



**MEETING SUMMARY – TECHNICAL REVIEW TEAM
GRASSY MOUNTAIN GOLD MINE PROJECT**

July 25, 2018

9:00 am

Meeting at DOGAMI Portland Offices with Phone Access

Attendance:

Committee Members

- Randy Jones, Oregon Department of Geology and Mineral Industries (DOGAMI)
- Heidi Williams, Oregon Department of Environmental Quality (DEQ)
- Larry Knudsen, DEQ
- Rick Hill, DEQ
- John Dadoly, DEQ
- Jim Billings, DEQ
- John Dadoly, DEQ
- Bob Schwarz, DEQ
- Bob Brinkmann, DOGAMI
- Matt Diederich, State Historic Preservation Office (SHPO)
- Philip Milburn, Oregon Department of Fish and Wildlife (ODFW)
- Joy Vaughan, ODFW
- Nigel Seidel, ODFW
- Andrea Bowen, US Bureau of Land Management (BLM)
- Phil Marcy, Oregon Water Resources Department (WRD)

Others in Attendance

- Glen Van Treek, Paramount Gold Nevada/Calico Resources
- Carlo Buffone, Paramount/Calico
- Nancy Wolverson, Paramount/Calico
- John Seaberg, Paramount/Calico
- Rich DeLong, EM Strategies
- Larry Meyer, Argus Observer
- Peggy Lynch, League of Women Voters of Oregon
- Dan Morse, Oregon Natural Desert Association (ONDA)
- Alyssa Pratt, DOGAMI
- Kim Riddell, DOGAMI
- Jesse Ratcliffe, Oregon Department of Justice
- Libby Barg, Barney & Worth
- Adam Bonin, Cardno
- Emily Merickel, Cardno
- Janet Gillaspie, Environmental Strategies

Introductions

The group introduced themselves.

Review of Agenda and Additional Items to Add

Randy Jones, DOGAMI, chaired the meeting. He stated the meeting was being recorded to maintain a record under the Oregon Public Meetings Law. He asked if there were additional items to add to the agenda. There were none.

Matt Diederich, SHPO, said that this would be his last Technical Review Team (TRT) meeting; Dennis Griffin from SHPO will be replacing him on the TRT.

Jones requested each TRT participating agency review the Calico Pre-Feasibility Study for additional state requirements and report back to him by August 15, 2018 (close of day). The TRT will discuss possible additional state requirements at its August 22, 2018 meeting, to be convened at the BLM Vale District Office.

He continued that DOGAMI is considering organizing a Project Coordinating Committee (PCC) meeting in Malheur County on August 21, 2018.

Jones said that the TRT often meets in person and also meets by phone. He commented that the TRT uses subcommittees, as needed, to increase efficiency.

Jones also stated the TRT has not accepted public comments at past meetings, to make the TRT meetings as efficient as possible. He recommended that the TRT start including a brief period for public comments at the end of its meetings. He added that this process would be suspended if it becomes unwieldy. He asked the TRT for any comments or questions.

Larry Knudsen, DEQ, asked if this would apply to the full TRT meetings or both the full TRT meetings and the subcommittee meetings. Jones responded that public comments would be heard at both types of meetings.

Rich DeLong, EM Strategies, asked if there would be just comments or also questions, indicating a dialogue with the public. He continued that there was a process for the TRT meetings historically, and he does not see a reason to change that. Jones continued that providing public access, as the technical information is unfolding, allows the State to be more inclusive.

Nancy Wolverson, Paramount/Calico, indicated that the Company would prefer comments and questions, but not a dialogue in the meetings. Jones responded that it would not be a dialogue; there is not time to respond to questions in the meeting. Responses to questions will be separate from the TRT meeting time, said Jones.

Peggy Lynch, League of Women Voters of Oregon, agreed with Calico and suggested that the TRT process continue to be efficient and not slowed down. She suggested allowing limited comments and then a chance to provide written comments.

Dan Morse, ONDA, agreed with comments and questions, and he suggested that the process for responding to the questions and comments be clarified; the process for a response should be detailed.

Status of Baseline Data Collection Program at Calico Grassy Mountain Site

Jones said that the status of the baseline data collection program was summarized and has been distributed to the TRT members.

Jones summarized the status of the baseline data collection, including:

These baseline data collection programs have not yet been submitted by Calico:

- Geology and Soils
- Final Geochemistry (partial information submitted)
- Noise
- Cultural Resources
- Groundwater

The State has requested additional information for these baseline data programs:

- Erionite (Air Quality)
- Surface Water

The State has its review underway for these baseline data programs:

- Terrestrial Vegetation
- Wildlife Resources
- Aquatic Resources

Baseline data has been accepted for these baseline data programs:

- Land Use
- Socioeconomics
- Environmental Justice
- Wild, Scenic, or Recreational Rivers
- Areas of Critical Environmental Concern/Research Natural Areas
- Transportation
- Outstanding Natural Areas
- Wetlands and Waters of the State (Oregon Department of State Lands review)
- Grazing Management
- Visual Resources (not a State requirement)
- Air Quality (except for Erionite)
- Recreation

DOGAMI and Calico are discussing the baseline data filed for the Oregon Natural Heritage Plan, Jones said. Groundwater level sampling is on-going on a quarterly basis.

Review of Calico Grassy Mountain Pre-Feasibility Study

Glen Van Treek, Paramount/Calico, made a presentation on the Calico Grassy Mountain Pre-Feasibility Study (PFS). A copy of the presentation is posted on the DOGAMI web site at:

http://www.oregongeology.org/mlrr/chemicalprocess_Calico-GrassyMtn.htm.

Key points from his presentation included:

- Gold prices have been around \$1,300 per ounce for the past few years.
- The cost of producing gold is about \$900 per ounce; smaller companies have higher costs.
- Paramount/Calico has two projects: Sleeper in Nevada and Grassy Mountain in Oregon.
- The largest communities around the project have lower incomes than other parts of the State or the surrounding areas.
- Access to the mine site will be from Russell Road; the road will be upgraded, mostly following the existing road alignment.

- Power will be provided by Idaho Power from the Hope Substation; it will be a 23-mile line with a capacity of 5.3 MW. The power line will follow the access road. Power line construction will take about 1 year; the Hope Substation will need to be upgraded.
- An underground mine will be constructed to produce between 1,200 – 1,400 tons of rock per day. The mine will operate 4 days per week on 2 shifts per day (10 – 12-hour shifts, Monday through Thursday). The mill will operate at 750 tons per day, on a 24/7 schedule.
- Processing will be by gravity concentration, followed by a Carbon-in-Leach recovery process in tankage.
- The yearly production is anticipated to be 47,000 oz. of gold and 50,000 oz. of silver.
- The total life of the mine is estimated to be about 8 years, plus 1 year of construction.
- The total initial capital expenditures will be \$110 million.
- A summary of the reserves was provided.
- A mine layout plan was provided.
- The Tailings Disposal Facility was reviewed:
 - Three phases of construction
 - Constructed to the DEQ Division 43 standards, including a leak detection system.
- The mining methodology will be a decline construction to the bottom of the deposit with two ventilation shafts for escape routes and ventilation; there will be a total of 35 levels in the constructed mine.
- The mine will be a 'cut and fill' operation. The mine will be backfilled with waste rock and cemented rock fill. The cemented waste rock will take about one month to cure and become stable.
- Underground mining support will include bolts, steel net, and shotcrete.
- Underground equipment will be limited to 13 feet in height and will include a jumbo for blasting, bolter, front end loaders, low profile trucks, bulldozer, motor grader, fuel truck, service truck, and other equipment.
- The processing will include:
 - Primary crushing
 - Secondary crushing
 - Tertiary crushing (the target is to have 80% of the rock finer than 100 mesh)
 - Milling, then cyclone separation and gravity separation into the gravity concentrate holding tank
 - Carbon-in-leach processing
 - Milling is a closed process
 - Cyanide detoxification before the tailings disposal facility
 - Carbon will be regenerated
 - Leaching concentrate will be gravity concentrated, gravity electrowinning, filtered, dried, smelted, and made into dore; the dore will be sold to a refinery.
- The processing costs will be about \$8 million per year. About 50% of that is salaries, the rest will be consumables, such as energy and chemicals.
- About 94 – 95% of the gold is anticipated to be recovered.
- A chart of mine personnel was included. Paramount/Calico estimates that 112 people will be employed at the mine. Additional staff would be on contract, such as the firm to construct the mine decline. The borrow material will be contracted out, also. Staff categories include: mine superintendent, processing superintendent, general accounting, and Health, Safety, Environmental and Community superintendent.

- Calico estimates that the total yearly cost for the payroll would be \$8,906,000; averaging at \$79,518 per position. These projections are higher than the current household income in the surrounding areas.
- Capital investment is an initial investment of \$110 million for infrastructure and equipment, pre-production mine development, and other capital and contingency.
- The PFS is based on market rates of \$1,300 per oz. of gold and \$16.75 per oz. of silver. The PFS analyzed the impacts of both a lower price and a higher price of both gold and silver.
- There are opportunities to increase revenues and extend the mine life with other gold reserves that have been identified in the area, generally in North Spur, Bluegrass, and Wally-Wood mine sites.
- Additional drilling in the Grassy Mountain area is planned.

Carlo Buffone, Paramount/Calico provided a portion of the presentation.

John Dadoly, DEQ, asked about the length of the construction phase of the project. Van Treek said there would be approximately one year of construction time, starting with upgrading the access road and then building the power line. The processing facility will take 8 – 9 months to build. The decline will take about 13 months to construct.

Dadoly asked about the decline construction and water entering the tunnel during construction. How would the decline be dewatered and where would the water be stored, he asked. Van Treek highlighted that little water has been encountered at the site to date; there is water at the bottom of the mine, but not much in the upper portions. Dadoly asked if there would be a storage pond; yes, responded Van Treek, and that water would be used for processing. Dadoly highlighted that water will accumulate over the decline construction when there is no processing taking place. The water storage pond size is to scale, on the drawings, added Wolverson. This information should be detailed in the Consolidated Application, said Dadoly.

Larry Knudsen, DEQ, asked about the borrow pit on site. Would that include a batch plant and crusher, he asked. Van Treek indicated there would be a crusher on site. Knudsen asked about the use of crushed rock from the borrow pit. Van Treek said that an off-site private source of rock would be used to upgrade the road.

Bob Brinkmann, DOGAMI, asked about slide 17 in the Paramount/Calico presentation related to mining methodology. He pointed out that backfilling of all the stopes will be a combination of Rock Fill and Cemented Rock Fill in the 13-foot tall tunnels, which are 20 feet wide.

Brinkmann added that the DOGAMI Division 30 permitting for aggregate permitting would be applicable since the dam tailing construction material will be developed from within the project boundary.

He continued to discuss slide 28 of the presentation and asked about slumping at the surface. Van Treek responded that no slumping or subsidence at the surface is anticipated. The upper level of the mine will be about 300 feet from ground surface and the underground mine will be backfilled.

Jones continued to discuss seismic risk and considerations for the underground workings. Van Treek stated that the geotechnical work would include a seismic risk analysis.

Brinkmann asked about the backfilling materials; will those materials be tested for acid-rock drainage? Paramount/Calico responded yes.

Knudsen asked about the waste rock dump and whether that material will be reincorporated into the mine filling process; how will that material be stored, and how long will it be stored? Van Treek responded that there is a permanent area for waste rock dump and, close to the mine, an area for fill to be placed for cemented decline construction.

Bob Schwarz, DEQ, asked about the Tailings Storage Facility. Will there be leak detection, he asked. There will be two liners, said Van Treek. There will also be upgradient and downgradient wells. DeLong explained that there will be a drainage collection system and leak detection system.

Schwarz asked about the 'landfill'. DeLong responded it is an industrial solid waste landfill and it would be all inert waste. Knudsen clarified that it would handle both inert waste from the mill and mine and the decommissioning wastes. DeLong indicated there would be little decommissioning waste, since these can usually be sold.

Jones highlighted that there will be additional details emerging regarding the tailings disposal facility plans when Calico files an additional preliminary design of the facility. This will be reviewed by the Tailings Disposal Facility Subcommittee of the TRT.

Phil Marcy, WRD, asked about the estimated amount of process water that is needed for mine operations. Van Treek said that the mine water demands are weather dependent; about 50 cubic meters per hour will be needed; 220 gallons per minute.

Joy Vaughan, ODFW, asked about the tailings disposal facility containment. DeLong responded that the supranatant pool will be exposed and will be detoxified to the DEQ cyanide concentration limit.

Van Treek added that an earthquake hazard evaluation will be incorporated in the Consolidated Application.

Jones introduced Jesse Ratcliffe from the Oregon Department of Justice. Ratcliffe will be advising DOGAMI and the TRT on the chemical mining process. Ratcliffe outlined a bit of his experience, including working on multiple State agency permitting projects, such as the proposed Jordan Cove natural gas storage facility and other Energy Facility Siting Council (EFSC)-related processes.

Review of Schedule and Process Outline

Jones said that Calico estimates a Consolidated Application is targeted for 4Q18.

This will include:

- DOGAMI operating permit including General Information, Environmental Baseline Data, Operating Plan, Reclamation and Closure Plan and Alternatives Analysis (there are additional details included in the DOGAMI Division 37 rules).
- Wildlife Protection Plan, Wildlife Mitigation Plan, Greater Sage Grouse Mitigation Plan, and Wildlife Injury and Morality Reporting Plan.
- Scientific Taking Permit for ODFW and federal lands.
- Land Use Compatibility Statement and proposed land use findings.
- Historic properties management plan.
- DEQ permits for water quality (tailings storage facility, on-site sewage disposal, stormwater), air quality, solid waste.
- WRD water right permit amendment.

It is unclear at this time if Oregon Department of State Lands permits will be required, or if Oregon Health Authority permits will be required for the drinking water system.

Jones used a slide to illustrate the Division 37 Consolidated Application Process. A copy of the presentation containing the slide is available on the DOGAMI website.

Jones used the slide to show the responsibilities of the TRT and PCC when the Consolidated Application is received. Once received, the TRT will have 90 days to review the Consolidated Application for completeness; there will also be a public notice and engagement process.

The majority of the technical work will be conducted by the TRT. This is a very public process, stressed Jones. He suggested TRT members review the TRT charter. Working with the Company to have a complete application is important, said Jones.

After the Consolidated Application is accepted, the draft permits are due within 225 days. The Environmental Evaluation and Socioeconomic Analysis must also be prepared. Final permits are developed and coordination with the federal process will be important also, said Jones. Coordinating state and federal permitting processes will be a challenge, he said.

Heidi Williams, DEQ, asked about the definition of ‘days’. It is calendar days, said Jones.

Vaughan asked about the local land use process. It is starting now, said DeLong.

Vaughan asked about the areas of additional exploration. Knudsen explained that the additional exploration will be conducted under separate regulations for exploration for DOGAMI and BLM. He continued that if additional areas were identified for chemical process mining, a separate and new Notice of Intent under the DOGAMI Division 37 regulations would be needed.

Review of Draft Environmental Evaluation and Socioeconomic Impact Analysis

Dr. Adam Bonin with Cardno provided a presentation on the draft Environmental Evaluation and Socioeconomic Analysis outlines.

Cardno’s role includes:

- Provide technical support to the TRT
- Assist DOGAMI and TRT with identifying feasible alternatives
- Prepare the Environmental Evaluation and Socioeconomic Analysis reports

He continued by stating that the Environmental Evaluation will address:

- Providing specific impacts to affected agencies
- Providing full information on significant environmental impacts and alternatives

The scope of the Environmental Evaluation will include TRT and PCC engagement, along with public engagement. The preliminary scope has been reviewed earlier with the TRT, said Bonin.

The Environmental Evaluation report will include:

- Existing conditions
- Alternatives
- Impact analysis
- Cumulative impact analysis
- Mitigation
- “Best Available Practicable and Necessary Technology” (by individual components)

Much of the required information will be in the Consolidated Application. Some information and analysis can be initiated now, said Jones.

Bonin reviewed the Environmental Evaluation – Draft Outline including:

- Introduction
- Project Description and Alternatives
- Impact Analysis
- Cumulative Impact Analysis
- Mitigation
- References
- Technical appendices
 - Cyanide Chemistry
 - Analysis of Credible Accidents

Bonin reviewed the Socioeconomics and Environmental Justice Analysis – Draft Outline scope and table of contents.

For now, the main components include:

- Introduction
- Demographic and Economic Baseline Profile
- Impacts and Mitigation Measures
- References

Bonin stressed the importance of collaboration between the federal and state permitting processes (see OAR 632-037 regulations). Coordination between Cardno and the BLM National Environmental Policy Act (NEPA) contractor HDR will be important.

Williams asked about the timing of the Environmental Evaluation. Knudsen responded that there are differences between the federal and state permitting processes. The baseline data collection occurs before the application, and the evaluation occurs after the application is filed. The Environmental Evaluation will be available for agencies to use in drafting permits and for the public to use in reviewing draft permits, said Knudsen.

Jones asked the TRT members to review the draft Table of Contents for each of the report outlines and add their ideas and suggestions. Jones asked TRT members to consider specific environmental performance standards that might be included in the evaluation; for instance, what is an ‘undisturbed eco-system’, necessary for reclamation, he said.

Van Treek asked if additional information from the Company before the Consolidated Application was filed would be useful in preparing the report. Bonin stated that any additional information would be useful; Van Treek suggested that this information should be formally requested.

Knudsen added that any work to the ‘front end’ of the Environmental Evaluation will be useful and is anticipated.

Van Treek asked how the Environmental Evaluation and federal Environmental Impact Statement (EIS) will be coordinated to reduce duplication. There is an existing Memorandum of Understanding (MOU) between DOGAMI, BLM, and Calico regarding coordination, said Van Treek. Van Treek asked when monthly coordination meetings should be initiated. Andrea Bowen, BLM, suggested that the right time

for a monthly coordination meeting is after the completion of the federal Plan of Operations. Wolverson agreed.

Jones again suggested the TRT consider other items for the Table of Contents. He questioned what additional areas of environmental concern have arisen, such as climate change, how has cyanide beneficiation improved, how might severe weather events be evaluated, how is wildlife evaluated, and other considerations.

Jones said that the DOGAMI/DEQ Communications Team includes its consultants and they will be working on developing communications products and will share them with the TRT membership.

Necessary Follow Up and Next Steps

Janet Gillaspie, Environmental Strategies, stated there are no follow up items from the meeting.

The meeting was adjourned at 11:52 am (Pacific).