



**Mount Polley  
Mining Corporation**  
an Imperial Metals company



# **Mount Polley – Public Liaison Committee Meeting**

October 7, 2020

# Public Liaison Committee Meeting

Mount Polley  
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- Roll Call
- Additions to the Agenda
- Approval of Agenda
- MPMC Discussion Items
- Roundtable Discussion
- PLC Questions/Comments
- Next meeting



Vegetation at Polley Flats, Sept. 29, 2020

# Additions to the Agenda



- Are there any additions to the agenda?
- Approval of agenda



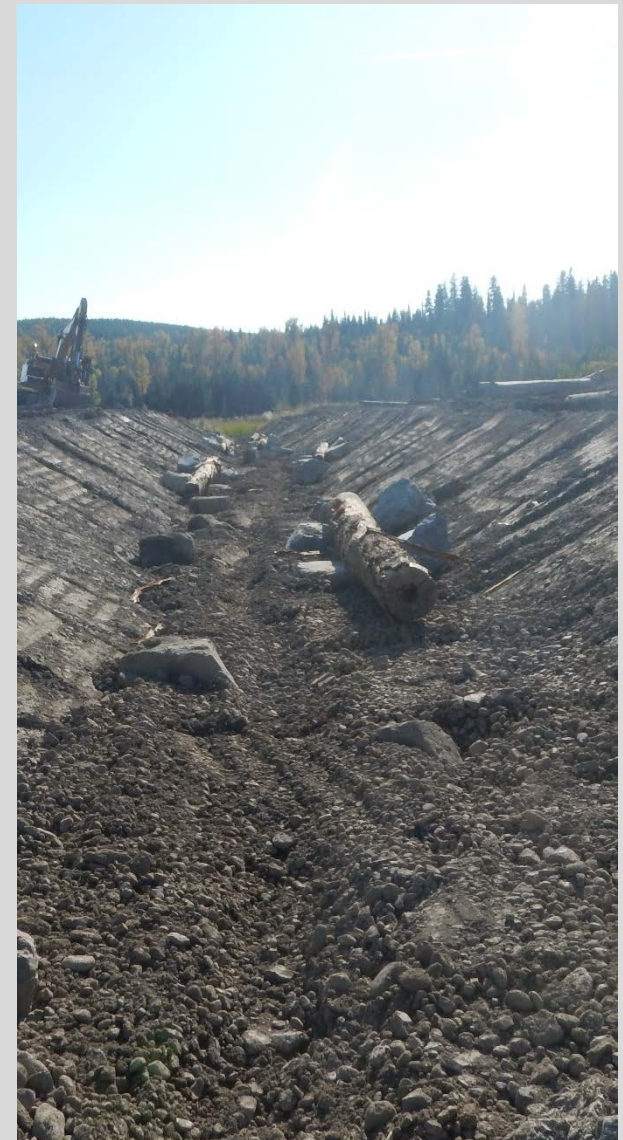
# Discussion Topics



- Care and maintenance update
- COVID-19 Update
- PLC Membership Review
- Environmental Monitoring Update
  - CEMP sample site changes
- Discharge/WTP Update
- Water Management Update
- Remediation Update
- Exploration Update
- ENV/EMPR Discussion
  - Review EMA Permit 11678 Inspection Warning Letter



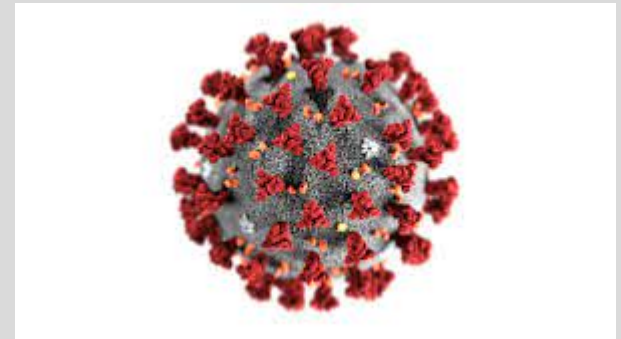
Edney Creek HRWG Tour, September 29, 2020



Edney Creek High Flow Bypass, October 1, 2020



- Care and maintenance activities are ongoing, and all employees are still reporting to work.
- As of March 19 all personnel at the mine site must:
  - practice social distancing
  - frequently wash hands
  - Practice safe sneeze/cough etiquette
  - wear face mask while in vehicle with others
  - must stay home if feeling sick.
  - keep hands away from eyes, nose and mouth
  - Keep work areas and tools clean and hygienic
- Everyone must fill out a COVID-19 questionnaire prior to entering the site and will be turned away if showing symptoms of illness.
- Room occupancy limits and additional cleaning requirements have been implemented



# PLC Membership Review



We have vacant seats on the committee, should we fill them?

| Member Organization   | Seats  | Name  |                 |
|---|--------|---|-----------------|
| BC Ministry of Indigenous Relations and Reconciliation  | 1      | Vacant  |                 |
| BC Ministry of Agriculture*   | 1      | Vacant  |                 |
| BC Ministry of Environment and Climate Change Strategy (ENV)  | 2      | Carol Danyluk, Alan Gibson, Abhirosh Chandran   |                 |
| BC Ministry of Energy and Mines and Petroleum Resources   | 1      | Sean Shaw ? Lowell Constable?   |                 |
| BC Ministry of Forests, Lands and Natural Resource Operations   | 1      | Vacant  |                 |
| BC Ministry of Transportation and Infrastructure  | 1      | Vacant  |                 |
| Interior Health Authority*  | 1      | Vacant  |                 |
| Environment and Climate Change Canada*  | 1      | Vacant  |                 |
| Department of Fisheries and Oceans Canada*  | 1      | Vacant  |                 |
| Soda Creek Indian Band  | 1      | Edna Boston, Mike Stinson   |                 |
| Williams Lake Indian Band   | 1      | Aaron Higgenbottom  |                 |
| Mount Polley Mining Corporation   | 2      | Gabriel Holmes, Dale Reimer, Matt O'Leary, Don Parsons (Imperial Metals), Lyn Anglin (Anglin and Associates), Alicia Lalonde (DWB Consulting) |                 |
| University of Northern British Columbia   | 1      | Vacant  |                 |
| Cariboo Regional District   | 1      | Maureen Lebourdais  |                 |
| Environmental Advocacy Group  | 2      | Christine Mclean (Concerned Citizens of Quesnel Lake), 1 seat vacant  |                 |
| Local communities <sup>1</sup> - Community Member   | 1 each | Doug Watt (Likely), Steve Hocqard (Horsefly), Richard Holmes (Little Lake), Mickey McIntosh (Likely), Bill Carruthers (Williams Lake)         | 8 Members Total |
| Local communities -Business Member  | 1 each | Bee Hooker (Big Lake), Claudine Kadonaga (Likely), Linda Barsch (Horsefly)  | 8 Members Total |
| Local communities - Government Member   | 1 each | Jackie Sarginson, Walt Cobb   | 8 Members Total |
| Local communities - Chamber of Commerce Member  | 1 each | Lisa Kraus, Jaylyn Bayer  | 8 Members Total |
| United Steel Workers  | 1      | Vacant  |                 |
| MPMC Employee Representative  | 1      | Vacant  |                 |
| The Interested Public (if determined by the membership of the PLC that additional representation of the public is needed) | 1      | Vacant  |                 |

\* These members will be invited to PLC meetings when there are topics relevant to their mandates to discuss

<sup>1</sup> Local communities are defined in the Definitions section - 150 Mile House, Big Lake, Horsefly, Likely, Mitchell Bay, Morehead, Little Lake, Williams Lake

# Care and Maintenance Update

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## What is happening?

Water management  
Water treatment plant  
Environmental monitoring  
Exploration  
Remediation construction

Site Improvements  
Open air site tours  
Road building materials for MOT  
Canmag



Cariboo Pit, August 13, 2020

# Site Tours

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- Community Meeting – August 26, 2020
- Habitat Remediation Working Group – September 29, 2020



HRWG tour Sept. 29, 2020

# Environmental Monitoring Update

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Cariboo Pit Lake Sampling, August 13, 2020

Water Sampling  
Surveys and Studies  
Sump and Ditch Inspections  
Seep Surveys  
Flow Monitoring  
Wildlife observation  
Construction Monitoring  
Reporting  
Planning



Constructed Wetland Treatment System, September 17, 2020

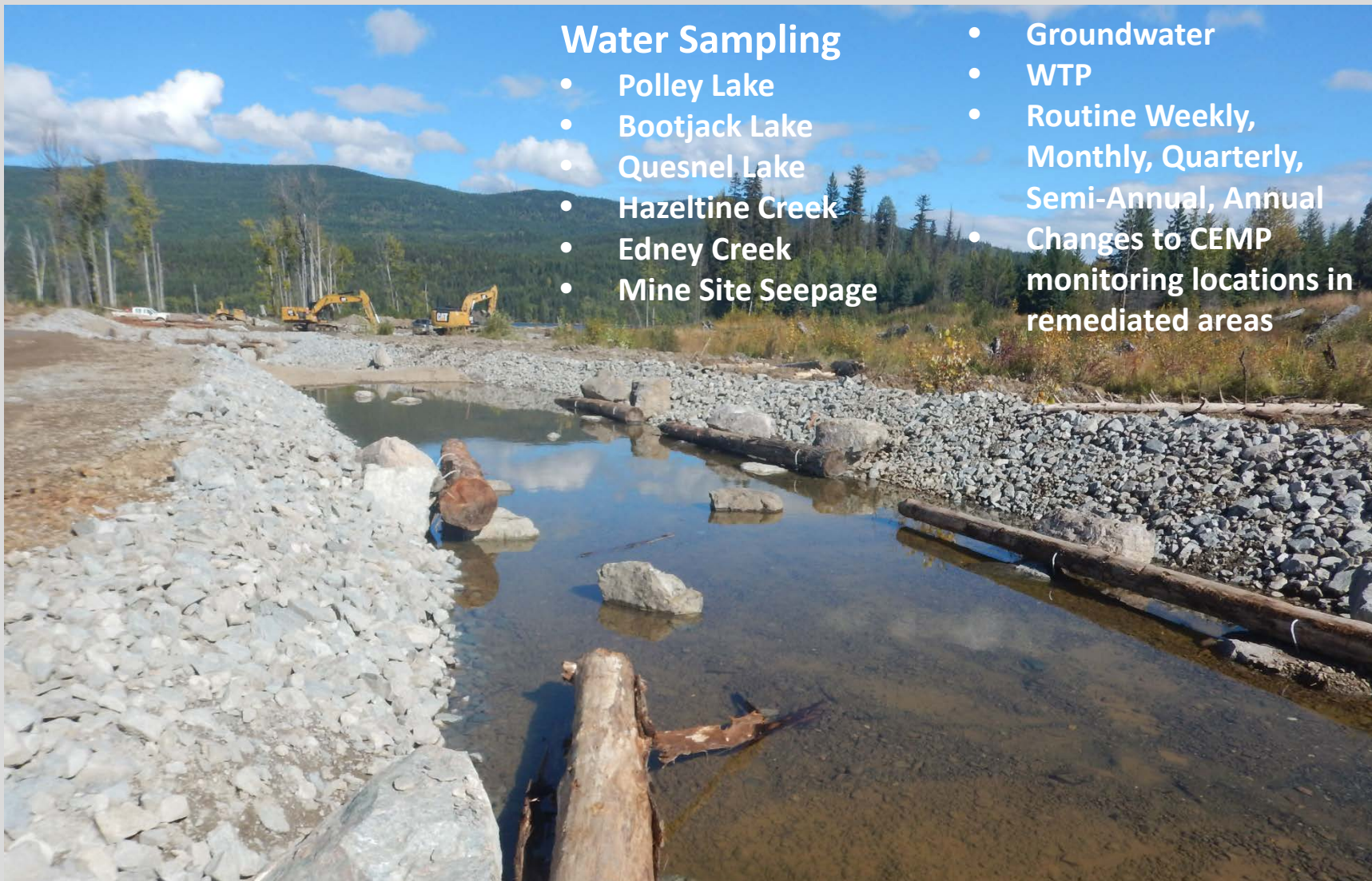
# Environmental Monitoring Update

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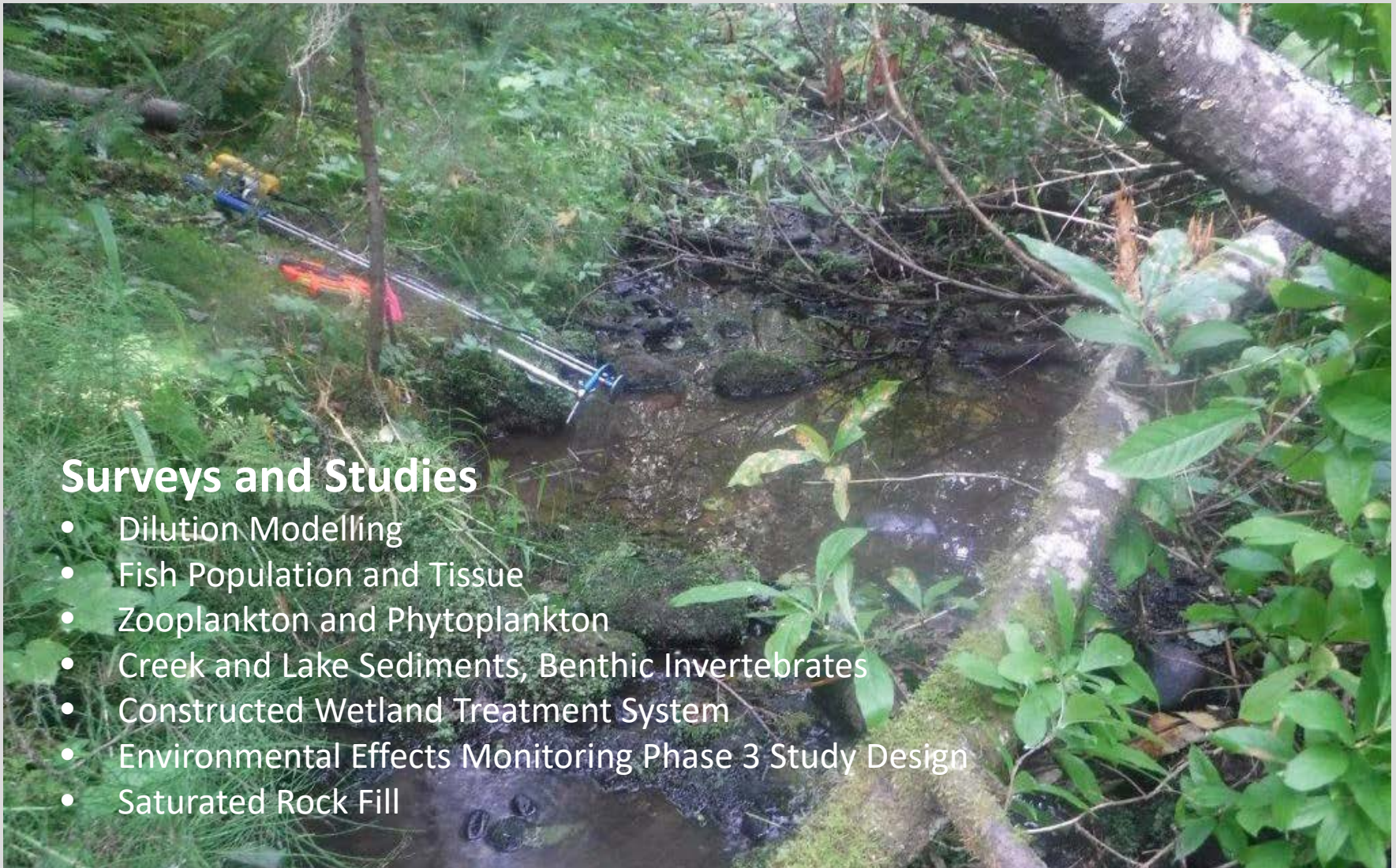


## Water Sampling

- Polley Lake
- Bootjack Lake
- Quesnel Lake
- Hazeltine Creek
- Edney Creek
- Mine Site Seepage
- Groundwater
- WTP
- Routine Weekly, Monthly, Quarterly, Semi-Annual, Annual
- Changes to CEMP monitoring locations in remediated areas



Newly Constructed Edney Creek Channel, September 22, 2020



## Surveys and Studies

- Dilution Modelling
- Fish Population and Tissue
- Zooplankton and Phytoplankton
- Creek and Lake Sediments, Benthic Invertebrates
- Constructed Wetland Treatment System
- Environmental Effects Monitoring Phase 3 Study Design
- Saturated Rock Fill



## Sump And Ditch Inspections

- Permit 11678 Requirement
- Completed twice annually
- All critical ditches, sumps, ponds and pipelines are inspected





## Seep Surveys

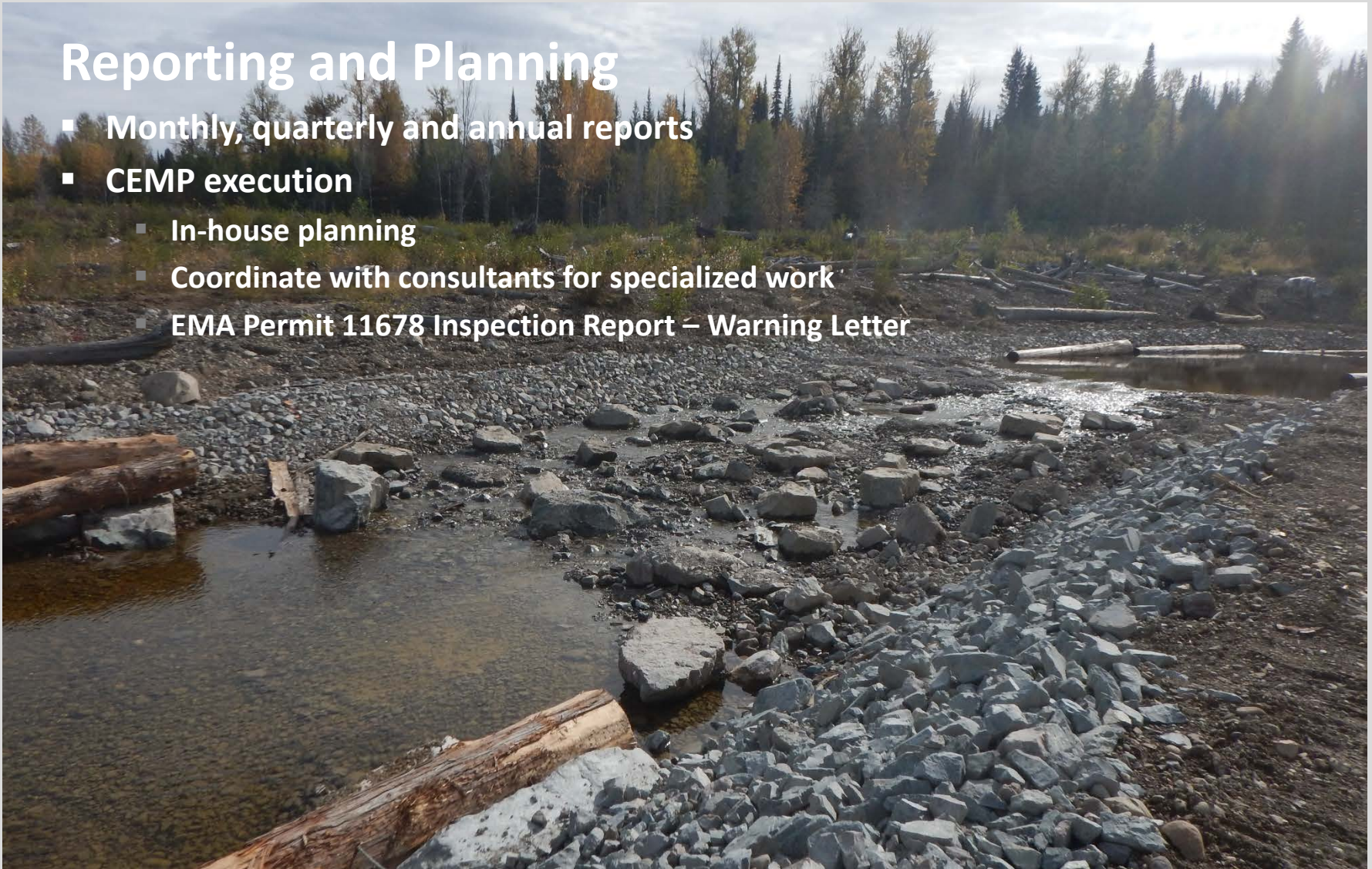
- Sample all significant seepage sources from the toes of dumps and roads.

Seepage at SERD Dump, 2014



## Reporting and Planning

- Monthly, quarterly and annual reports
- CEMP execution
  - In-house planning
  - Coordinate with consultants for specialized work
  - EMA Permit 11678 Inspection Report – Warning Letter

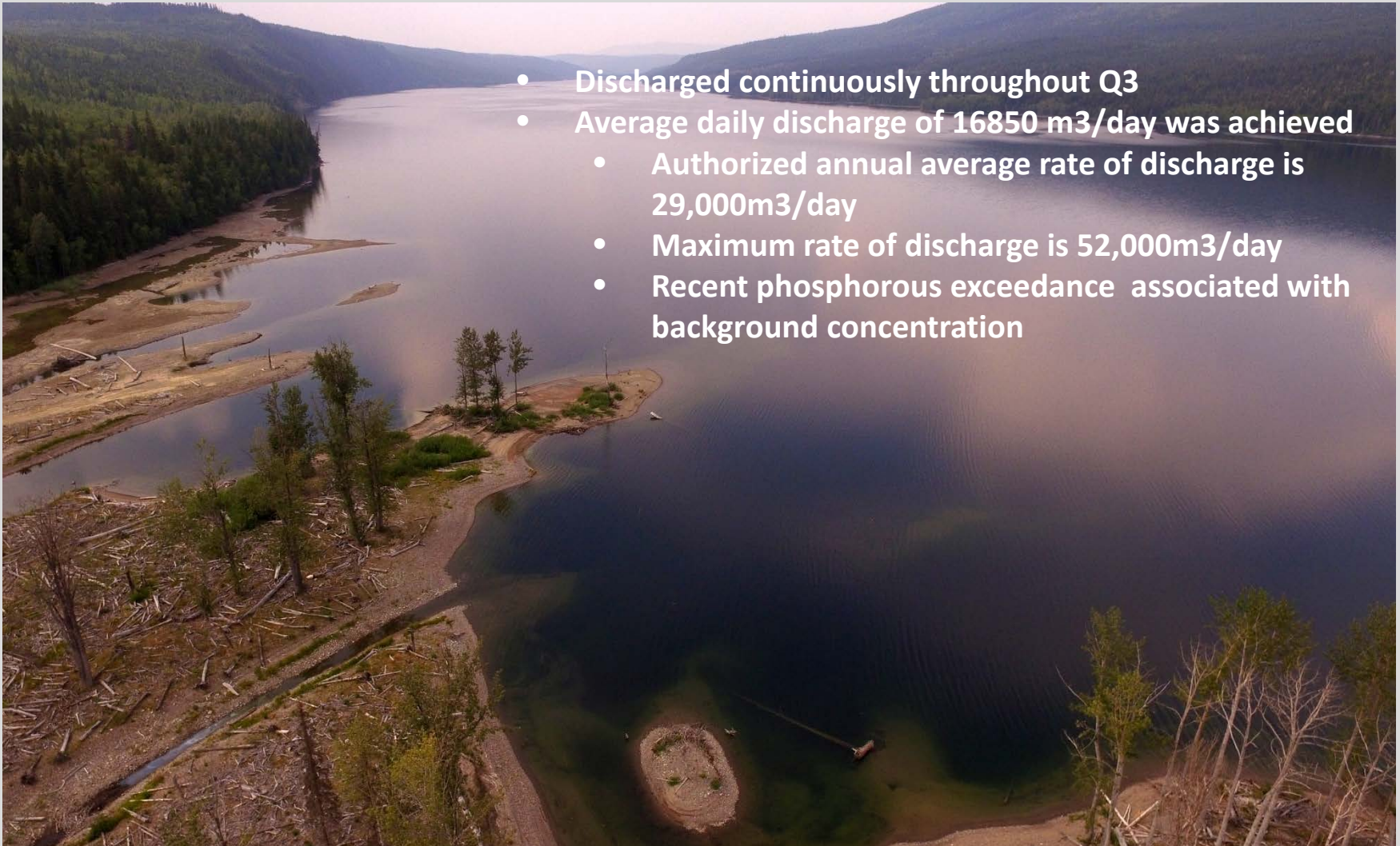


# Discharge/WTP Update

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- Discharged continuously throughout Q3
- Average daily discharge of 16850 m<sup>3</sup>/day was achieved
  - Authorized annual average rate of discharge is 29,000m<sup>3</sup>/day
  - Maximum rate of discharge is 52,000m<sup>3</sup>/day
  - Recent phosphorous exceedance associated with background concentration

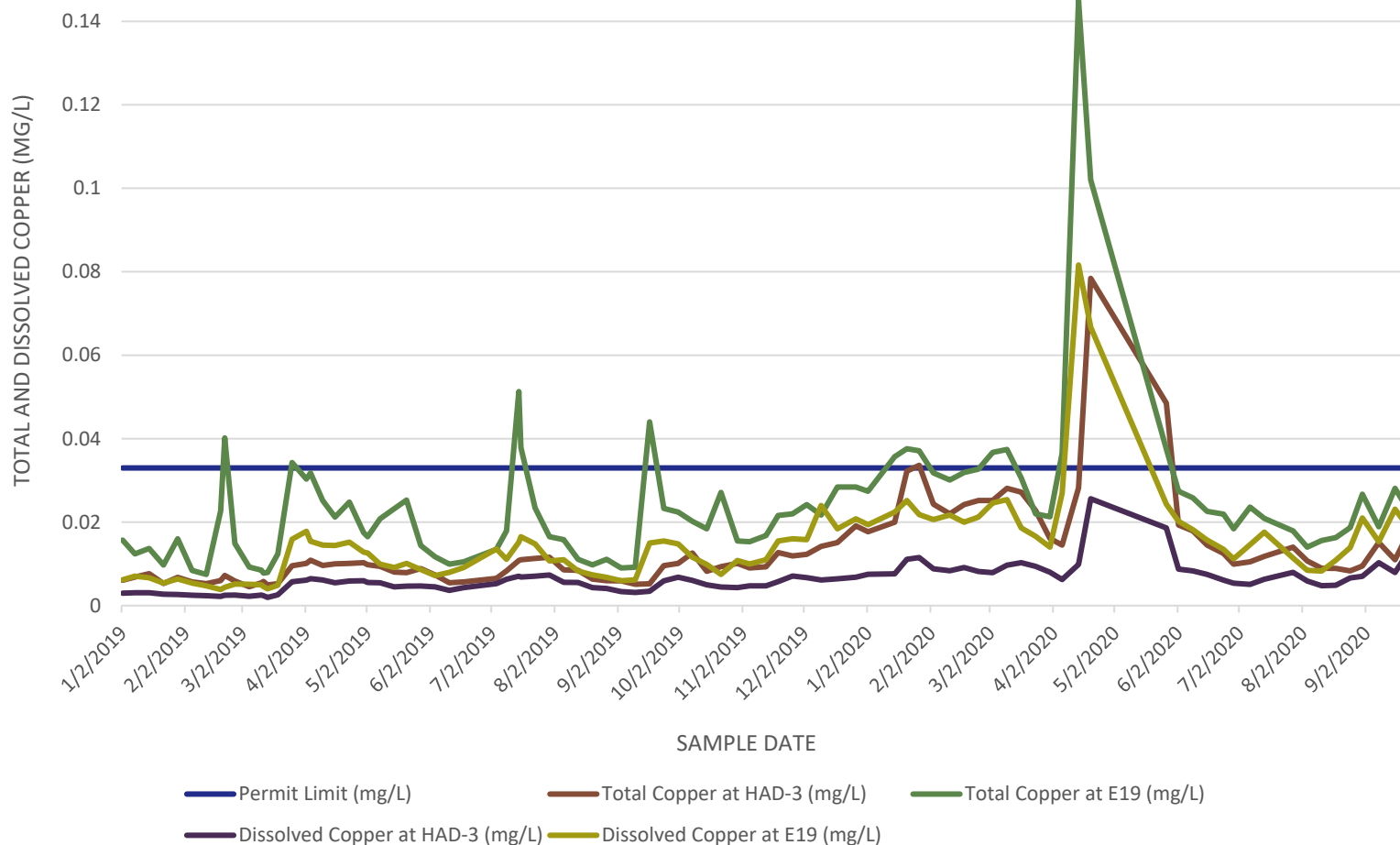


Quesnel Lake Looking Toward Diffusers, July 31, 2018



## Water Treatment Plant – Influent vs. Effluent – Copper

2019/2020 Total Copper Concentrations (mg/L) at HAD-3 and E19



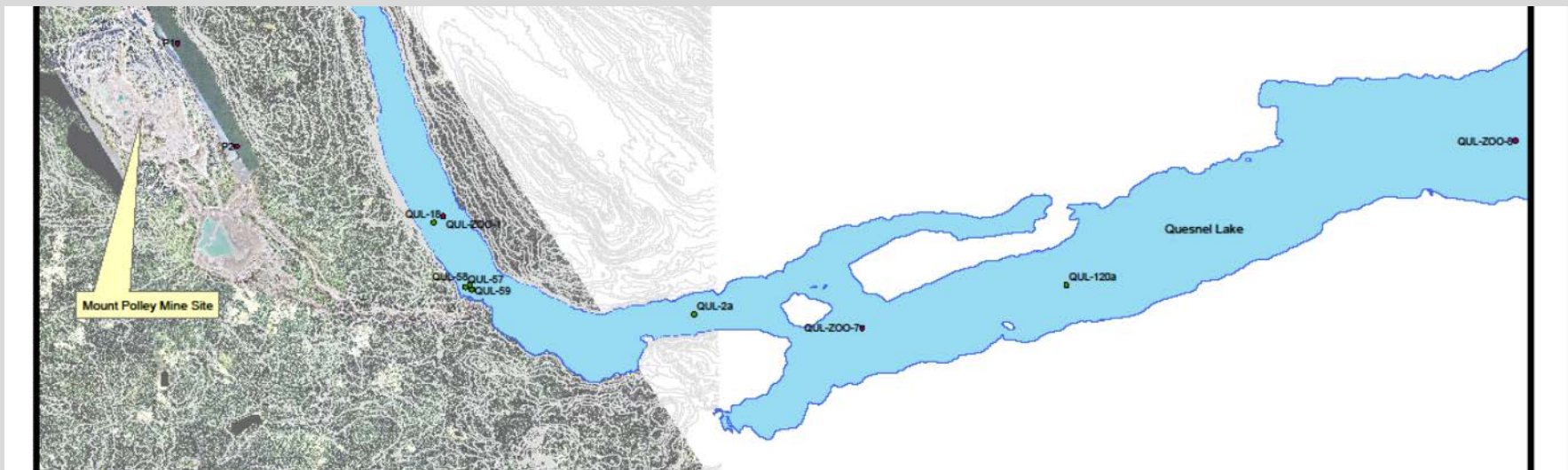


## Quesnel Lake

- Environmental Effects Monitoring Phase 3 Study Design is being developed
- Fish population study will be discontinued as per MDMER Schedule 5, Part 2, Section 9. Previous study and modelling results indicate that the criteria has been met.

“a study respecting fish population, if the highest concentration of effluent in the exposure area, during a period in which there are deposits, is greater than 1% at any location that is 250 m from a point at which the effluent enters the area from a final discharge point, unless the results of the previous two biological monitoring studies indicate

- (i) for all effect indicators with no assigned critical effect size, no effect on the fish population, and
- (ii) for all effect indicators with an assigned critical effect size, no effect on the fish population or an effect on the fish population the absolute value of the magnitude of which is less than the absolute value of its assigned critical effect size;”



# Water Management

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Water storage on site (TSF & Pits)  
Water Treatment Plant  
WTP bypass  
Polley Lake control structure  
Research  
Ditches and sumps  
NEZ seeps  
TSF status

Tailings Storage Facility, October 1, 2020

# Water Storage



## Weekly TSF & Water Management Systems Status

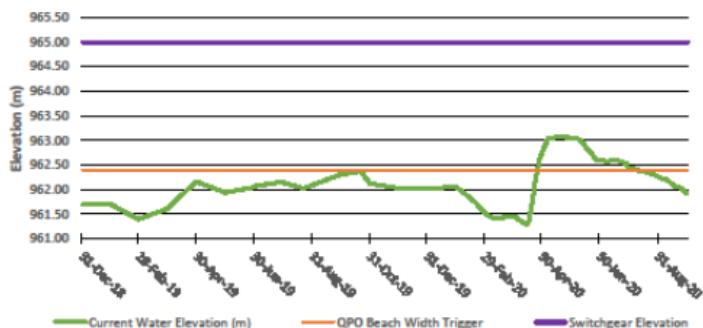
October 1, 2020

| Water Management Status  |          |                   | Instrumentation Status             |                      |
|--------------------------|----------|-------------------|------------------------------------|----------------------|
| Pond Elevation           | 961.92   | m                 | Inclinometers                      | within QPO*          |
| Freeboard                | 6.1      | m                 | Piezometers                        | within QPO*          |
| Current TSF Volume       | 1.83     | Mm <sup>3</sup>   | IPI                                | within QPO*          |
| Remaining Storage        | 8.84     | Mm <sup>3</sup>   | Survey Monuments                   | within QPO*          |
| Min. Till Height         | 968.0    | m                 | SAA                                | Golden to Review     |
| WTP                      | 809      | m <sup>3</sup> /h | Beach @ Corner 1                   | within QPO*          |
| SP Tails Remaining       | 2.04     | Mm <sup>3</sup>   | Beach @ P. Emb                     | within QPO*          |
| SP Tails Removed         | 1.15     | Mm <sup>3</sup>   | Beach @ M. Emb                     | within QPO*          |
| SP Elevation [Mine Grid] | 1,003.50 | m                 | Beach @ S. Emb                     | within QPO*          |
| SP Remaining Storage     | 10.00    | Mm <sup>3</sup>   | TSF Volume                         | < 1.7Mm <sup>3</sup> |
| CP Elevation [Mine Grid] | 996.42   | m                 | Pit Monitors                       | within system        |
| CP Remaining Storage     | 6.99     | Mm <sup>3</sup>   | *QPO Ref #1413803-085-TM-Rev3-5115 |                      |

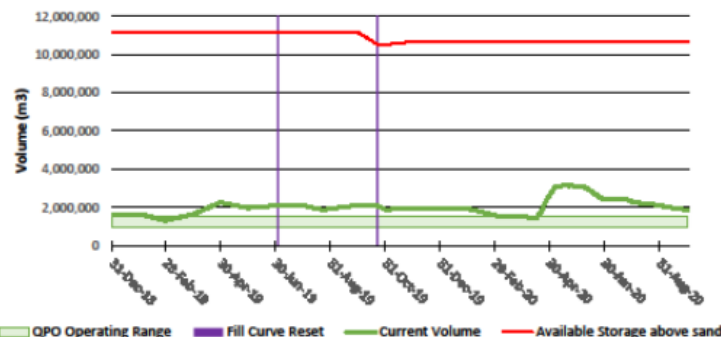
| Pumping/Flow Status |           |                  |  |       |   |
|---------------------|-----------|------------------|--|-------|---|
| Location            | Pumps     | Destination      | Max Vol per Pump (m <sup>3</sup> /day) | Usage | Approx Vol Pumped (m <sup>3</sup> /day) |
| WTP                 | 1 of 1    | To Quesnel Lake  | 20,000                                 | 97%   | 19,400                                  |
| NEZ Sump            | 1 of 1    | To Wight Pit     | 20,000                                 | 5%    | 1,000                                   |
| NW Sump             | 1 of 1    | To Mine Drainage | 20,000                                 | 5%    | 1,000                                   |
| Barge               | 2 of 4    | To Booster       | 13,000                                 | 57%   | 14,820                                  |
| Wight Pit           | 1 of 1    | To Long Ditch    | 10,000                                 | 100%  | 10,000                                  |
| Till Borrow         | 2 of 2    | To TSF           | 20,000                                 | 0%    | 0                                       |
| CCS                 | 1 of 1    | To TSF           | 30,000                                 | 0%    | 0                                       |
| TSF Booster         | 2 of 3    | To Mill          | 13,000                                 | 25%   | 6,500                                   |
| TSF Booster         | 2 of 3    | To CCS           | 13,000                                 | 32%   | 8,400                                   |
| Mill                | 1 gravity | To Cariboo Pit   | 11,500                                 | 0%    | 0                                       |

| Location     | Volume - This week (Mm <sup>3</sup> ) |
|--------------|---------------------------------------|
| TSF          | 1.83                                  |
| Cariboo Pit  | 2.24                                  |
| Springer Pit | 2.81                                  |
| Wight Pit    | 0.00                                  |
| Total        | 6.88                                  |

Current TSF Water Elevation



Current TSF Water Volume



## Comments

- TSF continues to drop. Any extra water is going to WTP.
- TSF needs to be ~961.70m to meet QPO Volume.
- Springer and Cariboo Pits still increasing due to ground infiltration
- Still making excellent progress on dewatering the TSF. A bit slower this week due to WP pumping 100%
- No concerns this week



- Dewater TSF and conveying water around site
- Operate WTP
- Temporarily store water in pits for future treatment and discharge

# Remediation Update

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- Commenced 2020 work on July 6<sup>th</sup>, completed on Oct 6
- Comprehensive fish salvage completed
- HRWG met and toured the site
- Design changes were incorporated based on HRWG input
- Key Features

- Instream habitat

Pools, riffles, runs, floodplains, boulders, coarse woody debris

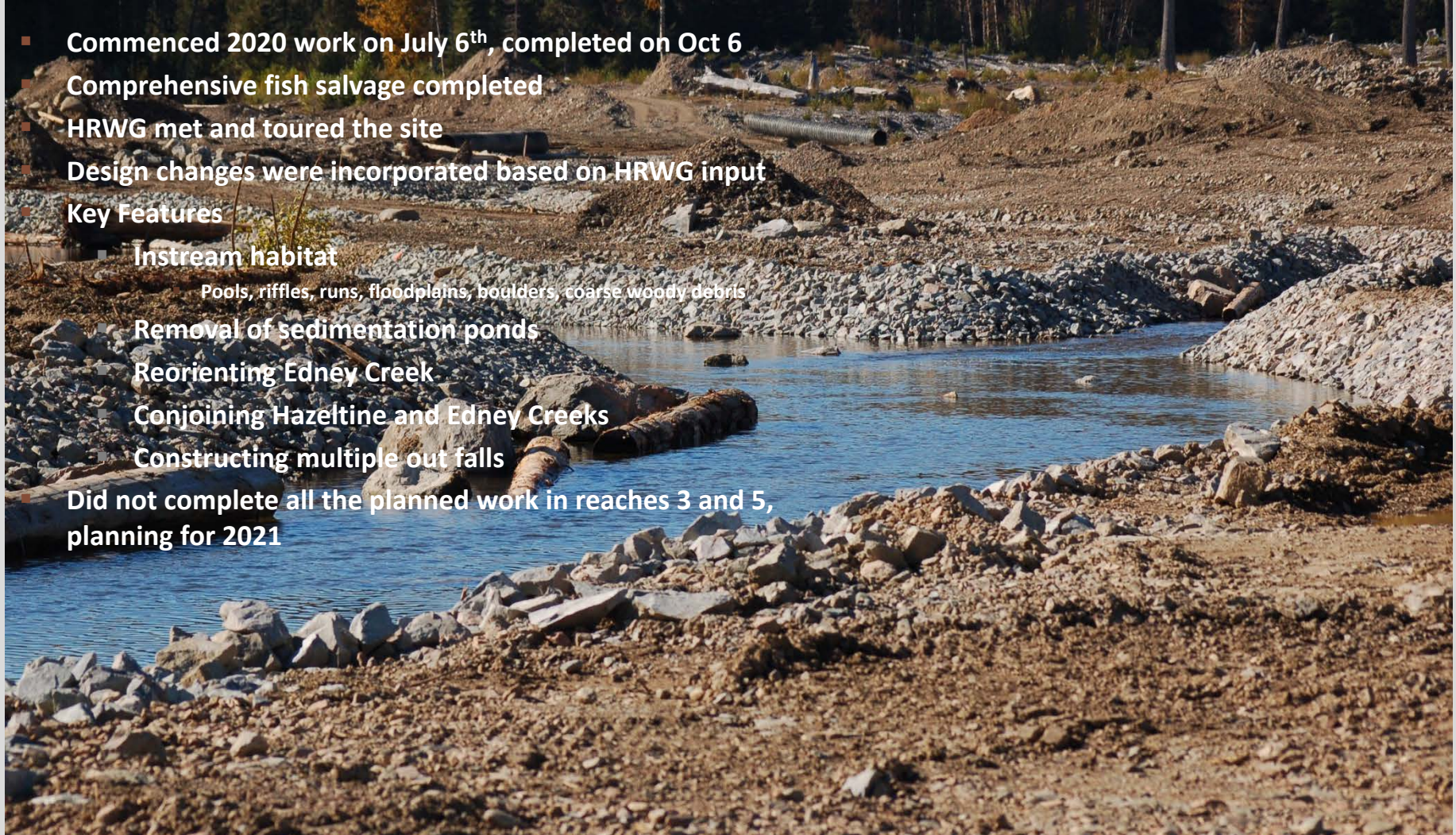
- Removal of sedimentation ponds

- Reorienting Edney Creek

- Conjoining Hazeltine and Edney Creeks

- Constructing multiple out falls

- Did not complete all the planned work in reaches 3 and 5, planning for 2021



# Remediation Update



## Outstanding work includes:

### Upper Hazeltine

- Polley Lake Shoreline -soil cap and shore gravels
- Roads in Polley Flats
- Lower floodplain upstream of Gavin Lake Rd bridge

### Middle Hazeltine

- Lower floodplain in reach 3, including coarse woody debris, perching and denning habitat
- “Blowout” area
- Re-contour access roads (R2, R3, R4) to tree line

### Lower Hazeltine

- Hazeltine Creek Reach 5
- Parking area

Planning an interpretive walking trail from Raft Creek Rec. Site anyone? Here's a clue: I am



## Completed Work

- Notice of Work Application (NoW) on Mineral Claims.
- Deemed Authorization Permit on Mine Permit Area.
- Geological Mapping of “New” areas.
- Ground truth the exploration drill targets.
- Plan easiest, non-invasive access and diamond drill sites.
- Complete 3-D IP over mine site known mineralization for new exploration and create fingerprint of known mineralized bodies.
- Diamond drill prioritized targets, MMI and Geophysical targets.

## Planned Work

- Diamond drilling



# Compliance Review Update

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ENV Update – Permit 11678

EMPR Update – Permit M-200



## EMA Permit 11678 Inspection Report – Warning Letter

- Outlines review of the MPMC 2019 Annual Environmental Report
- “Out” of compliance issues are reviewed and resolved, if possible
- Some out of compliance items cannot be resolved and will likely occur in the future
  - Quesnel Lake sample depths
    - Requirement to sample at same depths is often not achievable due different site depths
    - Requirement to sample below plume is not achievable if the plume is at the bottom of the lake
  - Permit conditions change

## Other Issues include

- 2019 CEMP submitted in Oct 2019, still not approved. New plan is due March 2023
- ENV communication on aspects of monitoring plan that are planned to be discontinued
  - Sediment toxicity testing in Polley Lake
  - Variance to remove DGT monitoring from the plan
- EMA permit appeal

# Roundtable Discussion

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Questions?



Black Bear on Polley Lake Shore at Bootjack Creek, May 25, 2020

# Next Meeting

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Next PLC meeting?





PLC Sharepoint Site:

<https://imperialmetals.sharepoint.com/sites/MountPolleyLiaison/Shared%20Documents/Forms/AllItems.aspx>

BC Ministry of Environment Natural Resource and Enforcement Database:

<https://a100.gov.bc.ca/pub/ocers/searchApproved.do?submitType=menu>

BC Mine Information page:

<https://mines.nrs.gov.bc.ca/>

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