



Katie Hobbs
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Karen Peters
Cabinet Executive
Officer

Via Electronic Mail

November 21, 2023

South32 Hermosa Inc. (South32).
Attn: Mr. Brent Musslewhite
Director, Environment and Permitting
1860 E River Road, Suite 200
Tucson, Arizona 85718

Re: Determination of Applicability for the Hermosa Project Cemented Paste Tailings Backfill Inventory 512235, LTF No. 99798, Place ID: 18640

Dear Mr. Musslewhite:

The Arizona Department of Environmental Quality (ADEQ) has reviewed the Determination of Applicability (DOA) for the Hermosa Project Cemented Paste Tailings Backfill (CPTB). Based on the information submitted with the DOA application received on September 18, 2023, **no Aquifer Protection Permit (APP) will be required** for the following reasons:

1. South32 plans on utilizing approximately 50% (~34,460,100 cubic meters or 72 million metric tons) of the tailings in the form of CPTB in the underground mine workings to serve as additional structural support of the workings, which provide a safer working environment for the miners.
2. Diffusion is the primary release mechanism of the CPTB due to the low permeability of the material. South32 used the Leaching Environmental Assessment Framework (LEAF) method to predict the diffusive leaching potential of the CPTB.
3. A total of 263 individual samples were characterized for diffusive leaching potential during the LEAF procedure. Acid-base accounting (ABA) static testing was also performed on 18 samples representing the lithologic types present at the mine-site. The LEAF and ABA samples were representative of the produced tailings from the different lithologic units that will compose the planned CPTB mixtures.
4. Based on the LEAF characterization, the geometric mean for the all measured constituents were less than corresponding Aquifer Water Quality Standards (AWQS).
5. Acid-base accounting (ABA) analyses of the raw tailings indicate that the tailings are non-acid generating. The weighted average Net Neutralization Potential (NNP) of the tailings was calculated at +81 tons CaCO₃/kton rock, which is considered non-acid generating and in general has a high acid neutralization potential.
6. The addition of cement to create the CPTB will increase the acid neutralization potential of the material and NNP.

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Based on the information in the application, the expected lithologic content composing the CPTB is non-acid generating. The LEAF method leachable concentrations exhibit an overall geometric mean for all measured constituents that are less than the corresponding AWQS. Given the expected lithologic content of the CPTB, the emplaced material meets the definition of “inert” under A.R.S. § 49-201.22 because it is not acid generating and it does not leach constituents at concentrations above the AWQS. The CPTB also meets the exemption from the APP program for storage, treatment or disposal of inert material under A.R.S. § 49-250(B)(20).

ADEQ may withdraw this decision if future changes in operation occur or if the information submitted in the DOA is found to be inaccurate. Further, this letter is not intended to waive any federal, state or local requirements. Additionally, if South32 encounters material containing different rock composition, a DOA to demonstrate that material is inert under A.R.S. § 49-201.22 is encouraged, otherwise, South32 cannot guarantee that the operations detailed in this DOA approval remain exempt as conditions change.

This decision is an appealable agency action under A.R.S. § 41-1092. You have a right to request a hearing and file an appeal under A.R.S. § 41-1092.03(B). You must file a written Request for Hearing or Notice of Appeal within **30 days** of your receipt of this Notice. A Request for Hearing or Notice of Appeal is filed when it is received by ADEQ’s Hearing Administrator as follows:

Hearing Administrator
Office of Administrative Counsel
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007

The Request for Hearing or Notice of Appeal shall identify the party, the party’s address, the agency and the action being appealed and shall contain a concise statement of the reasons for the appeal. Upon proper filing of a Request for Hearing or Notice of Appeal, ADEQ will serve a Notice of Hearing on all parties to the appeal. If you file a timely Request for Hearing or Notice of Appeal you have a right to request an informal settlement conference with ADEQ under A.R.S. § 41-1092.06. This request must be made in writing no later than **20 days** before a scheduled hearing and must be filed with the Hearing Administrator at the above address.

If you have any questions, please feel free to contact me by email at reeder.daniel@azdeq.gov or call (602) 771-4127.

Sincerely,

DocuSigned by:


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Daniel Reeder, Principal Hydrogeologist
Individual APP Unit
Groundwater Protection Section, Water Quality Division

cc: Ethan Leiter, Supervisor, Individual APP Unit
Vimal Chauhan, Environmental Engineer, Groundwater Protection Section