

APPENDIX VII

BASELINE WATER QUALITY AND WEATHER DATA

ROCK HAVEN RESOURCES LTD KLAZA PROPERTY

2016 WEATHER DATA

Final Report

An Onset Hobo weather station was installed and launched June 22, 2013 at the Klaza Property. The weather station has operated continuously from June 2013 to January 2, 2016.

The weather station is located at the Klaza camp atop a rounded hill with no vegetation greater than 0.3 meters in height.

The station measures the following parameters with instruments mounted on a 3 meter mast:

1. Wind Speed
2. Wind Gusts
3. Wind Direction
4. Solar Radiation
5. Relative Humidity
6. Temperature (maximum, minimum)
7. Rainfall Precipitation

Data recovery for Solar Radiation and rainfall precipitation were affected by sensor problems.

The weather data is listed as:

Parameter	Data Recovery (%)
Wind Speed – Average Daily	100 %
Wind Gusts – Average Daily	100
Wind Direction – Average Daily	100
Solar Radiation – Mean Daily	28
Relative Humidity – Daily Mean	100
Temperature – Daily Maximum	100
Daily Mean	100
Daily Minimum	100
Rain Fall Precipitation – Daily Total	35

Snowfall precipitation data is available from the Yukon Government's Snow Bulletin for the Mount Nansen Snow Course. Data will be summarized in a later report.

Rock Haven Resources. Klaza Project. Daily Max Air Temperature (Degrees Celsius) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	-3.2	-11.0	-4.9	7.9	5.8	10.9	14.1	18.1	8.2	4.9	-7.1	-7.1
2	-3.5	-13.0	-2.9	3.2	6.7	10.4	12.3	18.6	6.6	-0.2	-1.6	-7.2
3	-5.6	-10.8	-5.1	2.7	4.8	11.8	14.6	14.0	10.6	0.2	-4.9	-21.5
4	-7.1	-7.4	-8.5	1.8	3.1	10.2	16.0	17.4	12.7	-0.8	-1.4	-24.9
5	-6.0	-6.1	-8.6	-0.8	4.7	6.9	16.7	16.5	10.3	-0.8	-2.8	-21.4
6	-7.1	-6.2	-7.8	2.8	5.7	6.8	12.1	18.3	6.8	-1.2	-6.2	-22.1
7	-6.0	-9.9	-7.5	-0.3	4.1	8.0	12.9	18.8	6.5	2.8	-5.0	-20.7
8	-6.3	-7.2	-8.9	3.6	8.8	11.9	17.8	15.2	6.9	1.2	-1.0	-20.3
9	-6.1	-5.7	-5.7	4.4	8.3	16.2	17.6	10.0	3.5	5.7	0.3	-23.8
10	-6.5	-5.7	-4.8	3.1	8.8	18.1	13.2	12.9	6.4	5.3	0.6	-19.0
11	-6.3	-2.1	-4.6	3.1	13.3	14.0	14.8	14.8	7.9	5.2	-1.6	-13.1
12	-4.8	-2.9	-2.1	2.7	15.9	10.5	15.7	14.2	11.8	3.7	-2.3	-9.3
13	-5.7	-3.1	-2.5	2.1	17.0	10.3	16.2	12.9	13.0	1.0	-3.2	-10.6
14	-7.6	-5.1	-0.5	1.4	17.5	5.8	20.3	12.7	8.3	-6.9	-5.0	-12.2
15	-8.8	-4.8	-5.8	4.0	16.1	11.8	18.1	12.7	8.7	-9.4	-5.1	-9.5
16	-9.7	-7.8	-5.1	3.2	12.4	15.6	17.9	14.4	9.0	-11.0	-10.7	-8.8
17	-8.8	-15.3	-4.2	0.5	8.9	19.3	17.3	15.4	8.4	-3.5	-11.4	-7.4
18	-9.5	-14.6	-5.7	0.1	8.7	20.6	14.1	7.9	7.1	-2.9	-13.3	-8.6
19	-9.0	-16.9	-5.9	3.7	12.2	19.5	11.0	11.9	4.4	-1.9	-14.6	-5.9
20	-6.5	-5.5	-1.6	5.2	12.9	10.8	10.7	11.7	8.9	0.2	-14.8	-6.4
21	-9.5	-3.4	0.1	4.8	17.2	12.1	9.7	14.9	7.2	-1.4	-10.9	-9.0
22	-7.2	-4.7	-1.9	2.7	8.7	16.4	10.3	14.5	7.3	-8.0	-6.4	-11.1
23	-6.6	-7.8	-2.2	8.2	12.0	15.4	7.6	15.6	7.7	-7.9	-10.9	-13.8
24	-6.7	-2.6	-3.3	10.0	8.3	16.0	11.4	14.7	5.2	-10.6	-11.7	-14.3
25	-5.2	-1.4	-1.0	4.3	7.2	16.6	13.9	14.0	6.1	-2.7	-12.2	-12.3
26	-3.6	-2.1	-1.1	5.8	6.8	14.0	13.5	11.7	2.7	-6.5	-7.6	-11.1
27	-3.0	-3.5	-1.8	4.2	8.1	14.2	13.6	11.2	0.4	-6.5	-5.4	-10.3
28	-3.5	-2.9	-0.5	2.8	10.0	17.3	15.4	8.5	2.5	-2.3	-10.1	-9.4
29	-2.9		1.3	4.5	8.8	17.1	13.8	6.8	0.9	-2.3	-9.5	-11.0
30	-6.4		4.8	1.7	6.7	12.3	16.7	6.8	0.9	-5.0	-10.5	-7.1
31	-5.4		4.2		11.2		17.9	10.0		-6.3		-8.6
Total	-194.2	-189.6	-104.2	103.4	300.7	401.1	447.3	417.0	206.8	-67.5	-206.4	-397.8
Mean	-6.3	-6.8	-3.4	3.4	9.7	13.4	14.4	13.5	6.9	-2.2	-6.9	-12.8
Max	-2.9	-1.4	4.8	10.0	17.5	20.6	20.3	18.8	13.0	5.7	0.6	-5.9
Min	-9.7	-16.9	-8.9	-0.8	3.1	5.8	7.6	6.8	0.4	-11.0	-14.8	-24.9

Rock Haven Resources. Klaza Project. Daily Mean Air Temperature (Degrees Celsius) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	-5.7	-12.4	-8.0	4.5	1.5	7.1	9.4	12.4	5.7	-1.1	-8.1	-9.2
2	-4.9	-14.2	-8.1	-0.1	2.0	5.9	8.4	13.2	4.0	-2.6	-5.6	-10.6
3	-7.6	-12.5	-10.7	-1.8	-0.2	5.7	8.9	10.6	6.5	-3.7	-6.2	-25.3
4	-9.2	-9.8	-10.0	-1.3	-0.8	6.0	10.2	12.6	7.5	-4.3	-4.3	-26.6
5	-8.4	-8.3	-9.0	-2.6	0.1	3.7	12.7	12.0	6.3	-4.0	-4.8	-23.3
6	-9.4	-9.2	-8.8	-1.2	0.7	2.9	9.2	13.5	4.6	-4.1	-7.9	-23.7
7	-8.0	-11.1	-9.9	-3.2	-0.1	3.3	9.0	13.1	3.8	-2.7	-6.6	-22.1
8	-7.9	-8.8	-8.3	0.4	3.9	6.8	10.8	10.4	3.6	-2.9	-3.2	-21.9
9	-7.8	-8.7	-7.5	-0.5	4.0	11.5	12.7	7.9	2.3	-0.5	-2.2	-26.0
10	-8.3	-9.0	-7.2	0.1	2.5	12.8	10.3	9.2	2.4	0.5	-1.0	-20.9
11	-7.7	-4.4	-6.3	-0.5	8.2	9.4	10.1	10.5	4.0	1.4	-3.2	-17.3
12	-5.9	-5.1	-5.7	-0.8	10.9	7.2	11.8	9.4	7.5	0.4	-4.0	-11.0
13	-7.5	-5.7	-6.5	-1.7	13.4	6.2	13.5	8.8	6.2	-3.5	-4.7	-12.6
14	-8.4	-7.0	-7.1	-1.4	13.5	4.9	15.2	8.4	4.2	-9.4	-6.2	-14.9
15	-10.6	-6.7	-7.0	-0.7	11.9	7.2	13.0	8.0	5.3	-11.3	-7.2	-13.2
16	-11.2	-11.4	-7.2	-1.7	6.7	11.2	13.2	7.8	5.2	-13.0	-12.3	-11.4
17	-12.2	-16.8	-8.3	-2.7	3.6	13.9	12.8	10.2	4.5	-7.9	-13.6	-9.3
18	-12.7	-17.8	-7.5	-3.1	3.9	15.2	10.7	5.9	2.6	-4.9	-14.4	-10.5
19	-11.4	-20.0	-5.3	-1.1	6.6	14.0	8.1	7.2	0.9	-4.2	-15.8	-8.1
20	-10.6	-11.1	-3.3	0.9	8.5	6.8	7.5	7.2	3.3	-3.1	-17.0	-7.8
21	-10.8	-6.0	-3.9	1.6	10.9	8.1	7.1	9.9	3.4	-4.6	-15.4	-10.4
22	-10.6	-6.6	-4.4	0.5	6.0	10.4	7.6	8.3	2.9	-11.9	-13.9	-15.3
23	-8.5	-9.0	-5.3	3.5	7.0	9.8	6.0	9.3	1.8	-13.3	-14.5	-19.6
24	-7.8	-5.6	-4.1	4.7	4.9	10.9	7.7	10.1	1.0	-13.5	-15.4	-16.0
25	-6.7	-4.0	-4.0	1.4	2.2	10.5	8.9	9.9	0.7	-9.1	-15.1	-13.2
26	-5.0	-4.1	-4.4	0.8	2.8	9.0	8.4	7.9	-0.8	-7.4	-9.7	-12.4
27	-5.8	-5.8	-3.4	0.0	3.6	9.5	9.0	7.4	-2.0	-7.3	-8.6	-12.6
28	-5.0	-5.0	-2.3	-1.4	5.3	11.4	10.0	4.8	-2.0	-5.5	-14.0	-10.8
29	-5.7	-5.8	1.0	-0.5	5.1	12.2	9.0	3.0	-2.4	-4.6	-11.8	-18.2
30	-8.2		1.3	-2.2	2.2	9.4	12.3	3.8	-3.2	-6.6	-16.7	-10.7
31	-10.4		4.9		6.2		11.9	5.9		-8.8		-10.8
Total	-259.9	-262.2	-176.4	-10.0	157.0	262.8	315.4	278.5	89.8	-173.9	-283.4	-475.6
Mean	-8.4	-9.0	-5.7	-0.3	5.1	8.8	10.2	9.0	3.0	-5.6	-9.4	-15.3
Max	-4.9	-4.0	4.9	4.7	13.5	15.2	15.2	13.5	7.5	1.4	-1.0	-7.8
Min	-12.7	-20.0	-10.7	-3.2	-0.8	2.9	6.0	3.0	-3.2	-13.5	-17.0	-26.6

Rock Haven Resources. Klaza Project. Daily Min Air Temperature (Degrees Celsius) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	-7.3	-14.1	-10.3	1.0	-3.1	3.7	4.7	6.8	3.1	-5.0	-9.7	-12.5
2	-6.6	-15.5	-10.5	-2.9	-1.5	1.2	5.8	10.2	2.8	-4.8	-7.9	-21.5
3	-9.5	-14.5	-14.6	-4.6	-5.0	1.0	4.0	7.3	3.9	-5.3	-7.6	-26.8
4	-10.9	-12.4	-11.3	-3.7	-2.9	1.8	4.4	7.7	3.1	-6.4	-5.7	-27.5
5	-10.1	-10.0	-10.2	-4.6	-4.6	0.3	9.2	9.2	3.1	-6.1	-8.8	-24.7
6	-11.3	-11.3	-10.1	-4.4	-2.9	0.7	6.7	9.5	2.2	-6.5	-9.4	-24.9
7	-10.0	-11.9	-10.6	-5.3	-3.1	0.7	6.2	8.7	2.2	-5.8	-8.9	-23.9
8	-9.7	-10.3	-11.1	-3.1	-0.9	1.7	6.3	6.8	1.9	-5.8	-4.8	-24.2
9	-9.6	-11.4	-10.2	-5.3	-0.2	6.2	9.4	6.3	0.9	-4.8	-4.1	-28.8
10	-10.4	-11.8	-9.9	-2.7	-1.4	7.4	8.4	5.7	-1.9	-3.7	-2.8	-24.8
11	-9.7	-6.2	-9.3	-2.2	3.1	4.7	7.9	7.3	0.1	-1.5	-5.2	-21.0
12	-7.1	-6.8	-8.3	-2.9	5.9	4.3	8.9	5.2	4.2	-2.7	-5.7	-13.5
13	-9.1	-7.4	-9.7	-3.1	9.8	2.8	10.8	4.9	1.2	-6.8	-5.5	-14.3
14	-9.2	-8.4	-8.2	-3.2	9.7	3.9	11.8	4.8	1.1	-10.6	-7.2	-17.3
15	-12.7	-8.3	-8.8	-5.0	8.3	3.4	10.3	4.8	1.2	-12.3	-11.6	-15.9
16	-12.5	-16.5	-9.6	-5.7	2.2	5.7	10.2	4.2	1.6	-13.8	-14.2	-13.6
17	-15.1	-18.0	-11.1	-5.8	-1.6	8.4	9.8	5.6	1.2	-13.2	-15.8	-12.0
18	-15.1	-20.0	-9.6	-6.1	0.2	10.6	8.0	4.8	0.4	-6.7	-16.1	-12.6
19	-13.3	-23.9	-8.1	-5.5	1.3	8.5	6.5	3.7	-1.9	-6.6	-17.7	-10.3
20	-12.7	-16.9	-7.1	-3.2	3.6	4.4	5.5	3.5	-0.5	-5.3	-18.0	-10.2
21	-11.7	-8.9	-6.7	-1.8	4.4	5.8	4.8	5.5	1.0	-7.9	-18.7	-11.8
22	-13.0	-8.5	-6.3	-1.0	4.5	5.4	6.6	3.5	-0.3	-14.4	-17.5	-23.3
23	-9.9	-11.0	-7.4	-1.2	3.6	5.5	4.6	4.4	-2.2	-15.7	-17.8	-24.5
24	-8.9	-8.4	-6.8	1.3	3.0	5.8	5.0	5.7	-2.0	-15.1	-20.5	-18.3
25	-8.1	-5.8	-6.7	-2.1	-0.8	5.3	4.5	6.9	-2.7	-13.1	-18.7	-15.1
26	-6.4	-5.7	-7.3	-3.5	-0.4	4.1	5.0	5.6	-2.6	-9.7	-12.1	-13.4
27	-8.7	-8.4	-5.6	-3.4	-0.7	4.0	4.4	4.8	-3.3	-7.9	-10.1	-14.0
28	-6.0	-6.6	-5.6	-5.6	2.1	5.4	6.1	3.2	-5.3	-10.0	-21.5	-11.6
29	-7.5	-7.1	-2.2	-4.8	0.2	6.9	5.2	0.8	-4.8	-6.1	-17.5	-21.2
30	-9.4		-0.8	-6.3	-1.0	7.2	8.4	1.0	-6.3	-8.5	-23.6	-14.8
31	-14.0		1.9		1.2		6.2	1.6		-11.6		-14.7
Total	-315.6	-325.9	-252.3	-107.0	33.1	136.7	215.7	170.2	1.1	-253.5	-364.7	-562.9
Mean	-10.2	-11.2	-8.1	-3.6	1.1	4.6	7.0	5.5	0.0	-8.2	-12.2	-18.2
Max	-6.0	-5.7	1.9	1.3	9.8	10.6	11.8	10.2	4.2	-1.5	-2.8	-10.2
Min	-15.1	-23.9	-14.6	-6.3	-5.0	0.3	4.0	0.8	-6.3	-15.7	-23.6	-28.8

Rock Haven Resources. Klaza Project. Mean Daily Solar Radiation (W/M²) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1										116.1	7.0	9.4
2										67.0	16.7	4.2
3										66.5	7.6	4.9
4										58.7	26.9	5.0
5										99.4	20.7	9.3
6										106.1	43.0	3.2
7										101.9	12.8	4.1
8										101.4	17.4	3.4
9										99.2	34.6	2.2
10										95.6	21.0	9.8
11										92.3	16.9	9.4
12										92.2	30.5	11.6
13										87.3	13.4	10.2
14										21.8	13.1	9.3
15										33.5	29.9	10.0
16										49.0	9.6	6.3
17										21.7	8.8	3.3
18										35.4	4.1	3.4
19									142.3	52.1	5.3	6.6
20									101.7	70.1	17.1	5.2
21									71.9	60.9	13.3	8.1
22									57.9	32.9	17.9	7.2
23									136.0	27.6	19.8	3.5
24									93.3	41.9	11.0	2.3
25									107.6	66.3	7.1	3.9
26									64.7	15.8	13.0	6.0
27									64.7	23.4	13.8	3.1
28									114.7	42.8	3.0	11.8
29									107.9	54.5	4.1	6.7
30									117.6	54.3	12.9	1.6
31										47.8		8.1
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1180.3	1935.8	472.4	193.0
Mean									98.4	62.4	15.7	6.2
Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	142.3	116.1	43.0	11.8
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.9	15.8	3.0	1.6

Rock Haven Resources. Klaza Project. Daily Mean Relative Humidity (%) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	87.0	94.7	69.9	55.1	66.2	62.6	66.1	59.4	74.1	66.0	96.9	96.4
2	88.9	93.7	53.4	72.6	73.6	72.4	80.5	63.5	99.8	69.8	98.5	95.6
3	75.0	94.8	86.2	55.6	59.2	68.8	70.3	84.7	77.5	82.1	98.4	86.5
4	76.7	96.6	87.9	56.8	74.6	76.7	72.7	72.7	66.8	78.5	99.5	85.6
5	67.5	97.6	95.3	92.6	64.2	73.4	65.7	79.1	69.4	69.2	99.1	87.5
6	61.5	83.2	93.6	71.9	75.1	91.8	87.8	81.6	89.9	68.3	92.9	87.4
7	69.2	90.5	93.8	88.0	87.5	91.1	88.6	71.2	92.2	60.8	94.7	88.3
8	94.9	92.7	90.0	78.2	67.1	67.5	85.4	76.6	93.2	60.5	96.2	88.3
9	96.5	93.5	86.0	69.6	63.2	46.1	72.3	88.9	96.6	55.0	89.5	85.8
10	92.0	96.7	85.6	79.4	85.7	36.3	86.5	76.0	72.5	43.9	89.1	88.9
11	97.3	91.3	80.0	92.7	56.8	54.1	93.6	72.8	68.1	43.2	90.1	81.4
12	98.8	90.8	67.9	82.1	36.0	65.6	89.4	77.7	69.8	45.2	89.0	57.3
13	98.0	80.1	77.8	97.7	29.0	84.8	80.3	76.5	80.4	65.2	97.8	57.6
14	97.5	95.7	95.3	93.1	30.5	100.0	67.0	80.6	81.7	89.5	89.4	64.3
15	96.3	83.3	88.2	75.9	28.3	89.2	77.3	74.1	78.6	93.3	81.7	65.8
16	95.8	92.6	73.5	76.5	68.4	57.9	81.5	75.6	82.6	92.3	93.7	64.0
17	95.1	90.8	75.7	85.4	70.5	48.0	81.2	69.1	81.5	95.8	93.2	90.5
18	94.8	88.4	88.3	91.0	75.7	42.7	84.5	89.7	92.1	89.0	92.8	94.8
19	95.7	89.5	91.6	71.9	68.2	35.7	89.3	88.6	90.6	94.3	92.0	90.6
20	96.3	90.1	84.0	52.7	43.5	71.1	85.9	84.5	80.7	93.0	91.0	84.3
21	96.1	87.1	81.0	60.3	52.4	79.3	96.1	64.0	66.3	91.2	91.3	88.5
22	96.2	79.0	79.9	93.1	94.6	64.7	98.8	66.6	71.7	94.1	92.2	92.0
23	97.5	83.5	86.5	84.0	80.6	72.1	99.6	74.5	68.8	93.2	91.5	89.2
24	98.0	81.8	80.4	79.6	94.6	69.9	94.2	72.6	76.7	93.1	92.1	91.5
25	98.7	86.2	85.1	76.1	82.5	67.5	82.5	88.8	81.1	93.8	92.5	93.3
26	99.7	92.9	89.7	70.6	66.6	68.0	79.1	91.2	90.0	96.2	95.6	93.9
27	99.3	86.8	84.7	64.8	60.6	63.0	81.8	80.4	96.0	96.7	96.0	93.8
28	99.3	90.6	82.1	73.7	49.8	54.7	78.4	85.6	81.1	86.8	93.7	95.0
29	87.4	80.3	83.7	71.8	53.4	54.8	82.9	87.5	74.6	89.4	94.9	90.6
30	91.4		93.7	78.3	82.9	83.0	70.4	79.5	76.8	95.0	91.8	95.2
31	95.9		60.6		67.2		66.6	69.0		96.2		95.2
Total	2834.5	2594.6	2571.4	2290.9	2008.6	2012.9	2536.2	2402.6	2421.2	2480.6	2797.0	2659.3
Mean	91.4	89.5	82.9	76.4	64.8	67.1	81.8	77.5	80.7	80.0	93.2	85.8
Max	99.7	97.6	95.3	97.7	94.6	100.0	99.6	91.2	99.8	96.7	99.5	96.4
Min	61.5	79.0	53.4	52.7	28.3	35.7	65.7	59.4	66.3	43.2	81.7	57.3

Rock Haven Resources. Klaza Project. Rainfall Daily Total (mm) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
2	0.0	0.0	0.0	0.8	0.6					0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	1.0					0.0	0.0	0.0
5	0.0	0.0	0.0	0.2	0.0					0.0	0.0	0.0
6	0.0	0.0	0.0	0.8	0.0					0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.2					0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	1.4					0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	3.6					0.0	0.2	0.0
11	0.0	0.0	0.0	1.2	0.0					0.0	0.0	0.0
12	0.0	0.0	0.0	0.4	0.0					0.0	0.0	0.0
13	0.0	0.0	0.0	2.4	0.0					0.0	0.0	0.0
14	0.0	0.0	0.0	4.2	0.0					0.0	0.0	0.0
15	0.0	0.0	0.4	0.0	0.0					0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
18	0.0	0.0	0.0	0.2	0.0					0.0	0.0	0.0
19	0.0	0.0	0.0	0.2	0.0				0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.2	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	1.4	0.0			0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.6	0.0			0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0			0.4	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0			0.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.6	0.0	0.0			0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	1.0	12.4	6.8	0.0	0.0	0.0	0.6	0.2	0.2	0.0
Mean	0.0	0.0	0.0	0.4	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Max	0.0	0.0	0.6	4.2	3.6	0.0	0.0	0.0	0.4	0.2	0.2	0.0
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Rock Haven Resources. Klaza Project. Average Daily Wind Direction (degrees °) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	158.2	261.9	173.4	178.0	165.6	142.8	136.7	263.8	218.0	158.0	155.8	152.1
2	157.7	191.8	265.8	244.8	150.6	158.5	156.6	204.3	331.5	167.7	155.8	207.9
3	174.2	142.6	149.8	236.8	193.1	176.0	177.8	240.4	213.9	238.4	155.8	314.7
4	154.0	150.6	107.5	104.5	220.5	202.7	192.4	167.7	160.5	213.6	149.2	320.4
5	162.8	179.6	122.4	151.0	155.9	155.2	222.3	161.3	195.7	217.2	153.8	205.2
6	152.1	155.8	131.8	188.3	166.9	204.9	257.8	170.1	170.1	237.5	156.4	152.9
7	156.1	150.4	160.4	133.1	269.0	255.9	275.0	157.7	274.7	166.4	139.1	137.8
8	160.3	159.1	153.1	227.3	287.5	284.1	257.0	153.8	210.3	157.1	158.7	173.8
9	159.7	250.1	151.4	153.3	198.0	204.3	169.3	241.9	131.6	180.2	154.0	173.3
10	170.9	140.7	147.0	155.1	244.3	224.6	271.6	258.7	309.2	246.7	132.7	298.9
11	140.7	158.8	169.2	222.9	152.7	192.7	271.0	191.2	204.6	155.9	160.0	317.6
12	139.0	142.6	148.0	125.7	141.0	153.8	288.0	165.6	167.6	149.6	157.6	292.7
13	139.0	166.2	181.1	208.4	113.0	307.2	269.6	156.1	212.1	209.5	149.9	331.0
14	139.0	169.1	207.8	176.0	124.9	306.8	226.7	161.4	165.1	106.5	167.7	321.1
15	139.0	227.5	163.0	151.9	159.5	305.4	305.8	171.3	161.5	198.7	260.1	237.0
16	137.7	305.5	158.6	188.5	232.3	315.1	293.3	190.2	177.4	81.4	287.3	190.7
17	166.4	199.5	167.3	141.2	157.3	285.5	303.1	191.3	149.5	122.9	57.6	156.8
18	221.9	176.4	141.5	228.2	195.3	249.1	290.3	193.4	280.3	163.3	88.0	187.5
19	149.1	145.7	131.2	225.5	246.9	201.2	296.2	272.0	288.2	148.9	93.5	172.3
20	65.8	149.6	147.4	109.7	160.3	154.6	300.5	291.3	158.2	146.3	146.8	156.9
21	120.4	142.9	120.6	114.8	157.2	264.3	245.8	164.9	161.1	188.5	217.5	192.6
22	157.5	171.3	149.9	122.0	298.3	254.0	215.8	155.7	151.8	306.3	186.7	180.5
23	152.8	146.1	137.1	136.6	233.7	246.6	167.8	173.6	165.3	313.0	154.4	96.9
24	158.5	144.3	214.0	129.2	291.3	209.2	231.8	156.8	156.2	193.9	132.8	96.3
25	150.2	158.6	156.4	150.1	310.9	156.3	188.6	199.5	153.2	230.5	148.4	102.7
26	153.4	137.1	149.5	156.1	302.7	180.0	156.7	320.9	275.3	143.2	133.7	89.2
27	143.9	147.7	175.5	158.0	190.2	161.0	155.6	254.2	302.6	130.0	122.3	61.2
28	161.7	137.3	161.7	144.9	168.1	161.5	197.1	239.7	299.5	202.0	123.5	90.7
29	192.0	260.6	197.6	187.7	112.7	141.7	283.9	163.2	314.8	157.2	129.3	302.7
30	309.3		184.1	147.1	182.1	194.7	215.5	58.1	287.5	156.9	157.2	240.3
31	271.8		185.3		137.8		212.6	170.7		154.4		298.3
Mean	161.8	174.8	161.6	166.6	197.4	215.0	233.3	195.5	214.9	182.8	152.9	201.7
Max	309.3	305.5	265.8	244.8	310.9	315.1	305.8	320.9	331.5	313.0	287.3	331.0
Min	65.8	137.1	107.5	104.5	112.7	141.7	136.7	58.1	131.6	81.4	57.6	61.2

Rock Haven Resources. Klaza Project. Average Daily Wind Speed (metres/sec) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	6.3	0.0	1.4	6.6	7.9	3.4	3.7	1.6	1.7	3.9	0.0	0.1
2	10.2	0.0	1.0	2.3	9.3	4.8	3.2	1.7	3.5	1.8	0.0	2.1
3	4.9	4.4	3.4	1.9	2.3	3.4	2.3	1.2	0.9	2.2	0.0	4.5
4	6.7	4.3	7.4	4.7	2.2	2.8	1.1	1.9	2.8	1.1	0.8	2.8
5	3.5	1.7	5.9	4.5	5.7	4.9	1.9	1.0	2.0	1.9	1.7	2.1
6	5.6	2.1	2.9	3.2	9.4	4.1	1.7	2.1	3.2	1.9	3.9	2.5
7	4.7	5.7	3.5	8.3	6.7	3.3	1.3	4.7	4.9	0.8	7.1	2.9
8	2.0	4.4	4.1	4.9	5.0	2.7	2.3	2.6	1.8	3.7	6.0	0.4
9	2.8	1.2	4.1	5.5	2.3	2.6	1.9	4.4	4.1	2.0	6.9	0.0
10	2.7	2.6	5.0	7.0	3.0	2.3	1.6	2.2	5.9	3.0	11.0	0.0
11	1.7	5.9	6.1	2.6	3.1	4.4	1.9	3.0	3.7	3.4	8.4	1.9
12	0.0	8.8	3.0	1.9	2.6	2.6	2.1	5.9	6.8	3.6	5.4	1.2
13	0.0	3.7	2.7	0.9	2.4	4.0	0.8	6.8	3.8	1.8	5.7	3.1
14	0.0	2.4	2.2	2.0	3.9	5.9	1.8	7.1	2.4	2.7	4.9	3.0
15	0.0	1.3	1.7	5.4	3.8	5.4	2.8	6.2	4.8	2.4	2.4	1.3
16	0.0	4.2	3.2	4.1	3.1	3.7	3.1	1.6	3.9	2.4	1.0	2.0
17	0.0	2.0	2.8	4.1	6.7	2.8	3.4	1.6	1.5	4.8	0.0	5.7
18	0.0	1.5	3.9	5.2	2.2	2.5	3.3	4.3	1.7	1.9	0.0	4.3
19	0.0	4.9	7.2	3.0	1.4	4.8	4.8	2.4	1.1	4.0	0.0	6.6
20	0.0	5.5	6.5	4.4	5.0	2.5	4.4	1.9	5.1	2.1	0.0	8.6
21	2.1	10.8	4.3	5.5	5.4	3.4	2.5	3.3	9.7	3.0	0.0	2.5
22	0.0	5.1	4.4	6.6	4.2	3.0	1.0	4.1	11.6	6.1	0.0	0.8
23	0.0	6.6	6.0	4.8	2.4	2.7	1.7	3.6	2.7	1.3	0.0	0.0
24	0.0	10.9	2.1	2.5	3.2	1.8	2.6	3.1	5.6	2.6	0.5	0.0
25	2.6	6.0	6.4	7.0	6.6	3.6	2.3	3.2	2.7	2.0	0.0	0.0
26	2.4	7.2	4.4	7.0	6.2	4.8	4.2	7.2	2.3	7.3	0.0	0.0
27	8.5	6.9	4.1	6.6	3.7	4.0	5.6	3.7	1.4	5.6	0.0	0.0
28	7.8	8.4	6.5	6.4	2.5	2.9	4.9	3.2	2.6	1.0	0.0	0.0
29	2.2	2.3	5.5	5.1	3.5	2.9	4.2	4.2	6.7	4.0	0.1	0.0
30	3.3		3.6	8.3	1.6	2.5	1.1	3.8	2.2	4.5	0.0	3.1
31	0.5		2.6		1.5		2.9	2.2		2.4		9.5
Total	80.4	130.5	128.0	142.2	128.9	104.5	82.5	105.8	112.8	91.5	65.8	71.2
Mean	2.6	4.5	4.1	4.7	4.2	3.5	2.7	3.4	3.8	3.0	2.2	2.3
Max	10.2	10.9	7.4	8.3	9.4	5.9	5.6	7.2	11.6	7.3	11.0	9.5
Min	0.0	0.0	1.0	0.9	1.4	1.8	0.8	1.0	0.9	0.8	0.0	0.0

Rock Haven Resources. Kilauea Project. Wind Gust (metres/sec) 2016.

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	16.6	0.3	4.3	18.6	17.1	12.6	11.8	6.8	7.3	8.8	2.5	2.0
2	21.9	0.5	3.0	7.8	22.4	12.3	9.1	7.8	9.1	4.8	0.0	9.8
3	15.9	17.1	11.8	5.5	8.8	12.6	8.6	5.0	6.6	5.8	0.0	8.6
4	12.1	9.1	12.8	11.3	8.3	9.3	8.6	7.3	7.6	4.8	8.6	4.8
5	8.8	6.0	11.6	10.6	17.9	14.6	9.1	6.0	6.6	5.5	7.1	6.3
6	10.8	6.0	7.6	9.3	19.9	11.8	8.1	7.6	9.1	6.3	9.1	6.6
7	8.8	17.4	8.1	18.1	13.9	9.6	6.0	13.1	11.8	4.5	18.4	6.0
8	5.3	11.1	7.6	13.1	13.1	8.1	10.1	8.8	7.6	8.3	13.6	4.5
9	8.3	4.8	8.1	10.1	9.1	10.3	8.6	14.6	11.6	5.3	12.6	0.8
10	11.1	6.6	11.3	14.1	9.3	9.8	6.8	8.6	12.3	6.3	23.4	0.8
11	7.3	17.6	12.6	10.6	10.6	13.6	9.6	10.1	10.1	6.8	17.6	5.8
12	0.5	16.6	8.6	8.1	8.8	9.3	7.1	13.1	13.1	9.8	12.3	3.5
13	0.5	12.8	9.6	6.3	9.3	11.8	6.8	15.4	12.3	6.8	13.1	5.8
14	0.0	5.8	5.8	8.8	11.8	10.8	13.6	16.4	8.6	7.3	11.8	7.3
15	0.0	4.5	4.8	13.1	12.1	11.3	10.1	14.9	12.8	5.0	7.3	5.8
16	1.0	9.8	6.6	10.1	10.6	10.3	8.6	9.6	12.1	7.6	7.6	5.5
17	0.0	7.3	7.3	10.1	13.4	17.1	8.3	7.3	6.3	14.4	1.3	10.1
18	0.8	5.3	10.1	13.9	8.3	8.1	9.6	9.8	10.1	6.3	0.5	12.8
19	0.3	10.1	16.1	11.6	6.3	12.1	9.8	8.8	5.8	8.8	0.3	14.9
20	0.0	13.1	12.6	12.8	14.1	8.3	11.8	10.6	9.8	7.1	0.3	18.9
21	9.6	21.2	10.3	13.4	13.9	11.1	9.1	12.1	20.4	7.3	0.0	7.8
22	2.0	15.9	10.8	12.8	9.8	10.1	4.5	11.3	22.7	10.3	0.3	3.8
23	0.8	18.1	13.6	10.1	9.8	11.3	6.8	10.8	8.6	5.3	0.0	0.3
24	0.5	18.6	7.8	9.1	10.6	8.6	9.3	8.6	12.6	5.3	6.8	0.3
25	10.3	19.1	15.1	16.1	14.1	9.6	9.1	9.8	8.1	9.8	0.5	1.0
26	8.8	17.1	10.1	16.9	15.6	12.3	11.3	17.6	8.6	13.4	0.5	1.0
27	19.9	15.1	12.1	14.9	10.3	10.6	15.1	11.1	4.5	10.3	0.0	0.0
28	14.6	18.4	12.6	15.9	10.6	9.3	12.1	12.6	8.1	6.8	0.0	0.0
29	8.3	7.3	13.4	13.1	11.6	8.6	12.3	12.1	15.1	7.6	2.0	0.8
30	6.3		11.1	18.4	7.8	10.3	6.6	9.6	7.1	7.6	0.0	18.6
31	3.5		8.3		8.3		9.6	9.1		6.0		18.4
Total	214.5	332.6	305.2	364.6	367.4	325.6	287.6	326.1	306.0	229.9	177.3	192.4
Mean	6.9	11.5	9.8	12.2	11.9	10.9	9.3	10.5	10.2	7.4	5.9	6.2
Max	21.9	21.2	16.1	18.6	22.4	17.1	15.1	17.6	22.7	14.4	23.4	18.9
Min	0.0	0.3	3.0	5.5	6.3	8.1	4.5	5.0	4.5	4.5	0.0	0.0

Rock Haven Resources Ltd.

Klaza Property

Baseline Water Quality / Hydrology Survey

February, 2017

J. Gibson Env. Consulting

Whitehorse, Yukon

Klaza Property February 2017

Rock Haven Resources Ltd. requested baseline water quality / hydrology surveys be conducted quarterly on the surface waters draining the area of the KLAZA Claims. Ground water wells were drilled in November 2015 with quarterly monitoring scheduled in conjunction with surface water monitoring.

The KLAZA Claims are located on tributaries to the Nansen Creek and the Klaza River approx. 75 kilometers east of Carmacks.

The Mt Nansen and upper Klaza River are historic placer mining areas.

Main stem Nansen Creek and tributaries as well as Klaza River tributaries have been equipment mined over the past 3 decades.

An abandoned hard rock gold mine is located approximately 5 kilometers to the east of the Klaza Property.

In February 2017 placer operators on EF Nansen and China Creek were not active.

All surface waters are tributaries to the Klaza River and the Yukon River.

All sites were accessed by helicopter on February 6, 2017.

Monitoring

The surface water baseline survey consisted of water quality samples for routine chemistry, total metals, dissolved metals, total organic carbon and total cyanide with field measurements for pH, water temperature and flow volumes.

Groundwater monitoring consisted of measurements for standing water levels, purging and sampling wells with sufficient standing water. Wells were sampled for routine chemistry, total and dissolved metals, total Kjeldahl nitrogen, ionic balance and acidity.

Thermistor string readings were taken.

Ground water piezometer data loggers were not downloaded in February.

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The ONSET / HOBO weather station logger was downloaded.

Sample Locations

Ten potential water quality sample sites were identified for the KLAZA Claims in March 2012.

An additional site was added in July, 2014; Station KZ-11 is located at the effluent discharge point of the "China Creek" placer operation prior to entering the Klaza River.

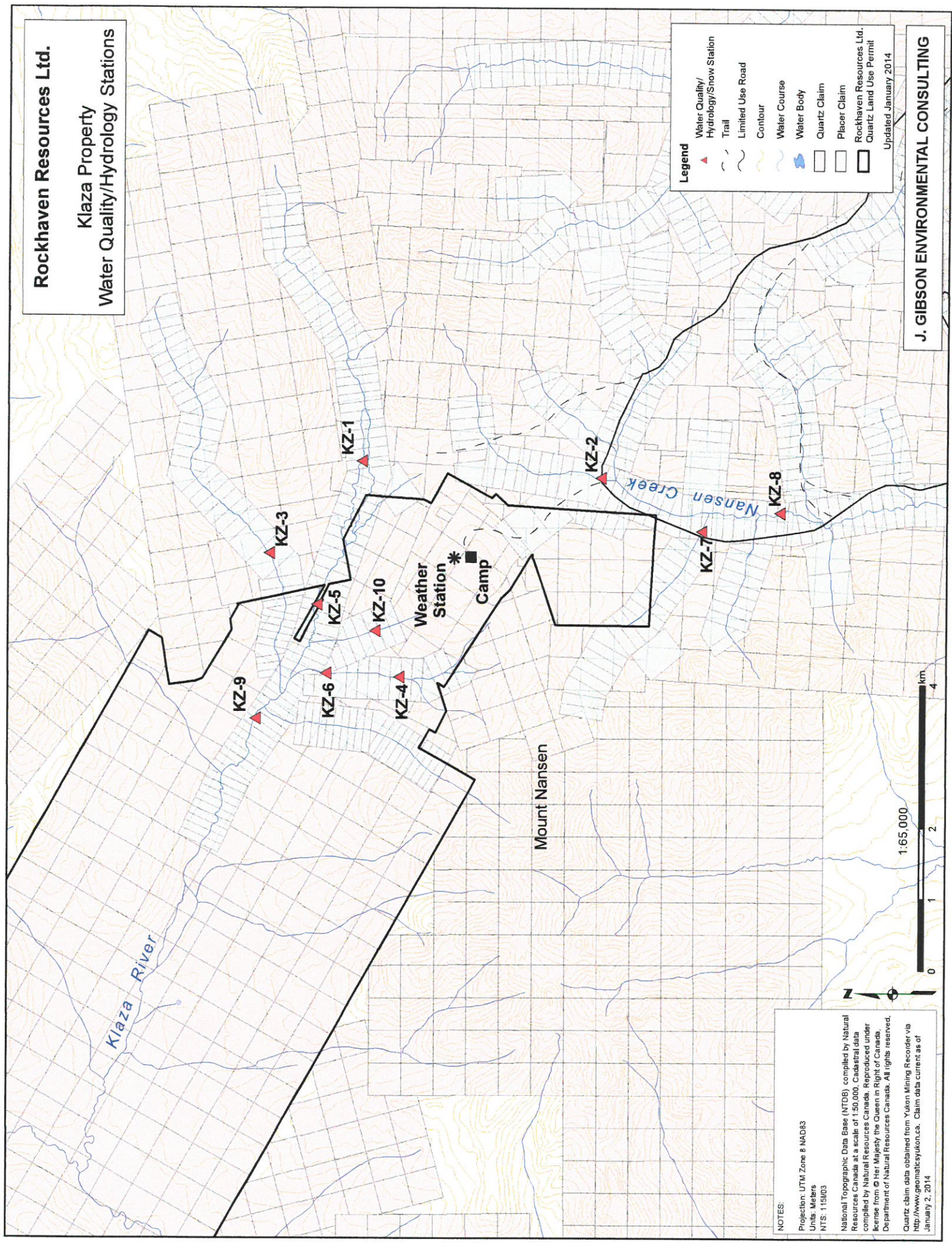
Groundwater Monitoring wells developed in 2015 are also listed.

Surface water sites are on the attached location map.

KLAZA Claim sample station designations and coordinates are:

Station #	LAT/LONG Coordinates
Surface Waters	
KLAZA-1	62.132 137.216
KLAZA-2	62.101 137.218
KLAZA-3	62.143 137.242
KLAZA-4	62.126 137.274
KLAZA-5	62.137 137.255
KLAZA-6	62.135 137.273
KLAZA-7	62.088 137.232
KLAZA-8	62.079 137.226
KLAZA-9	62.144 137.286
KLAZA-10	62.129 137.261
KLAZA -11	no data
Groundwater Monitoring Wells	
MW15-01	383413 E 6888610 N
MW15-02	383355 E 6890004 N
MW15-03	383056 E 6890592 N
MW15-04	382484 E 6891020 N
MW15-05	381552 E 6890347 N
Thermistor String Well	
GTC15-01	382824 E 6890304 N

Rockhaven Resources Ltd.
Klaza Property
Water Quality/Hydrology Stations



- Legend**
- Water Quality/Hydrology/Snow Station
 - Trail
 - Limited Use Road
 - Contour
 - Water Course
 - Water Body
 - Quartz Claim
 - Placer Claim
 - Rockhaven Resources Ltd. Quartz Land Use Permit

Updated January 2014

J. GIBSON ENVIRONMENTAL CONSULTING

NOTES:
 Projection: UTM Zone 8 NAD83
 Units: Meters
 NTS: 115/03
 National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.
 Quartz claim data obtained from Yukon Mining Recorder via <http://www.geomatics.yukon.ca>. Claim data current as of January 2, 2014



Sample Parameters

All surface and groundwater wells stations were sampled for total metals, dissolved metals, routine chemistry. Surface waters had the addition of total organic carbon, total cyanide and total mercury; with groundwater having total Kjeldahl nitrogen, acidity and ionic balance added.

Dissolved metals samples were filtered onsite using disposable 60 ml syringes and 0.45 micron filters. New syringes and filters were used for each station.

Total and dissolved metal samples were preserved with nitric acid immediately after sampling.

Total Organic Carbon samples were preserved with HCL immediately after sampling.

Total cyanide samples were preserved with sodium hydroxide immediately after sampling.

All samples were stored in coolers, kept at 4 Celsius and shipped by air cargo to the Exova Canada Inc. laboratory in Surrey B.C. for analysis within recommended holding times.

Field measurements for pH and conductivity were taken with an Oakton PCS TestR 35, water temperatures with a digital thermometer.

Stream flow volumes were measured with a Price Velocity meter and cross sectional area.

No surface water Quality Control samples were taken in February.

Ground water monitoring wells were located, standing water levels were measured and samples taken of the three wells that were unfrozen and had sufficient standing water, Wells MW15-02S, MW15-03S and Well MW15-01D.

All other wells were dry or remained frozen.

The data logger in MW15-05 remains frozen. The well has been frozen the past four surveys; January, May and September 2016 and February 2017.

Thermistor string measurements were taken at GTC15-01.

Analysis Results

Laboratory analysis and field measurement results are listed in the following tables:

Surface Waters

Table1. KLAZA Stations Routine Chemistry – laboratory analysis and field measurements. February 2017.

Table2. KLAZA Stations Total Metals ICP–MS laboratory analysis results. February 2016.

Table3. KLAZA Stations Dissolved Metals ICP–MS laboratory analysis results. February 2017.

Table4. Flow Volume Measurement Summary 2012 – 2017

Groundwater Wells

Table5. Ground water wells standing water levels to February 2017.

Table6. Ground water Routine Chemistry – laboratory analysis and field measurements. February 2017.

Table7. Ground water Total Metals ICP–MS laboratory analysis results. February 2017.

Table8. Ground water Dissolved Metals ICP–MS laboratory analysis results. February 2017.

Table9. Thermistor String Measurements to February 2017

Table10. Ground Water Well MW15-01D. Well temperatures, August 24 to December 31, 2015.

Table11. Ground Water Well MW15-01D. Well temperatures, January 1 to September 19, 2016.

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Table12. Ground Water Well MW15-01D. Daily well water levels, August 24 to December 31, 2015

Table13. Ground Water Well MW15-01D. Daily well water levels January 1 to September 19, 2016

As a guide for reviewing site water quality, the Maximum Acceptable Concentration (MAC) according to ***Canadian Drinking Water Quality*** are listed along with the Aquatic Guidelines for the protection of aquatic life in water with a pH of > 6.5 according to ***CCME – Canadian Water Quality Guidelines***. Guideline values are listed for both surface and groundwater analysis results.

All water quality ***Guideline*** concentrations are based on total metal values.

Laboratory Analytical Reports are attached in Appendix 1.

Data Summaries for each surface water station and each groundwater well are on the attached disc.

Discussion

Hydrology

February 2017 stream flow in Klaza Property channels had volumes consistent with winter low flow / minimum conditions.

Stream channels at stations KZ#1, KZ#2, KZ#6, KZ#10 and KZ#11 had no surface flow. Channels had ice cover over an airspace and dry creek bottoms.

The diversion channel on upper East Fork Nansen (KZ#8) has been returned to the right limit. The left limit continues as an effluent channel through recently mined areas and settling ponds. Flows were split approximately 50/50 between right and left limit channels.

The KZ- 8 sample was taken of flows on the left / east limit channel as the right limit channel had greater than 2 meters glacial ice cover.

Table 1. RockHaven Resources - Klaza Property. Surface Waters Routine Chemistry / Field Measurements February 2017

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11	DWQ* G.Lines	Aquatic** G.Lines
pH (field)	ru	Dry	Dry	7.35	7.11	7.09	Dry	Glacial ice	7.14	6.89	Dry	Dry		
pH (lab)	ru			7.1	7.2	6.79			7.13	7.01			6.5-8.5	6.5-9
Conductivity (lab)	us/cm			129	211	69			508	106				
Water Temp	C			2.2	1.7	1.9			1.1	1.8				
Flow Volume	cms			0.0025	<0.001	0.0015			<0.002	0.0657				
Organic Carbon Total	mg/L			1.7	1.9	1.7			4	2				
Cyanide Total	mg/L			<0.002	<0.002	<0.002			<0.002	<0.002			0.2	0.005
Phosphorus Total	mg/L			0.005	0.109	0.005			0.062	0.007				
Ammonia - N	mg/L			<0.01	0.01	0.01			0.01	0.01				1.37-2.2
Nitrate - N	mg/L			0.398	0.099	0.18			0.145	0.154			10	
Nitrite - N	mg/L			<0.01	<0.01	<0.01			<0.01	<0.01			1	0.06
T-Alkalinity	mg/L			64	90	33			114	54				
Chloride	mg/L			0.191	0.098	0.169			0.363	0.139			<250	
Sulfate (SO4)	mg/L			4.4	21.2	3			138	3.3				
Hardness as CaCO3	mg/L			64	110	33			269	55			<500	
T.Suspended Solids	mg/L			<2	182	<2			3	<2				
T.Dissolved Solids	mg/L			34	54	22			278	64			500	

All results and limits in mg/L unless otherwise noted

DWQ* Guidelines are Maximum Acceptable Concentration according to Canadian Drinking Water Quality

Aquatic** Guidelines for Protection of aquatic life in waters with pH>6.5 and hardness as CaCO3>180 mg/L

indicates concentration equal or exceeds Guidelines

Table 2. RockHaven Resources Klaza Property - Surface Waters Total Metals Analysis Results February 2017.

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11	DWQ*	Aquatic**
Calcium	mg/L	Dry	Dry	18.2	36.2	9.24	Dry	Glacial ice	79.1	13.8	Dry	Dry	G.Lines	G.Lines
Iron	mg/L			0.402	2.6	0.013			0.302	0.082			0.3	0.3
Magnesium	mg/L			5.64	8.3	2.98			18.3	4.79				
Manganese	mg/L			0.049	0.764	<0.001			0.011	0.04			0.05	
Potassium	mg/L			0.5	1.2	0.4			1.3	0.5				
Silicon	mg/L			7.7	9.84	5.76			8.51	6.74				
Sulfur	mg/L			1.8	8.7	1.3			53.7	1.4				
Sodium	mg/L			3.07	2.57	2.2			7.9	2.58			<200	
Titanium	mg/L			0.008	0.062	<0.002			0.024	0.004				
Aluminum	mg/L			0.164	1.97	0.01			0.179	0.031				
Antimony	mg/L			0.0001	0.00115	0.00004			0.00023	0.00005			0.006	
Arsenic	mg/L			0.0004	0.0094	0.0002			0.0025	0.0003			0.01	
Barium	mg/L			0.0587	0.221	0.0269			0.0697	0.0441				
Beryllium	mg/L			<0.00005	0.00014	<0.00005			<0.00005	<0.00005				
Bismuth	mg/L			<0.0001	0.0001	<0.0001			<0.0001	<0.0001				
Boron	mg/L			<0.002	<0.002	<0.002			0.002	<0.002			5	
Cadmium	mg/L			0.00003	0.00065	0.00002			0.00006	0.00002			0.005	0.0018
Chromium	mg/L			0.00034	0.00129	0.00008			0.00008	0.00012			0.05	0.002
Cobalt	mg/L			0.00023	0.0012	0.00002			0.00023	0.00013				
Copper	mg/L			0.0006	0.0072	0.0003			0.0029	0.0004			1	0.004
Lead	mg/L			0.00009	0.009	0.000016			0.000812	0.000075			0.01	0.007
Lithium	mg/L			0.001	0.0016	0.0008			0.0018	0.0007				
Mercury	mg/L			<0.00001	<0.00001	<0.00001			<0.00001	<0.00001			0.001	0.1
Molybdenum	mg/L			0.000404	0.00104	0.000103			0.000858	0.000213				
Nickel	mg/L			0.0007	0.0016	0.0002			0.0003	<0.0002				0.15
Selenium	mg/L			<0.0002	0.0007	<0.0002			<0.0002	<0.0002			0.01	0.001
Silver	mg/L			0.000016	0.000167	<0.00001			<0.00001	<0.00001				0.0001
Strontium	mg/L			0.152	0.165	0.0702			0.578	0.125				
Thallium	mg/L			0.000022	0.000067	<0.00001			<0.00001	<0.00001				
Tin	mg/L			<0.0001	<0.0001	<0.0001			<0.0001	<0.0001				
Uranium	mg/L			0.00118	0.00247	0.000073			0.00231	0.000192			0.02	
Vanadium	mg/L			0.000738	0.00452	<0.000050			0.000725	0.000122				
Zinc	mg/L			0.0022	0.0272	0.0011			0.0032	0.0016			<5	0.03
Zirconium	mg/L			0.0004	0.0004	<0.0001			0.0002	<0.0001				

Indicates concentration equal or exceeds Guidelines

Table 3. RockHaven Resources - Klaza Property Surface Waters Dissolved Metals Analysis Results February 2017

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11
Calcium	mg/L	Dry		17	32.5	8.6	Dry	Glacial ice	77.7	14	Dry	Dry
Iron	mg/L		Dry	0.033	0.003	0.005			0.004	0.014		
Magnesium	mg/L			5.3	7.3	2.8			18.2	4.9		
Manganese	mg/L			0.002	0.006	<0.001			<0.001	0.035		
Potassium	mg/L			0.5	0.5	0.4			1.2	0.5		
Silicon	mg/L			6.93	5.33	5.38			8.15	6.77		
Sodium	mg/L			2.9	2.3	2			7.7	2.6		
Sulfur	mg/L			1.7	7.8	1.2			52.8	1.4		
Aluminum	mg/L			0.0125	0.001681	0.004087			0.003239	0.004776		
Antimony	mg/L			0.000028	0.000188	<0.000020			0.000153	<0.000020		
Arsenic	mg/L			0.0002	0.0004	0.0002			0.0016	0.0002		
Barium	mg/L			0.0514	0.1077	0.024			0.059	0.0414		
Beryllium	mg/L			<0.000050	<0.000050	<0.000050			<0.000050	<0.000050		
Bismuth	mg/L			<0.0001	<0.0001	<0.0001			<0.0001	<0.0001		
Boron	mg/L			<0.002	<0.002	<0.002			<0.002	<0.002		
Cadmium	mg/L			<0.00001	<0.00001	<0.00001			0.000022	0.000015		
Chromium	mg/L			<0.00050	0.00008	<0.00050			0.000169	<0.00050		
Cobalt	mg/L			<0.000020	<0.000020	<0.000020			<0.000020	0.000072		
Copper	mg/L			<0.0005	<0.0005	<0.0005			0.0018	<0.0005		
Lead	mg/L			0.000089	<0.00013	<0.00001			<0.00001	0.000013		
Lithium	mg/L			0.0009	<0.0005	0.0006			0.0016	0.0007		
Molybdenum	mg/L			0.0002	0.000243	<0.000020			0.000623	0.000086		
Nickel	mg/L			<0.0002	<0.0002	<0.0002			<0.0002	<0.0002		
Selenium	mg/L			<0.0002	<0.0002	<0.0002			<0.0002	<0.0002		
Silver	mg/L			<0.00001	<0.00001	<0.00001			<0.00001	<0.00001		
Strontium	mg/L			0.1312	0.1479	0.0618			0.5104	0.115		
Titanium	mg/L			0.003	0.006	<0.002			0.012	<0.002		
Tellurium	mg/L			<0.000050	<0.000050	<0.000050			<0.000050	<0.000050		
Thallium	mg/L			<0.00001	<0.00001	<0.00001			<0.00001	<0.00001		
Thorium	mg/L			<0.000050	0.000101	<0.000050			<0.000050	<0.000050		
Tin	mg/L			<0.0001	<0.0001	<0.0001			<0.0001	<0.0001		
Uranium	mg/L			0.000731	0.000509	0.000063			0.001943	0.000178		
Vanadium	mg/L			0.000195	<0.000050	0.000115			0.000106	0.000101		
Zinc	mg/L			0.0016	0.001	0.0009			0.0011	0.0011		
Zirconium	mg/L			<0.0001	<0.0001	<0.0001			0.0001	<0.0001		

Table 4. Klaza Project - Flow Volume Measurement Summary 2013-2017

Station	Date												
	Jun-13	Oct-13	Jan-14	Apr-14	Jul-14	Oct-14	Feb-15	May-15	Aug-15	Jan-16	May-16	Sep-16	Feb-17
KZ#1	0.1308	0.0248	Dry	Dry	0.0466	0.0232	Dry	nr	0.2706	Dry	0.0854	0.009	Dry
KZ#2	0.0079	nr	Dry	Dry	<0.001	Dry	Dry	nr	0.0093	Dry	0.0144	<0.001	Dry
KZ#3	0.0142	nr	0.007	0.005	0.0077	0.0246	0.003*	nr	0.1005	0.0292	0.0955	0.0203	0.0025
KZ#4	0.0352	nr	nr	nr	0.0041	0.0372	nr	nr	0.0958	Glacial Ice	0.1241	0.0454	<0.001
KZ#5	0.0957	nr	0.003	nr	0.0262	0.0316	0.002*	nr	0.2213	0.0035	0.1873	0.0576	0.0015
KZ#6	0.0471	0.06	Dry	Dry	<0.001	0.0367	Dry	nr	nr	Dry	nr	0.0314	Dry
KZ#7	0.0723	0.0423	nr	nr	0.0158	0.01*	Glaciated	nr	0.1391	Glacial Ice	0.0847	0.0643	Glacial Ice
KZ#8	0.1600	0.0764	nr	0.07	nr	0.015*	nr	nr	0.1844	nr	nr	0.0554	<0.002
KZ#9	0.2528	0.2365	0.0765	0.0335	0.0849	0.1684	0.064	nr	0.4566	0.0868	0.3246	0.2613	0.0657
KZ#10	Dry	<0.001	nr	Dry	Dry	Dry	Dry	Dry	0.0014	Dry	0.0162	0.0025	Dry
KZ#11						Dry	Dry	0.001	0.006	Dry	No Flow	<0.001	No Flow
	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)

Volume stated as "<" are estimated

Table 5. Rock Haven Resources - Klaza Project. Groundwater Well Measurements to February 2017.

Well #	Total Drilled Depth (m)	Standing		Standing		Standing		Standing		Comments
		Water Level (m)	Nov-15	Water Level (m)	02-Jan-16	Water Level (m)	12-May-16	Water Level (m)	18-Sep-16	
										06-Feb-17
MW 15-01 D	75.9	18.85		14.61	18.38	9.94	15.42	Sampled		
MW 15-01 S	5.60	Dry		5.64	5.64	5.66	5.6	Dry		
MW 15-02 D	66.75	59.83		66.00	66.00	65.92	no reading	blockage at 1 m depth		
MW 15-02 S	5.67	1.23		4.44	4.44	1.92	4.83	Sampled		
MW 15-03 D	33.32	29.14		28.68	29.7	29.1	28.6	Dry/ Frozen		
MW 15-03 S	5.80	2.16		4.95	3.66	3.19	5.41	Sampled		
MW 15-04 D	84.43	14.05		14.1	14.09	14.13	14.1	Dry/ Frozen		
MW 15-04 S	4.20	2.16		3.42	3.42	3.91	4.07	Dry		
MW 15-05 D	48.46	13.61		13.81	13.81	5.21	5.21	Logger Frozen in @ 5.21 m		
MW 15-05 S	3.65	1.04		2.67	2.67	3.65	3.65	Dry/ Frozen		

Table 6 . RockHaven Resources - Klaza Property. Groundwater Wells Routine Chemistry / Field Measurements February 2017

Parameter	Unit	MW15-01D	MW15-01S	MW15-02D	MW15-02S	MW15-03D	MW15-03S	MW15-04D	MW15-04S	MW15-05D	MW15-05S	DWQ *
Total Depth	meters	75.9	5.66	66.75	5.67	33.32	5.80	84.43	4.20	48.46	3.65	Guidelines
Standing Water Level	meters	15.42	5.66	nr	4.83	28.6	5.41	14.10	4.07	5.21	3.65	
Volume Purged (L)	liters	0	Dry	Blocked	2	Dry / Frozen	2	Frozen	Frozen	Frozen	Frozen	
pH (field)	ru	7.55			7.12		7.08					
pH (lab)	ru	7.4			6.07		7.05					6.5-8.5
Conductivity (lab)	us/cm	657			283		640					
Water Temp	C	0.9			0.7		0.2					
Organic Carbon (Diss)	mg/L	3.6			3.2		2.9					
Phosphorus Total	mg/L	0.13			2.48		0.42					
OrthoPhosphate (Diss)	mg/L	<0.01			<0.01		<0.01					
Ammonia - N	mg/L	0.048			0.063		0.049					
Nitrate + Nitrite	mg/L	0.01			1.79		0.24					10
Sulfate (SO4)	mg/L	2.5			60.3		88.3					
T-Alkalinity	mg/L	224			65		272					
P-Alkalinity	mg/L	<5			<5		<5					
BiCarbonate	mg/L	273			79		331					
Carbonate	mg/L	<6			<6		<6					
Chloride	mg/L	0.21			0.757		0.453					<250
Flouride	mg/L	0.536			0.021		0.053					
T.Hardness as CaCO3	mg/L	342			110		381					<500
T.Dissolved Solids	mg/L	366			146		346					500
T.Kjeldahl Nitrogen	mg/L	0.52			2.43		1.51					
Acidity	mg/L CaCO3	16			74		24					
Ionic Balance (Diss)	%											

DWQ* Guidelines are Maximum Acceptable Concentration according to Canadian Drinking Water Quality

indicates concentration equal or exceeds Guidelines

Table 7. RockHaven Resources - Klaza Property. Groundwater Wells Total Metals Analysis February 2017

Parameter	Unit	MW15-01D	MW15-01S	MW15-02D	MW15-02S	MW15-03D	MW15-03S	MW15-04D	MW15-04S	MW15-05D	MW15-05S	DWQ *
Calcium	mg/L	Sampled 114	Dry	Dry	Sampled 59.6	Dry / Frozen	Sampled 168	Frozen	Frozen	Frozen	Frozen	Guidelines
Iron	mg/L	2.71			47		34.2					0.3
Magnesium	mg/L	22.5			17.9		29.3					
Manganese	mg/L	0.79			2.82		1.68					0.05
Potassium	mg/L	7.6			5.6		5.2					
Silicon	mg/L	9.02			66.4		32					
Sodium	mg/L	11.9			10.2		5.42					<200
Sulfur	mg/L	47.2			24.2		33.6					
Aluminum	mg/L	0.986			24		7.37					
Antimony	mg/L	0.00122			0.00191		0.00196					0.006
Arsenic	mg/L	0.0056			0.402		0.064					0.01
Barium	mg/L	0.247			1.7		0.49					
Beryllium	mg/L	0.00007			0.00234		0.0009					
Bismuth	mg/L	0.0001			0.0028		0.0002					
Boron	mg/L	0.006			0.007		0.005					5
Cadmium	mg/L	0.0083			0.036		0.00154					0.005
Chromium	mg/L	0.00423			0.0409		0.041					0.05
Cobalt	mg/L	0.00087			0.02		0.00972					
Copper	mg/L	0.0331			0.224		0.0865					1
Lead	mg/L	0.00797			0.403		0.0751					0.01
Lithium	mg/L	0.0083			0.0105		0.0061					
Mercury	mg/L	<0.00001			<0.00001		<0.00001					0.001
Molybdenum	mg/L	0.00345			0.00724		0.0103					
Nickel	mg/L	0.0034			0.024		0.0203					
Selenium	mg/L	0.0003			0.009		0.0037					0.01
Silver	mg/L	0.000132			0.031		0.00466					
Strontium	mg/L	1.83			0.393		0.514					
Titanium	mg/L	0.054			0.169		0.215					
Tellurium	mg/L	<0.000050			0.000138		<0.000050					
Thallium	mg/L	0.00002			0.000332		0.000235					
Thorium	mg/L	0.000419			0.0236		0.00787					
Tin	mg/L	0.0028			0.0014		0.0017					
Uranium	mg/L	0.00548			0.00744		0.0147					0.02
Vanadium	mg/L	0.00344			0.0564		0.0267					
Zinc	mg/L	0.063			1.76		0.222					<5
Zirconium	mg/L	0.0003			0.0025		0.001					

indicates concentration equal or exceeds Guidelines

Table 8. RockHaven Resources - Klaza Property. Groundwater Wells Dissolved Metals Analysis February 2017

Parameter	Unit	MW15-01D	MW15-01S	MW15-02D	MW15-02S	MW15-03D	MW15-03S	MW15-04D	MW15-04S	MW15-05D	MW15-05S
Calcium	mg/L	Sampled	Dry	Dry	Sampled	Dry / Frozen	Sampled	Frozen	Frozen	Frozen	Frozen
Iron	mg/L	103			32.8		121				
Magnesium	mg/L	0.17			0.297		0.004				
Manganese	mg/L	20.8			7.4		19.2				
Potassium	mg/L	0.854			1.84		0.417				
Silicon	mg/L	4.3			0.6		1.1				
Sodium	mg/L	6.8			8.41		5.71				
Sulfur	mg/L	10.7			7.5		4.3				
Aluminum	mg/L	41.7			21		33.1				
Antimony	mg/L	0.004836			0.001765		0.002346				
Arsenic	mg/L	0.000244			0.000091		0.000268				
Barium	mg/L	0.0023			0.0058		0.0011				
Beryllium	mg/L	0.1562			0.3133		0.0535				
Bismuth	mg/L	0.000083			<0.000050		<0.000050				
Boron	mg/L	<0.0001			<0.0001		<0.0001				
Cadmium	mg/L	0.003			<0.002		<0.002				
Chromium	mg/L	0.000176			0.001976		0.000084				
Cobalt	mg/L	0.000237			0.000104		0.00007				
Copper	mg/L	0.000368			0.002001		0.000791				
Lead	mg/L	<0.0005			0.0007		<0.0005				
Lithium	mg/L	0.000117			0.000015		0.000127				
Molybdenum	mg/L	0.0088			0.0023		0.0029				
Nickel	mg/L	0.001228			0.000196		0.000661				
Selenium	mg/L	0.0007			0.0199		0.001				
Silver	mg/L	<0.0002			<0.0002		<0.0002				
Strontium	mg/L	0.000117			<0.00001		<0.00001				
Titanium	mg/L	1.85			0.1838		0.3491				
Tellurium	mg/L	0.015			0.006		0.017				
Thallium	mg/L	0.000053			<0.000050		<0.000050				
Thorium	mg/L	0.000081			<0.00001		<0.00001				
Tin	mg/L	0.000061			<0.000050		<0.000050				
Uranium	mg/L	0.0002			<0.0001		<0.0001				
Vanadium	mg/L	0.003236			0.000105		0.01184				
Zinc	mg/L	0.000497			<0.000050		<0.000050				
Zirconium	mg/L	0.0035			0.1312		0.0068				
	mg/L	0.0002			<0.0001		<0.0001				

Table 9. Rock Haven Resources - Klaza Project. Thermistor String Measurements.

Well # GTC 15-01	Nov-15	Jan-16	May-16	Sep-16	Feb-17
Channel #	(k ohm)	(k ohm)	(k ohm)	(k ohm)	(k ohm)
1	16.45	16.83	17.53	16.24	16.83
2	16.52	17.02	17.1	16.63	16.47
3	16.63	17.91	16.89	16.92	16.84
4	16.75	16.97	16.88	16.87	16386
5	16.77	17.34	16.87	16.88	16.87
6	16.76	16.88	16.87	16.87	16.86
7	16.62	16.93	16.76	16.76	16.75
8	16.56	16.67	16.66	16.66	16.65
9	16.39	16.48	16.45	16.45	16.45
10	16.27	16.32	16.31	16.31	16.31

Note: Thermistor readings require conversion by EBA / Tetra Tech

Table 10. RockHaven Resources. Klaza Project.Ground Water Well MW15-01D.
2015 Well Water Temperatures (Degrees C)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1									0.747	0.658	0.641	0.636
2									0.737	0.657	0.641	0.636
3									0.729	0.656	0.641	0.636
4									0.722	0.655	0.641	0.636
5									0.716	0.654	0.641	0.635
6									0.711	0.654	0.640	0.635
7									0.706	0.653	0.640	0.635
8									0.702	0.652	0.640	0.635
9									0.697	0.651	0.640	0.635
10									0.694	0.651	0.639	0.635
11									0.691	0.650	0.639	0.635
12									0.687	0.650	0.639	0.635
13									0.685	0.649	0.638	0.635
14									0.683	0.649	0.639	0.635
15									0.681	0.648	0.639	0.634
16									0.679	0.647	0.638	0.634
17									0.676	0.647	0.638	0.634
18									0.674	0.646	0.638	0.634
19									0.672	0.646	0.638	0.634
20									0.671	0.646	0.637	0.634
21									0.669	0.646	0.637	0.634
22									0.668	0.645	0.637	0.634
23									0.666	0.644	0.637	0.634
24								0.989	0.665	0.644	0.637	0.634
25								0.895	0.664	0.643	0.637	0.634
26								0.855	0.663	0.644	0.636	0.633
27								0.826	0.661	0.643	0.636	0.633
28								0.803	0.661	0.643	0.636	0.633
29								0.785	0.660	0.642	0.636	0.633
30								0.770	0.658	0.642	0.636	0.633
31								0.757		0.642		0.633
Mean								0.835	0.686	0.648	0.638	0.634
Max								0.989	0.747	0.658	0.641	0.636
Min								0.757	0.658	0.642	0.636	0.633

Table 11. RockHaven Resources, Klaza Project.Ground Water Well MW15-01D.
2016 Well Water Temperatures (Degrees C)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1	0.633	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.631			
2	0.633	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
3	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
4	0.633	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
5	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
6	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.630			
7	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.631			
8	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
9	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.630			
10	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.630			
11	0.632	0.632	0.631	0.631	0.631	0.630	0.630	0.631	0.630			
12	0.632	0.631	0.631	0.631	0.645	0.630	0.630	0.631	0.631			
13	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.630			
14	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.630	0.631			
15	0.632	0.631	0.631	0.631	0.630	0.630	0.631	0.631	0.630			
16	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631	0.630			
17	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631	0.631			
18	0.632	0.631	0.631	0.630	0.630	0.630	0.630	0.631	0.631			
19	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631	0.631			
20	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631	0.631			
21	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.630				
22	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631				
23	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631				
24	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.630				
25	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.631				
26	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631				
27	0.631	0.631	0.631	0.631	0.630	0.630	0.631	0.631				
28	0.632	0.631	0.631	0.631	0.630	0.630	0.630	0.631				
29	0.632				0.630	0.630	0.630	0.631				
30	0.631				0.629	0.630	0.630	0.631				
31	0.632				0.630		0.631	0.631				
Mean	0.632	0.631	0.631	0.631	0.631	0.630	0.630	0.630	0.631			
Max	0.633	0.632	0.631	0.631	0.645	0.630	0.631	0.631	0.631			
Min	0.631	0.631	0.631	0.630	0.629	0.630	0.630	0.630	0.630			

Table 12. RockHaven Resources. Klaza Project.Ground Water Well MW15-01D.
2015 Standing Water Levels in Meters above sea level.

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1									1306.263	1309.660	1307.715	1306.100
2									1306.764	1309.568	1307.659	1306.039
3									1307.263	1309.536	1307.613	1305.982
4									1307.779	1309.507	1307.546	1305.926
5									1308.210	1309.450	1307.486	1305.850
6									1308.545	1309.419	1307.526	1305.822
7									1308.851	1309.365	1307.416	1305.783
8									1309.123	1309.322	1307.305	1305.740
9									1309.345	1309.327	1307.313	1305.703
10									1309.532	1309.281	1307.264	1305.601
11									1309.667	1309.148	1307.179	1305.530
12									1309.731	1309.114	1307.201	1305.501
13									1309.826	1308.970	1307.129	1305.419
14									1309.995	1308.810	1306.994	1305.379
15									1310.088	1308.745	1306.942	1305.281
16									1310.144	1308.757	1306.904	1305.221
17									1310.211	1308.741	1306.853	1305.233
18									1310.237	1308.640	1306.738	1305.206
19									1310.215	1308.549	1306.656	1305.178
20									1310.159	1308.480	1306.640	1305.138
21									1310.124	1308.465	1306.640	1305.075
22									1310.099	1308.373	1306.486	1305.024
23									1310.073	1308.260	1306.404	1304.931
24								1300.252	1310.069	1308.191	1306.362	1304.831
25								1300.502	1310.056	1308.124	1306.312	1304.776
26								1300.934	1310.005	1308.044	1306.305	1304.765
27								1301.443	1309.939	1308.023	1306.240	1304.702
28								1302.243	1309.933	1308.029	1306.212	1304.672
29								1303.684	1309.944	1307.987	1306.171	1304.597
30								1304.914	1309.859	1307.928	1306.121	1304.545
31								1305.717		1307.827		1304.529
Mean								1302.461	1309.402	1308.763	1306.911	1305.293
Max								1305.717	1310.237	1309.660	1307.715	1306.100
Min								1300.252	1306.263	1307.827	1306.121	1304.529

**Table 13. RockHaven Resources. Klaza Project.Ground Water Well MW15-01D.
2016 Standing Water Levels in Meters above sea level.**

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1	1304.456	1303.148	1301.921	1300.715	1300.636	1302.242	1304.244	1306.170	1308.611			
2	1304.434	1303.096	1301.887	1300.664	1300.503	1302.301	1304.307	1306.314	1308.664			
3	1304.325	1303.088	1301.875	1300.605	1300.538	1302.329	1304.335	1306.447	1308.706			
4	1304.293	1303.093	1301.865	1300.596	1300.460	1302.328	1304.354	1306.564	1308.795			
5	1304.268	1303.053	1301.829	1300.586	1300.424	1302.387	1304.400	1306.702	1308.889			
6	1304.205	1302.943	1301.776	1300.499	1300.434	1302.477	1304.452	1306.837	1308.958			
7	1304.152	1302.877	1301.727	1300.474	1300.411	1302.484	1304.491	1306.987	1308.984			
8	1304.112	1302.849	1301.679	1300.479	1300.352	1302.529	1304.509	1307.124	1308.985			
9	1304.086	1302.801	1301.643	1300.388	1300.309	1302.596	1304.550	1307.217	1309.067			
10	1304.005	1302.789	1301.620	1300.394	1300.183	1302.698	1304.586	1307.291	1309.060			
11	1304.007	1302.743	1301.559	1300.374	1300.210	1302.786	1304.600	1307.363	1309.039			
12	1303.992	1302.728	1301.515	1300.363	1300.420	1302.865	1304.604	1307.451	1309.129			
13	1303.928	1302.690	1301.483	1300.337	1300.569	1302.931	1304.617	1307.551	1309.189			
14	1303.841	1302.650	1301.438	1300.349	1300.688	1302.987	1304.645	1307.637	1309.180			
15	1303.791	1302.592	1301.365	1300.398	1300.715	1303.028	1304.694	1307.683	1309.208			
16	1303.782	1302.544	1301.277	1300.430	1300.701	1303.107	1304.748	1307.686	1309.246			
17	1303.735	1302.519	1301.223	1300.475	1301.182	1303.207	1304.801	1307.687	1309.236			
18	1303.696	1302.516	1301.233	1300.521	1301.632	1303.276	1304.864	1307.759	1309.186			
19	1303.636	1302.435	1301.221	1300.456	1301.656	1303.347	1304.926	1307.826	1309.127			
20	1303.572	1302.375	1301.156	1300.439	1301.657	1303.434	1304.979	1307.900				
21	1303.555	1302.315	1301.122	1300.432	1301.660	1303.513	1305.034	1307.983				
22	1303.533	1302.244	1301.079	1300.433	1301.624	1303.577	1305.108	1308.042				
23	1303.465	1302.188	1301.051	1300.416	1301.594	1303.681	1305.180	1308.043				
24	1303.434	1302.205	1301.011	1300.407	1301.580	1303.773	1305.233	1308.030				
25	1303.433	1302.162	1300.966	1300.514	1301.588	1303.830	1305.311	1308.099				
26	1303.449	1302.137	1300.950	1300.667	1301.677	1303.881	1305.415	1308.178				
27	1303.387	1302.081	1300.903	1300.716	1301.859	1303.929	1305.528	1308.213				
28	1303.392	1302.062	1300.843	1300.699	1301.956	1303.997	1305.667	1308.294				
29	1303.308		1300.785	1300.675	1302.027	1304.068	1305.789	1308.370				
30	1303.221		1300.723	1300.618	1302.069	1304.160	1305.914	1308.431				
31	1303.149		1300.699		1302.140		1306.061	1308.521				
Mean	1303.795	1302.604	1301.336	1300.504	1301.079	1303.125	1304.902	1307.561	1309.014			
Max	1304.456	1303.148	1301.921	1300.716	1302.140	1304.160	1306.061	1308.521	1309.246			
Min	1303.149	1302.062	1300.699	1300.337	1300.183	1302.242	1304.244	1306.170	1308.611			

Klaza Property February 2017

Station KZ#7 also had heavy glacial ice cover and sample could not be taken.

Flow volumes for stations KZ#3, KZ#4, KZ#5 and KZ#8 are estimated.

Table 4 is a summary of flow measurements 2012 -2017. February 2017 flow volume calculations are attached in Appendix 2.

Groundwater piezometer standing water levels were taken with a hydrometer.

Laboratory Analytical Results

Surface Waters

Parameters that equal or exceed either *Drinking Water or Aquatic Guidelines* are highlighted in yellow in Tables 1 and 2. All Guideline metals values are Totals.

Stations KZ-1, 2, 6, 10, and 11 had no surface flow and were therefore not sampled. Station KZ#7 had heavy glacial ice cover and was also not sampled.

Station KZ-3 exceeds the *Guideline levels* for iron.

Station KZ-4 exceeds *Guideline levels* for iron and manganese.

Stations KZ-8 exceeds *Guideline levels* for iron.

Station KZ-8 exceeds *Guideline levels* for iron.

All stations sampled reported total cyanide at less than laboratory detection limits (0.002 mg/L).

All stations sampled reported total mercury at less than detection limit (0.00001 mg/L).

Groundwater Wells

Groundwater wells MW15-01D, MW15-02S and MW15-03S were the only wells not dry or frozen in February 2017.

Well analysis results and field measurements are listed in Tables 6, 7, 8 and 9.

Laboratory analytical results are compared to Drinking Water Quality Guidelines.

Klaza Property February 2017

Well MW15-01D exceeded Guidelines for pH, iron, manganese and cadmium.

Well MW15-02S exceeded Guidelines for pH, sulfate, iron, manganese, arsenic, cadmium and lead.

Well MW15-03S exceeded Guidelines for sulphate, iron, manganese, arsenic and lead.

Thermistor

Thermistor string readings were taken at Well GTC15-01. Results for January, May, September 2016 and February 2017 are listed in Table 9. Site readings require conversion.

Vibrating Wire Piezometers

The three vibrating wire piezometers were located but attempts to download data were unsuccessful in September 2016– likely due to a software problem. Downloads will be attempted again in May 2017.

Onset Weather Station

The **Onset / Hobo** weather station installed near camp on June, 2013 was downloaded on February 6, 2017.

The 2016 weather data is attached as a separate report.

APPENDIX 1

LABORATORY ANALYTICAL REPORTS

Surface Water
Ground water

KLAZA PROPERTY

February, 2017

Report Transmission Cover Page

Bill To: J. Gibson & Associates	Project:	Lot ID: 1185470
Report To: J. Gibson & Associates	ID: Rockhaven Resources	Control Number: C0059186
Box 20913	Name: Klaza	Date Received: Feb 8, 2017
Whitehorse, YT, Canada	Location:	Date Reported: Feb 16, 2017
Y1A 6P2	LSD: Surf H2O	Report Number: 2167227
Attn: John Gibson	P.O.:	
Sampled By: John Gibson	Acct code:	
Company:		

Contact & Affiliation	Address	Delivery Commitments
John Gibson J. Gibson & Associates	Box 20913, Whitehorse, Yukon Territory Y1A 6P2 Phone: (867) 633-4522 Fax: (867) 668-6895 Email: ludditegibson@gmail.com	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (Test Report) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report On [Lot Creation] send (COR) by Email - Single Report

Notes To Clients:

- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for sample #1185470-2. Detection limits are adjusted accordingly.
- Analysis was performed on LOT# 1185470 that exceeded the recommended holding time for Nitrite and Nitrate analysis.
- Sample 1185470-4; 5640580 Reduction of analytical volume was necessary for Sulfate to bring results within the analytical range for sample 1185470-4. Detection limits are adjusted accordingly.

Analytical Report

Bill To: J. Gibson & Associates
 Report To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: John Gibson
 Company:

Project:
 ID: Rockhaven Resources
 Name: Klaza
 Location:
 LSD: Surf H2O
 P.O.:
 Acct code:

Lot ID: **1185470**
 Control Number: C0059186
 Date Received: Feb 8, 2017
 Date Reported: Feb 16, 2017
 Report Number: 2167227

		Reference Number	1185470-1	1185470-2	1185470-3	
		Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017	
		Sample Time	11:10	12:40	11:25	
		Sample Location				
		Sample Description	Surf. / KZ-3 / 5.3°C	Surf. / KZ-4 / 5.3°C	Surf. / KZ-5 / 5.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	1.7	1.9	1.7	0.5
Cyanide	Total	mg/L	<0.002	<0.002	<0.002	0.002
Ammonia - N		mg/L	<0.01	0.01	0.01	0.01
Phosphorus	Total	mg/L	0.005	0.109	0.005	0.003
Metals Total						
Calcium	Total	mg/L	18.2	36.2	9.24	0.01
Magnesium	Total	mg/L	5.64	8.30	2.98	0.02
Potassium	Total	mg/L	0.5	1.2	0.4	0.04
Silicon	Total	mg/L	7.70	9.84	5.76	0.005
Sulfur	Total	mg/L	1.8	8.7	1.3	0.02
Sodium	Total	mg/L	3.07	2.57	2.20	0.1
Titanium	Total	mg/L	0.008	0.062	<0.002	0.002
Digestion	Preparation		Field Pres, digest as total Hg	Field Pres, digest as total Hg	Field Pres, digest as total Hg	
Mercury	Total	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<2	182	<2	2
Solids	Total Dissolved	mg/L	34	54	22	5
Routine Water						
pH - Holding Time			Exceeded	Exceeded	Exceeded	
pH	at 25 °C		7.10	7.20	6.79	
Electrical Conductivity		µS/cm at 25 C	129	211	69	1
Calcium	Dissolved	mg/L	17.0	32.5	8.6	0.01
Magnesium	Dissolved	mg/L	5.3	7.3	2.8	0.02
Potassium	Dissolved	mg/L	0.5	0.5	0.4	0.04
Silicon	Dissolved	mg/L	6.93	5.33	5.38	0.005
Sodium	Dissolved	mg/L	2.9	2.3	2.0	0.1
Sulfur	Dissolved	mg/L	1.7	7.8	1.2	0.02
Bicarbonate		mg/L	79	110	40	5
Carbonate		mg/L	<6	<6	<6	6
Hydroxide		mg/L	<5	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	64	90	33	5
Chloride	Dissolved	mg/L	0.191	0.098	0.169	0.05
Nitrate - N	Dissolved	mg/L	0.398	0.099	0.180	0.01
Nitrite - N	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01

Analytical Report

Bill To: J. Gibson & Associates
Report To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: John Gibson
Company:

Project:
ID: Rockhaven Resources
Name: Klaza
Location:
LSD: Surf H2O
P.O.:
Acct code:

Lot ID: **1185470**
Control Number: C0059186
Date Received: Feb 8, 2017
Date Reported: Feb 16, 2017
Report Number: 2167227

Reference Number	1185470-1	1185470-2	1185470-3
Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017
Sample Time	11:10	12:40	11:25
Sample Location			
Sample Description	Surf. / KZ-3 / 5.3°C	Surf. / KZ-4 / 5.3°C	Surf. / KZ-5 / 5.3°C

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sulfate (SO4)	Dissolved	mg/L	4.4	21.2	3.0	0.1
Hardness	as CaCO3 (dissolved)	mg/L	64	110	33	5
Hardness	Total	mg CaCO3/L	68.7	125	35.3	1
Trace Metals Dissolved						
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.003	0.006	<0.002	0.002
Aluminum	Dissolved	mg/L	0.01125	0.001681	0.004087	0.001
Antimony	Dissolved	mg/L	0.000028	0.000188	<0.000020	0.00002
Arsenic	Dissolved	mg/L	0.0002	0.0004	0.0002	0.0001
Barium	Dissolved	mg/L	0.0514	0.1077	0.0240	0.0001
Beryllium	Dissolved	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Chromium	Dissolved	mg/L	<0.00050	0.000080	<0.00050	0.00005
Cobalt	Dissolved	mg/L	<0.000020	<0.000020	<0.000020	0.00002
Copper	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Iron	Dissolved	mg/L	0.033	0.003	0.005	0.002
Lead	Dissolved	mg/L	0.000089	0.000013	<0.00001	0.00001
Lithium	Dissolved	mg/L	0.0009	<0.0005	0.0006	0.0005
Manganese	Dissolved	mg/L	0.002	0.006	<0.001	0.001
Molybdenum	Dissolved	mg/L	0.000200	0.000243	<0.000020	0.00002
Nickel	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	0.1312	0.1479	0.0618	0.0001
Tellurium	Dissolved	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Thorium	Dissolved	mg/L	<0.000050	0.000101	<0.000050	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.000731	0.000509	0.000063	0.00001
Vanadium	Dissolved	mg/L	0.000195	<0.000050	0.000115	0.00005
Zinc	Dissolved	mg/L	0.0016	0.001	0.0009	0.0005
Zirconium	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001

Analytical Report

Bill To: J. Gibson & Associates
 Report To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: John Gibson
 Company:

Project:
 ID: Rockhaven Resources
 Name: Klaza
 Location:
 LSD: Surf H2O
 P.O.:
 Acct code:

Lot ID: **1185470**
 Control Number: C0059186
 Date Received: Feb 8, 2017
 Date Reported: Feb 16, 2017
 Report Number: 2167227

		Reference Number	1185470-1	1185470-2	1185470-3	
		Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017	
		Sample Time	11:10	12:40	11:25	
		Sample Location				
		Sample Description	Surf. / KZ-3 / 5.3°C	Surf. / KZ-4 / 5.3°C	Surf. / KZ-5 / 5.3°C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Trace Metals Total						
Aluminum	Total	mg/L	0.164	1.97	0.01	0.001
Antimony	Total	mg/L	0.00010	0.00115	0.00004	0.00002
Arsenic	Total	mg/L	0.0004	0.0094	0.0002	0.0001
Barium	Total	mg/L	0.0587	0.221	0.0269	0.0001
Beryllium	Total	mg/L	<0.00005	0.00014	<0.00005	0.00005
Bismuth	Total	mg/L	<0.0001	0.0001	<0.0001	0.0001
Boron	Total	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Total	mg/L	0.00003	0.00065	0.00002	0.00001
Chromium	Total	mg/L	0.00034	0.00129	0.00008	0.00005
Cobalt	Total	mg/L	0.00023	0.00120	0.00002	0.00002
Copper	Total	mg/L	0.0006	0.0072	0.0003	0.0002
Iron	Total	mg/L	0.402	2.60	0.013	0.002
Lead	Total	mg/L	0.000090	0.00900	0.000016	0.00001
Lithium	Total	mg/L	0.0010	0.0016	0.0008	0.0005
Manganese	Total	mg/L	0.049	0.764	<0.001	0.001
Molybdenum	Total	mg/L	0.000404	0.00104	0.000103	0.00002
Nickel	Total	mg/L	0.0007	0.0016	0.0002	0.0002
Selenium	Total	mg/L	<0.0002	0.0007	<0.0002	0.0002
Silver	Total	mg/L	0.000016	0.000167	<0.00001	0.00001
Strontium	Total	mg/L	0.152	0.165	0.0702	0.0001
Tellurium	Total	mg/L	0.000112	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	0.000022	0.000067	<0.00001	0.00001
Thorium	Total	mg/L	0.000449	0.000351	0.000083	0.00005
Tin	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Total	mg/L	0.00118	0.00247	0.000073	0.00001
Vanadium	Total	mg/L	0.000738	0.00452	<0.000050	0.00005
Zinc	Total	mg/L	0.0022	0.0272	0.0011	0.0005
Zirconium	Total	mg/L	0.0004	0.0004	<0.0001	0.0001

Analytical Report

Bill To: J. Gibson & Associates
 Report To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: John Gibson
 Company:

Project:
 ID: Rockhaven Resources
 Name: Klaza
 Location:
 LSD: Surf H2O
 P.O.:
 Acct code:

Lot ID: **1185470**
 Control Number: C0059186
 Date Received: Feb 8, 2017
 Date Reported: Feb 16, 2017
 Report Number: 2167227

		Reference Number	1185470-4	1185470-5	
		Sample Date	Feb 06, 2017	Feb 06, 2017	
		Sample Time	10:10	11:50	
		Sample Location			
		Sample Description	Surf. / KZ-8 / 5.3°C	Surf. / KZ-9 / 5.3°C	
		Matrix	Water	Water	
Analyte		Units	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters					
Organic Carbon	Total Nonpurgeable	mg/L	4.0	2.0	0.5
Cyanide	Total	mg/L	<0.002	<0.002	0.002
Ammonia - N		mg/L	0.01	0.01	0.01
Phosphorus	Total	mg/L	0.062	0.007	0.003
Metals Total					
Calcium	Total	mg/L	79.1	13.8	0.01
Magnesium	Total	mg/L	18.3	4.79	0.02
Potassium	Total	mg/L	1.3	0.5	0.04
Silicon	Total	mg/L	8.51	6.74	0.005
Sulfur	Total	mg/L	53.7	1.4	0.02
Sodium	Total	mg/L	7.90	2.58	0.1
Titanium	Total	mg/L	0.024	0.004	0.002
Digestion	Preparation		Field Pres, digest as total Hg	Field Pres, digest as total Hg	
Mercury	Total	mg/L	<0.00001	<0.00001	0.00001
Physical and Aggregate Properties					
Solids	Total Suspended	mg/L	3	<2	2
Solids	Total Dissolved	mg/L	278	64	5
Routine Water					
pH - Holding Time			Exceeded	Exceeded	
pH	at 25 °C		7.13	7.01	
Electrical Conductivity		µS/cm at 25 C	508	106	1
Calcium	Dissolved	mg/L	77.7	14.0	0.01
Magnesium	Dissolved	mg/L	18.2	4.9	0.02
Potassium	Dissolved	mg/L	1.2	0.5	0.04
Silicon	Dissolved	mg/L	8.15	6.77	0.005
Sodium	Dissolved	mg/L	7.7	2.6	0.1
Sulfur	Dissolved	mg/L	52.8	1.4	0.02
Bicarbonate		mg/L	139	66	5
Carbonate		mg/L	<6	<6	6
Hydroxide		mg/L	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	114	54	5
Chloride	Dissolved	mg/L	0.363	0.139	0.05
Nitrate - N	Dissolved	mg/L	0.145	0.154	0.01
Nitrite - N	Dissolved	mg/L	<0.01	<0.01	0.01

Analytical Report

Bill To: J. Gibson & Associates
 Report To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: John Gibson
 Company:

Project:
 ID: Rockhaven Resources
 Name: Klaza
 Location:
 LSD: Surf H2O
 P.O.:
 Acct code:

Lot ID: **1185470**
 Control Number: C0059186
 Date Received: Feb 8, 2017
 Date Reported: Feb 16, 2017
 Report Number: 2167227

		Reference Number	1185470-4	1185470-5	
		Sample Date	Feb 06, 2017	Feb 06, 2017	
		Sample Time	10:10	11:50	
		Sample Location			
		Sample Description	Surf. / KZ-8 / 5.3°C	Surf. / KZ-9 / 5.3°C	
		Matrix	Water	Water	
Analyte		Units	Results	Results	Nominal Detection Limit
Routine Water - Continued					
Sulfate (SO4)	Dissolved	mg/L	138	3.3	0.1
Hardness	as CaCO3 (dissolved)	mg/L	269	55	5
Hardness	Total	mg CaCO3/L	273	54.3	1
Trace Metals Dissolved					
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.012	<0.002	0.002
Aluminum	Dissolved	mg/L	0.003239	0.004776	0.001
Antimony	Dissolved	mg/L	0.000153	<0.000020	0.00002
Arsenic	Dissolved	mg/L	0.0016	0.0002	0.0001
Barium	Dissolved	mg/L	0.0590	0.0414	0.0001
Beryllium	Dissolved	mg/L	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.000022	0.000015	0.00001
Chromium	Dissolved	mg/L	0.000169	<0.00050	0.00005
Cobalt	Dissolved	mg/L	<0.000020	0.000072	0.00002
Copper	Dissolved	mg/L	0.0018	<0.0005	0.0005
Iron	Dissolved	mg/L	0.004	0.014	0.002
Lead	Dissolved	mg/L	<0.00001	0.000013	0.00001
Lithium	Dissolved	mg/L	0.0016	0.0007	0.0005
Manganese	Dissolved	mg/L	<0.001	0.035	0.001
Molybdenum	Dissolved	mg/L	0.000623	0.000086	0.00002
Nickel	Dissolved	mg/L	<0.0002	<0.0002	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	0.5104	0.1150	0.0001
Tellurium	Dissolved	mg/L	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.00001	<0.00001	0.00001
Thorium	Dissolved	mg/L	<0.000050	<0.000050	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.001943	0.000178	0.00001
Vanadium	Dissolved	mg/L	0.000106	0.000101	0.00005
Zinc	Dissolved	mg/L	0.0011	0.0011	0.0005
Zirconium	Dissolved	mg/L	0.0001	<0.0001	0.0001

Analytical Report

Bill To: J. Gibson & Associates
Report To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: John Gibson
Company:

Project:
ID: Rockhaven Resources
Name: Klaza
Location:
LSD: Surf H2O
P.O.:
Acct code:

Lot ID: **1185470**
Control Number: C0059186
Date Received: Feb 8, 2017
Date Reported: Feb 16, 2017
Report Number: 2167227

Reference Number	1185470-4	1185470-5
Sample Date	Feb 06, 2017	Feb 06, 2017
Sample Time	10:10	11:50
Sample Location		
Sample Description	Surf. / KZ-8 / 5.3°C	Surf. / KZ-9 / 5.3°C

		Matrix	Water	Water	
Analyte		Units	Results	Results	Nominal Detection Limit
Trace Metals Total					
Aluminum	Total	mg/L	0.179	0.031	0.001
Antimony	Total	mg/L	0.00023	0.00005	0.00002
Arsenic	Total	mg/L	0.0025	0.0003	0.0001
Barium	Total	mg/L	0.0697	0.0441	0.0001
Beryllium	Total	mg/L	<0.00005	<0.00005	0.00005
Bismuth	Total	mg/L	<0.0001	<0.0001	0.0001
Boron	Total	mg/L	0.002	<0.002	0.002
Cadmium	Total	mg/L	0.00006	0.00002	0.00001
Chromium	Total	mg/L	0.00008	0.00012	0.00005
Cobalt	Total	mg/L	0.00023	0.00013	0.00002
Copper	Total	mg/L	0.0029	0.0004	0.0002
Iron	Total	mg/L	0.302	0.082	0.002
Lead	Total	mg/L	0.000812	0.000075	0.00001
Lithium	Total	mg/L	0.0018	0.0007	0.0005
Manganese	Total	mg/L	0.011	0.040	0.001
Molybdenum	Total	mg/L	0.000858	0.000213	0.00002
Nickel	Total	mg/L	0.0003	<0.0002	0.0002
Selenium	Total	mg/L	<0.0002	<0.0002	0.0002
Silver	Total	mg/L	<0.00001	<0.00001	0.00001
Strontium	Total	mg/L	0.578	0.125	0.0001
Tellurium	Total	mg/L	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	<0.00001	<0.00001	0.00001
Thorium	Total	mg/L	0.000152	<0.000050	0.00005
Tin	Total	mg/L	<0.0001	<0.0001	0.0001
Uranium	Total	mg/L	0.00231	0.000192	0.00001
Vanadium	Total	mg/L	0.000725	0.000122	0.00005
Zinc	Total	mg/L	0.0032	0.0016	0.0005
Zirconium	Total	mg/L	0.0002	<0.0001	0.0001

Approved by:



Mathieu Simoneau
Operations Manager

Methodology and Notes

Bill To: J. Gibson & Associates	Project:	Lot ID: 1185470
Report To: J. Gibson & Associates	ID: Rockhaven Resources	Control Number: C0059186
Box 20913	Name: Klaza	Date Received: Feb 8, 2017
Whitehorse, YT, Canada	Location:	Date Reported: Feb 16, 2017
Y1A 6P2	LSD: Surf H2O	Report Number: 2167227
Attn: John Gibson	P.O.:	
Sampled By: John Gibson	Acct code:	
Company:		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (Surrey)	APHA	* Alkalinity - Titration Method, 2320 B	10-Feb-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Conductivity, 2510 B	10-Feb-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* pH - Electrometric Method, 4500-H+ B	10-Feb-17	Exova Surrey
Ammonia-N in Water (Surrey)	APHA	* Flow Injection Analysis, 4500-NH3 H	14-Feb-17	Exova Surrey
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	14-Feb-17	Exova Surrey
Carbon Organic (Total) in water (TOC)	APHA	High-Temperature Combustion Method, 5310 B	09-Feb-17	Exova Edmonton
Cyanide (Total) in water	US EPA	* US EPA method, 335.3	09-Feb-17	Exova Edmonton
Mercury Low Level (Total) in water (Surrey)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	14-Feb-17	Exova Surrey
Metals SemiTrace (Dissolved) in water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	09-Feb-17	Exova Surrey
Metals SemiTrace (Total) in Water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	09-Feb-17	Exova Surrey
Phosphorus - total by Smartchem (Surrey)	APHA	* Persulfate digestion method, 4500-P B5	14-Feb-17	Exova Surrey
Solids Dissolved (Total, Fixed and Volatile) - Surrey	APHA	* Total Dissolved Solids Dried at 180 C, 2540 C	09-Feb-17	Exova Surrey
Solids Suspended (Total, Fixed and Volatile) - Surrey	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	09-Feb-17	Exova Surrey
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	09-Feb-17	Exova Surrey
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Feb-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	09-Feb-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	15-Feb-17	Exova Surrey

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

Methodology and Notes

Bill To: J. Gibson & Associates
Report To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: John Gibson
Company:

Project:
ID: Rockhaven Resources
Name: Klaza
Location:
LSD: Surf H2O
P.O.:
Acct code:

Lot ID: **1185470**
Control Number: C0059186
Date Received: Feb 8, 2017
Date Reported: Feb 16, 2017
Report Number: 2167227

-
- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for sample #1185470-2. Detection limits are adjusted accordingly.
 - Analysis was performed on LOT# 1185470 that exceeded the recommended holding time for Nitrite and Nitrate analysis.
 - Sample 1185470-4; 5640580 Reduction of analytical volume was necessary for Sulfate to bring results within the analytical range for sample 1185470-4. Detection limits are adjusted accordingly.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Report Transmission Cover Page

Bill To:	J. Gibson & Associates	Project:		Lot ID:	1185465
Report To:	J. Gibson & Associates	ID:	Rockhaven Res.	Control Number:	C0059187
	Box 20913	Name:		Date Received:	Feb 8, 2017
	Whitehorse, YT, Canada	Location:	Klaza - Groundwater	Date Reported:	Feb 16, 2017
	Y1A 6P2	LSD:		Report Number:	2167219
Attn:	John Gibson	P.O.:			
Sampled By:	J. Gibson	Acct code:			
Company:					

Contact & Affiliation	Address	Delivery Commitments
John Gibson J. Gibson & Associates	Box 20913, Whitehorse, Yukon Territory Y1A 6P2 Phone: (867) 633-4522 Fax: (867) 668-6895 Email: ludditegibson@gmail.com	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (Test Report) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report On [Lot Creation] send (COR) by Email - Single Report

Notes To Clients:

- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for all samples. Detection limits are adjusted accordingly.

Analytical Report

Bill To: J. Gibson & Associates
Report To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J. Gibson
Company:

Project:
ID: Rockhaven Res.
Name:
Location: Klaza - Groundwater
LSD:
P.O.:
Acct code:

Lot ID: **1185465**
Control Number: C0059187
Date Received: Feb 8, 2017
Date Reported: Feb 16, 2017
Report Number: 2167219

Reference Number	1185465-1	1185465-2	1185465-3
Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017
Sample Time	15:05	13:20	14:05
Sample Location			
Sample Description	MW15-01D / 15.42 / m	MW15-02S / 4.83 / m	MW15-03S / 5.41 / m

Analyte	Matrix	Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Ammonium - N		mg/L	0.048	0.063	0.049	0.025
Kjeldahl Nitrogen	Total	mg/L	0.52	2.43	1.51	0.07
Phosphorus	Total	mg/L	0.13	2.48	0.42	0.05
Orthophosphate-P	Dissolved	mg/L	<0.01	<0.01	<0.01	0.01
Organic Carbon	Dissolved Nonpurgeable	mg/L	3.6	3.2	2.9	0.5
Metals Total						
Calcium	Total	mg/L	114	59.6	168	0.01
Magnesium	Total	mg/L	22.5	17.9	29.3	0.02
Potassium	Total	mg/L	7.6	5.6	5.2	0.04
Silicon	Total	mg/L	9.02	66.4	32.0	0.005
Sulfur	Total	mg/L	47.2	24.2	33.6	0.02
Sodium	Total	mg/L	11.9	10.2	5.42	0.1
Titanium	Total	mg/L	0.054	0.169	0.215	0.002
Digestion	Preparation		Field Pres, digest as total Hg	Field Pres, digest as total Hg	Field Pres, digest as total Hg	
Mercury	Total	mg/L	<0.00001	<0.00001	<0.00001	0.00001
Physical and Aggregate Properties						
Solids	Total Dissolved	mg/L	366	146	346	5
Routine Water						
Nitrate and Nitrite - N		mg/L	0.01	1.79	0.24	0.01
Acidity	titrate to pH of 8.3	mg/L as CaCO3	16	74	24	5
pH - Holding Time			Exceeded	Exceeded	Exceeded	
pH	at 25 °C		7.40	6.07	7.05	
Electrical Conductivity		µS/cm at 25 C	657	283	640	1
Calcium	Dissolved	mg/L	103	32.8	121	0.01
Magnesium	Dissolved	mg/L	20.8	7.4	19.2	0.02
Potassium	Dissolved	mg/L	4.3	0.6	1.1	0.04
Silicon	Dissolved	mg/L	6.80	8.41	5.71	0.005
Sodium	Dissolved	mg/L	10.7	7.5	4.3	0.1
Sulfur	Dissolved	mg/L	41.7	21.0	33.1	0.02
Bicarbonate		mg/L	273	79	331	5
Carbonate		mg/L	<6	<6	<6	6
Hydroxide		mg/L	<5	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	224	65	272	5

Analytical Report

Bill To: J. Gibson & Associates
Report To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J. Gibson
Company:

Project:
ID: Rockhaven Res.
Name:
Location: Klaza - Groundwater
LSD:
P.O.:
Acct code:

Lot ID: **1185465**
Control Number: C0059187
Date Received: Feb 8, 2017
Date Reported: Feb 16, 2017
Report Number: 2167219

Reference Number	1185465-1	1185465-2	1185465-3
Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017
Sample Time	15:05	13:20	14:05
Sample Location			
Sample Description	MW15-01D / 15.42 / m	MW15-02S / 4.83 / m	MW15-03S / 5.41 / m

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Chloride	Dissolved	mg/L	0.210	0.757	0.453	0.05
Fluoride	Dissolved	mg/L	0.536	0.021	0.053	0.01
Sulfate (SO4)	Dissolved	mg/L	2.5	60.3	88.3	0.1
Hardness	as CaCO3 (dissolved)	mg/L	342	110	381	5
Trace Metals Dissolved						
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.015	0.006	0.017	0.002
Aluminum	Dissolved	mg/L	0.004836	0.001765	0.002346	0.001
Antimony	Dissolved	mg/L	0.000244	0.000091	0.000268	0.00002
Arsenic	Dissolved	mg/L	0.0023	0.0058	0.0011	0.0001
Barium	Dissolved	mg/L	0.1562	0.3133	0.0535	0.0001
Beryllium	Dissolved	mg/L	0.000083	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	0.003	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.000176	0.001976	0.000084	0.00001
Chromium	Dissolved	mg/L	0.000237	0.000104	0.000070	0.00005
Cobalt	Dissolved	mg/L	0.000368	0.002001	0.000791	0.00002
Copper	Dissolved	mg/L	<0.0005	0.0007	<0.0005	0.0005
Iron	Dissolved	mg/L	0.170	0.297	0.004	0.002
Lead	Dissolved	mg/L	0.000117	0.000015	0.000127	0.00001
Lithium	Dissolved	mg/L	0.0088	0.0023	0.0029	0.0005
Manganese	Dissolved	mg/L	0.854	1.84	0.417	0.001
Molybdenum	Dissolved	mg/L	0.001228	0.000196	0.000661	0.00002
Nickel	Dissolved	mg/L	0.0007	0.0199	0.0010	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	0.000117	<0.00001	<0.00001	0.00001
Strontium	Dissolved	mg/L	1.850	0.1838	0.3491	0.0001
Tellurium	Dissolved	mg/L	0.000053	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	0.000081	<0.00001	<0.00001	0.00001
Thorium	Dissolved	mg/L	0.000061	<0.000050	<0.000050	0.00005
Tin	Dissolved	mg/L	0.0002	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.003236	0.000105	0.01184	0.00001
Vanadium	Dissolved	mg/L	0.000497	<0.000050	<0.000050	0.00005
Zinc	Dissolved	mg/L	0.0035	0.1312	0.0068	0.0005
Zirconium	Dissolved	mg/L	0.0002	<0.0001	<0.0001	0.0001

Analytical Report

Bill To: J. Gibson & Associates
 Report To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: J. Gibson
 Company:

Project:
 ID: Rockhaven Res.
 Name:
 Location: Klaza - Groundwater
 LSD:
 P.O.:
 Acct code:

Lot ID: **1185465**
 Control Number: C0059187
 Date Received: Feb 8, 2017
 Date Reported: Feb 16, 2017
 Report Number: 2167219

Reference Number	1185465-1	1185465-2	1185465-3
Sample Date	Feb 06, 2017	Feb 06, 2017	Feb 06, 2017
Sample Time	15:05	13:20	14:05
Sample Location			
Sample Description	MW15-01D / 15.42 / m	MW15-02S / 4.83 / m	MW15-03S / 5.41 / m

		Matrix	Water	Water	Water	Nominal Detection Limit
Analyte		Units	Results	Results	Results	
Trace Metals Total						
Aluminum	Total	mg/L	0.986	24.0	7.37	0.001
Antimony	Total	mg/L	0.00122	0.00191	0.00196	0.00002
Arsenic	Total	mg/L	0.0056	0.402	0.0640	0.0001
Barium	Total	mg/L	0.247	1.70	0.490	0.0001
Beryllium	Total	mg/L	0.00007	0.00234	0.00090	0.00005
Bismuth	Total	mg/L	0.0001	0.0028	0.0002	0.0001
Boron	Total	mg/L	0.006	0.007	0.005	0.002
Cadmium	Total	mg/L	0.00830	0.0360	0.00154	0.00001
Chromium	Total	mg/L	0.00423	0.0409	0.0410	0.00005
Cobalt	Total	mg/L	0.00087	0.0200	0.00972	0.00002
Copper	Total	mg/L	0.0331	0.224	0.0865	0.0002
Iron	Total	mg/L	2.71	47.0	34.2	0.002
Lead	Total	mg/L	0.00797	0.403	0.0751	0.00001
Lithium	Total	mg/L	0.0083	0.0105	0.0061	0.0005
Manganese	Total	mg/L	0.790	2.82	1.68	0.001
Molybdenum	Total	mg/L	0.00345	0.00724	0.0103	0.00002
Nickel	Total	mg/L	0.0034	0.0240	0.0203	0.0002
Selenium	Total	mg/L	0.0003	0.0090	0.0037	0.0002
Silver	Total	mg/L	0.000132	0.0310	0.00466	0.00001
Strontium	Total	mg/L	1.83	0.393	0.514	0.0001
Tellurium	Total	mg/L	<0.000050	0.000138	<0.000050	0.00005
Thallium	Total	mg/L	0.000020	0.000332	0.000235	0.00001
Thorium	Total	mg/L	0.000419	0.0236	0.00787	0.00005
Tin	Total	mg/L	0.0028	0.0014	0.0017	0.0001
Uranium	Total	mg/L	0.00548	0.00744	0.0147	0.00001
Vanadium	Total	mg/L	0.00344	0.0564	0.0267	0.00005
Zinc	Total	mg/L	0.0630	1.76	0.222	0.0005
Zirconium	Total	mg/L	0.0003	0.0025	0.0010	0.0001

Approved by:

Randy Neumann

Randy Neumann, BSc
 Vice President

Methodology and Notes

Bill To: J. Gibson & Associates	Project:	Lot ID: 1185465
Report To: J. Gibson & Associates	ID: Rockhaven Res.	Control Number: C0059187
Box 20913	Name:	Date Received: Feb 8, 2017
Whitehorse, YT, Canada	Location: Klaza - Groundwater	Date Reported: Feb 16, 2017
Y1A 6P2	LSD:	Report Number: 2167219
Attn: John Gibson	P.O.:	
Sampled By: J. Gibson	Acct code:	
Company:		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Acidity in water (Surrey)	APHA	* Acidity - Titration Method, 2310 B	15-Feb-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Alkalinity - Titration Method, 2320 B	10-Feb-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Conductivity, 2510 B	10-Feb-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* pH - Electrometric Method, 4500-H+ B	10-Feb-17	Exova Surrey
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	13-Feb-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	10-Feb-17	Exova Edmonton
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	14-Feb-17	Exova Surrey
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	15-Feb-17	Exova Surrey
Carbon Organic (Dissolved) in water (DOC)	APHA	High-Temperature Combustion Method, 5310 B	10-Feb-17	Exova Edmonton
Filtration of water for dissolved analysis	APHA	* Filtration for Dissolved and Suspended Metals / Total Organic Carbon, 3030 B / 5310 A	10-Feb-17	Exova Edmonton
Mercury Low Level (Total) in water (Surrey)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	14-Feb-17	Exova Surrey
Metals SemiTrace (Dissolved) in water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	09-Feb-17	Exova Surrey
Metals SemiTrace (Total) in Water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	09-Feb-17	Exova Surrey
Orthophosphate-P in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	13-Feb-17	Exova Edmonton
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	10-Feb-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile) - Surrey	APHA	* Total Dissolved Solids Dried at 180 C, 2540 C	09-Feb-17	Exova Surrey
Total and Kjeldahl Nitrogen (Total) in Water	ISO	* Water Quality - Determination of nitrogen, ISO/TR 11905-2	09-Feb-17	Exova Edmonton
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	09-Feb-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	09-Feb-17	Exova Surrey

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
EPA	Environmental Protection Agency Test Methods - US
ISO	International Organization for Standardization
US EPA	US Environmental Protection Agency Test Methods

Methodology and Notes

Bill To: J. Gibson & Associates	Project:	Lot ID: 1185465
Report To: J. Gibson & Associates	ID: Rockhaven Res.	Control Number: C0059187
Box 20913	Name:	Date Received: Feb 8, 2017
Whitehorse, YT, Canada	Location: Klaza - Groundwater	Date Reported: Feb 16, 2017
Y1A 6P2	LSD:	Report Number: 2167219
Attn: John Gibson	P.O.:	
Sampled By: J. Gibson	Acct code:	
Company:		

Comments:

- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for all samples. Detection limits are adjusted accordingly.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



Exova

www.exova.com ED 120-02

Project Information

Project ID: ROCK HAVEN RES.
 Project Name: KLARZA
 Project Location: GROUNDWATER
 Legal Location:
 PO/AFE#: GROUNDWATER
 Proj. Acct. Code:
 Quote #

Emergency (contact lab for turnaround and pricing)
 Priority 1-2 working days (100% surcharge)
 Urgent 2-3 working days (50% surcharge)

Date Required:

Signature:

Special Instructions/Comments (please include contact information including ph. # if different from above).

RETURN = PH, EC, TDS, OH, TALK, ACIDITY
NUTRIENTS = NH3, NO3, NO2, O-RN, SO4, FL, CL

Invoice to:
 Company: J. Gibson & Associates
 Address: BOX 20913
 Attention: John Gibson
 Phone: (557) 653-4522
 Cell:
 Fax: (557) 658-6895
 E-mail: judd@jgibson@gmail.com
 Agreement ID: 6546
 Copy of report: ☒

Report To:
 Company: J. Gibson & Associates
 Address: BOX 20913
 Attention: John Gibson
 Phone: (557) 653-4522
 Cell:
 Fax: (557) 658-6895
 E-mail 1: judd@jgibson@gmail.com
 E-mail 2:
 Copy of invoice:

Report Results
 E-Mail
 Mail
 Online
 Fax
 PDF
 Excel
 QA/QC
 Regulatory Requirement
 HCDWQG
 Ab Tier 1
 SPIGEC
 BCCSR
 Other (list below)

Sample Custody (please print)

Sampled by: J. Gibson

Company:

This section for Lab use only

Date/Time stamp:

FEB 8 17 14:58

Site I.D.	Sample Description	Depth start in cm (m)	Date/Time Sampled	Matrix	Sampling Method
-----------	--------------------	-----------------------	-------------------	--------	-----------------

1					
2	MW15-01D	15.42	Feb 08 1505	H2O	PTG
3					
4	MW15-02S	4.83	Feb 08 1320	H2O	PTG
5					
6	MW15-03S	5.41	Feb 08 1405	H2O	PTG
7					
8					
9					
10					
11					
12	NOTES: TAN BOTTLE #2 PRESERVED HCL				
13					
14	TW23 Field Filtered				
15					

RUSH Priority

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Number of Containers

Enter tests above (✓ relevant samples below)

Indicate in the space allotted any deficiencies by the corresponding number.

1. Indicate any samples that were not packaged well	
2. Indicate any samples not received in Exova supplies	
3. Indicate any samples that were not clearly labeled	
4. Indicate any samples not received within the required hold time or temp.	
5. Indicate any missing or extra samples	
6. Indicate any samples that were received broken	
7. Indicate any samples where sufficient volume was not received	
8. Indicate any samples received in an inappropriate container	

Submission of this form acknowledges acceptance of Exova's Standard Terms and Conditions (<http://www.exova.com/about/terms-and-conditions/>)

Please indicate any potentially hazardous samples

Page 1 of 1

Control # C 0059187

Lot: 1185465



Shipping: COD Y/ N
 # and size of coolers
 Temp. received: 5.3°C
 Delivery Method:
 Waybill:

Received by:

Rock Haven Resources Ltd.

Klaza Property

Baseline Water Quality / Hydrology Survey

May, 2017

J.Gibson Env. Consulting

Whitehorse, Yukon

Klaza Property May 2017

Rock Haven Resources Ltd. requested baseline water quality / hydrology surveys be conducted quarterly on the surface waters draining the area of the KLAZA Claims. Ground water wells were drilled in November 2015 with quarterly monitoring scheduled in conjunction with surface water monitoring.

The KLAZA Claims are located on tributaries to the Nansen Creek and the Klaza River approx. 75 kilometers east of Carmacks.

The Mt Nansen and upper Klaza River are historic placer mining areas.

Main stem Nansen Creek and tributaries as well as Klaza River tributaries have been equipment mined over the past 3 decades.

An abandoned hard rock gold mine is located approximately 5 kilometers to the east of the Klaza Property.

In May 2017 placer operators on EF Nansen, Klaza River and tributaries were onsite but not actively sluicing.

All surface waters are tributaries to the Klaza River and the Yukon River.

All sites were accessed by ATV on May 28th and 29th, 2017.

Monitoring

The surface water baseline survey consisted of water quality samples for routine chemistry, total metals, dissolved metals, total organic carbon and total cyanide with field measurements for pH, water temperature and flow volumes. Total mercury samples were taken at downstream stations.

Groundwater monitoring consisted of measurements for standing water levels, purging and sampling wells with sufficient standing water. Wells were sampled for routine chemistry, total and dissolved metals, total Kjeldahl nitrogen, ionic balance and acidity.

Thermistor string readings were taken.

Ground water piezometer data loggers were not downloaded in May.

Klaza Property May 2017

The ONSET / HOBO weather station logger was downloaded.

Sample Locations

Ten potential water quality sample sites were identified for the KLAZA Claims in March 2012.

An additional site was added in July, 2014; Station KZ-11 is located at the effluent discharge point of the "China Creek" placer operation prior to entering the Klaza River.

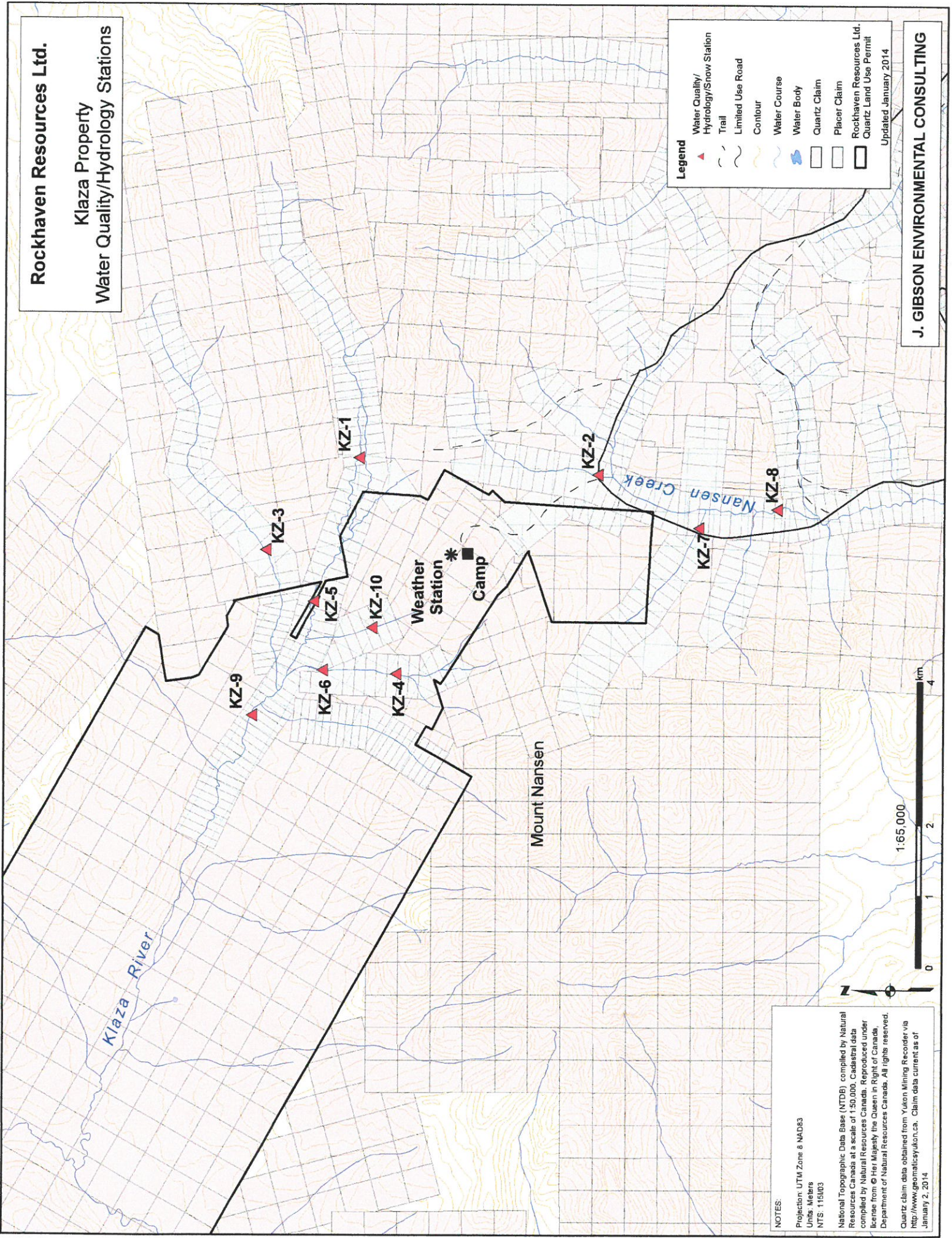
Groundwater Monitoring wells developed in 2015 are also listed.

Surface water sites are on the attached location map.

KLAZA Claim sample station designations and coordinates are:

Station #	LAT/LONG Coordinates
Surface Waters	
KLAZA-1	62.132 137.216
KLAZA-2	62.101 137.218
KLAZA-3	62.143 137.242
KLAZA-4	62.126 137.274
KLAZA-5	62.137 137.255
KLAZA-6	62.135 137.273
KLAZA-7	62.088 137.232
KLAZA-8	62.079 137.226
KLAZA-9	62.144 137.286
KLAZA-10	62.129 137.261
KLAZA -11	no data
Groundwater Monitoring Wells	
MW15-01	383413 E 6888610 N
MW15-02	383355 E 6890004 N
MW15-03	383056 E 6890592 N
MW15-04	382484 E 6891020 N
MW15-05	381552 E 6890347 N
Thermistor String Well	
GTC15-01	382824 E 6890304 N

Rockhaven Resources Ltd.
 Klaza Property
 Water Quality/Hydrology Stations



NOTES:

Projection: UTM Zone 8 NAD83
 Units: Meters
 NTS: 115003

National Topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Cadastral data compiled by Natural Resources Canada. Reproduced under license from © Her Majesty the Queen in Right of Canada, Department of Natural Resources Canada. All rights reserved.

Quartz claim data obtained from Yukon Mining Recorder via <http://www.geomatics.yukon.ca>. Claim data current as of January 2, 2014.

Sample Parameters

All surface and groundwater wells stations were sampled for total metals, dissolved metals, routine chemistry. Surface waters had the addition of total organic carbon and total cyanide. Total mercury was taken at downstream surface stations. Groundwater stations had total Kjeldahl nitrogen, acidity and ionic balance added.

Dissolved metals samples were filtered onsite using disposable 60 ml syringes and 0.45 micron filters. New syringes and filters were used for each station.

Total and dissolved metal samples were preserved with nitric acid immediately after sampling.

Total Organic Carbon samples were preserved with HCL immediately after sampling.

Total cyanide samples were preserved with sodium hydroxide immediately after sampling.

All samples were stored in coolers, kept at 4 Celsius and shipped by air cargo to the Exova Canada Inc. laboratory in Surrey B.C. for analysis within recommended holding times.

Field measurements for pH and conductivity were taken with an Oakton PCS TestR 35, water temperatures with a digital thermometer.

Stream flow volumes were measured with a Price Velocity meter and cross sectional area.

Surface water Quality Control samples were taken at Station KZ-9.

Ground water monitoring wells were located, standing water levels were measured and samples taken of the two wells that were unfrozen and had sufficient standing water, Wells MW15-03S and Well MW15-01D.

All other wells were dry or remained frozen.

The data logger in MW15-05 remains frozen. The well has been frozen the past five surveys; January, May and September 2016, February and May 2017.

Thermistor string measurements were taken at GTC15-01.

Analysis Results

Laboratory analysis and field measurement results are listed in the following tables:

Surface Waters

Table1. KLAZA Stations Routine Chemistry – laboratory analysis and field measurements. May 2017.

Table2. KLAZA Stations Total Metals ICP–MS laboratory analysis results. May 2017.

Table3. KLAZA Stations Dissolved Metals ICP–MS laboratory analysis results. May 2017.

Table4. Flow Volume Measurement Summary 2012 – 2017

Table 5. Quality Control samples analysis results – Station KZ-9

Groundwater Wells

Table6. Ground water wells standing water levels to May 2017.

Table7. Ground water Routine Chemistry – laboratory analysis and field measurements. May 2017.

Table8. Ground water Total Metals ICP–MS laboratory analysis results. May 2017.

Table9. Ground water Dissolved Metals ICP–MS laboratory analysis results. May 2017.

Table10. Thermistor String Measurements to May 2017

Table 1. RockHaven Resources - Klaza Property. Surface Waters Routine Chemistry / Field Measurements May 2017

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11	DWQ* G.Lines	Aquatic** G.Lines
pH (field)	ru	7.2	7.28	7.56	8.14	7.5	7.95	7.72	8.12	7.55	7.07	No		
pH (lab)	ru	6.47	7.01	6.3	7.01	6.69	7.04	6.88	7.28	6.97	6.6	Effluent	6.5-8.5	6.5-9
Conductivity (lab)	us/cm	20	38	13	48	57	52	50	179	49	23	Flow		
Water Temp	C	8	3.3	7.4	1.9	5.5	3.3	1.1	10.7	3.3	9.0			
Flow Volume	cms	0.0026	0.008	0.0672	0.0896	0.0291	0.0374	0.1112	0.015	0.4289	0.001	0		
Organic Carbon Total	mg/L	19.2	11.5	14	12.2	4.3	12	12.7	7.5	8.4	18			
Cyanide Total	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002		0.2	0.005
Phosphorus Total	mg/L	0.031	0.004	0.01	0.01	<0.003	0.063	0.039	0.95	0.086	0.01			
Ammonia - N	mg/L	0.04	0.01	0.01	0.02	0.01	0.03	0.03	0.03	0.02	0.01			1.37-2.2
Nitrate - N	mg/L	<0.010	0.044	<0.010	0.013	0.131	<0.010	<0.010	0.31	0.021	<0.010		10	
Nitrite - N	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		1	0.06
T-Alkalinity	mg/L	6	17	<5	22	27	23	14	48	24	9			
Chloride	mg/L	0.071	0.0959	<0.050	0.076	0.111	0.064	0.151	0.114	0.076	0.068		<250	
Sulfate (SO4)	mg/L	0.3	0.6	<0.1	3.1	2.7	3.2	7.5	40.5	1.8	0.3			
Hardness as CaCO3	mg/L	11.2	21	7.4	27	27	27	25	102	30	15		<500	
T.Suspended Solids	mg/L	<8	<8	<8	<8	<8.0	34	<8	1000	74	<8			
T.Dissolved Solids	mg/L	78	<5	<5	<5	<5	20	32	100	36	10		500	

All results and limits in mg/L unless otherwise noted

DWQ* Guidelines are Maximum Acceptable Concentration according to Canadian Drinking Water Quality

Aquatic** Guidelines for Protection of aquatic life in waters with pH>6.5 and hardness as CaCO3>180 mg/L

indicates concentration equal or exceeds Guidelines

Table 2. RockHaven Resources Klaza Property - Surface Waters Total Metals Analysis Results May 2017.

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11	DWQ* G.Lines	Aquatic** G.Lines
Calcium	mg/L	3.5	6.9	2.4	8	7.6	8.6	7.9	28	7.4	4.1			
Iron	mg/L	0.25	0.037	0.19	0.2	0.054	1.9	0.67	11	1.4	0.19		0.3	0.3
Magnesium	mg/L	0.61	0.98	0.42	1.6	2	2	1.7	8.2	2	0.81			
Manganese	mg/L	0.022	<0.001	0.009	0.069	0.005	0.14	0.12	0.51	0.066	0.0096	No Effluent Flow	0.05	
Potassium	mg/L	0.36	0.53	0.45	0.58	0.52	0.84	0.71	2.4	0.72	0.58			
Silicon	mg/L	3.1	2.3	1.5	2.5	4.3	4.3	2.6	17	4.4	2.2			
Sulfur	mg/L	0.34	0.44	0.21	1.3	1.1	1.4	2.7	13	0.84	0.35			
Sodium	mg/L	1	0.8	0.5	1.1	1.7	1.3	1.1	3	1.2	0.9			
Titanium	mg/L	0.004	0.003	0.004	0.003	0.003	0.048	0.018	0.2	0.042	0.004			
Aluminum	mg/L	0.46	0.12	0.38	0.1	0.058	1.2	0.43	4.6	1.1	0.26			
Antimony	mg/L	0.00011	0.00011	0.00068	0.00015	0.000078	0.00032	0.00014	0.0012	0.00019	0.0001		0.006	
Arsenic	mg/L	0.0003	0.0007	0.0002	0.0009	0.0002	0.003	0.0014	0.027	0.0015	0.0005		0.01	
Barium	mg/L	0.025	0.041	0.016	0.065	0.038	0.1	0.028	0.17	0.065	0.07			
Beryllium	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00038	<0.000050	<0.000050			
Bismuth	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0007	<0.0001	<0.0001			
Boron	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		5	
Cadmium	mg/L	0.000032	0.000039	0.000027	0.000048	0.000021	0.00016	0.00033	0.0018	0.000099	0.000057		0.005	0.0018
Chromium	mg/L	0.00035	0.0002	0.0003	0.00012	0.00011	0.0014	0.00055	0.0053	0.0014	0.00027		0.05	0.002
Cobalt	mg/L	0.00022	0.00003	0.0001	0.000095	0.000042	0.00076	0.00045	0.0076	0.00057	0.00006			
Copper	mg/L	0.0031	0.0016	0.002	0.0029	0.0011	0.0052	0.0033	0.096	0.0033	0.0035		1	0.004
Lead	mg/L	0.0001	0.000061	0.00012	0.00023	0.000056	0.0042	0.0064	0.041	0.0021	0.00014		0.01	0.007
Lithium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00096	<0.0005	0.0042	0.0009	0.0006			
Mercury	mg/L	0.00001	ns	<0.00001	ns	<0.00001	ns	ns	ns	<0.00001	ns		0.001	0.1
Molybdenum	mg/L	0.000093	0.000087	0.000034	0.00028	0.000099	0.00045	0.00013	0.0022	0.00022	0.000076			
Nickel	mg/L	0.0008	0.0002	0.0009	0.0006	<0.0002	0.0014	0.0007	0.0057	0.0011	0.0007			0.15
Selenium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002		0.01	0.001
Silver	mg/L	<0.000010	0.000015	<0.000010	0.000018	<0.000010	0.000065	0.000019	0.00031	0.000024	0.000026			0.0001
Strontium	mg/L	0.024	0.027	0.017	0.064	0.061	0.069	0.06	0.3	0.064	0.031			
Thallium	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000029	0.000011	0.00011	0.000017	<0.000010			
Tin	mg/L	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0004			
Uranium	mg/L	0.000037	0.000075	0.000024	0.00021	0.00014	0.00075	0.00025	0.003	0.00046	0.00031		0.02	
Vanadium	mg/L	0.00055	0.000079	0.00045	0.00014	0.00019	0.0038	0.0017	0.019	0.0033	0.00043			
Zinc	mg/L	0.0021	0.0034	0.0032	0.0026	0.001	0.014	0.0097	0.09	0.0082	0.0047		<5	0.03
Zirconium	mg/L	0.0009	0.0003	0.0004	0.0003	<0.0001	0.0004	0.0003	0.00096	0.0003	0.0006			

Indicates concentration equal or exceeds Guidelines

Table 3. RockHaven Resources - Klaza Property Surface Waters Dissolved Metals Analysis Results May 2017

Parameter	Unit	KZ-1	KZ-2	KZ-3	KZ-4	KZ-5	KZ-6	KZ-7	KZ-8	KZ-9	KZ-10	KZ-11
Calcium	mg/L	3.5	6.9	2.3	8.1	7.3	8	7.5	29	8.2	4.4	
Iron	mg/L	0.215	0.035	0.103	0.108	0.025	0.336	0.166	4.46	0.127	0.148	
Magnesium	mg/L	0.62	1	0.4	1.7	2	1.7	1.7	7.5	2.4	0.88	No
Manganese	mg/L	0.02	<0.001	0.003	0.046	0.004	0.089	0.061	0.476	0.027	0.007	Effluent
Potassium	mg/L	0.36	0.56	0.44	0.59	0.5	0.67	0.65	1.2	0.58	0.58	Flow
Silicon	mg/L	3.1	2.3	1.4	2.5	4.2	2.6	2.3	5.7	3.5	2.2	
Sodium	mg/L	0.9	0.6	0.5	0.9	1.5	0.95	0.9	2.5	1.3	0.8	
Sulfur	mg/L	0.32	0.42	0.2	1.3	1.1	1.3	2.7	13	0.87	0.35	
Aluminum	mg/L	0.422	0.113	0.299	0.079	0.034	0.072	0.166	1.68	0.076	0.222	
Antimony	mg/L	0.000133	0.000149	0.000084	0.00017	0.000084	0.000193	0.000378	0.000529	0.000116	0.000105	
Arsenic	mg/L	0.0002	0.0006	0.0001	0.0007	0.0002	0.0011	0.0006	0.0148	0.0004	0.0004	
Barium	mg/L	0.023	0.0388	0.0144	0.0606	0.0338	0.0639	0.018	0.1561	0.0406	0.0621	
Beryllium	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000354	<0.000050	0.000073	
Bismuth	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0002	<0.0001	<0.0001	
Boron	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Cadmium	mg/L	0.00002	0.000014	0.000021	0.000036	0.000017	0.000028	0.0000988	0.001647	0.000018	0.000046	
Chromium	mg/L	0.000401	0.000181	0.000239	0.000213	0.000129	0.000148	0.000201	0.001314	0.000264	0.000317	
Cobalt	mg/L	0.000198	0.000038	0.000044	0.000065	0.00003	0.000146	0.000119	0.005127	0.00008	0.000054	
Copper	mg/L	0.0026	0.0015	0.0016	0.0026	0.00099	0.0026	0.0018	0.0792	0.0013	0.003	
Lead	mg/L	0.000028	0.000053	<0.000010	0.000091	0.00002	0.000231	0.00112	0.033369	0.000085	0.000083	
Lithium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0024	<0.0005	<0.0005	
Molybdenum	mg/L	0.000084	0.000075	0.000024	0.000244	0.000075	0.000317	0.000168	0.00146	0.000195	0.00006	
Nickel	mg/L	0.001	0.0005	0.0007	0.0007	0.0004	0.0007	0.0004	0.0032	0.0004	0.0007	
Selenium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	
Silver	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000073	<0.000010	<0.000010	<0.000010	
Strontium	mg/L	0.0221	0.0241	0.0145	0.0581	0.0557	0.0586	0.0541	0.2792	0.0679	0.0263	
Titanium	mg/L	0.003	<0.002	<0.002	0.002	<0.002	0.003	0.005	0.046	<0.002	0.002	
Tellurium	mg/L	0.000068	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000463	0.000108	<0.000050	<0.000050	
Thallium	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000029	<0.000010	<0.000010	
Thorium	mg/L	0.000109	0.000053	0.000067	0.000056	<0.000050	0.000067	0.000291	0.000338	0.000065	0.000196	
Tin	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Uranium	mg/L	0.000041	0.000078	0.000023	0.000189	0.000131	0.000225	0.000161	0.002901	0.000178	0.000289	
Vanadium	mg/L	0.000453	0.000162	0.0002	0.00014	0.000172	0.000478	0.000462	0.01061	0.000277	0.000289	
Zinc	mg/L	0.0011	0.0016	0.0018	0.0019	<0.0005	0.0009	0.0096	0.056	0.0008	0.0038	
Zirconium	mg/L	0.0006	0.0002	0.0002	0.0002	<0.0001	0.0002	0.0003	0.0008	0.0002	0.0005	

Table 4. Klaza Project - Flow Volume Measurement Summary 2013-2017

Station	Date													
	Jun-13	Oct-13	Jan-14	Apr-14	Jul-14	Oct-14	Feb-15	May-15	Aug-15	Jan-16	May-16	Sep-16	Feb-17	May-17
KZ#1	0.1308	0.0248	Dry	Dry	0.0466	0.0232	Dry	nr	0.2706	Dry	0.0854	0.009	Dry	0.0026
KZ#2	0.0079	nr	Dry	Dry	<0.001	Dry	Dry	nr	0.0093	Dry	0.0144	<0.001	Dry	0.008
KZ#3	0.0142	nr	0.007	0.005	0.0077	0.0246	0.003*	nr	0.1005	0.0292	0.0955	0.0203	0.0025	0.0672
KZ#4	0.0352	nr	nr	nr	0.0041	0.0372	nr	nr	0.0958	Glacial Ice	0.1241	0.0454	<0.001	0.0896
KZ#5	0.0957	nr	0.003	nr	0.0262	0.0316	0.002*	nr	0.2213	0.0035	0.1873	0.0576	0.0015	0.0291
KZ#6	0.0471	0.06	Dry	Dry	<0.001	0.0367	Dry	nr	nr	Dry	nr	0.0314	Dry	0.0374
KZ#7	0.0723	0.0423	nr	nr	0.0158	0.01*	Glaciated	nr	0.1391	Glacial Ice	0.0847	0.0643	Glacial Ice	0.1112
KZ#8	0.1600	0.0764	nr	0.07	nr	0.015*	nr	nr	0.1844	nr	nr	0.0554	<0.002	<0.015
KZ#9	0.2528	0.2365	0.0765	0.0335	0.0849	0.1684	0.064	nr	0.4566	0.0868	0.3246	0.2613	0.0657	0.4289
KZ#10	Dry	<0.001	nr	Dry	Dry	Dry	Dry	Dry	0.0014	Dry	0.0162	0.0025	Dry	0.001
KZ#11									0.006	Dry	No Flow	<0.001	No Flow	No Flow
	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)

Volume stated as "<" are estimated

Table 5. Quality Control Samples - Lab Analysis Results May 2017

Parameter	Unit	Total Metals		Dissolved Metals	
		KZ - 9	KZ-9 Duplicate	KZ - 9	KZ-9 Duplicate
Calcium	mg/L	7.4	7.3	8.2	8.1
Iron	mg/L	1.4	0.95	0.127	0.132
Magnesium	mg/L	2	1.9	2.4	2.4
Manganese	mg/L	0.066	0.06	0.027	0.027
Potassium	mg/L	0.72	0.64	0.58	0.57
Silicon	mg/L	4.4	3.7	3.5	3.5
Sulfur	mg/L	0.84	0.82	0.87	0.87
Sodium	mg/L	1.2	1.2	1.3	1.3
Titanium	mg/L	0.042	0.025	<0.002	0.003
Aluminum	mg/L	1.1	0.67	0.076	0.075
Antimony	mg/L	0.00019	0.00016	0.000116	0.00011
Arsenic	mg/L	0.0015	0.0012	0.0004	0.0004
Barium	mg/L	0.065	0.061	0.0406	0.0408
Beryllium	mg/L	<0.000050	<0.000050	<0.000050	<0.000050
Bismuth	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Boron	mg/L	<0.002	<0.002	<0.002	<0.002
Cadmium	mg/L	0.000099	0.000063	0.000018	0.000019
Chromium	mg/L	0.0014	0.00083	0.000264	0.000174
Cobalt	mg/L	0.00057	0.0004	0.00008	0.000082
Copper	mg/L	0.0033	0.0029	0.0013	0.0014
Lead	mg/L	0.0021	0.0018	0.000085	0.000091
Lithium	mg/L	0.0009	0.0006	<0.0005	<0.0005
Mercury	mg/L	<0.00001		ns	
Molybdenum	mg/L	0.00022	0.0002	0.000195	0.0002
Nickel	mg/L	0.0011	0.0008	0.0004	0.0005
Selenium	mg/L	<0.0002	<0.0002	<0.0002	<0.0002
Silver	mg/L	0.000024	0.000017	<0.000010	<0.000010
Strontium	mg/L	0.064	0.064	0.0679	0.0681
Thallium	mg/L	0.000017	<0.000010	<0.000010	<0.000010
Tin	mg/L	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	mg/L	0.00046	0.00042	0.000178	0.000185
Vanadium	mg/L	0.0033	0.0023	0.000277	0.000298
Zinc	mg/L	0.0082	0.0055	0.0008	0.0006
Zirconium	mg/L	0.0003	0.0002	0.0002	0.0002

denotes >10% variation between samples

Table 6. Rock Haven Resources - Klaza Project. Groundwater Well Measurements to May 2017.

Well #	Total Drilled Depth (m)	SWL (m)	SWL (m)	SWL (m)	SWL (m)	SWL (m)	SWL (m)	SWL (m)	Comments
	Nov-15	Nov-15	02-Jan-16	12-May-16	18-Sep-16	06-Feb-17	28-May-17	28-May-17	
MW 15-01 D	75.9	18.85	14.61	18.38	9.94	15.42	15.82	Sampled	
MW 15-01 S	5.60	Dry	5.64	5.64	5.66	5.66	5.66	Dry	
MW 15-02 D	66.75	59.83	66.00	66.00	65.92	no reading	1.03	blocked/frozen at 1 m depth	
MW 15-02 S	5.67	1.23	4.44	4.44	1.92	4.83	1.03	blocked/frozen at 1 m depth	
MW 15-03 D	33.32	29.14	28.68	29.7	29.1	28.6	28.62	Dry/ Frozen	
MW 15-03 S	5.80	2.16	4.95	3.66	3.19	5.41	4.51	Sampled	
MW 15-04 D	84.43	14.05	14.1	14.09	14.13	14.1	14.22	Dry/ Frozen	
MW 15-04 S	4.20	2.16	3.42	3.42	3.91	4.07	4.09	Dry	
MW 15-05 D	48.46	13.61	13.81	13.81	5.21	5.21	5.21	Frozen	
MW 15-05 S	3.65	1.04	2.67	2.67	3.65	3.65	3.65	Frozen	

Table 7 . RockHaven Resources - Klaza Property. Groundwater Wells Routine Chemistry / Field Measurements May 2017

Parameter	Unit	MW15-01D	MW15-01S	MW15-02D	MW15-02S	MW15-03D	MW15-03S	MW15-04D	MW15-04S	MW15-05D	MW15-05S	DWQ *
Total Depth	meters	75.9	5.66	66.75	5.67	33.32	5.80	84.43	4.20	48.46	3.65	Guidelines
Standing Water Level	meters	15.82	5.66	1.03	1.03	28.62	4.51	14.22	4.09		3.65	
Volume Purged (L)	liters	50	Dry	Frozen	Frozen	Dry	8	Frozen	Frozen	Frozen	Frozen	
pH (field)	ru	7.91					7.11					6.5-8.5
pH (lab)	ru	7.4					7.07					
Conductivity (lab)	us/cm	647					530					
Water Temp	C	0.5					2.1					
Organic Carbon (Diss)	mg/L	3.9					7.8					
Phosphorus Total	mg/L	<0.05					0.33					
OrthoPhosphate (Diss)	mg/L	<0.01					<0.01					
Ammonia - N	mg/L	0.044					<0.025					
Nitrate + Nitrite	mg/L	<0.01					1.57					10
Sulfate (SO4)	mg/L	127					65					
T-Alkalinity	mg/L	229					223					
P-Alkalinity	mg/L	<5					<5					
BiCarbonate	mg/L	279					272					
Carbonate	mg/L	<6					<6					
Chloride	mg/L	4.48					<0.50					<250
Flouride	mg/L	0.64					0.47					
T.Hardness as CaCO3	mg/L	330					290					<500
T.Dissolved Solids	mg/L	370					340					500
T.Kjeldahl Nitrogen	mg/L	0.4					0.88					
Acidity	mg/L CaCO3	12					14					
Ionic Balance (Diss)	%											

DWQ* Guidelines are Maximum Acceptable Concentration according to Canadian Drinking Water Quality

indicates concentration equal or exceeds Guidelines

Table 8. RockHaven Resources - Klaza Property. Groundwater Wells Total Metals Analysis May 2017

Parameter	Unit	MW15-01D	MW15-01S	Dry	MW15-02D	MW15-02S	Frozen	Dry	MW15-03D	MW15-03S	Frozen	MW15-04D	MW15-04S	Frozen	MW15-05D	MW15-05S	DWQ *
Calcium	mg/L	100								92							
Iron	mg/L	0.67								8.4							0.3
Magnesium	mg/L	19								14							
Manganese	mg/L	0.88								0.3							0.05
Potassium	mg/L	3								2.3							
Silicon	mg/L	6.9								13							
Sodium	mg/L	10								4.5							<200
Sulfur	mg/L	42								23							
Aluminum	mg/L	0.16								1.4							
Antimony	mg/L	0.00042								0.00094							0.006
Arsenic	mg/L	0.0034								0.0084							0.01
Barium	mg/L	0.19								0.11							
Beryllium	mg/L	<0.000050								0.00017							
Bismuth	mg/L	<0.0001								<0.0001							
Boron	mg/L	0.006								0.004							5
Cadmium	mg/L	0.0014								0.00035							0.005
Chromium	mg/L	0.0018								0.0012							0.05
Cobalt	mg/L	0.00022								0.0014							
Copper	mg/L	0.0069								0.0097							1
Lead	mg/L	0.0014								0.0073							0.01
Lithium	mg/L	0.0068								0.0031							0.001
Mercury	mg/L	<0.00001								nr							
Molybdenum	mg/L	0.00076								0.00097							
Nickel	mg/L	0.0024								0.0015							
Selenium	mg/L	<0.0002								0.0002							0.01
Silver	mg/L	0.000025								0.0011							
Strontium	mg/L	2.2								0.31							
Titanium	mg/L	0.025								0.075							
Tellurium	mg/L	0.000074								<0.000050							
Thallium	mg/L	<0.000010								0.000096							
Thorium	mg/L	0.00031								0.0013							
Tin	mg/L	0.0013								0.0003							
Uranium	mg/L	0.0055								0.0086							0.02
Vanadium	mg/L	0.00052								0.003							
Zinc	mg/L	0.019								0.052							<5
Zirconium	mg/L	0.0005								0.0003							

indicates concentration equal or exceeds Guidelines

Table 9. RockHaven Resources - Klaza Property. Groundwater Wells Dissolved Metals Analysis May 2017

Parameter	Unit	MW15-01D	MW15-01S	MW15-02D	MW15-02S	MW15-03D	MW15-03S	MW15-04D	MW15-04S	MW15-05D	MW15-05S
Calcium	mg/L	Sampled	Dry	Frozen	Frozen	Dry	Sampled	Frozen	Frozen	Frozen	Frozen
Iron	mg/L	100					91				
Magnesium	mg/L	0.158					0.043				
Manganese	mg/L	20					15				
Potassium	mg/L	0.817					0.151				
Silicon	mg/L	3					1.2				
Sodium	mg/L	6.7					5.7				
Sulfur	mg/L	10					5.5				
Aluminum	mg/L	42					24				
Antimony	mg/L	0.008					0.0097				
Arsenic	mg/L	0.000302					0.000731				
Barium	mg/L	0.0027					0.0004				
Beryllium	mg/L	0.1689					0.041				
Bismuth	mg/L	<0.000050					<0.000050				
Boron	mg/L	<0.0001					<0.0001				
Cadmium	mg/L	0.004					0.004				
Chromium	mg/L	0.000138					0.000258				
Cobalt	mg/L	0.000344					0.000251				
Copper	mg/L	0.000089					0.000321				
Lead	mg/L	0.0023					0.0041				
Lithium	mg/L	0.000103					0.000079				
Molybdenum	mg/L	0.0064					0.003				
Nickel	mg/L	0.000306					0.000841				
Selenium	mg/L	0.0012					0.0017				
Silver	mg/L	<0.0002					<0.0002				
Strontium	mg/L	<0.000010					<0.000010				
Titanium	mg/L	2.085					0.2953				
Tellurium	mg/L	0.016					0.015				
Thallium	mg/L	0.000115					0.00008				
Thorium	mg/L	<0.000010					<0.000010				
Tin	mg/L	0.00018					0.000089				
Uranium	mg/L	0.0002					<0.0001				
Vanadium	mg/L	0.005403					0.007913				
Zinc	mg/L	0.000188					0.000056				
Zirconium	mg/L	0.0091					0.0307				
	mg/L	0.0003					0.0005				

Table 10. Rock Haven Resources - Klaza Project. Thermistor String Measurements.

Well # GTC 15-01	Nov-15	Jan-16	May-16	Sep-16	Feb-17	May-17
Channel #	(k ohm)	(k ohm)	(k ohm)	(k ohm)	(k ohm)	(k ohm)
1	16.45	16.83	17.53	16.24	16.83	17.94
2	16.52	17.02	17.1	16.63	16.47	17.16
3	16.63	17.91	16.89	16.92	16.84	16.81
4	16.75	16.97	16.88	16.87	16386	16.85
5	16.77	17.34	16.87	16.88	16.87	16.86
6	16.76	16.88	16.87	16.87	16.86	16.86
7	16.62	16.93	16.76	16.76	16.75	16.75
8	16.56	16.67	16.66	16.66	16.65	16.65
9	16.39	16.48	16.45	16.45	16.45	16.45
10	16.27	16.32	16.31	16.31	16.31	16.31

Note: Thermistor readings require conversion by EBA / Tetra Tech

As a guide for reviewing site water quality, the Maximum Acceptable Concentration (MAC) according to *Canadian Drinking Water Quality* are listed along with the Aquatic Guidelines for the protection of aquatic life in water with a pH of > 6.5 according to *CCME – Canadian Water Quality Guidelines*. Guideline values are listed for both surface and groundwater analysis results.

All water quality *Guideline* concentrations are based on total metal values.

Laboratory Analytical Reports are attached in Appendix 1.

Data Summaries for each surface water station and each groundwater well are on the attached disc.

Discussion

Hydrology

May 2017 stream flow in Klaza Property channels had volumes consistent with late freshet flows. Tributary channels to the Klaza River had volumes 70-75% of May 2016 flows. Main stem Klaza River volumes were 125% of May 2016 flows and approach the maximum volume measured at that site.

There was significant variation in volumes between May 28 and May 29 as nocturnal temperatures remained above freezing overnight.

The diversion channel on upper East Fork Nansen (KZ#8) has been returned to the right limit. The left limit continues as an effluent channel through recently mined areas and settling ponds. Flows were split approximately 20/80 between right and left limit channels with some glaciation remaining in the both channels.

The KZ- 8 sample was taken of flows on the left / east limit effluent channel.

Table 4 is a summary of flow measurements 2012 -2017. May 2017 flow volume calculations are attached in Appendix 2.

Groundwater piezometer standing water levels were taken with a hydrometer. A majority of the wells remain dry or frozen and could not be sampled.

Piezometer data loggers in MW15-01D were not downloaded this survey. Data loggers in piezometer MW15-05D remain frozen in.

Laboratory Analytical Results

Surface Waters

Parameters that equal or exceed either *Drinking Water or Aquatic Guidelines* are highlighted in yellow. All *Guideline* metals values are Totals.

Stations KZ-1, 2, 3, 5 and 10 met all *Drinking Water or Aquatic Guidelines* parameters analyzed for.

Station KZ-4 exceeds the *Guideline levels* for iron.

Station KZ-6 exceeds *Guideline levels* for iron, manganese and copper.

Station KZ-7 exceeds *Guideline levels* for iron and manganese.

Station KZ-8 exceeds *Guideline levels* for iron, manganese, cadmium, chromium, cooper, silver and zinc.

Station KZ-9 exceeds *Guideline levels* for iron and manganese.

All stations sampled reported total cyanide at or less than laboratory detection limits (0.002 mg/L).

All stations sampled reported total mercury at or less than detection limit (0.00001 mg/L).

Quality control sample results for Station KZ-9 are listed in Table 5.

Groundwater Wells

Groundwater wells MW15-01D and MW15-03S were the only wells not dry or frozen in May 2017.

Well analysis results and field measurements are listed in Tables 6, 7, 8 and 9.

Laboratory analytical results are compared to Drinking Water Quality Guidelines.

Well MW15-01D exceeded *Guidelines levels* for iron and manganese.

Well MW15-03S exceeded *Guidelines levels* for iron and manganese.

Thermistor

Thermistor string readings were taken at Well GTC15-01. Results for January, May, September 2016 and February and May 2017 are listed in Table 10. Site readings require conversion.

Vibrating Wire Piezometers

The three vibrating wire piezometers were located but attempts to download data were unsuccessful in May and September 2016, and May 2017. Download problems are due to a soft ware driver problems.

Onset Weather Station

The **Onset / Hobo** weather station installed near camp on June, 2013 was downloaded on May 29, 2017.

APPENDIX 1

LABORATORY ANALYTICAL REPORTS

Surface Water
Ground water

KLAZA PROPERTY

May, 2017

Report Transmission Cover Page

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205296
Box 20913	ID: Rockhaven Res.	Control Number: C0059198
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Groundwater	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194566
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

Contact & Affiliation	Address	Delivery Commitments
John Gibson J. Gibson & Associates	Box 20913, Whitehorse, Yukon Territory Y1A 6P2 Phone: (867) 633-4522 Fax: (867) 668-6895 Email: ludditegibson@gmail.com	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (Test Report) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report On [Lot Creation] send (COR) by Email - Single Report

Notes To Clients:

- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for samples #1205296-1 and 2. Detection limits are adjusted accordingly.
- Sample 1205296-1; 5731612 Reduction of analytical volume was necessary for anions due to matrix effects in sample 1205296-1 and 1205296-2. Detection limits are adjusted accordingly.

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Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J. Gibson
Company:

Project:
ID: Rockhaven Res.
Name: Klaza
Location: Groundwater
LSD:
P.O.:
Acct code:

Lot ID: **1205296**
Control Number: C0059198
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194566

Reference Number	1205296-1	1205296-2
Sample Date	May 28, 2017	May 29, 2017
Sample Time	09:40	12:10
Sample Location		
Sample Description	M. Well / MW15-01D / 9 °C	M. Well / MW15-03S / 9 °C
Matrix	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters					
Ammonium - N	mg/L	0.044	<0.025		0.025
Kjeldahl Nitrogen	Total mg/L	0.40	0.88		0.07
Phosphorus	Total mg/L	<0.05	0.33		0.05
Orthophosphate-P	Dissolved mg/L	<0.01	<0.01		0.01
Organic Carbon	Total Nonpurgeable mg/L	3.9	7.8		0.5
Metals Total					
Calcium	Total mg/L	100	92		0.01
Magnesium	Total mg/L	19	14		0.02
Potassium	Total mg/L	3.0	2.3		0.04
Silicon	Total mg/L	6.9	13		0.005
Sulfur	Total mg/L	42	23		0.02
Sodium	Total mg/L	10	4.5		0.1
Titanium	Total mg/L	0.025	0.075		0.002
Digestion	Preparation	Field Pres, digest as total Hg			
Mercury	Total mg/L	<0.00001			0.00001
Physical and Aggregate Properties					
Solids	Total Dissolved mg/L	370	340		5
Routine Water					
Nitrate and Nitrite - N	mg/L	<0.01	1.57		0.01
Acidity	titrate to pH of 8.3 mg/L as CaCO ₃	12	14		5
pH - Holding Time		Exceeded	Exceeded		
pH	at 25 °C	7.40	7.07		
Electrical Conductivity	µS/cm at 25 °C	647	530		1
Calcium	Dissolved mg/L	100	91		0.01
Magnesium	Dissolved mg/L	20	15		0.02
Potassium	Dissolved mg/L	3.0	1.2		0.04
Silicon	Dissolved mg/L	6.7	5.7		0.005
Sodium	Dissolved mg/L	10	5.5		0.1
Sulfur	Dissolved mg/L	42	24		0.02
Bicarbonate	mg/L	279	272		5
Carbonate	mg/L	<6	<6		6
Hydroxide	mg/L	<5	<5		5
P-Alkalinity	as CaCO ₃ mg/L	<5	<5		5

Analytical Report

Bill To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: J.Gibson
 Company:

Project:
 ID: Rockhaven Res.
 Name: Klaza
 Location: Groundwater
 LSD:
 P.O.:
 Acct code:

Lot ID: **1205296**
 Control Number: C0059198
 Date Received: May 31, 2017
 Date Reported: Jun 6, 2017
 Report Number: 2194566

		Reference Number		1205296-1	1205296-2
		Sample Date		May 28, 2017	May 29, 2017
		Sample Time		09:40	12:10
		Sample Location			
		Sample Description		M.Well / MW15-01D / 9 °C	M.Well / MW15-03S / 9 °C
		Matrix	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued					
T-Alkalinity	as CaCO ₃	mg/L	229	223	5
Chloride	Dissolved	mg/L	4.48	<0.50	0.05
Fluoride	Dissolved	mg/L	0.64	0.47	0.01
Sulfate (SO ₄)	Dissolved	mg/L	127	65	0.1
Hardness	as CaCO ₃ (dissolved)	mg/L	330	290	5
Trace Metals Dissolved					
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.016	0.015	0.002
Aluminum	Dissolved	mg/L	0.008	0.0097	0.001
Antimony	Dissolved	mg/L	0.000302	0.000731	0.00002
Arsenic	Dissolved	mg/L	0.0027	0.0004	0.0001
Barium	Dissolved	mg/L	0.1689	0.0410	0.0001
Beryllium	Dissolved	mg/L	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	0.004	0.004	0.002
Cadmium	Dissolved	mg/L	0.000138	0.000258	0.00001
Chromium	Dissolved	mg/L	0.000344	0.000251	0.00005
Cobalt	Dissolved	mg/L	0.000089	0.000321	0.00002
Copper	Dissolved	mg/L	0.0023	0.0041	0.0005
Iron	Dissolved	mg/L	0.158	0.043	0.002
Lead	Dissolved	mg/L	0.000103	0.000079	0.00001
Lithium	Dissolved	mg/L	0.0064	0.0030	0.0005
Manganese	Dissolved	mg/L	0.817	0.151	0.001
Molybdenum	Dissolved	mg/L	0.000306	0.000841	0.00002
Nickel	Dissolved	mg/L	0.0012	0.0017	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.000010	<0.000010	0.00001
Strontium	Dissolved	mg/L	2.085	0.2953	0.0001
Tellurium	Dissolved	mg/L	0.000115	0.000080	0.00005
Thallium	Dissolved	mg/L	<0.000010	<0.000010	0.00001
Thorium	Dissolved	mg/L	0.000180	0.000089	0.00005
Tin	Dissolved	mg/L	0.0002	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.005403	0.007913	0.00001
Vanadium	Dissolved	mg/L	0.000188	0.000056	0.00005
Zinc	Dissolved	mg/L	0.0091	0.0307	0.0005

Analytical Report

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205296
Box 20913	ID: Rockhaven Res.	Control Number: C0059198
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Groundwater	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194566
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

Reference Number	1205296-1	1205296-2
Sample Date	May 28, 2017	May 29, 2017
Sample Time	09:40	12:10
Sample Location		
Sample Description	M.Well / MW15-01D / 9 °C	M.Well / MW15-03S / 9 °C
Matrix	Water	Water

Analyte		Units	Results	Results	Nominal Detection Limit
Trace Metals Dissolved - Continued					
Zirconium	Dissolved	mg/L	0.0003	0.0005	0.0001
Trace Metals Total					
Aluminum	Total	mg/L	0.16	1.4	0.001
Antimony	Total	mg/L	0.00042	0.00094	0.00002
Arsenic	Total	mg/L	0.0034	0.0084	0.0001
Barium	Total	mg/L	0.19	0.11	0.0001
Beryllium	Total	mg/L	<0.000050	0.00017	0.00005
Bismuth	Total	mg/L	<0.0001	<0.0001	0.0001
Boron	Total	mg/L	0.006	0.004	0.002
Cadmium	Total	mg/L	0.0014	0.00035	0.00001
Chromium	Total	mg/L	0.0018	0.0012	0.00005
Cobalt	Total	mg/L	0.00022	0.0014	0.00002
Copper	Total	mg/L	0.0069	0.0097	0.0002
Iron	Total	mg/L	0.67	8.4	0.002
Lead	Total	mg/L	0.0014	0.0073	0.00001
Lithium	Total	mg/L	0.0068	0.0031	0.0005
Manganese	Total	mg/L	0.88	0.30	0.001
Molybdenum	Total	mg/L	0.00076	0.00097	0.00002
Nickel	Total	mg/L	0.0024	0.0015	0.0002
Selenium	Total	mg/L	<0.0002	0.0002	0.0002
Silver	Total	mg/L	0.000025	0.0011	0.00001
Strontium	Total	mg/L	2.2	0.31	0.0001
Tellurium	Total	mg/L	0.000074	<0.000050	0.00005
Thallium	Total	mg/L	<0.000010	0.000096	0.00001
Thorium	Total	mg/L	0.00031	0.0013	0.00005
Tin	Total	mg/L	0.0013	0.0003	0.0001
Uranium	Total	mg/L	0.0055	0.0086	0.00001
Vanadium	Total	mg/L	0.00052	0.0030	0.00005
Zinc	Total	mg/L	0.019	0.052	0.0005
Zirconium	Total	mg/L	0.0005	0.0003	0.0001



Analytical Report

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205296
Box 20913	ID: Rockhaven Res.	Control Number: C0059198
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Groundwater	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194566
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

Approved by:

Mathieu Simoneau
Operations Manager

Methodology and Notes

Bill To: J. Gibson & Associates Box 20913 Whitehorse, YT, Canada Y1A 6P2	Project: ID: Rockhaven Res. Name: Klaza Location: Groundwater LSD: P.O.: Acct code:	Lot ID: 1205296 Control Number: C0059198 Date Received: May 31, 2017 Date Reported: Jun 6, 2017 Report Number: 2194566
Attn: John Gibson Sampled By: J.Gibson Company:		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Acidity in water (Surrey)	APHA	* Acidity - Titration Method, 2310 B	05-Jun-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Alkalinity - Titration Method, 2320 B	01-Jun-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Conductivity, 2510 B	01-Jun-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* pH - Electrometric Method, 4500-H+ B	01-Jun-17	Exova Surrey
Ammonium-N in Water	APHA	* Automated Phenate Method, 4500-NH3 G	02-Jun-17	Exova Edmonton
Anions (Routine) by Ion Chromatography	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	02-Jun-17	Exova Edmonton
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	01-Jun-17	Exova Surrey
Carbon Organic (Total) in water (TOC)	APHA	High-Temperature Combustion Method, 5310 B	02-Jun-17	Exova Edmonton
Filtration of water for dissolved analysis	APHA	* Filtration for Dissolved and Suspended Metals / Total Organic Carbon, 3030 B / 5310 A	01-Jun-17	Exova Edmonton
Mercury Low Level (Total) in water (Surrey)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	01-Jun-17	Exova Surrey
Metals SemiTrace (Dissolved) in water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	01-Jun-17	Exova Surrey
Metals SemiTrace (Total) in Water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	01-Jun-17	Exova Surrey
Orthophosphate-P in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	05-Jun-17	Exova Edmonton
Phosphorus - Total in Water	APHA	* Automated Ascorbic Acid Reduction Method, 4500-P F	05-Jun-17	Exova Edmonton
Solids Dissolved (Total, Fixed and Volatile) - Surrey	APHA	* Total Dissolved Solids Dried at 180 C, 2540 C	01-Jun-17	Exova Surrey
Total and Kjeldahl Nitrogen (Total) in Water	ISO	* Water Quality - Determination of nitrogen, ISO/TR 11905-2	02-Jun-17	Exova Edmonton
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Surrey

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
EPA	Environmental Protection Agency Test Methods - US
ISO	International Organization for Standardization
US EPA	US Environmental Protection Agency Test Methods

Comments:

Methodology and Notes

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rockhaven Res.
Name: Klaza
Location: Groundwater
LSD:
P.O.:
Acct code:

Lot ID: **1205296**
Control Number: C0059198
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194566

-
- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for samples #1205296-1 and 2. Detection limits are adjusted accordingly.
 - Sample 1205296-1; 5731612 Reduction of analytical volume was necessary for anions due to matrix effects in sample 1205296-1 and 1205296-2. Detection limits are adjusted accordingly.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.



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www.exova.com ED 120-02

Project Information

Project ID: ROCKHAVEN RES.
Project Name: KLATA
Project Location: GROUND WATER
Legal Location:
PO/A/E#: GROUND WATER
Proj. Acct. Code:
Quote #

Emergency (contact lab for turnaround and pricing)
Priority 1-2 working days (100% surcharge)
Urgent 2-3 working days (50% surcharge)

Date Required:

Signature:

Special Instructions/Comments (please include contact information including ph. # if different from above):

RATEM = PH, EC, TDS, OH, TALK ACIDITY
NUTRIENTS = NH4, NO3, NO2, O-RN, SO4, K, CL

Site I.D.	Sample Description	Depth start and in cm m	Date/Time Sampled	Matrix	Sampling Method
1					
2	MW15-OLD	15.98	MM 28 0940	H2O	PTG
3					
4	MW15-035	4.51	May 29 1210	H2O	PTG
5					
6					
7					
8					
9					
10					
11					
12	AKTES 2W23 FLOW ALIQUOT				
13	METALS + NITR				
14	NH4 + H2SO4				
15	TKN @ HCL				

Submission of this form acknowledges acceptance of Exova's Standard Terms and Conditions (<http://www.exova.com/about/terms-and-conditions/>)

Please indicate any potentially hazardous samples.

Page 1 of 1 Control # **C 0059198**

Report To:

Company: J. Gibson & Associates
Address: Box 20913
Whitehorse, YT Y1A 6P2
Attention: John Gibson
Phone: (867) 533-4522
Cell:
Fax: (867) 568-6895
E-mail 1: judditegibson@gmail.com
E-mail 2:
Copy of invoice: X

Invoice to:

Company: J. Gibson & Associates
Address: Box 20913
Whitehorse, YT Y1A 6P2
Attention: John Gibson
Phone: (867) 533-4522
Cell:
Fax: (867) 568-6895
E-mail: judditegibson@gmail.com
Agreement ID: 6645
Copy of report: X

Report Results

E-Mail: HCDWQG
Mail: Ab Tier 1
Online: SPIGEC
Fax: BCCSR
PDF: Other (list below)
Excel:
QA/QC:
Sample Custody (please print)
Sampled by: J. Gibson

Regulatory Requirement

E-Mail: HCDWQG
Mail: Ab Tier 1
Online: SPIGEC
Fax: BCCSR
PDF: Other (list below)
Excel:
QA/QC:
Sample Custody (please print)
Sampled by: J. Gibson

Copy of invoice:

RUSH Priority

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact this lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Number of Containers

R. CHM
NUTRIENTS
NH4
TKN
1+2
1W24
1W23
TOC
TH4

Enter tests above
(✓ relevant samples below)

Indicate in the space allotted any deficiencies by the corresponding number.

1. Indicate any samples that were not packaged well
2. Indicate any samples not received in Exova supplies
3. Indicate any samples that were not clearly labeled
4. Indicate any samples not received within the required hold time or temp.
5. Indicate any missing or extra samples
6. Indicate any samples that were received broken
7. Indicate any samples where sufficient volume was not received
8. Indicate any samples received in an inappropriate container

Lot: **1205296** COC



Shipping: 9C COD Y N
and size of coolers
Temp. received:
Delivery Method:
Waybill:
Received by:

Report Transmission Cover Page

Bill To:	J. Gibson & Associates	Project:		Lot ID:	1205303
	Box 20913	ID:	Rochaven Res.	Control Number:	C0059197
	Whitehorse, YT, Canada	Name:	Klaza	Date Received:	May 31, 2017
	Y1A 6P2	Location:	Surface H2O	Date Reported:	Jun 6, 2017
Attn:	John Gibson	LSD:		Report Number:	2194574
Sampled By:	J.Gibson	P.O.:			
Company:		Acct code:			

Contact & Affiliation	Address	Delivery Commitments
John Gibson J. Gibson & Associates	Box 20913, Whitehorse, Yukon Territory Y1A 6P2 Phone: (867) 633-4522 Fax: (867) 668-6895 Email: ludditegibson@gmail.com	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (Test Report) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report On [Lot Creation] send (COR) by Email - Single Report

Notes To Clients:

- Analysis was performed on lot# 1205303 that exceeded the recommended holding time for nitrite and nitrate analysis.
- Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for samples #1205303-6, 8, and 9. Detection limits are adjusted accordingly.
- Reduction of analytical volume was necessary for suspended solids analysis due to insufficient volume of samples #1205303-1,2,3,4,5,6,7,8,9 and 10. Detection limits are adjusted accordingly.
- No Hg container received for sample 2. Hg container received on sample 1. Will add service to sample 1 and delete from sample 2.
- Sample 1205303-8; 5731657 Reduction of analytical volume was necessary for nitrate due to matrix effects in sample 1205303-8-1. Detection limits are adjusted accordingly.
- Sample 1205303-8; 5731657 Reduction of analytical volume was necessary for TP analysis to bring results within the analytical range for sample # 1204876-8. Detection limits are adjusted accordingly.

Analytical Report

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205303
Box 20913	ID: Rochaven Res.	Control Number: C0059197
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Surface H2O	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194574
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

Reference Number	1205303-1	1205303-2	1205303-3
Sample Date	May 28, 2017	May 28, 2017	May 28, 2017
Sample Time	13:25	14:10	16:00
Sample Location			
Sample Description	Surface / KZ-1 / 9 °C	Surface / KZ-2 / 9 °C	Surface / KZ-3 / 9 °C

		Matrix	Water	Water	Water	Nominal Detection Limit
Analyte		Units	Results	Results	Results	
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	19.2	11.5	14.0	0.5
Cyanide	Total	mg/L	0.002	<0.002	<0.002	0.002
Ammonia - N		mg/L	0.04	0.01	0.01	0.01
Phosphorus	Total	mg/L	0.031	0.004	0.010	0.003
Metals Total						
Calcium	Total	mg/L	3.5	6.9	2.4	0.01
Magnesium	Total	mg/L	0.61	0.98	0.42	0.02
Potassium	Total	mg/L	0.36	0.53	0.45	0.04
Silicon	Total	mg/L	3.1	2.3	1.5	0.005
Sulfur	Total	mg/L	0.34	0.44	0.21	0.02
Sodium	Total	mg/L	1.0	0.8	0.5	0.1
Titanium	Total	mg/L	0.004	0.003	0.004	0.002
Digestion	Preparation		Field Pres, digest as total Hg		Field Pres, digest as total Hg	
Mercury	Total	mg/L	0.00001		<0.00001	0.00001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<8	<8	<8	2
Solids	Total Dissolved	mg/L	78	<5	<5	5
Routine Water						
pH - Holding Time			Exceeded	Exceeded	Exceeded	
pH	at 25 °C		6.47	7.01	6.30	
Electrical Conductivity		µS/cm at 25 °C	20	38	13	1
Calcium	Dissolved	mg/L	3.5	6.9	2.3	0.01
Magnesium	Dissolved	mg/L	0.62	1.0	0.40	0.02
Potassium	Dissolved	mg/L	0.36	0.56	0.44	0.04
Silicon	Dissolved	mg/L	3.1	2.3	1.4	0.005
Sodium	Dissolved	mg/L	0.9	0.6	0.5	0.1
Sulfur	Dissolved	mg/L	0.32	0.42	0.20	0.02
Bicarbonate		mg/L	<5	21	<5	5
Carbonate		mg/L	8	<6	<6	6
Hydroxide		mg/L	<5	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	6	17	<5	5
Chloride	Dissolved	mg/L	0.071	0.0959	<0.050	0.05
Nitrate - N	Dissolved	mg/L	<0.010	0.044	<0.010	0.01
Nitrite - N	Dissolved	mg/L	<0.010	<0.010	<0.010	0.01

Analytical Report

Bill To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: J.Gibson
 Company:

Project:
 ID: Rochaven Res.
 Name: Klaza
 Location: Surface H2O
 LSD:
 P.O.:
 Acct code:

Lot ID: **1205303**
 Control Number: C0059197
 Date Received: May 31, 2017
 Date Reported: Jun 6, 2017
 Report Number: 2194574

		Reference Number	1205303-1	1205303-2	1205303-3	
		Sample Date	May 28, 2017	May 28, 2017	May 28, 2017	
		Sample Time	13:25	14:10	16:00	
		Sample Location				
		Sample Description	Surface / KZ-1 / 9 °C	Surface / KZ-2 / 9 °C	Surface / KZ-3 / 9 °C	
		Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Routine Water - Continued						
Sulfate (SO4)	Dissolved	mg/L	0.3	0.6	<0.1	0.1
Hardness	as CaCO3 (dissolved)	mg/L	11.2	21	7.4	5
Hardness	Total	mg CaCO3/L	11.2	21	7.7	1
Trace Metals Dissolved						
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.003	<0.002	<0.002	0.002
Aluminum	Dissolved	mg/L	0.422	0.113	0.299	0.001
Antimony	Dissolved	mg/L	0.000133	0.000149	0.000084	0.00002
Arsenic	Dissolved	mg/L	0.0002	0.0006	0.0001	0.0001
Barium	Dissolved	mg/L	0.0230	0.0388	0.0144	0.0001
Beryllium	Dissolved	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.000020	0.000014	0.000021	0.00001
Chromium	Dissolved	mg/L	0.000401	0.000181	0.000239	0.00005
Cobalt	Dissolved	mg/L	0.000198	0.000038	0.000044	0.00002
Copper	Dissolved	mg/L	0.0026	0.0015	0.0016	0.0005
Iron	Dissolved	mg/L	0.215	0.035	0.103	0.002
Lead	Dissolved	mg/L	0.000028	0.000053	<0.000010	0.00001
Lithium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Manganese	Dissolved	mg/L	0.020	<0.001	0.003	0.001
Molybdenum	Dissolved	mg/L	0.000084	0.000075	0.000024	0.00002
Nickel	Dissolved	mg/L	0.0010	0.0005	0.0007	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.00001
Strontium	Dissolved	mg/L	0.0221	0.0241	0.0145	0.0001
Tellurium	Dissolved	mg/L	0.000068	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.00001
Thorium	Dissolved	mg/L	0.000109	0.000053	0.000067	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.000041	0.000078	0.000023	0.00001
Vanadium	Dissolved	mg/L	0.000453	0.000162	0.000200	0.00005
Zinc	Dissolved	mg/L	0.0011	0.0016	0.0018	0.0005
Zirconium	Dissolved	mg/L	0.0006	0.0002	0.0002	0.0001

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-1	1205303-2	1205303-3
Sample Date	May 28, 2017	May 28, 2017	May 28, 2017
Sample Time	13:25	14:10	16:00
Sample Location			
Sample Description	Surface / KZ-1 / 9 °C	Surface / KZ-2 / 9 °C	Surface / KZ-3 / 9 °C

		Matrix	Water	Water	Water	Nominal Detection Limit
Analyte		Units	Results	Results	Results	
Trace Metals Total						
Aluminum	Total	mg/L	0.46	0.12	0.38	0.001
Antimony	Total	mg/L	0.00011	0.00011	0.000068	0.00002
Arsenic	Total	mg/L	0.0003	0.0007	0.0002	0.0001
Barium	Total	mg/L	0.025	0.041	0.016	0.0001
Beryllium	Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Bismuth	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Total	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Total	mg/L	0.000032	0.000039	0.000027	0.00001
Chromium	Total	mg/L	0.00035	0.00020	0.00030	0.00005
Cobalt	Total	mg/L	0.00022	0.000030	0.00010	0.00002
Copper	Total	mg/L	0.0031	0.0016	0.0020	0.0002
Iron	Total	mg/L	0.25	0.037	0.19	0.002
Lead	Total	mg/L	0.00010	0.000061	0.00012	0.00001
Lithium	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Manganese	Total	mg/L	0.022	<0.001	0.009	0.001
Molybdenum	Total	mg/L	0.000093	0.000087	0.000034	0.00002
Nickel	Total	mg/L	0.0008	0.0002	0.0009	0.0002
Selenium	Total	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Total	mg/L	<0.000010	0.000015	<0.000010	0.00001
Strontium	Total	mg/L	0.024	0.027	0.017	0.0001
Tellurium	Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	<0.000010	<0.000010	<0.000010	0.00001
Thorium	Total	mg/L	0.00020	0.00011	0.00012	0.00005
Tin	Total	mg/L	0.0001	<0.0001	0.0001	0.0001
Uranium	Total	mg/L	0.000037	0.000075	0.000024	0.00001
Vanadium	Total	mg/L	0.00055	0.000079	0.00045	0.00005
Zinc	Total	mg/L	0.0021	0.0034	0.0032	0.0005
Zirconium	Total	mg/L	0.0009	0.0003	0.0004	0.0001

Analytical Report

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205303
Box 20913	ID: Rochaven Res.	Control Number: C0059197
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Surface H2O	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194574
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

		Reference Number	1205303-4	1205303-5	1205303-6	
		Sample Date	May 29, 2017	May 28, 2017	May 29, 2017	
		Sample Time	11:50	15:00	10:40	
		Sample Location				
		Sample Description	Surface / KZ-4 / 9 °C	Surface / KZ-5 / 9 °C	Surface / KZ-6 / 9 °C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	12.2	4.3	12.0	0.5
Cyanide	Total	mg/L	<0.002	<0.002	0.002	0.002
Ammonia - N		mg/L	0.02	0.01	0.03	0.01
Phosphorus	Total	mg/L	0.010	<0.003	0.063	0.003
Metals Total						
Calcium	Total	mg/L	8.0	7.6	8.6	0.01
Magnesium	Total	mg/L	1.6	2.0	2.0	0.02
Potassium	Total	mg/L	0.58	0.52	0.84	0.04
Silicon	Total	mg/L	2.5	4.3	4.3	0.005
Sulfur	Total	mg/L	1.3	1.1	1.4	0.02
Sodium	Total	mg/L	1.1	1.7	1.3	0.1
Titanium	Total	mg/L	0.003	0.003	0.048	0.002
Digestion	Preparation			Field Pres, digest as total Hg		
Mercury	Total	mg/L		<0.00001		0.00001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<8	<8.0	34	2
Solids	Total Dissolved	mg/L	<5	<5	20	5
Routine Water						
pH - Holding Time			Exceeded	Exceeded	Exceeded	
pH	at 25 °C		7.01	6.69	7.04	
Electrical Conductivity		µS/cm at 25 °C	48	57	52	1
Calcium	Dissolved	mg/L	8.1	7.3	8.0	0.01
Magnesium	Dissolved	mg/L	1.7	2.0	1.7	0.02
Potassium	Dissolved	mg/L	0.59	0.50	0.67	0.04
Silicon	Dissolved	mg/L	2.5	4.2	2.6	0.005
Sodium	Dissolved	mg/L	0.9	1.5	0.95	0.1
Sulfur	Dissolved	mg/L	1.3	1.1	1.3	0.02
Bicarbonate		mg/L	26	33	28	5
Carbonate		mg/L	<6	<6	<6	6
Hydroxide		mg/L	<5	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	22	27	23	5
Chloride	Dissolved	mg/L	0.076	0.111	0.064	0.05
Nitrate - N	Dissolved	mg/L	0.013	0.131	<0.010	0.01
Nitrite - N	Dissolved	mg/L	<0.010	<0.010	<0.010	0.01

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-4	1205303-5	1205303-6
Sample Date	May 29, 2017	May 28, 2017	May 29, 2017
Sample Time	11:50	15:00	10:40
Sample Location			
Sample Description	Surface / KZ-4 / 9 °C	Surface / KZ-5 / 9 °C	Surface / KZ-6 / 9 °C

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sulfate (SO4)	Dissolved	mg/L	3.1	2.7	3.2	0.1
Hardness	as CaCO3 (dissolved)	mg/L	27	27	27	5
Hardness	Total	mg CaCO3/L	27	27	30	1
Trace Metals Dissolved						
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.002	<0.002	0.003	0.002
Aluminum	Dissolved	mg/L	0.079	0.034	0.072	0.001
Antimony	Dissolved	mg/L	0.000170	0.000084	0.000193	0.00002
Arsenic	Dissolved	mg/L	0.0007	0.0002	0.0011	0.0001
Barium	Dissolved	mg/L	0.0606	0.0338	0.0639	0.0001
Beryllium	Dissolved	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.000036	0.000017	0.000028	0.00001
Chromium	Dissolved	mg/L	0.000213	0.000129	0.000148	0.00005
Cobalt	Dissolved	mg/L	0.000065	0.000030	0.000146	0.00002
Copper	Dissolved	mg/L	0.0026	0.00099	0.0026	0.0005
Iron	Dissolved	mg/L	0.108	0.025	0.336	0.002
Lead	Dissolved	mg/L	0.000091	0.000020	0.000231	0.00001
Lithium	Dissolved	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Manganese	Dissolved	mg/L	0.046	0.004	0.089	0.001
Molybdenum	Dissolved	mg/L	0.000244	0.000075	0.000317	0.00002
Nickel	Dissolved	mg/L	0.0007	0.0004	0.0007	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.00001
Strontium	Dissolved	mg/L	0.0581	0.0557	0.0586	0.0001
Tellurium	Dissolved	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.00001
Thorium	Dissolved	mg/L	0.000056	<0.000050	0.000067	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.000189	0.000131	0.000225	0.00001
Vanadium	Dissolved	mg/L	0.000140	0.000172	0.000478	0.00005
Zinc	Dissolved	mg/L	0.0019	<0.0005	0.0009	0.0005
Zirconium	Dissolved	mg/L	0.0002	<0.0001	0.0002	0.0001

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-4	1205303-5	1205303-6
Sample Date	May 29, 2017	May 28, 2017	May 29, 2017
Sample Time	11:50	15:00	10:40
Sample Location			
Sample Description	Surface / KZ-4 / 9 °C	Surface / KZ-5 / 9 °C	Surface / KZ-6 / 9 °C

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Trace Metals Total						
Aluminum	Total	mg/L	0.10	0.058	1.2	0.001
Antimony	Total	mg/L	0.00015	0.000078	0.00032	0.00002
Arsenic	Total	mg/L	0.0009	0.0002	0.0030	0.0001
Barium	Total	mg/L	0.065	0.038	0.10	0.0001
Beryllium	Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Bismuth	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Boron	Total	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Total	mg/L	0.000048	0.000021	0.00016	0.00001
Chromium	Total	mg/L	0.00012	0.00011	0.0014	0.00005
Cobalt	Total	mg/L	0.000095	0.000042	0.00076	0.00002
Copper	Total	mg/L	0.0029	0.0011	0.0052	0.0002
Iron	Total	mg/L	0.20	0.054	1.9	0.002
Lead	Total	mg/L	0.00023	0.000056	0.0042	0.00001
Lithium	Total	mg/L	<0.0005	<0.0005	0.00096	0.0005
Manganese	Total	mg/L	0.069	0.005	0.14	0.001
Molybdenum	Total	mg/L	0.00028	0.000099	0.00045	0.00002
Nickel	Total	mg/L	0.0006	<0.0002	0.0014	0.0002
Selenium	Total	mg/L	<0.0002	<0.0002	<0.0002	0.0002
Silver	Total	mg/L	0.000018	<0.000010	0.000065	0.00001
Strontium	Total	mg/L	0.064	0.061	0.069	0.0001
Tellurium	Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	<0.000010	<0.000010	0.000029	0.00001
Thorium	Total	mg/L	0.00010	0.000064	0.00032	0.00005
Tin	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Total	mg/L	0.00021	0.00014	0.00075	0.00001
Vanadium	Total	mg/L	0.00014	0.00019	0.0038	0.00005
Zinc	Total	mg/L	0.0026	0.0010	0.014	0.0005
Zirconium	Total	mg/L	0.0003	<0.0001	0.0004	0.0001

Analytical Report

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205303
Box 20913	ID: Rochaven Res.	Control Number: C0059197
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Surface H2O	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194574
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

		Reference Number	1205303-7	1205303-8	1205303-9	
		Sample Date	May 29, 2017	May 29, 2017	May 29, 2017	
		Sample Time	09:10	09:30	12:15	
		Sample Location				
		Sample Description	Surface / KZ-7 / 9 °C	Surface / KZ-8 / 9 °C	Surface / KZ-9 / 9 °C	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	12.7	7.5	8.4	0.5
Cyanide	Total	mg/L	<0.002	<0.002	<0.002	0.002
Ammonia - N		mg/L	0.03	0.03	0.02	0.01
Phosphorus	Total	mg/L	0.039	0.95	0.086	0.003
Metals Total						
Calcium	Total	mg/L	7.9	28	7.4	0.01
Magnesium	Total	mg/L	1.7	8.2	2.0	0.02
Potassium	Total	mg/L	0.71	2.4	0.72	0.04
Silicon	Total	mg/L	2.6	17	4.4	0.005
Sulfur	Total	mg/L	2.7	13	0.84	0.02
Sodium	Total	mg/L	1.1	3.0	1.2	0.1
Titanium	Total	mg/L	0.018	0.20	0.042	0.002
Digestion	Preparation				Field Pres, digest as total Hg	
Mercury	Total	mg/L			<0.00001	0.00001
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<8	1000	74	2
Solids	Total Dissolved	mg/L	32	100	36	5
Routine Water						
pH - Holding Time			Exceeded	Exceeded	Exceeded	
pH	at 25 °C		6.88	7.28	6.97	
Electrical Conductivity		µS/cm at 25 °C	50	179	49	1
Calcium	Dissolved	mg/L	7.5	29	8.2	0.01
Magnesium	Dissolved	mg/L	1.7	7.5	2.4	0.02
Potassium	Dissolved	mg/L	0.65	1.2	0.58	0.04
Silicon	Dissolved	mg/L	2.3	5.7	3.5	0.005
Sodium	Dissolved	mg/L	0.9	2.5	1.3	0.1
Sulfur	Dissolved	mg/L	2.7	13	0.87	0.02
Bicarbonate		mg/L	17	58	29	5
Carbonate		mg/L	<6	<6	<6	6
Hydroxide		mg/L	<5	<5	<5	5
P-Alkalinity	as CaCO3	mg/L	<5	<5	<5	5
T-Alkalinity	as CaCO3	mg/L	14	48	24	5
Chloride	Dissolved	mg/L	0.151	0.114	0.076	0.05
Nitrate - N	Dissolved	mg/L	<0.010	0.31	0.021	0.01
Nitrite - N	Dissolved	mg/L	<0.010	<0.010	<0.010	0.01

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-7	1205303-8	1205303-9
Sample Date	May 29, 2017	May 29, 2017	May 29, 2017
Sample Time	09:10	09:30	12:15
Sample Location			
Sample Description	Surface / KZ-7 / 9 °C	Surface / KZ-8 / 9 °C	Surface / KZ-9 / 9 °C

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Routine Water - Continued						
Sulfate (SO4)	Dissolved	mg/L	7.5	40.5	1.8	0.1
Hardness	as CaCO3 (dissolved)	mg/L	25	102	30	5
Hardness	Total	mg CaCO3/L	27	103	27	1
Trace Metals Dissolved						
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.005	0.046	<0.002	0.002
Aluminum	Dissolved	mg/L	0.166	1.680	0.076	0.001
Antimony	Dissolved	mg/L	0.000378	0.000529	0.000116	0.00002
Arsenic	Dissolved	mg/L	0.0006	0.0148	0.0004	0.0001
Barium	Dissolved	mg/L	0.0180	0.1561	0.0406	0.0001
Beryllium	Dissolved	mg/L	<0.000050	0.000354	<0.000050	0.00005
Bismuth	Dissolved	mg/L	0.0002	0.0002	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.0000988	0.001647	0.000018	0.00001
Chromium	Dissolved	mg/L	0.000201	0.001314	0.000264	0.00005
Cobalt	Dissolved	mg/L	0.000119	0.005127	0.000080	0.00002
Copper	Dissolved	mg/L	0.0018	0.0792	0.0013	0.0005
Iron	Dissolved	mg/L	0.166	4.46	0.127	0.002
Lead	Dissolved	mg/L	0.001120	0.033369	0.000085	0.00001
Lithium	Dissolved	mg/L	<0.0005	0.0024	<0.0005	0.0005
Manganese	Dissolved	mg/L	0.061	0.476	0.027	0.001
Molybdenum	Dissolved	mg/L	0.000168	0.001460	0.000195	0.00002
Nickel	Dissolved	mg/L	0.0004	0.0032	0.0004	0.0002
Selenium	Dissolved	mg/L	<0.0002	0.0005	<0.0002	0.0002
Silver	Dissolved	mg/L	0.000073	<0.000010	<0.000010	0.00001
Strontium	Dissolved	mg/L	0.0541	0.2792	0.0679	0.0001
Tellurium	Dissolved	mg/L	0.000463	0.000108	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.000010	0.000029	<0.000010	0.00001
Thorium	Dissolved	mg/L	0.000291	0.000338	0.000065	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.000161	0.002901	0.000178	0.00001
Vanadium	Dissolved	mg/L	0.000462	0.010610	0.000277	0.00005
Zinc	Dissolved	mg/L	0.0096	0.0560	0.0008	0.0005
Zirconium	Dissolved	mg/L	0.0003	0.0008	0.0002	0.0001

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-7	1205303-8	1205303-9
Sample Date	May 29, 2017	May 29, 2017	May 29, 2017
Sample Time	09:10	09:30	12:15
Sample Location			
Sample Description	Surface / KZ-7 / 9 °C	Surface / KZ-8 / 9 °C	Surface / KZ-9 / 9 °C

		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Trace Metals Total						
Aluminum	Total	mg/L	0.43	4.6	1.1	0.001
Antimony	Total	mg/L	0.00014	0.0012	0.00019	0.00002
Arsenic	Total	mg/L	0.0014	0.027	0.0015	0.0001
Barium	Total	mg/L	0.028	0.17	0.065	0.0001
Beryllium	Total	mg/L	<0.000050	0.00038	<0.000050	0.00005
Bismuth	Total	mg/L	<0.0001	0.0007	<0.0001	0.0001
Boron	Total	mg/L	<0.002	<0.002	<0.002	0.002
Cadmium	Total	mg/L	0.00033	0.0018	0.000099	0.00001
Chromium	Total	mg/L	0.00055	0.0053	0.0014	0.00005
Cobalt	Total	mg/L	0.00045	0.0076	0.00057	0.00002
Copper	Total	mg/L	0.0033	0.096	0.0033	0.0002
Iron	Total	mg/L	0.67	11	1.4	0.002
Lead	Total	mg/L	0.0064	0.041	0.0021	0.00001
Lithium	Total	mg/L	<0.0005	0.0042	0.0009	0.0005
Manganese	Total	mg/L	0.12	0.51	0.066	0.001
Molybdenum	Total	mg/L	0.00013	0.0022	0.00022	0.00002
Nickel	Total	mg/L	0.0007	0.0057	0.0011	0.0002
Selenium	Total	mg/L	<0.0002	0.0006	<0.0002	0.0002
Silver	Total	mg/L	0.000019	0.00031	0.000024	0.00001
Strontium	Total	mg/L	0.060	0.30	0.064	0.0001
Tellurium	Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	0.000011	0.00011	0.000017	0.00001
Thorium	Total	mg/L	0.00011	0.0013	0.00021	0.00005
Tin	Total	mg/L	<0.0001	<0.0001	<0.0001	0.0001
Uranium	Total	mg/L	0.00025	0.0030	0.00046	0.00001
Vanadium	Total	mg/L	0.0017	0.019	0.0033	0.00005
Zinc	Total	mg/L	0.0097	0.090	0.0082	0.0005
Zirconium	Total	mg/L	0.0003	0.00096	0.0003	0.0001

Analytical Report

Bill To: J. Gibson & Associates
 Box 20913
 Whitehorse, YT, Canada
 Y1A 6P2
 Attn: John Gibson
 Sampled By: J.Gibson
 Company:

Project:
 ID: Rochaven Res.
 Name: Klaza
 Location: Surface H2O
 LSD:
 P.O.:
 Acct code:

Lot ID: **1205303**
 Control Number: C0059197
 Date Received: May 31, 2017
 Date Reported: Jun 6, 2017
 Report Number: 2194574

Reference Number 1205303-10
 Sample Date May 29, 2017
 Sample Time 12:15
 Sample Location
 Sample Description Surface / KZ-10 / 9
 °C

Matrix Water

Analyte		Units	Results	Results	Results	Nominal Detection Limit
Inorganic Nonmetallic Parameters						
Organic Carbon	Total Nonpurgeable	mg/L	18.0			0.5
Cyanide	Total	mg/L	<0.002			0.002
Ammonia - N		mg/L	0.01			0.01
Phosphorus	Total	mg/L	0.010			0.003
Physical and Aggregate Properties						
Solids	Total Suspended	mg/L	<8			2
Solids	Total Dissolved	mg/L	10			5

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J.Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-10	1205303-11
Sample Date	May 29, 2017	May 29, 2017
Sample Time	12:15	NA
Sample Location		
Sample Description	Surface / KZ-10 / 9 °C	Surface / KZ-9 Duplicate / 9 °C

		Matrix	Water	Water	
Analyte		Units	Results	Results	Nominal Detection Limit
Metals Total					
Calcium	Total	mg/L	4.1	7.3	0.01
Magnesium	Total	mg/L	0.81	1.9	0.02
Potassium	Total	mg/L	0.58	0.64	0.04
Silicon	Total	mg/L	2.2	3.7	0.005
Sulfur	Total	mg/L	0.35	0.82	0.02
Sodium	Total	mg/L	0.9	1.2	0.1
Titanium	Total	mg/L	0.004	0.025	0.002
Routine Water					
pH - Holding Time			Exceeded		
pH	at 25 °C		6.60		
Electrical Conductivity		µS/cm at 25 °C	23		1
Calcium	Dissolved	mg/L	4.4	8.1	0.01
Magnesium	Dissolved	mg/L	0.88	2.4	0.02
Potassium	Dissolved	mg/L	0.58	0.57	0.04
Silicon	Dissolved	mg/L	2.2	3.5	0.005
Sodium	Dissolved	mg/L	0.8	1.3	0.1
Sulfur	Dissolved	mg/L	0.35	0.87	0.02
Bicarbonate		mg/L	<5		5
Carbonate		mg/L	10		6
Hydroxide		mg/L	<5		5
P-Alkalinity	as CaCO3	mg/L	<5		5
T-Alkalinity	as CaCO3	mg/L	9		5
Chloride	Dissolved	mg/L	0.068		0.05
Nitrate - N	Dissolved	mg/L	<0.010		0.01
Nitrite - N	Dissolved	mg/L	<0.010		0.01
Sulfate (SO4)	Dissolved	mg/L	0.3		0.1
Hardness	as CaCO3 (dissolved)	mg/L	15	30	5
Hardness	Total	mg CaCO3/L	14		1
Trace Metals Dissolved					
Digestion	Dissolved		Field filtered and Pres Dissol	Field filtered and Pres Dissol	
Titanium	Dissolved	mg/L	0.002	0.003	0.002
Aluminum	Dissolved	mg/L	0.222	0.075	0.001
Antimony	Dissolved	mg/L	0.000105	0.000110	0.00002
Arsenic	Dissolved	mg/L	0.0004	0.0004	0.0001

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J. Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-10	1205303-11
Sample Date	May 29, 2017	May 29, 2017
Sample Time	12:15	NA
Sample Location		
Sample Description	Surface / KZ-10 / 9 °C	Surface / KZ-9 Duplicate / 9 °C

		Matrix	Water	Water	
Analyte		Units	Results	Results	Nominal Detection Limit
Trace Metals Dissolved - Continued					
Barium	Dissolved	mg/L	0.0621	0.0408	0.0001
Beryllium	Dissolved	mg/L	0.000073	<0.000050	0.00005
Bismuth	Dissolved	mg/L	<0.0001	<0.0001	0.0001
Boron	Dissolved	mg/L	<0.002	<0.002	0.002
Cadmium	Dissolved	mg/L	0.000046	0.000019	0.00001
Chromium	Dissolved	mg/L	0.000317	0.000174	0.00005
Cobalt	Dissolved	mg/L	0.000054	0.000082	0.00002
Copper	Dissolved	mg/L	0.0030	0.0014	0.0005
Iron	Dissolved	mg/L	0.148	0.132	0.002
Lead	Dissolved	mg/L	0.000083	0.000091	0.00001
Lithium	Dissolved	mg/L	<0.0005	<0.0005	0.0005
Manganese	Dissolved	mg/L	0.007	0.027	0.001
Molybdenum	Dissolved	mg/L	0.000060	0.000200	0.00002
Nickel	Dissolved	mg/L	0.0007	0.0005	0.0002
Selenium	Dissolved	mg/L	<0.0002	<0.0002	0.0002
Silver	Dissolved	mg/L	<0.000010	<0.000010	0.00001
Strontium	Dissolved	mg/L	0.0263	0.0681	0.0001
Tellurium	Dissolved	mg/L	<0.000050	<0.000050	0.00005
Thallium	Dissolved	mg/L	<0.000010	<0.000010	0.00001
Thorium	Dissolved	mg/L	0.000196	0.000058	0.00005
Tin	Dissolved	mg/L	<0.0001	<0.0001	0.0001
Uranium	Dissolved	mg/L	0.000289	0.000185	0.00001
Vanadium	Dissolved	mg/L	0.000289	0.000298	0.00005
Zinc	Dissolved	mg/L	0.0038	0.0006	0.0005
Zirconium	Dissolved	mg/L	0.0005	0.0002	0.0001
Trace Metals Total					
Aluminum	Total	mg/L	0.26	0.67	0.001
Antimony	Total	mg/L	0.00010	0.00016	0.00002
Arsenic	Total	mg/L	0.0005	0.0012	0.0001
Barium	Total	mg/L	0.070	0.061	0.0001
Beryllium	Total	mg/L	<0.000050	<0.000050	0.00005
Bismuth	Total	mg/L	<0.0001	<0.0001	0.0001
Boron	Total	mg/L	<0.002	<0.002	0.002
Cadmium	Total	mg/L	0.000057	0.000063	0.00001
Chromium	Total	mg/L	0.00027	0.00083	0.00005

Analytical Report

Bill To: J. Gibson & Associates
Box 20913
Whitehorse, YT, Canada
Y1A 6P2
Attn: John Gibson
Sampled By: J. Gibson
Company:

Project:
ID: Rochaven Res.
Name: Klaza
Location: Surface H2O
LSD:
P.O.:
Acct code:

Lot ID: **1205303**
Control Number: C0059197
Date Received: May 31, 2017
Date Reported: Jun 6, 2017
Report Number: 2194574

Reference Number	1205303-10	1205303-11
Sample Date	May 29, 2017	May 29, 2017
Sample Time	12:15	NA
Sample Location		
Sample Description	Surface / KZ-10 / 9 °C	Surface / KZ-9 Duplicate / 9 °C
Matrix	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Trace Metals Total - Continued					
Cobalt	Total	mg/L	0.000060	0.00040	0.00002
Copper	Total	mg/L	0.0035	0.0029	0.0002
Iron	Total	mg/L	0.19	0.95	0.002
Lead	Total	mg/L	0.00014	0.0018	0.00001
Lithium	Total	mg/L	0.0006	0.0006	0.0005
Manganese	Total	mg/L	0.0096	0.060	0.001
Molybdenum	Total	mg/L	0.000076	0.00020	0.00002
Nickel	Total	mg/L	0.0007	0.0008	0.0002
Selenium	Total	mg/L	<0.0002	<0.0002	0.0002
Silver	Total	mg/L	0.000026	0.000017	0.00001
Strontium	Total	mg/L	0.031	0.064	0.0001
Tellurium	Total	mg/L	<0.000050	<0.000050	0.00005
Thallium	Total	mg/L	<0.000010	<0.000010	0.00001
Thorium	Total	mg/L	0.00029	0.00012	0.00005
Tin	Total	mg/L	0.0004	<0.0001	0.0001
Uranium	Total	mg/L	0.00031	0.00042	0.00001
Vanadium	Total	mg/L	0.00043	0.0023	0.00005
Zinc	Total	mg/L	0.0047	0.0055	0.0005
Zirconium	Total	mg/L	0.0006	0.0002	0.0001

Approved by: 
Mathieu Simoneau
Operations Manager

Methodology and Notes

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205303
Box 20913	ID: Rochaven Res.	Control Number: C0059197
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Surface H2O	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194574
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Alk, pH, EC, Turb in water (Surrey)	APHA	* Alkalinity - Titration Method, 2320 B	01-Jun-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* Conductivity, 2510 B	01-Jun-17	Exova Surrey
Alk, pH, EC, Turb in water (Surrey)	APHA	* pH - Electrometric Method, 4500-H+ B	01-Jun-17	Exova Surrey
Ammonia-N in Water (Surrey)	APHA	* Flow Injection Analysis, 4500-NH3 H	01-Jun-17	Exova Surrey
Anions by IEC in water (Surrey)	APHA	* Ion Chromatography with Chemical Suppression of Eluent Cond., 4110 B	01-Jun-17	Exova Surrey
Carbon Organic (Total) in water (TOC)	APHA	High-Temperature Combustion Method, 5310 B	02-Jun-17	Exova Edmonton
Cyanide (Total) in water	US EPA	* US EPA method, 335.3	05-Jun-17	Exova Edmonton
Mercury Low Level (Total) in water (Surrey)	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	01-Jun-17	Exova Surrey
Metals SemiTrace (Dissolved) in water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	01-Jun-17	Exova Surrey
Metals SemiTrace (Total) in Water (Surrey)	US EPA	* Metals & Trace Elements by ICP-AES, 6010C	01-Jun-17	Exova Surrey
Phosphorus - total by Smartchem (Surrey)	APHA	* Persulfate digestion method, 4500-P B5	05-Jun-17	Exova Surrey
Solids Dissolved (Total, Fixed and Volatile) - Surrey	APHA	* Total Dissolved Solids Dried at 180 C, 2540 C	01-Jun-17	Exova Surrey
Solids Suspended (Total, Fixed and Volatile) - Surrey	APHA	* Total Suspended Solids Dried at 103-105°C, 2540 D	01-Jun-17	Exova Surrey
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Surrey
Trace Metals (dissolved) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	06-Jun-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	01-Jun-17	Exova Surrey
Trace Metals (Total) in Water (Surrey)	US EPA	* Determination of Trace Elements in Waters and Wastes by ICP-MS, 200.8	06-Jun-17	Exova Surrey

* Reference Method Modified

References

APHA	Standard Methods for the Examination of Water and Wastewater
EPA	Environmental Protection Agency Test Methods - US
US EPA	US Environmental Protection Agency Test Methods

Comments:

Methodology and Notes

Bill To: J. Gibson & Associates	Project:	Lot ID: 1205303
Box 20913	ID: Rochaven Res.	Control Number: C0059197
Whitehorse, YT, Canada	Name: Klaza	Date Received: May 31, 2017
Y1A 6P2	Location: Surface H2O	Date Reported: Jun 6, 2017
Attn: John Gibson	LSD:	Report Number: 2194574
Sampled By: J.Gibson	P.O.:	
Company:	Acct code:	

-
- Analysis was performed on lot# 1205303 that exceeded the recommended holding time for nitrite and nitrate analysis.
 - Reduction of analytical volume was necessary for Trace Metals analysis to bring results within the analytical range for samples #1205303-6, 8, and 9. Detection limits are adjusted accordingly.
 - Reduction of analytical volume was necessary for suspended solids analysis due to insufficient volume of samples #1205303-1,2,3,4,5,6,7,8,9 and 10. Detection limits are adjusted accordingly.
 - No Hg container received for sample 2. Hg container received on sample 1. Will add service to sample 1 and delete from sample 2.
 - Sample 1205303-8; 5731657 Reduction of analytical volume was necessary for nitrate due to matrix effects in sample 1205303-8-1. Detection limits are adjusted accordingly.
 - Sample 1205303-8; 5731657 Reduction of analytical volume was necessary for TP analysis to bring results within the analytical range for sample # 1204876-8. Detection limits are adjusted accordingly.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

APPENDIX 2

STREAM FLOW VOLUME CALCULATIONS

May, 2017

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 29-May-17

Site: KZ-9 Mainstem Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
3.4	0	0.2	0	0	0.000
3.8	0.12	0.4	0.725	0.048	0.035
4.2	0.14	0.4	0.676	0.056	0.038
4.6	0.14	0.4	0.725	0.056	0.041
5	0.15	0.4	0.692	0.06	0.042
5.4	0.18	0.4	0.725	0.072	0.052
5.8	0.16	0.4	0.825	0.064	0.053
6.2	0.1	0.4	0.725	0.04	0.029
6.6	0.24	0.4	0.629	0.096	0.060
7	0.28	0.4	0.442	0.112	0.050
7.4	0.28	0.25	0.432	0.07	0.030
7.5	0	0.05	0	0	0.000
4.10		4.1			0.4289

No Staff Gauge

Data logger reading: No logger

Channel under ice? ☒ Under Ice - removed for measurement

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 29-May-17

Site: KZ-7 Trib to EF Nansen

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
4	0	0.1	0	0	0.000
4.2	0.12	0.2	0.158	0.024	0.004
4.4	0.19	0.2	0.208	0.038	0.008
4.6	0.21	0.2	0.308	0.042	0.013
4.8	0.26	0.2	0.423	0.052	0.022
5	0.22	0.2	0.423	0.044	0.019
5.2	0.24	0.2	0.588	0.048	0.028
5.4	0.18	0.2	0.403	0.036	0.015
5.6	0.12	0.2	0.136	0.024	0.003
5.8	0	0.1	0	0	0.000

1.8

1.8

0.1112

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 29-May-17

Site: KZ-6 Trib to Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
0.8	0	0.1	0	0	0.000
1	0.36	0.3	0.346	0.108	0.037
1.4	0	0.2	0	0	0.000

0.6

0.6

0.0374

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 28-May-17

Site: KZ-5 Mainstem Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.35	0	0.075	0	0	0.000
1.5	0.06	0.175	0.098	0.0105	0.001
1.7	0.09	0.2	0.369	0.018	0.007
1.9	0.11	0.2	0.376	0.022	0.008
2.1	0.13	0.2	0.423	0.026	0.011
2.3	0.03	0.2	0.127	0.006	0.001
2.5	0.05	0.2	0.122	0.01	0.001
2.7	0.02	0.25	0.035	0.005	0.000
3	0	0.15	0	0	0.000

1.65 1.65 0.0291

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 29-May-17

Site: KZ-4 Trib to Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.7	0	0.15	0	0	0.000
2	0.06	0.25	0.148	0.015	0.002
2.2	0.14	0.2	0.029	0.028	0.001
2.4	0.14	0.2	0.266	0.028	0.007
2.6	0.16	0.2	1.022	0.032	0.033
2.8	0.09	0.2	0.629	0.018	0.011
3	0.1	0.2	0.564	0.02	0.011
3.2	0.1	0.2	0.508	0.02	0.010
3.4	0.14	0.25	0.391	0.035	0.014
3.7	0	0.15	0	0	0.000

2 2 0.0896

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 28-May-17

Site: KZ-3 Trib to Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.2	0	0.1	0	0	0.000
1.4	0.06	0.2	0.089	0.012	0.001
1.6	0.07	0.2	0.423	0.014	0.006
1.8	0.07	0.2	0.707	0.014	0.010
2	0.12	0.2	0.676	0.024	0.016
2.2	0.14	0.2	0.644	0.028	0.018
2.4	0.08	0.2	0.564	0.016	0.009
2.6	0.08	0.2	0.323	0.016	0.005
2.8	0.04	0.2	0.083	0.008	0.001
3	0.05	0.3	0.078	0.015	0.001
3.4	0	0.2	0	0	0.000
2.2		2.2			0.0672

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 28-May-17

Site: KZ-2 Summit Creek - trib to EF Nansen

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.1	0	0.05	0	0	0.000
1.2	0.03	0.1	0.0854	0.003	0.000
1.3	0.05	0.1	0.114	0.005	0.001
1.4	0.06	0.1	0.089	0.006	0.001
1.5	0.06	0.1	0.226	0.006	0.001
1.6	0.08	0.1	0.221	0.008	0.002
1.7	0.1	0.1	0.182	0.01	0.002
1.8	0.07	0.1	0.178	0.007	0.001
1.9	0.08	0.1	0.058	0.008	0.000
2	0	0.05	0	0	0.000

0.9 0.9 **0.0080**

No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 29-May-17

Site: KZ-1 Mainstem Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.8	0	0.05	0	0	0.000
1.9	0.04	0.1	0.203	0.004	0.001
2	0.06	0.15	0.203	0.009	0.002
2.2	0	0.1	0	0	0.000

0.4	0.4	0.0026
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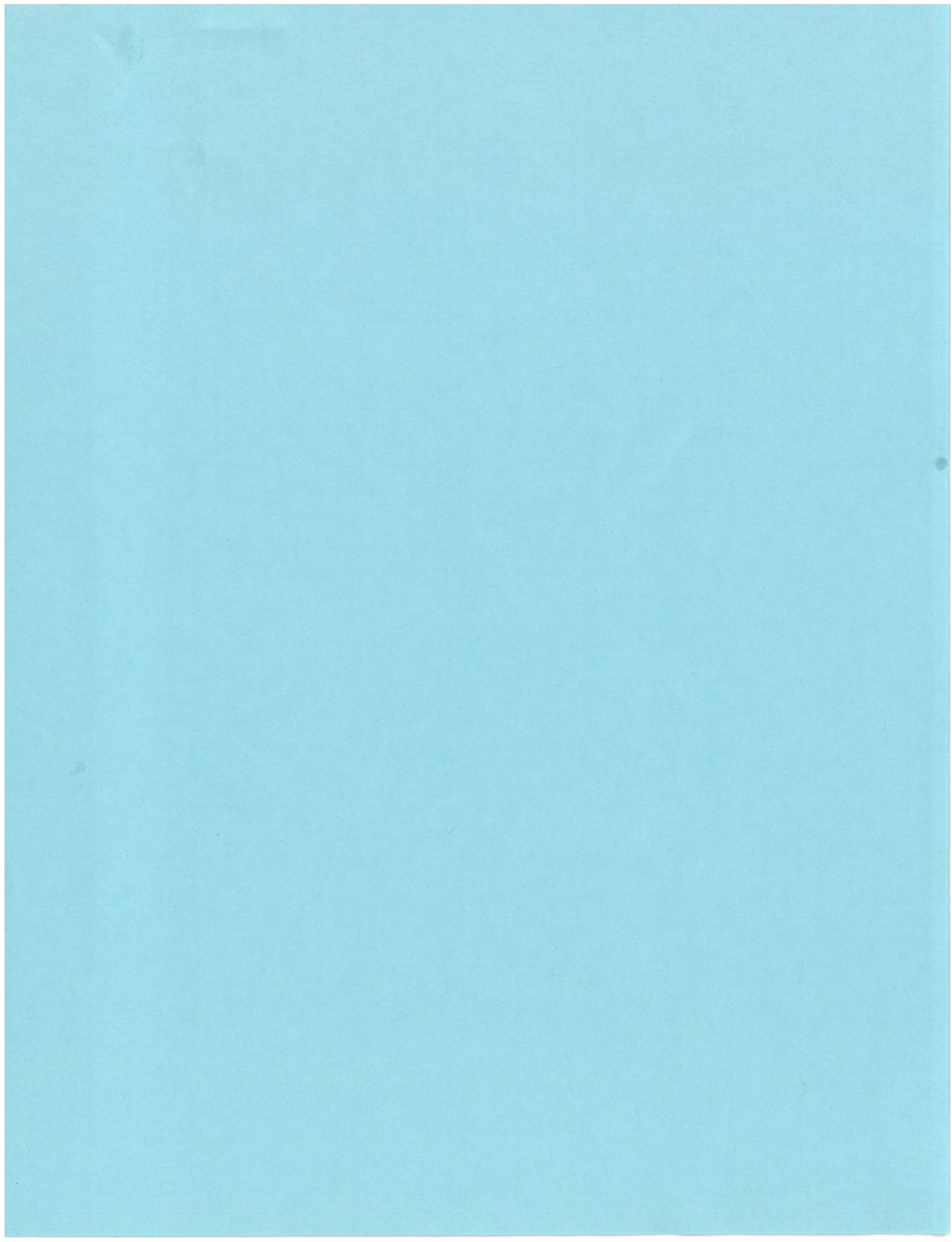
No Staff Gauge

Data logger reading: No logger

Channel under ice? No

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: G.Ford



APPENDIX 2

STREAM FLOW VOLUME CALCULATIONS

February, 2017

Stage Discharge Calculations

Project: RockHaven-Klaza

Date: 06-Feb-17

Site: KZ-9 Mainstem Klaza River

Point (m)	Depth (meters)	Width (meters)	Velocity (m/sec)	Area (m sq)	Volume (cms)
1.6	0	0.2	0	0	0.000
2	0.07	0.3	0.112	0.021	0.002
2.2	0.12	0.2	0.135	0.024	0.003
2.4	0.14	0.2	0.391	0.028	0.011
2.6	0.09	0.2	0.254	0.018	0.005
2.8	0.14	0.2	0.262	0.028	0.007
3	0.2	0.25	0.272	0.05	0.014
3.3	0.15	0.3	0.258	0.045	0.012
3.6	0.12	0.45	0.223	0.054	0.012
4.2	0	0.3	0	0	0.000

2.6

2.6

0.0657

No Staff Gauge

Data logger reading: No logger

Channel under ice? ☒ Under Ice - removed for measurement

Method: Price Velocity meter#1/ TS Wading Rod

Measurement By: J.Gibson