

**Oregon Consolidated Permit Application (CPA) Process – Chemical Process Mine
Calico Resources USA**

Technical Review Team (TRT) Meeting

Date: January 30, 2025; 1:30pm – 3:30pm PST

Location: Zoom teleconference, with public access by phone or online.

Purpose: to discuss Best Available Practicable and Necessary Technology (BAPNT).

<i>Attendees</i>	<i>Agency or Affiliation</i>
Sarah Lewis	Oregon Department of Geology and Mineral Industries (DOGAMI)
Ruarri Day-Stirrat	DOGAMI
Adam Bonin	DOGAMI
Becky Johnson	DOGAMI
Alex Lopez	DOGAMI
Bob Brinkmann	DOGAMI
Phil Marcy	Oregon Water Resources Department (WRD)
Ryan Lewis	Oregon Department of Environmental Quality (DEQ)
Ron Doughten	DEQ
Jennifer Peterson	DEQ
David Cole	DEQ
Joy Lovett	Oregon Department of Fish & Wildlife (ODFW)
Tom Segal	ODFW
Mike Schmeiske	Oregon Department of State Lands (DSL)
Nikki Haskett	US Bureau of Land Management (BLM)
Caroline Chang	BLM
Jackie Cupples	US Fish & Wildlife Service (USFWS)
Robin Van Meter	USFWS
Julie Vold	USFWS
Alison Uno	Stantec
George Fennemore	Stantec
Glen van Treek	Paramount Gold
Scott Miller	SLR Consulting
Tom Patterson	SLR Consulting
Wendy Wente	Mason, Bruce & Girard, Inc.
Ann von Mehren	Public
S. Ghosal	Public/investor in Paramount Gold

Agenda:

Time	Agenda Topic
1:30pm - 3:30pm PST	Welcome and Introductions
	Revisions to the Agenda
	BAPNT Discussion (TRT / Calico)
	Meeting Conclusion and Final Remarks
2:55pm	A D J O U R N

Notes:

Introduction

- Meeting introduction by Alex Lopez (DOGAMI).
- Call-in details were provided in the comments section and notice was given that the meeting was being recorded.
- Public comments will not be taken during this meeting.
- Adam Bonin (DOGAMI) coordinated introductions of TRT members.
- No public comments were received prior to the meeting.

Agenda

- Reviewed by committee members; no changes or additions requested.

Project Check-In

- Environmental Evaluation (EE) approved 10/3/2024 at the TRT meeting.
- EE approval started the 225-day clock.
- National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) process update was shared.

Best Available Practicable and Necessary Technology (BAPNT)

- Defined in *OAR 630-037-0010- Best Available Practicable and Necessary Technology*
- Provided further detail regarding what is required with BAPNT ("best tech") in *OAR 630-037-0118*.
- Best tech from EE, along with alternatives and remaining issues are compiled in tables for ease of review.

BAPNT Comment Review (Tables)

- Table 3 Review:
 - Some comments/questions provided by TRT members in advance of the meeting do not specifically represent best tech but were included in the table to be comprehensive regarding feedback received.

- Table 1 provides components considered best tech and identified by the applicant and examined in the EE:
 - USFWS table comment - Is there an alternative to backfilling?
 - Aren't the alternatives offered just a type of backfilling?
 - **Adam Bonin (DOGAMI)** - Backfilling provides stability in the underground workings and cemented rock fill provides buffering to prevent acid rock drainage.
 - **George Fennemore (Stantec)** - The EE did evaluate an alternative to backfilling which was paste backfill. Cemented rock fill was determined to be the preferred alternative to paste backfill.
 - **USFWS** - Why aren't the benefits of the electromagnetic leak detections being taken into consideration?
 - **George Fennemore (Stantec)** - Requirement for leak collection with leak detection to monitor leakage through primary liner. Direct observation of leak collection was determined to be a better method than electromagnetic leak detection.
 - **Jackie Cupples (USFWS)** - Can't both be used? Or is this an "either or situation"?
 - **George Fennemore (Stantec)** - You can potentially use both, but electromagnetic leak detection typically not used without physical leak detection component in tailings facilities. Electromagnetic leak detection is used at landfills when looking for leaks, but where collection is not a requirement.
 - **Ryan Lewis (DEQ)** - Ryan spoke with Doug Welch/DEQ air quality permit writer about whether backup generators would be designed to Tier IV emission standards. No response from Calico or consultants during the meeting.
- Table 2:
 - Ranking of technologies that remain under consideration for selection of best tech. Applicant's proposed measures are presented in bold.
 - Transporting mined materials and biodiesel sourcing in the region.
 - Reclamation (breaking, burying, contouring foundation materials or full foundation removal).
 - **Jackie Cupples (USFWS)** - Question asked about electromagnetic leak detection to detect leaks earlier than physical collection such as during construction.
 - **George Fennemore (Stantec)** - Physical leak detection is effective to detect leaks in real-time so no advantage of electromagnetic leak detection.
 - **George Fennemore (Stantec)** - The processing requires a very fine particle size that does not lend itself to create competent concrete for backfill applications.
 - **Bob Brinkmann (DOGAMI)** - Waste rock material to be used as cemented rock fill and quarry material has the geotechnical competency to be used as backfill in support of the underground workings.
 - **ODFW** - Wildlife exclusion zones and deterrents.
 - **Adam Bonin (DOGAMI)** - Assume being addressed in the developing Wildlife Mitigation Plan.
 - **Robin Van Meter (USFWS)** - When would ODFW be able to see the mitigation plan?
 - **Wendy Wente (MB&G)** - A Wildlife Protection Plan exists in the CPA (also a Compensatory Mitigation Plan) and a new version is being developed. Just to confirm, bird deterrent balls would be deployed in the reclamation pond and not the tailings storage supernatant pond.
 - **Tom Segal (ODFW)**: Is the bio-exclusion zone specific to the Tailings Storage Facility (TSF)? Aquatic vegetation would be controlled from growing in the TSF supernatant pond.

- **Allison Uno (Stantec):** I believe so. Vegetation would be removed. Refers to natural vegetation around the TSF where we don't want wildlife to exist. Immediately adjacent to the pond area.
 - **Glen van Treek (Paramount Gold):** Entire perimeter would be fenced preventing entry to animals with the exception of birds.
- **Nikki Haskett (BLM):** Is there a Wildlife Mitigation Plan specific to wildlife and is that available to be reviewed?
 - **Wendy Wente (MB&G):** A Wildlife Mitigation Plan was submitted with the CPA.
 - **Tom Segal (ODFW):** Draft mitigation plan was submitted with the CPA that didn't quite meet the requirements, but we allowed it to be submitted with the knowledge that it needs to be fleshed out. We are working with Wendy and her team to do that now.
 - **Adam Bonin (DOGAMI)** – Reiterated that the intention of the meeting is to pick up the conversation started during the October 3, 2024, TRT meeting. No voting of best tech will happen today, but the conversation will support TRT approval of technologies in the next couple of months.
- **Tom Segal (ODFW):** I wanted to know what went into the analysis for piping water into Vale. There are potentially going to be issues with seeps and springs in the area, and we are just trying to figure out ways to mitigate potential impacts.
 - **Alison Uno/George Fennemore (Stantec)** - Responded and detailed the process and described the increased disturbance, etc.
 - **Bob Brinkmann (DOGAMI)** – Footprint of a water supply line would be greater than the surface area disturbance from the wellfield.
 - **Mike Schmeiske (DSL):** Would the pipe be trenched from town and would it potentially cross through wetlands? Avoidance of aquatic resource impacts would be preferable to prevent any removal-fill permitting with DSL.
 - **George Fennemore (Stantec):** The EE determined that the use of onsite wells would be the preferred approach compared to a water supply line from town.
 - **Jackie Cupples (USFWS):** USFWS felt that there was a bias. There was no information listed showing any kind of benefits about pumping water in from Vale, instead of using water that wildlife relies on. It was not clear why placing the pipeline under already disturbed road would cause impacts. There also doesn't appear to be backup data that shows the water will last through the life of the project, and no discussion of alternative water sources if that becomes a future issue.
 - **Bob Brinkmann (DOGAMI):** The wellfield design report provided details of the aquifer stress tests, which indicated it will support the drawing of the water.
 - **Glen van Treek (Paramount Gold):** We did studies on our well and don't foresee issues occurring.
 - **George Fennemore (Stantec)** – There have been no analyses regarding the potential for hauling water by truck.
 - **Phil Marcy (OWRD):** There are little data on these particular aquifer systems, so we don't really know how the wells will behave. With the reduced rate that the operator would be using, they are likely to be able to sustain usage.
- **Phil Marcy (OWRD):** Subcommittee is currently developing groundwater monitoring plans.
- **Ryan Lewis (DEQ):** DEQ is curious about how to repair TSF liner leaks.
 - **George Fennemore (Stantec):** The liners work by detecting and collecting. Then, you are able to repair and minimize. It's a rare occurrence, but it does happen. You rely on those collection pipes to see where the leak is occurring (via monitoring

points) and then address that location such as moving the ponding away from the leaking area.

- **Adam Bonin (DOGAMI):** Quality control during installation and inspection is key to alleviating future leak probability.
- **Robin Van Meter (USFWS):** USFWS is wondering why thiosulfate is not included as a viable BAPNT in this area, and where the details for further evaluation are located particularly related cyanide processing.
 - **George Fennemore (Stantec):** Thiosulfate has been attempted as a gold processing measure since the early 2000s. It's not economical for the operator and clean-up is an issue. The Gold Strike Mine in Nevada is a good example of a thiosulfate attempt at gold extraction. The mine began as a cyanide processing facility then, shifted to trying to make thiosulfate work. They ultimately switched back to cyanide due to the lack of success using thiosulfate. Gold recovery is much less in thiosulfate vs cyanide and would make this project non-viable.
 - **Jackie Cupples (USFWS):** The EE says there will be a follow up discussion, is that still true? Thiosulfate wasn't tested at this mine. We're also unclear as to how the EE determined that cyanide was determined to be a better option than thiosulfate from an environmental perspective.
 - **George Fennemore (Stantec)** - Technologies were evaluated in terms of availability and practicability by applying a hierarchy for ranking the technologies. For thiosulfate, the processing was not considered available and practical, therefore it was not carried forward into the environmental analysis. The analysis screened out at the availability step since it has not been demonstrated to be a workable technology in industry practice. Lower yield resulted in the technology being discontinued.
 - **Bob Brinkmann (DOGAMI):** Thiosulfate has essentially the same environmental impacts as cyanide except the air quality output, which is actually worse for thiosulfate that requires the burning of fossil fuels to generate steam. In addition, the proposed process would result in the reduction of Weak Acid Dissociable (WAD) cyanide discharge (to the tailings facility) concentration to less than half of DEQ's 30 parts per million requirement.

Final Remarks

- Adam thanked the participants for attending the meeting and for the TRT's time and discussion.
- DOGAMI will be scheduling another TRT meeting for late February/early March, where TRT members will review and approve best tech, as well as additional measures, and discuss any remaining issues.
- Reclamation securities, bonding, coordinated monitoring plans could be topics of forthcoming TRT meetings.
- Meeting notes will be available on DOGAMI's website.
- The meeting adjourned at 2:55 pm.