.150	<0,050	0.222			
Lithium, total	7439-93-2	E420/WP		16.8	16.5	16.2	16.4		: 37700 (
Magnesium, total	7439-95-4	E420/WP	µg/L_	37400	37800	37400	37200			
Manganese, total	7439-96-5	E420/WP		2.99	5.77	2.07	1.53		2 	
Molybdenum, total	7439-98-7	E420/WP	μg/L	1.86	2.01	1.96	1.96		;;	



Matrix: Water	sample ID	KLEEFELD 1 - RAW WELL 1	KLEEFELD 1 - RAW WELL 2 - BACKUP	KLEEFELD 2 - TREATED	KLEEFELD 3 - DISTRIBUTION MID-POINT 22 ASPEN BAY				
	Sampling date/time				22-Aug-2023 10:15	22-Aug-2023 14:00			-
		Sub-Matrix	Water	Water	Water	Water			
Analyte CAS Nul	ber Method/Lab	Unit	WP2320500-001	WP2320500-002	WP2320500-003	WP2320500-004	*******	1 <u></u>	
Total Metals		24.22		and the set of a	Contraction of the second	Rent March	1. A. 1.		
Nickel, total 7440-	2-0 E420/WP		0.50	5.49	0.54	0.76			I
Phosphorus, total 7723-	4-0 E420/WP	µg/L	1780	244	1440	849	22217		
Potassium, total 7440-0	9-7 E420/WP		4320	4390	4280	4300			
Rubidium, total 7440-	7-7 E420/WP	µg/L	3.23	3,36	2.95	3.12			
Selenium, total 7782-4	9-2 E420/WP		0.073	0.074	0.122	0.051			
Silicon, total 7440-2	1-3 E420/WP	µg/L	8110	8290	7980	8030			1
Silver, total 7440-2	2-4 E420/WP		<0.010	<0.010	<0.010	<0.010			
Sodium, total 7440-2	3-5 E420/WP	µg/L	25200	23700	31600	32100			
Strontium, total 7440-2	1-6 E420/WP		469	473	466	452			
Sulfur, total 7704-3	1-9 E420/WP	µg/L	<500	<500	<500	<500			VALUE
Tellurium, total 13494-8	-9 E420/WP		<0.20	<0.20	<0.20	<0.20			
Thallium, total 7440-2	3-0 E420/WP	µg/L	<0.010	<0.010	<0,010	<0.010	-		
Thorium, total 7440-2	-1 E420/WP		<0.10	<0.10	<0.10	<0,10			
Tin, total 7440-3	-5 E420/WP	µg/L	<0.10	<0.10	<0.10	0.16			
Titanium, total 7440-3	2-6 E420/WP		<0.30	4,66	<0.30	<0.30			
Tungsten, total 7440-3	3-7 E420/WP	µg/L	<0.10	<0.10	<0.10	<0.10		<u></u>	
Uranium, total 7440-6	-1 E420/WP		<0.010	0,017	<0,010	<0.010	3 3943 5		
Vanadium, total 7440-6	2-2 E420/WP	µg/L	<0.50	0.51	<0.50	<0.50	(*****)		
Zinc, total 7440-6	-6 E420/WP		<3.0	59.3	4.3	7.0			
Zirconium, total 7440-6	-7 E420/WP	µg/L	<0.20	0.22	<0.20	<0.20	30000		
Volatile Organic Compounds	新教育教育教育		States IS Show	a start and	A PARTY AND	1421-24			
Benzene 71-4	-2 E611D/WP		<0.00050	<0.00050		1	14444		1000
Bromodichloromethane 75-2	-4 E611D/WP	mg/L	<0.00050	<0.00050				12222	10.00
Bromoform 75-2	-2 E611D/WP		<0.00050	<0.00050					
Chloroform 67-6	-3 E611D/WP	mg/L	<0.00050	<0.00050					
Dibromochloromethane 124-4	-1 E611D/WP		<0.00050	<0.00050		1.000	2222		
Dichloromethane 75-0	-2 E611D/WP	mg/L	<0.0010	<0.0010				(****)	



Matrix: Water		Client	sample ID	KLEEFELD 1 - RAW WELL 1	KLEEFELD 1 - RAW WELL 2 - BACKUP	KLEEFELD 2 - TREATED	KLEEFELD 3 - DISTRIBUTION MID-POINT 22 ASPEN BAY	20023		
		Sampling	date/time	22-Aug-2023 09:45	22-Aug-2023 10:00	22-Aug-2023 10:15	22-Aug-2023 14:00			
y		S	ub-Matrix	Water	Water	Water	Water			
Analyte	CAS Number	Method/Lab	Unit	WP2320500-001	WP2320500-002	WP2320500-003	WP2320500-004			And and a second se
Volatile Organic Compounds			1.0							
Ethylbenzene	100-41-4	E611D/WP		<0.00050	<0.00050					(1999)
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WP	mg/L	<0.00050	<0.00050				/*****	
Tetrachioroethylene	127-18-4	E611D/WP		<0.00050	<0.00050				1.000	000002
Toluene	108-88-3	E611D/WP	mg/L	<0.00050	<0.00050		: ****		37000	: .
Trichloroethane, 1,1,1-	71-55-6	E611D/WP		<0.00050	<0,00050	1022227	2222			
Trichloroethane, 1,1,2-	79-00-5	E611D/WP	mg/L	<0.00050	<0.00050	1.0000		mas-	1000	
Trichloroethylene	79-01-6	E611D/WP		<0.00050	<0.00050		12000			32223
Xylene, m+p-	179601-23-1	E611D/WP	mg/L	<0.00040	<0.00040					
Xylene, o-	95-47-6	E611D/WP		<0.00030	<0.00030			****		-
Xylenes, total	1330-20-7	E611D/WP	mg/L	<0.00050	<0.00050	00000			3242	
BTEX, total		E611D/WP		<0.0010	<0.0010	100000				
Volatile Organic Compounds Surrogate	S		SER							
Bromofluorobenzene, 4-	460-00-4	E611D/WP	%	88.4	87.0				-	
Difluorobenzene, 1,4-	540-36-3	E611D/WP		105	104	24449				54444

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Key:

ALS Canada Ltd.



		ROL INTERPRETIVE REI	PORT	
Work Order	WP2320500	Page	: 1 of 14	
Client	Manitoba Conservation & Climate	Laboratory	ALS Environmental - Winnipeg	
Contact	Sarah Belisle	Account Manager	Sheriza Rajack-Ahamed	
Address	14 Fultz Boulevard	Address	1329 Niakwa Road East, Unit 12	
	Winnipeg MB Canada R3Y 0L6		Winnipeg, Manitoba Canada R2J 3T4	
Telephone	:	Telephone	+1 204 255 9720	
Project	: 104.00	Date Samples Received	23-Aug-2023 10:09	
PO		Issue Date	30-Aug-2023 08:03	
C-O-C number	1		5	
Sampler	7			
Site	:Kleefeld- PWS 104.00 Op Id: 7793			
Quote number	WTP Chemistry			
No: of samples received	:4			
No. of samples analysed	:4			

....

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

• Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

• Quality Control Sample Frequency Outliers occur - please see following pages for full details.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Water

Analyte Group	Mothod	Come line D. A	Evaluation: * = Holding time excee						edance ; 🖌 = Within Holding Ti		
Container / Client Sample ID(s)	Wearby	Sampling Date	E	xtraction / I	Preparation	_	Analysis				
			Preparation	Holdi	ng Times	Eval	Analysis Date	Holdin	a Times	Eval	
Anions and Nutrients : Ammonia in Water by Colour	A CONTRACTOR OF THE OWNER		Date	Rec	Actual			Rec	Actual	Litar	
Amber glass total (sulfuric acid)		And State State				1. A.		_			
KLEEFELD 1 - RAW WELL 1	E303	22-Aug-2023	24-Aug-2023	28 davs	2 days	1	24-Aug-2023	28 days	2 days	1	
Anions and Nutrients : Ammonia in Water by Colour		and a second	Strates and the	1	<u> </u>						
Amber glass total (sulfuric acid) KLEEFELD 1 - RAW WELL 2 - BACKUP	E303	22-Aug-2023	24-Aug-2023	28 days	2 days	1	24-Aug-2023	28 days	2 days	1	
Amons and Nutrients : Ammonia in Water by Colour	ALL STREET	In the second								_	
KLEEFELD 2 - TREATED	E303	22-Aug-2023	24-Aug-2023	28 days	2 days	1	24-Aug-2023	28 days	2 days	1	
Anions and Nutrients : Bromide in Water by IC (Low Level)	VEO PERO I	Non-Street Party	No. of Concession, Name	1	L		1				
HDPE KLEEFELD 1 - RAW WELL 1	E235.Br-L	22-Aug-2023	23-Aug-2023	28 days	1 days	1	23-Aug-2023	28 days	1 days	1	
HDPE											
KLEEFELD 1 - RAW WELL 2 - BACKUP	E235.Br-L	22-Aug-2023	23-Aug-2023	28 days	1 days	1	23-Aug-2023	28 days	1 days	4	
HDPE			a and a state	Sorale							
KLEEFELD 2 - TREATED	E235.Br-L	22-Aug-2023	23-Aug-2023	28 days	1 days	*	23-Aug-2023	28 days	1 days	1	
HDPF	And the second second		THE STATE OF		8 10 17					_	
KLEEFELD 1 - RAW WELL 1	E235.CI-L	22-Aug-2023	23-Aug-2023	28 days	1 days	*	23-Aug-2023	28 days	1 days	4	



Matrix: Water					E	valuation: × =	Holding time exce	edance ; 🗸	V = Withir	Holding Time
Analyte Group	Method	Sampling Date	Ex	traction / Pi	reparation			Analys	us	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	, Times	Eval
			Date	Rec	Actual	1		Rec	Actual	1
Anions and Nutrients : Chloride in Water by IC (Low Level)		A LEAST CHILL				C.L. Incola				
HDPE										
KLEEFELD 1 - RAW WELL 2 - BACKUP	E235 CI-L	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	1
				days						
Anions and Nutrients : Chloride in Water by IC (Low Level)		Shises Store			California -					
HDPE										
KLEEFELD 2 - TREATED	E235.CI-L	22-Aug-2023	23-Aug-2023	28	1 days	-	23-Aug-2023	28 days	1 days	-
				days						
Anions and Nutrients : Fluoride in Water by IC				pessi				r		
	F005 F	00 4	00.4				00.4	00.1	4 .1	
KLEEFELD 1 - RAW WELL 1	E235.F	22-Aug-2023	23-Aug-2023	28	Tdays		23-Aug-2023	28 days	lays	
		L		days						
Anions and Nutrients : Fluoride in Water by IC	STRANG L			1			1			
	E025 E	22 Aug 2022	22 Aug 2022		1 dour	1	22 Aug 2022	28 days		
RLEEFELD - RAW WELL 2 - BACKUP	EZ33,F	22-Aug-2023	23-Aug-2023	28	Tuays	•	23-Aug-2023	20 uays	Tuays	•
	and the second s	ALC: NOT STREET		uays	ļ	ļ				
Anions and Nutrients : Fluoride in Water by IC			2020 2020 225 H.S. S		1			1	r	
	F235 F	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	1
	EL00.1	22 / lug 2020	20 Adg 2020	davs	1 days		207/lug 2020	20 duys	1 days	
Anings and Mutricete : Witness in Materia IC/Law Levell		State of the second second			100.50					
Anions and Nutrients : Nitrate in water by IC (Low Level)		A MARCON EXCLUSION OF		mile	1			1		
KLEEFELD 1 - RAW WELL 1	E235.NO3-L	22-Aug-2023	23-Aug-2023	3 davs	1 days	1	23-Aug-2023	3 days	1 days	1
		5	5				5			
Anions and Nutrients · Nitrate in Water by IC (Low Level)	WE WERE DONNESS	CARLES DELET	02230000000000000	Sectors.						
HDPE				1						
KLEEFELD 1 - RAW WELL 2 - BACKUP	E235.NO3-L	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	1
			-				_			
Anions and Nutrients : Nitrate in Water by IC (Low Level)	The second second	the state of the	S. Contract	1000						
HDPE			Contraction of the second	T						
KLEEFELD 2 - TREATED	E235,NO3-L	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	1
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
KLEEFELD 1 - RAW WELL 1	E235.NO2-L	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	-



Matrix: Water					_	1	10/12 10/00			
Analyte Group	Method	Sampling Date	E	xtraction / F	EV Preparation	aluation: *	= Holding time exc	eedance ;	✓ = Withir	Holding Ti
Container / Client Sample ID(s)			Preparation	Holdir	a Times	Eval	Analysis Date	xceedance ; Analy ite Holdin Rec 3 3 days 3 28 days 3 28 days 3 28 days 3 28 days 3 28 days	ISIS	E 1
A CONTRACTOR OF THE OWNER OWNER OWNER OF THE OWNER OWNE			Date	Rec	Actual		, indiguis Date	Rec	Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)	Contraction Lac			neroch) z		1	-		1	
KLEEFELD 1 - RAW WELL 2 - BACKUP	E235.NO2-L	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	1
Anions and Nutrients : Nitrite in Water by IC (Low Level)	a the state of the state of the		1		-		1			
HDPE	T	T		T	T T		T		· · · · ·	
KLEEFELD 2 - TREATED	E235,NO2-L	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	1
Anions and Nutrients : Sulfate in Water by IC	4X TISATORES	Carlow States	and the second		<u> </u>		L			
KLEEFELD 1 - RAW WELL 1	E235.SO4	22-Aug-2023	23-Aug-2023	28 days	1 days	1	23-Aug-2023	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC		AND STATIST	137. 11. 7.							
HDPE KLEEFELD 1 = RAW WELL 2 - BACKUP	E235.SO4	22-Aug-2023	23-Aug-2023	28 days	1 days	4	23-Aug-2023	28 days	1 days	1
Anions and Nutrients : Sulfate in Water by IC	et al a a a a a a a a a a a a a a a a a a			uays						
HDPE KLEEFELD 2 - TREATED	E235.SO4	22-Aug-2023	23-Aug-2023	28 days	1 days	1	23-Aug-2023	28 days	1 days	1
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low	Level)	and the state of		1-1-50						
Amber glass dissolved (lab preserved) KLEEFELD 1 - RAW WELL 1	E358-L	22-Aug-2023	24-Aug-2023	3 days	2 days	1	25-Aug-2023	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low	Level)		12.7	la serie	PIN-	-				
KLEEFELD 1 - RAW WELL 2 - BACKUP	E358-L	22-Aug-2023	24-Aug-2023	3 days	2 days	1	25-Aug-2023	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low I	Lovel)	Statistics 1	1 - Q. 4 - Q. 4 - C - C							
Amber glass dissolved (lab preserved) KLEEFELD 2 - TREATED	E358-L	22-Aug-2023	24-Aug-2023	3 days	2 days	*	25-Aug-2023	28 days	1 days	1
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combu	istion (Low Level)	885 - 10 - 20 - 20	10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	0.55-5						
Amber glass total (sulfuric acid) KLEEFELD 1 - RAW WELL 1	E355-L	22-Aug-2023	23-Aug-2023	28 days	1 days	1	23-Aug-2023	28 days	1 days	1



Matrix: Water					E	valuation: × =	Holding time exce	edance ; ·	✓ = Withir	Holding Time
Analyte Group	Method	Sampling Date	Ex	traction / P	reparation			Analys	sis	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	g Times	Eval
			Date	Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustic	n (Low Leval)	alon and								
Amber glass total (sulfuric acid)										
KLEEFELD 1 - RAW WELL 2 - BACKUP	E355-L	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	1
				days						
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion	n (Low Level)	A States	the second	8 8 Mar				17		
Amber glass total (sulfuric acid)				1	Ĭ					
KLEEFELD 2 - TREATED	E355-L	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	✓
				days						
Physical Tests : Alkalinity Species by Titration	VAR SE ROLES	A REAL PROPERTY	N CARLENDER	State Barrie		200		1		
HDPE		1		1	1		1	T		
KLEEFELD 1 - RAW WELL 1	E290	22-Aug-2023	23-Aug-2023	14	1 days	1	23-Aug-2023	14 days	1 days	1
				days						
Physical Tests : Alkalinity Species by Titration		and the second	107 07 65	A PERC					A	
HDPE				1	1		1	1	<u> </u>	
KLEEFELD 1 - RAW WELL 2 - BACKUP	E290	22-Aug-2023	23-Aug-2023	14	1 days	1	23-Aug-2023	14 days	1 davs	1
				davs			1	, í		
Physical Tests : Alkalinity Species by Titration		A CONTRACTOR OF	The second second		-					
HDPE				1	1	11	T	1	1	
KLEEFELD 2 - TREATED	E290	22-Aug-2023	23-Aug-2023	14	1 days	1	23-Aug-2023	14 days	1 days	1
				davs						
Physical Tests : Colour (True) by Spectrometer (5 (11)	1812 T 1815 181	Section Party in								
HDPF		and the second					1	()		
KLEEFELD 1 - RAW WELL 1	F329	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-Aug-2023	3 days	1 days	1
		g	207.09 2020	o dayo	, days			0 0033	1 duys	·
Divisional Totals - Calcus (Taus) by Canadasanata (C.C.II)	Contraction of the local division of the loc		Carl And And							
Physical rests : colour (True) by Spectrometer (5 CD)	A BASSING STATE			1						
KI EEFELD 1 - RAW WELL 2 - BACKLIP	F329	22-Aug-2023	23-Aug-2023	3 days	1 days	1	23-400-2023	3 dave	1 days	1
	LOZU	22-A09-2020	23-Aug-2023	Juays	Tuays	•	23-Aug-2023	Juays	Tuays	·
Physical Tests : Colour (True) by Spectrometer (5 CU)	TERMS AND IN			1.1			1			
	E220	22 Aug 2022	22 Aux 2022	2 1000	1 100	1	00 4	2 4-1-1-	4	1
RLEEFELD 2 - TREATED	E329	22-Aug-2023	23-Aug-2023	3 days	Toays	*	23-AUg-2023	3 days	1 days	v
Physical Tests : Conductivity in Water	And the state of t			1.00						
	Etop	22 411- 2000	00 Aur 0000			1	00.4	00.1		
KLEEFELD I - RAVV WELL I	E100	22-Aug-2023	23-Aug-2023	28	1 days	~	23-Aug-2023	28 days	1 days	•
				days						



Matrix: Water					E	valuation: × =	Holding time exce	edance ; 🔹	V = Withir	Holding Time
Analyte Group	Method	Sampling Date	Ext	traction / Pi	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual	1		Rec	Actual	1
Physical Tests : Conductivity in Water		· · · · · · · · · · · · · · · · · · ·	EL - BARRING TO AND	1. 22 L						
HDPE										
KLEEFELD 1 - RAW WELL 2 - BACKUP	E100	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	1
				days						
Physical Tests : Conductivity in Water			State August	Ser B	142					
HDPE										
KLEEFELD 2 - TREATED	E100	22-Aug-2023	23-Aug-2023	28	1 days	1	23-Aug-2023	28 days	1 days	1
				days						
Physical Tests : pH by Meter										
HDPE										
KLEEFELD 2 - TREATED	E108	22-Aug-2023	23-Aug-2023	0.25	32 hrs	JE .	23-Aug-2023	0.25	32 hrs	*
				hrs		EHTR-FM		hrs		EHTR-FM
Physical Tests : pH by Meter						100				
HDPE										
KLEEFELD 1 - RAW WELL 1	E108	22-Aug-2023	23-Aug-2023	0.25	33 hrs	R	23-Aug-2023	0.25	33 hrs	×
				hrs		EHTR-FM		hrs		EHTR-FM
Physical Tests : pH by Meter			TOP- PARTY							
HDPE	F 400									
KLEEFELD 1 - RAW WELL 2 - BACKUP	E108	22-Aug-2023	23-Aug-2023	0.25	33 hrs		23-Aug-2023	0.25	33 hrs	
				hrs		EHIR-FM		hrs		EHIR-FM
Physical Tests : TDS by Gravimetry (Low Level)	AL PER AND DE			12.2.2	_					
HDPE	F100									,
KLEEFELD 1 - RAW WELL 1	E162-L	22-Aug-2023					24-Aug-2023	/ days	2 days	
Physical Tests : TDS by Gravimetry (Low Level)	1241 - Sec. 240	STRUCTURY STRUCT		34C.14				1		
	E162 I	22 440 2022		10000			24 Aug 2022	Zdava	2 days	
KLEEFELD I - RAW WELL Z - BACKUP	E 102-L	22-Aug-2023					24-Aug-2023	/ days	2 uays	•
	The stand of the second				I					
Physical Tests : TDS by Gravimetry (Low Level)			Enderst End Col	1		_				
	E162-I	22-4110-2023					24-440-2023	7 days	2 dave	1
REEFELD Z - TREATED	L102-L	22-Aug-2023					24-Aug-2023	/ uays	2 0893	
				I						
Physical rests : Turbidity by Nephelometry	Solar IN S V	Energia de alto	135 (1997) (1997) 1997 - 1997 (1997)	r	1		·	()		
KLEEFELD 1 - RAW WELL 1	F121	22-Aug-2023					23-Aug-2023	3 days	1 dave	1
	5.5							,,.		



Matrix: Water					Eva	aluation: × =	Holding time exce	edance ; 🔻	✓ = Withir	Holding Time
Analyte Group	Method	Sampling Date	Ex	traction / P	reparation			Analys	is	
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Analysis Date	Holding	Times	Eval
			Date	Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry			No. Contract	100	10 m 1	-				
HDPE				T						
KLEEFELD 1 - RAW WELL 2 - BACKUP	E121	22-Aug-2023					23-Aug-2023	3 days	1 days	1
Physical Tests : Turbidity by Nephelometry				and a				I		
HDPE										
KLEEFELD 2 - TREATED	E121	22-Aug-2023		Sine:	54022		23-Aug-2023	3 days	1 days	4
Physical Tests : UV Absorbance and Transmittance by Spectrometry										
HDPE										
KLEEFELD 1 - RAW WELL 1	E404	22-Aug-2023					23-Aug-2023	3 days	1 days	~
Physical Tests : UV Absorbance and Transmittance by Spectrometry						-				
HDPE										
KLEEFELD 1 - RAW WELL 2 - BACKUP	E404	22-Aug-2023					23-Aug-2023	3 days	1 days	~
Physical Tests : UV Absorbance and Transmittance by Spectrometry							1			
HDPE										,
KLEEFELD 2 - TREATED	E404	22-Aug-2023					23-Aug-2023	3 days	1 days	*
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)	F 100		05.4 0000			,	05 4 0000			/
KLEEFELD 1 - RAW WELL 1	E420	22-Aug-2023	25-Aug-2023	180	3 days	*	25-Aug-2023	180	3 days	v
				days				days		
Total Metals : Total Metals in Water by CRC ICPMS					· · · · ·					
HDPE total (nitric acid)	E 100		05 0 0000			,	05 4 0000			
KLEEFELD 1 - RAW WELL 2 - BACKUP	E420	22-Aug-2023	25-Aug-2023	180 davs	3 days	4	25-Aug-2023	180 davs	3 days	*
Total Metals : Total Metals in Water by CRC ICPMS			Real Provide							
HDPE total (nitric acid)										
KLEEFELD 2 - TREATED	E420	22-Aug-2023	25-Aug-2023	180	3 days	1	25-Aug-2023	180	3 days	1
				days				days		
Total Metals : Total Metals in Water by CRC ICPMS		Sector Sector					1			
HUPE TOTAL (NITRIC ACID)	E420	22-4-10-2022	25 Aug 2022	400	3 days	1	25-410-2023	100	3 dave	1
REEL ELD 5- DISTRIBUTION MILET ONT 22 ASPENDAT		22-ruy-2020	20-709-2020	davs	o qaya	2	207.0g-2023	davs	0 00,0	



Matrix: Water					-					
Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Ex Preparation Date	traction / P Holdin Rec	Preparation ng Times Actual	Eval	Analysis Date	edance ; Analys Holding Rec	✓ = Withir sis g Times Actual	Eval
Glass vial (sodium bisulfate) KLEEFELD 1 - RAW WELL 1	E611D	22-Aug-2023	24-Aug-2023	14 days	2 days	4	24-Aug-2023	14 days	2 days	1
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS Glass vial (sodium bisulfate) KLEEFELD 1 - RAW WELL 2 - BACKUP	E611D	22-Aug-2023	24-Aug-2023	14 days	2 days	1	24-Aug-2023	14 days	2 days	•

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: Water	ency outside spe	ecification; 🗸 = 🤅	QC frequency wit	thin specification.			
Quality Control Sample Type			Co	ount		Frequency (%))
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)		A SHE LONG COM	West Profession	-			
Alkalinity Species by Titration	E290	1100911	1	10	10.0	5.0	1
Ammonia in Water by Colour	E303	1101546	1	20	5.0	5.0	1
Bromide in Water by IC (Low Level)	E235 Br-L	1099485	0	3	0.0	5.0	x
Chloride in Water by IC (Low Level)	E235,CI-L	1099481	1	18	5.5	5.0	1
Colour (True) by Spectrometer (5 CU)	E329	1099662	1	10	10.0	5,0	1
Conductivity in Water	E100	1100910	1	11	9.0	5.0	1
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1100971	1	19	5,2	5.0	1
Fluoride in Water by IC	E235.F	1099480	1	19	5.2	5.0	1
Nitrate in Water by IC (Low Level)	E235.NO3-L	1099483	0	4	0.0	5.0	x
Nitrite in Water by IC (Low Level)	E235.NO2-L	1099484	0	4	0.0	5.0	*
pH by Meter	E108	1100912	1	11	9.0	5.0	1
Sulfate in Water by IC	E235.SO4	1099482	1	18	5,5	5.0	~
TDS by Gravimetry (Low Level)	E162-L	1099960	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1103435	1	8	12.5	5.0	1
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1099628	1	10	10.0	5.0	1
Turbidity by Nephelometry	E121	1099544	1	6	16.6	5.0	1
UV Absorbance and Transmittance by Spectrometry	E404	1099673	1	17	5.8	5.0	1
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1101590	1	11	9.0	5_0	1
Laboratory Control Samples (LCS)	The second second						
Alkalinity Species by Titration	E290	1100911	1	10	10.0	5.0	1
Ammonia in Water by Colour	E303	1101546	1	20	5.0	5.0	1
Bromide in Water by IC (Low Level)	E235,Br-L	1099485	1	3	33.3	5.0	1
Chloride in Water by IC (Low Level)	E235.Ci-L	1099481	1	18	5.5	5.0	✓
Colour (True) by Spectrometer (5 CU)	E329	1099662	1	10	10.0	5.0	~
Conductivity in Water	E100	1100910	1	11	9.0	5.0	~
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1100971	1	19	5.2	5.0	1
Fluoride in Water by IC	E235.F	1099480	1	19	5.2	5.0	~
Nitrate in Water by IC (Low Level)	E235.NO3-L	1099483	1	4	25.0	5,0	1
Nitrite in Water by IC (Low Level)	E235,NO2-L	1099484	1	4	25.0	5.0	1
pH by Meter	E108	1100912	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1099482	1	18	5.5	5.0	1
TDS by Gravimetry (Low Level)	E162-L	1099960	1	18	5.5	5.0	1
Total Metals in Water by CRC ICPMS	E420	1103435	1	8	12.5	5.0	1
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1099628	1	10	10.0	5.0	1
Turbidity by Nephelometry	E121	1099544	1	6	16.6	5.0	1
UV Absorbance and Transmittance by Spectrometry	E404	1099673	1	17	5.8	5.0	1

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Client	:	Manitoba Conservation & Climate
Project		104.00



Matrix: Water		Evaluati	ion: = QC frequ	ency outside so	ecification: √ = i	OC frequency with	thin specification
Quality Control Sample Type			I C	ount)	
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued				-			
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1101590	1 1	11	9.0	5.0	
Method Blanks (MB)		Star New Constant	and the second second				¥
Alkalinity Species by Titration	E290	1100911	1 1	10	10.0	50	
Ammonia in Water by Colour	E303	1101546	1	20	5.0	5.0	
Bromide in Water by IC (Low Level)	E235.Br-L	1099485	1	3	33.3	5.0	
Chloride in Water by IC (Low Level)	E235.CI-L	1099481	1	18	5.5	5.0	
Colour (True) by Spectrometer (5 CU)	E329	1099662	1	10	10.0	5.0	
Conductivity in Water	E100	1100910	1	11	9.0	5.0	
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1100971	1	19	5.2	5.0	
Fluoride in Water by IC	E235.F	1099480	1	19	5.2	5.0	
Nitrate in Water by IC (Low Level)	E235.NO3-L	1099483	1	4	25.0	5.0	
Nitrite in Water by IC (Low Level)	E235.NO2-L	1099484	1	4	25.0	5.0	
Sulfate in Water by IC	E235.SO4	1099482	1	18	5.5	5.0	
TDS by Gravimetry (Low Level)	E162-L	1099960	1	18	5.5	5.0	
Total Metals in Water by CRC ICPMS	E420	1103435	1	8	12.5	5.0	
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1099628	1	10	10.0	5.0	
Turbidity by Nephelometry	E121	1099544	1	6	16.6	5.0	
UV Absorbance and Transmittance by Spectrometry	E404	1099673	1	17	5.8	5.0	
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1101590	1	11	9.0	5.0	
Matrix Spikes (MS)							
Ammonia in Water by Colour	E303	1101546	1 1	20	5.0	5.0	./
Bromide in Water by IC (Low Level)	E235.Br-1	1099485	0	3	0.0	5.0	¥
Chloride in Water by IC (Low Level)	E235.CI-L	1099481	1	18	5.5	5.0	
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1100971	1	19	5.2	5.0	
Fluoride in Water by IC	E235.F	1099480	1	19	5.2	5.0	
Nitrate in Water by IC (Low Level)	E235.NO3-L	1099483	0	4	0.0	5.0	
Nitrite in Water by IC (Low Level)	E235.NO2-L	1099484	0	4	0.0	5.0	
Sulfate in Water by IC	E235.SO4	1099482	1	18	5.5	5.0	
Total Metals in Water by CRC ICPMS	E420	1103435	1	8	12.5	5.0	
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1099628	1	10	10.0	5.0	
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1101590	1	11	9.0	5.0	



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	MelapiteSecurity
Conductivity in Water	E100 ALS Environmental - Winnipeg	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Winnipeg	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^{\circ}$ C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Winnipeg	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry (Low Level)	E162-L ALS Environmental - Winnipeg	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^{\circ}$ C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Winnipeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
Chloride in Water by IC (Low Level)	E235.CI-L ALS Environmental - Winnipeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Winnipeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Winnipeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Winnìpeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Winnipeg	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and /or UV detection.



Analytical Methods	Method / Lab	Metrix	Method Reference	Manual Deschillant
Alkalinity Species by Titration	E290 ALS Environmental - Winnipeg	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia in Water by Colour	E303 ALS Environmental - Winnipeg	Water	APHA 4500 NH3-NITROGEN (AMMONIA)	This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.
Colour (True) by Spectrometer (5 CU)	E329 ALS Environmental - Winnipeg	Water	APHA 2120 C (mod)	Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing) without pH adjustment
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Winnipeg	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Winnipeg	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
UV Absorbance and Transmittance by Spectrometry	E404 ALS Environmental - Winnipeg	Water	APHA 5910 B (mod)	UV Absorbance is determined by first filtering a sample through a 0.45 micron filter, followed by UV absorbance measurement in a quartz cell at 254 nm. The analysis is carried out without pH adjustment.
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Winnipeg	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Winnipeg	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Description
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Winnipeg	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Ion Balance using Total Metals	EC101A ALS Environmental - Winnipeg	Water	APHA 1030E	Cation Sum (using total metals), Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Saturation Index using Laboratory pH (Ca-T)	EC105A ALS Environmental - Winnipeg	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO3. Negative values indicate undersaturation of CaCO3. This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C. Ryznar Stability Index is an alternative index used for scale formation and corrosion potential.
Preparation Methods	Method / Lab	Matrix	Method Reference	Mathled Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Winnipeg	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Winnipeg	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Winnipeg	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Winning	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.

ALS Canada Ltd.



	QUALI	IT CONTROL REPORT		
Work Order	WP2320500	Page	1 of 14	
Client	: Manitoba Conservation & Climate	Laboratory	: ALS Environmental - Winnipeg	
Contact	Sarah Belisle	Account Manager	Sheriza Rajack-Ahamed	
Address	104.00 - Kleefeld- PWS 28 Westland Drive	Address	1329 Niakwa Road East, Unit 12	
	Mitchell MB Canada R5G 2N9		Winnipeg, Manitoba Canada R2J 3T4	
Telephone	2	Telephone	a+1 204 255 9720	
Project	104.00	Date Samples Received	: 23-Aug-2023 10:09	
PO	2	Date Analysis Commenced	23-Aug-2023	
C-O-C number		Issue Date	30-Aug-2023 08:03	
Sampler	(
Site	Kleefeld- PWS 104.00 Op Id: 7793			
Quote number	WTP Chemistry			
No. of samples received	4			
No. of samples analysed	4			

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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full. This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Gerry Vera	Analyst	Winnipeg Organics, Winnipeg, Manitoba
Lee McTavish		Winnipeg Inorganics, Winnipeg, Manitoba
Lee McTavish		Winnipeg Metals, Winnipeg, Manitoba
Matthew Bouch		Winnipeg Inorganics, Winnipeg, Manitoba

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 Work Order
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 Manitoba Conservation & Climate

 Project
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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot. CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances. DQO = Data Quality Objective. LOR = Limit of Reporting (detection limit). RPD = Relative Percent Difference # = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC	Lot: 1099544)			CENS DEPART	State and	22 Of 2 -			Y.		
WP2320502-003	Anonymous	Turbidity		E121	0.10	NTU	1.48	1,33	10.7%	15%	2000
Physical Tests (QC	Lot: 1099662)		ACCESS OF T			Section 1				2) 2	
WP2320448-001	Anonymous	Colour, true	11125	E329	5.0	CU	24,3	25,1	0.8	Diff <2x LOR	377770.C
Physical Tests (QC	Lot: 1099673)						The second				
WP2320256-001	Anonymous	Absorbance, UV (@ 254nm)		E404	0,0050	AU/cm	0.0560	0.0560	0.00%	20%	
Physical Tests (QC	Lot: 1099960)			1-118921-0		TRANST			IF		
WP2320427-001	Anonymous	Solids, total dissolved [TDS]		E162-L	3.0	mg/L	317	316	0.158%	20%	
Physical Tests (QC	Lot: 1100910)					and the	ikąci na i		N.		
WP2320427-001	Anonymous	Conductivity		E100	2.0	µS/cm	550	551	0.182%	10%	
Physical Tests (QC	Lot: 1100911)						(12 I		
WP2320427-001	Anonymous	Alkalinity, total (as CaCO3)		E290	1.0	mg/L	343	348	1_39%	20%	
Physical Tests (QC	Lot: 1100912)					The second					
WP2320427-001	Anonymous	pH		E108	0.10	pH units	8.49	8.48	0.118%	4%	(inter-
Anions and Nutrient	ts (QC Lot: 1099480)						17 C				
WP2320433-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.078	0.077	0.0009	Diff <2x LOR	
Anions and Nutrient	ts (QC Lot: 1099481)										
WP2320433-001	Anonymous	Chloride	16887-00-6	E235.CI-L	0.10	mg/L	1,94	1,90	2,57%	20%	3996
Anions and Nutrient	ts (QC Lot: 1099482)								2		
WP2320433-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	10.2	10.2	0,203%	20%	2000 C
Anions and Nutrient	ts (QC Lot: 1101546)		a aligned by			1. 3. P				v	
WP2320448-002	Anonymous	Ammonia, total (as N)	7664-41-7	E303	0.010	mg/L	<0.010	<0,010	0	Diff <2x LOR	10000 (
Organic / Inorganic	Carbon (QC Lot: 109962	28)							12 I I I I I I I I I I I I I I I I I I I		
WP2320500-001	KLEEFELD 1 - RAW	Carbon, tolal organic [TOC]		E355-L	0.50	mg/L	4.99	4.72	0.28	Diff <2x LOR	
Organic / Inorganic	Carbon (QC Lot: 110097	71)	Market Street	Carl Carl Street	17. 18. B. S.						
WP2320502-001	Anonymous	Carbon, dissolved organic [DOC]		E358-L	0.50	mg/L	2,92	2,60	0,32	Diff <2x LOR	
Total Metals (QC Lo	ot: 1103435)		A LIGHT ST	S		1212.3					
WP2320448-003	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<3.0 µg/L	<0.0030	0	Diff <2x LOR	
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.33 µg/L	0.00030	0.00003	Diff <2x LOR	
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Laberbary sample D Cleff sample D Analysis Analysis Designation of the sample D Designat Designation of the sample D	Sub-Matrix: Water							Labora	tory Duplicate (D	UP) Report		
Total Macha (QC Lot: 110342) continued WP220044-003 Aronyrous Berylium, total 7440-117 520 0.00010 mpl. 217 rg L. 0.00150 0 D12-LOR WP220044-003 Berylium, total 7440-117 520 0.000050 mpl. 4000500 0 D12-LOR Biomuth, total 7440-128 E620 0.000010 mgl. 4000700 0.00011 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.000100 0.00010 0.00010 0.00010 0.000100 <	Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
WHYP2220444003 Metry fruids Bateurn, Istal 7440.39 7640	Total Metals (QC Lo	ot: 1103435) - continued		Sand Street		Market Star						
Bernlum, tealP40041P40040P40040Pa005Pa01P400400	WP2320448-003	Anonymous	Barium, total	7440-39-3	E420	0,00010	mg/L	21.7 µg/L	0.0215	0.861%	20%	
Binrup, hainYelde yesYelde yesQuade yes </td <td></td> <td></td> <td>Beryllium, total</td> <td>7440-41-7</td> <td>E420</td> <td>0.000020</td> <td>mg/L</td> <td><0.020 µg/L</td> <td><0_000020</td> <td>0</td> <td>Diff <2x LOR</td> <td></td>			Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<0_000020	0	Diff <2x LOR	
Born, total740-2486200.0008mpL89.pU89.pU0.090.940.97 cLO0.97 cLO0.0000Cachriun, total740-436200.0000.0000.001 uL0.00000.000000.000000.000000.000000.000000.000000.000000.000000.000000.000000.000000.000000.000000.000000.00			Bismuth, total	7440-69-9	E420	0,000050	mg/L	<0.050 µg/L	<0,000050	0	Diff <2x LOR	(*****)
Lade-um, totalPriod-98EA3Bolocomemage0.0000090.0000090.0000090.0000090.0000090.0000090.0000090.0000090.0000090.000000.000000.000000.000000.000000.000000.000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.00000000.0000000.0000000.0000000.00000000.00000000.00000000.00000000.00000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.00000000.000000 </td <td></td> <td></td> <td>Boron, total</td> <td>7440-42-8</td> <td>E420</td> <td>0.010</td> <td>mg/L</td> <td>98 µg/L</td> <td>0.094</td> <td>0.004</td> <td>Diff <2x LOR</td> <td></td>			Boron, total	7440-42-8	E420	0.010	mg/L	98 µg/L	0.094	0.004	Diff <2x LOR	
Cacham, totalChacham, totalChacham, totalChacham, totalCacham, totalCac		· · · · ·	Cadmium, total	7440-43-9	E420	0,0000050	mg/L	0.0071 µg/L	0.0000058	0.0000013	Diff <2x LOR	
claum, indianY440-42K40-40K00000mg,c0.00000mg,<			Calcium, total	7440-70-2	E420	0.050	mg/L	21100 µg/L	20.2	4.07%	20%	:****
chrominungial7440-437400740074007400740074007400740074000740007400074000740000074000007			Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.010 µg/L	<0,000010	0	Diff <2x LOR	1.552.5
Cacaat colaitCacaat			Chromium, total	7440-47-3	E420	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	1000
Cooper, totalCooper, totalCooper			Coball, tota!	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	(1000)
Inon, total7439-867439-866200000mpL010pL0.00100.010			Copper, total	7440-50-8	E420	0.00050	mg/L	7,46 µg/L	0.00734	1.56%	20%	2022
Lead, lotai743942t6200.000000mgh.0.524 µgl.0.0005003.64%,0.20%,0.10%Lihlium, fotai74394326200.0010mgh.207 µgl.0.01994.16%,20%,6.20%Magnesum, fotai74394546200.00010mgl.7.84µgl.0.006500.00000.00			Iron, total	7439-89-6	E420	0,010	mg/L	<10 µg/L	<0.010	0	Diff <2x LOR	
Lithium, total7439-32F4200.0010mg/L2.07, up0.01994.16%2.0%1.0%Magesum, total7439-856200.0050mg/L1.200 up/L1.2.002.62%2.0%1.0%Maggesum, total7439-856200.00000.00000.059, up/L0.000000.000			Lead, total	7439-92-1	E420	0.000050	mg/L	0.524 µg/L	0.000506	3.46%	20%	
Magnesium, total7439-85.E4200.0000mgl.1230 ugl.12.02.62%2.0%1Manganese, total7439-85.E4200.00010mgl.0.00059 ugl.0.000030.000020.000200.000100.000100.00140.000100.0014			Lithium, total	7439-93-2	E420	0.0010	mg/L	20.7 µg/L	0.0199	4,16%	20%	52002
Manganese, totalY439-96E4200.0001mg/L4.78 µg/L0.004652.89%2.0%0.111Molydoenum, total7439-98-7E4200.00050mg/L0.059 µg/L0.000050.00000Diff 2x LORANicket, total7440-02E4200.0005mg/L6.59 µg/L0.000570.00000Diff 2x LORAPotassum, total7440-07E4200.050mg/L6.50 µg/L0.00140.0016Diff 2x LORARubidum, total7440-17E4200.0000mg/L1.30 µg/L0.001140.0001Diff 2x LORASelenium, total7440-17E4200.00000mg/L1.30 µg/L0.001140.0001Diff 2x LORASilicon, total7440-21E4200.00000mg/L1.30 µg/L0.001140.0001Diff 2x LORASodium, total7440-21E4200.00000mg/L6.20 µg/L0.00010Diff 2x LORASodium, total7440-21E4200.00010mg/L6.00 µg/L6.00 µg/L0.00010Diff 2x LORASodium, total7440-21E4200.00010mg/L6.00 µg/L6.00 µg/L0.00010Diff 2x LORASodium, total7440-21E4200.00020mg/L6.00 µg/L6.00 µg/L0.00020Diff 2x LORASodium, total7440-21E4200.00020mg/L6.00 µg/L6.00 µg/L6.00 µg/L0.00020			Magnesium, total	7439-95-4	E420	0.0050	mg/L	12300 µg/L	12.0	2,62%	20%	
Maybdenum, txtal7439-87F4200.000050mg/L0.093 µL0.0000300.000020Diff \approx L LOR \sim Nickel, total7440-20E200.00050mg/L0.59 µg/L0.000570.00002Diff \approx L LOR \sim Phosphors, total7723-160E200.050mg/L500 µg/L0.010160Diff \approx L LOR \sim Rubidum, total740-177E200.0002mg/L1.30 µg/L0.001160.00005Diff \approx L LOR \sim Selenium, total740-177E200.00005mg/L0.239 µg/L0.001560.00003Diff \approx L LOR \sim Selenium, total740-213E200.00005mg/L5.521.72%22% \sim Sileon, total740-224E420.00015mg/L6.000171.30 µg/L0.001500.00035Diff \approx L LOR \sim Solum, total740-235E420.00005mg/L0.00140.001501.07%22% \sim Solum, total740-245E420.0002mg/L9.70 µg/L0.000151.07%22% \sim Solum, total740-254E420.0002mg/L9.70 µg/L0.000151.07%22% \sim Solum, total740-254E420.0002mg/L9.70 µg/L0.0001001.47% LOR \sim Solum, total740-254E420.0002mg/L4.000100000 \sim \sim Solum, total740-254<			Manganese, total	7439-96-5	E420	0,00010	mg/L	4.78 µg/L	0.00465	2.69%	20%	
Nickel, totalNickel, totalNickel			Molybdenum, total	7439-98-7	E420	0,000050	mg/L	0,095 µg/L	0.000093	0.000002	Diff <2x LOR	
Phosphorus, total7723-14.0E4200.050mg/L<50 µg/L<0.0500Dff <2x LOR<Potassium, total7440-09-7E4200.050mg/L5010 µg/L4.941.39 %20%Rubidium, total7440-17-7E4200.00020mg/L1.30 µg/L0.001140.00018Dff <2x LOR			Nickel, total	7440-02-0	E420	0.00050	mg/L	0.59 µg/L	0.00057	0.00002	Diff <2x LOR	
Petassium, total7440-97E4200.050mg/L5010 µg/L4.941.39%20%Rubidium, total740-177E4200.00020mg/L1.30 µg/L0.001140.00016Diff <2x LOR			Phosphorus, total	7723-14-0	E420	0.050	mg/L	<50 µg/L	<0,050	o	Diff <2x LOR	
Rubidum, total740-17.7E4200.00020mg/L1.30 µJ/L0.001410.00160Diff <2x LORSelenium, total7782-492E4200.000505mg/L0.239 µJ/L0.0001560.000083Diff <2x LOR			Potassium, total	7440-09-7	E420	0.050	mg/L	5010 µg/L	4,94	1.39%	20%	
Selenium, total 7782492 $E420$ 0.00050 mg/L $0.239 \mu/L$ 0.000150 0.00083 $Dff < 2 LOR$ $$ Silicon, total $7440-213$ $E420$ 0.10 mg/L $5620 \mu/L$ 5.52 1.72% 20% $$ Solium, total $7440-243$ $E420$ 0.00010 mg/L $<0.0010\mu/L$ <0.00010 00 $Diff < 2 LOR$ $$ Solium, total $7440-245$ $E420$ 0.0002 mg/L $97.\mu/L$ 0.0986 1.07% 20% $$ Storntum, total $7440-245$ $E420$ 0.0002 mg/L $99.7 \mu/L$ 0.0986 1.07% 20% $$ Sulfur, total $7440-245$ $E420$ 0.0002 mg/L $600 \mu/L$ <0.0020 0.016 0.0162 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026 0.0162 0.0026			Rubidium, total	7440-17-7	E420	0.00020	mg/L	1.30 µg/L	0.00114	0.00016	Diff <2x LOR	:
Silicon, total 7440-21-3 E420 0,10 mg/L 5620 µg/L 5.52 1,72% 20%			Selenium, total	7782-49-2	E420	0,000050	mg/L	0,239 µg/L	0.000156	0.000083	Diff <2x LOR	10000
Silver, totalSilver, total7440-224E4200.00010mg/L<0.010 µ/L<0.000100DIff <2x LORSodium, total7440-235E4200.050mg/L1750 µ/L17.31.34%20%-Strontium, total7440-246E4200.0002mg/L99.7 µ/L0.09861.07%20%-Sulfur, total7704-349E4200.0002mg/L600 µ/L<0.0002			Silicon, total	7440-21-3	E420	0,10	mg/L	5620 µg/L	5.52	1.72%	20%	
Sodium, total7440-23-sE4200.050mg/L1750 µg/L17.31.34%20%Strontium, total7440-24-sE4200.0002mg/L99.7 µg/L0.09861.07%20%Sulfur, total7704-34-9E4200.500mg/L600 µg/L<0.0020			Silver, total	7440-22-4	E420	0,000010	mg/L	<0,010 µg/L	<0.000010	0	Diff <2x LOR	
Stontium, total7440-246E4200.0020mg/L99.7 µ/L0.09861.07%20%-Sulfur, total7704-349E4200.50mg/L600 µ/L<.0500			Sodium, total	7440-23-5	E420	0,050	mg/L	17500 µg/L	17.3	1.34%	20%	
Sulfur, total7704-34-9E4200.50mg/L600 µg/L<0.500.10Diff <2x LORTellurium, total13494-809E4200.00020mg/L<0.20 µg/L			Strontium, lotal	7440-24-6	E420	0.00020	mg/L	99,7 µg/L	0.0986	1.07%	20%	
Tellurium, total 13494-80-9 E420 0,00020 mg/L <0.00200			Sulfur, total	7704-34-9	E420	0.50	mg/L	600 µg/L	<0.50	0,10	Diff <2x_LOR	
Phallium, total7440-28-0E4200.000010mg/L<0.010 µg/L<0.000100Diff <2x LORThorium, total7440-29-1E4200.0010mg/L<0.10 µg/L			Tellurium, total	13494-80-9	E420	0,00020	mg/L	<0.20 µg/L	<0.00020	0	Diff <2x LOR	
Thorium, total 7440-29-1 E420 0,00010 mg/L <0.001/L			Thallium, totai	7440-28-0	E420	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	
Tin, total 7440-31-5 E420 0,00010 mg/L <0.00 µg/L			Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	33442
Titanium, total 7440-32-6 E420 0,00030 mg/L <0.30 µg/L <0.00030 0 Diff <2x LOR Tungsten, total 7440-33-7 E420 0.0010 mg/L <0.10 µg/L			Tin, total	7440-31-5	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	-
Tungsten, total 7440-33-7 E420 0.00010 mg/L <0.10 µg/L <0.00010 0 Diff <2x LOR Uranium, total 7440-61-1 E420 0.00010 mg/L 0.061 µg/L 0.000062 0.000001 Diff <2x LOR			Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.30 µg/L	<0.00030	o	Diff <2x LOR	and a
Uranium, total 7440-61-1 E420 0.00010 mg/L 0.061 µg/L 0.000062 0.000001 Diff <2x LOR Vanadium, total 7440-62-2 E420 0.00050 mg/L 1.32 µg/L 0.00131 0.00001 Diff <2x LOR			Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	o	Diff <2x LOR	
Vanadium, total 7440-62-2 E420 0.00050 mg/L 1.32 µg/L 0.00131 0.00001 Diff <2x LOR			Uranium, total	7440-61-1	E420	0.000010	mg/L	0.061 µg/L	0.000062	0.000001	Diff <2x LOR	
			Vanadium, total	7440-62-2	E420	0.00050	mg/L	1,32 µg/L	0.00131	0.00001	Diff <2x LOR	

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Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lo	ot: 1103435) - continued		1411	· 21년 월1년소 신신		San and					
WP2320448-003	Anonymous	Zinc, total	7440-66-6	E420	0.0030	mg/L	28.3 µg/L	0.0281	0.0002	Diff <2x LOR	: 240
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.20 µg/L	<0,00020	0	Diff <2x LOR	12222
Volatile Organic Cor	mpounds (QC Lot: 1101	590)	A State	A STATISTICS	S. Letter	11-1-1-1	n K Charles			l	
WP2320256-001	Anonymous	Benzene	71-43-2	E611D	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	
		Bromoform	75-25-2	E611D	0.50	µg/L	<0,50	<0.50	0	Diff <2x LOR	
		Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	(
		Dibromochloromethane	124-48-1	E611D	0,50	µg/L	<0.50	<0.50	0	Diff <2x LOR	
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<0.0010 mg/L	<1.0	0	Diff <2x LOR	
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.00050 mg/L	<0.50	o	Diff <2x LOR	
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0,50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	
		Tetrachloroethylene	127-18-4	E611D	0,50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	1002
		Toluene	108-88-3	E611D	0.50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	****
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.00050 mg/L	<0,50	0	Diff <2x LOR	
l.		Trichloroethane, 1,1,2-	79-00-5	E611D	0,50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	
		Trichloroethylene	79-01-6	E611D	0,50	µg/L	<0.00050 mg/L	<0.50	0	Diff <2x LOR	
		Xylene, m+p-	179601-23-1	E611D	0,40	µg/L	<0.00040 mg/L	<0.40	0	Diff <2x LOR	
		Xylene, o-	95-47-6	E611D	0,30	µg/L	<0.00030	<0.30	0	Diff <2x LOR	



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water						
Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1099544)			astronom and the second	8	N	
Turbidity		E121	0.1	NTU	<0.10	
Physical Tests (QCLot: 1099662)						
Colour, true		E329	5	CU	<5.0	****
Physical Tests (QCLot: 1099673)						
Absorbance, UV (@ 254nm)	1999	E404	0.005	AU/cm	<0.0050	
Physical Tests (QCLot: 1099960)						
Solids, total dissolved [TDS]		E162-L	3	mg/L	<3,0	
Physical Tests (QCLot: 1100910)						
Conductivity		E100	1	µS/cm	<1.0	
Physical Tests (QCLot: 1100911)						
Alkalinity, total (as CaCO3)	Contract of the second s	E290	1	mg/L	<1,0	
Anions and Nutrients (QCLot: 109948	0)					
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	
Anions and Nutrients (QCLot: 109948	1)				2 4	
Chloride	16887-00-6	E235.CI-L	0.1	mg/L	<0.10	
Anions and Nutrients (QCLot: 109948.	2)					
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	
Anions and Nutrients (QCLot: 109948	3)					
Nitrate (as N)	14797-55-8	E235 NO3-L	0,005	mg/L	<0.0050	
Anions and Nutrients (QCLot: 109948	4)	DR JEVELUS ACTIVITY			7	
Nitrite (as N)	14797-65-0	E235 NO2-L	0.001	mg/L	<0.0010	1777 - 1 1777 - 1
Anions and Nutrients (QCLot: 109948	5)			CO.	1	
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	
Anions and Nutrients (QCLot: 110154	6)	5000				
Ammonia, total (as N)	/664-41-/	E303	0.01	mg/L	<0.010	
Organic / Inorganic Carbon (QCLot: 1)	099628)				-0.50	
Carbon, total organic [IOC]	·····	E300-L	0.5	mg/∟	<0.50	
Organic / Inorganic Carbon (QCLot: 1	100971)	F250 1			-0.50	
Carbon, dissolved organic [DOC]		E330-L	0.5	mg/L	<0.50) (*****
Total Metals (QCLot: 1103435)	7400.00.5	E420	0.000		-0.0000 I	
Aluminum, total	/429-90-5	E420	0.003	mg/∟	<0,0030	
Antimony, total	7440-36-0	±420	0.0001	mg/L	<0.00010	1.5425

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Sub-Matrix: Water

other Machine (Octob 1109A35) - continued Areatic like 744-03-52 6/20 0.0001 mg/L 4-0.0010 Barun, total 744-03-52 6/20 0.0001 mg/L 4-0.00010 Barun, total 744-04-51 6/20 0.00005 mg/L 4-0.00050 Barun, total 744-04-56 6/20 0.00055 mg/L 4-0.00050 Barun, total 744-04-56 6/20 0.00055 mg/L 4-0.000000 Cadeur, total 744-04-55 6/20 0.0005 mg/L 4-0.000100 Cadeur, total 744-04-55 6/20 0.0005 mg/L 4-0.000100 Caseur, total 744-04-65 6/20 0.0005 mg/L 4-0.000100 Coper, total 744-04-75 6/20 0.0005 mg/L 4-0.00050 Coper, total 744-04-75 6/20 0.0005 mg/L 4-0.00050 Coper, total <th>Analyte</th> <th>CAS Number</th> <th>Method</th> <th>LOR</th> <th>Unit</th> <th>Result</th> <th>Qualifier</th>	Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Asers, cad 740 382 F>Q 0001 mg/L 0.0001 mg/L 0.0001 mg/L Barun, bal 7440 383 F>Q 0.0002 mg/L 0.00020 mg/L 0.00005 mg/L 0.0001 mg/L 0.0001 mg/L 0.0001 mg/L 0.0001 mg/L 0.0001 mg/L <td>Total Metals (QCLot: 1103435) - coi</td> <td>ntinued</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Total Metals (QCLot: 1103435) - coi	ntinued					
Banun, total740035Ka00.0001mpl.0.0000mpl.0.00000mpl.Beryltun, total744043Ka00.0005mpl.0.00005mpl.0.00005MBorun, total744043Ka00.0000mpl.0.00005M0.00005MCalcun, total744043Ka00.0000mpl.0.00005M0.00005MCalcun, total744043Ka00.0005mpl.0.00005M0.00005MCalcun, total744043Ka00.0005mpl.0.00005M0.00005MCobat, total744043Ka00.0005mpl.0.00005M0.00005MCobat, total744043Ka00.001mpl.0.00005M0.00105MCobat, total744043Ka00.001mpl.0.00005M0.00105MCobat, total744043Ka00.001mpl.0.00005M0.00105MCobat, total744043Ka00.001mpl.0.00005M0.0001MCobat, total744043Ka0CobatM0.0005M0.0001MMLan, total744043Ka0CobatM0.0005M0.0001MMLan, total744043Ka0Ka0MMMMMMMMMMMMMMMMMM	Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	:
Bergdin, ball740-012000.00000	Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	
Bindy, ball7446486200.000mgl.9.00000mgl.Bron, ball7447436200.0001mgl.40.0000Mgl.Cakim, ball7447436200.0001mgl.40.0000Mgl.Cakim, ball7447436200.0001mgl.40.0001Mgl.Coat, ball7447436200.0001mgl.40.0001Mgl.Coat, ball7446436200.0005mgl.40.0001Mgl.Coat, ball7446436200.0005mgl.40.0001Mgl.Coat, ball7446436200.0005mgl.40.0001Mgl.Coat, ball7446436200.0005mgl.40.0005Mgl.Coat, ball7446436200.0005mgl.40.0005Mgl.Coat, ball7436436200.001mgl.40.0005Mgl.Coat, ball7436436200.001mgl.40.0005Mgl.Magnetin, ball7436436200.001mgl.40.005Mgl.Magnetin, ball7436436200.005mgl.40.005Mgl.Magnetin, ball7446436200.005mgl.40.005Mgl.Magnetin, ball7436436200.005mgl.40.005Mgl.Magnetin, ball7446436200.005mgl.40.005Mgl.Naber, ball7446436200.005mgl.40.005Mgl.Naber	Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	
Bronk tokalY440-24RA200.01mgl.0.010mgl.0.0100.0100.010000000000000000000000000000000000	Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	1
Cadacun, totalFA40-049EA200.0000050megl.0-0.000000megl.0-0.000000megl.0-0.000000megl.0-0.000000-megl.Cackun, totalFA40-642EA200.000010.000010.000010.000000.000010.0000000.000	Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	
Calcum, total7440-70 740-80Fe200.0600mg40.0000Cosing, total7440-73 740-744Fe200.0001mg4.0.00000Cober, total7440-74 740-744Fe200.0001mg4.0.00000Cober, total7440-74 740-744Fe200.0005mg4.0.00000Cober, total7440-74 740-744Fe200.0005mg4.0.00000Len, total7440-74 740-744Fe200.0005mg4.0.00000Len, total749-74 740-744Fe200.0001mg4.0.00000Magnesen, total749-74 749-744Fe200.0001mg4.0.00000Magnesen, total749-74 749-744Fe200.0001mg4.0.00000Magnesen, total749-74 749-744Fe200.0001mg4.0.00000Magnesen, total749-74 749-744Fe200.0001mg4.0.00000Nobelpout, total749-74 749-74Fe200.0005mg4.0.00000Nobelpout, total749-74 749-74Fe200.0001mg4.0.00000Nobelpout, total749-74 749-74Fe200.0001mg4.0.00000Nobelpout, total749-74 749-74Fe200.0001mg4.0.00000Nobelpout, total749-74 749-74Fe200.0001mg4.0.0000	Cadmium, total	7440-43-9	E420	0,000005	mg/L	<0,0000050	
cessun, total7440-45Exc0.00001mgh.6.000000.00000Chonk, total7440-44Exc0.00000.00000.000010.000010.00001Copper, total7440-54Exc0.00010.00000.00000.00000.00000.0000Ion, total7440-54Exc0.00010.00000.0	Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	
Chonun, totalY40-473E200.0005mg/t9.00050mg/t9.00050mg/tCober, totalY40-444E200.0001mg/t4.000501.0000000Iron, totalY40-454E200.0005mg/t4.0000501.0000000Lad, totalY40-9920E200.00050mg/t4.0000001.0000000Magnetin, totalY40-9920E200.00000mg/t4.0000001.0000000Magnetin, totalY40-9920E200.00000mg/t4.0000001.0000000Magnetin, totalY40-9920E200.00000mg/t4.0000001.0000000Magnetin, totalY40-992E200.00000mg/t4.0000001.0000000Magnetin, totalY40-992E200.00000mg/t4.0000001.0000000Poteshoru, totalY40-992E200.00000mg/t4.0000001.000000Poteshoru, totalY40-992E200.00000mg/t4.0000001.000000Poteshoru, totalY40-992E200.00000mg/t4.0000001.000000Selenut, totalY40-992E200.00000mg/t4.0000001.000000Selenut, totalY40-992E200.00000mg/t4.0000001.000000Selenut, totalY40-992E200.00000mg/t4.0000001.000000Selenut, totalY40-992E200.00000mg/t4.0000001.000000Selenut, totalY40-99	Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	
Cobail Loai7440-44Fa00.0001mg/L<000000	Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	1.000
Coper, total744-04-08200.0005mg/L<000050mg/L<000050mg/Lten, total7439-828200.00100.00050.00100.000500	Cobalt, total	7440-48-4	E420	0,0001	mg/L	<0.00010	
Iren, tablY438.86Ed20.01mgl.<0.010Mgl.<0.0010Mgl.Lad, tablY438.92Ed20.001Mgl.<0.0010	Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	
Led, brial743942Fa00.00005mgl.<0.000050	Iron, total	7439-89-6	E420	0.01	rng/L	<0.010	
Lithun, total74399-28200.001mg/.94.00164.00564.005Magnese, total7439-638200.005Mg/.64.005064.005064.0050Molybeenun, total7439-638200.0001Mg/.64.005064.005064.0050Nickel, total7440-028200.0055Mg/.64.005064.005064.0050Posphors, total7723-1408200.005Mg/.64.005064.0050Posphors, total7724-048200.005Mg/.64.005064.0050Posphors, total7724-048200.0050Mg/.64.005064.0050Steinun, total7784-048200.0001Mg/.64.005064.0050Steinun, total7784-048200.0001Mg/.64.000064.0050Storiun, total7402-048200.0001Mg/.64.000064.0000Storiun, total7404-048200.0001Mg/.64.000064.0000Storiun, total7404-048200.0001Mg/.64.000064.0000Storiun, total7404-048200.0001Mg/.64.000064.0000Tehriun, total7404-048200.0001Mg/.64.000064.0000Tehriun, total7404-048200.0001Mg/.64.000064.0000Tehriun, total7404-048200.0001Mg/.64.000064.0000Tehriun, total7404-04820<	Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	2000
Magnesium, total 7439-95 620 0.005 mg/L < < 0.0050 G.0001 Magnesen, total 7439-965 620 0.0000 mg/L < 0.00000	Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	
Marganese, total7439465E4200.0001mg/L0.0001000.0000000Molycberum, total7439487E4200.00000mg/L0.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.0000000.000000000.00000000.00000000.000000000.000000000.000000000.000000000.000000000.000000000.000000000.000000000.000000000.000000000.00000000.000000000.000000000.000000000.000000000.0000000000.000000000.000000000.000000000000.0000000000000.000000000000000.000000000000000.0000000000000000000000000.00000000000000000000000000000000000	Magnesium, total	7439-95-4	E420	0,005	mg/L	<0_0050	
Mojobenum, totalT393-98F200.00005mg/L0.000050mg/L0.000050mg/LNickei, totalT440-020F200.0005mg/L0.00050mg/L0.00050mg/LPobasium, totalT440-02F200.000mg/L0.00050mg/L0.00050mg/LRubidum, totalT440-02F200.0005mg/L0.00050mg/L0.00050mg/LSelenium, totalT725-42F200.0005mg/L0.00001mg/L0.00010mg/LSilcon, totalT402-13F200.0001mg/L0.00010mg/L0.00010mg/LSilcon, totalT402-24F200.0001mg/L0.00010mg/L0.00010mg/LSilcon, totalT402-24F200.0001mg/L0.00010mg/L0.00010mg/LSilcon, totalT402-24F200.0001mg/L0.00010mg/L0.00010mg/LSilcon, totalT402-24F200.0001mg/L0.00010mg/L0.00010mg/LSilcun, totalT402-24F200.0001mg/L0.00010mg/L0.00010mg/LSilcun, totalT404-24F200.0001mg/L0.00010mg/L0.00010mg/LTellurium, totalT404-24F200.0001mg/L0.00010mg/L0.00010mg/LTellurium, totalT404-24F200.0001mg/L0.00010mg/L0.00010mg/L<	Manganese, total	7439-96-5	E420	0,0001	mg/L	<0,00010	
Nickel, total 7440-02 820 0.0005 mg/L 6.00050	Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	
Phosphorus, total 7723140 E420 0.05 mg/L 6.0,50 mg/L Potassium, total 7440-097 E420 0.0,002 mg/L 6.0,002 mg/L 6.0,001 mg/L 6.0,001 <td>Nickel, total</td> <td>7440-02-0</td> <td>E420</td> <td>0,0005</td> <td>mg/L</td> <td><0.00050</td> <td></td>	Nickel, total	7440-02-0	E420	0,0005	mg/L	<0.00050	
Potassium, total 7440-097 6420 0.05 mg/L <0.0500 mg/L <0.00020 mg/L Rubidum, total 7440-177 6420 0.00020 mg/L <0.00020	Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0,050	
Rubidium, total 7440-17- E420 0.0002 mg/L <0.00020 mg/L <0.00050 mg/L Selenium, total 7782-492 E420 0.00050 mg/L <0.00050	Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	
Selenium, total 7782-492 8420 0.000050 mg/L <0.000050 mg/L Silicon, total 7440-213 8420 0.1 mg/L <0.00010	Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	
Silicon, total 740-213 E420 0.1 mg/L <0.10 Silver, total 740-224 E420 0.0001 mg/L <0.00010	Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	1.0000
Silver, total7440-224E4200.0001mg/L<0.00010Sodium, total7440-235E4200.052mg/L<0.0020	Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	
Sodium, total 7440-23 8420 0.05 mg/L < 0.050 Strontium, total 7440-24 8420 0.0002 mg/L <0.0020	Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	
Strontium, total 7440-24-6 E420 0.0002 mg/L <0.00020 Sulfur, total 7704-34-9 E420 0.5 mg/L <0.00020	Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	
Sulfur, total 7704-349 8420 0.5 mg/L <0.50	Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	1.0000
Tellurium, total 13494-80-9 E420 0.0002 mg/L <0.00020 Thalium, total 740-28-0 E420 0.0001 mg/L <0.00010	Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	
Thallium, total 7440-28-0 E420 0.0001 mg/L <0.00010 Thorium, total 7440-29-1 E420 0.0001 mg/L <0.00010	Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	
Thorium, totai 7440-29-1 E420 0.0001 mg/L <0.00010 Tin, total 7440-31-5 E420 0.0001 mg/L <0.00010	Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	1,000
Tin, total 7440-31-5 E420 0.0001 mg/L <0.00030 Titanium, total 7440-32-6 E420 0.0003 mg/L <0.00030	Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	2000 C
Titanium, total 7440-32-6 E420 0.0003 mg/L <0.0030 Tungsten, total 7440-33-7 E420 0.0001 mg/L <0.00010	Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	
Tungsten, total 7440-33-7 E420 0.0001 mg/L <0.00010 Uranium, total 7440-61-1 E420 0.00001 mg/L <0.000010	Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	
Uranium, total 7440-61-1 E420 0.00001 mg/L <0.000010 Vanadium, total 7440-62-2 E420 0.0005 mg/L <0.00050	Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	
Vanadium, total 7440-62-2 E420 0.0005 mg/L <0.00050	Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	
	Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	



Sub-Matrix: Water

Analyte	CAS Numbe	r Method	LOR	Unit	T	1
Total Metals (QCLot: 1103435) - conti	nued	The state of the second	TSI WEISSHELS BERGE	Unit	Result	Qualifier
Zinc, total	7440-66-6	E420	1 0.003	ma/l	-0.0020	ř
Zirconium, total	7440-67-7	E420	0.0002	mg/L	~0.0030	
Volatile Organic Compounds (QCLot:	1101590)	and the second second second second	SIDDOL	I mg/L	<0,00020	
Benzene	71-43-2	E611D	1 05			
Bromodichloromethane	75-27-4	E611D	0,5	µg/L	<0.50	
Bromoform	75-25-2	E611D	0,5	µg/L	<0,50	
Chloroform	67.00.0		0,5	µg/L	<0.50	
Dibramachlaramathana	07-00-3	E611D	0,5	μg/L	<0.50	
Disblossmathane	124-48-1	E611D	0,5	µg/L	<0.50	
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	24.63
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	
Tetrachloroethylene	127-18-4	E611D	0.5	ua/L	<0.50	
Toluene	108-88-3	E611D	0.5	ug/l	<0.50	
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	ug/l	<0.50	
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	μg/L	<0.50	(1111)
Trichloroethylene	79-01-6	E611D	0,5	µg/L	<0.50	
Xylene, m+p-	179601 22 4	E611D	0,5	µg/L	<0.50	2000
Xvlene n-	175001-23-1		0_4	µg/L	<0.40	1
righting o	95-47-6	20110	0_3	µg/L	<0.30	



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix,

Sub-Matrix: Water	Laboratory Control Sample (LCS) Report							
r				Spike	Recovery (%)	Recovery	Limits (%)	
Analyte CAS Numbe	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1099544)		and the second						-
Turbidity	- E121	0,1	NTU	200 NTU	103	85.0	115	
Physical Tests (QCLot: 1099662)								
Colour, true	E329	5	CU	250 CU	98,4	85.0	115	
Physical Tests (QCLot: 1099673)			ALC: NO.					ý.
Absorbance, UV (@ 254nm)	E404	0.005	AU/cm	0.463 AU/cm	102	85.0	115	
Physical Tests (QCLot: 1099960)	A WESSEL AT		Difference and					
Solids, total dissolved [TDS]	E162-L	3	mg/L	1000 mg/L	95.8	85.0	115	
Physical Tests (QCLot: 1100910)				Shire Set and Second				ř
Conductivity	E100	1	µS/cm	1412 µS/cm	101	90.0	110	
Physical Tests (QCLot: 1100911)	15200					05.0	145	1
Aikainity, total (as CaCO3)	E290		mg/∟	100 mg/L	101	65.0	115	
Physical Tests (QCLot: 1100912)	15108		ald units		1	08.0	102	1
pn	E 106		pri units	7 pH units	100	90.0	102	
	AND	WED STALS CAASE	MARY SALES	KERNI SASANA LAT	1			ł.
Anions and Nutrients (QCLot: 1099480) Elugride 16984-48-6	E235.F	0.02	ma/L	1 mo/l	102	90.0	110	1
Anione and Nutriante (OC) at 1000.024	And the second second			i i i i i i i i i i i i i i i i i i i	102			1
Chloride 16887-00-0	E235.CI-L	0.1	mg/L	100 mg/L	100	90.0	110	1
Anions and Nutrients (OCI of: 1089482)	a manufacture and	A PART BARRIER	A DAMAGE	Carlos and the second	1			4
Sulfate (as SO4) 14808-79-8	E235.SO4	0,3	mg/L	100 mg/L	101	90.0	110	
Anions and Nutrients (OCI of: 1099483)	A DE CONSTRUCT	Call And Storage	and see and the		1			ř.
Nitrate (as N) 14797-55-6	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	
Anions and Nutrients (QCLot: 1099484)	2 Statistics	ALC: NO PROPERTY	10 - 10 - 10	· ···································				*
Nitrite (as N) 14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.1	90.0	110	[
Anions and Nutrients (QCLot: 1099485)			T HEIMAN		a second			
Bromide 24959-67-5	E235 Br-L	0.05	mg/L	0.5 mg/L	98.9	85.0	115	
Anions and Nutrients (QCLot: 1101546)			12257-1012	124-54-55				*.
Ammonia, total (as N) 7664-41-7	E303	0.01	mg/L	0.25 mg/L	97.7	85.0	115	- m
Organic / Inorganic Carbon (QCLot: 1099628)								T.
Carbon, total organic [TOC]	E355-L	0.5	mg/L	8.57 mg/L	102	80.0	120	
Organic / Inorganic Carbon (QCLot: 1100971)	A REAL AND	NOT STATISTICS						

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Sub-Matrix: Water	Laboratory Control Sample (LCS) Report								
					Spike	Recovery (%)	Recovery	/ Limits (%)	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1	100971) - continued								
Carbon, dissolved organic [DOC]		E358-L	0.5	mg/L	8,57 mg/L	101	80.0	120	
Total Metals (QCLot: 1103435)								- 	
Aluminum, total	7429-90-5	E420	0,003	mg/L	2 mg/L	111	80.0	120	
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	113	80.0	120	
Arsenic, total	7440-38-2	E420	0,0001	mg/L	1 mg/L	113	80.0	120	
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	114	80.0	120	: ::::: :
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	106	80.0	120	
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	111	80.0	120	
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	109	80.0	120	1000
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	111	80.0	120	
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	108	80.0	120	
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	108	80.0	120	
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	112	80.0	120	
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	111	80.0	120	
Copper, total	7440-50-8	E420	0_0005	mg/L	0.25 mg/L	110	80.0	120	:
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	102	80.0	120	1045302
Lead. total	7439-92-1	E420	0.00005	mg/L	0.5 ma/L	108	80.0	120	-
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.4	80.0	120	
Magnesium total	7439-95-4	E420	0,005	ma/L	50 mg/L	113	80.0	120	
Manganese total	7439-96-5	E420	0.0001	ma/L	0.25 mg/l	111	80.0	120	
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	111	80.0	120	
Nickel total	7440-02-0	E420	0.0005	ma/L	0.5 mg/l	110	80.0	120	
Phosoborus total	7723-14-0	F420	0.05	ma/l	10 mg/l	113	80_0	120	12000
Potassium total	7440-09-7	F420	0.05	ma/l	50 mg/L	107	80.0	120	10000
Bubidum lotal	7440-17-7	F420	0.0002	ma/L	0.1 mg/l	118	80.0	120	
Selenium total	7782-49-2	E420	0.00005	ma/L	1 mg/l	106	80.0	120	
Silicon total	7440-21-3	F420	0.1	mg/L	10 mg/L	105	80.0	120	
Silver total	7440-22-4	F420	0.00001	ma/L	0.1 mg/l	101	80.0	120	(energy)
Sodium total	7440-23-5	E420	0.05	mg/l	50 mg/l	106	80.0	120	
Streatium lotal	7440-24-6	E420	0.0002	mg/2	0.25 mg/l	107	80.0	120	
Sulfur total	7704-34-0	E420	0.5	mg/L	50 mg/L	107	80.0	120	1000
Tallunium total	12/04-04-0	E420	0.00	mg/L	0.1	107	80.0	120	
Theilium total	7440 20 0	E420	0.0002	mg/L	0-1 mg/L	107	80.0	120	475525
Theorem tetal	7440-28-0	E420	0.0001	mg/L	1 mg/L	109	80.0	120	1.000
i nonum, total	7440-29-1	E420	0.0001	mg/L	U_1 mg/L	103	80.0	120	
Tin, total	/440-31-5	E420	0.0001	mg/L	0.5 mg/L	111	80.0	120	

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Project	125	104.00



Sub-Matrix: Water		Laboratory Control Sample (LCS) Report							
					Spike	Recovery (%)	Recovery		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1103435) - conti	inued					Alesses and a			
Titanium, total	7440-32-6	E420	0,0003	mg/L	0,25 mg/L	110	80.0	120	-
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	109	80.0	120	
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	113	80.0	120	
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	110	0.08	120	1000
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0_1 mg/L	103	80.0	120	
Valatila Osmania Compoundo (OCI at	4404500					I			
Benzene	71-43-2	E611D	0.5	μg/L	100 µg/L	89.6	70.0	130	-
Bromodichloromethane	75-27-4	E611D	0,5	μg/L	100 µg/L	80.5	70.0	130	1
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	75.9	70.0	130	
Chloroform	67-66-3	E611D	0,5	µg/L	100 µg/L	86.6	70.0	130	
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	78.8	70.0	130	(1017)
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	82,2	70.0	130	
Ethylbenzene	100-41-4	E611D	0.5	μg/L	100 µg/L	103	70.0	130	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	102	70.0	130	
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	92.8	70.0	130	
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	97.2	70.0	130	
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	94.9	70.0	130	
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	85.6	70.0	130	
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	88.8	70.0	130	: ::::: :
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	105	70.0	130	300000
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	93_1	70.0	130	1000



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias, ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water			Matrix Spike (MS) Report								
					Sp	/ Limits (%)					
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier	
Anions and Nutr	ients (QCLot: 1099480)									1	
WP2320433-001	Anonymous	Fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75_0	125	See	
Anions and Nutr	ients (QCLot: 1099481)									,	
WP2320433-001	Anonymous	Chloride	16887-00-6	E235.CI-L	101 mg/L	100 mg/L	101	75.0	125		
Anions and Nutr	ients (QCLot: 1099482)					AN BARE					
WP2320433-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	99.6 mg/L	100 mg/L	99.6	75,0	125		
Anions and Nutr	ients (QCLot: 1101546)	And and the second second second	The Carlo Con	「「「「「「「「」」」	Cale of the second						
WP2320448-002	Anonymous	Ammonia, total (as N)	7664-41-7	E303	0.214 mg/L	0.25 mg/L	85.8	75.0	125		
Organic / Inorga	nic Carbon (QCLot: 109	9628)					1				
WP2320500-002	KLEEFELD 1 - RAW WELL 2 - BACKUP	Carbon, total organic [TOC]	(*****)	E355-L	4.88 mg/L	5 mg/L	97.5	70.0	130		
Organic / Inorga	nic Carbon (QCLot: 110	0971)		ALL DOCTOR					I		
WP2320502-002	Anonymous	Carbon, dissolved organic [DOC]		E358-L	5,10 mg/L	5 mg/L	102	70.0	130		
Total Metals (QC	Lot: 1103435)		Jenets		STATISTICS.	Statistics in	1				
WP2320448-003	Anonymous	Aluminum, total	7429-90-5	E420	0.199 mg/L	0.2 mg/L	99.7	70.0	130		
		Antimony, total	7440-36-0	E420	0,0198 mg/L	0.02 mg/L	99.2	70.0	130		
		Arsenic, total	7440-38-2	E420	0.0202 mg/L	0.02 mg/L	101	70_0	130		
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130		
		Beryllium, total	7440-41-7	E420	0.0402 mg/L	0.04 mg/L	100	70_0	130		
		Bismuth, total	7440-69-9	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130		
		Boron, total	7440-42-8	E420	0.102 mg/L	0.1 mg/L	102	70.0	130		
		Cadmium, total	7440-43-9	E420	0_00398 mg/L	0.004 mg/L	99.6	70_0	130		
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70_0	130	1.111	
		Cesium, total	7440-46-2	E420	0_00986 mg/L	0,01 mg/L	98.6	70.0	130		
		Chromium, total	7440-47-3	E420	0.0404 mg/L	0.04 mg/L	101	70.0	130		
		Cobalt, total	7440-48-4	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130		
		Copper, total	7440-50-8	E420	0.0189 mg/L	0.02 mg/L	94.3	70.0	130		
		Iron, total	7439-89-6	E420	2.09 mg/L	- 2 mg/L	105	70.0	130	-	
		Lead, lotal	7439-92-1	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130		
		Lithium, lotal	7439-93-2	E420	0.0955 mg/L	0.1 mg/L	95.5	70.0	130		
	8	Magnesium, total	7439-95-4	E420	ND ma/l	1 mo/l	ND	70.0	130	1	

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Project	÷	104.00



Sub-Matrix: Water				Matrix Spike (MS) Report							
					Spi	ke	Recovery (%)	Recovery	/ Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier	
Total Metals (QC	Lot: 1103435) - cont	tinued		NAK TO SH	Section Parts	400 m				·	
WP2320448-003	Anonymous	Manganese, total	7439-96-5	E420	0.0201 mg/L	0.02 mg/L	100	70_0	130		
		Molybdenum, total	7439-98-7	E420	0.0208 mg/L	0.02 mg/L	104	70.0	130	-	
		Nickel, total	7440-02-0	E420	0.0391 mg/L	0.04 mg/L	977	70.0	130		
		Phosphorus, total	7723-14-0	E420	10.4 mg/L	10 mg/L	104	70.0	130		
		Potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130		
		Rubidium, total	7440-17-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130		
		Selenium, total	7782-49-2	E420	0.0434 mg/L	0_04 mg/L	108	70.0	130		
		Silicon, total	7440-21-3	E420	9.93 mg/L	10 mg/L	99.3	70.0	130		
		Silver, total	7440-22-4	E420	0.00402 mg/L	0.004 mg/L	101	70.0	130		
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130		
		Strontium, total	7440-24-6	E420	ND mg/L	0_02 mg/L	ND	70.0	130		
		Sulfur, total	7704-34-9	E420	20.5 mg/L	20 mg/L	103	70.0	130		
		Tellurium, total	13494-80-9	E420	0.0388 mg/L	0_04 mg/L	97.0	70.0	130		
		Thallium, total	7440-28-0	E420	0.00393 mg/L	0.004 mg/L	98.3	70.0	130		
		Thorium, total	7440-29-1	E420	0.0201 mg/L	0.02 mg/L	101	70.0	130		
		Tin, total	7440-31-5	E420	0.0202 mg/L	0_02 mg/L	101	70,0	130		
		Titanium, total	7440-32-6	E420	0.0405 mg/L	0.04 mg/L	101	70,0	130		
		Tungsten, total	7440-33-7	E420	0.0207 mg/L	0.02 mg/L	103	70.0	130		
		Uranium, total	7440-61-1	E420	0.00398 mg/L	0.004 mg/L	99.5	70,0	130		
		Vanadium, total	7440-62-2	E420	0.102 mg/L	0.1 mg/L	102	70.0	130		
		Zinc, total	7440-66-6	E420	0.400 mg/L	0.4 mg/L	100.0	70.0	130		
		Zirconium, total	7440-67-7	E420	0.0436 mg/L	0.04 mg/L	109	70.0	130		
Volatile Organic (Compounds (QCLot	: 1101590)		HENRY CONTRACTOR					l//		
WP2320256-001	Anonymous	Benzene	71-43-2	E611D	92.6 µg/L	100 µg/L	92,6	60,0	140		
		Bromodichloromethane	75-27-4	E611D	84.7 µg/L	100 µg/L	84.7	60.0	140		
		Bromoform	75-2 5 -2	E611D	79.0 µg/L	100 µg/L	79.0	60,0	140		
		Chloroform	67-66-3	E611D	89.1 µg/L	100 µg/L	89.1	60.0	140		
		Dibromochloromethane	124-48-1	E611D	82.1 µg/L	100 µg/L	82,1	60.0	140		
		Dichloromethane	75-09-2	E611D	85,4 µg/L	100 µg/L	85.4	60.0	140		
		Ethylbenzene	100-41-4	E611D	104 µg/L	100 µg/L	104	60.0	140		
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	103 µg/L	100 µg/L	103	60.0	140		
		Tetrachloroethylene	127-18-4	E611D	91.0 µg/L	100 µg/L	91.0	60.0	140		
		Toluene	108-88-3	E611D	96.9 µg/L	100 µg/L	96.9	60_0	140		
		Trichloroethane, 1,1,1-	71-55-6	E611D	96.8 µg/L	100 µg/L	96.8	60,0	140		
	10	Trichloroethane, 1,1,2-	79-00-5	E611D	88.7 µg/L	100 µg/L	88.7	60,0	140		

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Sub-Matrix: Water		Matrix Spike (MS) Report								
						ke	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic C	Compounds (QCLot: 110	01590) - continued								
WP2320256-001	Anonymous	Trichloroethylene	79-01-6	E611D	90.7 µg/L	100 µg/L	90,7	60.0	140	
		Xylene, m+p-	179601-23-1	E611D	210 µg/L.	200 µg/L	105	60.0	140	:
		Xylene, o-	95-47-6	E611D	94.7 µg/∟	100 µg/L	94.7	60.0	140	****

Manit	oba					Chain of Custody (Manitoba Drinking	COC) Water S	vstems		Reg	ular Service	e (defau	lt):	t): Regular Service (is 5-7 Days):				ice /s):
Office of Drinki 007 Century St Canada R3H 0	e of Drinking Water Century Street, Winnipeg, Manitoba, da R3H 0W4								Unless otherwise req				ested	ested C 2 Day, rush / priority C 3 Day, rush / priority C 3 Day, rush / priority				/ priority / priority / priority
Report to OpContact:BaAddress:28Phone:(20Imail:barolrol	perator (email l rry Broesky Westland Driv 04) 371-0484 rry.broesky@h b.driedger@ha b.friesen@hand If an upda	PDF): e, Mitche anoverm novermb. overmb.c ite in (ell, MB R5 b.ca; b.ca; ca Dwner c	G 2N9 Dr Operat	Report Contact Address Phone: Email:	to Owner (email PDF): Rob Driedger 28 Westland Drive, F (204) 346-7121 rob.driedger@hanow tact information	Aitchell, N vermb.ca	4B R5G 2N uired, p	19 C C C C C C C C C C C C C C C C C C C	Email PDF copy to: DWO: Sarah Belisle DWO Address: Unit B-284 Reimer Ave., Steinback DWO Phone: (204) 371-5065 DWO Email: Sarah.Belisle@gov.mb.ca Additional Email: Joern.Muenster@gov.mb.ca; Melanie.Betsill@gov.mb.ca; Melanie.Betsill@gov.mb.ca;						ibach, er	, MB R5G	
Client / Pro	oject Informa	ation:	Lab:			Account:	Ag	ency Cod	e: 382	Re	port Type	: EMS	(Lab-N	IWS)	Pro	ject:	DWQ-C
Operation Nation Department of	me: KLEEFE de: 104.00 7793	LD - PW	5			, ,	Expe	ected Sam	ple Time:			Feb	ruar	.	202	23		
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DO N		or RE-l	JSE this	form. Sa	mple N	Number are unig	, ue to t	he Offic	e of Dr	inkir	ig Wate	•				1	İ	
			а	nd provid	ded by	Drinking Water	Officer					-0				z		
		1		15		1		1						MB-(Σ	B-V0		
														무	B-M	<u>,</u>	° ₽	
			27				Muno							SMo	Ξ	No.	<u>c</u>	
iamele	Station						Free Chlorine	Total Chlorine	Sample D	Sample Sample Sample			Sample	-1/2	5	-12	ntair	
Vumber	Number	Sample 1	dentification	n			(mg/L)	(mg/L)	dd-mmm	Date Time Sample Im-yyyy hh:mm Matrix			Туре	013	N.	013	lers	
2302SB5005	MB05OED031	Kleefeld	1 - Raw We	11				1	22-Aug.	-2023	9:45	6	1	X	\square	x	6	
2302SB5006	MB05OED031	Kleefeld	1 - Raw We	l 2 - backup					2.A.A.	223	10:00	6	1	X		Х	6	
2302SB5007	MB05OED032	Kleefeld	2 - Treated						22.An-	223	10:15	10	1	X			4	
2302SB5008	MB05OED033	Kleefeld	3 - Distribut	ion mid-point	22 A	spin bay	130	5.1	22 Aug-	223	2100	9	1		X		1	
	Environmental Division Winnipeg Work Order Reference								lon									
Failure to cor	mplete all port	ions of t	his form m	ay delay ana	alysis.		Sample M	Aatrix:	6-Raw V	Vater,	9-Distribute	d Wate	-	VVI	-2	32	:05	00
Please fill in t	this form LEGI	BLY.					Sample 7	ype:	1-Grab S	ample						WA.	W.	101 - F
By the use of	this form the u	iser ackn	owledges	and agrees v	with the T	Ferms and Conditions a	s specifie	d by the La	aboratory.									1
Pelinquished	Resting, please	e use Lab	oratory sp	Date & Time			Malidated By (lab use aphil)					13						
rennquisneu		AUG 2 3 20					2023 Sample Condition (lab use only)						III F					
Received By: Tabluse only!			190	Date & Time		AUG 3 2 2023	Temp	Telephone : +1 204 255 9720						"J				

Appendix D

Operating License for Public Water System

Manitoba Environment and Climate Office of Drinking Water Box 19 – 14 Fultz Boulevard, Winnipeg, Manitoba R3Y 0L6

OPERATING LICENCE FOR A PUBLIC WATER SYSTEM

LICENCE NUMBER: PWS-21-655-01

THE DRINKING WATER SAFETY ACT CHAPTER D101, C.C.S.M.

WATER SYSTEM CODE: 104.00

OPERATION ID: 7793

EFFECTIVE DATE: JUNE 1, 2023

EXPIRY DATE: MAY 31, 2028

IN ACCORDANCE WITH THE DRINKING WATER SAFETY ACT, THIS OPERATING LICENCE IS ISSUED PURSUANT TO SUBSECTION 8(1) TO:

RURAL MUNICIPALITY OF HANOVER: "THE LICENSEE"

FOR THE OPERATION OF THE **KLEEFELD PUBLIC WATER SYSTEM**, WHICH INCLUDES SECURE WELLS, TREATMENT FACILITIES, WATER STORAGE RESERVOIRS, AND DISTRIBUTION LINES, SUBJECT TO THE ATTACHED TERMS AND CONDITIONS.

THIS LICENCE DOES NOT AFFECT THE LICENSEE'S OBLIGATIONS WITH RESPECT TO COMPLIANCE WITH ALL APPLICABLE MUNICIPAL, PROVINCIAL, AND FEDERAL LEGISLATION. THIS LICENCE SUPERSEDES ALL PREVIOUS LICENCES FOR THIS PUBLIC WATER SYSTEM.



DATE: October 31, 2023

Sacha Janzen A/Director, Office of Drinking Water

TERMS AND CONDITIONS

1. GENERAL

- 1.1. The Licensee shall operate the public water system in accordance with all applicable requirements of The Drinking Water Safety Act and its regulations, and the requirements of this licence. In the event that specific terms and conditions of this licence imposed under the authority of subsection 8(3) of the Act exceed the general requirements of the Act and regulations, the specific requirements of this licence shall apply.
- 1.2. The Licensee shall obtain approval from the Office of Drinking Water prior to making any significant alterations to the water source, the water treatment process, the water storage facilities, or the water distribution system.
- 1.3. This licence may be amended by the director where, in the opinion of the director, an amendment is necessary and the amendment will not negatively impact the safety of water obtained from the water system, or effective environmental management.
- 1.4. The Licensee may request an amendment to this licence by submitting an amendment application to the Office of Drinking Water.
- 1.5. This licence may be suspended or cancelled by the director for any of the reasons identified in Section 11 of Manitoba Regulation 40/2007, Drinking Water Safety Regulation or due to a failure to comply with any term or condition of this licence.
- 1.6. The Licensee shall provide written notice to the Office of Drinking Water of any change in ownership of the water system within seven days of the transfer of ownership.
- 1.7. The Licensee shall provide written notice to the Office of Drinking Water of any changes in the operational status of the water system, such as a permanent cessation of service, or changing the length of service from year-round to seasonal or the opposite.
- 1.8. The director of the Office of Drinking Water, medical officer of health or drinking water officer may enter any water system facility as necessary to carry out the provisions of The Drinking Water Safety Act and its regulations.
- 1.9. The Licensee shall post a copy of the first page of this licence at the water treatment facility.
- 1.10. The Licensee shall keep a copy of this licence in its entirety at a location established by the drinking water officer and ensure all operators are familiar with its terms and conditions.
- 1.11. The Licensee shall apply for renewal of this licence at least 60 days prior to its expiry.

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2. OPERATION - GENERAL

- 2.1. The Licensee shall operate all water system facilities, control systems, equipment, any reservoirs/cisterns and/or distribution lines as efficiently as possible, inspect them on a regular basis, maintain them in good working order, and ensure that the water system is protected from the risks associated with contamination.
- 2.2. The Licensee shall ensure that all chemicals and components that may come into contact with potable water are certified safe for potable water use through AWWA Standards, ANSI/NSF Standard 60 or 61, Health Canada, or other standards acceptable to the director.
- 2.3. No alternate water source shall be brought into service without the consent of the drinking water officer and the maintenance of adequate cross connection control between the alternate source and the primary source.
- 2.4. The Licensee shall follow the requirements as specified in *Operational Guideline ODW-OG-02 Seasonal Water Systems Start-up Shut-down Procedures* for any portion(s) of the distribution system that operate on a seasonal basis.
- 2.5. The Licensee shall have re-assessments of the water system infrastructure and water supply sources completed by a qualified person, who is not an employee of the water system, in accordance with assessment checklist GW by March 1, 2021, and every five years thereafter. The Licensee may instead have the assessment completed by a qualified professional engineer, who is not an employee of the water system, in accordance with terms of reference for engineering assessments.
- 2.6. The Licensee shall, upon request from the Office of Drinking Water, submit or resubmit a compliance plan, in a form satisfactory to the director, to address any noncompliance issues identified at the time.

3. OPERATION - EMERGENCIES

- 3.1. The Licensee shall ensure that disinfection is undertaken following construction, repair or maintenance activities on the water system, in accordance with applicable AWWA standards, or Manitoba Water Services Board specifications, or any other standards approved by the director. A copy of all associated test results must be kept available for review by the Office of Drinking Water for a minimum of 24 months.
- 3.2. The Licensee shall ensure that all equipment used for disinfection is maintained in effective working order and keep available for immediate use all spare parts and chemical supplies as may be necessary to ensure continuous disinfection, including a spare disinfection unit, if necessary.
- 3.3. The Licensee shall immediately notify the Office of Drinking Water of any condition that may affect the ability of the water system to produce or deliver safe drinking water including but not limited to treatment upsets or bypass conditions, contamination of the source water or treated water, a disinfection system failure, or a distribution system failure.
- 3.4. If a medical officer of health, the director of the Office of Drinking Water, or a drinking water officer issues a water advisory on the water system, the Licensee shall provide notice of the advisory to all water users in accordance with the advisory notification plan or by a method acceptable to the issuer.

4. WATER QUALITY/TREATMENT STANDARDS

4.1. The Licensee shall operate the water system in a manner that achieves the water quality/treatment standards specified in Table 1, as determined through the monitoring requirements specified in Table 2:

M	
Parameter	Quality Standard
Total coliform	Less than one total coliform bacteria detectable per 100 mL in all treated and distributed water
E. coli	Less than one <i>E. coli</i> bacteria detectable per 100 mL in all treated and distributed water
Ultraviolet Disinfection	95% of water produced per month is disinfected within validated conditions
Monochloramine	A monochloramine residual of at least 0.3 mg/L at all times at any point in the water distribution system
Arsenic	Less than or equal to 0.01 mg/L
Barium	Less than or equal to 2.0 mg/L
Benzene	Less than or equal to 0.005 mg/L
Ethylbenzene	Less than or equal to 0.14 mg/L
Fluoride	Less than or equal to 1.5 mg/L
Lead	Less than or equal to 0.005 mg/L based on a sample(s) collected at a cold water tap or other appropriate location where water may be used for drinking or food preparation
Manganese	Less than or equal to 0.12 mg/L
Nitrate	Less than or equal to 45 mg/L measured as nitrate (10 mg/L measured as nitrogen)
Nitrite	Less than or equal to 3 mg/L measured as nitrite (1 mg/L measured as nitrogen)
Trichloroethylene	Less than or equal to 0.005 mg/L
Tetrachloroethylene	Less than or equal to 0.01 mg/L
Toluene	Less than or equal to 0.06 mg/L
Total Xylenes	Less than or equal to 0.09 mg/L
Uranium	Less than or equal to 0.02 mg/L

Table 1: Water Quality/Treatment Standards

- 4.2. If a bacteriological standard is not met, the Licensee shall immediately undertake the applicable corrective actions as listed in "Schedule A" of Manitoba Regulation 41/2007, Drinking Water Quality Standards Regulation.
- 4.3. If a microbial, chemical, radiological, or physical standard is not met, the Licensee shall immediately undertake the applicable corrective actions specified in "Schedule C" of Manitoba Regulation 41/2007, the Drinking Water Quality Standards Regulation.
- 4.4. The Licensee shall maintain in effective working order ultraviolet (UV) light disinfection equipment and controls for primary disinfection that result in greater than or equal to 95% of the water produced per month undergoing UV light disinfection within validated conditions and at a minimum dose of 40 mJ/cm².

5. WATER QUALITY MONITORING

5.1.	The Licensee shall	ensure monitoring is	completed as set out in	Table 2.
------	--------------------	----------------------	-------------------------	----------

Tabla	2.	Monitoring	Schodulo
Ianc	۷.	wormoring	Schedule

	Nonitoring
Parameter	Requirement
	Biweekly sampling program with each set of samples consisting of one raw.
Bacteriological	one treated, and a minimum of one distribution sample
	, · · · · · · · · · · · · · · · · · · ·
E. COII)	Consecutive sample sets to be separated by at least 12 days
Ultraviolet	Daily operation verification of continuous UV unit monitoring
Disinfection	
UV Transmittance	One sample per week of water entering the UV disinfection units
(UVT)	
Monochloramine	One sample per day of water entering the distribution system
(treated water)	
Monochloramine	At the same times and location(s) as bacteriological distribution system
(distribution system)	sampling
Total Chlorine	One sample per week of water entering the distribution system
(treated water)	
Total Chlorine	At the same times and location(s) as bacteriological distribution system
(distribution system)	sampling
Free Ammonia	One sample per week of water entering the distribution system
(treated water)	
Free Ammonia	At the same times and location(s) as bacteriological distribution system
(distribution system)	sampling
Nitrite and Nitrate	One sample taken during July or August every year at a dead end sampling
(distribution system)	location in the distribution system
General Chemistry	One raw and one treated water sample once every three years
(parameter list	
provided by Office	
of Drinking water)	
I OTAL METALS	One sample taken at the same time(s) as general chemistry sampling at a
(distribution system)	mid-point in the distribution system
Darium	One raw, one treated, and one distribution water sample every year
Lead	As per me instructions of the annual elements and tatal parts
Ivianganese	wonitoring included in the general chemistry and total metals analysis
Uther Parameters	As per the instructions of the drinking water officer

- 5.2. The Licensee shall ensure that an accredited laboratory, as specified in section 35 of Manitoba Regulation 40/2007 the Drinking Water Safety Regulation, undertake the following analysis required in Table 2:
 - a) bacteriological (total coliform and E. coli)
 - b) barium
 - c) nitrite and nitrate
 - d) general chemistry
 - e) manganese
 - f) total metals
 - g) any other parameter required by the drinking water officer

and that all samples are collected, handled, and submitted in a manner that is satisfactory to the accredited laboratory.

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- 5.3. The Licensee shall ensure that parameters listed in Table 2 but not specified in clause 5.2 are measured utilizing certified water quality monitoring equipment and methods approved by the latest edition of *Standard Methods for the Examination of Water and Wastewater* published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation.
- 5.4. The Licensee shall ensure that all water quality monitoring equipment is properly maintained and calibrated by a qualified person according to manufacturer recommendations and that records are maintained to that effect.
- 5.5. The Licensee shall ensure that sampling within the distribution system takes place at varied locations acceptable to the drinking water officer.

6. RECORD-KEEPING AND REPORTING

- 6.1. The Licensee shall maintain in a secure location all construction drawings for the life of the water system components.
- 6.2. The Licensee shall retain in chronological order for a minimum of 24 months all information specified in subsection 34(2) of Manitoba Regulation 40/2007, Drinking Water Safety Regulation.
- 6.3. The Licensee shall ensure the information identified in clause 6.2 is available for inspection by any member of the public during normal business hours at the office of the water supplier or at a location convenient to the users of the system.
- 6.4. The Licensee shall record disinfectant residual measurements on the monthly disinfection report or other forms satisfactory to the director.
- 6.5. The Licensee shall record other measurements as specified in *Table 2: Monitoring Schedule* on the monthly report forms or other forms satisfactory to the director.
- 6.6. The Licensee shall record UV alarms and maintenance procedures performed on the water system and its supporting equipment on the monthly UV report forms or other forms satisfactory to the director.
- 6.7. The Licensee shall record validated UV condition verifications on the monthly report forms or other forms satisfactory to the director.
- 6.8. The Licensee shall keep one copy of all monthly report forms required in this licence, and forward the original copy to the drinking water officer within seven days after the end of each calendar month.
- 6.9. The Licensee shall record all distribution system measurements specified in *Table 2: Monitoring Schedule* on the chain of custody form (laboratory submission form) which accompanies the bacteriological sample bottles to the laboratory.
- 6.10. The Licensee shall ensure that water metering devices at the water treatment plant or storage reservoir are maintained in good working order and that flow meter readings are recorded on a daily basis and such records are made available for inspection by a drinking water officer.

- 6.11. The Licensee shall submit an annual report to the director by March 31st of each year on the operation of the water system in the immediately preceding calendar year. The report shall include the information as set out in subsection 32(2) of Manitoba Regulation 40/2007, Drinking Water Safety Regulation.
- 6.12. The Licensee shall inform the public, in a form satisfactory to the director, when an annual report has been prepared and identify how a free copy can be obtained.
- 6.13. The Licensee shall make a copy of each annual report available to the public at no charge on an internet website within two weeks of the issuance of the report, unless otherwise approved by the director. The annual report shall remain available to the public for at least one year.
- 6.14. The Licensee shall maintain and submit an advisory notification plan to the drinking water officer by May 1st of each year. The plan must include a detailed description of communication tools and methods to be used to notify the public of a drinking water emergency, considering key contacts, fan-outs, critical customers, susceptible or difficult-to-reach sub-groups, and template notices where applicable.

Appendix E

Monochloramine and UV Reports



Water System Name: KLEEFELD	Water System Code: <u>/04.0</u>
Month: JANGARY Year: 2024 Type of Mea	surement Device: <u>ELECTRONIC</u>
Operator-in-charge (Print): BARRY BREEFET	Other Operators (Print): <u>Rog FRIGIEN</u>
Daily Consumption Units:	STEPH DUGAL

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Date	ate Time Initials		Residual	s (mg/L)	Daily	
Date	Time	muais	Mono	Total	Consumption	
1	8:15	8.B	2.66		204	
2	7:00	8.B	2.63		234	
3	7:00	B.B.	2.57		214	
4	7:00	BB	2.53		211	
5	6:45	88	2.64	4.2	222	
6	7:15	BB	2.60		222	
7	9.30	B.B.	2.78		280	
8	7.00	R.F.	2.99		221	
9	8:00	R.F.	2.63		233	
10	7:00	RF	2.83		210	
11	7:00	RIF	2.73		208	
12	7:00	RIF	2.61	4.7	228	
13	7:30	Rit	2.03		216	
14	11:30	RIF	2.66		290	
15	7:30	R.F.	2.23		191	
16	7:00	RIF	2.91		217	

Data	Time	Initiala	Residual	s (mg/L)	Daily		
Date	nme		mitiais	Mono	Total	Consumption	
17	6:15	RIF	5.04		210		
18	8:00	RIE	2.73		232		
19	8:00	RIF	2.83	4.7	214		
20	7.30	B.B	2.73	2	205		
21	10:00	BB	300		266		
22	630	B B.	2.96		215		
23	7.00	8.8	2.82		230		
24	8:00	RIF.	3,15		226		
25	7:00	RIF	2,90		198		
26	8:30	Rif.	3,53	4.2	249		
27	41:00	2.5	3 41		210		
28	9:00	Rif.	3.26		247		
29	7:00	8 B.	3.00		207		
30	7:00	B.B.	2.93		228		
31	7:00	8.R.	2.80		218		
	Total Monthly Consumption 6,956						

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
5	7:00	BB	0.00	101	8:00	RIF	0.00				(***8/ =/
12	7:00	RIF	001	26	8:30	RIC	0.00				

Residuals at Distribution Sample Locations

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
9	8:30	Rif	Main Streit	1.51	3.6	00
23	9:45	8.8	MAIN LT.	3.10	4.6	0.00
					i.	



FEETH DUNK

Monthly Ultraviolet (UV) Report

Water System Name: ____KLEEFELD

Water System Code: 104.0

Month: ANUARY Year: 2024

Operator-in-charge (Print): BARRY BROEFEN

Unit: m5/em2

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
1	8:30	BB	64.27	1
2	7:00	B.B	63 52	
3	7:00	R.B.	63.52	-
4	7:15	8.8	63.52	
5	7:00	B.B	63.52	
6	7:30	8.8	63.49	-
7	9:45	BB	63 49	
8	7:00	RIF	62.49	-
9	8.00	RIF.	64.06	~
10	7:00	RIF	63.49	-
11	7:00	RIF	63.49	924 - C
12	7:00	RIF.	63.06	· · · ·
13	7:30	RIF	63.69	
14	11:30	RIF	13.69	~
15	7:30	RIF	63.69	
16	7:60	RIF	63.69	-

17 6:15 $R = -$ 63.65 $-$ 18 $R = 00$ $R = 63.65$ $-$ 19 $Z = 68.00$ $R = Rr$ 63.67 $-$ 20 $7:45$ $B.8$ 63.69 $-$ 20 $7:45$ $B.8$ 63.69 $-$ 21 $10:00$ $B.8$ 63.69 $-$ 22 $6:45$ $B.8$ 63.69 $-$ 23 $7:15$ $B.8$ 63.69 $-$ 24 $8:00$ 2.5 63.69 $-$ 25 $7:00$ $R.5$ 63.69 $-$ 26 $8:30$ $R:F$ 63.69 $-$ 27 $9:00$ $R.5$ 63.69 $-$ 28 $7:00$ $R:F$ 63.69 $-$ 30 $7:15$ 8.8 63.69 $-$ 31 $7:15$ 8.8 63.69 $-$	Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
18 g	17	6:15	R.F.	63.69	1
19 7.45 8.6 8.7 63.6 $-$ 20 7.45 8.8 63.69 $-$ 21 10.00 8.8 63.69 $-$ 22 6.45 8.8 63.69 $-$ 23 7.15 8.8 63.69 $-$ 24 8.00 2.5 63.69 $-$ 25 7.00 $R.6$ 13.69 $-$ 26 8.30 $R.6$ 13.69 $-$ 26 8.30 $R.6$ 13.69 $-$ 26 8.30 $R.6$ 13.69 $-$ 27 9.00 $R.6$ 13.69 $-$ 28 91.00 $R.6$ 63.69 $-$ 29 7.15 8.8 63.69 $-$ 30 7.15 8.8 63.69 $-$ 31 7.15 8.8 63.69 $-$	18	8.00	Rich	6369	-
20 $7:45$ $B.B$ $H24_{-3.69}$ $-$ 21 $10:60$ $B.B$ 63.69 $-$ 22 $6:45$ $B.B$ 63.69 $-$ 23 $7:15$ $B.B$ 63.69 $-$ 24 $8:00$ $P.F.$ 63.69 $-$ 25 $7:00$ $R.F.$ 13.69 $-$ 26 $8:30$ $R:F.$ 63.69 $-$ 26 $8:30$ $R:F.$ 63.69 $-$ 27 $9:00$ $R:F.$ 63.69 $-$ 28 $9:00$ $R:F.$ 63.69 $-$ 30 $7:15$ $8.B.$ 63.69 $-$ 31 $7:15$ $8.B.$ 63.69 $-$	19	7-45 8.00	RF.	6369(427	-
21 $10:00$ BB 63.69 $-$ 22 $6:45$ $B.B.$ 63.69 $-$ 23 $7:15$ $B.B.$ 63.69 $-$ 24 $8:00$ 2.5 63.69 $-$ 25 $7:00$ $R.F.$ 63.69 $-$ 26 $8:30$ $R:F.$ 63.69 $-$ 26 $8:30$ $R:F.$ 63.69 $-$ 27 $9:00$ $R:F.$ 63.69 $-$ 28 $9:00$ $R:F.$ 63.69 $-$ 29 $7:15$ $B.B.$ 63.69 $-$ 30 $7:15$ $B.B.$ 63.69 $-$ 31 $7:15$ $B.B.$ 63.69 $-$	20	7:45	B.B.	EY241369	1.57
22 $6:45$ $8.8.$ 63.69 - 23 $7:15$ $8.8.$ 43.69 - 24 $8'.00$ $2.5.$ 63.69 - 25 $7:00$ $8.6.$ 43.69 - 26 $8!30$ $8.6.$ 63.69 - 27 $9:00$ $8.6.$ 63.69 - 28 $9!00$ $8.6.$ 63.69 - 29 $7:15$ $8.8.$ 63.69 - 30 $7:15$ $8.8.$ 63.69 - 31 $7:15$ $8.8.$ 63.69 -	21	10.00	BB	63.69	and a
23 7.15 B.B. $4.3.69$ $-$ 24 8.00 2.5 63.69 $-$ 25 7.00 $R.F.$ 43.69 $-$ 26 8.30 $R.F.$ 43.69 $-$ 27 9.00 $R.F.$ 63.69 $-$ 28 9.00 $R.F.$ 63.69 $-$ 29 7.15 8.8 63.69 $-$ 30 7.15 8.8 63.69 $-$ 31 7.15 8.8 63.69 $-$	22	6:45	8.8.	63.69	
24 $g: col 2.5 63.69 - 25 7:col R.F. 13.69 - 26 g:30 R.F. 13.69 - 27 9:col R.F. 63.69 - 28 9:col R.F. 63.69 - 29 7:15 8.8 63.69 - 30 7:15 8.8 63.69 - 31 7:15 8.8 63.69 - $	23	7:15	B. B.	13.69	-
25 $7:00$ $R.K.$ 13.69 $-$ 26 $8:30$ $R.K.$ 13.69 $-$ 27 $9:00$ $R.K.$ 63.69 $-$ 28 $9:00$ $R.K.$ 63.69 $-$ 29 $7:15$ $8.8.$ 63.69 $-$ 30 $7:15$ $8.8.$ 63.69 $-$ 31 $7:15$ $8.8.$ 63.69 $-$	24	8:00	R.F.	63.69	1440
26 $\$$:30 \Re :F. 63.69 - 27 $9:00$ \Re :F. 63.69 - 28 $9:00$ \Re :F. 63.69 - 29 $7:15$ 8.8 63.69 - 30 $7:15$ 8.8 63.69 - 31 $7:15$ 8.8 63.69 -	25	7:00	R.F.	13.69	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	26	\$130	RIF	63.69	-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	27	9:00	P.F.	63.69	***
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	28	9:00	RIK	63.69	
30 7:15 BB 63.69 31 7:15 BB 63.69	29	7.15	B.B.	63.69	1894./
31 7:15 B.B. 63.69 -	30	7:15	BB	63.69	2.4
	31	7:15	B B.	63.69	200

Date	UVT rea Alarm or Warning History	idings and and actions taken to resolve
5	UNT TEST: 80.5	
12	UUT TEST \$1.7	
9	UVITES! SI.2	
26	UNTEST: 810	

Signature: 1 Pan 1 feel



Water System Name: KIEEFELO	Water System Code: <u>104.0</u>
Month: FERCARY Year: 2024 Type of Mea	surement Device: <u>FLFCTRONIC</u>
Operator-in-charge (Print): BARRI BROESKI	Other Operators (Print): ROB FUESEN
Daily Consumption Units:	STEPH DUVAL

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Data	Time	Initials	Residua	ls (mg/L)	Daily	
Date	Time	Initials	Mono	Total	Consumption	Dat
1	7:00	B.B.	2.88		218	17
2	7:00	B.B.	2.91	4.0	214	18
3	7:00	B.B.	3.12		222	19
4	8:45	BB.	2.88		270	20
5	8:00	R.F.	3.01		242	21
6	8:30	RIE	2.96		225	22
7	7:00	RIF	2.99		207	23
8	8:00	R.F.	3.16		224	24
9	8:30	R.E.	2.65	4.0	229	25
10	9:00	Rita	3.08		218	26
11	5:30	2.5	3.16		230	27
12	7:00	8.8	3.04		244	28
13	7:00	BB.	2.82		236	29
14	7:00	B.B.	2.15		221	30
15	7:00	B.B.	2.34		219	31
16	7:00	B.B.	2.57	3.2	227	

	Time	Initiala	Residuals	5 (mg/L)	Daily
Jale	nme	Initials	Mono	Total	Consumption
17	7:15	BB	2.57		209
18	9:00	BB.	2.72		252
19	6:45	B.B.	2.76		189
20	8:00	RIF	3.01		273
21	8:00	R.F.	337		220
22	-1.00	RIF.	3.16		206
23	8 00	2.5	2.87	39	220
24	8:00	R.F.	3.04		216
25	5:30	R.F.	302		221
26	8:45	5.D	2.93		263
27	7:15	5.D	2.46		300
28	7:00	5 D.	2.04		221
29	7 00	8.8.	3.08		215
30					
31					
		Total N	nonthly Con	sumption	6.336

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
2	7:00	8.B.	0.00	16	7:00	8 B.	0.00				
J	8 30	R.F.	0.00	23	8:00	R.F.	006				

Residuals at Distribution Sample Locations

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
6	8:45	R.F.	Mann Street	2.98	4.2	0.07
20	8.15	Rik	Main Smell	2.05	3.7	0.09
Jbmit	ted by (Pi	rint): <u> </u>	ARET BROFSKY	Signat	ure:	long 1



Number c

Monthly Ultraviolet (UV) Report

Water System Name: KLEEFELD Water System Code: 104.0

Month: FEBRUARY Year: 2024

Operator-in-charge (Print): BARRY BROESKY Other Operators (Print): ROB FRIESEN Unit: milcm2 STERN DUVAL

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	Date	Time	Oper: Initia
1	7:15	8 B	64.44	24	17	7:3c	BF
	7:15	B.B.	63.69	1.000	18	9.10	22
3	7:15	R.B	63.52	-	19	7:00	20
	9:00	B.B.	64.27		20	8'00'	20
5	8:00	RIF	63.52	-	21	8:00	R
6	8:30	R.F	64110	-	22	7'00	2
7	7:00	RIF	64.27	-	23	2.00	20
8	8:00	RIF.	63.52	_	24	8:00	12.
9	8:30	RIC	64.10	-	25	5:30	17
10	9.00	RIES	64.10	-	26	8:30	2
11	5:30	RIF	63.52	-	27	7:15	5
12	7:00	B	63 52	-	28	7.00	5.1
13	7:15	B.B.	63.52	- 244	29	7:15	28
14	7:15	8.8	63.52	5.000 ()	30		0.0
15	7.00	B. B.	6352		31		
16	7:00	B.B.	69.38	•(*)			
Dat 2 9 16 23	10 UVT71 UVT71 UVT71 UVT71	Est: 80.8 ST: 80.9 EST 81.3 Est 81.2	Alar	m or Warning	UVT reading History and	s and actions taken to	o resolve

Date	Time	Operator Initials	UV Dose mJ/cm2	Alarms (A or Warnings (W)	
17	7:3c	B B.	63.60	-	
18	9:15	R B.	6360	**	
19	7:00	8 B	63.60	-	
20	8:00	RiF	13.60	-	
21	8:00	RIFIE	63.60	-	
22	7:00	R.F.	6360	-	
23	8.00	R.F.	6360		
24	8:00	12. C	62.60	-	
25	5:30	R.F.	6360		
26	8:30	5.0,	63.50		
27	7:15	- 5. D.	103.50		
28	7:00	S.D.	6350		
29	7:15	B. R.	62 83		
30			02.00		
31					

Submitted by (Print): BARXI BROENKI Signature:

ē.



Water System Name: <u>KLEEFELD</u>	Water System Code: <u>104.0</u>
Month: <u>Maker</u> Year: <u>2024</u> Type of Mea	surement Device: <u>ELECTRENIC</u>
Operator-in-charge (Print):	Other Operators (Print): ROB FRIESEN
Daily Consumption Units:	STEPH DUUAL

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Data	Time	Initiala	Residual	ls (mg/L)	Daily
Date	Time	maars	Mono	Total	Consumption
1	7'00	B.B.	3.08	3.8	217
2	7:30	BB	2.81		215
3	9:30	8. R.	2.99		271
4	7.00	R.F.	2.82		221
5	8:00	R.F.	2.58		249
6	8:00	R.F.	2.61		230
7	8:00	RIF	2.81		233
8	8:00	R.F.	2.83	3.1	210
9	8:30	RIF	3.16	3,7	227
10	11:00	R.F.	3.07		269
11	7:00	8.8.	2.99		195
12	7.00	B.B.	3.10		233
13	7:00	8.B.	3.08		225
14	7:65	8.8	3.10		227
15	7:00	B.B.	3.01	4.0	129
16	7:15	B.B.	2.93		222

Data	Time	1-141-1-	Residuals	s (mg/L)	Daily
Date	nme	initiais	Mono	Total	Consumption
17	9:30	B.B.	3.04		277
18	8:00	R.F.	3.09		243
19	8:00	R.F	319		228
20	7:00	R.F.	3.04		215-
21	7:00	R.F.	3.03		222
22	7.00	RIF.	3,21	3.7	234
23	9:00	PIF	332		233
24	11:30	R.F.	307		301
25	8:00	RE	2.99		190
26	8.00	Rill	5.16		229
27	6:30	R.F.	3.10		200
28	8:00	RIF	3.06	4,5	232
29	5.30	RIF	3.59		198
30	6:15	B.B.	3.04		230
31	9:00	B.B.	3.04		259
		Total N	Ionthly Con	7164	

Total Monthly Consumption

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
1 8	7:00	B.B. R.F.	0.00	16 22	7:00	B.B. R.F.	0.00	28	8:00	RIF	0,00

Residuals at Distribution Sample Locations

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
5	\$:30	RIF	Main St.	1.83	3,5	6.10
19	9.45	B.B.	MAINLE.	3.11	4.2	0.00
			0 . 0			1,1
Submit	ted by (P	rint):	SARRY BROFSRY	Signat	ure: 🗋	7 tonte



Monthly Ultraviolet (UV) Report

Water System Name: KLEEFELD Water System Code: 104.0

Month: <u>7774KCH</u> Year: <u>2024</u>

Operator-in-charge (Print): BARRY BROESRY Other Operators (Print): ROB FRIESEN STEPH DUIAL Unit: milem2

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	Date	Time	Operator Initials	UV Dose mJ/cm2	Number o Alarms (A) or Warnings (W)
1	7:15	88	63.59	-	17	9:30	R R	64.20	~
2	7:30	BB	63.49		18	8:00	R.F.	6420	1443
3	9:30	BR	63.49	10	19	8.00	RIF	64.61	(e)
4	7'00	R.F.	6344	~	20	7:00	RF	64,20	-
5	8:00	RIF	1465		21	7:00	12,5.	6420	-
6	8:00	RIF.	63 49	3 4	22	7100	RIF	640)	~
7	8.00	12.6	63.49	-	23	11:00	RIF	62.45	2011 1878
8	8:00	R.F.	63,49	_	24	11:30	R.E.	6345	-
9	8:30	RIF.	63,49	-	25	8.00	R.F.	63.45	
10	11:00	R.F.	65.16	-	26	8:00	Ric	62.45	-
11	7:15	B.B.	65.16		27	6:30	Rif.	63.45	-
12	7:15	BB	65.16		28	7:00	RIF	63.45	×
13	7:00	B.B.	65.16	-	29	5:00	Rit	63.45	~
14	7:3c	B.B.	65.16	-	30	6:30	B.B.	64.60	-
15	7:15	<u>B.B.</u>	65.16	-	31	39:00	B.B.	64.60	2.0
16	7:30	B.B.	63.45						
Da j	te UVT	TEST : 80.5	Alar	m or Warnin	UVT reading g History and a	s and actions taken t	o resolve		
8	UVT	TEST: 85.2							
15	UUT	TET: 79.9							
2	2 UVT	TEST : 792							
2	8 00	UNT TEST 74.9							

Submitted by (Print): <u>BARRY BROFSEY</u> Signature:



Nater System Name: Kleekeld	Water System Code: <u>/04.0</u>
Month: April Year: 2024	Type of Measurement Device: Electronuc
Operator-in-charge (Print): <u>Rob Gro</u> g	Sen Other Operators (Print): Burry Browsky
Daily Consumption Units:3	Steph Durn

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Dete	T	La Marta	Residual	s (mg/L)	Daily
Date	Time	initiais	Mono	Total	Consumption
1	7:30	R.F.	3.16		2/4
2	8130	R.F.	3.22		253
3	8:00	R,R	3.29		222
4	8:00	R.F.	3.20		224
5	8:00	R.F.	3,20	4.0	235
6	8:30	Rif	3.05	-	227
7	11:00	RIE.	3,27		286
8	7:00	8.8.	2.96		190
9	7:00	B.B	2.89		244
10	7:15	B.B.	2.70		233
11	7:00	B.B	2.64		222
12	7:15	B.B.	2.88	3.4	239
13	6:30	B.B.	2.91		218
14	10:45	B.B.	3.00		312
15	8:00	R.E	2.97		195
16	8:00	Rit.	3.02		246

D. (La Marta	Residual	s (mg/L)	Daily	
Date	Time	Initials	Mono	Total	Consumption	
17	8:00	P.F.	2.97		219	
18	6:30	R.F.	2.94		222	
19	7:00	R.F.	300	3.9	241	
20	9:30	R.F.	3.13		267	
21	11:15	R.F.	3.21		297	
22	7:00	B.B.	2.87		190	
23	6:45	B.8.	2.77		237	
24	7:00	8.8.	2.84		247	
25	7:00	B.B.	2.88		234	
26	7:30	B.B.	2.86	3.6	254	
27	6:30	B.B.	2.75		214	
28	10.30	B.B	2.58		289	
29	7:30	R.F	3.07		203	
30	8:30	R.F.	2.85		247	
31						

Total Monthly Consumption

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	D	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
5	8:00	2,6	0.00	1	19	7:00		0.01			-	_
12	7:15	BB.	0.08	2	26	7:30	B.B.	0.14				

Residuals at Distribution Sample Locations

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
2	9:00	RIF	Nhin Stint	1.88	3.1	0.04
16	8:45	R.F.	NEW Sweet	3.07	4.1	0.14
30	8:45	R.F.	Main Sweet	2.91	3.6	009
						11
Submit	ted by (Pr	rint): <u>Ro</u>	bluesin	Signat	ure:	10



Monthly Ultraviolet (UV) Report

Nater S	System	Name	: Kle	4612	
	Λ.	T.		2.211	

Nonth: April Year: 2024

Water System Code: 104.0

Operator-in-charge (Print): Rob Green Other Operators (Print): Barry Broesky

STRPH DUVAL

Unit: mj/cm²

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
1	7:30	R.F.	6460	
2	8 30	P.L	64.60	-
3	8.00	RiF	611.60	-
4	8.00	RIF	64.60	24
5	8:00	R.F.	6460	200
6	8.30	R.F.	6364	~
7	11.00	R.F.	63.64	
8	E007:16	B.B.	63.64	
9	7:00	B.B	63.64	-
10	7:30	B B	63.64	
11	7:15	B.B.	63.64	9
12	7:30	B.B.	63.64	
13	6:45	B.B.	62.93	
14	11:60	B.B.	62.93	-
15	8:00	R.K.	62.93	-
16	\$ 20	Q.T.	67.17	-

17 $8:00$ 2.6 $2.62.17$ $-$ 18 $6:30$ R_1F 62.17 $-$ 19 $7:00$ R_1F 62.17 $-$ 20 $9:30$ R_2F 63.17 $-$ 21 $11!75$ R_1F 63.94 $-$ 22 $7:00$ 8.8 63.94 $-$ 23 $7:00$ 8.8 62.41 $-$ 24 $7:00$ 8.8 62.41 $-$ 25 $7:15$ 8.8 62.41 $-$ 26 $7:30$ 8.8 63.50 $-$ 28 $10:30$ $R.6$ 61.99 $-$ 29 7130 $R.6$ 63.50 $-$ 30 $8:30$ $R:6$ 63.50 $-$ 31 $ -$ <	Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
18 $6:30$ $R_1F.$ 62.17 $-$ 19 $7:00$ $R_1F.$ 62.17 $-$ 20 $9:30$ $R_1F.$ 62.17 $-$ 21 $11!75$ $R_1F.$ 63.94 $-$ 22 $7:00$ $B.B.$ 63.94 $-$ 23 $7:00$ $B.B.$ 62.41 $-$ 24 $7:00$ $B.B.$ 62.41 $-$ 25 $7:15$ $B.B.$ 62.41 $-$ 26 $7:30$ $B.B.$ $63.1R$ $-$ 27 $6:30$ $B.B.$ 61.99 $-$ 28 $10:30$ $B.B.$ 61.99 $-$ 30 $8:30$ $R_1F.$ $(03.50$ $-$ 31 $ -$	17	8:00	RIF.	262.17	
19 $7:00$ $R:F.$ 62.17 $-$ 20 $9:30$ $R:F.$ 63.94 $-$ 21 $11'15$ $R:F.$ 63.94 $-$ 22 $7:00$ $8.8.$ 63.94 $-$ 23 $7:00$ $8.8.$ 63.94 $-$ 23 $7:00$ $8.8.$ 63.94 $-$ 23 $7:00$ $8.8.$ 63.94 $-$ 24 $7:00$ $8.8.$ 62.41 $-$ 25 $7:15$ $8.8.$ 62.41 $-$ 26 $7:30$ $8.8.$ 63.18 $-$ 26 $7:30$ $8.8.$ 63.50 $-$ 28 $10:30$ $8.8.$ 61.99 $-$ 29 7130 $R:F.$ 63.50 $-$ 30 $8:30$ $R:F.$ (03.50) $-$ 31 $ -$	18	6:30	RIF.	62.17	11
20 $9:30$ $R.F.$ 63.94 - 21 $11!75$ $R.F.$ 63.94 - 22 $7:00$ $8.8.$ 63.94 - 23 $7:00$ $8.8.$ 63.94 - 24 $7:00$ $8.8.$ 62.94 - 24 $7:00$ $8.8.$ 62.41 - 25 $7:15$ $8.8.$ 62.41 - 26 $7:30$ $8.8.$ $63.18.$ - 27 $6:30$ $8.8.$ $63.50.$ - 28 $10:30.$ $8.8.$ $61.99.$ - 29 $7:30.$ $R.F.$ $63.50.$ - 30 $8:30.$ $R.F.$ $(03.50.$ - 31 - - - - -	19	7:00	RIF	62.17	-
21 $11!15$ $R.E.$ 63.94 22 $7:00$ $8.B.$ 63.94 $ 23$ $7:00$ $8.B.$ 63.94 $ 24$ $7:00$ $8.B.$ 63.94 $ 24$ $7:00$ $8.B.$ 62.41 $ 25$ $7:15$ $8.B.$ 62.41 $ 26$ $7:30$ $8.B.$ 62.41 $ 26$ $7:30$ $8.B.$ 63.18 $ 27$ $6:30$ $8.B.$ 61.99 $ 28$ $10:30$ $8.B.$ 61.99 $ 29$ $7:30$ $R.F.$ 63.50 $ 30$ $8:30$ $R.F.$ $(03.50$ $ 31$ $ -$	20	9:30	R.F.	63,99	-
22 $7:00$ $8.8.$ 63.94 $-$ 23 $7:00$ $8.8.$ 63.94 $-$ 24 $7:00$ $8.8.$ 62.41 $-$ 25 $7:15$ $8.8.$ 62.41 $-$ 26 $7:30$ $8.8.$ 62.41 $-$ 26 $7:30$ $8.8.$ 63.18 $-$ 27 $6:30$ $8.8.$ 63.50 $-$ 28 $10:30$ $8.8.$ 61.99 $-$ 30 $8:30$ $8.5.$ 63.50 $-$ 31 $ -$	21	11:15	RA	63.94	
23 7.00 \mathcal{B} <	22	7:00	8.8.	63 94	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	23	7:00	BB.	63.94	-
25 $7:15$ $B.B.$ 62.41 $-$ 26 $7:30$ $B.B.$ $63.1R$ $-$ 27 $6:30$ $B.B.$ $63.5c$ $-$ 28 $10:30$ $B.B.$ 61.99 $-$ 29 $7:30$ $R.F.$ 63.50 $-$ 30 $8:30$ $R.F.$ (03.50) $-$ 31 $ -$	24	7:00	8.B.	62.41	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	25	7:15	B.B.	62.41	~
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	26	7:30	B. B.	63.18	-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	27	6:30	BB	63.50	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	28	10:30	88.	61.99	-
30 8:30 R.F. (3.50 -	29	5130	Rik	63.50	-
31	30	8:30	R.F.	(03.50)	-
· · · · · · · · · · · · · · · · · · ·	31				

Date	UVT readings and Alarm or Warning History and actions taken to resolve						
5	UNITEST - 81.5						
12	UVT TEST: 81.7						
19	UNTTEST: 82.6						
26	UNT TEST: 80.6						

Submitted by (Print): Rob Fresh

Signature:



Vater System Name: Klee	Water System Code: 104.0
Nonth: May Year:	Type of Measurement Device: Electronic
Operator-in-charge (Print):	Rob Friesen Other Operators (Print): Burry Bioesky
Jaily Consumption Units:3	Colleen Monent

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

-		1	Residuals (mg/L)		Daily
Date	Time	Initials	Мопо	Total	Consumption
1	8:30	R.F.	2.94		252
2	8 00	R.F	2.89		224
3	7.30	12,5.	2.75	3.6	228
4	9:00	RIF	2.94		237
5	11:30	R.F.	2.90		301
6	7:00	B.B.	2.81		224
7	6:45	B B.	1.32		265
8	7 00	R.B.	1.68		242
9	7:00	B.B.	2.05		256
10	7:00	RB	2.91	3.3	572
11	5.45	R.B.	3.01		463
12	9:45	B.B.	3.15		361
13	8.00	Z.F.	3.26		288
14	7:45	R.F.	3.16		277
15	7:00	RIF	3.38		269
16	7:00	RIF.	3.09		250

			Residuals	5 (mg/L)	Daily
Date	Time	Initials	Mono	Total	Consumption
17	10:15	RiF	3.18	4.7	293
18	\$:30	R.E.	3.29		217
19	11:00	RIC	3.35		291
20	9:00	R.F.	2.87		201
21	7:00	B.B.	3.19		326
22	7:00	8.8	3.16		273
23	7:00	B.8.	3.15		260
24	7:00	88	2.63	3.5	251
25	6:15	8.8	2.75		214
26	7:15	B.B.	2.45		263
27	8.00	R.F.	2,51		297
28	9:00	CM	2.94		28
29	8:30	R.F.	2.90		247
30	8:00	RIF	2.95		282
31	8:00	R.L.	2.07	39	259
		Total	Monthly Cor	sumption	8705

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
31	7:30	R.F.	0.05	17	10:15	RIC	0.16	31	8:00	R.F.	0.12
10	7:00	B.8.	0.26	24	7:00	B.B.	0.08				

Residuals at Distribution Sample Locations

				Residuals (mg/L)				
Date	Time	Initials	Location	Mono	Total	Ammonia		
141	9:30	R.F.	Man St.	3.27	4.5	0.04		
28	8:20	R.S.	March ST.	2.44	3.5	0.21		
0.0						-		
						111		
In 14	ted by /D		b from	Signat	ure: 😕	///		
Submit	tea by (P	rinty. <u> </u>		Signat		C-		



Monthly Ultraviolet (UV) Report

Vater Sy	stem Name: _	Kleckeld		Water S	System Code	e: 104.0			
Month: <u>M</u> Dperator Jnit: <u>M</u>	<u>lhy</u> Υ -in-charge (Ρι J/cm ²	ear: <u>7024</u> int): <u>Rob Fra</u>	ryn	Other C)perators (P	rint): (01/eei	Bruesky Moway		
Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
1	8:30	RIF.	63,50		17	10:15	R.F.	63.59	-
2	8.00	12.F	62.75	-	18	\$:20	R.F.	62.32	
3	7:30	RIF	64.66	-	19	11:00	RIK	63.09	*
	CALIN	0.0	1110		20	671130	RE	1.205-	-

2	8.00	R.F	62.75	~	
3	7:30	RIF	64.66	-	
4	9:00	RIC	62.19	-	
5	11:30	R.R.	63.64	-	
6	7:15	8.B	63.64	-	
7	7:00	B.B.	63.64	-	
8	7:30	B.B	62.13	-	
9	7:15	B.B.	62.89	·	
10	7:15	8.8	62.89	-	
11	6:00	B.B.	62.67	-	
12	9:45	88	62.83		
13	8:00	OL. RF.	63:59	-	
14	7:45-	RIC	62.07	-	
15	7:00	R.F.	62.59	-	
16	7:00	a.E.	1.3.59	-	

Date	Time	Operator Initials	UV Dose mJ/cm2	Alarms (A) or Warnings (W)
17	10:15	R.F.	63.59	-
18	\$:20	R.F.	1.2.32	
19	11:00	RIK	63.09	*
20	9:00	RIL	63.85	-
21	7:00	B.8	62.32	
22	7.00	B.B.	62.32	-
23	7:00	88	62.32	
24	7.15	B.B.	62.32	-
25	6:30	8.8	62.04	
26	7:30	BB	62.04	
27	8:00	Rif.	62.04	-
28	8:50	CM	6314	
29	8.30	R.F.	62.04	-
30	8:00	RIC.	62.04	-
31	8:00	R.R.	62.04	-

Date	Alarm or Warning History and actions taken to resolve	
3	UNT TEST: 81.5	
10	UNT TEST: 81.2	
17	UNTTEST 823	
24	UNTTENT: 81.0	
31	UVI TEST: 80.9	

Submitted by (Print): Rob Friese

Signature:



Nater System Name: Kuthing	Water System Code: 10 ² 1.0	
٧onth: <u> </u>	e of Measurement Device: Electron, C	
Dperator-in-charge (Print): Rob fries	C Other Operators (Print): Barry Broesky	
)aily Consumption Units:3	Steph Dunal	

¹low Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Date	Time	Initiale	Residua	ls (mg/L)	Daily	Dete	Time	1	Residual	s (mg/L)	Daily
	inne	muais	Mono	Total	Consumption	Date	lime	Initials	Mono	Total	Consumption
1	9:00	R.C.	2.96		264	17	7:00	B.B.	2.87		259
2	11:15	RA	305		378	18	7:00	B.B.	2.89		395
3	7:00	R.K.	3.12		256	19	7:00	R.R.	2.88		254
4	7:45	88.	3.13		287	20	7:00	B.8.	2.86		3.54
5	7:00	8.8.	2.96		241	21	7:00	B.B.	2.82	4.2	323
6	7:30	8.8	3.13		296	22	6:45	B.B.	2.99		408
7	7:30	B.B.	3.14	3.9	253	23	6:30	BB	2.96		323
8	6:45	R.R.	2.94		289	24	7:30	Rife	2.91		322
9	10.00	8.8.	3.23		376	25	9:30	RF	2.60		419
10	7:30	R.F.	3.09		290	26	7.15	RIF	1.40		294
11	8:00	RF.	2.88		330	27	7:00	RE	1.99		279
12	8:00	RIF	1.80		587	28	6:30	RIF.	2.49	31	267
13	8:00	R.F.	2.37		405	29	6 30	Rya,	2.75	-	243
14	8:00	Rira	2.75	3.9	600	30	11.00	RIF	2.72		303
15	9:00	R.F.	3.09		535	31					
16	11:30	R.c.	2.89		378		~	Total N	Ionthly Con	sumption	10,208

Immonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	D	Date	Time	Initials	Ammonia (mg/L)	Date		Time	Initials	Ammonia (mg/L)
7	7:30	BB	0.21	2	21	7:00	88.	0.12		1			
14	8'00	R.F.	0.07	2	28	6:30	R.F.	0 01					

tesiduals at Distribution Sample Locations

				Residuals (mg/L)				
Date	Time	Initials	Location	Mono	Total	Ammonia		
11	8:30	R.F.	May Sheit	2.72	28	0.25		
26	10:00	P.F.	Mun Smelt	2.68	4.0	0.06		
				~~~~				
		R	1 1			11		
ubmit	ted by (Pr	int):	ob triggen	Signate	ure:	AV		


#### Monthly Ultraviolet (UV) Report Nater System Name: Kleefeld Water System Code: 104.0 Month: June Year: 2024 Derator-in-charge (Print): Rob Rriesen Other Operators (Print): Barry Broesky Jnit: mi/cm2 Skich Duval Number of Number of Alarms (A) Alarms (A) UV Dose UV Dose Operator Operator Date Time Date Time or ог Initials mJ/cm2 Initials mJ/cm2 Warnings Warnings (W) (W) R.I. 62.02 9:00 17 7:15 60.40 1 1.000 -18 23 -2 RIF. 62,02 2:00 60.40 11:15 -BB 19 _ 3 7:20 62.02 7:00 BR 60.40 B.R BB 20 7:00 4 8:00 ...... -61.47 60.40 5 21 7:15 8 8 --6117 -27.00 R.R. 62.02 6 R. X 62.07 .... 22 RR 60.93 _ 7:30 7:00 7 RR .... 23 6:30 R.R. 62.48 ..... 62.02 7:30 R.L. 8 7:00 KR 61.17 ... 24 7:30 60.93 ----R.F. -9 10:15 RR 60.40 25 01:30 60.93 60.93 -7.15 R.F 10 7:30 D.F. 60.40 _ 26 Rif. 60.39 11 27 8:00 R.F. 61.94 ~ 7:00 -12 60.40 28 6:30 RIF 60.39 8:00 RiF _ -13 29 RIR 8'00 R.L. 60.40 -10:30 61.17 K.E. 14 8:00 R.F. 59.63 30 11:00 60.40 15 H= 30'7:00 R.C. 59.63 -31 R.F. 59.63 -16 A:11:30 UVT readings and Alarm or Warning History and actions taken to resolve Date 7 OVI TENT: 80.0 WTTEST: 81.8 14 21 UNT TEST: 82.8 UUTITEST: 79.8 28 Submitted by (Print): Rob friespin

Signature:/



STEPH DOVAL

# onthly Chloramination Report

ater System Name: KIEFFEW Water System Code: 104.0

onth: July Year: 2024 Type of Measurement Device: ElectRonic

perator-in-charge (Print): <u>BARRY BROESKY</u> Other Operators (Print): <u>Rog FRIESEN</u>

aily Consumption Units:

m ow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

	1		Residuals	(mg/L)	Daily Consumption	
Date	Time	Initials	Mono	Total	Consumption	
1	8:30	R.F.	2.87		205	
2	8:00	R.F.	2.01		215	
2	7.45	R.F.	2.19		246	
4	7:00	RIF	1.73		239	
5	8.00	RIE	2.66	3.7	281	
6	7:15	8.8.	2.72		295	
7	9.45	8.B.	1.98		566	
8	8.00	R.F.	1.75		280	
9	8:00	R.C.	2.31		300	
10	8:00	RIF	5.16		6007	
11	8:00	K1	5.05	110	53-1	
12	7:30	Rit.	3.26	49		
13	6:30	R.F.	3 3		465	
14	11:30	R.K.	5.29		289	
15	7:00	B.B.	3.16		279	
16	7:00	B.B.	3.17		61	

			Residuals	(mg/L)	Daily
Date	Time	Initials	Mono	Total	Consumption
47		DD	310		245
1/	1:00	0.0	210		279
18	7:00	BB.	0.0	27	249
19	6:45	8B	2.11	6.1	201
20	6:30	88.	2.41		506
21	6:30	B.B.	2.85	_	318
22	8:00	RIF.	3.20		364
23	8:00	R.F.	3.18		260
24	8:30	RUE	3.18		213
25	8:30	RIF	3.01		735522
26	8:00	B.8.	2,19	4.2	353
27	9:30	R.F.	5.17		369
28	11:00	PIF.	3.26		-149
29	7:00	B.B.	3.41		900
30	6:45	B.8.	3.45		314
31	7:15	B.B.	3.50		476

Total Monthly Consumption 10,584

### L. L. Treated Water

Ammon	ia in Treate	u water	Ammonia	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	(mg/L)	
Date 5	Time 8:00	Initials	(mg/L) ().00	19 19	7:00	R.R.	0.00					
12	7:30	Rik.	0.00	26	0.00	0.0						

#### Residuals at Distribution Sample Locations Residuals (mg/L) Ammonia Total Mono Location Initials 0.06 Time 2.94 5.2 Date w. Svelt R.F. 9:00 001 0 4.4 2.11 RIF 23 9.00 Signature: 🎢

# Submitted by (Print): BARRY BROESEY



# Ionthly Ultraviolet (UV) Report

later System Name	KLE	EFELD	
ionth: July	Year:	2024	

Water System Code: 104.0

)perator-in-charge (Print): BARKT BROENEY Other Operators (Print): Ros FRIEJEN

GEPH DOUM

Init: mj/cm2

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	
1	\$:30	RiF	61.93		
2	8:00	R.F.	6193		
3	1:45	RIF	61.93	-	
4	7:00	R.F.	61.93		
5	8:00	R.F.	61.93	-	
6	7.20	B.B.	61.38		
7	10.15	B.8.	60.40	-	
8	\$:00	RIF	60.40		
9	\$100	R.F.	00 94	-	
10	8.00	RIE	59.62	-	
11	CA: RA	RIF.	56.415		
12	7'30	2.6	56.45	-	
12	1:30	R.C.	59.02	-	
13	0.00	2.1.	59.02		
45	7.5	88	59.81	-	
15	-7.15	RR	59.81	-	

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
17	7:00	<u> </u>	59.81	
18	7:15	R.B.	63.64	
19	-7:00	B.B.	58.23	
20	6:30	B.B.	58.25	
21	6.45	B.B.	56.65	
22	8.00	R.F.	56.65	-
22	9:00	R.F.	55.84	-
24	51:20	21-	55.84	
24	2:30	P.F	55.84	-
25	0:00	R.B.	\$4.19	
20	0.00	RE	54.30	~
21	11: 10	2.5	54.30	1
28	11.00	12 2	5262	-
29	1:15	00	(212	-
30	/ 00	0.0.	5212	
31	1:30	<u><u> </u></u>	NC. CC	

#### UVT readings and Alarm or Warning History and actions taken to resolve Date 76.6 TEST : 5 81.5 GCT . 12 81.6 UNT TEST : 19 82.1 UNT TEST: 26

Signature: Submitted by (Print): BAREY BREESKY



Water System Name: LIEEFELD	_Water System Code: <u>/0 /. o</u>
Month: Autor Year: 2024 Type of Mea	asurement Device: ELECTRONIC
Operator-in-charge (Print): BARKY BROEDLY	Other Operators (Print): Ros FRIEREN
Daily Consumption Units:	STEPH' DUVAL

Flow Meter for Daily Consumption: (circle choice) Ray Treated No Metering

Date	Timo	Initiala	Residual	s (mg/L)	Daily		
Dale	Time	muais	Mono	Total	Consumption	Date	Tim
1	7:45	B.B.	3.46		460	17	7:0
2	7.00	8.8.	2.99	3.4	602	18	9.20
3	6:45	B.B.	3.35		465	19	7:30
4	8:30	8.8.	3.38		411	20	80
5	7:5	8.8	3.18		249	21	7 2
6	8:15	R.F.	3.2.7		LIDO	22	2
7	7:00	RiF	3.51		351	23	310
8	8.30	R.F.	3.46		340	24	91
9	8:00	RIF.	3.17	3.4	27	25	7-
10	6:30	RiF	3.06		279	26	7.0
11	11:00	R.P.	3.30		527	27	7. 1
12	10.00	88	348		440	28	-1.3:
13	7:15	B. B.	3.63		471	29	-1:2
14	6:45	B. 8.	3.62		412	30	7.0
15	6:45	B.R.	3.08		1292	31	5.0
16	6:45	B.R.	2.93	3.6	275		<u> </u>

Data	Time	Initiala	Residua	ls (mg/L)	Daily
Date	Time	initials	Mono	Total	Consumption
17	7:00	8.8.	2.97		273
18	9:30	B.B.	3.16		378
19	7:30	RIT.	3.34		325
20	800	Rif.	2.04		382
21	7.30	R.F.	3.14		400
22	8:00	RE	3.48		247
23	8:00	RIF	3.34	4.8	304
24	9:30	RF.	3.34		407
25	7.30	RIF	3,33		354
26	7:00	B.B.	2.57		420
27	7:00	8.8	2.60		319
28	7:30	cer	2.77		321
29	71:30	CM	2.80		301
30	7.00	cu .	2773	3.0	278
31	5.45	B.B.	306		303

Total Monthly Consumption 11,531

#### Ammonia in Treated Water

Date	Time	Initials	Аттопіа (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia
2	7:00	B.B.	0.00	16	6:45	R.B.	DOL	30	7.00	C.A	
9	8:00	RIF	004	7023	8:00	RE.	0.00	50	//00	0.77.	0.07

#### **Residuals at Distribution Sample Locations**

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
6	9:30	Rif.	Nam Streth	3.14	4.2	0.0
20	9:30	RIF.	March Slytt	1.59	20	Urd
_						
ubmit	ted by (Pr	rint): <u> </u>	BROENLY	Signat	ure: T	tint



STEPH DUVAL

# Monthly Ultraviolet (UV) Report

Water System Name: KIEEFELD Water System Code: 104.0

Month: August Year: 2024

Operator-in-charge (Print): BARRY BROESKY Other Operators (Print): ROB FRIENEN

Unit: <u>milem2</u>

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Number o Alarms (A or Warnings (W)	UV Dose mJ/cm2	Operator Initials	Time	Date	Number of Alarms (A) or Warnings (W)	UV Dose mJ/cm2	Operator Initials	Time	Date
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		6.2 62	8 B	1:00	17	-	52.62	8.3.	8:00	1
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		1115	22	9:80	18		\$2.62	R.B.	7:15	2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		SE.6.)	2.8	7:30	19		\$2.56	8.8.	7:00	3
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		5419	P.C.	8.00	20		52.56	B.B.	8:45	4
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	54119	P.F.	7:20	21		52.56	88	7:30	5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	54.19	R.F-	8.00	22	-	51.71	R.S.	8:15	6
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	~	5252	RIF	8:00	23		417.31	RJS	7:00	7
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	~	SUIG	RIF.	9:30	24	-	47.32	R.F.	8.30	8
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	54 19	R.F.	7:30	25		47.32	R.F.	8:00	9
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	54 19	RR	7.15	26	-	417.32	R.F.	6:30	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		5419	88	7:15	27	-	417.32	RIF	11:00	11
$\frac{13}{14}  \frac{715}{14}  \frac{8.8}{12}  \frac{42.69}{1216} = \frac{29}{730}  \frac{730}{12}  \frac{52.52}{14}$		EA 19	C.A.	7 15	28	-	47.32	B.B.	10:00	12
14 ( ut P2 112/C 20 72 m ( ut f	-	52.52	<u>C</u>	7.30	29	-	42.69	88.	7:15	13
		5614	CM	C	30 70		42.69	B.8.	6:45	14
15 7.00 B.B. 4269 - 31 ARB 5269	1.1	52 53	B.B	4095 6 in	31		42.69	8.8.	7:00	15
16 7:00 88 42.69 -		SANC				-	42.69	88	7:00	16

-

Submitted by (Print): BAARI BROENEY

Signature: 1414



Water System Name: KLEEFELD	Water System Code:/04, o
Month: SEPTEMBER Year: 2024 Type of M	easurement Device: ELECTION
Operator-in-charge (Print):	Other Operators (Print): ROB FRIESEN
Daily Consumption Units:	COLLEN MOWAS
6	

Flow Meter for Daily Consumption: (circle choice) Raw (reated No Metering

Date	Time	Initiala	Residua	is (mg/L)	Daily
Date	Time	muais	Mono	Total	Consumption
1	8:30	8.8.	3.14		336
2	6:30	8.B.	3.29		288
3	8:00	RIF	3.19		41412
4	8:00	R.F.	255		461
5	8:00	R.F.	2.75		247
6	7:30	RIF.	3,38	4.4	338
7	9:30	R.F.	3.08		362
8	12:00	R.F.	3.39	10 A	465
9	7.00	R.R.	171		319
10	7:00	cu	3,15		A31
11	7:00	in	2,99		380
12	7:00	B.B.	3.82		634
13	7:15	88	1.13	1.46	574
14	6:30	8.B.	3.16		549
15	9:00	8.8.	3.23		357
16	7:00	RIR.	3,34		341

Data	Time	Initiala	Residua	ls (mg/L)	Daily
Date	Time	initials	Mono	Total	Consumptior
17	8:00	RIF.	2.83		325
18	7:00	RIF.	1.77		2417
19	7:00	R.F.	2.02		240
20	8:00	RIF.	1.53	18	281
21	9:15	R.F.	1.55		248
22	12:00	R.F.	1.30		315
23	7:00	<b>B.B</b> .	1.11		210
24	7:15	8.8.	1.94		257
25	6:45	8.8.	1.17		254
26	6:45	8.8.	1.94		244
27	7:00	8.B.	1.77	2,1	272
28	7:15	B.8.	2.60		261
29	8:00	8.8.	2.17		192
30	6:00	8.8.	2.18		2.39
31	1211202				~/

Total Monthly Consumption

10,209

#### Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	D	ate	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
6	7:30	R.F.	0.02	2	20	8:00	P.F.	0.00				(
13	7:15	<b>B.B.</b>	0.00	2	17	7:00	<b>B.B</b> .	0.02				

#### **Residuals at Distribution Sample Locations**

				Re	siduals (mg/L)		Residuals (mg/L)	
Date	Time	Initials	Location	Mono	Total	Ammonia		
υŻ	9:15	R.F.	Marin Street	3.13	4.4	0.00		
17	9:00	R.F.	Main Street	2.75	4.2	0.00		



## Monthly Ultraviolet (UV) Report

Water System Name: KLEEFFLD	Water System Code: 104.0
Month: SETTEMBER Year: 2024	
Operator-in-charge (Print): BALLY BROESLY	Other Operators (Print):
Unit: milan2	COLLEEN MOWAT

Unit: <u>mjlem2</u>

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	C
1	8:45	8.8.	\$2.58	4.000	
2	6:45	8.8	5258	-	
3	8:00	R.F.	52.58	-	
4	8:00	R.F.	51,73	-	
5	7:00	R.F.	51.73	-	
6	7:30	RIF	51.73	-	
7	9:30	R.F.	57.50	-	
8	7-16	RR	94 <del>,5</del> 3		
9	7.65	a	51.656	-	
10	7 00	Cu	5165		
11	7:00	an	52.50	-	
12	7:15	B.B.	52.50	-	
13	7:15	B.B.	51.65	~	
14	6:45	R.B.	52.52	~	
15	9:00		52.52	-	
16	7:00	RIF.	52,52	-	

Date	Time	Operator Initials	UV Dose mJ/cm2	Number ( Alarms (# or Warning: (W)
17	8:00	Rif.	52.52	~
18	7:00	R.F.	52,52	-
1 <del>9</del>	7:00	R.F.	52.99	-
20	8:00	R.F.	52.52	-
21	9:15	RIF.	52.52	1
22	12:00	RIF.	52.52	-
23	7:00	8.8.	52.62	-
24	7:30	B.B.	\$2.62	-
25	7:00	B. B.	52.62	-
26	7:00	8.8	\$2.62	<b>A</b>
27	7:00	8.8.	52.62	
28	7:30	<i>B.B.</i>	52.40	1
29	8:15	R.B.	52.40	
30	6:15	<b>B.B</b> .	52.40	-
31				

Date	Alarm or Warning History and actions taken to resolve							
6	UVTTEST- 81.5							
13	OVT TEST - 81.6							
20	UVY Test - 82.1							
27	UVI TES: 80.8							

Submitted by (Print): BARRY BROESEY

Signature: The



Nater System Name: Kleefeld	Water System Code: ///////	
Month: October Year: Jo24	Type of Measurement Device: Electronsic	
Dperator-in-charge (Print): <u>Lob Fr.es</u>	(n Other Operators (Print): Brown Browsky	
Jaily Consumption Units:	Colleen Mowertt	

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Data	Time		Residual	s (mg/L)	Daily	Dete	Time		Residual	s (mg/L)	Daily
Date		miliais	Mono	Total	Consumption	Date	Time	initiais	Mono	Total	Consumption
1	7:00	RIF.	2.80		308	17	7:00	RIF	1.40		246
2	7'00	R.F.	1,94		281	18	8:00	RIF	2.36	3.4	264
3	7:00	RIF	2.09		271	19	9:15	R.F.	1.84		250
4	7:30	R.F.	I.C.	1.5	289	20	9:15	R.F.	1.88		272
5	6:30	R.F.	2.05	1	264	21	7:15	8.8.	2.04		235
6	11:30	RIF.	1.6)		347	22	7:00	8.8.	1.51		250
7	7:15	8.8	1.16		221	23	7:00	<i>8.8</i> .	2.18		240
8	7:00	au	1.96		256	24	6:45	R. R.	1.63		243
9	6:45	8.R	1.90		272	25	7:00	R.B.	1.39	1.4	241
10	8:00	an	3113		604	26	6:30	8.B.	1.11		247
11	7-30	an	1.91	2.4	1514	27	9:15	B.B.	1.33		283
12	6:30	B. B.	2.74		251	28	7:15	R.F.	2.20		237
13	9:00	8.8.	2.49		303	29	7:15	RIF.	1.66		244
14	5:30	8.8.	2.13		220	30	7:00	RIF	1,94		246
15	7:00	RIF.	198		317	31	7:00	R.F.	1.25		242
16	7:00	R.F.	2.04		254			Total N	Ionthly Cor	sumption	8712

#### Ammonia in Treated Water

Date	Tìme	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
4	7:30	R.F.	0.00	18	8:00	R.C.	0.00				
1)	7.00	cu	0,00	25	7:00	8.B.	0.00				

#### **Residuals at Distribution Sample Locations**

				Re	siduals (mg	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
l.	8:45	RIF	Main Strait	2.71	3,4	0.00
15	9:20	R.F.	Menn Strait	1.91	311	0.00
29	8,00	PIT.	Mann Street	1.70	3.0	0.01
						11
Submit	ted by (Pi	rint):	us friesch	Signat	ure:	ll -



## Monthly Ultraviolet (UV) Report

Nater System Name:	Kleeffeld
Month: October	Year: 2024

Water System Code: 104, 0

Colleyn Mount +

Derator-in-charge (Print): Rob Friesen Other Operators (Print): Borry Broesky

Jnit: <u>My Km²</u>

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
1	7:00	R.F.	52.40	-	17	7:00	RIF.	24.28	-
2	7:00	R.E.	52.40	1. C.	18	8:00	R.F.	59.58	-
3	7:00	R.F.	51.55	-	19	915	R.F.	54.58	-
4	7:30	C. M.	52,40	-	20	9:15	RIC	54.58	-
5	6:30	R.F.	52.40		21	7:15	8.8.	54.58	-
6	11:30	RIF	52,40	1	22	7:15	<b>B.B</b> .	54.58	1
7	7:30	B. B.	53.98	-	23	7:00	B.B.	54.58	-
8	7.00	Cu	53,13		24	6:45	<i>B.B.</i>	54.58	-
9	7:00	8. <i>8</i> .	54.83		25	7:00	8.8.	54.58	-
10	Biog	ca	54,83	-	26	7:00	B.B.	54.45	-
11	7:30	Ch-	54.8.3	-	27	9:30	B.B.	52.71	
12	7:00	B.B.	52.89	-	28	7:15	R.F.	52.77	-
13	9.00	8.8.	56.23	-	29	7:15	2.F.	52.77	-
14	5:30	B.8	56.23	~	30	7:00	R.F.	52,77	-
15	7:00	RIF	56.23	-	31	7:00	RiF	52,77	-
16	7:00	R.F.	54.58	-					

Date	UVT readings and Alarm or Warning History and actions taken to resolve
41	UVT TED: 83.8
11	()VT Test 83-1
18	UVT TEST : 83.1
25	UNT TEST: 82.7

Submitted by (Print):

Roh

Signature: 🌶



Water System Name: <u>KLEEFELD</u>	Water System Code: _/ º 4. o
Month: November Year: 2024 Type	of Measurement Device:
Operator-in-charge (Print): BARLY BROESELY	Other Operators (Print): Ros FRIESEN
Daily Consumption Units:	COLLEEN MOWAT

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Data	Time	Initiala	Residua	ls (mg/L)	Daily
Date	Time	initials	Mono	Totai	Consumption
1	7:00	12.F.	1.38	2.4	292
2	9:00	RIF	1.66		261
3	12:00	R.R.	2.10		338
4	7:00	B.B.	2.2.8		200
5	7:00	8.8.	1.88		275
6	7:15	8.8.	2.31		256
7	6:45	8.B.	1.63		254
8	7:00	R.R.	2.26	3.1	267
9	6:00	R.B.	2.11		235
10	9:30	B.B.	1.22		308
11	8:00	8.8.	1.32		229
12	7:00	Rif.	1.45		290
13	7:00	RF	1.63		263
14	7:00	RE	2.03		251
15	7:00	RIF	1.5	2.0	249
16	9:00	R.F.	1,28		256

0.4			Residua	ls (mg/L)	Daily
Date	lime	Initials	Mono	Total	Consumption
17	5:30	Rif.			240
18	7:00	B.8.	0.33		2.80
19	6:45	B.B.	0.36		276
20	6:45	8.8.	1.04		243
21	7:00	B.8.	1.31		252
22	7:00	B.B.	1.50	2.4	247
23	6:00	B.B.	1.36		252
24	9:00	<b>B.B.</b>	1.38		2.99
25	7:00	RIF	1.06		247
26	7:30	cu	1,04		290
27	7:00	R.F.	1,15		262
28	7:00	RIF	1.41	1)	261
29	7:00	RIF.	1.18	1.4	300
30	9:00	RIF.	1,51		274
31					
					the second se

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Total Monthly Consumption 7,887

#### Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)
1	7:00	Rif	0.08	15	7:00	R.F.	0.00	29	7:00	R.F.	0.01
8	7:00	8.8.	0,00	22	7.00	8.8.	0.03				

#### **Residuals at Distribution Sample Locations**

				Re	siduals (m	g/L)
Date	Time	Initials	Location	Mono	Total	Ammonia
12	10:00	RIE	Main Strett	1.57	1.6	0.00
26	8:00	RIF.	Main St.	1.22	1.4	0.00
			2. Parts		-	11
upmit	ted by (P	rint):	JAKRXDKOESKY	Signat	ure:/	herengt lan



COLLEGN MOINAT

.

## Monthly Ultraviolet (UV) Report

Water System Name: <u>KIEEFELD</u>

Water System Code: 104.0

Month: Nevember Year: 2024

Operator-in-charge (Print): <u>RARRY BROESHY</u> Other Operators (Print): <u>ROR FRIESEN</u>

Unit: milom2

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)
1	7:00	K.F.	52,77	1
2	9:00	RIF	52,77	1
3	12:00	RIF.	541.83	1
4	7:15	<b>B.B.</b>	53,18	-
5	7:15	8.B.	53.13	*
6	7:30	B.B.	53.13	1
7	7:00	8.8.	\$3.98	1
8	7:15	BB.	53.13	1
9	6:15	B B.	\$\$2.40	1
10	9:30	8.8.	52.40	•
11	8:00	B.B.	52.40	-
12	7:00	RIF	SIISS	-
13	7:00	RIF.	52.40	1
14	7:00	Rif.	52.40	-
15	7:00	RIF.	52,40	-
16	9100	2.6	52.40	

Date	Time	Operator Initials	UV Dose mJ/cm2	Number c Alarms (A or Warning: (W)
17	5:30	RIF		3
18	7:00	B.B.	52.38	( <del>**</del>
19	7:00	88	62.38	
20	7:00	BB	52.38	-
21	7:15	8.B.	52.38	-
22	7:00	8.8	51.53	-
23	6:15	8B	51.63	
24 🔹	9:15	B.B.	51.68	
25	7:00	R.F.	51.63	
26	4:15	cre	53,45	-
27	7.00	R.F.	52.48	-
28	7:00	R.F.	52.48	-
29	7:30	R.F.	52,48	-
30	9:00	RIF	51.68	
31	11:15	P.K.	52.48	

Date	UVT readings and Alarm or Warning History and actions taken to r	esolve
1	33.8 - UVT Test	
8	UNTTEST: 80.8	
15	UV+ TEST : 80.6	
22	OUT TEST: SI.4	
29	UNT TES: 81.3	

Submitted by (Print): <u>BARRY BROSSXY</u>

Signature:



Water System Name: <u>KLEEFELD</u>	_ Water System Code:/o/4
Month: December Year: <u>2024</u> Type of Me	asurement Device: ELECTRONIC
Operator-in-charge (Print): BARRY BROESNY	Other Operators (Print): Ros FRIEJEN
Daily Consumption Units:	STEPH DUVAL

Flow Meter for Daily Consumption: (circle choice) Ray Treated No Metering

Date	Time	Initiale	Residua	ls (mg/L)	(mg/L) Daily Total Consumption Date	Dete	Data Time	Initials	Residuals (mg/L)		Daily
Date	Time	indais	Mono	Total		Date	Ime	Initials	Mono	Total	Consumptior
1	11:15	RiF.	1.92		362	17	7:00	B.B.	1.10		273
2	7.00	8 B.	1.82		256	18	7:30	B.B.	1,37		256
3	7:00	B.B.	1.26		260	19	8:00	B.R.	1.05		365
4	7:15	B.B	1,70		271	20	8:00	B.B	1.33	7:30	252
5	7:00	8.B.	1.15		260	21	6:15	8.8.	1.30		232
6	6:45	<b>B.B.</b>	1.36	1.8	261	22	6:45	R.B.	1.29		270
7	5:45	8. B.	1.64	1919 - L	242	23	6:15	B.B.	1.64		268
8	9:00	8.8	1.41		293	24	6:15	B.B.	1.42		276
9	7:00	R.F.	1.87		251	25	5:30	B.B.	2.18		281
10	8:30	R.F.	1.53		285	26	7:45	8.8.	2.45		248
11	8:00	R.F.	1.10		236	27	6:45	<b>B.B</b> .	2.76	4.0	243
12	8:00	Rit.	1.59		237	28	9:30	RIF.	2,94		313
13	8:00	R.F.	1.57	1.6	243	29	11:00	RIF.	3.10		308
14	8.00	R.F.	1.17		247	30	8:00	R.F.	3.01		226
15	7'00	R.F.	1.03		267	31	8:00	RIF	2.90		287
16	7:00	B.B.	1.16		281	Total Monthly Consumption					8250

#### Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)	Date	Time	Initials	Ammonia (mg/L)		Date	Time	Initials	Ammonia (mg/L)
6	6:45	8.8	0.00	30	81,00	B.B	Q.09	Ì				
13	\$ :00	R.F.	0.00	27	7:00	8.8.	0.02					

#### **Residuals at Distribution Sample Locations**

				Residuals (mg/L)				
Date	Time	Initials	Location	Mono	Total	Ammonia		
10	14:45	8.8.	Alaindr.	1.73	2.1	0.00		
22	14:45	B.B.	MAIN ST.	1.88	3.2	0.00		
_								
ubmit	ted by (Pr	rint):	LAT BROESNY	Signa	ture:	1 ten 1		



STEPH DUNAL

### Monthly Ultraviolet (UV) Report

Water System Name: KLEEFELD Water System Code: 104.0

Month: DECEMBER Year: 2024

Operator-in-charge (Print): <u>BARRY BROESH</u> Other Operators (Print): <u>Rob FRIESEN</u>

Unit: milom2

Date	Time	Operator Initials	UV Dose mJ/cm2	Number of Alarms (A) or Warnings (W)	Date	Time	Operator Initials	UV Dose mJ/cm2	Number ( Alarms ( or Warning (W)
1	<del>₹\$0</del>   : 5	55. Rif.	52.48	1	17	7:00	88	61.35	-
2	7:30	R. 8.	51.13	-	18	7:00	B.B	61.35	
3	7:00	8.B.	51.63	-	19	7:30	B.B	61.35	-
4	7:30	B.B	51,63	1	20	8:00	B,B	61.35	-
5	7.30	8.8	64.35		21	630	B.3	59.74	-
6	7:00	8.8	64.35	-	22	7:00	8.8.	59.74	-
7	6:00	<u>8.8</u> .	64.20	-	23	6:30	B.B.	59.74	
8	9:00	8.B.	62.69		24	1:3c	B.B	59.74	
9	7.00	RIF	63 415	-	25	5:45	88.	59.74	-
10	8:30	2.F.	63.45	1	26	7:45	8.B.	59.74	-
11	8:00	R.F.	61.93	12	27	7:00	B.B.	58.16	
12	8:00	RIF	61.93	- 241	28	9:30	RIF	58.08	-
13	8:00	R.F.	60.40	1	29	11:00	R.F.	58.16	-
14	8.00	RIF	61.93	1	30	8.00	Pit.	58.08	-
15	7:00	RIF.	61.98	-	31	8:00	R.C.	58.05	-
16	7.00	8.8.	62.15	-					

Date	UVT readings and Alarm or Warning History and actions taken to resolve							
6	UVT TEIT: 79.9							
13	() VT TES: 85.4							
20	UV7 Test: 81.1							
27	UVI TEST: 80.4							

Submitted by (Print): BARLY BROESLY

les Signature: "

# Appendix F

# INCIDENT ADVISORY NOTIFICATION PLAN





# Appendix G

# BOIL WATER ADVISORY DOCUMENTATION



August 15, 2024

Code: 104.00

Rural Municipality of Hanover Rob Driedger, Manager of Engineering & Utilities 28 Westland Drive Mitchell, MB R5G 2N9 rob.driedger@hanovermb.ca

#### **RE: BOIL WATER ADVISORY ISSUED TO KLEEFELD PUBLIC WATER SYSTEM**

Dear Rob Driedger,

A power outage, on August 15, 2024 has led to the loss of water pressure in the **Kleefeld distribution system**. Distribution depressurization can compromise the safety of the water supply; therefore, a boil water advisory has been issued to ensure public health protection.

Section 17(2) of *The Drinking Water Safety Act* states that:

A boil water advisory may be issued by the director or a drinking water officer, without Medical Officer of Health consultation if the person issuing the advisory reasonably believes that water from a water system is or may be unsafe for domestic purposes unless it is boiled or otherwise disinfected and public health would be better protected by quickly issuing an advisory. The Medical Officer of Health has been notified of the advisory via copy of this letter.

I am requesting that you as owner of the water supply immediately advise all water users affected by the boil water advisory, reaching as many individuals and organizations in the fastest and most feasible way possible, by distributing the attached notice. Emphasis should be placed on public facilities with vulnerable users such as hospitals, personal care homes, day cares, and schools. In addition, a copy of the notice must be posted on your website and updated accordingly.

Water users must be advised that all water used for consumption be brought to a rolling boil for at least one minute. This includes water used for drinking, preparing food, making ice, washing vegetables and fruit, brushing teeth, and making infant formula. As an alternative, individuals may also choose to use a known safe source of water such as bottled water. Water may be used for general domestic purposes including hand washing, bathing and showering (provided the water is not swallowed), dishwashing and laundry.

Copies of the following Fact Sheets should be made available to the public:

- Boil Water Advisory Fact Sheet #1 Boil Water Advisory For Drinking Water Only
- Boil Water Advisory Fact Sheet #3 Boil Water Advisory for Commercial/Public Facilities

Fact sheets can be obtained from your Regional Drinking Water Officer, or are available at <u>www.manitoba.ca/drinkingwater</u>.

This Boil Water Advisory will remain in effect until the following actions are taken:

- The power has been restored; •
- There has been sufficient time or flushing following restoration of water services to ensure that • any remaining potentially contaminated water in the distribution system has been eliminated;
- One set of bacteriological tests, including a minimum of three distribution samples from the . affected area with results meeting regulatory standards;
- Comply with any other directives issued by the Office of Drinking Water or Medical Officer of Health.

Once the above conditions are met to the satisfaction of the Medical Officer of Health the advisory will be rescinded. The Office of Drinking Water needs to be contacted to confirm rescind conditions have been met prior to removing notices. At that time you will be issued a rescind letter to give notice to all water users that the conditions that led to the issuance of the advisory have been successfully addressed, the advisory has been rescinded and the water is safe for consumption.

Should you have any questions, please contact Adam Frieling at 204-371-3885.

Sincerely,

Marah British Digitally signed by Sarah Belisle Date: 2024.08.15 08:55:10 -05'00'

Senior Drinking Water Officer

CC:

Dr. Davinder Singh – Regional Medical Officer of Health Dr. Mahmoud Khodaveisi - Regional Medical Officer of Health Sacha Janzen - A/Director, Office of Drinking Water Marc Balcaen – A/Manager, Field Operations, Office of Drinking Water Adam Frieling - Regional Drinking Water Officer, Office of Drinking Water Public Health Inspector - healthprotection@gov.mb.ca Southern Health Emergency Preparedness Program (DisasterManagement@southernhealth.ca)

# PUBLIC NOTICE

#### BOIL WATER ADVISORY FOR THE KLEEFELD PUBLIC WATER SYSTEM

Issued by the Medical Officer of Health, Manitoba Health and the Office of Drinking Water, Manitoba Environment and Climate Change

#### August 15, 2024

A power outage, on August 15, 2024 has led to the loss of water pressure in the Kleefeld distribution system. Distribution depressurization can compromise the safety of the water supply; therefore, a boil water advisory has been issued to ensure public health protection.

#### RECOMMENDATIONS

Until further notice, all water used for consumption should be brought to a rolling boil for at least one minute before it is used for:

- Drinking and ice making
- Preparing beverages, such as infant formula
- Preparing food, including washing fruits and vegetables
- Brushing teeth

It is **not** necessary to boil tap water used for other household purposes, such as laundry or washing dishes. Adults and older children that are able to avoid swallowing the water can wash, bathe, or shower. Young children should be sponge bathed. If boiling is not practical, an alternate and safe supply of water should be used for consumptive purposes; i.e. bottled water. Boil Water Advisory Fact Sheet #1 - Boil Water Advisory For Manitoba Water System Users contains additional information on water use and can be found on the website below.

All commercial, public and permitted facilities (ex: restaurants, health care facilities, day cares, personal care homes and other private facilities that provide food and water services) must follow water use recommendations from the <u>Boil Water Advisory Fact Sheet #3 – Boil Water Advisory For Commercial/Public Facilities</u>. A copy of this Fact Sheet is available on the website below.

**To avoid burn injuries from hot water**, caution should be taken. Please keep young children away from boiling water. Place kettles and pots away from counter and stove edges.

Please share this information with other people who use the tap water, especially those who may not have received this notice directly (ex: renters, tenants, staff, or clients). This notice can also be posted in common areas where people tend to gather.

#### DURATION

The Boil Water Advisory will remain in effect until the water supplied by this water system no longer presents a risk to public health. You will be notified when the advisory has been rescinded.

If you have any questions or concerns, please contact water system at 204-346-7121 or the Regional Drinking Water Officer at 204-371-3885, or Health Links at 204-788-8200 (toll free at 1-888-315-9257).

To review Fact Sheets on water use, please go to <u>www.manitoba.ca/drinkingwater</u> or <u>http://www.gov.mb.ca/health/publichealth/environmentalhealth/water.html</u>



Health, Seniors and Active Living Dr. Mahmoud Khodaveisi Medical Officer of Health 180 Centennaire Dr. Southport MB R0H 1N1 www.manitoba.ca

August 21, 2024

Code: 104.00

Rural Municipality of Hanover Rob Driedger, Manager of Engineering & Utilities 28 Westland Drive Mitchell, MB R5G 2N9 rob.driedger@hanovermb.ca

#### Re: BOIL WATER ADVISORY ISSUED TO KLEEFELD WATER SYSTEM

Dear Rob Driedger:

Drinking Water Officer, Adam Freiling has advised me that the Kleefeld water system has met all conditions for rescinding the boil water advisory and that bacteriological testing results meet regulatory standards.

I am therefore rescinding the boil water advisory that was placed on the Kleefeld water system on August 16, 2024.

Please ensure all water users are notified that the advisory has been rescinded and that normal water usage can be resumed. A copy of this letter can be provided as notification. Notices posted in public locations such as washrooms are to be removed.

Should you have any questions, please contact Adam Freiling, Regional Drinking Water Officer at 204-371-3885.

Sincerely,

Michalien

**Dr. Dr. Mahmoud Khodaveisi** Medical Officer of Health Southern Health – Santé Sud

CC:

Sacha Janzen – A/Director, Office of Drinking Water Dr. Davinder Singh- Medical Officer of Health Marc Balcaen – A/Manager, Field Operations, Office of Drinking Water Adam Freiling - Drinking Water Officer, Office of Drinking Water <u>healthprotection@gov.mb.ca</u> – Public Health Inspector Southern Health-Santé Sud Emergency Preparedness Program (DisasterManagement@southernhealth.ca)

# Appendix H

# **Construction Permits**



### Permit to Construct or Alter Public Water System

### PERMIT NUMBER: PWS-24-P43

### The Drinking Water Safety Act CCSM Cap c. 36

WATER SYSTEM CODE: 104.00

EFFECTIVE DATE: 30 December 2024

EXPIRY DATE: 01 January 2027

In accordance with The Drinking Water Safety Act, this permit is issued pursuant to Subsection 7(1) to:

#### Kleefeld Developments: "The Permittee"

Alteration of the Kleefeld Public Water System consisting of approximately 1500 meters of watermain extensions located south of Briarwood Avenue and south of Kleefeld, Manitoba in the Rural Municipality of Hanover, as part of the Brookridge Meadows subdivision (84 residential single-family lots); as specified in the permit application and follow-up technical correspondence, subject to the attached terms and conditions.

The proposed work was reviewed for compliance with The Drinking Water Safety Act and Office of Drinking Water guidelines, and general conformance with drinking water industry standards. Other aspects of the work including structural, mechanical, electrical and workplace safety are not the subject of this Permit. This Permit does not affect The Permittee's obligations with respect to compliance with all applicable municipal, provincial and federal legislation including requirements under The Environment Act, The Water Rights Act and The Ground Water and Water Well Act.

DATE: 30 December 2024

<u>Original signed by...</u> Sacha Janzen Acting Director

#### TERMS AND CONDITIONS

#### 1. General

- 1.1. The Permittee shall perform the approved alteration of the water system works in accordance with the documents submitted, all applicable requirements of The Drinking Water Safety Act and its regulations, and the requirements of this Permit. In the event of an inconsistency between the specific requirements of terms and conditions of this Permit imposed on the authority of subsection 7(3) of The Act and the general requirements of The Act and regulations, the specific requirements of this Permit shall apply.
- 1.2. This Permit may be amended by the Director where in the opinion of the Director, an amendment is necessary to provide for the safety of water obtained from the water system or for the purposes of effective environmental management.
- 1.3. The Permittee may request an amendment to this Permit by submitting an amendment application to the Office of Drinking Water.
- 1.4. The Permittee shall ensure that any change in design or installation that materially impact the effectiveness of the water system works are submitted by the design engineer in writing to the Office of Drinking Water and are approved prior to the change being completed.
- 1.5. This Permit may be suspended or cancelled by the Director for any of the reasons identified in Section 6 of Manitoba Regulation 40/2007 Drinking Water Safety Regulation or due to a failure to comply with any term or condition of this Permit.
- 1.6. The Permittee shall provide written notice to the Office of Drinking Water of any change in title/ownership of the water system within 30 days of the transfer of title/ownership.
- 2. Construction General
- 2.1. The Permittee shall ensure that measures are taken to prevent adverse environmental effects from the approved alteration of the water system works including damage to land, vegetation and watercourses.
- 2.2. The Permittee shall complete construction of the approved water system works by the expiry date indicated on the Permit. If construction will not be completed by the expiry date of the Permit, the Permittee shall request an amendment to the Permit.
- 2.3. The Permittee shall immediately notify the Drinking Water Officer upon recognizing that construction work may result in depressurization within the distribution system, or any other concern about the safety of the municipal water supply.
- 2.4. The Permittee shall ensure that minimum horizontal separation of 3m, measured between closest pipe edges, is maintained between water lines, and any raw or non-potable water pipelines, sewer mains, or oil or gas pipelines where piping runs parallel.

- 2.5. The Permittee shall ensure that minimum vertical separation of 0.45m is maintained at any water line crossings of raw or non-potable water pipelines, sewer mains, or oil or gas pipelines, with the water line located above wherever possible. If the treated water pipeline must cross below a sewage forcemain, the water pipeline must be encased in watermain-grade pipe at, and at least 3m beyond, the crossing. Vertical separation must be increased to 1.0m where an HDPE water line must cross below an oil or gas pipeline, and encasing the water line in watermain-grade PVC pipe at, and at least 3m beyond, the crossing. Where a water line must cross below another utility pipeline, special care and attention are required to pipe installation to ensure adequate structural support of the pipe. Any water line joints must be located as far as possible from the crossing.
- 2.6. The Permittee shall ensure that the maximum water demand exerted will not adversely affect the ability to maintain a minimum pressure of 140 kPa in the distribution system.
- 3. Construction Materials
- 3.1 The Permittee shall ensure that all components and materials for the approved water system works including piping and associated appurtenances are ANSI/NSF Standard 61 certified, CSA certified, meet applicable AWWA Standards, or meet other potable water standards approved by the Director.
- 3.2 The Permittee shall ensure that all chemicals potentially in contact with potable water including sodium hypochlorite solutions are ANSI/NSF Standard 60 or ANSI/NSF Standard 61 certified, meet applicable AWWA Standards, or meet other potable water standards approved by the Director.
- 3.3 The Permittee shall ensure that all materials used in the construction of the approved water system works are kept as clean as possible during construction in order to prevent contamination.
- 4. Disinfection of Works
- 4.1 The Permittee shall ensure that the water pipelines, service lines and associated appurtenances are disinfected before being placed into service in accordance with AWWA Standard C651 or RM of Hanover Standard Construction Specifications (latest), and that a copy of all associated test results are maintained as water system records for a minimum of 24 months.



Office of Drinking Water 14 Fultz Blvd Winnipeg MB R3Y 0L6 T 204-794-1435 Anjanie.Gorcharan@gov.mb.ca www.manitoba.ca/drinkingwater

Justin Taplin, P.Eng. Sison Blackburn Consulting Inc. 60 South Landing Drive, Unit 1 Oak Bluff, Manitoba R4G 0C4 <u>itaplin@sbcinc.ca</u> (no hard copy to follow)

30 December 2024 PWS 104.00 Kleefeld ODW permit # PWS-24-P43

Hello:

#### Re: Kleefeld Developments – Kleefeld PWS, Brookridge Meadows Subdivision Watermain Extensions – Application for a Permit to Construct or Alter under The Drinking Water Safety Act

The Office of Drinking Water received a permit application for alterations to the Kleefeld Public Water System consisting of approximately consisting of approximately 1500 meters of watermain extensions located south of Briarwood Avenue and south of Kleefeld, Manitoba in the Rural Municipality of Hanover, as part of the Brookridge Meadows subdivision (84 residential single-family lots). The following comments address approval requirements and other regulatory considerations for the project.

- As per Clause 2.3 of the Permit, the Drinking Water Officer must be immediately notified if construction work is expected to result in depressurization in the distribution system or any other concern over the safety of the water supply to the community, and any major interruption of the treated water due to connection of the new watermains to the existing watermains.
- Water pipeline separation requirements from sewer lines and gas lines are identified in Clauses 2.4 and 2.5 of the Permit.
- As per Clause 2.6, the water system must have the ability to maintain a minimum pressure of 140 kPa in the distribution system.
- As per Clause 4.1, watermains and service lines must be disinfected and tested in accordance with AWWA Standard C651 or RM of Hanover Standard Construction Specifications (latest).
- Approval is required for future development phases.

Other Regulatory Considerations

- Backflow prevention requirements for service connections are addressed under the Manitoba Plumbing Code and CSA B64.10 Selection and Installation of Backflow Preventers. Thermal expansion within plumbing systems must be considered if backflow prevention devices are required to protect the public water supply.
- Requirements for water service lines fall under the Manitoba Plumbing Code and local standards or by-laws. Application of water-sewer main separation standards to water-sewer service lines is recommended.
- Alterations to the wastewater collection system are proposed. The Environmental Approvals Branch of Department of Environment and Climate Change should be contacted to ensure approval requirements under The Public Health Act are met.

The Permit to Construct or Alter issued for the proposed distribution system works pursuant to Section 7 of The Drinking Water Safety Act is enclosed (Permit # PWS-24-P43). Appeals of any terms or conditions must be made in writing to the Minister within 14 days as per Section 16 of The Drinking Water Safety Act. The notice of appeal must state the reason for the appeal and the facts relied upon. An appeal of a director's decision does not stay the decision pending the appeal, unless the minister orders a stay.

Thank you for your cooperation. Contact us if you have any questions.

Sincerely, Original signed by... Anjanie Gorcharan, P.Eng. Approvals Engineer

CC:

- Wajed Shah, Drinking Water Officer, Office of Drinking Water, (wajed.shah@gov.mb.ca), via email only.
- Colin Nakata, A/ Supervisor, Drinking Water Officer, Office of Drinking Water, (colin.nakata@gov.mb.ca), *via email only*.
- Cory Vitt, P.Eng., Senior Approvals Engineer, Office of Drinking Water, (cory.vitt@gov.mb.ca), via email only.
- Rob Driedger, C.E.T., Manager of Engineering and Utilities, RM of Hanover, (rob.driedger@hanovermb.ca), *via email only*.
- Representatives, Kleefeld Developments, (abe@kleefelddevelopments.com).

Mailing address:

Kleefeld Developments regarding: Brookridge Meadows Subdivision Box 141 Kleefeld, MB R0A 0V0

Prepared by: Anjanie Gorcharan, P.Eng., Approvals Engineer, Reviewed by: Cory Vitt, P.Eng., Senior Approvals Engineer.