

**Report of the Independent Review Panel**  
**Periodic Review No. 2 of Yankee Doodle Tailings Impoundment**  
**Montana Resources, LLC**  
**Butte Montana**



Photo provided by Montana Resources, 2025

**Independent Review Panel Members**

Dr. Peter Robertson, P.Eng.  
Dr. Leslie Smith, P.Geo.  
Dr. Dirk van Zyl, P.E.

September 08, 2025

## 1. INTRODUCTION

As part of the ongoing operations of the Yankee Doodle Tailings Impoundment (YDTI) the Montana Code Annotated (MCA) requires that the owner Montana Resources LLC (MR) retain an Independent Review Panel (IRP) to review ongoing designs and operations. The IRP was established in 2015 and has received regular updates from MR and their engineering consultant Knight Piésold Ltd. (KP) on evolving site conditions at the YDTI, construction activities related to the expansion, and results of ongoing site investigation programs, as well as design reports for various raises.

The Montana Code (Section 82-4-380) requires that at least once every 5 years, the IRP undertake a formal review of the facility and submit the findings to the Montana Department of Environmental Quality. The first periodic review was carried out in 2020. In consultation with Montana Resources, Knight Piésold, and Mr. Daniel Fontaine, the Engineer of Record (EOR) for YDTI, the IRP scheduled the second periodic review for the summer of 2025.

Current IRP members are Drs. Peter Robertson, Leslie Smith and Dirk Van Zyl. Drs. Robertson and Van Zyl participated on site for the second Periodic Review.<sup>1</sup> Dr. Smith received a video recording of the meeting and viewed all presentations and associated discussion. Drone video enabled him to observe current conditions at the TSF and Horseshow Bend area. He discussed the IRP findings with the other Panel members following the close-out meeting. On August 21 he interviewed several members of the MR staff and the EOR. Annual inspection reports and other technical reports such as Corrective Action Plans and the 2024 dam breach inundation study have been reviewed by Dr. Smith. The IRP considers that these alternate arrangements satisfy the requirements for the 5-Year Periodic Review.

Montana Code 82-4-380 prescribes the following activities be undertaken by the IRP in the Periodic Review of the YDTI:

- Inspect the tailings storage facility
- Review the Tailings Operation, Maintenance and Surveillance (TOMS) Manual and the records collected in association with the manual
- Interview people with responsibilities identified in the TOMS
- Review the annual EOR inspection reports and the corrective action plans
- Consider any other documents to ensure that the tailings storage facility is constructed, operated and maintained as designed, is functioning as intended and meets acceptable engineering standards.

## 2.0 REVIEW PROCESS ADOPTED BY THE INDEPENDENT REVIEW PANEL

KP provided copies of the following documents:

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<sup>1</sup> Scheduling constraints that could not be resolved meant that Dr. Smith did not attend the Periodic Review meeting in Butte the week of July 14, 2025. The only open time slots that could be found where all three Panel could attend in person were in early 2026, and this delay was deemed unacceptable by the IRP.

- TOMs Manual (dated December 2023),
- Annual inspection reports from 2020 to 2024,
- Corrective action plans from 2020 to 2024,
- YDTI EL 6450 Construction Completion Report,
- 2024 Data Analysis Report
- Q1 2025 YDTI Performance Monitoring Summary.

The inspection of the YDTI was carried out on July 16, 2025, by Drs Robertson and Van Zyl, and high-quality drone videos were provided to the IRP at the meeting. The IRP last visited the YDTI in June 2023 as part of the annual meeting of the Panel. Dr. Robertson also visited the YDTI in April 2024.

The Periodic Review meeting was held on site from July 15 to 17, 2025. The agenda for the meeting is attached as Appendix A. All elevations in this report are in Anaconda Copper Company datum. Technical presentations by KP and MR were given on July 15 and 16. Titles of these presentations are given in Appendix B. On July 15 interviews were held with the management team at MR and the EOR. Names and positions of the people interviewed are given in Appendix C. An overview of the key findings arising from the meeting was presented by the IRP on July 17 and a copy of the Closeout slides are included in Appendix D. Representatives of MR, KP, Atlantic Richfield Company (AR) and the Montana Department of Environmental Quality attended this meeting.

### **3.0 SUMMARY OF CHANGES AT THE YDTI SINCE THE 2020 PANEL REPORT**

KP provided a summary of changes at the YDTI since 2020. In April 2020 construction was started on the 6,450 ft lift and was substantially completed in March 2024. Minor related activities continued through 2024, and a Construction Completion Report and Record Drawings were issued in June 2025.

Two major aspects of operations are tailings deposition and water management. There have been ongoing improvements in beach development since the change from a single point discharge to multiple spigots. Under normal operations, this has pushed the supernatant pond against natural ground at the north end of the facility, well away from the TSF embankments (Figure 1).

## 2024 Aerial



Figure 1 – YDTI as operated in 2024

Important progress continues to be made in water management of the YDTI through the initiation of the Berkeley Pit and Discharge Pilot Project (Berkeley Pit Pilot Project), which is now operating at design capacity. The water management strategy in place over the past 5 years has been successful in reducing the YDTI pond volume down to about 15,000 acre-ft from a peak of about 35,000 acre-ft in 2020.

The reduction in supernatant pond volume promotes risk reduction related to potential piping failures following possible beach inundation. In the unlikely event of a dam breach, the smaller pond volume will also reduce the amount of water and tailings that could be released.

The automation of monitoring systems for the YDTI is at the leading edge of practice providing near real time monitoring data that can be reviewed and acted upon. Since 2017 there has been an improved data analysis frequency and reporting rigor. This is an important outcome of the monitoring system automation. The IRP strongly supports the approach taken by MR to make these investments and by the EOR in making effective use of the technology.

## 4. OBSERVATIONS FROM THE SITE VISIT AND DRONE FLIGHT VIDEO

Drs Robertson and Van Zyl made a comprehensive site visit of the YDTI on July 16, 2025, and MR and KP presented and shared a series of high-quality drone flights that was reviewed with the IRP prior to the site visit. The drone videos were very helpful in providing an up-to-date view of the YDTI surroundings, embankments, deposition locations and overall beach and pond. The IRP made the following observations from the site visit and drone videos:

- No visual evidence of instability of the embankments was seen in the videos and during the site visit
- Good beach and pond management
- Well-coordinated construction activities
- Neat and tidy appearance of all embankments
- Large crest width on all embankments
- West Embankment Drain is functioning as intended
- Stage 1 drainage and rock disposal in the Horseshoe Bend (HsB) area.

## 5. INTERVIEWS WITH THE MANAGEMENT TEAM

The IRP interviewed those persons that were identified in the TOMS manual with key responsibilities in the design, construction, operation, maintenance and/or performance monitoring of the YDTI. Each of the interviews was scheduled for 20 minutes duration. The individuals interviewed and their areas of responsibilities are given in Appendix C.

Based on these discussions, the IRP is satisfied that:

- The management team has the background and experience to direct construction and manage safe operation of the YDTI.
- Each person interviewed was familiar with their job responsibilities as set out in the TOMS Manual.
- The members of the senior staff interviewed are fully engaged in their responsibilities, are competent in their management roles, and have sufficient training in their specialties.
- Each member of the team was sensitive to the needs and appropriate requirements for management of risk.
- Each of the team members indicated familiarity with Montana Resources corporate objective of continuous improvement in operational practice.
- The management team indicated they had sufficient resources to meet their assigned responsibilities.
- The EOR is appropriately engaged with the senior executives of MR and fulfills the responsibilities of the position of EOR. There is an excellent long-standing working relationship between MR and KP.

## 6. REVIEW OF THE TAILINGS OPERATION, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL

The IRP was provided an electronic copy of the TOMS Manual, Rev. 6, dated December 4, 2023.

Section 2 of the TOMS Manual provides an up-to-date organizational chart incorporating the name of each person fulfilling the various roles associated with tailings management. A RASCI matrix (Responsible, Accountable, Support, Consulted, Informed) was included that identified each employee's role within this matrix. This RASCI matrix follows guidance summarized by the Canadian Dam Association (2019) on best management practices for tailings dam safety.<sup>2</sup>

The TOMS Manual (Section 4) includes an up-to-date description of the YDTI and its three embankments (North-South, East-West and West), the tailings delivery and water reclaim systems, the Silver Lake Water System, Horseshoe Bend (HsB) area, surface water management system and the site-wide water balance.

The TOMS manual (Section 5) identifies four key performance objectives and a set of quantitative performance parameters (QPPs) that readily indicate whether the YDTI is being operated in accord with the design concepts. The QPP status is monitored routinely as part of regular surveillance. The QPPs at the YDTI are the pond freeboard, minimum beach length, downstream embankment slope and embankment crest width, and water levels recorded in 17 (of 102) piezometers located on representative sectors of the embankments. The vibrating wire piezometers are connected to the remote monitoring system and have trigger values set for automatic notification. No exceedances of alert levels have occurred to date in 2025.

The QPP/TARP system used by MR and the EOR is the same as that used effectively by KP at other tailings facilities with which the IRP has direct experience. The system is based on the Mining Association of Canada risk response framework<sup>3</sup>. The IRP considers the QPP/TARP system in place at MR is aligned with current good practice procedures.

The TOMS manual (Section 6) provides detailed lists of YDTI maintenance and surveillance requirements. Since 2020 many instrument locations have been added to the monitoring network to track the geotechnical/hydrogeologic performance of the YDTI. MR and KP outlined the comprehensive surveillance plan that incorporates daily, weekly, monthly, quarterly and annual reviews of the monitoring data. The IRP observes that both MR and KP are fully engaged in this effort.

The IRP are provided copies of the following documents on a regular basis:

- Quarterly Performance Monitoring Summary (started in Q1 2025)
- Quarterly Construction Summary and Field Reviews (up to Q4 2024)
- Quarterly Piezometric and Deformation Monitoring Summary (up to Q4 2024)

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<sup>2</sup> CDA Technical Bulletin: Application of Dam Safety Guidelines to Mining Dams, Revision to Section 3.1, Dam Safety Management, May 2019.

<sup>3</sup> The Mining Association of Canada (MAC), 2021. Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities. Version 2.1. March 2021.



- Tailings and Water Monitoring Summary (Up to Q4 2024).

The information contained in each of these quarterly reports is well organized and data straightforward to locate. The quarterly monitoring report examines the piezometers assigned as QPP's in the TOMS manual. Data from all piezometers at the YDTI are reviewed in the annual Data Analysis Report (DAR). Trigger water level elevations assigned to each QPP are re-assessed on an annual basis to account for the rising pond elevation in YDTI. The IRP considers this an acceptable approach.

In 2024, KP completed a dam breach inundation study for the YDTI 6,560 ft amendment design to estimate the potential consequences of a hypothetical dam failure at the ultimate proposed configuration (prior to closure). In the opinion of the IRP, the methodology used to assess breach geometry and release of flowable tailings, fluid/tailings flow paths, arrival times, and in mapping the potential inundation zone follows current good practice for these types of studies.

The Emergency Preparedness and Response Plan summarized in Section 7 of the TOMS manual provides clear instructions for responding to the occurrence of an unusual event (e.g. extreme rainfall, an observed seepage breakout). The manual provides notification procedures that are to be followed. The scope and level of detail included in the response plan is consistent with what the IRP has observed at other large mining operations.

The IRP concludes that MR and KP are fulfilling the requirements set down in the TOMS Manual.

## **7. ADEQUACY OF ANNUAL INSPECTION REPORTS AND SITE INVESTIGATION**

KP provides yearly EOR Annual Inspection Reports (AIRs) and Data Analysis Reports (DARs) that fulfill all the requirements and provide a good summary of the data collected and their analyses. The field observations and monitoring data confirm that the YDTI continues to be operated and constructed in a manner consistent with the intent of the design objectives and that the facility layout conformed with the QPPs relating to downstream overall slope angle, minimum crest width, pond freeboard, and minimum beach length. A significant reduction in water use from the Silver Lake Water System was realized in 2017 and MR continued to maintain operations with decreased freshwater inputs throughout 2024. MR implemented a new tailings discharge strategy in 2017 that incorporates the use of multiple tailings discharge locations (currently 12 locations) along the YDTI embankments instead of a single central discharge location. The effect of the new tailings discharge strategy has resulted in a more extensive beach adjacent to the YDTI embankments, particularly along the northern extremities of the North-South and West Embankments.

The recent site investigation programs have been well planned and executed, with specific efforts made to improve the understanding of moisture content and saturation levels in the embankments. The 2024 Embankment Geotechnical Site Investigation Report dated May 7 2025 was forwarded to the IRP when it was published. In-situ pore pressures, gravimetric moisture contents, compression wave data and nuclear magnetic resonance testing continue

to suggest that the phreatic surface is located deep within the embankment with the thickness of the basal saturated zone controlled by the original ground surface topography underlying the embankments and that isolated perched saturation zones exist within predominately unsaturated rockfill above the saturated zone. The recent site investigation results support the model that rockfill segregation and macro-scale drainage features control the perched saturation zones. The coarse grained materials found within the basal rubble zones and coarse dipping layers are inferred to be unsaturated and the finer grained materials found within the lift tops and dipping layers retain more moisture and may have a higher degree of saturation resulting in localized perched saturation. The historical leached area, just west and up-gradient of the Horseshoe Bend area was also determined to be unsaturated.

The updated monitoring results show that piezometer readings in the central (East-West) embankment and foundation soils have experienced a recent (2024-2025) small increase caused by the pervasive tailings discharge from the 12-inch spigots along the East-West and North-South embankments. The piezometers in the tailings upstream of the East-West and North-South embankments are now monitoring pore pressures higher than historical conditions prior to the multi-point tailing discharge due to rising beach and pond elevations. MR and KP are monitoring this increase in water levels diligently. Stable pore pressures have been monitored within the East-West and North-South embankments outside the central pedestal area and minor fluctuations appear to correlate with nearby tailings discharge.

Pore pressures within the West Embankment Drain (WED) and foundation remain lower than those monitored within the West Ridge, indicating the drain is functioning as designed and hydrodynamic containment is being maintained.

Construction related pore pressure increases have been observed in piezometers within the foundation and basal saturated zone below the North-South embankment due to nearby rockfill placement on the downstream slope. This construction related pore pressures are dissipating with time.

Seepage rates reporting to the Seep 10 and Horseshoe Bend seepage collection areas have essentially stabilized since implementation of the new tailings discharge strategy and show a small seasonal effect from precipitation. The seepage rates to the Seep 10 collection area have increased slightly in 2024-25 compared to prior years but is inferred to be caused by the overall increasing piezometric conditions within the tailings mass and embankment, and improved retention of seepage water following lined collection ditch construction that was completed in August 2023.

In summary, the content of the Annual Inspection Report (2024) and the DAR (2024) meet expected requirements.

## **8. WEST RIDGE HYDROGEOLOGY**

Hydrometrics Inc. continue to monitor water levels along the West Ridge as part of MR's surveillance team. The IRP discussed recent hydrogeological conditions on the west side of the YDTI with Hydrometrics as part of the program to assess the potential impacts of an embankment raise to 6560 ft. The IRP is satisfied that the reporting requirements on



hydrogeologic conditions along the West Ridge are being met. A comprehensive piezometer network is present in the ridge to the west of the YDTI to monitor piezometric conditions at the West Ridge. The conceptual hydrogeologic model of the bedrock flow system developed has not required revision as more recent water level data has become available. Groundwater levels along the crest of West Ridge continue to be higher than the current YDTI pond level, ensuring hydrodynamic containment on the west side of YDTI. Hydrodynamic containment is also supported by the interpretation of routine water quality data collected.

## 9. WATER MANAGEMENT AND WATER BALANCE

Since the 2020 IRP review, there have been several important changes in the components of the YDTI water balance. These changes include:

- The change from the single-point tailings discharge system to the multipoint system distributed along the embankments has over time resulted in a reduction in seepage flows in the Horseshoe Bend area and at Seep 10 located on the downstream face of the East-West Embankment. Seepage fluctuates with a season high during the months of May to October. The flow rate at Seep 10 shows a maximum of about 180 gpm in July-August period with an annual average flow of around 100 gpm.
- With the invert elevation of the West Embankment Drain now below the YDTI pond elevation, this seepage interception system is operational and maintaining the water level in that area as intended in the design. Flow rates after 2021 have been around 600 gpm and are inferred to be caused by infiltration of tailings-derived water as tailings began infilling upstream and above historically placed rockfill.
- The IRP notes the success MR has achieved in reducing requirements for fresh water imports from Silver Lake. Imports from Silver Lake in 2016 were 3.5 million gallons per day (Mgpd); in 2024 they averaged 1.1 Mgpd. It is understood the operational changes in the Concentrator plant that allowed for this reduction in the volume of fresh water brought into the system are permanent.
- The Berkeley Pit Discharge Project, now at operational capacity, has been a key element in the reduction of the pond volume in YDTI and the consequent dam safety risk reduction.

MR has a well-structured water balance model in place that can be used in a stochastic framework to account for inherent future variability in annual precipitation totals. At this Periodic Review meeting, it was demonstrated that the model, calibrated using historic climate data and pond volume measurements through 2019, was able to match the observed pond volumes from 2020 – 2024 for the case where a net 4 MGPd of treated effluent from YDTI were released by the water treatment plant. This benchmarking exercise supports confidence in the reliability of the YDTI water balance model. The model indicates that it should be possible, in the absence of extreme precipitation events, to maintain the YDTI pond volume within the target range of 15,000 ± 3000 acre-ft for the period through to 2032, if the treated effluent

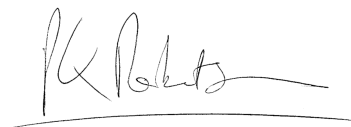

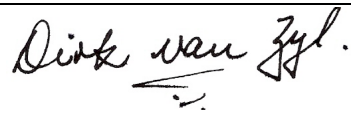
volume for release is managed in accordance with the prevailing climate conditions during that period.

## 12. CONCLUDING STATEMENT

The IRP has concluded:

1. Based on conditions observed during the site visit and in the drone videos, and the monitoring data presented, the YDTI appears to be performing according to design. Construction is well managed, as is tailings deposition and facility maintenance.
2. MR and the EOR are fulfilling the conditions set out in the TOMS manual.
3. Each person on the management team interviewed has the background and experience to direct construction and manage the safe operation of the YDTI. Each person interviewed was familiar with their job responsibilities as set out in the TOMS manual.
4. The content of the annual inspection reports and the annual data analysis reports meets expected requirements.
5. There has been a significant expansion of the instrument monitoring network at the YDTI since 2020. The automated data management system is at the leading edge of practice.
6. Ongoing site investigations have resulted in improved definition of hydrotechnical conditions and material properties of the rockfill mass within the YDTI embankments.
7. Hydrodynamic containment is documented along the west ridge bounding the YDTI.
8. MR has been successful in achieving a large reduction in the volume of pond water held in the YDTI from the volume that was present in 2020.

In summary the IRP considers that the YDTI is being constructed, operated and maintained as designed, and is functioning as intended and meets acceptable engineering standards.

Dr. Peter K Robertson	Dr. Leslie Smith	Dr. Dirk van Zyl
		

**APPENDIX A - MEETING SCHEDULE**

Tuesday July 15 <sup>th</sup> , 2025			
	Welcome and Introductions	All	AM
	Construction Progress and Reporting Update <ul style="list-style-type: none"> <li>YDTI EL. 6,450 ft Lift</li> <li>HsB RDS Stage 1 Drainage System</li> </ul>	JRG	AM
	EOR Annual Inspections and Recommendations	DDF	AM
	Coffee Break		
	TOMS Manual Update Overview	JRG/KTD	AM
	Emergency Action Plan (EAP) Updates	MR	AM
	Lunch Break		
	Panel Interviews	IRP	PM
	Montana Mining Association (MMA) Dinner at the Copper King Hotel and Convention Center	All	
Wednesday July 16 <sup>th</sup> , 2025			
	Performance Monitoring Update	GOJ/KTD	AM
	Coffee Break		
	Impoundment Stability Update	DDF	AM
	Water Balance Update	DDF	AM
	Lunch Break		
	Site Tour	All	PM
	Dinner (Rib and Chop House)	All	
Thursday July 17 <sup>th</sup> , 2025			
	Panel Deliberations	IRP	AM/PM
	Lunch Break		
	Panel Close-out Meeting	IRP	PM

**APPENDIX B - LIST OF PRESENTATIONS GIVEN AT PERIODIC REVIEW MEETING**

1. EOR Updates and Annual Inspection Reviews (KP)
2. Construction and Construction Sequencing (KP)
3. Drone Videos (KP)
4. YDTI TOMS Update (KP)
5. Emergency Action Plan Update (MR)
6. Performance Monitoring Update (KP)
7. Impoundment Stability and Water Balance Update (KP)

### **Appendix C - Personnel Interviewed**

#### Montana Resources (MR) Personnel

##### Rob Sanderson - Vice President Maintenance

Tailings Delivery System, Reclaim Water System, WED Extraction Pond, Silver Lake Water System, Site Climate Station.

##### Felipe Salamanca - Manager of Engineering and Geology

Embankment Construction, Construction Quality Control, Mine Plan and Dumping Design, As-Built Surveys, Pond Surveys and Bathymetry, Tailings Beach Surveys and Deposition Plan, Piezometric Monitoring, Movement Monitoring

##### Tim Boyle - Mine Superintendent

Embankment Construction, Construction Quality Control

##### Jeremy Fleege - Environmental Engineer

Environmental Compliance, Annual Permit Reporting, Emergency Action Plan, Closure Planning

Mark Thompson – Vice President of Environmental Affairs

#### Knight Piésold (KP) Personnel

##### Dan Fontaine - YDTI Engineer of Record (EOR)

Embankment Construction Drawings and Specifications, Construction Quality Assurance, Quarterly Construction Field Review, Quarterly Piezometric Data Summary, Quarterly Water Data Summary, EOR Annual Inspection Report (AIR), Annual Data Analysis Report (DAR), Water Balance Modelling

## Appendix D – IRP Closeout Presentation July 17, 2025

7/21/25



**Montana Resources**

Yankee Doodle Tailings Impoundment  
Independent Review Panel (IRP)  
Annual Meeting & Periodic Review  
July 15-17, 2025

**IRP**

Peter Robertson  
Dirk van Zyl  
Leslie Smith (not participating)

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### Agenda of Meeting

- Embankment Construction Update
  - YDTI 6,450 ft lift
  - HsB RDS Stage 1 Drainage System
- EOR Annual Inspection and recommendations
- TOMS Manual updates overview
- Emergency Action Plan updates
- Panel Interviews for Periodic Review
- Performance Monitoring update
- Impoundment Stability update
- Water Balance update
- Site Tour (~3 hours July 16)
- IRP Close-Out

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### Periodic Review

- First Periodic Review completed in 2020
- Second Periodic Review at this meeting
- Role of Periodic Review described in Montana Code 82-4-380:
  - Inspect the tailings storage facility
  - Review the Tailings Operation, Maintenance and Surveillance (TOMS) Manual and the records collected in association with the manual
  - Interview people with responsibilities identified in the TOMS
  - Review the annual EOR inspection reports and the corrective action plans
  - Consider any other documents to ensure that the tailings storage facility is constructed, operated and maintained as designed, is functioning as intended and meets acceptable engineering standards.

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### Site Tour of YDTI

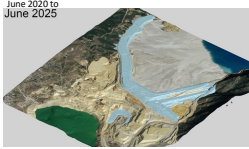
- IRP did not observe any conditions during the tour that indicated a concern for dam safety
- Deposition points using 12" pipes
- Large beach was observed and looked dry and trafficable, large freeboard available
- 3H:1V upstream alluvium layer on embankment on N-S and Central Pedestal
- HsB for RDS Stage 1 Drainage System
- All monitoring systems indicate embankment is performing according to design



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### Construction Update


- EL 6,450 ft lift completed in March 2023.
- Construction Completion Report & Record Drawings issued June 2025
- Robust Quality System program was applied
- Materials used met design intent
- No significant issues encountered



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### HsB Drainage System

- Construction of drainage system started in 2022 and substantially completed Oct. 2024
- Drain material is good quality and similar to WED
- Construction to EL 5,700 ft ongoing
- Good construction documentation and supervision
- All materials met criteria
- Construction Completion Report in preparation



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7/21/25

EOR Annual Inspection and Recommendations

- EOR provided a summary of Annual Inspections since last Periodic Review in 2020
- Summary of changes:
  - Physical changes to facility
  - Operational changes
  - Continued expansion of monitoring systems and protocols
  - Continued refinements to the KP Team and to Teamwork
  - Continuous improvements in knowledge of site and site history
  - Comprehensive Risk Assessment completed in 2022
  - Frequent data analysis, reporting and information sharing
- Focus on enhancing dam safety and continuous improvements
- IRP support and concur with the ongoing changes and improvements

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TOMS Manual

- Current TOMS Manual, dated December 2023, is comprehensive and fit for purpose and contained QPPs
- The IRP concludes that MR and KP are fulfilling the requirements set down in the TOMS Manual.
- EOR provided a summary of suggested updates to the Manual to include TARPS for several parameters
- IRP is supportive of proposed updates and look forward to reviewing an updated TOMS Manual in due course

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Emergency Action Plans Updates

- MR provided a summary of updates to the Emergency Action Plans (EAP)
- Comprehensive update completed in 2021
  - Referenced in TOMS Manual
- Review and update is currently underway
- Main items: On Site containment and Pond Volume
  - Topographic control at south end of HsB
  - Reduction in pond volume - Pilot Project transitioned to active volume management
- Successful evacuation drill in Q2 2025

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Performance Monitoring Updates

- KP provided summary of updates to monitoring program and interpretation
- Additional sensors added to provide comprehensive monitoring with current:
  - 302 active piezometers
  - 21 manual survey monuments and 14 GNSS monuments
  - 4 instrumented inclinometers and 6 manually surveyed inclinometers
  - 2 Elecon Geo4Sight installations
  - InSAR and Photogrammetric surveys
  - Regular tailings, water and seepage monitoring and embankment geometry
- YDTI performing as intended and no QPP exceedances between 2020 and Q2 2025
- Small pond volume, long beach lengths and large freeboard
- Pore pressures and deformations within expected ranges
- Western hydrodynamic containment persists
- Planned instrumentation in HsB Stage 1 RDS for 2025 includes SAA, VWP and GNSS
- IRP impressed with extent of monitoring and high standards of implementation from KP and level of support from MR

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Impoundment Stability Updates

- KP provided a summary of updated stability evaluation for existing 6,450 ft plus proposed 6,560 ft lift
- Critical stability sections located in Central Pedestal area above HsB
- Updated material parameters and piezometric surface applied
- Critical loading condition is undrained response in saturated materials
- Analyses based on updated undrained parameters (peak and residual)
- Analyses done for 2D (simplified) and 3D (actual) conditions
- 3D effects provide  $\geq 10\%$  improvement

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Impoundment Stability Updates

Schematic Summary of stability assessment approach used by KP

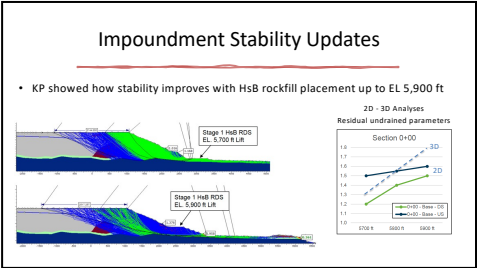
**6,560 Amendment Assessment Approach**

Schematic Summary of Work

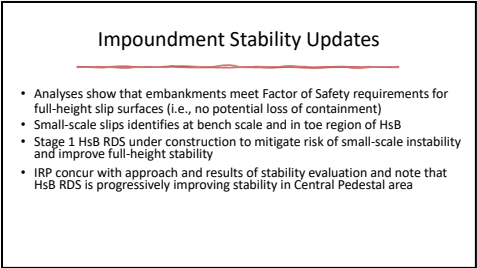
Results were presented in the YDTI - Stability Assessment Report for 6,560 Amendment Design Document (P9, 2024)

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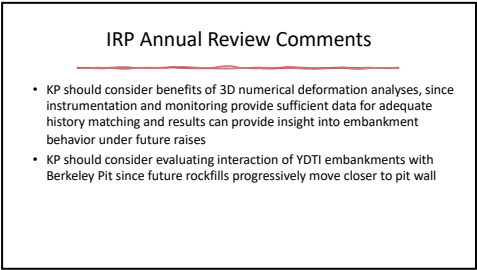
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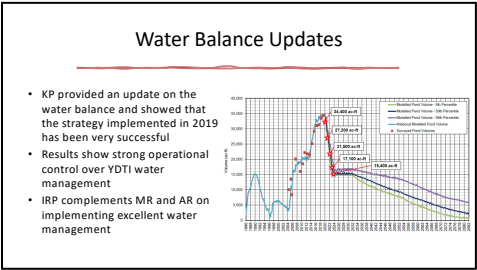
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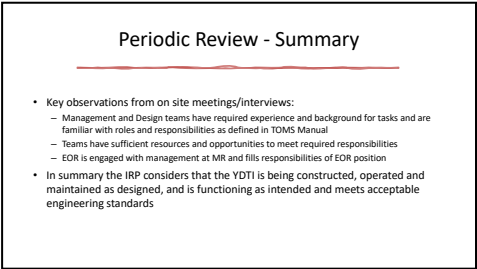
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