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November 28, 2022

Transmitted Via: Email (Jamie.Lancaster1@dnr.ga.gov)

Ms. Jamie Lancaster
Surface Mining Unit
Georgia Department of Natural Resources
Environmental Protection Division
4244 International Parkway, Suite 104
Atlanta, Georgia 30354

**Subject: Updated Documents
Twin Pines Minerals, LLC
Saunders Demonstration Mine
Charlton County, Georgia
EPD Mine ID No. 2073**

Dear Ms. Lancaster:

As requested, we have updated all of the plan sheets and appendices to bring everything up-to-date. The changes are detailed in the charts that follow and can be grouped into four groups.

First, all of the plan sheets have been grouped together. Previously the Surface Mining Land Use Plan consisted of 15 plan sheets followed by Exhibits, including Exhibit J, which included 57 additional plan sheets related to the Water Management Ponds. We have grouped all of these plan sheets together ease of reference. The sheet numbers have not changed.

Second, many of the appendices included appendices of their own, and some documents had been attached as appendices twice. Again for ease of reference, we have gathered all of these attachments into a single appendix. References to these documents have been updated accordingly.

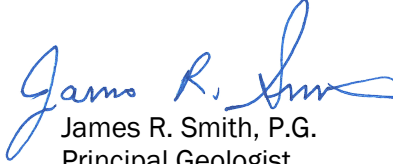
Third, we have reviewed all of the documents carefully to ensure everything is up to date. As you know, our plans have evolved over time in response to questions and specific requests from EPD as well as stakeholder comments. These changes improved our project, but they also introduced errors because the amendments were not always implemented consistently across all documents. These inconsistencies have been corrected. The most significant updates are to the process diagrams on Sheet 5 and the supplemental narrative on Sheet 15. In addition, we removed the erosion & sediment control "notes" (C-400 to C-425) because these are covered on Sheets 6 and 7. Any additional information needed during construction will be submitted with the land use disturbance permit application

Fourth, in the process of reviewing and updating the documents, we discovered minor errors, which have been corrected. None are consequential.

The revised organization is shown in the tables below, along with a detailed listing of changes. We hope this is consistent with what you had envisioned, but please let us know if it is not. We have also uploaded a complete set of the updated documents to the EPD's One Drive link. We would also be happy to provide as many copies of the complete set as would be convenient. Please let us know about that, and also if you have any questions.

Sincerely,
TTL, Inc.


Sheryl G. Reeves, P.E.
Principal Engineer


James R. Smith, P.G.
Principal Geologist

Application Form	
Document	Changes
Form	Updated Twin Pines Minerals, LLC address. Adjusted anticipated mining dates.

SURFACE MINING LAND USE PLAN (Rev'd 2022-11-28)	
Plan Sheet	Changes
1. Cover sheet and Drawing index	Updated location map Updated Sheet Index
Site layout	
2. Boundary Sheet	No changes
3. Mining Plan Sheet – Site Layout	No changes
Mining Plan Sheets	
4. Mining Plan Sheet – Estimated Progression of Mining	Updated timing estimate in first “Note”
5. Mining Plan Sheet – Process Flow Diagram	Updated Mining Process Flow Diagram for clarity, including separating the “Mining Water Process Flow Diagram” from the “Mining Sand Process Flow Diagram.” Updated Mining Water Process Flow Diagram to (1) show Water Management Pond M3 as the primary source of water for the Process Water Ponds, with the wells being used only as a back-up; (2) update quantities consumed and used; (3) clarify that water management ponds will not be used to manage stormwater; (4) delete insert stating the mine pit would not need to be routinely dewatered
Erosion and sediment control	
6. Erosion and Sediment Control Plan	Note added referring to Sheets C-400 to C-425 for the additional erosion and sediment control measures for the Process Water and Water Management Ponds

SURFACE MINING LAND USE PLAN (Rev'd 2022-11-28)	
Plan Sheet	Changes
7. Erosion and Sediment Control Plan Notes & Details	<p>NPDES Notes updated to reflect (1) current plans regarding pit dewatering, and (2) intended function of berms around the materials stockpile.</p> <p>Stockpile BMP Note updated to delete reference to stormwater being directed toward the mining pit</p> <p>“Temporary Vegetation” inset updated to describe erosion and sediment controls for the topsoil stockpile</p>
8. Temporary Vegetation Schedule Table	No changes
Reclamation plan	
9. Post-Mining Reclamation Plan (1)	<p>Statement in col. 1 ¶ 4 that the bentonite layer will be placed 7 to 10 feet below the surface has been corrected to refer to Soil Amendment Plan § 1.1</p> <p>Language describing the process for decommissioning the Process Water and Water Management Ponds has been updated to include a reference to C-801 and to conform to language used in the Water Use Management Plan.</p> <p>The Soil Amendment Plan has been amended to add that a Georgia-licensed P.E. or P.G. will supervise the placement of the bentonite layer under § 1.1 (procedures for application of the bentonite layer) and provide quarterly certifications / reports to Georgia EPD, and (2) to clarify under § 1.2.2 that a Georgia-licensed geologist will observe the drilling.</p>
10. Post Mining Reclamation Plan (2)	<p>Note #7 updated to refer to the correct sheet</p> <p>Note #8 added to refer to Sheet 9 and C-801 for the decommissioning of process water and water management ponds.</p>
Groundwater Surface Water Monitoring	
11. Groundwater and Surface Water Monitoring Plan (1)	No changes

SURFACE MINING LAND USE PLAN (Rev'd 2022-11-28)	
Plan Sheet	Changes
12. Groundwater and Surface Water Monitoring Plan (2)	No changes
13. Groundwater and Surface Water Monitoring Plan (3)	No changes
Hazard maps	
14. Supplemental Information – Vicinity Map, FEMA Flood Hazard map, etc.	No changes
Supplemental Narrative	
15. Supplemental Narrative	Supplemental narrative rewritten for clarity and consistency with updated plans. Substantive changes are noted on the plan sheets to which the narrative refers.

WATER MANAGEMENT POND SHEETS (Formerly Appendix J)	
Plan Sheet	Changes
Existing Conditions	
C-100 Overall Existing Conditions Plan	TOC revised to reflect additions and deletions
C-102 Existing Conditions Plan Sheet 2	No changes
C-103 Existing Conditions Plan Sheet 3	No changes
C-105 Existing Conditions Plan Sheet 5	No changes
Site Plan	
C-200 Overall Site Plan	No changes
C-202 Site Plan Sheet 2	No changes
C-203 Site Plan Sheet 3	No changes
C-205 Site Plan Sheet 5	No changes
Grading plan	
C-300 Overall Grading and Drainage Plan	No changes

WATER MANAGEMENT POND SHEETS (Formerly Appendix J)	
Plan Sheet	Changes
C-302 Grading and Drainage Plan Sheet 2	No changes
C-303 Grading and Drainage Plan Sheet 3	No changes
C-305 Grading and Drainage Plan Sheet 5	No changes
Erosion and sediment control for water management ponds	
C-400 Overall Initial Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (1)	No changes
C-402 Initial Erosion Sedimentation and Pollution Control Plan Sheet for Process Water and Water Management Ponds (2)	No changes
C-403 Initial Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (3)	No changes
C-405 Initial Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (5)	No changes
C-410 Overall Intermediate Erosion Sedimentation and Pollution Control Plan for Water Management Ponds (1)	No changes
C-412 Intermediate Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (2)	No changes
C-413 Intermediate Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (3)	No changes
C-415 Intermediate Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (5)	No changes
C-420 Overall Final Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (1)	No changes
C-422 Final Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (2)	No changes

WATER MANAGEMENT POND SHEETS (Formerly Appendix J)	
Plan Sheet	Changes
C-423 Final Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (3)	No changes
C-425 Final Erosion Sedimentation and Pollution Control Plan for Process Water and Water Management Ponds (5)	No changes
	C-431, 432 & 433 (E&SC Notes) have been removed. E&SC Notes are provided in Sheet 7.
C-439 Erosion Sedimentation and Pollution Control Checklist for Process Water and Water Management Ponds	No changes
C-441 Erosion Sedimentation and Pollution Control Details for Process Water and Water Management Ponds (1)	No changes
Utility Plan	
C-500 Overall Utility Plan	No changes
C-502 Utility Plan Sheet 2	No changes
C-503 Utility Plan Sheet 3	No changes
C-505 Utility Plan Sheet 5	No changes
C-511 Utility Details Sheet 1	No changes
C-512 Utility Details Sheet 2	No changes
C-513 Utility Details Sheet 3	No changes
C-514 Utility Details Sheet 4	No changes
C-515 Utility Details Sheet 5	No changes
C-521 Pump Station Plan and Section	No changes
C-530 Overall Evaporator Layout	C-530 is new and was added at Georgia EPD's request
C-532 Evaporator Plan Sheet 2	C-532 is new and was added at Georgia EPD's request

WATER MANAGEMENT POND SHEETS (Formerly Appendix J)	
Plan Sheet	Changes
C-533 Evaporator Plan Sheet 3	C-533 is new and was added at Georgia EPD's request
C-535 Evaporator Plan Sheet 5	C-535 is new and was added at Georgia EPD's request
	C-571& C-572 Mining Plan Sheet – Process Flow Diagram (1) & (2) have been removed. The Mining Water Process Flow Diagram is provided on Sheet 5
Detailed plans	
C-601 Perimeter Road Plan and Profile Sheet 1	No changes
C-602 Perimeter Road Plan and Profile Sheet 2	No changes
C-603 Perimeter Road Plan and Profile Sheet 3	No changes
C-604 Perimeter Road Plan and Profile Sheet 4	No changes
C-605 Perimeter Road Plan and Profile Sheet 5	No changes
C-606 Perimeter Road Plan and Profile Sheet 6	No changes
C-611 Pump House Road Plan and Profile Sheet 1	No changes
C-612 Pump House Road Plan and Profile Sheet 2	No changes
C-621 Storm Drain Plan and Profile	No changes
C-631 Site Cross Sections Sheet 1	No changes
C-632 Site Cross Sections Sheet 2	No changes
C-633 Site Cross Sections Sheet 3	No changes
C-701 Liner Details	No changes
C-711 Site Details 1	No changes
C-712 Site Details 2	No changes
C-713 Site Details 3	No changes
C-714 Site Details 4	No changes

Pond Closure Plan	
C-801 Pond Closure Plan	No changes

Appendices	
Appendix	Changes
Jurisdictional Determinations and Resource Surveys	
A. Approved Jurisdictional Determinations USACE JD (15 Oct. 2020; 14 Mar. 2021)	Added Aug. 22, 2022 Letter from J. O’Kane, USACE, to S. Ingle, Twin Pines reinstating Oct. 15, 2022 and March 4, 2021 AJDs.
B. Cultural Resources Reports (Apr. 2020)	No changes
C. Species Surveys and Habitat Assessments (2018-2020)	Added USFWS determination that Eastern Distinct Population Segment of the gopher tortoise, which includes the entire range east of the Mobile and Tombigbee Rivers in Alabama, does not qualify for listing as either a threatened or endangered species. See USFWS, Endangered and Threatened Wildlife and Plants; Finding for the Gopher Tortoise Eastern and Western Distinct Population Segments, 87 Fed. Reg. 196 (Oct. 12, 2022).
Investigations	
D. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Dec. 11, 2019). <i>Subsurface Lithology of the Surficial Aquifer at Twin Pines Mine.</i>	No changes
E. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Oct. 31, 2019). <i>Geologic Characterization at Twin Pines Mine.</i>	No changes
F. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Oct. 31, 2019). <i>Hydrogeologic Field Characterization at Twin Pines Mine.</i>	No changes
G. Holt, R.M. (Jan. 25, 2021). <i>Subsurface Continuity of Humate-Bearing Sands in Surficial Aquifer, Trail Ridge, Georgia.</i>	No changes
H. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Oct. 31, 2019). <i>Water Quality at Twin Pines Mine.</i>	No changes

Appendices	
Appendix	Changes
I. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Nov. 22, 2019). <i>Local Groundwater/Surface Water Hydrology at Twin Pines Mine.</i>	No changes
J. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Nov. 15, 2019). <i>Climate Data at Twin Pines Mine.</i>	No changes
Modeling Reports and Impact Analysis	
K. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Nov. 26, 2019). <i>Laboratory Testing Data at Twin Pines Mine.</i>	No changes
L. Holt, R.M., Tanner, J.M., Smith, J.R., Patton, A.C., and Lepchitz, Z.B. (Jan. 14, 2020). <i>Impact of the Proposed Twin Pines Mine on the Trail Ridge Hydrologic System.</i>	No changes
M. Holt, R.M., Tanner, J.M., Smith, J.R., (Nov. 13, 2020). <i>Assessing the Impact of Soil Amendments During the Reclamation of the Proposed Twin Pines Minerals, LLC Saunders Demonstration Mine Using Groundwater Flow Models.</i>	No changes
N. Panday, S., Wycoff, R., and Martell, G. (Sep. 14, 2021). GSI Environmental, <i>Modeling the Groundwater Flow System at the Proposed Twin Pines Mine on Trail Ridge.</i>	No changes
O. Panday, S., (Nov. 9, 2022). Addendum to <i>Modeling the Groundwater Flow System at the Proposed Twin Pines Mine on Trail Ridge.</i>	Minor corrections to terminology
Water Use Management	
P. Water Use Management Plan	Appendices to the Water Use management Plan have been restyled as appendices to the SMULP for ease of reference (to minimize nesting) Text edited to update references to appendices Additional edits for clarification
Q. Water Management Pond Hydrology and Hydraulic Analysis (May 2022)	No changes

Appendices	
Appendix	Changes
1. Water Management Pond Plan	No changes
2. 2 Pond Analysis Output Report for the 25-yr / 24-hr Event	No changes
3. Output Graph for the 25-yr / 24-hr Event	No changes
4. Pond Analysis Output Report for the 100-yr/24-hr Event	No changes
5. Output Graph for the 100-yr / 24-hr Event	No changes
6. Precipitation Frequency Data from NOAA	No changes
R. Rationale for Groundwater Level Monitoring Plan	Changed title to Rationale for Groundwater-Level Monitoring Plan
S. Technical Specifications	No changes
T. K. Eli Bundrick, Donald Smith Company, Inc., Well Proposal 16 Dec. 2019)	No changes
U. E3 Solutions Enhanced Water Evaporation Systems Brochure	No changes
V. Safe Dams Inspection List	The checklist formerly styled as an addendum to the Water Use Management Plan has been moved to Appendix V

OTHER SUBMISSIONS	
Document	Changes
Surface mining application	Updated the applicant's address and anticipated dates to reflect current status and plans
Groundwater withdrawal permit	Application form amended (1) to update Twin Pines Minerals LLC address; and (2) add information on well pumps Minor formatting and grammatical changes throughout Cover sheet updated to reflect new address for Twin Pines Minerals LLC

OTHER SUBMISSIONS	
Document	Changes
	<p>§ 1–3 reorganized into two sections to align with updated narrative in SMULP (Sheet 15)</p> <p>§ 4.2 ¶ 2: Added details about water flow from Upper Floridan wells to charge the plant. Added statement on makeup water needs and sources of makeup water.</p> <p>§ 4.2 ¶ 3: Revised to state process water for the MSP will be provided from pond M3. Clarified that process water from the MSP may be recycled for use or transported to process water pond P3 for re-use</p> <p>§ 4.3 ¶ 1: Added details about water flow from Upper Floridan wells to charge the plant. Added statement and makeup water needs and sources of makeup water.</p> <p>§ 4.4: Added details about makeup water requirements</p> <p>§ 5: Updated details regarding groundwater usage</p>
Environmental Provisions Checklist	<p>Updated Response to Question 10 by deleting first sentence of 2d paragraph, which is no longer correct</p> <p>Item 1, Sentences 1 & 2: Changed “affected” to “impacted” to align with regulatory text.</p> <p>Item 2: Updated to state that TPM has obtained the necessary permit from Charlton County</p> <p>Item 3: Updated to clarify that, after processing plants are charged, most process water will be supplied by seepage water conserved in the water management ponds</p> <p>Item 4: Updated to clarify that make-up water will primarily be supplied by seepage water conserved in the water management ponds</p> <p>Item 7: Updated to provide information about process and water management ponds</p>

OTHER SUBMISSIONS	
Document	Changes
	Item 10: Deleted statement that stormwater in processing area will be pumped to processing ponds.