South32 Offices, Nogales
South32 Advisory Panel Meeting
August 6th, 2025

Schedule
3:30-3:35 – Introductions
3:35-5:20 – Dr. Ty Ferre and Dr. Tomas Goode Hydrology Discussion and Q&A
5:20-5:30 – South32 Updates

Attendance

Meeting Facilitator (Acorn International): Ranay Guifarro

South32 Hermosa Advisory Panel Members Present: Linda Shore, Michael Young, Daniel Gutierrez, Gerry Isaac, Francisco Padilla, Lou Jeong, Guillermo Valencia, Fritz Sawyer, and Jonathan Lutz

South32 Hermosa Advisory Panel Members Absent: Eva Zuniga, George Wise Trina De La Ossa, and Maureen De La Ossa

South32: Sandra Moraga, Troy Kimball, and Dr. Tomas Goode

Guests: Dr. Ty Ferre

Minutes

3:30 – Greetings
Meeting is called to order

3:35 – Dr. Ty Ferre and Dr. Tomas Goode Hydrology Discussion and Q&A
Water calibration has now become state-of-the-art, and when looking at uncertainty, it is reduced as parameters become more defined.

Looking at the simple version of how we view a water model, one model can show a bad outcome; however, if multiple models show a bad outcome, then we can look at what data needs to be collected to further understand what and why there is a bad outcome.

When reviewing the model, Dr. Ferre did not find any red flags—such as those identified in a different project—which made the assumption that no amount of pumping would impact water levels of a stream, as it was factored as a steady state. This was not true for the model used at the Hermosa mine.

Pumping groundwater at the mine site creates a cone, or more specifically, a ‘cone of depression,’ so that mining can occur without groundwater, then, the cone must be maintained for the safety of the people at the mine

Pulses or variations will occur, and there will likely be more ‘pulses’ in summer and less in winter.

When looking at the modeling drawdown maps (found in the DEIS) that show the cone of depression, the lines indicate where the drawdown occurs by depth. The lines become smaller the further they are from the mine, and the map edges show that the cone of depression is expected to occur in 20 to 30 years.

When looking at the current groundwater, we can see that above-ground vegetation is a reflection of groundwater characteristics. Specifically, at Harshaw Creek, there are cottonwoods showing that shallow groundwater is maintaining vegetation.

There have been 19 seep and spring sites identified that could potentially have a regional groundwater connection.

Persistent flow is more likely associated with older groundwater and supports continuous plant life. There are nature-based solutions that may be used to promote and mitigate flow concerns.

South32 will be working with the Forest Service to monitor flow and moisture content of the soil to see if impacts occur. South32 would be working with the Forest Service to manage these impacts.

Q: Dr. Ferre was asked to review a memo written by Keith Nelson, which noted concerns on the steady state.
A (Dr. Ferre): The questions raised in the memo can be answered by reviewing the model that was used in the draft EIS, not just the model’s future simulations.

Q: Does South32 have cameras to monitor flow?
A (Dr. Goode): Not currently, most of the area is off South32 property

Someone in the community could agree to put a camera slash device that would monitor the flow of Hershaw Creek, noting that logistics are complex as the Creek does move.

Q: Given the recent flooding in Texas, could a similar event occur at the mine?
A (Dr. Goode): The mine could not produce that level of flow, as we don't have the space to have the retention areas that would cause that level of impact. The tailings on the mine property will be a dry stack, which significantly reduces the probability of failure. South32 has complied with the GISTM standard, which specifically looks at Tailings safety and can be found at:
https://www.south32.net/sustainability/environment/tailings/tailings-storage-facilities#hermosa

When looking at the drawdown map (found in the DEIS), the contouring lines show levels of water change; the closer the lines are, the more attention should be made to ensure that the anticipated drop levels match the model. Many of the wells that have been identified on the Forest Service land that ranchers are using as part of the lease will be monitored. If their ability to draw water is limited, then a mitigation measure would be put into place.

Monitoring data will be incorporated into the model to enhance its accuracy and support groundwater modeling. South32 collects data and provides it to the Forest Service annually. After five years, the model will be updated and will be completed a few months after the five-year mark. If the data matches the model, then no significant changes to the model would occur; if the opposite is true, then the model would have more changes.

A large amount of data was collected to create the model used to predict and plan for potential problems and determine how they would be addressed. The model only allows us to plan, but five years is a placeholder for updating the model. Five years provides us with enough time to reduce anomalies, and enough data to reveal trends or movement. The assumptions that are put into a model are usually hard to change.

Mitigations for well owners that have been impacted by the cone of depression include drilling deeper wells, installing water guzzlers, and trucking water to the location. The mitigation measures do not include protecting infrastructure. Mitigations are applied if the ability to get water is reduced or eliminated.

If a landowner agrees to the program, South32 will monitor the well's flow, and transducers will be placed in the well to monitor water levels.

No one is required to sign and agree to the monitoring program. South32 is proactively looking at their impacts and solutions for those impacts; however, if a well owner wants to sign the agreement with South32, it must be signed by the end of the year 2025. This mitigation measure is not a requirement and was released prior to the final EIS.

The most significant cost of monitoring is putting in the well; the program provides a great way/effort to feed the model. The consistent performance of transducers and their placement in wells is crucial for obtaining high-quality data.

5:20 – South32 Presentation—Project Update

The Hermosa Fund met and awarded 13 grants, from 15 applications.

$206,000 has been awarded to educational programs in Santa Cruz County, including Technolochicas, The "Santa Cruzer" Literacy Bus, and Early Childhood programs.

The road to Centro has been started.

$22,000 will be awarded for the Santa Cruz Provisional College.

The Electrician Program had 60 applicants for 16 spots. The program will start in September. The 16 spots will have all tuition and books covered. There will also be a fund available for these students so that if barriers exist to attending class, such as car issues or childcare assistance, they can be provided.