Knight Piésold CONSULTING

Management System Certified by: bsi ISO 9001 ISO 14001 ISO 45001 CERTIFIED

August 15, 2023

Knight Piésold Ltd.
Suite 1400 - 750 West Pender Street
Vancouver, British Columbia
Canada, V6C 2T8
T +1 604 685 0543
E vancouver@knightpiesold.com
www.knightpiesold.com

Mr. Mark Thompson
Vice President - Environmental Affairs
Montana Resources, LLC
600 Shields Avenue
Butte, Montana
USA, 59701

Dear Mark,

RE: Q2 2023 – YDTI Quarterly Water Data Summary

1.0 INTRODUCTION

This letter presents a summary of select water management data related to the Montana Resources, LLC (MR) Yankee Doodle Tailings Impoundment (YDTI) from the second quarter (Q2) of 2023, including April through June 2023. The purpose of this letter is to review the monitoring records associated with the YDTI water management systems and identify if any operational changes are recommended. The Q2 letter includes a summary of data related to the following:

- YDTI supernatant pond elevation
- Tailings beach elevations at the discharge points
- Silver Lake Water System (SLWS) flowrates
- Horseshoe Bend (HsB) Weir flowrates
- Seep 10 flowrates
- West Embankment Drain (WED) Extraction Pond flowrates

A photo log showing the current condition of the various water management systems is attached to this quarterly report. The photos were collected as a part of the site visits that were conducted by Knight Piésold Ltd. (KP) and MR on June 12, 2023.

2.0 YDTI SUPERNATANT POND

2.1 POND WATER ELEVATION

MR manually measures the YDTI supernatant pond elevation on a weekly basis. Monthly pond water elevations from 2018 through Q2 2023 are presented on Figure 2.1. The final pond water elevation recorded during the Q2 monitoring period was 6362.8 ft on June 21, which equates to a pond elevation increase of approximately 2.4 ft during Q2 2023. This contrasts the pond elevation decreases that occurred in Q2 of the previous two years and is mainly attributed to greater-than-normal precipitation events and melt of a larger-than-normal snowpack occurring throughout Q2 2023. The total precipitation measured in Q2 2023 was approximately 90% more than the average total in Q2 over the past decade.

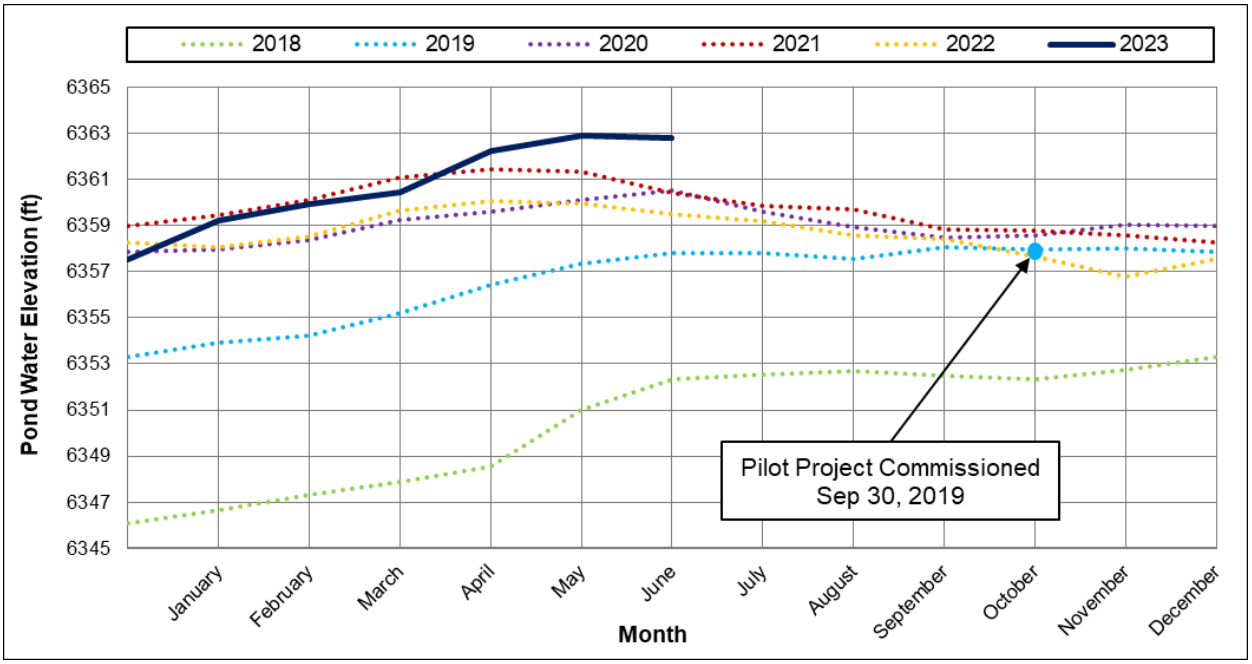


Figure 2.1 Monthly YDTI Pond Water Elevation

2.2 PILOT PROJECT DISCHARGE

The supernatant pond elevation rate of rise (or decrease) is currently affected by MR discharging YDTI water off-site via the Polishing Plant as part of their commitment to reducing the YDTI pond volume to approximately 15,000 acre-ft.

The YDTI supernatant pond had a net volume deficit of approximately 302 million gallons (927 acre-ft) of water in Q2. Approximately 342 million gallons (1,050 acre-ft) of treated Berkeley Pit water was discharged into the YDTI and 644 million gallons (1,976 acre-ft) of YDTI water was discharged off-site during Q2. The quarterly flow records for the Berkeley Pit Pumping System, Polishing Plant discharge, and YDTI quarterly balance since the Pilot Project commissioning in 2019 are shown on Figure 2.2.

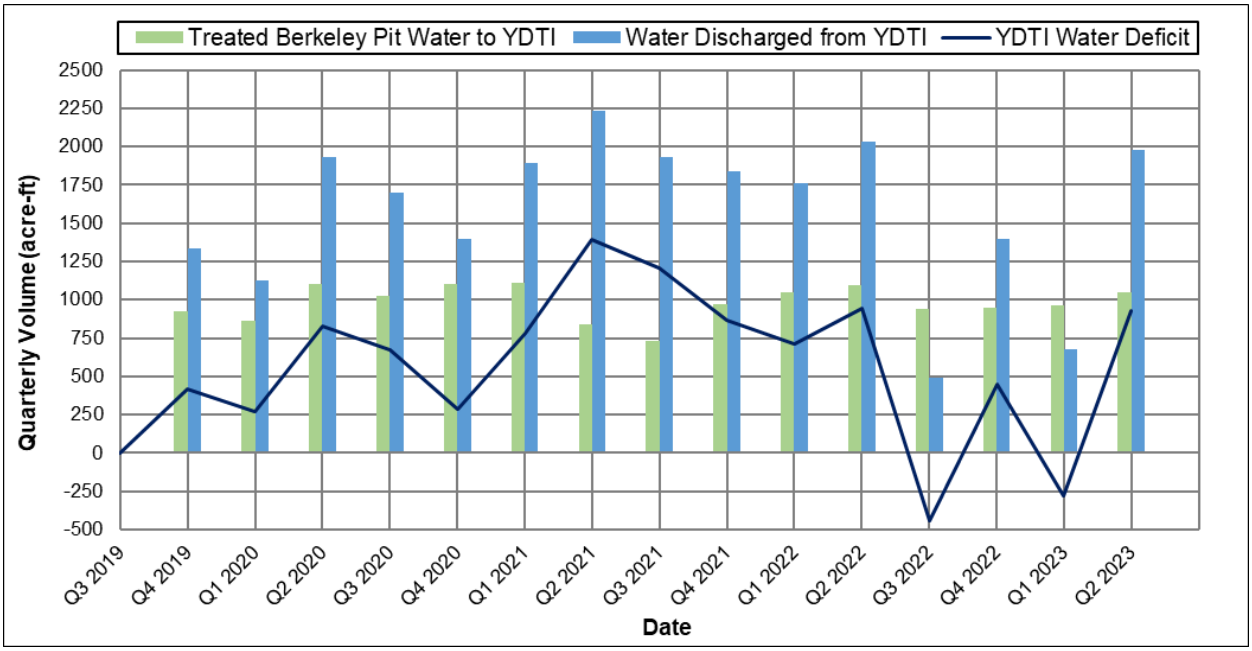


Figure 2.2 Berkeley Pit Pilot Project Flows – Quarterly Summary

3.0 YDTI TAILINGS BEACH

3.1 TAILINGS DISCHARGE LOCATIONS AND BEACH ELEVATIONS

Tailings discharge records indicate that tailings were distributed from all three YDTI embankments during Q2 2023, with four of the ten 26-inch discharge locations and two of the 12-inch discharge lines being used. The tailings discharge locations are shown on Figure 3.1, and the quarterly tailings beach elevations at each of the discharge locations are shown on Figure 3.2.

The discharge spigot with the lowest beach elevation was 3-5 at the end of Q2 2023. The elevation difference between 3-5 and the supernatant pond surface was approximately 12.6 ft at the end of Q2 2023. The location of the lowest discharge point identifies the general area of the facility where the pond may initially contact the embankment in the event the pond elevation rises due to an increase in pond volume (e.g., flooding). MR has completed discharge elevation surveys manually up to June 14, 2023. The last set of discharge elevations shown on Figure 3.2 was obtained by a drone flyover survey conducted on July 12, 2023. MR sent KP the resulting aerial image and surface file, and KP used these files to determine the approximate elevations of the discharge pipe ends at each location. Note that location 1-4 was out of the drone survey bounds.

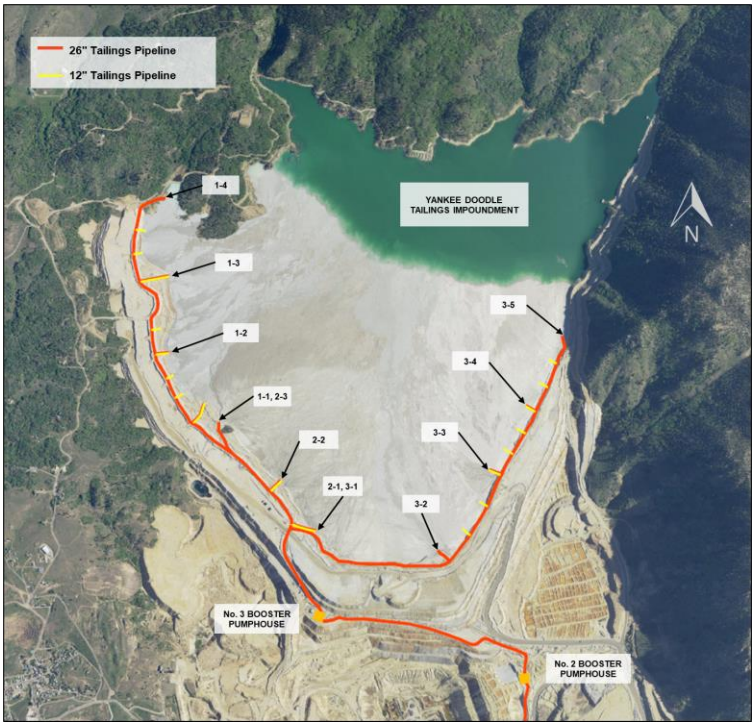
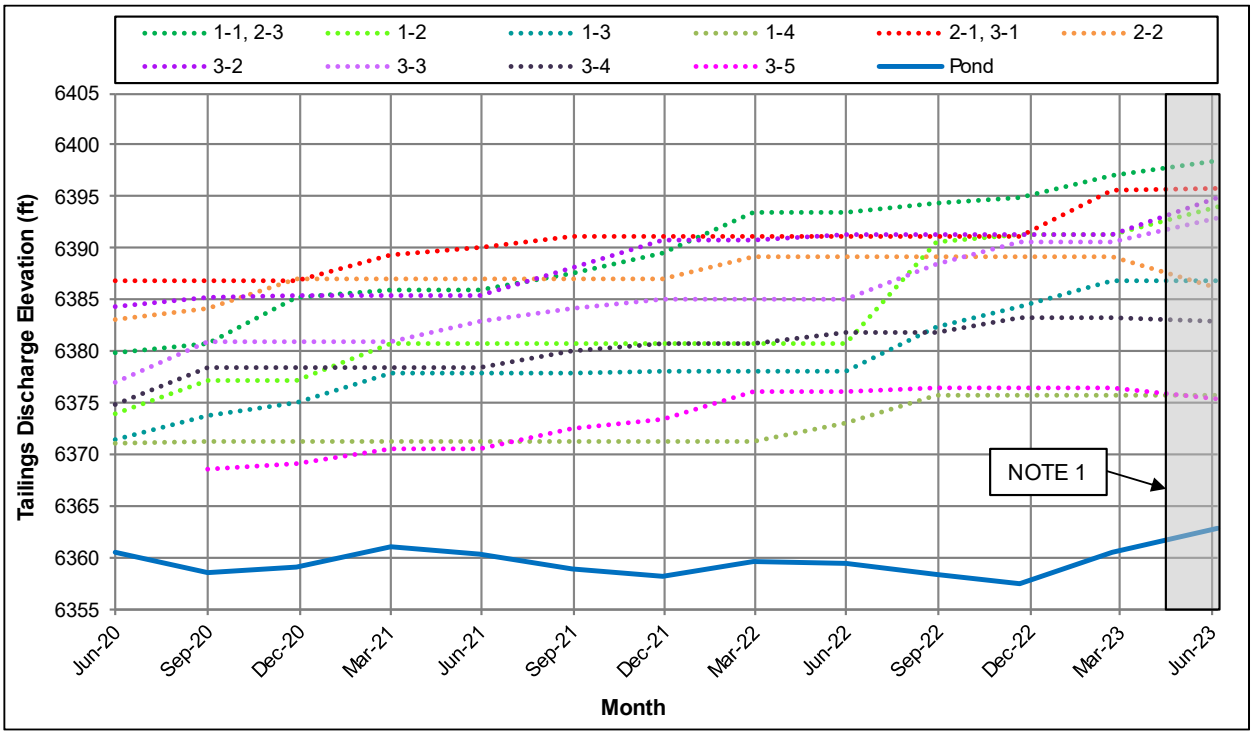


Figure 3.1 YDTI Tailings Discharge Locations



Note(s):

1. Last survey in Q2 completed via drone flyover. Tailings discharge locations were estimated from the drone photo and may differ from previous survey locations.

Figure 3.2 Tailings Discharge Elevations

3.2 TAILINGS BEACH LENGTH

Images captured by the Sentinel-2 satellite are reviewed twice per month to remotely observe the shape of the tailings beach and position of the supernatant pond relative to the embankments. The shortest beach length was observed at the northern end of the North-South Embankment and estimated to be approximately 1,050 ft at the end of Q2, which is approximately 400 ft shorter than the end-of-Q1 2023 beach length. This decrease in beach length is attributed to the greater-than-normal precipitation and snowmelt events, which contributed to the pond water elevation increasing and less beach being exposed as the beach/pond interface extends southward. The minimum beach length however still exceeds the 200 ft minimum beach length Quantitative Performance Parameter (QPP) outlined in the YDTI Tailings, Operation, Maintenance and Surveillance Manual (TOMS) (MR/KP, 2022).

An overview of the facility observed from the Sentinel-2 satellite images near the end of April, May, and June 2023 are presented in the attached figures. The elevations indicated on the end-of-June 2023 image were obtained from the drone survey discussed in the previous section. MR plans to conduct a drone flyover survey on a quarterly basis starting Q3 2023. KP will estimate the discharge locations and elevations based on the aerial image and surface data from MR.

4.0 SILVER LAKE WATER SUPPLY SYSTEM FLOWRATE

Water from the Silver Lake Water System (SLWS) is used to meet both the operational freshwater and make-up water requirements. SLWS flows in Q2 2023 averaged 716 gpm (1.0 Mgpd), which is similar to the average Q2 flowrate over the past five years. Average monthly SLWS flowrates from 2019 through Q2 2023 are shown on Figure 4.1.

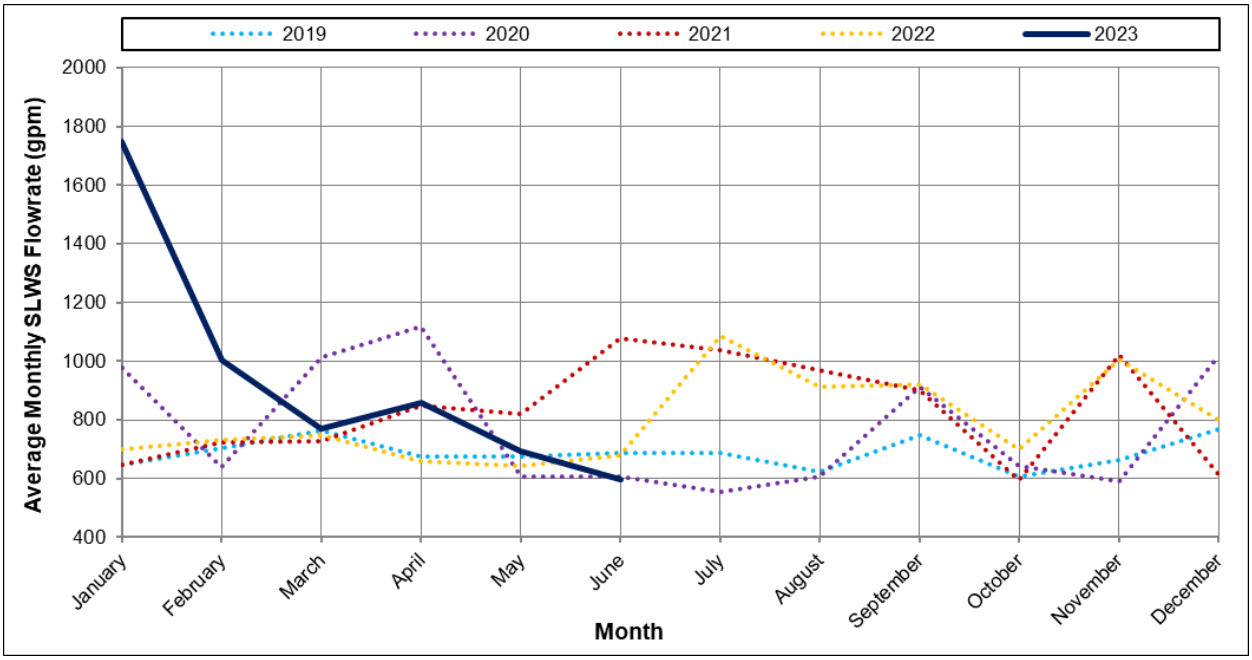


Figure 4.1 Average Monthly SLWS Flowrate

5.0 HSB WEIR FLOWRATE

The HsB Weir records the flow of surface water discharging from the HsB area via the HsB Pond. The flows include YDTI seepage and meteoric inputs from the contributing catchment areas. Seepage from the YDTI flows south through the HsB area and joins with localized surface runoff in the HsB Pond before passing over the HsB Weir. The flow depth over the weir is measured continuously using an ultrasonic lookdown level sensor located upstream of the weir.

The average flowrate during Q2 2023 was approximately 2,810 gpm, which is approximately 510 gpm (15%) lower than the average Q2 flowrate over the past two years. The Q2 2023 average is also similar to the Q1 2023 and Q2 2019 averages; the HsB Weir flowrates may be returning to a steady state since recirculation of leach solutions to the rock disposal sites (RDSs) ceased in Q3 2021. A longer period of data is required before this can be confirmed. Average monthly HsB Weir flowrates are presented on Figure 5.1.

A second level sensor that records the flow depth passing over the HsB Weir was connected to MR's remote monitoring system (Sensemetrics) in December 2022. Calibration/troubleshooting of the Sensemetrics software and program is ongoing. MR will begin using this data as the primary flow-monitoring device once calibration is complete.

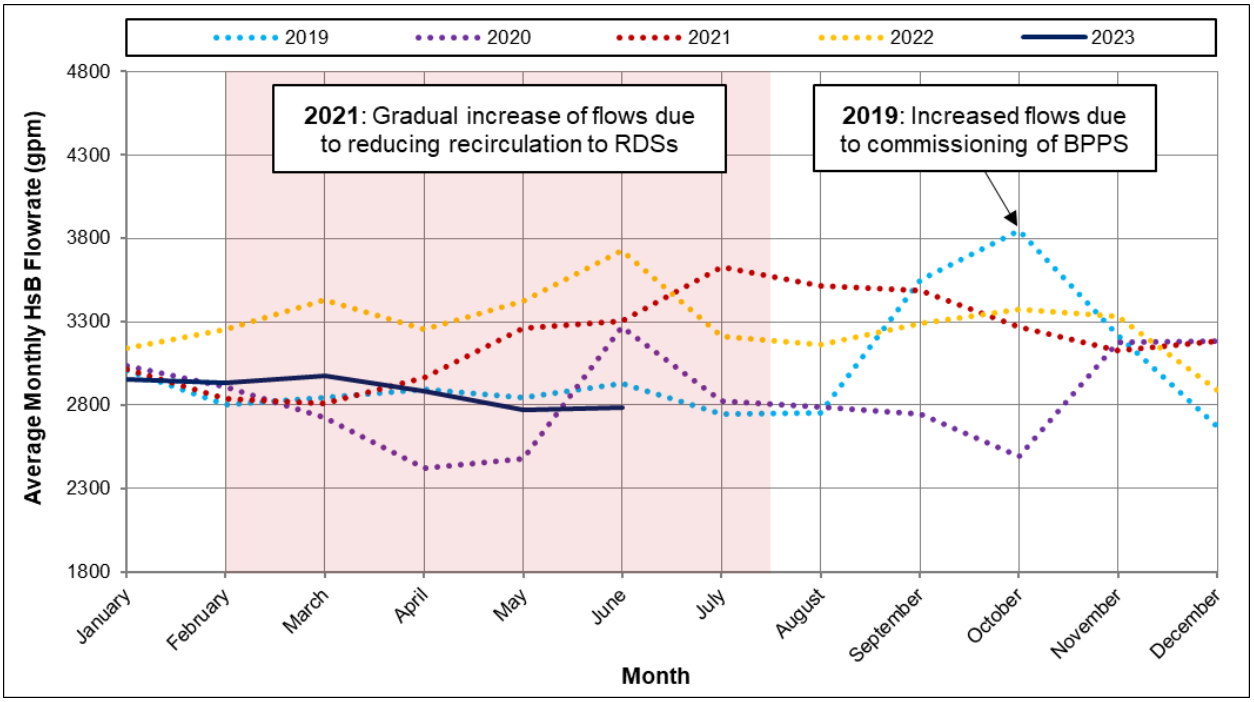


Figure 5.1 Average Monthly HsB Weir Flowrate

6.0 SEEP 10 FLOWRATE

The Number 10 Seeps (Seep 10) daylight on the EL. 5,900 ft bench above the HsB seepage collection area. The seepage is collected in a small pond on the top of the EL. 5,900 ft bench and is routed to the HsB seepage collection area via a pipe. The Seep 10 flows are measured using an ultrasonic lookdown level sensor that automatically measures the stilling pond level near the weir. Images of the Seep 10 stilling pond taken on June 12, 2023 are presented in Appendix A – Photos 1 and 2.

The average monthly Seep 10 flowrates from 2019 through Q2 2023 are presented on Figure 6.1. The flowrates during Q2 2023 were on average approximately 16% (16 gpm) higher compared to Q2 over the past three years. This increase is attributed to the greater-than-normal precipitation and snowmelt events. The seasonal trend remains consistent with the trend observed over the past three years.

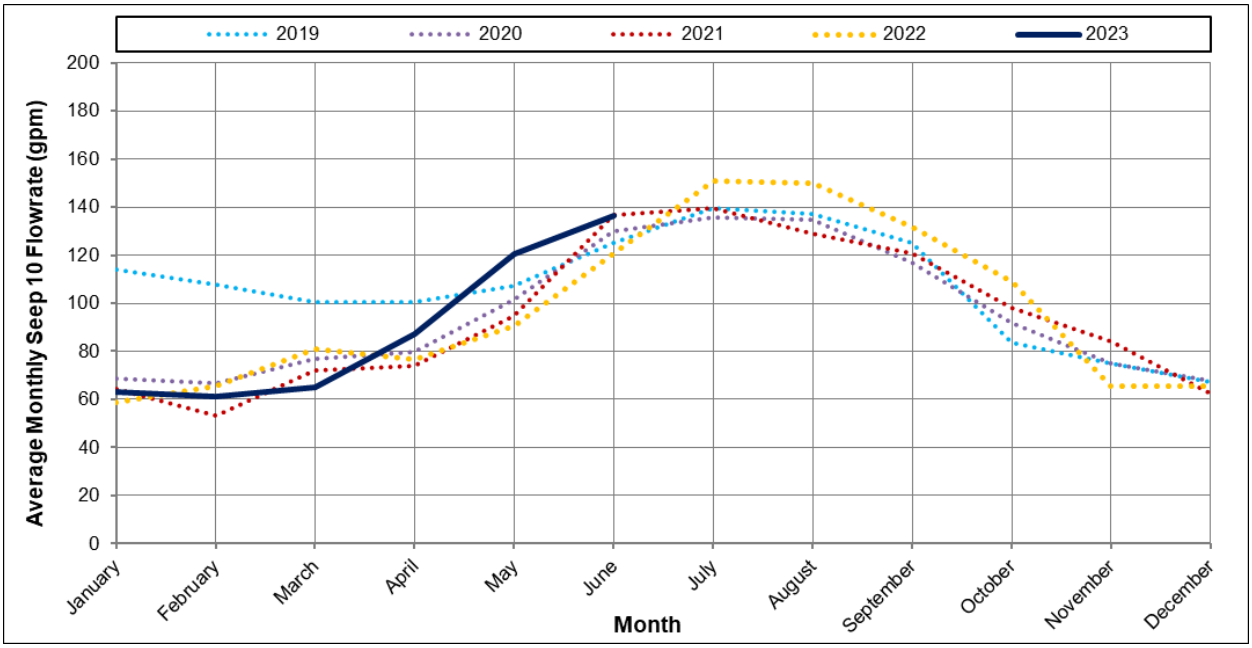


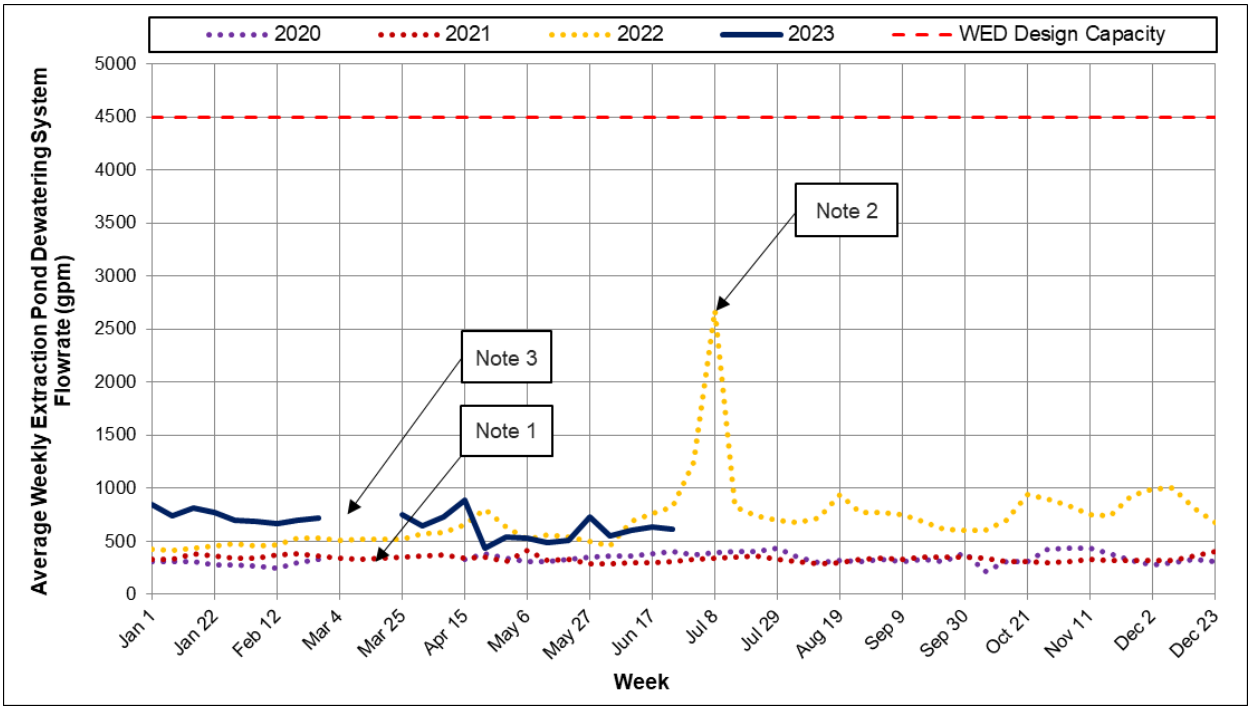
Figure 6.1 Average Monthly Seep 10 Weir Flowrate

7.0 WED EXTRACTION POND DEWATERING SYSTEM

Water collected in the WED flows by gravity into the Extraction Pond and is pumped to the YDTI via the Extraction Pond Dewatering System. The flows are measured using an inline totalizing flowmeter. An image of the WED Extraction Pond and Dewatering System taken on June 12, 2023 is presented in Appendix A – Photo 3.

The average weekly flowrates for the Extraction Pond Dewatering System since it began operating on November 20, 2019 are presented Figure 7.1. The WED average weekly pumping rates ranged between 300 to 500 gpm for the first two years and increased in early 2022 to range between 500 to 1,000 gpm. The increased flowrates recorded since early to mid-2022 are attributed to the discharge of tailings overtop of the historical tailings pipeline corridor for the EL. 6,400 ft lift of the West Embankment causing increased infiltration of tailings water into the WED.

MR and KP anticipate the WED pumping rates will vary throughout the year depending on tailings discharge practices and may slowly decrease over time as the tailings beach thickness increases above the EL. 6,400 ft pipeline corridor bench. MR have been closely monitoring the daily pump data records and conducting regular visual inspections of the tailings beach adjacent to the West Embankment. No adverse conditions have been observed to date. MR will continue to regularly monitor the tailings discharges in this area and associated changes in pumping rates required to maintain dewatering of the Extraction Pond.



Note(s):

1. Erroneous data caused by pump cycling from March to April 2020 were removed.
2. The average weekly Extraction Pond Dewatering System flowrate peaked July 9 to 15, 2022. This high flowrate is attributed to a single event on July 9 associated with power outages and subsequent increase in pumping rate to reduce the WED pond elevation.
3. Erroneous data suspected to be due to a flowmeter error from March 4 to 18, 2023 were removed.

Figure 7.1 Average Weekly Extraction Pond Dewatering System Flowrate

8.0 CONCLUSIONS

The following observations were derived from the analysis of the Q2 2023 YDTI water data records:

- The YDTI supernatant pond elevation increased by approximately 2.4 ft in Q2 2023. This is mainly attributed to a combination of the greater-than-normal rainfall events, and the melting of a large snowpack.
- Operation of the Pilot Project resulted in a net volume deficit of approximately 302 million gallons (927 acre-ft) of YDTI supernatant pond water.
- MR obtained end-of-June 2023 tailings discharge elevations by drone flyover survey. The previous discharge elevations were obtained by MR staff conducting manual surveys on the ground. MR will conduct quarterly drone surveys to obtain discharge elevations starting in Q3 2023.
- SLWS flows averaged 716 gpm (1.0 Mgpd), which is similar to the average Q2 flowrate over the past five years.
- HsB Weir flowrates averaged approximately 2,810 gpm in Q2, which is similar to the Q1 2023 average but approximately 510 gpm (15%) lower than the average Q2 flowrate since recirculation of leach solutions to the RDSs ceased.

- Seep 10 flowrates were on average approximately 16% (16 gpm) higher compared to Q2 over the past three years. This is mainly attributed to a combination of the greater-than-normal rainfall events, and the melting of a large snowpack.
- WED Extraction Pond Dewatering System flowrates continued to be elevated above historical pumping rates during Q1, which is attributed to the rising tailings level and increased tailings slurry water being collected by the WED. MR and KP continue to monitor these flows closely.

We trust that this letter meets your needs at this time. Please do not hesitate to contact the undersigned with any questions.

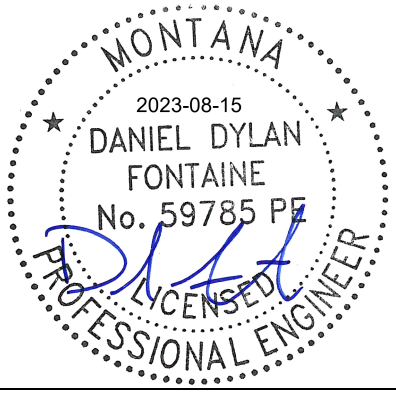
Yours truly,
Knight Piésold Ltd.

Prepared:

Lena Choi, EIT
Project Engineer

Reviewed:

Roanna Dalton, P.Eng.
Specialist Engineer | Associate



Reviewed:

Daniel Fontaine, P.E.
Specialist Engineer | Associate
YDTI Engineer of Record

KNIGHT PIÉSOLD LTD.
PERMIT NUMBER
1001011
EGBC PERMIT TO PRACTICE

Approval that this document adheres to the Knight Piésold Quality System: DDF

Attachments:
Photo Log
Figure A.1 Rev 0 Tailings Beach Assessment – April 27, 2023
Figure A.2 Rev 0 Tailings Beach Assessment – May 25, 2023
Figure A.3 Rev 0 Tailings Beach Assessment – July 6, 2023

References:

Montana Resources and Knight Piésold Ltd. (MR/KP, 2022). Yankee Doodle Tailings Impoundment – Tailings Operations, Maintenance and Surveillance (TOMS) Manual, Rev 5, dated January 2022.

/lc

Q2 2023 – YDTI QUARTERLY WATER DATA SUMMARY
PHOTO LOG

PHOTO 1 – June 12, 2023 – Seep 10 Stilling Pond.

PHOTO 2 – June 12, 2023 – Seep 10 Weir and Staff Gauge reading slightly below 0.4.

Q2 2023 – YDTI QUARTERLY WATER DATA SUMMARY
PHOTO LOG

PHOTO 3 – June 12, 2023 – WED Extraction Pond and Dewatering System.

NOTES:

1. TAILINGS DISCHARGE AND SUPERNATANT POND ELEVATIONS WERE SURVEYED ON APRIL 27, 2023. ALL ELEVATIONS ARE RELATIVE TO THE ANACONDA DATUM.
2. THE MINIMUM BEACH LENGTH AT THE NORTHERN EXTREMITY OF THE N-S EMBANKMENT IS MEASURED FROM THE TAILINGS BEACH AND UPSTREAM EMBANKMENT INTERFACE, AT THE INTERSECTION OF THE N-S EMBANKMENT AND NATURAL TOPOGRAPHY OF RAMPART MOUNTAIN, TO THE TAILINGS BEACH AND POND SURFACE INTERFACE.
3. SENTINEL-2 VISIBLE SATELLITE IMAGE TAKEN ON APRIL 30, 2023.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	15AUG'23	ISSUED WITH LETTER	LC	RSD

MONTANA RESOURCES, LLC.

YANKEE DOODLE TAILINGS IMPOUNDMENT

SENTINEL-2 SATELLITE IMAGERY
TAILINGS BEACH ASSESSMENT
APRIL 27, 2023

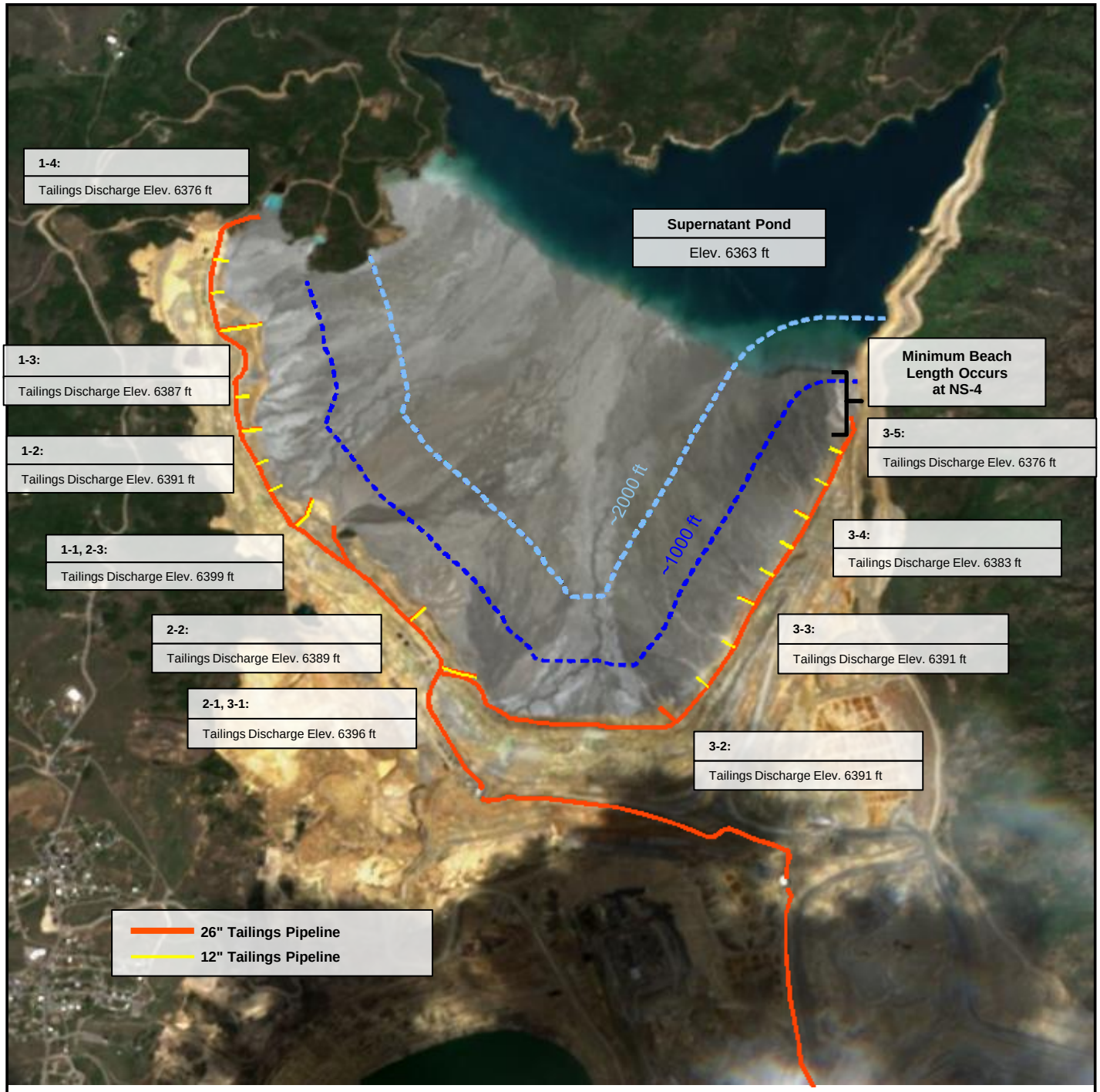
Knight Piésold CONSULTING

P/A NO. VA101-126/29

REF. NO. VA23-01408

FIGURE A.1

REV 0



NOTES:

1. TAILINGS DISCHARGE AND SUPERNATANT POND ELEVATIONS WERE SURVEYED ON MAY 25, 2023. ALL ELEVATIONS ARE RELATIVE TO THE ANACONDA DATUM.
2. THE MINIMUM BEACH LENGTH AT THE NORTHERN EXTREMITY OF THE N-S EMBANKMENT IS MEASURED FROM THE TAILINGS BEACH AND UPSTREAM EMBANKMENT INTERFACE, AT THE INTERSECTION OF THE N-S EMBANKMENT AND NATURAL TOPOGRAPHY OF RAMPART MOUNTAIN, TO THE TAILINGS BEACH AND POND SURFACE INTERFACE.
3. SENTINEL-2 VISIBLE SATELLITE IMAGE TAKEN ON MAY 30, 2023.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	15AUG'23	ISSUED WITH LETTER	LC	RSD

MONTANA RESOURCES, LLC.

YANKEE DOODLE TAILINGS IMPOUNDMENT

SENTINEL-2 SATELLITE IMAGERY
TAILINGS BEACH ASSESSMENT
MAY 25, 2023

Knight Piésold CONSULTING

P/A NO. VA101-126/29

REF. NO. VA23-01408

FIGURE A.2

REV 0

NOTES:

1. TAILINGS DISCHARGE AND SUPERNATANT POND ELEVATIONS WERE SURVEYED BY DRONE FLYOVER ON JULY 6, 2023. ALL ELEVATIONS ARE RELATIVE TO THE ANACONDA DATUM.
2. THE MINIMUM BEACH LENGTH AT THE NORTHERN EXTREMITY OF THE N-S EMBANKMENT IS MEASURED FROM THE TAILINGS BEACH AND UPSTREAM EMBANKMENT INTERFACE, AT THE INTERSECTION OF THE N-S EMBANKMENT AND NATURAL TOPOGRAPHY OF RAMPART MOUNTAIN, TO THE TAILINGS BEACH AND POND SURFACE INTERFACE.
3. SENTINEL-2 VISIBLE SATELLITE IMAGE TAKEN ON JULY 2, 2023.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
0	15AUG'23	ISSUED WITH LETTER	LC	RSD

MONTANA RESOURCES, LLC.

YANKEE DOODLE TAILINGS IMPOUNDMENT

SENTINEL-2 SATELLITE IMAGERY
TAILINGS BEACH ASSESSMENT
JULY 6, 2023

Knight Piésold CONSULTING

P/A NO. VA101-126/29

REF. NO. VA23-01408

FIGURE A.3

REV 0