Agenda

• Abandoned Mines in Belt

• The Objective for Cleanup

• Water Treatment Progress and Next Steps

• DEQ Property

• French Coulee Ponds and Lewis Coulee

• Questions/Comments
Historical Coal Mining and Coking
Chemistry Of Pyrite Weathering: The Acid-Forming Process

Summary Reaction For Pyrite Weathering

Pyrite + Oxygen + Water $\rightarrow$ Iron Hydroxide + Sulfuric Acid

$\text{FeS}_2 + \frac{15}{4} \text{O}_2 + \frac{7}{2} \text{H}_2\text{O} \rightarrow \text{Fe(OH)}_3 + 2 \text{H}_2\text{SO}_4$
Anaconda Mine Workings in Belt
Coke Oven Flats
Prior to 1980s
Reclamation
Anaconda Coal Mine

Mine water discharges

1980s reclamation
Belt Creek
Water Quality

Exceeds:
• Aluminum
• cadmium
• iron
• nickel
• zinc
2015 Fish, Wildlife & Parks Investigation

Population Estimates

- Brown Trout
- Rainbow Trout
- Longnose Sucker
- Mountain Sucker
- Mountain Whitefish
- White Sucker

Control Section
Impact Section
Belt Water Treatment
Plant Engineering Design Update

• Finishing 30% Design
• Treatment Type:
  • Single Stage Lime Treatment
• Sludge Management
  • Injection Into Underground Workings
Single Stage Lime Treatment
Single Stage Lime Treatment
Potential Belt Water Treatment Plant Layout
Design Status

**Water Treatment Plant Components Under Design or Study:**
- Building Type/Layout
- Process Layout
- Electrical/Pumps/Controls Design
- Figuring out the best way to capture groundwater at Coke Oven Flats
- Site Civil Design
- Sludge Testing
- Settling Pond design

**Sludge Injection Pipeline Under Design or Study:**
- Pipeline Route
- Pipeline Sizing
- Sludge Testing
- Pump Selection
- Power and Controls Design
Coming up.....

**Treatment Plant**
- Site Layout Design
- Building Planning
- Lewis Coulee Flow Monitoring
- Injection Design Investigation for Millard Mine
- Conceptual Design Completion

**Sludge Injection**
- Reporting on latest mine pump test
- Well casing and grouting
- Test sludge injecting with water
- Pipeline route soil testing
Progress
DEQ Property

- Former MDT Property at Coke Oven Flats
- Boundary Adjustment
- Transfer to City of Belt
- Quiet Title Action
Thank You

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