TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL

Document Metadata Overview	
Document Name:	Tailings Storage Facility - Tailings Operations, Maintenance and Surveillance (TOMS) Manual
Document Owner:	Environmental Sustainability Manager - US Region

Document Control Information			
Effective from	**Version Number**	**Amendment Details**	**Amended By**
2021/05/03	V1.5	Updated for Existing Operations	Knight Piésold Ltd.
2022/12/20	V1.6	Updated for Existing Operations	Knight Piésold Ltd.
2023/5/16	V1.7	Appendix A Updated	Knight Piésold Ltd.
2025/07/02	V1.8	Updated for Existing Operations	Knight Piésold Ltd.
2026//04/13	V1.9	Updated for In-Basin Waste Rock Storage	Knight Piésold Ltd.

Approval - Version 1.8			
Approvals	**Title**	**Signature**	**Date Signed**

East Boulder Mine

Tailings Storage Facility - Tailings Operations, Maintenance and Surveillance (TOMS) Manual

2026/04/13

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COMMITMENT ACCOUNTABILITY RESPECT ENABLING SAFETY

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ABBREVIATIONS

CAP ..... Corrective Action Plan
CFR ..... Code of Federal Regulations
CORP ..... Consolidated Operations and Reclamation Plan
CSP ..... corrugated steel pipe
DBA ..... Dam Breach Assessment
DSR ..... Dam Safety Review
EBM ..... East Boulder Mine
EDS ..... Environmental Design Storm
El ..... Elevation
EOR ..... Engineer of Record
EPP ..... Emergency Preparedness Plan
GISTM ..... Global Industry Standard on Tailings Management
GM ..... General Manager
GPS ..... Global Positioning System
IBWRS ..... In-Basin Waste Rock Storage
IDF ..... Inflow Design Flood
IRP ..... Independent Review Panel
ITRB ..... Independent Tailings Review Board
KP ..... Knight Piésold Ltd.
MCA ..... Montana Code Annotated
MDEQ ..... Montana Department of Environmental Quality
Mine Act ..... *Federal Mine Safety and Health Act*
MSHA ..... Mine Safety and Health Administration
MT ..... Montana
PMF ..... Probable Maximum Flood
QA ..... Quality Assurance
QPP ..... Quantitative Performance Parameter
QRFG ..... Quick Reference Field Guide
ROD ..... Record of Decision
ROM ..... Run of Mine
RTFE ..... Responsible Tailings Facility Engineer
Stillwater ..... Sibanye Stillwater
SWPPP ..... Storm Water Pollution Prevention Plan
TOMS ..... Tailings Operations, Maintenance and Surveillance
TSF ..... Tailings Storage Facility
UAV ..... Unmanned Aerial Vehicles
USFS CGNF ..... United States Forest Service Custer Gallatin National Forest
VP ..... Vice President
VWP ..... vibrating wire piezometer

1.0 INTRODUCTION

1.1 SCOPE AND OBJECTIVES OF MANUAL

Sibanye Stillwater (Stillwater) owns and operates the East Boulder Mine (EBM), a platinum group metal mine located in south central Montana. The EBM consists of an underground mine, a concentrator, a Tailings Storage Facilities (TSF) and ancillary facilities. This Tailings Operations, Maintenance and Surveillance (TOMS) Manual has been prepared for the EBM TSF and its associated facilities. This TOMS Manual has been developed to meet the requirements of the Montana State Law as defined in Montana Code Annotated (MCA) Title 82 Chapter 4 Part 3 (MCA 82-4-379) (MT, 2024).

The objectives of this TOMS Manual include:

- Define the roles and responsibilities of Stillwater site personnel, third-party consultants, and government (Section 1.2)
- Define the training requirements for those involved in the operation, maintenance and surveillance of the TSF (Section 1.3)
- Outline the document control and revision procedures (Section 1.4)
- Provide an overview of the key components of the TSF and operating, maintenance and surveillance requirements (Sections 2 and 3)
- Define the surveillance, inspection, reporting and review requirements (Section 4)
- Present the Emergency Preparedness Plan (Section 5)

Appendix A1 provides a Quick Reference Field Guide (QRFG) for the operation of the TSF. The QRFG includes the Quantitative Performance Parameters (QPPs) and key information for the operation, monitoring and inspection of the TSF. Appendix A2 provides a QRFG for In-Basin Waste Rock Storage (IBWRS).

Reference documents for the EBM TSF are listed in Appendix B.

Appendix C includes the inspection schedules and the inspection log templates. These templates are to be utilized for daily data collection, and for information gathered during the routine inspections.

1.2 ROLES AND RESPONSIBILITIES

The following provides an overview of the responsibilities of Stillwater site personnel and third-party consultants, as well as the role of the Montana Department of Environmental Quality (MDEQ) and other government agencies.

1.2.1 STILLWATER MINE SITE PERSONNEL

The Vice President (VP) and General Manager (GM) of Mine Operations has the ultimate responsibility for the safety of the EBM TSF. The Concentrator Manager has been designated as Safety Manager for the TSF and is the primary contact for all matters relating to the operation, maintenance and surveillance of the TSF. The Concentrator Manager reports to the VP/GM of Mine Operations and is responsible for the day-to-day operations of the TSF.

In addition to the Concentrator Manager, other key Stillwater personnel have roles and responsibilities relating to the operation, maintenance, and surveillance of the TSF. The organization and responsibilities chart is shown on Figure 1.1. A list of these key personnel, and their responsibilities are provided on Table 1.1. Emergency contact information for Stillwater personnel is provided in the EPP.

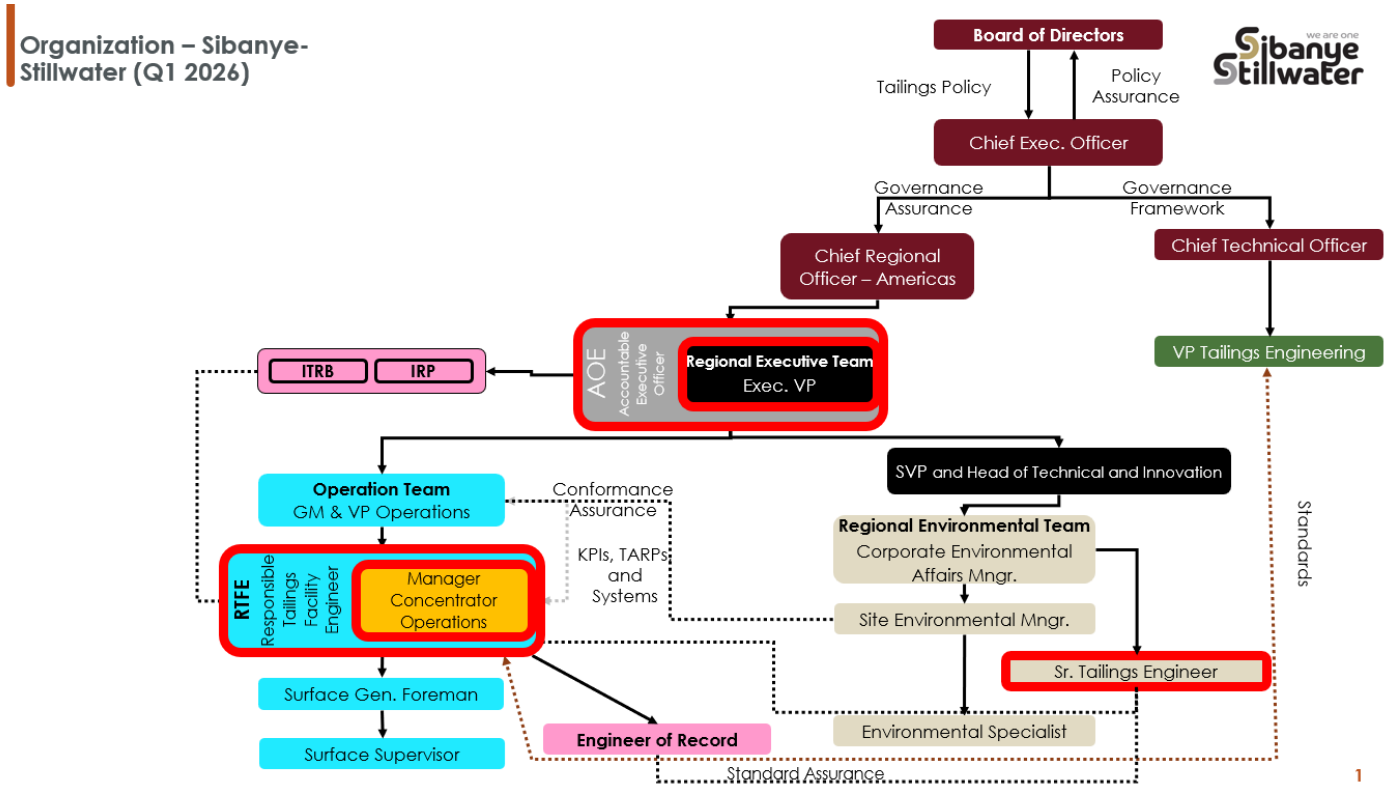


Figure 1.1 Organization and Responsibilities Chart

Table 1.1 Stillwater Personnel - Roles and Responsibilities

Position	Responsibilities
VP and GM of Mine Operations	• Provide oversight and leadership of all activities required for the safe and socially responsible operation of the mine site. Overall project review and implementation, and budget allocation.
Corporate Environmental Affairs Manager	• Provide oversight and leadership of all activities required for the socially and environmentally responsible operation of the mine site • Communications with Government Agencies and Stakeholders
Concentrator Manager (Responsible Tailings Facility Engineer (RTFE))	• Accountable for the integrity of the tailings storage facility • Responsible for liaising with EOR, operations, and planning • Person responsible for the safe operation of the TSF including overall operations, maintenance and surveillance and TOMS Manual updates and review • Plan, coordinate, supervise, direct and review all activities related to the TSF construction and operation, tailings delivery and water reclaim, TSF water balance, IBWRS and Emergency Preparedness Plan (EPP) • Overall operations of the concentrator and supervision of concentrator personnel • Overall concentrator operations contact responsible for Tailings Delivery System, Water Reclaim System and IBWRS • Person responsible for inspection, maintenance, review and oversight of all areas of the tailings management, water reclaim operations, including tailings deposition, Tailings Delivery System, Water Reclaim System, Basin Underdrains, and IBWRS • Quarterly Dam Safety Inspections for the TSF • Responsible for TSF water management • Unusual Event inspections • Implementation of EPP • Coordinate supernatant pond surveys and soundings • Responsible for task training of all tailings and IBWRS personnel • Responsible, with the EOR, for the Construction Records Report • Responsible for liaising with regulatory affairs, social performance and environment teams • Responsible for TOMS Manual
Tailings Engineer	• Plan, coordinate, advise, and review all operational activities related to environmental compliance functions (quarterly inspections, leak detection, water quality, TSF water balance). Ensure Stillwater remains in compliance with all applicable permits, rules and regulations related to these areas. • Responsible for the monitoring system and communication of the results to the EOR, including performance reviews and update TOMS Manual and EPP • Coordinate supernatant pond surveys and soundings • Quarterly TSF Inspections • Monthly TSF and instrumentation inspections • Implementation of EPP • Instrumentation monitoring and review • Maintain TSF water balance tracking spreadsheet
Environmental Affairs Manager	• Plan, coordinate, advise, and review all operational activities related to environmental compliance functions (quarterly inspections, leak detection, water quality, TSF water balance). Ensure Stillwater remains in compliance with all applicable permits, rules and regulations related to these areas. • Review and update TOMS Manual and EPP • Implementation of EPP • Communications with Government Agencies and Stakeholders

Position	Responsibilities
Concentrator General Foreman	• Monthly TSF inspections • Weekly TSF inspections
Surface Supervisor	• Routine inspections of the Tailings Delivery System, Water Reclaim System and IBWRS operations during dayshift • Weekly TSF inspections • Annual Tailings Delivery System Inspection and Planned Maintenance • Supervises the Surface Crew
Concentrator Operations Supervisor	• Routine inspections of the Tailings Delivery System, Water Reclaim System during dayshift and night shift (counterpart to Surface Supervisor) • Annual Tailings Delivery System Inspection and Planned Maintenance
Surface Crew	• Efficiently operate the TSF within Stillwater standards, occasional supervision to ensure regulatory compliance • Responsible for visual day shift inspections, report any unusual observations to Surface Supervisor • Maintaining TSF operations within Stillwater standards and at the highest level of safety
Environmental Specialist(s)	• Attend Quarterly TSF inspections • Conduct unusual event inspections • Maintaining environmental systems, wildlife protection and annual permit reporting • Implementation of EPP • Geotechnical instrument monitoring and review (survey monuments, inclinometers, piezometers) • Geotechnical instrument support, maintenance, and installation • Monitoring and sampling of groundwater monitoring wells • Organizing and reporting on all reclamation activities
Chief Engineer	• Technical support
Projects Engineer	• Coordinate TSF embankment raises • Coordinate supernatant pond surveys and soundings • Coordinate IBWRS construction (i.e., geomembrane protection layer and Access Ramp) • Routine IBWRS inspections
Safety Manager	• Coordinate the Emergency Response Team; Emergency Preparedness Plan; Emergency Response Planning; Emergency Response Binder; Training and/or ensure job hazard analyses are completed as required

1.2.2 Engineer of Record (EOR) and Third-Party Consultants

A number of third-party consultants are involved in the design, construction and inspection of the TSF. The roles and responsibilities of the various third-party consultants and the Engineer of Record (EOR) are summarized in Table 1.2. Emergency contact information for the EOR and third-party contractors is provided in the EPP.

Table 1.2 EOR and Third Party Consultants

Role and Name	Responsibilities	Stillwater Contact
Engineer of Record Knight Piésold Ltd. EOR - Ken Brouwer, P.E. Deputy EOR - Craig N. Hall, P.E.	• Provide operational support to Stillwater • Preparation of construction specifications and drawings and contract documentation, prescribe and oversee QA/QC activities, provide on-site personnel for construction monitoring activities and practices • Review of instrumentation records, complete annual inspections and reporting	• Environmental Affairs Manager • Tailings Engineer • Environmental Specialist(s) • Corporate Environmental Manager
Independent Tailings Review Board Members	• Provide independent reviews of the TSF including operation of the facility, engineering, and geotechnical investigation • Reporting to the Authorized Economic Operator	• Tailings Engineer • Corporate Environmental Manager
Independent Review Panel Members	• Provide independent reviews of future TSF design and once constructed review to confirm TSF operations satisfy the design intent • Reporting to the MDEQ	• Tailings Engineer • Corporate Environmental Manager
Hydrogeology Consultant	• Provide hydrogeological support to Stillwater	• Environmental Affairs Manager • Corporate Environmental Manager
Specialist Lining Contractor	• Qualified manufacturers and installers are used to supply and install the geosynthetics lining materials required for the TSF construction • Complete detailed inspections and make repairs to the HDPE geomembrane on a semi-annual basis	• Tailings Engineer • Concentrator Manager
Earthworks Contractor	• Local contractor with heavy equipment • Qualified to construct engineered embankments, random fills, surface preparation for liner installation, reclamation earthworks, initial construction for IBWRS, and other earthmoving activities	• Project Manager • Concentrator Manager
Reclamation Contractor	• Reclamation work	• Environmental Specialist

1.2.3 Regulatory Agencies

The jurisdiction for regulation of tailings impoundments resides with the MDEQ. Embankments for TSFs and water reservoirs subject to permits issued by MDEQ are specifically exempt from certain provisions of the *Montana Dam Safety Act* (MCA 85-15-107) and therefore are not subject to embankment hazard potential classification within the State (MCA 85-15-209). The MDEQ is the regulatory agency responsible for ensuring the applicable legislative requirements outlined in MCA 82-4-379, relating to this TOMS Manual, are met by Stillwater.

The Mine Safety and Health Administration (MSHA) is responsible for administering the provisions of the *Federal Mine Safety and Health Act* of 1977 (*Mine Act*) and enforcing compliance with mandatory safety and health standards. Title 30 Code of Federal Regulations (CFR) part 56.20010 requires that *'if failure of a water or silt retaining dam at a mine will create a hazard, it shall be of substantial construction and inspected at regular intervals*'. The *Mine Act* requires MSHA to inspect surface mines at least twice per year.

1.3 TRAINING

Training is required for any personnel involved in the operation, maintenance, surveillance and inspection of the TSF. Training must be conducted by the Concentrator Manager, Tailings Engineer, Concentrator General Foreman, or a suitably qualified individual familiar with the design, operation, maintenance and inspection of all civil and mechanical works associated with the TSF. Training sessions will be documented, and a record kept on file on Stillwater's electronic filing system.

The VP/GM of Mine Operations, Concentrator Manager, Concentrator General Forman, Surface Supervisor, Tailings Engineer and Environmental Affairs Manager must fully understand and be able to implement the TOMS Manual requirements and also ensure that all applicable mine personnel and contractors understand the requirements presented in the TOMS Manual.

Appropriate site personnel are responsible for being continually aware of the visual indications of the TSF performance. Anything observed that is outside of normal operating parameters, as outlined in this TOMS Manual, must be immediately reported to the Concentrator Manager and/or Tailings Engineer.

1.4 CONTROL AND REVISIONS TO THE MANUAL

This TOMS Manual is a controlled document, and specific procedures have been defined for the distribution, revision, and review as outlined below.

1.4.1 DISTRIBUTION

The TOMS Manual will be controlled by the Concentrator Manager. The Tailings Engineer will be responsible for maintaining the latest version of the TOMS Manual on Stillwater's electronic file management system. The current location on US SharePoint is: US Environmental Team/ Corporate/5.0 Tailings Management System/Group Tailings Management System (GISTM) & Policy/ TOMS Manuals.

The latest version of the TOMS Manual is also available on Knight Piésold Ltd.'s (KP) FULCRUM data management site. The file location of the TOMS Manual on Fulcrum is shown in Figure 1.2 below.

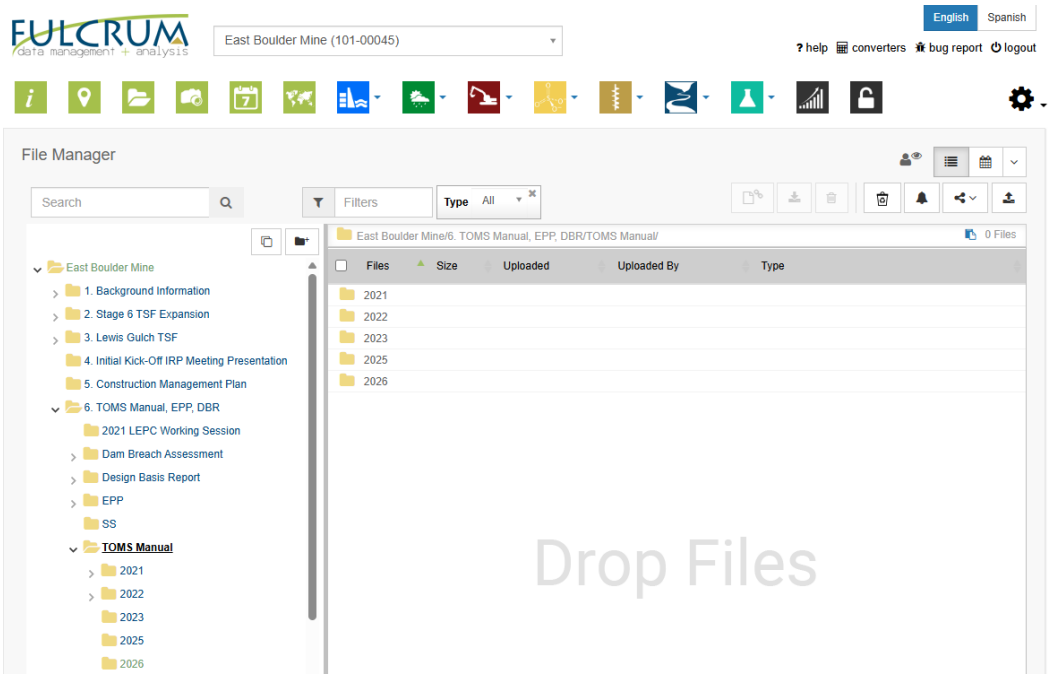


Figure 1.2 TOMS Manual Location on FULCRUM

1.4.2 Revisions

The TOMS Manual is required to be reviewed on an annual basis to ensure that it reflects the current operating conditions. The TOMS Manual will be reviewed in conjunction with the annual inspections and third-party reviews outlined in Section 4.

The EOR shall certify any revisions made to the TOMS Manual. The Tailings Engineer shall notify Stillwater's responsible personnel when revisions to the TOMS Manual are made.

1.5 Reference Documents

Pertinent references for the TSF and associated infrastructure are included in Appendix B. Electronic copies are available from Stillwater's electronic file management system.

1.6 Regulatory Requirements

The regulatory requirements and commitments that pertain to the construction, operation, and closure of the EBM TSF are summarized in the EBM Consolidated Operations and Reclamation Plan (CORP). The CORP includes all Environmental Impact Statements, associated Records of Decision (RODs), stipulations for the EBM and its facilities, and a list of applicable statutes and regulations.

1.7 Independent Tailings Review Board

Stillwater's Corporate Tailings Management Framework requires the appointment of an Independent Tailings Review Board (ITRB) to fulfill an oversight role of the operation of the EBM TSF. The ITRB members are also the Independent Review Panel (IRP) that was assembled to review the design of the Stage 6 TSF as per 82-4377 MCA (MT, 2024).

The ITRB's overall responsibility includes completing a review of the full TSF life cycle from design though closure planning. The ITRB reports directly to the Sibanye Accountable Executive. ITRB responsibilities include the following as per the Sibanye Global Tailings Management System:

- Review Corporate Tailings Mgmt. documents (Global Tailings Management System, Terms of Ref, etc.) against local legislation, the Global Industry Standard on tailings Management (GISTM), Internation Council on Mining and Metals (ICMM) Guidelines, and international best practice
- Review Tailings Roles (RTFE, EOR, etc.) regarding responsibilities and competency
- Site Review
- Documents - Tailings Operations, Maintenance and Surveillance Manual (i.e. TOMS)
- Compliance - with the Corporate and Site specific documentation
- Review TSF Design and Engineering Documents – Design Reports, Design Criteria, Investigation Reports, etc.
- Understand the current TSF performance
- Reporting on any deviances and risks posed by the TSF to the Accountable Executive

1.8 INDEPENDENT REVIEW PANEL

The IRP was assembled to review the design of the Stage 6 TSF as per 82-4-377 MCA (MT, 2024). The IRP members are also the ITRB members.

The IRP reports to Montana (MT) DEQ and not SMC. The IRP's overall responsibilities are outlined in 82-4-377 MCA (MT, 2024) which includes the completion of design review of new and expanded TSFs, site reviews during construction and/or operations as required by the IRP, and for comprehensive Periodic Reviews as outlined in 82-4-388 (MT, 2024) at least once every 5 years.

2.0 DESCRIPTION OF THE TAILINGS STORAGE FACILITY

2.1 GENERAL

The following sections provide a brief summary of the design and management of the TSF and associated facilities. Additional information is available in the cited references listed in Appendix B.

2.2 PROJECT DESCRIPTION

2.2.1 SITE LOCATION

The EBM is located approximately 16 miles from McLeod in Sweet Grass County, Montana, and is within the East Boulder River valley. The mine site location is shown on Figure 2.1. The general arrangement for the TSF is shown on Figure 2.2.

2.2.2 PROJECT HISTORY

The EBM was initially permitted in 1992. The Environmental Impact Statement and Hard Rock Mine Impact Plan for the EBM were updated in 1998. Construction of the mine began in 1999 and the mine reached commercial production in 2002.

The EBM comprises an underground platinum and palladium mine, a 2,500 ton per day concentrator, a TSF, and other ancillary facilities. The flotation concentrate is filtered and transported by truck to Stillwater's Smelter and Base Metals Refinery located in Columbus, Montana.

The mine operating permit allows for ongoing staged development of the TSF using Run of Mine (ROM) rockfill from the underground mine development as the primary embankment construction material. Glacial till borrow material was excavated from within the Stage 1 and Stage 2 tailings basins and used for embankment construction. Glacial till borrow material was excavated from the permitted borrow area adjacent to the TSF to supplement ROM rockfill for the Stage 3, Stage 4, Stage 5 and Stage 6 TSF construction.

2.2.3 PROCESS DESCRIPTION

Ore is delivered from the underground workings to the concentrator where it is crushed and upgraded to a concentrate that is shipped offsite to Stillwater's smelter and base metal refinery in Columbus, Montana for further upgrading. Milling involves a combination of crushing, grinding, flotation and filtration processes to produce the concentrate. The tailings predominantly consist of sand and silt sized rock fragments left over from the milling process. The tailings are pumped as slurry from the Concentrator to the underground Sand Plant. The tailings pumped to the Sand Plant are separated into coarse sand and slimes fractions. The coarse sand fraction is dewatered and utilized as backfill in the underground mine. The remaining tailings (predominantly slimes fraction) are pumped to the EBM TSF as slurry. The process flow sheet is illustrated on Figure 2.3.

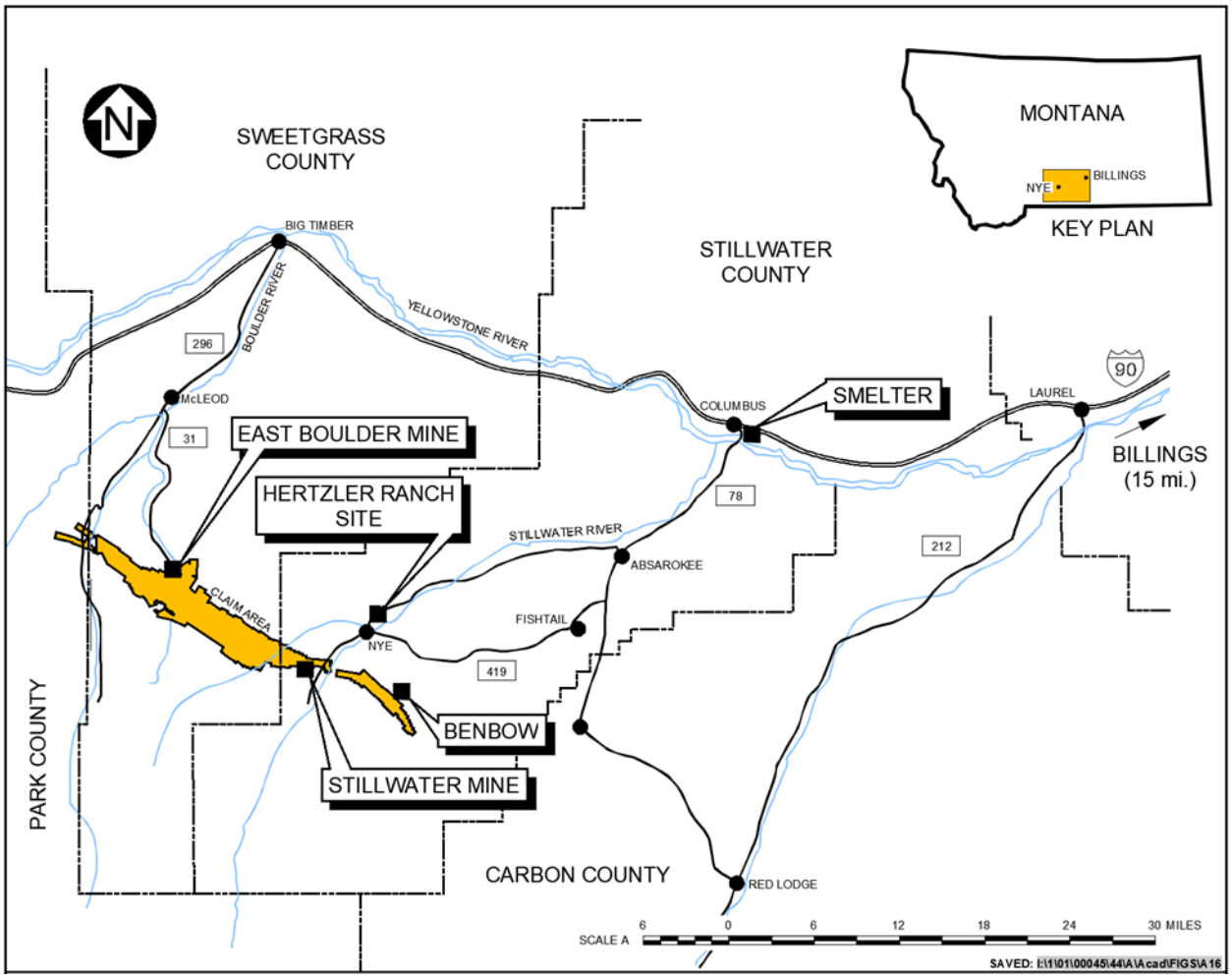
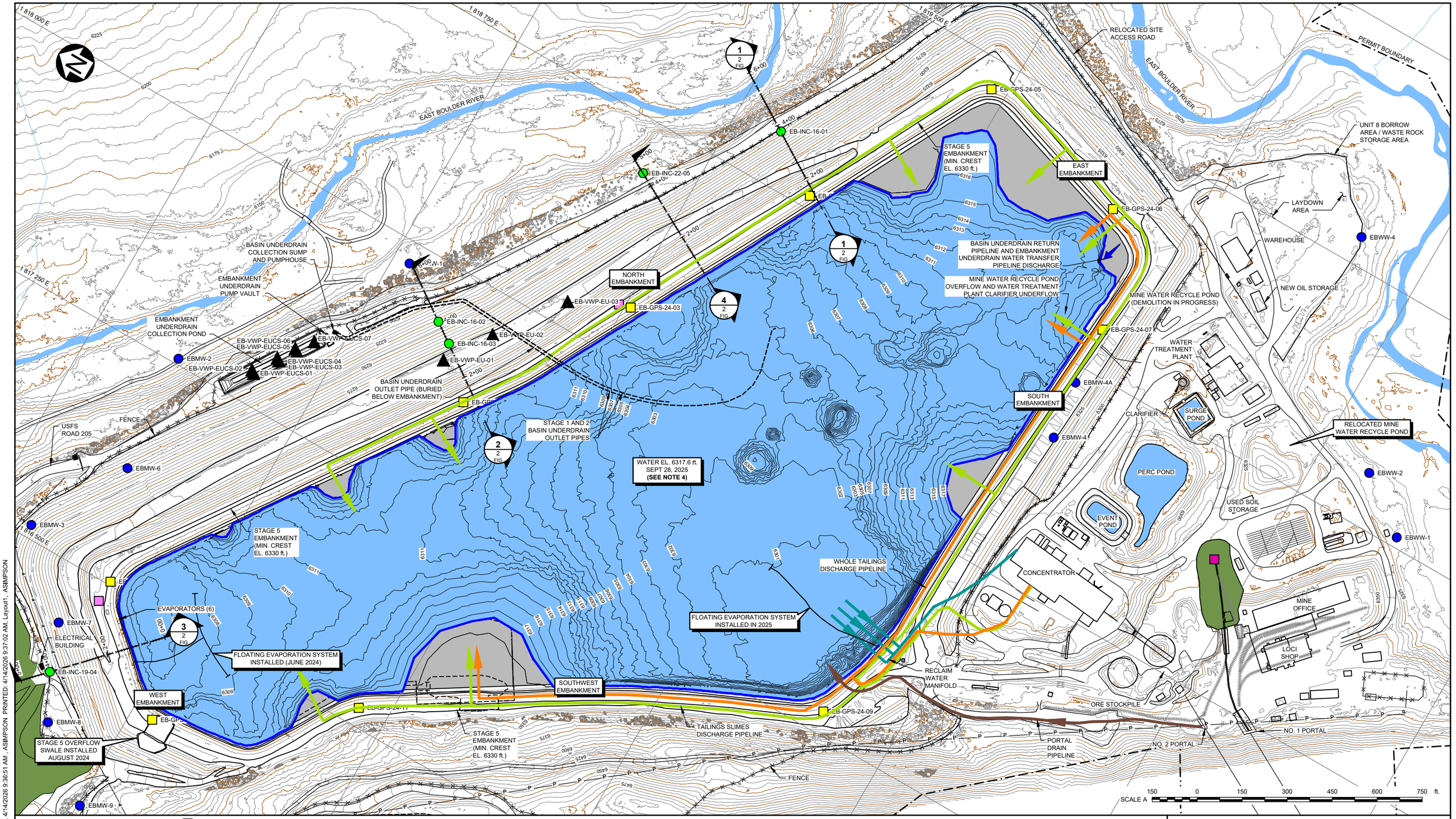


Figure 2.1 Site Location



LEGEND:

- WATER
- TAILINGS
- SURFACE SOIL STOCKPILE
- SURVEY MONUMENT
- VWP LOCATIONS (OPERATIONAL)
- VWP LOCATIONS (DECOMMISSIONED)
- SLOPE INCLINOMETER LOCATION
- MONITORING WELL LOCATION
- INSTRUMENTATION REPEATER LOCATION
- INSTRUMENTATION GATEWAY LOCATION
- EVAPORATORS
- PORTAL DRAIN PIPELINE
- TAILINGS SLIMES DELIVERY PIPELINE
- WHOLE TAILINGS DELIVERY PIPELINE
- RECLAIM WATER PIPELINE
- ROAD
- POWERLINE
- PERMIT BOUNDARY (PROPOSED)
- FENCE
- IN-BASIN WASTE ROCK STORAGE AREA (INDICATIVE PHASED PAD EXTENTS)

NOTES:

1. TOPOGRAPHY DEVELOPED FROM VARIOUS SURVEYS FOR EMBANKMENT STAGES 2, 3 AND 4 AND WERE PROVIDED BY STILLWATER MINING COMPANY. ADDITIONAL LIDAR DATA PROVIDED BY STILLWATER MINING COMPANY JUNE 2018, SURVEY DATA PROVIDED BY WOITH ENGINEERING INC. FEBRUARY 2021, MAY 2021 AND SURVEY DATA PROVIDED BY TURNER MINING JUNE 2022, NOVEMBER 2022, AUGUST 2023, APRIL 2024 AND MAY 2024. SEPTEMBER 30, 2025 DRONE SURVEY PROVIDED BY SIBANYE STILLWATER.
2. CONTOUR INTERVAL IS 5 FEET.
3. HORIZONTAL DATUM IS MONTANA COORDINATE SYSTEM, SINGLE ZONE, NAD83 (1992). UNITS ARE IN INTERNATIONAL FEET. VERTICAL DATUM IS NGVD29.
4. TAILINGS SURFACE SHOWN ON THIS FIGURE WAS SURVEYED SEPTEMBER 28, 2025.

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SIBANYE STILLWATER

EAST BOULDER MINE

GENERAL ARRANGEMENT

Knight Piésold CONSULTING

P/A NO.	REF NO.
NB101-45/77	NB26-00478

FIGURE 2.2 REV 0

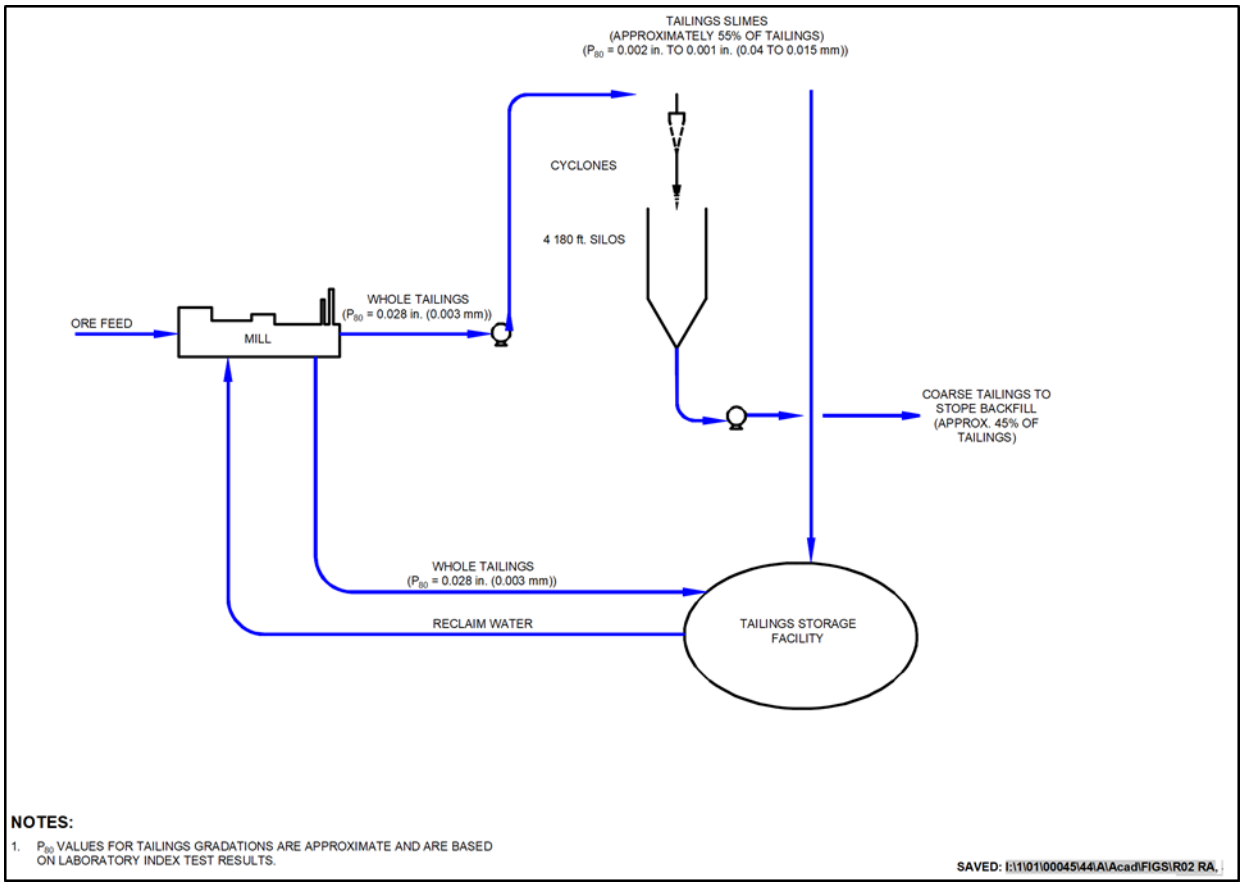

Figure 2.3 Process Flow Sheet

2.2.4 Tailings Management

The TSF was designed to store the fine tailings (slimes) that are not suitable for use as mine backfill as well as the whole tailings. Since commissioning of the TSF in 2002, approximately 55% of the total tailings (predominantly tailings slimes) have been pumped to the TSF for storage. Supernatant water is recycled to the Concentrator for re-use in the milling process via the Reclaim Water System.

Tailings are discharged into the TSF from a series of spigots located around the perimeter of the facility. The tailings discharge is rotated around the TSF in order to develop a low permeable tailings deposit against the upstream slope of the lined embankment and maintain the operating pond away from the embankment. Supernatant water is recycled to the Concentrator for re-use in the milling process via the Reclaim Water System.

2.2.5 In-Basin Waste Rock Storage

In-Basin Waste Rock Storage (IBWRS) will include direct placement of ROM rockfill within the tailings basin to provide for secure waste rock storage and to support long-term TSF closure objectives. The initial work for IBWRS includes installation of a Geomembrane Protection Layer on the HDPE lined basin slope at the Access Ramp location, construction of the Access Ramp, and staged development of a low-height waste rock pad by controlled tailings displacement.

2.3 Design Basis and Operating Criteria

2.3.1 Overview

The principal objectives for the design and staged construction of the EBM TSF are to safely and securely manage tailings materials and ROM rockfill, to ensure complete protection of the regional groundwater and surface water flows (both during operations and in the long term), and to achieve effective reclamation at mine closure. The principal design features are as follows:

- Permanent, secure and total confinement of all solid waste materials within an engineered storage impoundment
- Control, collection and removal of free draining liquids from the tailings during operations and the prevention of uncontrolled leakage from the impoundment to the maximum practical extent
- The inclusion of monitoring features for all aspects of the impoundment to ensure performance goals are achieved
- Staged development of the TSF to distribute capital expenditure over the life of the mine

The design basis and operating parameters for the TSF and associated facilities are provided in detail within the design documents listed in Appendix B. The main components of the EBM TSF include the tailings embankment, embankment underdrain, tailings basin which includes a geosynthetic lining system and Basin Underdrain, tailings delivery system and water reclaim system. The key design and operating parameters are summarized in the Design Basis Report (KP, 2025). The TSF components are briefly described below (Table 2.1).

TABLE 2.1

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
KEY DESIGN AND OPERATING PARAMETERS

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Item No.	Component	Design Criteria/Operating Criteria
1.0 General Design Criteria		
1.1	Codes and Standards	· ASTM, AASHTO, ACI, ANSI, MSHA, OSHA, MMMR, ARM, FEMA, ICOLD, NBC, FHWA, and related codes
1.2	Site Elevation	· 6100 to 6500 feet
1.3	Meteorological Parameters	· Average Annual Precipitation = 27.6 inches
		· Annual Mean Evaporation = 20 inches
		· Mean Daily Temperature = 42 degrees F
		· Environmental Design Storm (EDS) = 1 in 2,500 year, 24-hour rainfall of 6.4 inches
		· Design Storm Event is PMF = 47 inches
		· PMF defined as 24 hour PMP (29 inches), plus snowmelt (18 inches). Total = 47 inches
1.4	Seismic Design	· 1 in 10,000 year event (larger than deterministic Maximum Credible Earthquake)
		· Peak Ground Acceleration (PGA) for 1 in 10,000 year event = 0.32g
		· Site class B/C conditions with an earthquake magnitude of 7.5
2.0 Tailings Production		
2.1	Tailings Production Information	· Approximately 55% of the total tailings production will report to the TSF
		· Design Mill throughput = 2,000 tpd
		· Project Mill throughput = 1,820 tpd
2.2	Solids Content of Tailings Slurry	· 35% (approximate)
2.3	Tailings Average Dry Density	· 70 pcf
2.4	Tailings Solids Specific Gravity	· 2.67
2.5	Water Reclaim	· Design Capacity = 1,500 gpm
3.0 Tailings Basin		
3.1	Storage Capacity	· Stage 1 - 1.6 million cubic yards (El. 6279 ft.)
		· Stage 2 - 2.3 million cubic yards (El. 6279 ft.)
		· Stage 3 - 2.2 million cubic yards (El. 6299 ft.)
		· Stage 4 - 1.95 million cubic yards (El. 6315 ft.)
		· Stage 5 - 1.33 million cubic yards (El. 6324 ft.)
		· Stage 6 - 1.84 million cubic yards (El. 6338 ft.)
3.2	Operating Pond Volume	· Minimum Operating Pond Volume = 50 million gallons (153.6 acre-ft.)
		· Maximum Recommended Operating Pond Volume = 150 million gallons (460.6 acre-ft.)
3.3	Design Freeboard	· Total Freeboard = 10.5 ft. (Operations, 6 ft. with Overflow Swale), 6 ft. with Closure Spillway
		· 7.2 ft. of wet freeboard required to contain IDF
		· 3.3 ft. of dry freeboard required for wave run-up
		· After closure the impoundment surface will be dewatered, capped and graded to control runoff. Stormwater drainage provisions provided at final reclamation to provide routing for the PMF. Freeboard no longer required.
3.4	Lining System	· 12 oz./yd^2 non-woven geotextile filter fabric as cushion layer
		· 100 mil HDPE geomembrane installed overtop of non-woven geotextile
3.5	Basin Underdrain System	· Basin Underdrain layer (drainage layer (gravelly sand), perforated CPT collection pipes and HDPE conveyance pipes) installed over 100 mil HDPE geomembrane
		· Fine random fill placed over the drain sections as a protective layer
		· The underdrain collection pipeworks connect into solid steel outlet pipes (concrete encased)
		· Underdrain collection system and the conveyance pipes drain by gravity to the collection sump
4.0 Tailings Embankment		
4.1	Embankment Crest Width	· 30 feet (minimum) for Stages 1 through 4
		· 21 feet (minimum) for Stage 5 and 6
4.2	Embankment Height (Max.)	· Stage 1 & 2 - 97 feet (Crest El. 6285 feet)
		· Stage 3 - 117 feet (Crest El. 6305 feet)
		· Stage 4 - 133 feet (Crest El. 6321 feet)
		· Stage 5 - 142 feet (Crest El. 6330 feet)
		· Stage 6 - 156 feet (Crest El. 6344 feet)
4.3	Embankment Slopes	· Downstream fill slopes for Stage 2, 3 and 4 = 1.6H:1V (temporary interim slopes)
		· Downstream fill slope for Stage 5 = 2H:1V
		· Downstream fill slope for Stage 6 = 2.0H:1V, 1.75H:1V to 1.9H:1V at select locations (final configuration)
		· Upstream fill slopes = 2H:1V
4.4	Embankment Fill Material	· Coarse well-graded Glacial Till material excavated from within TSF Cells 1 and 2 for Stage 1 and 2
		· ROM rockfill for on-going staged expansions. Random Fill (Glacial Till) from permitted borrow area to supplement ROM rockfill as required
4.5	Embankment Stability Requirements	· Static Loading Conditions: FoS (Factor of Safety) ≥ 1.5
		· Post-Earthquake Static Loading Conditions: FoS ≥ 1.2
		· Deformation Analysis: Semi-empirical deformation analyses to estimate crest settlement and slip surface displacement following an earthquake. Demonstrate that seismic response will not result in uncontrolled release of impounded materials.
4.6	Embankment Underdrain System	· 12 oz/yd^2 non-woven geotextile cushion layer above and below HDPE geomembrane
		· 80 mil textured (both sides) HDPE geomembrane
		· Drainage layer (gravelly sand) with HDPE collection pipes
		· Collection pipework gravity drains to collection sump. Collected water pumped back to TSF.
5.0 In-Basin Waste Rock Storage		
5.1	Geomembrane Protection Layer (Access Ramp)	· Articulated Concrete Block Mat installed over 20 oz/yd^2 Non-Woven Geotextile Cushion Layer. Sand and Gravel Cushion Layer placed over concrete block mat.
5.2	Waste Rock Placement Geometry	· Waste rock slope above tailings surface: 4H:1V
		· Waste rock displacement below tailings surface: Variable
		· Initial Pad, El.: 6,325 ft.
		· Second Lift, El.: 6,330 ft.
		· Third Lift, El.: 6,335 ft.

\\ns-ca02\nb-project\1\01\00045\77\A\Report\2026 EBM TOMS Update - Rev 9\Final\[Table 2.1 - EBM TSF Key Design and Operating Parameters.xlsx]Table 2.1

2.3.2 TAILINGS EMBANKMENT

The tailings embankments have been constructed from glacial till excavated from within the Stage 1 and Stage 2 storage cells, permitted borrow area and ROM rockfill from the underground mine development. The staged TSF construction is summarized below.

- Stage 1 was completed in 1999 and consisted of a single cell (Cell 1) with North, East and West confining embankments constructed to El. 6,285 ft.
- Stage 2 TSF was completed in 2006 and included an expansion to the west, with excavation of a second tailings storage cell (Cell 2) adjacent to the existing Stage 1 cell (Cell 1). A divider berm separated the two cells and allowed for independent operation of Cell 2. The Stage 2 construction included construction of North and West confining embankments to El. 6,285 ft.
- The Stage 3 TSF was completed in 2015 and included raising the embankments around Cells 1 and 2 to El. 6,305 ft. The embankments were raised with the downstream construction method using ROM rockfill from the underground mine development.
- The Stage 4 TSF was completed in 2020 and included raising the embankment to El. 6,321 ft. The embankments were raised with the downstream construction method using ROM rockfill from the underground mine development, and random fill from the permitted borrow area.
- The Stage 5 TSF was completed in 2024 and included an embankment raise to El. 6,330 ft. The embankments were raised with the downstream construction method using ROM rockfill from the underground mine development, and Random Fill from the permitted borrow area.
- Stillwater is currently placing ROM rockfill to construct the Stage 6 downstream embankment raise. Stage 6 will be constructed to El. 6,344 ft. The lower portion of the Stage 6 North, East and West Embankments were constructed with Random Fill from the permitted borrow area. The Stage 6 South and Southwest Embankment will be constructed with Random Fill from the permitted borrow area.

2.3.3 EMBANKMENT UNDERDRAIN

The Embankment Underdrain was constructed below the Stage 4 and 5 North, East and West Embankments as part of the Stage 3 embankment construction. The Embankment Underdrain was installed as a voluntary nitrogen source reduction measure to control and collect meteoric water percolating through the ROM rockfill. As part of the Stage 5 and 6 TSF Construction, Ethe Embankment Underdrain was extended below the Stage 5 and 6 North, East and West Embankments.

The Embankment Underdrain consists of an HDPE geomembrane, non-woven geotextile, a sand and gravel drainage layer and collection pipework. The collected water gravity drains into a HDPE lined collection pond where the collected water is pumped into to the TSF or to the biological water treatment system.

2.3.4 TAILINGS BASIN

The total capacity of the TSF (all 6 Stages) is approximately 11.6 million cubic yards (approx. 11.0 Mt). The tailings basin filling is dependent on actual concentrator throughput rates, tailings deposition characteristics, water inputs and outputs, in situ settled tailings density and in situ placed waste rock density. The estimated filling schedule of the TSF is illustrated on Figure A1.1 (Appendix A1).

The minimum freeboard requirement for the Stage 5 Tailings Basin is 6 ft. with the installation of the Stage 5 Interim Overflow Channel. The freeboard allowance includes for temporary storage and conveyance of the Probable Maximum Flood (PMF) and a dry freeboard allowance of 3.3 ft. for wave run-up. The maximum operating level of the Stage 5 TSF is 6,324 ft. The recommended operating pond volumes for the tailings basin are as follows:

- The minimum operating pond volume is approximately 50 million gallons (153.6 acre-ft.). Stillwater has indicated that this is the minimum water required to maintain sufficient water volume for operations. This is equivalent to an average of approximately 2.0 ft. of water over the basin area (El. 6,322 to 6,324 ft. for Stage 5).
- The maximum recommended operating pond volume is approximately 150 million gallons (460.6 acre-ft.). This is equivalent to an average of approximately 6 ft. of water over the basin area (El. 6,318 to 6,324 ft. for Stage 5). The maximum operating pond volume is based on maintaining a sufficient water cover over tailings surface to prevent dusting during the winter months. The maximum operating pond volume may be reduced for the later TSF stages. It is noted that the EBM TSF may be safely operated with an operating pond volume that is greater than 150 million gallons as long as the 6 ft. minimum freeboard requirement is maintained.

The tailings basin is lined with a 100 mil HDPE geomembrane to minimize seepage losses from the tailings basin. The geomembrane is installed over a 12 oz/yd^2 non-woven geotextile cushion layer. A Basin Underdrain is installed over the floor of Cells 1 and 2 to promote tailings consolidation and reduce the pressure head on the lining system, thereby minimizing the potential for seepage from the TSF. The Basin Underdrain layer includes a granular drainage layer (gravelly sand), perforated CPT collection pipes and HDPE conveyance pipes. Coarse granular material was placed over the collection and conveyance pipe alignments as an additional drainage and erosion protection layer. The underdrain collection pipework is connected to concrete encased steel outlet pipes, which drain to the Basin Underdrain Collection Sump.

The Stage 1 and Stage 2 Basin Underdrains flow by gravity to the Underdrain Collection Sump. The Basin Underdrain water is pumped back to the east side of Cell 1 or to the Water Treatment Plant via a buried 3-inch HDPE pipe. The pipeline is buried adjacent to the site access road from the Underdrain Collection Sump to a manhole at the southeast corner of the TSF. A valve and pipe tee in the manhole allows water to be directed into the TSF or the Water Treatment Plant.

The IBWRS Geomembrane Protection Layer will be installed over the existing TSF basin liner (i.e., 100 mil HDPE geomembrane) and will consist of (from bottom to top) a 24 oz/yd^2 non-woven geotextile, articulated concrete block mat and sand and gravel cushion layer.

2.3.5 Seepage Collection System

There is no external seepage collection system for the EBM TSF. The HDPE geomembrane and Basin Underdrain layer in Cells 1 and 2 are the primary method for reducing seepage losses from the TSF. There are monitoring wells located downstream of the TSF which are utilized to pump collected seepage back to the TSF, if required.

2.3.6 Tailings Delivery System

Tailings are pumped from the underground Sand Plant or directly from the Concentrator to the TSF via separate HDPE pipelines. The pipeline is located on the west side of the Concentrator and runs to the southwest side of the TSF. The tailings delivery pipelines are connected to tailings discharge pipelines which are installed on the upstream side of the TSF embankments. The tailings discharge pipeline consists of butt fusion welded 8 inch diameter DR17 HDPE pipe. The tailings slurry can be discharged from up to eighteen (18) spigot locations that extend from the embankment crest down to near the tailings and supernatant pond surface.

The tailings slurry flow is monitored at both ends of the pipeline system. Visual monitoring of the tailings slurry flow is carried out at the TSF. Emergency shutoff for the tailings delivery system is located in the Concentrator.
Water Reclaim System

Three inclined reclaim pumps and pipelines are located at the south end of the TSF, adjacent to the Concentrator. The pumps are connected to 6-inch diameter DR17 HDPE pipes which are connected to the steel Reclaim Pipe Manifold located adjacent to the TSF. The Reclaim Pipe manifold is connected to a 12 inch diameter DR 11 HDPE pipeline which extends to the Concentrator as illustrated on Figure 2.2.

Normal operations include for one pump running (depending on throughput) with a secondary pump cycling on and off as needed to maintain concentrator process water tank level. The third pump is a spare and is run to feed the in-basin evaporator sprays during the summer. In the winter this pump recirculates water back into the pond via a 2 in. line to minimize ice development adjacent to the reclaim pumps.

2.4 WATER MANAGEMENT

2.4.1 GENERAL

The EBM TSF supernatant water consists of tailings water, precipitation and basin runoff. Supernatant water is recycled back to the Concentrator via the Reclaim Water System described in Section 2.3. Seepage control for the TSF is provided by a HDPE geomembrane liner system and Basin Underdrain. Water collected from the Basin Underdrain is primarily removed from the TSF by transferring water from the Water Treatment Plant. Occasionally Basin Underdrain water is pumped back to the TSF. Water collected in the Embankment Underdrain is also pumped into the TSF.

There is an upstream catchment area located adjacent to the southwest side of the TSF. Runoff from this catchment area is directed to local percolation areas. Surface water management measures for the facility include ditches and sedimentation basins located along the access roads and adjacent areas.

2.4.2 STAGE 5 INTERIM OVERFLOW CHANNEL

The stormwater management strategy for the TSF includes for providing temporary storage and conveyance of the Inflow Design Flood (IDF) within the TSF basin. The TSF includes freeboard to contain runoff resulting from the IDF as well as potential wave run-up during a storm event.

The Stage 5 Interim Overflow Channel was installed to manage the IDF and would convey a portion of the IDF from the TSF to the permitted borrow area located northwest of the TSF if the IDF occurred when the TSF filling level is approaching the design filling (El. 6,324 ft.). The Interim Overflow Channel is located on the West Embankment and includes a flow-through erodible plug with five 1.5 ft. diameter corrugated steel pipe (CSP) culverts, to facilitate equipment access along the crest of the embankment during TSF operations. The culverts have been sized to convey runoff resulting from a 1 in 2,500 year event if the water level was at the culvert invert level (El. 6,325.5 ft.). There is capacity to temporarily store the Environmental Design Storm (EDS) between the TSF maximum filling level (El. 6,324 ft.) and the culvert invert level.

The Interim Overflow Channel will be replaced by the Stage 6 TSF Closure Drainage Swale towards the end of Stage 6 impoundment operations.

2.4.3 Water Balance

The water balance for the EBM TSF is maintained by Stillwater. The water balance is updated on a monthly basis to reflect the operating conditions. The following data are pertinent to the operation of the TSF and are required to be tracked and included as part of the water balance:

- Tailings throughput and process water volumes delivered to the TSF
- Reclaim water volumes recycled to the Concentrator
- Water volumes transferred to the Water Treatment Plant via the Basin Underdrain
- Water volumes pumped from the Embankment Underdrain to the TSF
- Meteorological data

The water balance flow sheet is illustrated on Figure A1.4 (Appendix A1) and includes the average annual water additions and losses. The TSF water balance is reviewed quarterly and reported annually as part of the EOR annual inspection.

2.5 Closure Plan

Reclamation of disturbed areas is being carried out during operations to the maximum extent practicable. The objectives of the reclamation plan are to stabilize disturbed areas to prevent soil loss, minimize visual impacts, and prevent air and water pollution. These objectives are accomplished through surface drainage, concurrent reclamation of downstream embankment slopes and interim revegetation of borrow areas using approved seed mixes.

Final reclamation of the TSF will generally include the following:

- **Dewatering -** Natural drying and evaporation will reduce the moisture content in the tailings. In addition, the Basin Underdrain will promote consolidation of the tailings mass. At closure, surface ponded water will be pumped out of the TSF. This water will be treated and discharged to the Percolation Pond. The Basin Underdrain may be operated for some time after closure.
- **Capping -** The TSF will be capped with a minimum 2 ft. thick layer of waste rock and/or borrow material. The closure cap and embankment slopes will be covered with 28 inches of surface soil.
- **Revegetation -** Revegetation measures will include seedbed preparation and seeding with approved seed mixes in the upper soil layer.

Final reclamation will include the construction of a closure spillway (i.e. drainage channel) for storm water runoff management. During closure, the Basin Underdrain and Embankment Underdrain waters will be pumped to the Water Treatment Plant or redirected to the percolation area adjacent to the underdrain sump. After closure, the Basin Underdrain and Embankment Underdrain sumps will be converted to percolation structures by removing the liners and pumps; and then filling with gravel. At that point, the Basin Underdrain and Embankment Underdrain seepage will be directed to the percolation structures and either percolate or overflow onto native ground beyond the sumps.

Additional information on the reclamation of the TSF is presented in the amended reclamation plan, which is structured to meet the requirements of the *Montana Metal Mine Reclamation Act*.

3.0 OPERATIONS, MAINTENANCE AND SURVEILLANCE

3.1 INTRODUCTION

The EBM TSF components and associated facilities are shown on Figure 2.2. These components and facilities must be inspected and maintained regularly to ensure that any changes to the conditions, performance, or any potentially hazardous condition can be identified and promptly addressed. Selected photographs of the facility and associated components are provided in Appendix D. Inspection and surveillance schedules are provided in Appendix C.

The Concentrator Manager is responsible for ensuring that surveillance is carried out as defined in this TOMS Manual. The Concentrator Manager is responsible for daily management of the TSF and directs the Surface Supervisor to carry out routine activities. The roles and responsibilities for the inspections are summarized in Section 1.2 of this TOMS Manual.

Routine inspections of the EBM TSF will be completed by the Concentrator General Foreman, Environmental Specialists, Concentrator Manager and Tailings Engineer are as follows:

- The Concentrator General Foreman or designated subordinate employee will complete weekly and monthly TSF inspections. (Table C3.1 and Table C3.2, respectively).
- The Environmental Specialist will complete a monthly inspection of the TSF instrumentation (Table C3.3).
- The Tailings Engineer and/or Concentrator Manager will conduct a Quarterly TSF Inspection at least once per quarter (Table C3.4).

Inspection dam surveillance reports should be reviewed by the Tailings Engineer and filed within Stillwater's electronic filing system. The quarterly dam inspections shall be presented to the management team during a closeout meeting. Additional (non-routine) inspections may be required as outlined following any unusual event or observation (e.g., earthquake or extreme rainfall event). A summary of the recommended actions following an unusual event are outlined in Appendix C2.

Additional (non-routine) inspections may be required as outlined following any unusual event or observation (e.g., earthquake or extreme rainfall event). A summary of the recommended actions following an unusual event are outlined in Appendix C2.

If an inspection is performed by the EOR following an unusual event or observation, and corrective actions are identified by the EOR, the same procedural framework outlined in Section 4.1 for an annual inspection will be followed for preparing, submitting and implementing the corrective action plan and schedule.

The Concentrator Manager and/or Tailings Engineer must be made aware of any unusual events or observations and must contact the EOR as required. Typical examples of unusual events and observations to be made during such walkovers are outlined in Appendix C2.

Inspection forms are provided in Appendix C3 to help guide the observation and surveillance process. The inspection forms cover major items related to the TSF and associated facilities.

Copies of completed inspection forms, data sheets and field notes must be provided to the Tailings Engineer, and kept in Stillwater's electronic filing system. Any unusual observations must be reported to the Concentrator Manager and/or Tailings Engineer immediately and will be responded to in accordance with the appropriate response level outlined in Section 5.3.

Additional details for each component of the facility are provided in the following sections.

The operation, maintenance and surveillance of the TSF is based on the use of current technologies. It is recognized that technology is evolving, and other technologies should be considered as part of the future monitoring for the TSF. Several technologies that should be considered as part of future monitoring include:

- Landsat images to track tailings pond water volumes and construction progress over months and years, both for ongoing monitoring and for forensic evaluation
- Airborne or satellite-based InSAR to monitor ground movements
- Land-based time-lapse photography to document construction
- Unmanned aerial vehicles (UAVs or drones) to collect high-resolution imagery, LiDAR or Photogrammetry surveys to collect detailed topographic data on a regular basis
- Real-time and continuous record keeping

3.2 TAILINGS EMBANKMENT

3.2.1 OVERVIEW

The tailings embankments are constructed of glacial till and ROM rockfill and have been raised in stages using the downstream construction method as described in Section 2.3.2. Twelve survey monuments were installed on the Stage 5 embankment crest to monitor for settlement and/or displacement. The survey monuments include Global Positioning System (GPS) monitoring units that are programmed to collect 24 readings per day. An as-built survey of the Stage 5 embankment crest was made after the completion of Stage 5 embankment constructed in February 2024. Photogrammetry surveys of the TSF embankment are completed periodically to review TSF embankment construction progress for monitoring and construction planning purposes. Five slope inclinometers are located along the downstream toe of the north and west embankments to monitor for potential movement in the embankment foundation. Vibrating wire piezometers (VWPs) are installed at the base of each slope inclinometer to monitor the phreatic surface in the embankment foundation. Monitoring requirements for instrumentation are summarized in Section 3.7.

The Embankment Underdrain collects meteoric water that percolates through the ROM rockfill. The collected water drains by gravity to a Collection Pond lined with HDPE geomembrane and the collected water is transferred to the Mine Water Recycle Pond or the TSF as described in Section 2.3.3. Vibrating wire piezometers have been installed in the Embankment Underdrain to monitor the water level in the underdrain layer.

A Basin Underdrain is installed over the floor of the TSF to provide drainage from the tailings and reduce the head on the basin liner to minimize potential seepage. The Basin Underdrain includes VWPs to monitor pore pressure within in the underdrain layer. Water from the Basin Underdrain gravity drains to a pump adjacent to the Embankment Underdrain Collection Pond. Collected water is pumped to the Water Treatment Plant.

3.2.2 SURVEILLANCE AND MAINTENANCE

Regular surveillance of the embankments and associated structures should follow the schedule outlined in Appendix C1. Inspection forms are provided in Appendix C3. Typical observations to be made during surveillance include:

- Evidence indicating embankment structure deformation (e.g. slope bulging, cracks on the crest or crest settlement)
- Evidence indicating seepage, runoff or erosion
- Possible evidence suggesting internal erosion (piping) within the embankments (wet spots, seepage, etc.)
- Other unusual conditions in the impoundment area

The embankments and associated structures do not require regular maintenance; however, specific maintenance items may be identified during the regular observations and surveillance of the embankments. Maintenance items may include:

- Fill erosion gullies with properly compacted soil material. Seed or riprap repaired area to stabilize from future erosion
- Fill wildlife burrows
- Maintain grass cover by spraying weeds, fertilizing and watering as needed
- Maintain grading of the embankment crests to prevent potholes, rutting or other potential for standing water to accumulate
- Maintain fences to provide site security and to exclude wildlife from the embankments. Repair and/or re-vegetate damaged embankment surfaces.
- Perform regular inspections of the embankments and abutments to identify potential maintenance items

The integrity of the geomembrane lining in the Embankment Underdrain Collection Sump must be maintained to minimize seepage from the sump over the long term. Inspection of the geomembrane should be completed as part of the routine monthly inspections. Typical surveillance observations for the geomembrane include:

- Identification of defects in the geomembrane such as tears and holes
- Damage or degradation to geomembrane as a result of environmental exposure (e.g. ice, wind, UV damage, etc.)
- Identification of excess tension and trampolining in the geomembrane

Repairs to the geomembrane are required to be scheduled with a third-party geosynthetics installer if any defects or damage is identified.

The Embankment Underdrain collects meteoric water that percolates through the ROM rockfill and is operated continuously. Typical surveillance observations for the Embankment Underdrains include:

- Monitoring and documentation of Embankment Underdrain flows reporting to the Collection Sump
- Recording water volumes transferred from the Collection Sump to the TSF
- Monitoring the clarity of water from the Embankment Underdrain outlet pipeline
- Monitoring the Embankment Underdrain outlet pipeline for ice buildup during freezing conditions

VWPs monitor the water level within the Embankment Underdrain. Monitoring requirements for the piezometers are summarized in Section 3.7.

Additional inspections are required after any unusual event. Appendix C2 outlines additional observations that will need to be documented. Appropriate repairs to the TSF will be implemented should any damage occur from an unusual event.

Stillwater completes a weekly quality assurance (QA) checklist to document the ongoing ROM rockfill placement for the embankment construction. A copy of the QA checklist is included in Appendix C4.

3.3 TAILINGS BASIN

3.3.1 OPERATIONAL OBJECTIVES

The projected rate at which the tailings and ROM rockfill accumulate within the basin, combined with storage provisions for supernatant pond water and freeboard allowances for storm water, determine the schedule for raising the embankments. The filling curve and staged construction sequence are shown on Figure A1.2 (Appendix A1). The minimum freeboard requirement for the impoundment is 6 ft. which includes

temporary storage and conveyance of the PMF via the Stage 5 Interim Overflow Channel and a dry freeboard allowance of 3.3. ft. for wave run-up. The maximum operating level is 6 ft. below the embankment crest (El. 6,324 ft.).

Tailings deposition and waste rock placement are to cease if the pond level exceeds the maximum operating level and the removal of water from the pond is to commence using the water reclaim system. There are no restrictions on the rate of filling or on the rate of drawdown for the supernatant pond, with respect to dam safety.

The tailings basin is lined with a geosynthetic lining system and a Basin Underdrain is installed along the base of Cells 1 and 2. Surveillance and maintenance for tailings and waste rock basin filling, geosynthetic lining systems and the Basin Underdrains is required as part of the operation of the tailings basin. Vibrating wire piezometers are installed in the Basin Underdrain to monitor the response to pumping of the Basin Underdrain.

The IBWRS will include installation of a Geomembrane Protection Layer to facilitate construction of the Access Ramp along the Southwest side of the impoundment. Survey monuments will be established on the Geomembrane Protection Layer to monitor potential displacement of the protection layer during ramp construction and waste rock placement. VWPs will be installed within the tailings below the waste rock pad to monitor pore pressures within the tailings. Instrumentation monitoring requirements are documented in the CMP (KP, 2026).

3.3.2 Surveillance and Maintenance

The pond level must be at least 6 ft. below the crest elevation under normal operating conditions. Emergency procedures, discussed in Section 5.0, must be followed if the pond exceeds the maximum operating level. Regular inspections of the pond level must be carried out as part of the routine inspections according to the schedule outlined in Appendix C1 and the pond elevation should be recorded on a monthly basis. Inspection forms are included in Appendix C3.

Additional pond level inspections are required after an unusual event. The additional inspections are summarized in Appendix C2.

Maintaining the integrity of the geosynthetic lining system is integral for the safe operation of the TSF and to minimize seepage from the impoundment over the long term. Inspection of the geomembrane and Geomembrane Protection Layer) should be completed as part of the routine monthly inspections according to the schedule outlined in Appendix C1. Inspection forms are provided in Appendix C3. Typical surveillance observations for the geosynthetics include:

- Identification of defects in the geomembrane such as tears and holes
- Damage or degradation to geomembrane as a result of environmental exposure (e.g. ice, wind, UV damage, etc.)
- Identification of excess tension and trampolining in the geomembrane

Appropriate repairs are to be completed by the third party geosynthetics installer if any defects or damage are identified.

Stillwater contracts a third-party geosynthetics installer to complete a detailed inspection of the HDPE geomembrane on a semi-annual basis in the spring and fall of each year. The semi-annual inspection reports include a summary of repairs made to the HDPE geomembrane and are kept on file in the Environmental Department and/or on Stillwater's electronic filing system.

Operation of the Basin Underdrains minimizes the head on the geomembrane thereby reducing the potential for seepage from the facility and promoting consolidation of the deposited tailings. The Basin Underdrains

should be operated continuously. Typical observations for the Basin Underdrains to be made during surveillance include:

- Monitoring and documenting the Basin Underdrain flows
- Recording volumes pumped from the Basin Underdrain
- Monitoring the clarity of water from the Basin Underdrain return pipeline
- Monitoring the Basin Underdrain pipeline for ice buildup during freezing conditions

The VWPs in the Cell 1 and Cell 2 Basin Underdrains were installed to confirm the effectiveness of the underdrains. The piezometers monitor the pressure in the underdrains and the response to the Basin Underdrain pumping. Monitoring requirements for the piezometers are summarized in Section 3.7. Close monitoring of the pond elevation, depth, area and volume is important for the following reasons:

- To ensure that there is a sufficient volume of water available as make-up water while the pond is frozen and precipitation is at a minimum
- To enable monitoring of the supernatant pond depth/area/volume so that tailings characteristics such as settled dry density can be determined
- To monitor water recoveries
- To enable the correlation of the pond level with other data, such as the pore pressures (from the piezometers) and drain flow rates

3.4 Seepage Collection System

There is no external seepage collection system for the EBM TSF. If additional seepage collection measures are deemed to be necessary, based on environmental monitoring data, a seepage collection system would be designed and implemented. This TOMS Manual would then be revised to integrate the required operating, monitoring and surveillance measures related to the seepage collection system.

3.5 Tailings Delivery System

3.5.1 Operational Objectives

The tailings slurry is pumped from the underground Sand Plant or directly from the Concentrator to the TSF. The components of the tailings delivery system are described in Section 2.3.6. Operation of the tailings delivery system is based on rotational discharge of tailings whereby a group of spigots are operated for a period of time and then deposition is transferred to another group of spigots for a period of time, etc. This strategy controls the supernatant pond location and develops a well-drained and relatively flat tailings surface that optimizes the storage capacity within the TSF. The 2025 tailings deposition plan for the TSF is illustrated in Appendix E. The tailings deposition plan is reviewed on an annual basis as part of the EOR annual inspection.

3.5.2 Surveillance and Maintenance

The tailings discharge pipeline does not require significant external adjustments during normal operations. However, the following points must be considered during operation of the pipeline:

- Do not close all of the valves along the tailings discharge pipeline as they may be permanently blocked from sanding or suffer damage from excessively high pressures
- Ensure that there is an open pathway for tailings to exit the pipeline before switching tailings lines or after any spigots are relocated
- Flush the pipeline with water prior to shut down or relocation

The tailings delivery and discharge pipelines will be inspected and maintained, by the Concentrator Manager, regularly to ensure that the system operates properly. The tailings discharge location should be noted as part of the routine inspections. Appendix C1 provides a schedule for regular surveillance of the tailings delivery system. Inspection forms are provided in Appendix C3. Typical surveillance observations should seek to identify:

- Locations of excessive wear of the pipeline
- Evidence indicating leakage from the pipeline
- Wear at the bends on the butt-welded joints in the section of the pipeline installed on surface at the TSF
- Identification of pipe sections that are worn on one side that may be rotated so the unworn section conveys the tailings; or worn sections that require replacement

Additional inspections are required after an unusual event. Appendix C2 outlines additional observations that will need to be documented. Repairs to the system may be required after any unusual event.

3.6 Water Reclaim System

3.6.1 Operational Objectives

Supernatant water is recycled from the TSF to the Concentrator for use as process water in the Concentrator. The components of the tailings water reclaim system are described in Section 2.3.7. The reclaim pumps may be operated from the Concentrator control room or from the breaker panel located adjacent to the tailings embankment next to the reclaim manifold.

The reclaim pipeline does not require any external adjustments during normal operations. However, the reclaim system should be drained during maintenance periods or during a prolonged shutdown under extreme cold conditions.

3.6.2 Surveillance and Maintenance

The water reclaim system shall be inspected according to the schedule outlined in Appendix C1 and an inspection log will be completed as provided in Appendix C3. Typical items to inspect during surveillance of the reclaim pipeline include:

- Flow rates
- Locations of excessive wear of the pipeline
- Evidence indicating leakage from the pipeline
- Monitor supernatant pond and reclaim pump elevations
- Monitor the tailings surface elevation adjacent to the reclaim pumps
- Ice buildup around the reclaim pumps and pipelines during freezing conditions

Additional inspections are required after any unusual event. Appendix C2 outlines additional observations that must be documented. Repairs to the reclaim pumps and pipelines may be required after any unusual event.

3.7 INSTRUMENTATION

3.7.1 OPERATIONAL OBJECTIVES

Instrumentation is installed to assist with the monitoring of the TSF in order to evaluate compliance with design objectives. The instrumentation includes the following:

- Survey Monuments on the Embankment Crest to measure vertical and lateral movement of the embankment.
- Slope Inclinometers at the downstream toe of the embankment to monitor potential movement in the foundation.
- Vibrating Wire Piezometers in the Basin Underdrains to monitor the effectiveness of the Basin Underdrain system.
- Vibrating Wire Piezometers in the Embankment Underdrain to monitor the phreatic surface above the underdrain layer.
- Groundwater Monitoring Wells to monitor water quality downstream of the TSF. Water quality is monitored and reported separately under the Water Resources Monitoring Plan.

The locations of the survey monuments, slope inclinometers. piezometers and monitoring wells are shown on Figure A1.1 (Appendix A1).

3.7.2 SURVEILLANCE AND MAINTENANCE

Instrumentation components are regularly monitored. Instrumentation is connected to and viewable in real-time in GeoExplorer, an instrumentation monitoring software package (NavStar, 2017). The instrumentation data is collected, plotted and reported according to the schedule outlined in Appendix C1. The instrumentation data is reviewed by the EOR on a quarterly basis. The EOR must be notified of any anomalous trends or values above the specified trigger levels. Additional readings and inspections as outlined in Appendix C2 will be required after any unusual event or observation. The trigger levels for the survey monuments, slope inclinometers, vibrating wire piezometers are provided in the QRFG (Appendix A1).

The instruments may require occasional maintenance which could include:

- The piezometer wires may need to be cut and re-attached if the readout box is unable to acquire data.
- Piezometer wires that are exposed may become corroded and may need to be trimmed until a fresh surface is exposed to allow readings to be taken.
- Protection of survey monuments from equipment traffic on embankment crest and other disturbances may be required during maintenance work. Survey monuments need to be re-established and protected after construction of each new embankment stage.
- Slope inclinometers must be maintained according to the manufacturer's instructions.

The QRFG for IBWRS summarizing key details for the work is provided in Appendix A2. The inspection, testing and monitoring plan is provided in the CMP.

3.8 SURFACE WATER MANAGEMENT

Meteoric water reporting to the East Boulder TSF includes direct precipitation to the tailings basin and runoff from the embankment crest. The upstream catchment area of the East Boulder TSF is diverted using surface water management measures including ditches and sedimentation basins located along the access roads and adjacent areas. The ditches and sedimentation basins are inspected and maintained as part of the Storm Water Pollution Prevention Plan (SWPPP).

3.9 RIVERBANK EROSION MONITORING PLAN

Erosion of the East Boulder River escarpment has been identified as a potential hazard along a section of the TSF where the site access road and possibly the embankment toe could be undercut if erosion was extensive and if left unaddressed. Monitoring of the riverbank and site access road to confirm that riverbank erosion is not adversely impacting the site access road or TSF embankment includes:

- Annual topographic survey of the riverbank and escarpment following freshet. Additional surveys will be completed following storm events greater than or equal to the 1 in 200 year 24-hour precipitation event.
- Flow monitoring at station EBR-003 to document flow levels in the river during freshet and storm events (available on USGS website).
- Semi Annual inspections of the riverbank and site access road by mine personnel are completed as part of the Q2 and Q3 quarterly TSF inspections.

If migration of the lower riverbank occurs, the riverbank and site access road monitoring shall be increased as follows:

- The frequency of topographic surveys will be increased as directed by the EOR
- Inspections of the riverbank escarpment and site access road by mine personnel will be increased to monthly intervals

If migration of the riverbank results in oversteepening and/or slumping of the escarpment, the EOR will implement appropriate mitigation measures to stabilize the escarpment slope and site access road.

4.0 SAFETY INSPECTIONS, REPORTING AND REVIEWS

4.1 QUARTERLY AND ANNUAL INSPECTION

Quarterly and Annual inspections of the TSF and associated facilities are required to evaluate current and past performance and to observe potential deficiencies in condition, performance and/or operation. The Tailings Engineer is responsible for arranging the inspections. The level of dam safety evaluation will be based on detailed observations made by the EOR and/or Deputy EOR and on relevant information on the TSF operations collected by site personnel. Additional reviews may also be required to follow up on reports of unusual events or observations.

The Tailings Engineer and/or Concentrator Manager will accompany the EOR during the annual inspection.

The EOR and/or Deputy EOR evaluate the safety of the TSF and will review the following:

- The condition of the TSF and operating practices
- TOMS Manual
- The availability of all documents pertaining to dam safety on site
- The site surveillance practice
- Changes in relevant regulatory requirements since the last inspection

The EOR will issue an annual inspection report after completing the review. The report will include the following at a minimum:

- Conclusions on the status of the TSF
- Statement indicating completion of recommendations from previous inspections and reviews
- New recommendations if necessary

The annual inspections and reporting for the EBM TSF includes the following:

- The EOR shall inspect the TSF annually during operations or as required during closure pursuant to a reclamation plan.
- The EOR will prepare a report describing the scope of the inspection and recommended actions for the proper operation and maintenance of the EBM TSF.
- The EOR will submit the report to Stillwater, DEQ and United States Forest Service Custer Gallatin National Forest (USFS CGNF). The EOR shall immediately notify the DEQ, Stillwater and USFS CGNF if the facility presents an imminent threat or has the potential for an imminent threat to human health or the environment.

Should the annual inspection report contain recommendations, the following actions will be taken:

- Stillwater will prepare a Corrective Action Plan (CAP) and schedule to guide the implementation of the recommendations made by the EOR.
- Stillwater will submit the CAP and schedule to the EOR.
- The EOR will review the CAP and schedule and verify that the proposed corrective actions are reasonably expected to effectively address the recommendations made in the annual report.
- Stillwater will submit the verified CAP and schedule to the DEQ within 120 days following the date of the inspection.
- Stillwater will implement the CAP in accordance with the implementation schedule.

4.2 INDEPENDENT REVIEWS

Independent reviews are required for the TSF as per Stillwater's internal corporate governance document and the approved design documentation. The reviewers and review frequency are summarized in Table 4.1

Table 4.1 Independent Review Summary

Reviewer	Frequency
ITRB	The ITRB completes annual reviews of the TSF as per Stillwater's internal corporate governance document.

IRP	**IRP Inspections**
	As part of the Stage 6 TSF Design Review and permitting of the Lewis Gulch TSF the following inspections were defined for the IRP:
	• Stage 6 TSF Construction Inspections
	  ○ 2022 and 2023: Inspection of Foundation Preparation, Infrastructure Relocation and Embankment Fill Placement (Complete)
	  ○ 2024 and 2025: Inspections of ROM Rockfill Placement (In Progress)
	  ○ 2026: Final Inspection of Earthworks and Geosynthetics Installation (Planned)
	• Annual TSF Inspections by IRP as agreed during permitting of the Lewis Gulch TSF
	As the IRP consists of the same ITRB members, the annual inspections by the ITRB/IRP will be completed as one common inspection. The ITRB and IRP will complete separate reporting to Stillwater and DEQ as appropriate.
	Periodic Review
	The IRP will complete a Periodic Review of the Stage 6 TSF as per the legislation 82-4-380 MCA.

Independent Review (DSRs)	SMC has committed to an additional third-party Dam Safety Review (DSR) for the EBM TSF every 5 years to satisfy Sibanye Stillwater's corporate commitment to the Global Industry Standard on Tailings Management (GISTM). A third-party DSR was completed in 2025 and the next review is scheduled for 2030.

5.0 EMERGENCY PREPAREDNESS PLAN

5.1 GENERAL

An Emergency Preparedness Plan (EPP) (Stillwater, 2025) has been developed to enable Stillwater to:

- Identify emergency and hazardous conditions threatening the facility
- Expedite effective response actions to prevent failure
- Reduce loss of life, minimize property damage and protect the environment, should failure occur

In the event that Stillwater declares an emergency situation or a situation progressing in that manner and is unable to comply with any of the terms and conditions of the operating permit, due to any cause, Stillwater will:

- Immediately notify local stakeholders and agencies as per EPP.
- Immediately take action to stop, contain, and clean up unauthorized discharges or otherwise stop the non-compliance, correct the problem, and if applicable, repeat sampling and analysis of any non-compliance immediately.
- Submit a detailed written report to the DEQ within thirty (30) days (5 days for upsets and bypasses), unless requested earlier by the DEQ. The report will contain a description of the non-compliance, including exact dates and times, if the non-compliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

5.2 DAM BREACH RUNOUT

A Dam Breach Assessment (DBA) has been completed to estimate the potential runout and inundation extents from a hypothetical dam breach. The DBA considers credible failure modes related to hypothetical structural, foundation, and/or erosional failures.

The estimated inundation extents for a hypothetical failure have been used to inform the development of the EPP to plan for a flash flood downstream of the TSF due to a release of water and tailings solids. This identified the residences and roads that are at risk downstream of the TSF that have been identified from the dam breach inundation maps that are included in the EPP (Stillwater, 2025).

5.3 EMERGENCY CONDITIONS

The EPP (Stillwater, 2025) should be referred to if emergency conditions are suspected or have been identified. Two levels of emergency conditions (or warning signs) can be identified with respect to the site operations. These are defined as follows:

- **Level 1 -** Conditions that represent a potential emergency are those that if sustained or allowed to progress may result in an emergency, but no emergency situation is imminent.
- **Level 2 -** An emergency condition is defined by either failure of a significant component of the TSF and/or associated facility, or a significant failure of the performance of a component of the TSF. Such failure may have already occurred or be imminent.

For each level of emergency condition, the EPP identifies subsequent response and/or corrective actions, including emergency notification contacts.

6.0 REFERENCES

Knight Piésold Ltd. (KP), 2025. *East Boulder Mine TSF Design Basis Report*. July 4. North Bay, Ontario. Ref. No. NB101-45/38-3 Rev 1.

Knight Piésold Ltd. (KP), 2026. *East Boulder Mine - Construction Management Plan*. January 30. North Bay, Ontario. Ref. No. NB101-45/58-1 Rev 1.

NavStar Geomatics Ltd. (NavStar), 2017. *GeoExplorer 6*. Version 2.4.0.0. Kelowna, British Columbia.

Sibanye Stillwater (Stillwater), 2025. *Tailings Storage Facility - Emergency Preparedness Plan (EPP)*. May 1. V1.5.

State of Montana (MT), 2024. *Montana Code Annotated (MCA) 2023*. Title 82. Minerals, Oil, and Gas Chapter 4. Reclamation. Part 3. Metal Mine Reclamation.

7.0 CERTIFICATION

This report was prepared and reviewed by the undersigned.

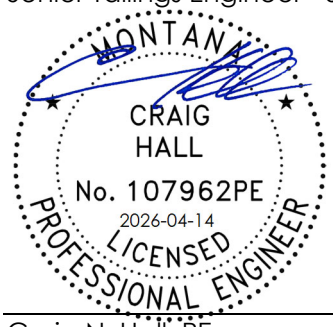
We hereby certify that the following:

- This TOMS Manual is consistent with the design of the EBM TSF;
- The inspections and monitoring described in this TOMS Manual are reasonably sufficient to ensure the EBM TSF will perform as intended and will reasonably be expected to detect deviations if they occur; and
- The Emergency Preparedness Plan (EPP) describes reasonable measures that can be taken to protect human health and the environment.

Prepared:

Zane Leonard, P.Eng.
Senior Tailings Engineer - Sibanye Stillwater

Prepared:



Craig N. Hall, PE
Knight Piésold Ltd. - Managing Principal
Deputy Engineer of Record for East Boulder Mine Tailings Storage Facility

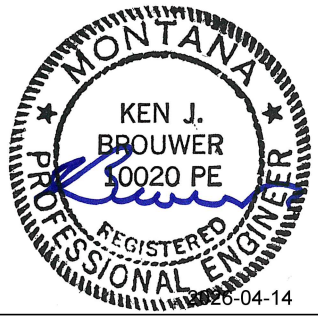
Reviewed:

Kaycie Kynett
East Boulder Concentrator Manager
EBM Responsible Tailings Facility Engineer

The Engineer of Record has reviewed this manual and hereby certifies the following:

- This TOMS Manual is consistent with the design of the EBM TSF;
- The inspections and monitoring described in this TOMS Manual are reasonably sufficient to ensure the EBM TSF will perform as intended and will reasonably be expected to detect deviations if they occur; and
- The Emergency Preparedness Plan (EPP) describes reasonable measures that can be taken to protect human health and the environment.

Reviewed:



Ken J. Brouwer, PE
Knight Piésold Ltd. - Principal Engineer
Engineer of Record for East Boulder Mine Tailings Storage Facility

Appendix A
Quick Reference Field Guides

Appendix A1
TSF Quick Reference Field Guide

Appendix A2
IBWRS Quick Reference Field Guide

Appendix A1
TSF Quick Reference Field Guide

(Pages A1-1 to A1-12)

APPENDIX A1
QUICK REFERENCE FIELD GUIDE

1.0 INTRODUCTION

This Quick Reference Field Guide (QRFG) provides a concise summary of key information for the operation, monitoring, and surveillance of the East Boulder Mine (EBM) Tailings Storage Facility (TSF). The Quantitative Performance Parameters (QPPs), instrumentation trigger levels and locations, and tailings and water management details for the TSF are summarized below.

2.0 QUANTITATIVE PERFORMANCE PARAMETERS

QPPs represent measurable parameters to confirm that the TSF is being operated in accordance with the design intent. QPPs for the EBM TSF are summarized in Table A1.1.

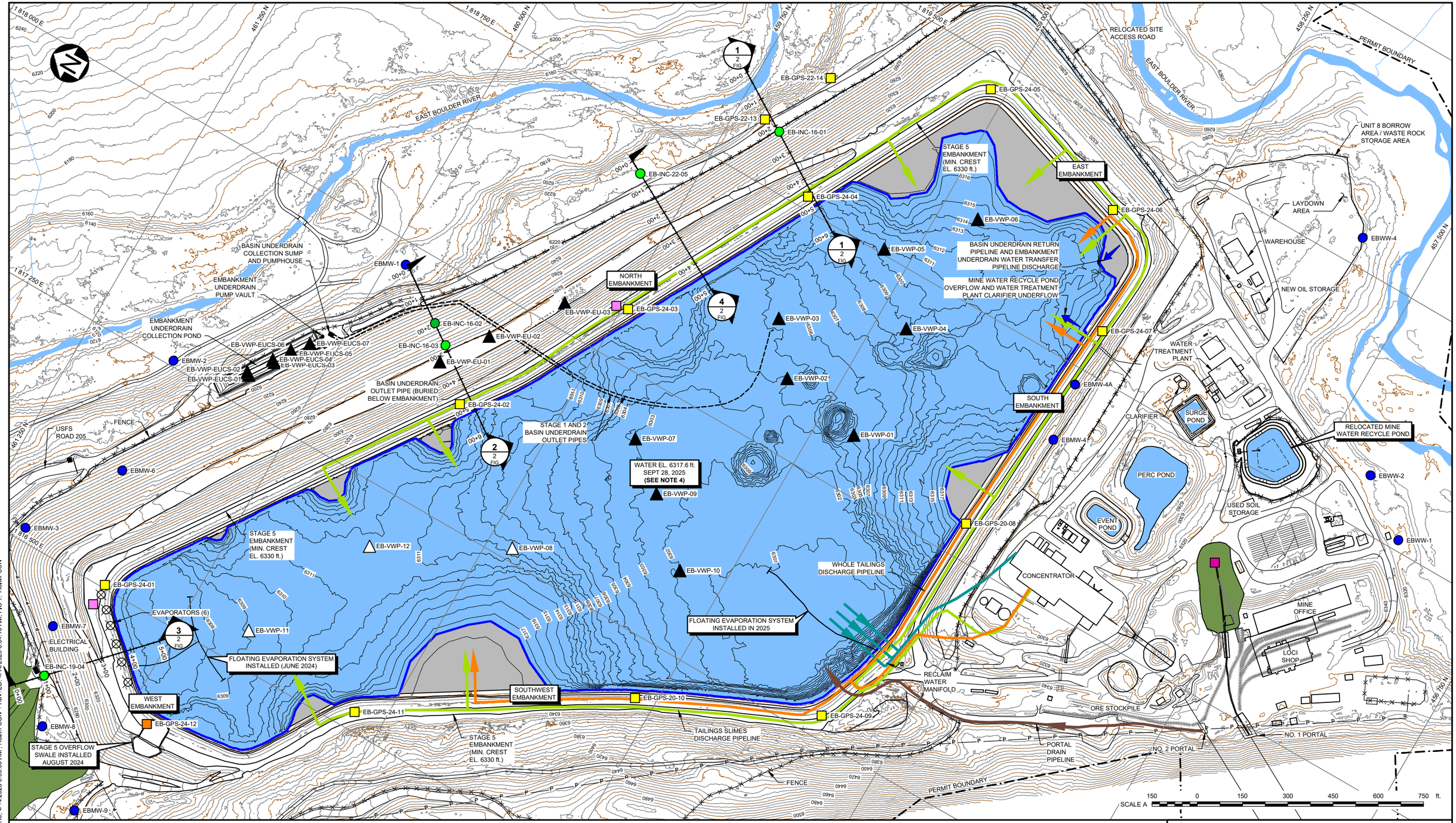
Table A1.1 TSF Quantitative Performance Parameters

Parameter	Stage	Value
Crest Elevation	Stage 5	6,330 ft.
	Stage 6	6,344 ft.
Minimum Freeboard	Stage 5	6 ft.
	Stage 6	10.5 ft.
Maximum Operating Level	Stage 5	El. 6,324 ft.
	Stage 6	El. 6,333.5 ft.
Interim Overflow Channel	Stage 5	Invert El.: 6,325 ft.
		Width: 50 ft.
Crest Width	Stage 5	21 ft.
	Stage 6	21 ft.
Embankment Slope Angle	Stage 5	Upstream: 2H:1V Downstream: 2H:1V
	Stage 6	Upstream: 2H:1V Downstream: 1.75 to 2.0H:1V
Recommended Operating Pond Volume	Stages 5	Minimum: 50 M gal
		Filling El. 6,314 to 6,319 ft.: 150 to 200 M gal
		Filling El. 6,319 to 6,324 ft.: <150 M gal
	Stage 6	Minimum: 50 M gal
		Maximum: 150 M gal

3.0 INSTRUMENTATION

Instrumentation has been installed in the EBM TSF to monitor the performance of the embankment and the Cell 1 and Cell 2 Basin Underdrains. The embankment survey monuments, embankment slope inclinometers and select vibrating wire piezometers (VWPs) are designated as QPPs for monitoring the performance of the TSF. The QPPs specify a displacement trigger level for the survey monuments and slope inclinometers and a piezometric trigger elevation for the piezometers. If the trigger levels are reached for the survey monuments, slope inclinometers and piezometers are reached, appropriate notifications are provided, and Unusual Event monitoring and reporting is triggered. The instrumentation locations for the Stage 5 TSF are shown on Figure A1.1. The slope inclinometer sections are illustrated on Figure A1.2. Instrumentation trigger levels are summarized in Table A1.2 to A1.5.

If an instrumentation trigger level is exceeded, inspections of the embankment crest and slopes are required to be completed to determine if indications of displacement such as cracking, sloughing, slumping or seepage are present. If no indications of displacement or adverse operating conditions are observed, the inspection observations should be documented, and the instrumentation should continue to be monitored. If indications of displacement or adverse operating conditions are observed, refer to the Emergency Preparedness Plan (EPP) (Stillwater, 2025) and contact the Engineer of Record (EOR).



LEGEND:

- WATER
- TAILINGS
- SURFACE SOIL STOCKPILE
- SURVEY MONUMENT
- SURVEY MONUMENT (INACTIVE)
- VWP LOCATIONS (OPERATIONAL)
- VWP LOCATIONS (DECOMMISSIONED)
- SLOPE INCLINOMETER LOCATION
- SLOPE INCLINOMETER LOCATION (INACTIVE)
- MONITORING WELL LOCATION
- INSTRUMENTATION REPEATER LOCATION
- INSTRUMENTATION GATEWAY LOCATION
- EVAPORATORS
- PORTAL DRAIN PIPELINE
- TAILINGS SLIMES DELIVERY PIPELINE
- WHOLE TAILINGS DELIVERY PIPELINE
- RECLAIM WATER PIPELINE
- ROAD
- POWERLINE
- PERMIT BOUNDARY (PROPOSED)
- FENCE

NOTES:

1. TOPOGRAPHY DEVELOPED FROM VARIOUS SURVEYS FOR EMBANKMENT STAGES 2, 3 AND 4 AND WERE PROVIDED BY STILLWATER MINING COMPANY. ADDITIONAL LIDAR DATA PROVIDED BY STILLWATER MINING COMPANY JUNE 2018, SURVEY DATA PROVIDED BY WOITH ENGINEERING INC. FEBRUARY 2021, MAY 2021 AND SURVEY DATA PROVIDED BY TURNER MINING JUNE 2022, NOVEMBER 2022, AUGUST 2023, APRIL 2024 AND MAY 2024. SEPTEMBER 30, 2025 DRONE SURVEY PROVIDED BY SIBANYE STILLWATER.
2. CONTOUR INTERVAL IS 5 FEET.
3. HORIZONTAL DATUM IS MONTANA COORDINATE SYSTEM, SINGLE ZONE, NAD83 (1992). UNITS ARE IN INTERNATIONAL FEET. VERTICAL DATUM IS NGVD29.
4. TAILINGS SURFACE SHOWN ON THIS FIGURE WAS SURVEYED SEPTEMBER 28, 2025.

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SIBANYE STILLWATER

EAST BOULDER MINE

TAILINGS SURFACE, PIPEWORK AND INSTRUMENTATION LOCATIONS

Knight Piésold CONSULTING

P/A NO. NB101-45/77 | REF NO. NB26-00478

FIGURE A1.1 | REV 0

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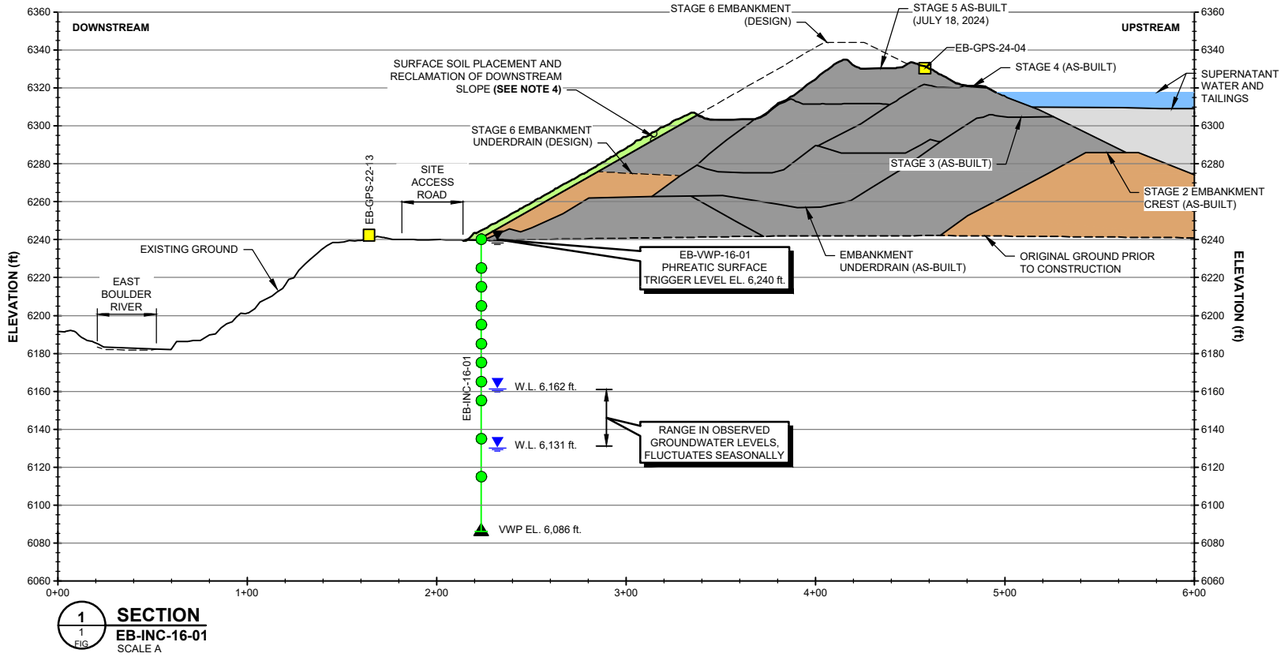
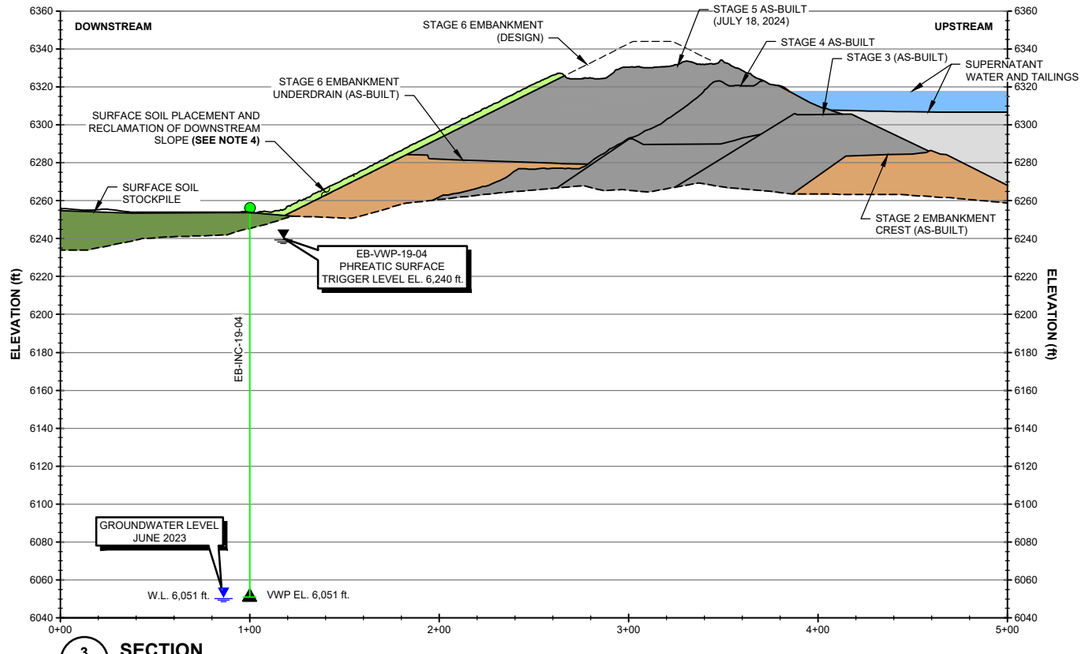
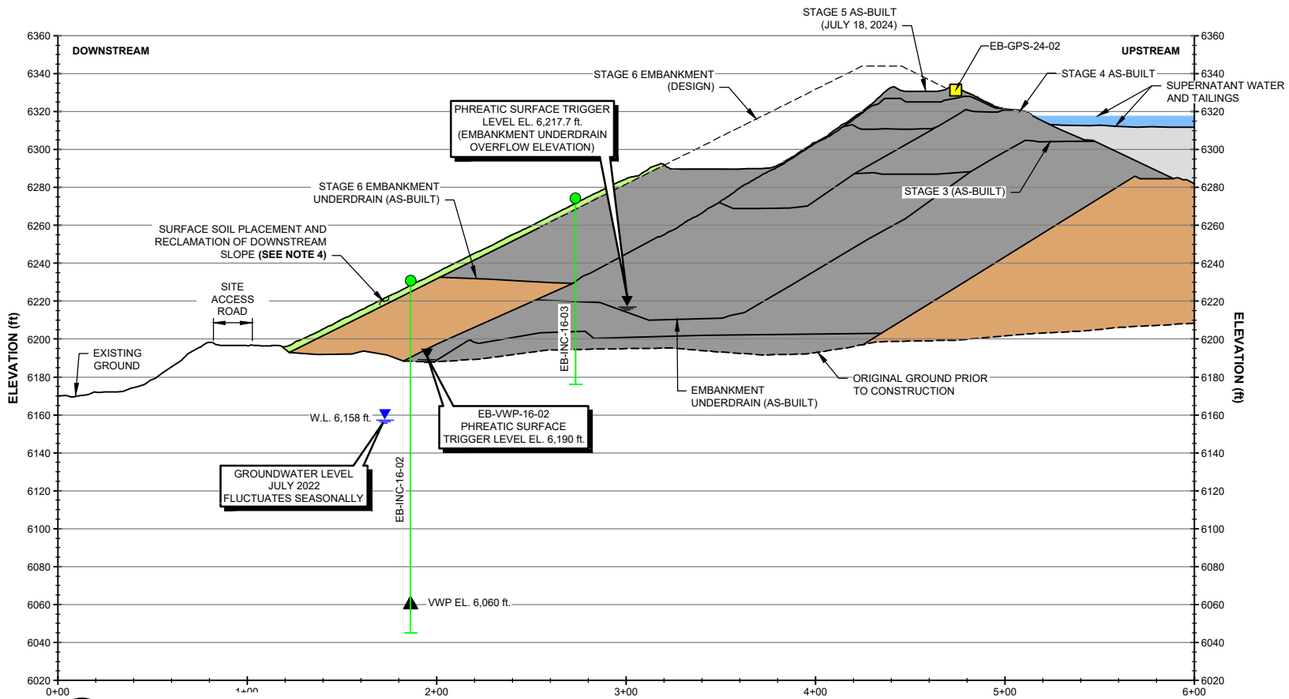


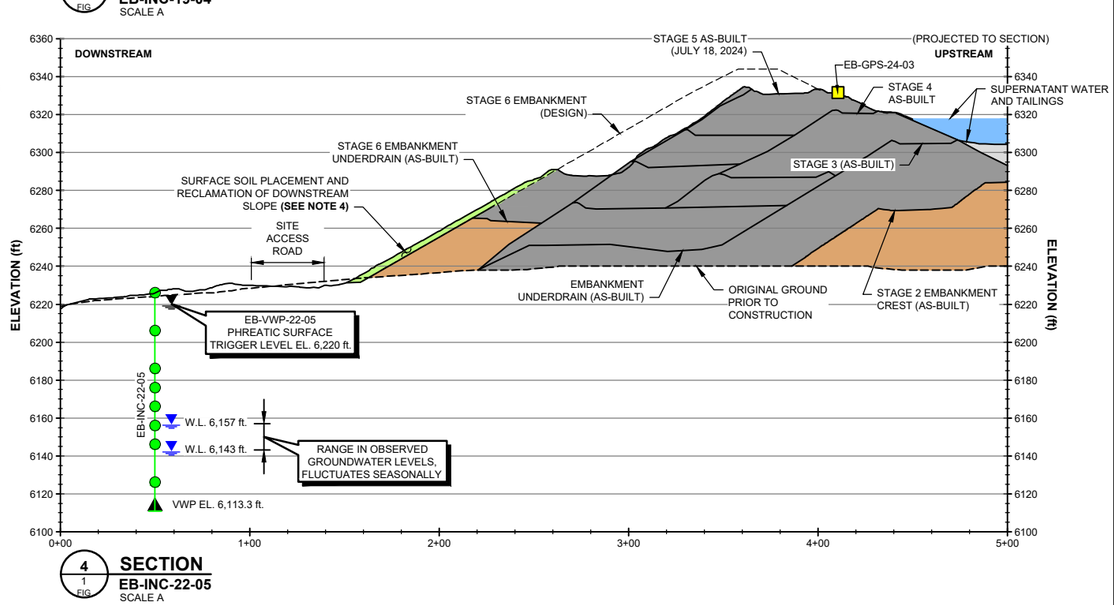
1 / 1 FIG — **SECTION EB-INC-16-01**
SCALE A



3 / 1 FIG — **SECTION EB-INC-19-04**
SCALE A



2 / 1 FIG — **SECTION EB-INC-16-02 AND EB-INC-16-03**
SCALE A



4 / 1 FIG — **SECTION EB-INC-22-05**
SCALE A

LEGEND:

- WATER
- TAILINGS
- RANDOM FILL
- ROM ROCKFILL
- SURFACE SOIL PLACEMENT (BY CONTRACTOR)
- SURFACE SOIL STOCKPILE
- SURVEY MONUMENT
- SLOPE INCLINOMETER LOCATION
- MEASURED WATER LEVEL
- PHREATIC SURFACE TRIGGER LEVEL
- VIBRATING WIRE PIEZOMETER LOCATION

NOTES:

1. SECTIONS DEVELOPED FROM VARIOUS SURVEYS FOR EMBANKMENT STAGES 2, 3 AND 4 AND WERE PROVIDED BY STILLWATER MINING COMPANY. ADDITIONAL LIDAR DATA PROVIDED BY STILLWATER MINING COMPANY JUNE 2018, SURVEY DATA PROVIDED BY WOITH ENGINEERING INC. FEBRUARY 2021, MAY 2021 AND SURVEY DATA PROVIDED BY TURNER MINING JUNE 2022, NOVEMBER 2022, AUGUST 2023, APRIL 2024 AND MAY 2024. SEPTEMBER 30, 2025 AND DECEMBER 2025 DRONE SURVEY PROVIDED BY SIBANYE STILLWATER.
2. TAILINGS SURFACE SHOWN ON THIS FIGURE WAS SURVEYED SEPTEMBER 28, 2025.
3. SLOPE INCLINOMETER TILTMETERS REMOVED IN SEPTEMBER 2023 TO COMPLETE MANUAL DOWNHOLE SURVEYS.
4. SURFACE SOIL PLACEMENT INCLUDES 22 INCHES OF SUBSOIL AND 6 INCHES OF TOPSOIL.

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SCALE A: 40 0 40 80 120 160 200 ft

SIBANYE STILLWATER

EAST BOULDER MINE

TAILINGS STORAGE FACILITY SLOPE INCLINOMETER SECTIONS

Knight Piésold CONSULTING

P/A NO.	REF NO.
NB101-45/77	NB26-00478

FIGURE A1.2 REV 0

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Table A1.2 Survey Monument Trigger Levels

Embankment Survey Monuments	Standard Operations	Orange Trigger Level	Red Trigger Level
EB-GPS-20-01	24-hour average displacement (ΔEl, ΔN, ΔE) < 1 in. (25 mm) and 24-hour average 3D displacement < 2 in. (50 mm)	24-hour average displacement (ΔEl, ΔN, ΔE) > 1 in. (25 mm) or 24-hour average 3D displacement > 2 in. (50 mm)	N/A
EB-GPS-20-02			
EB-GPS-20-03			
EB-GPS-20-04			
EB-GPS-20-05			
EB-GPS-20-06			
EB-GPS-20-07			
EB-GPS-20-08			
EB-GPS-20-09			
EB-GPS-20-10			
EB-GPS-20-11			
EB-GPS-20-12			
EB-GPS-22-13			
EB-GPS-22-14			
Monitoring and Reporting Requirements	Regular Instrumentation Monitoring and Reporting	Increase Monitoring Frequency, Inspect Survey Monument and Embankment and Complete Unusual Condition Report	Inform General Manager and Environmental Manager
Responsible Person	Senior Tailings Engineer	Inform RTFE Senior Tailings Engineer, EOR	Senior Tailings Engineer, EOR, RTFE

Table A1.3 IPI Slope Inclinometer Trigger Levels

Embankment Slope Inclinometers	Standard Operations	Orange Trigger Level > 0.4 in. (10 mm) [1]	Red Trigger Level > 1.0 in. (25 mm) [1]
EB-IPI-16-01-01	<0.188 Degrees Displacement	>0.188 Degrees Displacement	>0.47 Degrees Displacement
EB-IPI-16-01-02			
EB-IPI-16-01-03			
EB-IPI-16-01-04			
EB-IPI-16-01-05			
EB-IPI-16-01-06			
EB-IPI-16-01-07			
EB-IPI-16-01-08	<0.094 Degrees Displacement	>0.094 Degrees Displacement	>0.235 Degrees Displacement
EB-IPI-16-01-09			
EB-IPI-16-01-10	<0.188 Degrees Displacement	>0.188 Degrees Displacement	<0.47 Degrees Displacement
EB-IPI-16-02-01	<0.188 Degrees Displacement	>0.188 Degrees Displacement	>0.47 Degrees Displacement
EB-IPI-16-02-02			
EB-IPI-16-02-03			
EB-IPI-16-02-04			
EB-IPI-16-02-05	<0.094 Degrees Displacement	>0.094 Degrees Displacement	>0.235 Degrees Displacement
EB-IPI-16-02-06			
EB-IPI-16-02-07			
EB-IPI-16-02-08			
EB-IPI-22-05-01	<0.094 Degrees Displacement	>0.094 Degrees Displacement	>0.235 Degrees Displacement
EB-IPI-22-05-02			
EB-IPI-22-05-03			
EB-IPI-22-05-04			
EB-IPI-22-05-05			
EB-IPI-22-05-06			
EB-IPI-22-05-07	<0.188 Degrees Displacement	>0.188 Degrees Displacement	>0.47 Degrees Displacement

Embankment Slope Inclinometers	Standard Operations	Orange Trigger Level > 0.4 in. (10 mm) [1]	Red Trigger Level > 1.0 in. (25 mm) [1]
Monitoring and Reporting Requirements	Regular Instrumentation Monitoring and Reporting	Orange Level exceedances require daily review of inclinometer readings to be implemented and contingency or remedial measures to be developed if trigger levels continue to be exceeded Inform RTFE	Red Level exceedances require an Unusual Condition investigation and action plan and completion of downhole manual survey Inform General Manager and Environmental Manager
Responsible Person	Senior Tailings Engineer	Senior Tailings Engineer, EOR	Senior Tailings Engineer, EOR, RTFE

NOTES:

1. TRIGGER LEVELS WERE CONVERTED TO DEGREES OF DISPLACEMENT FOR USE IN SIBANYE STILLWATER'S MONITORING SYSTEM, GEOEXPLORER. DEGREES OF DISPLACEMENT ARE CALCULATED BASED ON 10 OR 20 FT. TILTMETER SPACING.

Table A1.4 Manual Survey Slope Inclinometer Trigger Levels

Embankment Slope Inclinometers	Standard Operations	Orange Trigger Level > 0.4 in.	Red Trigger Level > 1.0 in.
	<0.4 inch.	> 0.4 inch.	> 1 inch.
EBM-INC-16-02 **EBM-INC-16-03** **EBM-INC-16-04** Monitoring and Reporting Requirements	Regular Instrumentation Monitoring and Reporting	Orange Level exceedances require increase of inclinometer readings to be implemented and contingency or remedial measures to be developed if trigger levels continue to be exceeded Inform RTFE	Red Level exceedances require a completion of downhole camera inspection of inclinometer casing Inform General Manager and Environmental Manager
Responsible Person	Senior Tailings Engineer	Senior Tailings Engineer, EOR	Senior Tailings Engineer, EOR, RTFE

Table A1.5 Vibrating Wire Piezometer Trigger Levels

Piezometers	Standard Operations	Orange Trigger Level	Red Trigger Level
Embankment Slope Inclinometer VWPs [1]			
EB-VWP-16-01	< 6,240 ft.	> 6,240 ft.	N/A
EB-VWP-16-02	< 6,190 ft.	> 6,190 ft.	
EB-VWP-19-04	< 6,240 ft.	> 6,240 ft.	
EB-VWP-22-05	< 6,220 ft.	> 6,220 ft.	
Monitoring and Reporting Requirements	Regular Instrumentation Monitoring and Reporting	Increase Monitoring Frequency, Review Piezometer Data with precipitation and East Boulder flow monitoring records to determine reason for exceedance and Complete Unusual Condition Report	N/A
Basin Underdrain VWPs [2]			
EB-VWP-01	No trigger level - underdrain performance monitoring only (Piezo head fluctuated with Basin Underdrain pumping) [4]		
EB-VWP-02			
EB-VWP-03			
EB-VWP-04			
EB-VWP-05			
EB-VWP-06			
EB-VWP-07			
EB-VWP-09			
EB-VWP-11			
Embankment Underdrain VWPs [3]			
EB-VWP-EU-01	< 6,217.7	> 6,217.7 ft. [5]	N/A
EB-VWP-EU-02	< 6,217.7	> 6,217.7 ft. [5]	
EB-VWP-EU-03	< 6,217.7	> 6,217.7 ft. [5]	

Piezometers	Standard Operations	Orange Trigger Level	Red Trigger Level
Monitoring and Reporting Requirements	Regular Instrumentation Monitoring and Reporting	Increase Monitoring Frequency, Review Piezometer Data with precipitation and Underdrain Flow Records to determine reason for exceedance and Complete Unusual Condition Report Inform RTFE	Inform General Manager and Environmental Manager
Responsible Person	Senior Tailings Engineer	Senior Tailings Engineer, EOR	Senior Tailings Engineer, EOR, RTFE

NOTES:

1. MONITORS PHREATIC SURFACE IN THE EMBANKMENT FOUNDATION. EMBANKMENT STABILITY NOT SENSITIVE TO CHANGES IN GROUNDWATER LEVEL, HOWEVER UNCOMMON (I.E. NOT SEASONAL FLUCTUATIONS) TOWARDS GROUND SURFACE SHOULD BE INVESTIGATED.
2. MONITORS BASIN UNDERDRAIN RESPONSE TO PUMPING.
3. MONITORS PHREATIC SURFACE IN THE EMBANKMENT UNDERDRAIN.
4. NOTIFY THE ENGINEER OF RECORD IF BASIN UNDERDRAIN PIEZOMETERS ARE NOT RESPONDING TO BASIN UNDERDRAIN PUMPING.
5. NOTIFY THE ENGINEER OF RECORD IF EMBANKMENT UNDERDRAIN PIEZOMETERS INDICATE WATER LEVEL IS ABOVE THE OVERFLOW ELEVATION.

4.0 TAILINGS AND WATER MANAGEMENT

4.1 FILLING SCHEDULE

The Stage 5 and 6 TSF filling schedule are illustrated on Figure A1.3. Tailings deposition must cease if the supernatant pond level exceeds the maximum operating level and the removal of water from the TSF basin is required to immediately commence. There are no restrictions on the rate of filling or on the rate of drawdown for the supernatant pond, with respect to dam safety.

The TSF basin filling schedule depends on the incremental addition of settled tailings solids and on changes in the supernatant pond volume. The TSF filling curve has been updated for the 2026 Mine Plan with the estimated tailings disposal projections provided by Stillwater, In-Basin Waste Rock Storage (IBWRS) and for various assumptions on the size of the supernatant pond.

Base Case Filling Curve for Static 222 M gal Pond Volume

An updated short-term filling curve as of the end of September 2025 is shown on Figure A1.3 as a base case condition to allow direct comparison to previous filling models. The calculations assume that 55% of the tailings are deposited to the TSF and settle to achieve dry tailings density of 70 lb/ft^3,and approximately 40% of the annual waste rock production is stored in the TSF in 2026 and 2027. A pond volume of 222 M gallons is assumed to be maintained for these base case water management conditions.

The updated base case filling curve is briefly summarized below:

- The recorded water level at the time of the September 2025 survey was at El. 6,317.6 ft.
- The Stage 5 TSF is projected to reach capacity in Q1 2028 for an assumed 222 M gal supernatant pond volume

Updated Filling Curves Considering Current Water Management Trends

Stillwater implemented corrective actions in 2024 to both arrest the ongoing pond volume accumulation and to facilitate further pond volume reduction within the EBM TSF. Stillwater anticipates that these TSF inflow reductions could result in a reduction of the EBM TSF pond volume by 20M gal/year. Figure A1.3 shows the pond volume reduction targets proposed by Stillwater to facilitate a pond volume reduction down to 150 M gal within the next 3 to 4 years.

The operating life of the Stage 6 impoundment could be extended into Q3 2032 with the pond volume reduced below the QP pond volume target of 150 M gal.

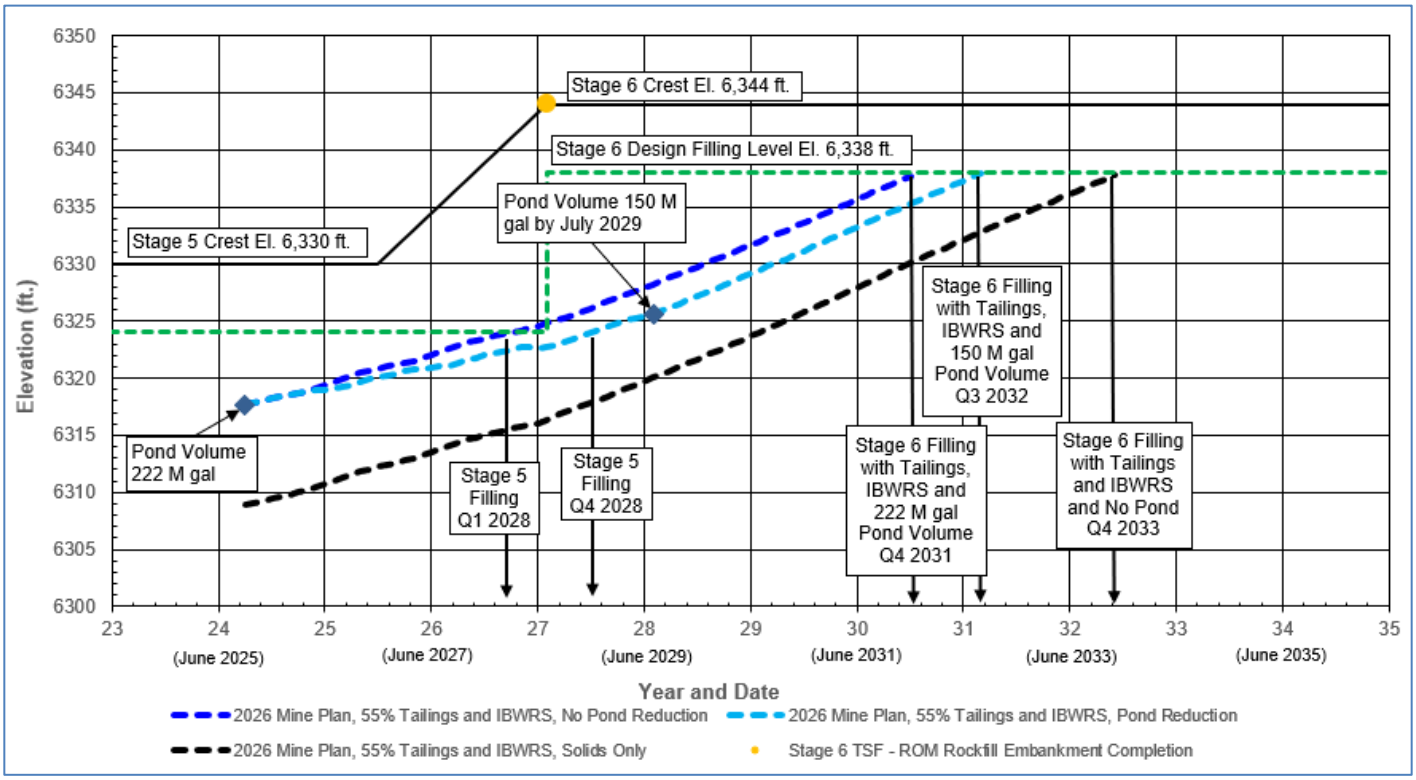
The TSF basin filling schedule depends on the incremental addition of settled tailings solids as well as changes in the supernatant pond volume. The filling schedule on Figure A1.3, reflects the 2025 restructuring mine plan.

4.2 INTERIM OVERFLOW CHANNEL

The Stage 5 Interim Overflow Channel located on the West Embankment has been sized to manage the IDF and would convey a portion of the IDF to the permitted borrow area located northwest of the TSF.

4.3 WATER BALANCE

The water balance flowsheet for the TSF is illustrated in Figure A1.4 with the average annual water additions and losses.



NOTE(S):

1. FILLING RATE DEPENDS ON A VARIETY OF OPERATING FACTORS INCLUDING MILL THROUGHPUT, TAILINGS DENSITY, MINE BACKFILL REQUIREMENTS, IBWRS PLACEMENT, SUPERNATANT POND VOLUME, ETC.
2. ASSUMES 2026 MINE PLAN WITH 55% OF TAILINGS DELIVERED TO THE TSF, ASSUMED TAILINGS DRY DENSITY OF 70 PCF AND FLAT/LEVEL FILLING.
3. INITIAL SUPERNATANT POND VOLUME OF 222 M GAL PER THE SEPTEMBER 2025 BATHYMETRIC SURVEY.
4. STAGE 6 ROM PLACEMENT SCHEDULE IS BASED ON 2026 MINE PLAN WITH 40% OF ANNUAL WASTE ROCK PRODUCTION TO IBWRS IN 2026 AND 2027, AND 100% WASTE ROCK PRODUCTION TO IBWRS FOLLOWING COMPLETION OF THE STAGE 6 TSF EMBANKMENT CONSTRUCTION.

Figure A1.3 Stage 5 and 6 TSF Filling Curve

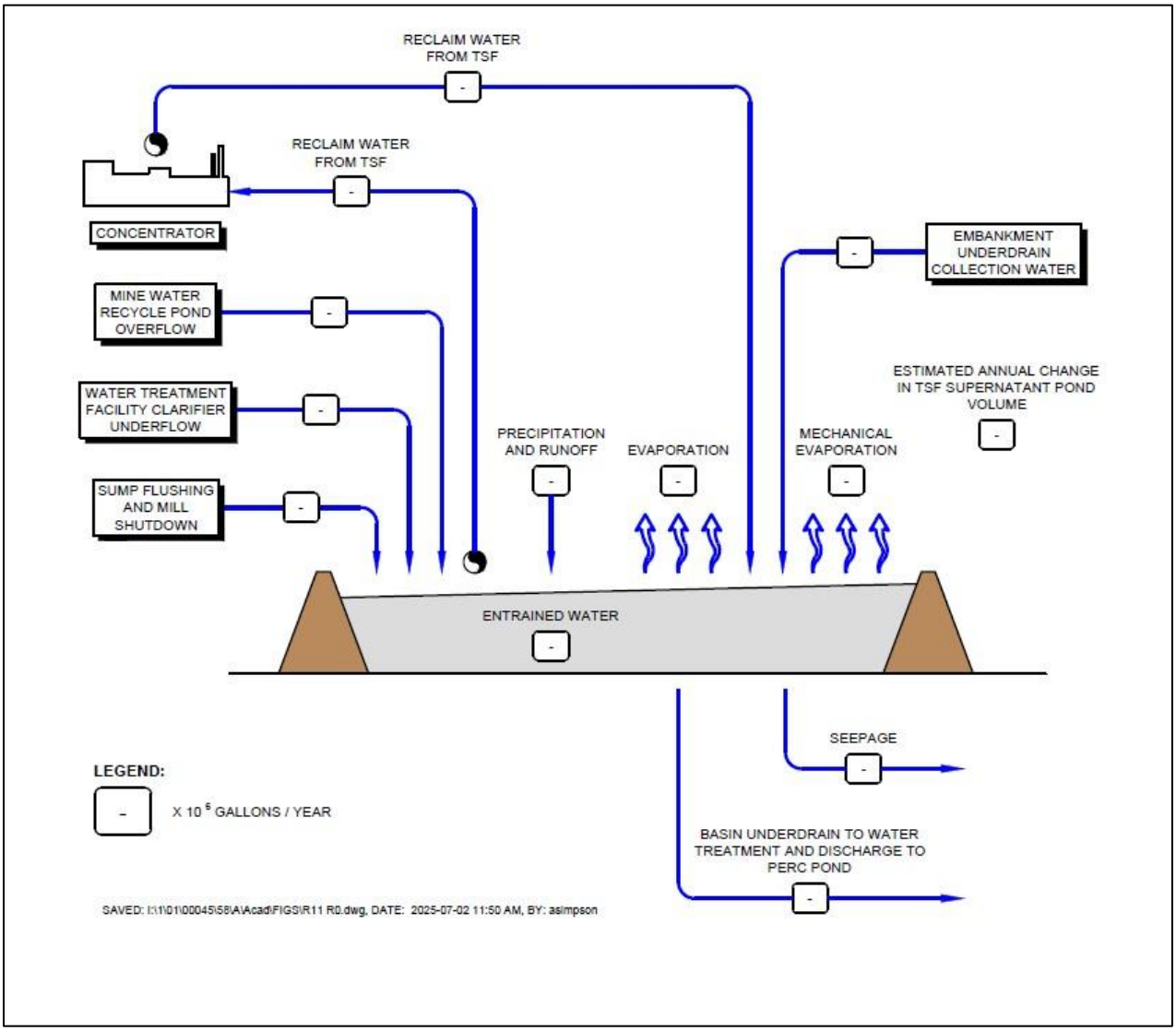


Figure A1.4 Water Balance Flowsheet

Appendix A2
IBWRS Quick Reference Field Guide

(Pages A2-1 to A2-2)

APPENDIX A2
IBWRS QUICK REFERENCE FIELD GUIDE

This Quick Reference Field Guide (QRFG) provides a concise summary of the inspection, testing and monitoring requirements for In-Basin Waste Rock Storage (IBWRS) within the East Boulder Mine (EBM) Tailings Storage Facility (TSF).

The IBWRS will include direct placement of ROM rockfill within the TSF basin. The IBWSR will include:

- Installation of Geomembrane Protection Layer at the Access Ramp location to protect the TSF basin liner
- Placement of 6 in. minus crushed rockfill to construct the Access Ramp
- Placement of ROM rockfill to establish an initial waste rock pad within the TSF basin
- Ongoing placement of ROM rockfill to expand the waste rock disposal pad within the TSF basin

The IBWRS Construction Management Plan (CMP) (KP, 2026) provides the roles and responsibilities, specifications, quality assurance and quality control, monitoring and documentation requirements for the IBWRS.

The inspection, monitoring and testing requirements are summarized on Table A2.1 for each phase of the work.

TABLE A2.1

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
IBWRS INSPECTION AND TESTING PLAN (ITP)

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Area/Activity	Inspection Requirement	Testing Requirement	Frequency Requirement	Tolerance and Response	Documentation Requirement
Geomembrane Protection Layer	Inspect TSF Basin Liner prior to Geomembrane Protection Layer installation. Repair any defects if present.	QC testing on geomembrane repairs if applicable	Daily	N/A	Subgrade inspection form Geomembrane QC testing report Daily inspection report completed by KP and/or SMC
	Visual monitoring during installation to confirm conformance with design	N/A	Daily	N/A	Daily and Weekly Reports including photographs to be prepared by KP and/or SMC
	Displacement Monitoring	Measurement of survey control points during Access Ramp installation	Daily during Geomembrane Protection Layer installation and Access Ramp construction Weekly during initial Rockfill Pad construction (A1 to A4) Monthly following initial Rockfill Pad construction (A5 onwards)	If displacement greater than 2 in. occurs, construction shall stop and KP and SMC will develop a repair plan with the contractor	Survey summary plot Weekly Reports prepared by KP and/or SMC
Access Ramp	Visual monitoring during ramp constructing by Engineer and Constructor	N/A	Daily	N/A	Daily and Weekly Reports including photographs to be prepared by KP and/or SMC
	Displacement Monitoring	Drone survey of Access Ramp and Rockfill Pad	Weekly during Access Ramp construction Monthly during Rockfill Pad construction	If displacement of Access Ramp exceeds 6 in., survey control points on Geomembrane Protection layer shall be checked, if displacement of Geomembrane Protection Layer has occurred, repair plan to be developed. If displacement of Geomembrane Protection Layer has not occurred, additional material to be placed as appropriate to restore ramp grade.	Survey surface comparison figure Weekly Reports prepared by KP and/or SMC
Rockfill Pad	Visual monitoring of placement conditions.	N/A	Daily	N/A	Daily and Weekly Reports including photographs to be prepared by SMC and/or KP
	Displacement Monitoring	Drone surveys during IBWRS	Monthly during Rockfill Pad construction, frequency to be increased if sinkholes or differential settlement greater than 2 ft. is observed	If settlement of Rockfill Pad exceeds 1 ft., material will be placed to top up settled areas	Survey surface comparison figure Weekly Reports prepared by KP and/or SMC
	Rockfill Pad surface condition	Equipment operator to confirm pad condition via tamping and track walking as pad is advance	Daily	If the tested area displaces more than 1 ft., an rockfill surge charge load (11 ft. high berm) shall be constructed over the area and left for 24 hours to apply further preload to the pad area	Daily shift observation report by operator
	Rockfill Pad thickness and underlying tailings density	Test pit excavation	Monthly, once possible	N/A	Daily and weekly inspection reports by SMC and/or KP
		In situ SCPT for tailings characterization	Scheduled for 2027	N/A	Site investigation summary report by KP
	VWP installation	VWPs installed as part of in situ SCPT for tailings characterization	Scheduled for 2027	N/A	VWP data to be reviewed and summarized weekly in monitoring reports by KP and/or SMC

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Appendix B
References

(Pages B-1 to B-2)

APPENDIX B
REFERENCE DOCUMENTS

International Engineering Company (IECO), 1988. Jackpine Project, Sweet Grass County, Montana, Preliminary Tailings Impoundment Engineering Report.

International Engineering Company (IECO), 1990. East Boulder Project Geotechnical Report.

International Engineering Company (IECO), 1990. East Boulder Project, Sweet Grass County, Montana, Preliminary Tailings Impoundment Engineering Report.

Knight Piésold Ltd. (KP), 1998. East Boulder 1998 Site Investigation Program. Ref. No. 30333/6-3, Rev 0.

Knight Piésold Ltd. (KP), 1998. Tender Documents for Stage 1 Tailings Storage Facility Construction. Ref. No. 30333/6-9.

Knight Piésold Ltd. (KP), 1998. Plan of Work - Plant Site Investigations and Detailed Design of Tailings Impoundment. Ref. No. 30333/6-1.

Knight Piésold Ltd. (KP), 2000. Stage 1 Construction Report. Ref. No. 31333/8-6, Rev 0.

Knight Piésold Ltd. (KP), 2000. Land Application Disposal (LAD) System - Basic Engineering Report. Ref. No. 31333/12-6, Rev 0.

Knight Piésold Ltd. (KP), 2000. Technical Specifications for Embankment Construction Using Materials from Mining Operations. Ref. No. 31333/8-5, Rev 1.

Knight Piésold Ltd. (KP), 2004. Detailed Design of Ongoing Expansions. Ref. No. NB101-00045/6 (31333/17-1), Rev 2.

Knight Piésold Ltd. (KP), 2005. Detailed Design of Ongoing Expansions. Ref. No. NB101-00045/6 (31333/17-1), Rev. 3.

Knight Piésold Ltd. (KP), 2005. Detailed Design of Ongoing Expansions. Ref. No. 31333/17-1, Rev 5.

Knight Piésold Ltd. (KP), 2006. Stage 2 Construction Report. Ref. No. NB101-45/12-1, Rev 0.

Knight Piésold Ltd. (KP), 2012. Stillwater Mining Company East Boulder Mine Nitrogen Source Reduction Options for TSF Embankments. Ref. No. NB101-45/23-1, Rev A.

Knight Piésold Ltd. (KP), 2013. TSF Embankment Nitrogen Source Reduction Design Summary. Ref. No. NB101-45/24-1, Rev 1.

Knight Piésold Ltd. (KP), 2018. Stage 3 Construction Report. Ref. No. NB101-45/41-1, Rev 0.

Knight Piésold Ltd. (KP), 2019. Geological and Geotechnical Site Conditions. September 25. North Bay, Ontario. Ref. No. NB101-45/44-8, Rev 1.

Knight Piésold Ltd. (KP), 2020. Stage 4 Construction Report. Ref. No. NB101-45/46-1, Rev 0.

Knight Piésold Ltd. (KP), 2021. Climatological Site Conditions. Ref. No. NB101-45/44-7, Rev 1.

Knight Piésold Ltd. (KP), 2025. East Boulder Mine TSF Design Basis Report. Ref. No. NB101-45/58-1, Rev 1.

Knight Piésold Ltd. (KP), 2022. RE: East Boulder Mine - Stage 4 and 5 TSFs - Interim Overflow Channel Design Summary. Ref. No. NB22-00690, Rev 0.

Knight Piésold Ltd. (KP), 2023. Tailings Storage Facility - 2021 & 2022 - Stage 6 Construction Summary. Ref. No. NB101-45/60-1, Rev 0.

Knight Piésold Ltd. (KP), 2025. TSF - 2023 & 2024 Stage 6 Construction Summary. February 5. North Bay, Ontario. Ref. No. NB101-45/62-1, Rev 0.

Montana Department of Environmental Quality and U.S.D.A. Forest Service (DEQ), 2012. Record of Decision for the Final Environmental Impact Statement for the Stillwater Mining Company's Revised Water Management Plans and Boe Ranch LAD.

Sibanye Stillwater (Stillwater), 2025. Tailings Storage Facility - Emergency Preparedness Plan (EPP). V1.5.

Appendix C
Inspection and Surveillance

Appendix C1
Inspection and Surveillance Schedule

Appendix C2
Unusual Events and Occurrences Requiring Non-Routine Walkovers

Appendix C3
Inspection Forms

Appendix C4
Weekly Embankment QA Checklist

Appendix C1
Inspection and Surveillance Schedule

(Page C1-1)

TABLE C1.1

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
INSPECTION AND SURVEILLANCE SCHEDULE

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Component	Description	Operations	Inspection and Surveillance	Responsible Parties
Tailings Embankments	Perimeter embankments around the TSF.	Grade embankment crest to prevent standing water.	Inspect the embankments **weekly** and look for evidence indicating instability or deformation.	Surface Crew
			Inspect downstream face **weekly** for evidence of seepage, runoff, erosion or piping.	Concentrator Manager, Surface Crew, Environmental Affairs Manager
			Take photographs of the embankments **semi-annually**.	Environmental Affairs Manager
Tailings Basin	Process water and tailings solids storage in an HDPE lined basin. Basin underdrain layer to reduce seepage and promote tailings consolidation.	Pond required to store 72 hr PMP event plus provide an additional 2.2 feet of freeboard. Maximum operating pond level is 6 feet below the crest elevation during normal operations.	Record Tailings throughput **daily**.	Concentrator Manager, Surface General Foreman
		Compare pond levels with design filling schedules.	Inspect the tailings discharge location **weekly** and note the approximate extent of beach development in the facility.	Concentrator Manager
		Relocate spigots as necessary to develop the tailings beach around the perimeter of the impoundment.	Inspect the tailings beach **daily**. Note any sinkholes or excessive beach erosion.	Surface Crew
			Inspect the geomembrane **monthly**.	Surface General Foreman
			Measure and monitor the pond water levels **weekly.**	Environmental Specialist
			Take photographs of the pond **semi-annually.**	Environmental Affairs Manager
			Determine the volume of the supernatant pond **annually** (prior to winter freeze-up) by sounding the pond depths from a boat.	Concentrator Manager
Tailings Delivery System	Consists of the tailings delivery pipeline and discharge spigots around perimeter of impoundment.	Ensure that the discharge pipeline is fully flushed prior to relocating any pipe work.	Inspect the pipeline **weekly** for evidence indicating leakage.	Concentrator Manager, Surface Crew
		Ensure that there is always an open path for the tailings to exit during operations and discharge relocation.	Conduct detailed inspections of the tailings pipeline during **pipeline maintenance.**	Concentrator Manager
		Keep spigot points downstream of active spigotting sections open to allow the unused pipeline to drain.		
		Maintain non-erosive laminar flow over the tailings beaches.		
Reclaim Water Pipeline	Consists of the 3 inclined reclaim pumps and pipes, reclaim manifold from tailing impoundment to the mill, reclaim water pipeline and booster pump station adjacent to the mine site.	Ensure that the pipeline is fully drained during maintenance periods or prolonged shutdown under extreme cold conditions.	Inspect the pipeline **weekly** for evidence of leakage.	Concentrator Manager, Surface Crew
		The inclined pumps and booster pump may be controlled from the Mill control room, or breather panel on the dam crest.	Conduct a detailed inspection of the inclined pumps **annually** for corrosion, wear and tear, etc. and make necessary repairs.	Concentrator Manager, Surface Crew
		Monitor the water and tailings elevation relative to the inclined pump location.	Monitor and assess the inclined pump elevation **weekly** and determine if pumps to be raised.	Concentrator Manager, Surface Crew
			Conduct detailed inspections of the reclaim pipeline during **pipeline maintenance.**	Concentrator Manager, Surface Crew
Instrumentation	Includes vibrating wire piezometers, survey monuments, groundwater monitoring wells and slope inclinometers.	Piezometers, slope inclinometers, and survey monuments transmit data to Navstar monitoring system.	Review instrumentation data **monthly**.	Environmental Coordinator
		Instrumentation data plotted and reviewed on Navstar's GeoExplorer software.	Check condition of instrumentation.	Environmental Coordinator
		Check condition of instrumentation and complete maintenance as required.	Provide instrumentation data **quarterly** to EOR for review.	Environmental Coordinator
		Make note of any instrumentation that is not functioning.	Monitor water levels in each groundwater monitoring well and obtain water quality samples as required by permits. Data is compiled by the Environmental Supervisor and a report is forwarded to the appropriate agencies **annually**.	Environmental Coordinator
		Follow manufacture's instructions for instrumentation operation.		
		Notify EOR of any anomalous trends in the data.		

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Appendix C2

Unusual Events and Occurrences Requiring Non-Routine Walkovers

(Page C2-1)

TABLE C2.1

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
UNUSUAL EVENTS AND OCCURRENCES REQUIRING NON-ROUTINE WALKOVERS

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Event/Observation	Recommended Action
Extreme rainfall	Monitor the TSF pond level. Confirm pond level is below the maximum operating level. Inspect the TSF embankments for signs of concentrated runoff and erosion. Inspect the TSF embankments for indications of localized slumping or instability. Note areas of saturated or soft ground. Inspect surface water management ditches and sediment ponds along access roads.
Water levels rising in the TSF more than expected and within 2 ft. of the maximum operating level.	Monitor pond levels Weekly. Develop plan to slow or stop the water level rise (stop tailings deposition, transfer water to the Percolation Pond). Contact the EOR and Site Management and establish routine communication plan.
Water levels rising in the TSF more than expected and with 1 ft. of the maximum operating level	Monitor pond levels daily. Initiate plan to slow or stop the water level rise (stop tailings deposition, transfer water to the Percolation Pond. Inform EOR and Site Management.
Significant earthquake event (See Note 1)	Read all instrumentation. Follow inspection and reporting procedures if instrumentation readings exceed trigger levels. Site personnel to complete visual inspection of TSF and report back to Tailings Engineer.
Rupture of pipeline at the embankment with greater than 5,000 gals of tailings release	Stop pumping tailings to the TSF and stop reclaiming water to the mill. Check the upstream slope and crest for erosion. Take photographs and make notes of exact location and cause (if known) of leak. Contact the EOR.
Sudden seepage on the embankment slope or downstream of embankment resulting in significant and rapid erosion	Estimate seepage flow rate. Estimate size of area. Take photographs and make notes of exact location (if known) of erosion. Contact the EOR.
Soft toe condition or minor seepage at the downstream slope or toe	Conduct embankment walkovers daily until the problem is understood and addressed. Monitor seepage development (e.g. clarity, content/quality, extent etc.). Prepare to carry out corrective repairs. Contact the EOR if appropriate.
High turbidity in Basin Underdrain flow	Reduce or suspend underdrain pumping. Collect sample for suspended solids determination. Conduct a pipeline inspection (remote camera). Prepare to carry out corrective repairs. Contact the EOR.
Exceedance of automated instrumentation trigger levels	Refer to trigger levels in QRFG. Re-check the readings. Continue monitoring daily until readings return to normal. Contact the EOR if appropriate.
Failure of reclaim water and/or Tailings Delivery Pipeline resulting in erosion of the embankment crest	Document and repair as necessary. Monitor water levels daily. Ensure backup pumps are available. Repair or replace failed pumps ASAP.
Tailings Delivery Pipeline blocked	Stop tailings discharge. Flush pipeline with water to clear obstruction. Inspect the pipeline for damages or leaks. Determine the cause or reason for blockage.
Minor cracks developing at the embankment crest or slope	Conduct embankment walkovers daily until the problem is understood and addressed. Monitor crack development (e.g. crack size, extent, etc.). Prepare to carry out corrective repairs. Contact the EOR if appropriate.
Geomembrane damage due to unusual environmental occurrences (ice, wind, erosion damages, etc.)	Document the extent of the geomembrane damage. Identify a repair plan. Contact the Geomembrane Installer to complete the repairs.
Other events/observations	Use judgement, consult your peers.

\\ns-ca02\nb-project\1\01\00045\77\A\Report\2026 EBM TOMS Update - Rev 9\Final\App C - Inspection and Surveillenance\[Table C2.1 - East Boulder Unusual Events 16JAN'25.xlsx]Table C2.1

NOTE:

1. A SIGNIFICANT EARTHQUAKE IS DEFINED AS AN EARTHQUAKE THAT COULD POTENTIALLY DISPLACE, DAMAGE OR CAUSE AN EMBANKMENT TO CRACK OR SETTLE, RESULTING IN A LOSS OF STRUCTURAL INTEGRITY OR FREEBOARD. THE OCCURRENCE OF AN EARTHQUAKE GREATER THAN MAGNITUDE 5.0 ON THE RICHTER SCALE WITHIN 60 MILES (100 KILOMETERS) OF THE FACILITY WILL AUTOMATICALLY TRIGGER A LEVEL 1 OR HIGHER CONDITION. ASSESSING AND REPORTING POTENTIAL DAMAGE CAUSED BY AN EARTHQUAKE WILL BE THE REQUIRED REMEDIAL ACTION.

Appendix C3
Inspection Forms

TABLE C3.1

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
WEEKLY TSF INSPECTION
(Concentrator General Foreman or Designate)

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Inspectors:		**Inspection Date:**	**Inspection Time:**
Name:	**Title:**	**Signature:**	
Name:	**Title:**	**Signature:**	
Weather Conditions	Precipitation (24hr):	Wind Speed:	
	Temperature °F:	Sky: Clear Partly Cloudy Cloudy Overcast	
Samples Collected:	Yes No		

TAILINGS EMBANKMENT			
Crest of Dam	**Condition/Issue/Defect Present (circle one)**		**Comments**
Cracking	Yes	No	
Subsidence, Depressions	Yes	No	
Lateral Deformation	Yes	No	
Standing Water or Wet Areas	Yes	No	
Upstream Slope			
Liner Trampoline (due to potential displacement of underlying subgrade)	Yes	No	
Liner Bulging (due to potential displacement of underlying subgrade)	Yes	No	
Excessive Ice Build-up and/or Snow Accumulation	Yes	No	
Ice Rafting on Geomembrane	Yes	No	
Downstream Slope			
Cracking	Yes	No	
Subsidence	Yes	No	
Bulging, Sliding or Sloughing	Yes	No	
Erosion	Yes	No	
Animal Burrows	Yes	No	
Damp Areas	Yes	No	
Seeps, Soft Areas	Yes	No	

TAILINGS BASIN			
Basin Filling	**Condition/Issue/Defect Present (circle one)**		**Comments**
Tailings Beach Location (sinkholes or excessive erosion)	Yes	No	
Pond Elevation (estimated from marked location (ft.))			
Tailings Beach Development (approx. area)			
Tailings Discharge Location (Spigot No.)			

TAILINGS DELIVERY SYSTEM			
Pipelines	**Condition/Issue/Defect Present (circle one)**		**Comments**
Pipeline Leakage (external inspection)	Yes	No	
Pipeline Damage (external inspection)	Yes	No	
Valves - Conditions/Issues Identified (external inspection)	Yes	No	
Maintenance Activities (repairs and replacements)			

WATER RECLAIM SYSTEM			
Pipelines and Pumps	**Condition/Issue/Defect Present (circle one)**		**Comments**
Pipeline Leakage (external inspection)	Yes	No	
Pipeline Damage (external inspection)	Yes	No	
Valves - Conditions/Issues Identified (external inspection)	Yes	No	
Maintenance Activities (repairs and replacements)			

INTERIM OVERFLOW CHANNEL			
Condition			**Comments**
Is the spillway clear?	Yes	No	
(near) Emergency conditions? (pond level within 1.5 ft of culverts)	Yes	No	

EVAPORATORS	
Floating & Stationary systems	**Comments**
Location / Active(?)	

OTHER	
Other Issues or Observations Identified	**Comments**

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TABLE C3.2

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
MONTHLY TSF INSPECTION
(Concentrator General Forman or Designate)

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Inspectors:		**Inspection Date:**	**Inspection Time:**
Name:		**Title:**	**Signature:**
Name:		**Title:**	**Signature:**
Weather Conditions	Precipitation (24hr):	Wind Speed:	
	Temperature °F:	Sky: Clear Partly Cloudy Cloudy Overcast	
NOTE: Photograph all conditions, issues or defects identified.			
Photos Taken:	Yes No		
Samples Collected:	Yes No		

TAILINGS EMBANKMENT			
Crest of Dam	**Condition/Issue/Defect Present (circle one)**		**Comments**
Cracking	Yes	No	
Subsidence, Depressions	Yes	No	
Lateral Deformation	Yes	No	
Standing Water or Wet Areas	Yes	No	
Excessive Ice Build-up and/or Snow Accumulation	Yes	No	
Upstream Slope			
Liner Trampoline (due to potential displacement of underlying subgrade)	Yes	No	
Liner Bulging (due to potential displacement of underlying subgrade)	Yes	No	
Excessive Ice Build-up and/or Snow Accumulation	Yes	No	
Ice Rafting on Geomembrane			
Downstream Slope			
Cracking	Yes	No	
Subsidence	Yes	No	
Bulging, Sliding or Sloughing	Yes	No	
Erosion	Yes	No	
Animal Burrows	Yes	No	
Damp Areas	Yes	No	
Seeps, Soft Areas	Yes	No	

TAILINGS BASIN			
Basin Filling	**Condition/Issue/Defect Present/Observation (circle one)**		**Comments**
Tailings Beach Location (sinkholes or excessive erosion)	Yes	No	
Freeboard minimum of 6 feet below crest required	Yes	No	
Pond Elevation (estimated from marked location (ft.))			
Tailings Beach Development (approx. area)			
Tailings Discharge Location (Spigot No.)			
Geomembrane			
Defects (holes, tears, ice, wind, uv degradation, etc.)	Yes	No	
Tension/Trampoline	Yes	No	
Areas of Previous Repair			
Concerns or Issues with Conditions	Yes	No	
Basin Underdrain			
Pump Operating	Yes	No	
Sump and Pumphouse (concerns or issues with conditions)	Yes	No	
Clarity of Discharge Water (WTP Sample Port)	Clear Cloudy Dirty		
Excessive Ice Buildup during Freezing Conditions	Yes	No	

TAILINGS DELIVERY SYSTEM			
Pipelines	**Condition/Issue/Defect Present/Observation (circle one)**		**Comments**
Pipeline Leakage (external inspection)	Yes	No	
Pipeline Damage (external inspection)	Yes	No	
Valves - Conditions/Issues Identified (external inspection)	Yes	No	
Spigot Inspection (issue identified)	Yes	No	
Excessive Ice Buildup during Freezing Conditions	Yes	No	

WATER RECLAIM SYSTEM			
Pipelines and Pumps	**Condition/Issue/Defect Present/Observation (circle one)**		**Comments**
Pipeline Leakage (external inspection)	Yes	No	
Pipeline Damage (external inspection)	Yes	No	
Valves - Conditions/Issues Identified (external inspection)	Yes	No	
Pumps - Conditions/Issues Identified (external inspection)	Yes	No	
Excessive Ice Buildup during Freezing Conditions	Yes	No	

INTERIM OVERFLOW CHANNEL			
Condition			**Comments**
Is the spillway clear?	Yes	No	
(near) Emergency conditions? (pond level within 1.5 ft of culverts)	Yes	No	

EVAPORATORS	
Floating & Stationary systems	**Comments**
Location / Active(?)	

OTHER	
Other Issues or Observations Identified	**Comments**

TABLE C3.3

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
QUARTERLY TSF INSPECTION
(Tailings Engineer and/or Concentrator Manager)

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Inspectors:		**Inspection Date:**	**Inspection Time:**
Name:		**Title:**	**Signature:**
Name:		**Title:**	**Signature:**
Weather Conditions	Precipitation (24hr):		Wind Speed:
	Temperature °F:		Sky: Clear Partly Cloudy Cloudy Overcast
Photos Taken:	Yes No		
Samples Collected:	Yes No		

TAILINGS EMBANKMENT				
Crest of Dam	**Condition/Issue/Defect Present (circle one)**		**Comments**	**Photos Taken**
Cracking	Yes	No		
Subsidence, Depressions	Yes	No		
Lateral Deformation	Yes	No		
Standing Water or Wet Areas	Yes	No		
Excessive Ice Build-up and/or Snow Accumulation	Yes	No		
Upstream Slope				
Liner Trampoline (due to potential displacement of underlying subgrade)	Yes	No		
Liner Bulging (due to potential displacement of underlying subgrade)	Yes	No		
Excessive Ice Build-up and/or Snow Accumulation	Yes	No		
Ice Rafting on Geomembrane	Yes	No		
Downstream Slope				
Cracking	Yes	No		
Subsidence	Yes	No		
Bulging, Sliding or Sloughing	Yes	No		
Erosion	Yes	No		
Animal Burrows	Yes	No		
Damp Areas	Yes	No		
Seeps, Soft Areas	Yes	No		
Vegetation (Reclamation)				
Wet Ground Vegetation	Yes	No		
Poor Growth	Yes	No		
Destroyed by Erosion	Yes	No		
Instrumentation				
Survey Monuments - Inspect Condition (damaged or maint needed)	Yes	No		
Piezometers - Inspect Condition (damaged or maint needed)	Yes	No		
Slope Inclinometers - Inspect Condition (damaged or maint needed)	Yes	No		
Areas of Previous Repair				
Concerns or Issues with Conditions	Yes	No		

TAILINGS BASIN				
Basin Filling	**Condition/Issue/Defect Present/ Observation (circle one)**		**Comments**	**Photos Taken**
Tailings Beach Location (sinkholes or excessive erosion)	Yes	No		
Freeboard Minimum of 6 feet below Crest Required	Yes	No		
Pond Elevation (estimated from marked location (ft.)				
Tailings Beach Development (approx. area (ft.))				
Tailings Discharge Location (Spigot No.)				
Geomembrane				
Defects (holes, tears, ice, wind, uv degradation, etc.)	Yes	No		
Tension/Trampoline	Yes	No		
Areas of Previous Repair				
Concerns or Issues with Conditions	Yes	No		
Basin Underdrain				
Pump Operating	Yes	No		
Sump and Pumphouse (concerns or issues with conditions)	Yes	No		
Clarity of Discharge Water (WTP Sample Port)	Clear Cloudy Dirty			
Excessive Ice Buildup during Freezing Conditions	Yes	No		

TAILINGS DELIVERY SYSTEM				
Pipelines	**Condition/Issue/Defect Present/Observation (circle one)**		**Comments**	**Photos Taken**
Pipeline Leakage (external inspection)	Yes	No		
Pipeline Damage (external inspection)	Yes	No		
Valves - Conditions/Issues Identified (external inspection)	Yes	No		
Spigot Inspection (issue identified)	Yes	No		
Excessive Ice Buildup during Freezing Conditions	Yes	No		

WATER RECLAIM SYSTEM				
Pipelines and Pumps	**Condition/Issue/Defect Present (circle one)**		**Comments**	**Photos Taken**
Pipeline Leakage (external inspection)	Yes	No		
Pipeline Damage (external inspection)	Yes	No		
Valves - Conditions/Issues Identified (external inspection)	Yes	No		
Pumps - Conditions/Issues Identified (external inspection)	Yes	No		
Excessive Ice Buildup during Freezing Conditions	Yes	No		

SURFACE WATER MANAGEMENT (COMPLETED AS PART OF THE SWPPP)				
Ditches, Sediment Collection	**Condition/Issue/Defect Present (circle one)**		**Comments**	**Photos Taken**
Blockages	Yes	No		
Flowing Water, Boils or Seeps	Yes	No		
Signs of Erosion	Yes	No		

INTERIM OVERFLOW CHANNEL			
Condition			**Comments**
Is the spillway clear?	Yes	No	
(near) Emergency conditions? (pond level within 1.5ft of culverts)	Yes	No	

EVAPORATORS	
Floating & Stationary systems	**Comments**
Location / Active(?)	

FENCING				
Fencing	Yes	No		

OTHER		
Other Issues or Observations Identified	**Comments**	**Photos Taken**

TABLE C3.4

SIBANYE STILLWATER
EAST BOULDER MINE

TAILINGS STORAGE FACILITY - TAILINGS OPERATIONS, MAINTENANCE AND SURVEILLANCE (TOMS) MANUAL
UNUSUAL EVENT INSPECTION
(Tailings Engineer and/or Concentrator Manager)

Print Apr-13-26 14:23:30

Inspectors:		**Inspection Date:**	**Inspection Time:**
Name:		**Title:**	**Signature:**
Name:		**Title:**	**Signature:**
Weather Conditions	Precipitation (24hr):	Wind Speed:	
	Temperature °F:	Sky: Clear Partly Cloudy Cloudy Overcast	
Photos Taken:	Yes No	**Instrumentation Data Reviewed:**	Yes No
Samples Collected:	Yes No		

Event	Comments	Photo
EXTREME RAINFALL EVENT (2 inches in 24 hours)		
Monitor TSF Pond Level. Confirm Pond Level is below Maximum Operating Level		
Inspect Embankments for Signs of Concentrated Runoff and Erosion		
Inspect Embankments for Indications of Localized Slumping or Instability		
Note Areas of Saturated or Soft Ground		
Inspect Surface Water Management Ditches and Sediment Ponds along Access Roads		
TSF POND LEVEL WITHIN 2 ft. MAXIMUM OPERATING LEVEL		
Monitor Pond Level Weekly		
Develop Plan to Reduce Pond Level		
TSF POND LEVEL WITHIN 1 ft. MAXIMUM OPERATING LEVEL		
Monitor Pond Level Daily		
Initiate Plan to Reduce Pond Level		
SIGNIFICANT EARTHQUAKE EVENT (Magnitude greater than 5 within 60 miles)		
Review Instrumentation Readings		
Carry Out Detailed Walkover of TSF, Pipelines and Associated Structures if Instrumentation Trigger Levels are Exceeded		
Investigate Downstream and Upstream (visible) Slopes for Cracks, Bulging Settlement or Deformation		
Look for and note any Seepage, particularly the Rate of Seepage Flow at the Embankment Toe and Clarity		
Review all Surface Monument and Slope Inclinometer Readings		
Inspect Downstream Embankment slope for Sand Boils and Sinkholes		
Inspect Tailings Beach for Whirlpools		
Discuss findings with Engineer of Record		
Check and ensure that the Basin Underdrain Sumps and Pumps are Functioning		
RUPTURE OF PIPELINE AT THE EMBANKMENT		
Stop Pumping Tails to the TSF and Stop Reclaiming Water to Mill		
Check Upstream Slope and Crest for Erosion		
Take Photographs and make Notes of Exact Location and Cause of Erosion (if known), Contact EOR		
SIGNIFICANT EROSION OF THE EMBANKMENT SLOPES; SEEPAGE ON THE EMBANKMENT SLOPE OR DOWNSTREAM OF THE EMBANKMENT TOE		
Estimate Seepage Flow Rate. Estimate Size of Area.		
Take Photographs and make Notes of Exact Location and Cause (if known) of Erosion		
Contact the EOR		
SIGNIFICANT TEAR OR DEFECT IN GEOMEMBRANE		
Document Location and Extent of Tear/Defect		
Develop Repair Plan		
EXCEEDANCE OF INSTRUMENTATION TRIGGER LEVEL		
Embankment Inspection Observations		
OTHER OBSERVATIONS		

\\ns-ca02\nb-project\1\01\00045\77\A\Report\2026 EBM TOMS Update - Rev 9\Final\App C - Inspection and Surveillenance\[Table C3.1 to C3.4- East Boulder Inspection Log Templates_13Apr'26.xlsx]Unusual Events Insp.

Appendix C4
Weekly Embankment QA Checklist

(Page C4-1)

SIBANYE STILLWATER
EAST BOULDER MINE
TAILINGS STORAGE FACILITY

WEEKLY QA/QC INSPECTION CHECKLIST FOR ROUTINE FILL PLACEMENT BY MINE OPERATIONS

GENERAL INFORMATION

Week Ending:		*General Location:*	
Time:		*Station Interval:*	
Weather:		*Offset from S.O.L.:*	
Temperature:		*Subgrade Elevation:*	
Inspector:		*Source of Material:*	

FOUNDATION OR UNDERLYING SURFACE

Sub-grade Material:		*Stakes Placed:*	
Compaction Applied:		*Stake Location Checked:*	
Boulders Removed:		*New Sed. Control Measures:*	
Topsoil Removed:		*FILL PLACEMENT APPROVED:*	

NOTES:

FILL PLACEMENT

Material:		*Compaction Applied:*	
Material Description:		*Compactor Type:*	
Max. Particle Size:		*No. of Passes:*	
Gradation Req. Met.:		*Compaction Spec. Met.:*	
Lift Thickness:		*LIFT APPROVED:*	

Sample Collected: Sa.No./Sta/OS/El:

NOTES:

GENERAL COMMENTS

Estimated Volume of Material Placed: _____ *Loads* _____ cubic yards

Other: _____

_____

_____

Signed _____ _____
Date

Appendix D
Selected Site Photos

(Pages D-1 to D-7)

EAST BOULDER MINE
SELECT SITE PHOTOS

PHOTO 1 - TSF overview from South Embankment corner looking north (May 2024).

PHOTO 2 - North Embankment downstream slope looking northwest (May 2024).

PHOTO 3 - North Embankment upstream slope and crest looking northwest (May 2024).

PHOTO 4 - West Embankment upstream slope, looking south (May 2024).

PHOTO 5 - Southwest Embankment looking southeast (May 2024).

PHOTO 6 - Upstream slope of Southwest Embankment, looking northwest (May 2024).

PHOTO 7 - South Embankment downstream slope, looking southwest (May 2024).

PHOTO 8 - South Embankment upstream slope looking east (May 2024).

PHOTO 9 - East Embankment upstream slope looking north (May 2024).

PHOTO 10 – West Embankment downstream slope, looking north (May 2024).

PHOTO 11 - East Embankment, Stage 6 ROM rockfill and surface soil placement on outer slope, looking south (May 2024).

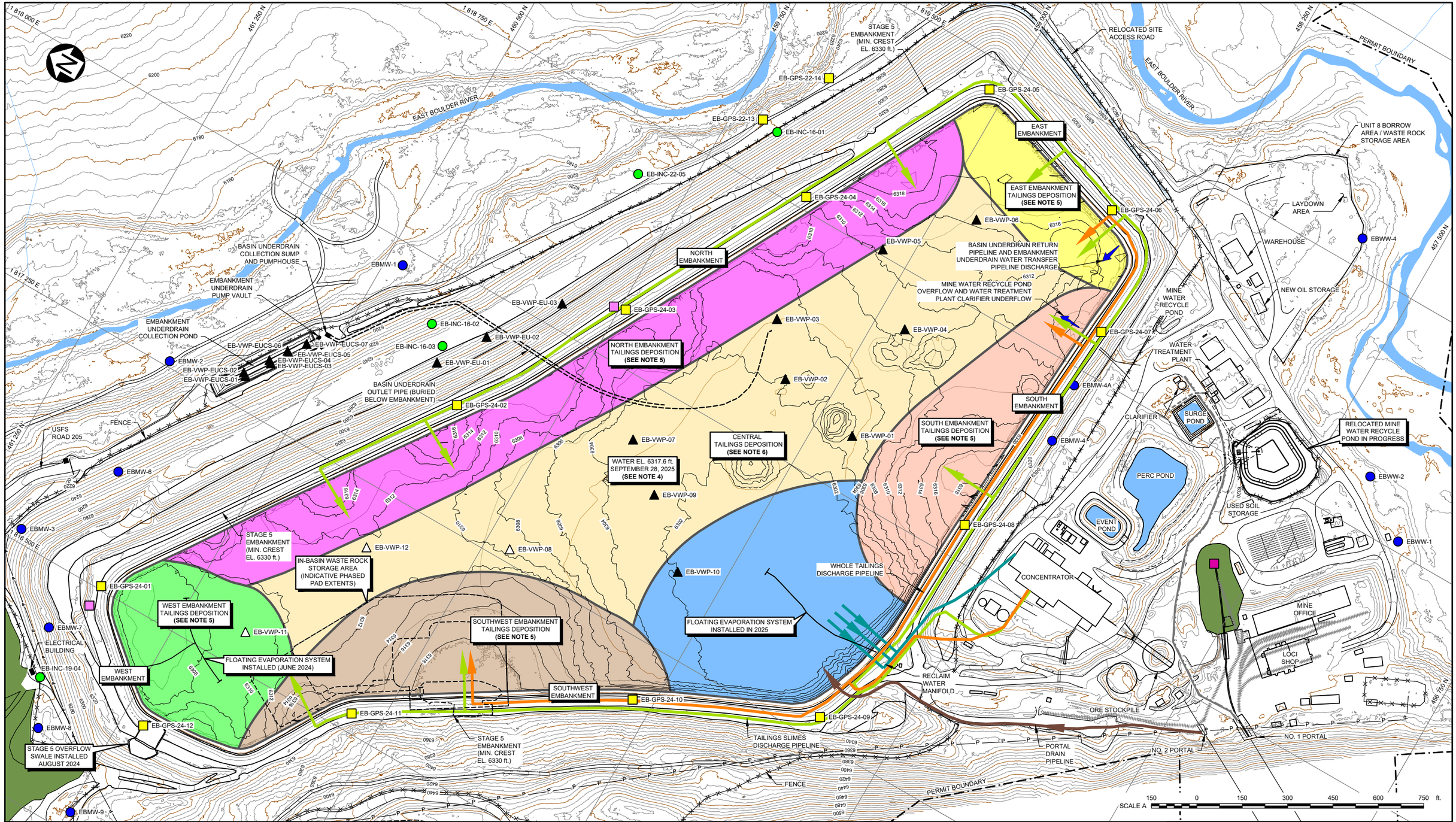
PHOTO 12 - North Embankment, Stage 6 ROM rockfill placement, looking east (May 2024).

PHOTO 13 – Tailings Discharge line from the Southeast Embankment, looking east (May 2024).

PHOTO 14 – Relocated Embankment Underdrain Collection Pond looking west (May 2024).

Appendix E
Tailings Deposition Plan

(Page E-1)



LEGEND:

- WATER
- SURFACE SOIL STOCKPILE
- EVAPORATORS
- RECLAIM WATER PUMPS
- SURVEY MONUMENT
- VWP LOCATIONS (OPERATIONAL)
- VWP LOCATIONS (DECOMMISSIONED)
- SLOPE INCLINOMETER LOCATION
- MONITORING WELL LOCATION
- INSTRUMENTATION REPEATER LOCATION
- INSTRUMENTATION GATEWAY LOCATION
- PORTAL DRAIN PIPELINE
- TAILINGS SLIMES DELIVERY PIPELINE
- WHOLE TAILINGS DELIVERY PIPELINE
- RECLAIM WATER PIPELINE
- ROAD
- POWERLINE
- PERMIT BOUNDARY (PROPOSED)
- FENCE
- IN-BASIN WASTE ROCK STORAGE AREA (INDICATIVE PHASED PAD EXTENTS)

NOTES:

1. TOPOGRAPHY BASED ON LIDAR DATA PROVIDED BY STILLWATER MINING COMPANY JUNE 2018 AND SURVEY DATA PROVIDED BY TURNER MINING SEPTEMBER 2023, OCTOBER 2023 AND SURVEY DATA PROVIDED BY UAS APRIL 2024.
2. TOPOGRAPHY CONTOUR INTERVAL IS 5 FEET. BATHYMETRY CONTOUR INTERVAL IS 2 FEET.
3. HORIZONTAL DATUM IS MONTANA COORDINATE SYSTEM, SINGLE ZONE, NAD83 (1992). UNITS ARE IN INTERNATIONAL FEET. VERTICAL DATUM IS NGVD29.
4. TAILINGS SURFACE SHOWN ON THIS FIGURE WAS SURVEYED SEPTEMBER 28, 2025.
5. TAILINGS DEPOSITION FROM EMBANKMENTS TO ROTATE MONTHLY.
6. CENTRAL TAILINGS DEPOSITION AS REQUIRED TO FILL IN LOW AREAS IDENTIFIED BY BATHYMETRIC SURVEYS.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	13APR'26	ISSUED WITH TRANSMITTAL	BEA	AS	CNH

SIBANYE STILLWATER

EAST BOULDER MINE

TAILINGS STORAGE FACILITY
2026 TAILINGS DEPOSITION PLAN

Knight Piésold CONSULTING

P/A NO. NB101-45/77 | REF NO. NB26-00478

FIGURE E.1 | REV 0

SAVED: \\ns-ca02\nb-project\101\000457\7A\Acad\FIGS\B09 R0, 4/14/2026 9:00:16 AM, ASIMPSON PRINTED: 4/14/2026 9:00:38 AM, FIG E.1, ASIMPSON