



# Oregon

Tina Kotek, Governor

## Department of Geology and Mineral Industries

Mineral Land Regulation & Reclamation

229 Broadalbin Street SW

Albany, OR 97321

(541) 967-2039

Fax: (541) 967-2075

[www.oregon.gov/dogami](http://www.oregon.gov/dogami)

May 30, 2025

Rachel Goldman  
Calico Resources USA Corp./Paramount Gold Nevada Corp.  
665 Anderson St.  
Winnemucca, NV 89445

RE: MARCH 6, 2025, TECHNICAL REVIEW TEAM APPROVAL OF BEST AVAILABLE PRACTICABLE AND  
NECESSARY TECHNOLOGY FOR PROPOSED GRASSY MOUNTAIN MINE  
Calico Resources USA Corp. Grassy Mountain Mine Project

Dear Ms. Goldman:

On March 6, 2025, the Technical Review Team (TRT) unanimously approved the Best Available Practicable and Necessary Technology (BAPNT) measures for the Grassy Mountain Mine Project (the project). This letter from the Oregon Department of Geology and Mineral Industries (DOGAMI; the Department) documents the approach employed for evaluating candidate technologies and ultimately, the process that resulted in decisions made by the TRT.

### **Best Available Practicable and Necessary Technology**

According to Oregon Administrative Rule Chapter 632 Division 037 Rule 0118 (OAR 632-037-0118), "Chemical process mining including extraction, processing, and reclamation, must be undertaken in a manner that minimizes environmental damage through the use of the best available, practicable, and necessary technology to ensure compliance with environmental standards." Further, OAR 632-037-0130 states that the Department also requires a chemical process mining operation to employ BAPNT for reclamation and closure to ensure compliance with state environmental standards. The regulations require that the TRT evaluate and select BAPNT in consultation with the Applicant (Calico Resources USA Corp.; Calico). The identification and adoption of BAPNT for a proposed project are state requirements without which a Consolidated Permit cannot be issued.

The BAPNT review process first requires the TRT to determine the necessary technologies, if such technologies exist, second to determine if necessary, technologies are available, and third to determine which of the necessary and available technologies is practicable (OAR 632-037-0118(2)). Per OAR 632-037-0010, the definitions for available, practicable, and necessary are as follows:

- “Available Technology” means technology that is obtainable and has been demonstrated to meet environmental standards at an existing mine or a demonstration project of similar size and scale, or is reasonably expected to meet or exceed environmental standards at the proposed mine.
- “Practicable Technology” means available and necessary technology whose costs are not significantly disproportionate to the potential environmental benefits. A technology is not practicable if the cost is so high it renders a mining operation infeasible.
- “Necessary Technology” means technology that is required to ensure compliance with environmental standards.

The TRT reviews the identified necessary, available, and practicable technologies to select the technologies with the most effective environmental benefits that become the BAPNT. The TRT then recommends the BAPNT to the Department to ensure compliance with environmental standards, which the Applicant must employ in the mining operation and associated activities. If the TRT or Department is unable to identify a necessary technology that is available and practicable, the Department shall not issue an operating permit (OAR 536-037-0118(4)). The evaluation of BAPNT is a collaborated and coordinated process between the TRT and the Applicant.

### **Milestones and Actions to Identify the BAPNT**

Alternative technologies for the various mine operation components were identified at various stages of Project review. The Applicant-proposed technologies and alternative technologies were reviewed during several stages to identify BAPNT for the Project, which are described below.

#### ***Development of the Environmental Evaluation Scope of Analysis***

Environmental review of the proposed Project is being carried out by state agencies, federal agencies, and local governments pursuant to the Oregon chemical process mining Consolidated Permit process described in Oregon Revised Statutes (ORS) 517. The Department is the lead facilitating agency and is coordinating with the TRT and permitting, cooperating, and commenting state agencies.

An Environmental Evaluation is an analysis prepared to assess the potential impacts of a chemical process mine. The analysis also provides information to support the decision to issue or deny a permit and develop permits conditions by state agencies. The proposed scope of the Environmental Evaluation was presented in an annotated outline that was distributed to TRT members for review. The TRT provided input on the Environmental Evaluation outline and contents and suggested including the BAPNT analysis as a separate technical appendix. The TRT approved the outline on March 15, 2023.

### ***Appendix A (BAPNT) of the Environmental Evaluation***

The Applicant's proposed technologies for the project are presented in the Consolidated Permit Application that was determined to be complete by the Department and the TRT on October 4, 2023. The TRT proposed a list of categories related to mine operation and closure for researching technologies in the Environmental Evaluation (dated August 1, 2024), which included the following:

1. Mine construction methods, including extracting ore, backfilling, and transporting mined materials;
2. Mill operations, including chemical processing, cyanide management, air quality controls, process solution containments, wildlife exclusion, and mill closure;
3. Tailings management including disposal, tailings storage facility (TSF) design, leak detection, long-term pollution prevention controls, long-term monitoring, wildlife exclusion, and TSF closure;
4. Operations management including water management, fugitive dust control, equipment maintenance, and operations monitoring;
5. Acid rock drainage management;
6. Hazardous materials handling, storage, and management; and
7. Spill and emergency response.

The technologies proposed by the Applicant (in the CPA) and identified by TRT members were included in the Environmental Evaluation. The technologies were then reviewed by the TRT, the Department, and the state's contractor, Stantec to determine if they achieved the objectives of being available, practicable, and necessary for the specific site at Grassy Mountain (Environmental Evaluation, Appendix A, Table A-3). The analysis considered site-specific conditions including climate, mineralization, geological, geotechnical, hydrogeological, and morphological conditions when determining whether a technology is necessary and practicable.

The BAPNT review process initially required the TRT to determine the necessary technologies to achieve the objectives of the Project. If a technology was considered to be unnecessary, it was not considered further in the BAPNT evaluation. For the technologies that were considered required, the TRT determined whether they were available and technically feasible for the Project. Those technologies that were deemed to be necessary and available were also assessed for economic practicability. Those that were not economically practicable were not carried forward in the BAPNT evaluation.

Additional technologies were identified by TRT members during review of the Applicant's proposed technologies and added to the analysis in Appendix A. The TRT then conducted a comprehensive review of the Environmental Evaluation, including the revised Appendix A. This process occurred between February and August 2024. Following three rounds of review, the Environmental Evaluation was accepted by the TRT as complete on October 3, 2024 during a public TRT meeting with the acknowledgement that formal TRT coordination and approval of BAPNT would occur subsequently.

### ***Technical Review Team Meetings***

On November 27, 2024, the Department sent an email to TRT members that included background information on the BAPNT process, including components of the Environmental Evaluation Appendix A. Members were asked to provide a list of technologies that warrant further discussion (by January 8, 2025) in advance of the TRT meeting focused on BAPNT. The Department sent a follow-up email to members on January 7, 2025, requesting the list of technologies.

The first BAPNT TRT meeting occurred on January 30, 2025. The Department provided background information on the regulations pertaining to BAPNT for chemical process mines in the State of Oregon. The technologies identified as Applicant-proposed measures in the Consolidated Permit Application, alternative technologies identified in the Environmental Evaluation, and additional measures identified to provide further environmental protection and benefit were presented during the meeting, including a comparative analysis of their advantages and disadvantages.

Comments from TRT Members on BAPNT technologies were provided and additional supporting information was presented and discussed. TRT comments on alternative technologies spanned topics, including leak detection methods, air quality analysis for back-up diesel engines, wildlife exclusion options, water supply alternatives, power supply alternatives, gold processing alternatives, and alternative TSF locations.

### ***Approval of the Best Available Practicable and Necessary Technology***

During the second BAPNT TRT meeting that occurred on March 6, 2025, TRT members discussed the final list of BAPNT options and voted to approve a final set of technologies for the Project.

Table 1 below presents the list of technologies and additional measures approved by the TRT on March 6, 2025, which are now considered to be part of the Grassy Mountain Mine Project. The approved technologies and additional measures will be integrated into the conditions within the Consolidated Operating Permit, as appropriate. The technologies and measures will also be incorporated into the Applicant's proposed mine operation and closure plans, and certain components will be included in the bond, as appropriate. TRT-approved additional measures are presented in italics in Table 1.

**Table 1 Best Technologies and Additional Recommended Measures**

Project Component	Best Technologies
<b>MINE CONSTRUCTION METHODS</b>	
Extracting Ore	Underground Mining Mechanized Cut-and-Fill with CRF
Backfilling	Cemented Rock Fill
<b>MILL OPERATIONS</b>	
Chemical Ore Processing	CIL Cyanide Circuit, Elution Electrowinning Recovery
Cyanide Management	Detoxification and Neutralization of Cyanide Cyanide Destruction Circuit
Cyanide Monitoring	Certified Laboratory Testing In-Line Device (e.g., Cynoprobe)
Air Quality Controls	Mercury Retort Oven and Wet Scrubber
Process Solution Containments	Concrete Secondary Containments <i>Water Stops and Concrete Coatings</i>
Wildlife Exclusion from Mill	Perimeter Fencing and Monitoring Covers, Mesh, or Netting to Reduce Bird and Bat Nesting Covering Waste Bins
Closure of the Mill	Dismantling, Salvaging, Selling, or Authorized Disposal of Mill Infrastructure Closure-Period Inspections Breaking, Burying, and Recontouring Foundations <i>Planting Sagebrush Plugs/Seedlings and Perennial Grasses and Forbs with a Monitoring Program</i>
<b>TAILINGS MANAGEMENT</b>	
Tailings Disposal	Permanent Storage of Tailings in Lined TSF, TSF Lime Addition, TSF pH Monitoring
Tailings Water Content	Conventional Tailings Slurry. <i>Water Balance Accounting (including probabilistic and deterministic meteorological water projections)</i>
TSF Design	Zero-discharge with Synthetic Double Lining
Leak Detection	Liner Leak Detection and Collection, and Groundwater Monitoring for Leaks
Long-Term Pollution Prevention Controls and Monitoring	Backfilling using CRF Plugging the Mine Portal Retaining Liners in Perpetuity Reclaiming Mine Areas Converting the Reclaim Pond to an Evaporation Cell Retaining Stormwater Infrastructure <i>Monitoring Mined Materials Quarterly During Operations</i>

Project Component	Best Technologies
Long-Term Monitoring	Monitoring Groundwater Monitoring Noxious Weeds Facility Inspections, Maintenance, and Repairs Inspections and Sampling of Stormwater Facilities and Discharges Spring and Seep Monitoring
TSF Wildlife Exclusion	Perimeter Fence and TSF Fences and Barriers Monitoring Perimeter for Signs of Wildlife Monitoring and Removal of Aquatic Species in TSF Pond Bird Deterrent Balls on TSF Pond <i>Visual Deterrents: Effigies, Predator Models</i> <i>Radar-activated Propane Cannons</i> <i>Laser Bird Deterrents</i> <i>Emergency Hazing</i> <i>Bio-exclusion Zones</i>
Closure of the TSF	Dry Closure Conversion of Process Pond to Evapotranspiration Cell <i>Hydroseeding</i>
<b>OPERATIONS MANAGEMENT</b>	
Air Quality Control Measures	Dust Suppression Water Spray Equipment Hoods, Curtains, Chutes Cover/Enclose Material Piles Air Permit BMPs Dust Control Staff Training Backup Generators <i>Monitor TSF for Dust after Operations Cease and Prior to Cover</i>
Water Management	Site Groundwater Production Wells and Water Level and Quality Monitoring <i>Closure Reclamation of Water Supply Piping</i>
Operations Monitoring	Resource-Specific Monitoring Plans Permit Monitoring Requirements
Acid Rock Drainage Management	Cement Rock Fill Groundwater Monitoring for Acid Rock Drainage <i>Additional Monitoring and Testing (by mine level)</i> <i>Additional Water Quality Monitoring</i> <i>Passive or Active Treatment of Acid Rock Drainage</i>
Transporting Mined Materials	Diesel Fuel (Trucks and Loaders)
Equipment Maintenance	Preventative Maintenance

Project Component	Best Technologies
Hazardous Materials Handling, Storage, and Management	Toxic and Hazardous Substances Transportation and Storage Plan Waste Management Plan Offsite Hazardous Materials Disposal Toxic and Hazardous Substances Transportation and Storage Plan Stormwater Pollution Control Plan Regular Inspections of Hazardous Materials Storage Areas and Updates to Management Plans
Spill and Emergency Response	Spill Prevention, Control, and Countermeasures Plan Emergency Response Plan Mobile Emergency Refuge Stations Fire Alarm System <i>Water Stops and Concrete Coatings</i> <i>Strobe Lights, Light Vests, Laser Pointers, Lifelines, Cones, and Reflective Strips</i>

If you have any questions or would like to schedule a meeting to discuss this letter, please contact me at 503-853-5139 or at [sarah.lewis@dogami.oregon.gov](mailto:sarah.lewis@dogami.oregon.gov).

Sincerely,



Sarah L. Lewis  
 Program Manager  
 DOGAMI - MLRR