

**KINROSS**

**Great Bear**

# **Great Bear Gold Project Impact Statement**

**Appendix I-2:**

**Mine Site Water Balance Report**



GREAT BEAR RESOURCES

# GREAT BEAR PROJECT MINE SITE WATER BALANCE

NOVEMBER 2025





# GREAT BEAR PROJECT MINE SITE WATER BALANCE

GREAT BEAR RESOURCES

PROJECT NO.: OMEMA2303  
NOVEMBER 2025

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# ABBREVIATIONS

AEX	Advanced exploration
CWP	Collection water pond
ECCC	Environment and Climate Change Canada
EDF	Environmental design flood
ETP	Effluent treatment plant
LGO	Low grade ore
LPC	LP central
MRS	Mine rock stockpile
MWP	Mine water pond
NPAG	Non-potentially acid generating
OVB	Overburden
PAG	Potentially acid generating
PFS	Pre-feasibility study
RCP	Representative concentration pathway
TMF	Tailings management facility
TSS	Total suspended solids
TWP	Treated water pond
UGM	Underground mine
VMF	Viggo management facility
WSC	Water Survey of Canada
WSP	WSP Canada Inc.
WTP	Water treatment plant



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- A Modeled Watershed Land Types
- B Detailed Annual Water Balance Results
- C Monthly Discharge Plots

# 1 INTRODUCTION

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## 1.1 PROJECT BACKGROUND

Great Bear Resources Ltd. (Great Bear Resources) a wholly owned subsidiary of Kinross Gold Corporation, is proposing to develop a gold mine (the Great Bear Project or Project) at the Great Bear Property (Property). The Property is located approximately 25 kilometres southeast of the Municipality of Red Lake (Figure 1-1) in northwestern Ontario.

The Project involves extracting and processing ore from two open pits and an underground mine. The main components of the Project shown on Figure 1-2 include:

- Underground mine
- LP Central pit
- West Viggo pit / West Viggo management facility (VMF)
- East Viggo pit / East VMF
- Tailings management facility (TMF)
- TMF pond
- Mine water pond (MWP)
- AEX mine water pond
- AEX effluent treatment plant (ETP)
- AEX treated water pond (TWP)
- Holding pond
- Collection water pond (CWP)
- Main collection channel
- Dixie Creek flood protection berm
- Mine rock stockpile (MRS)
- Overburden stockpiles
- Ore stockpiles
- Process plant
- Other buildings and supporting infrastructure
- Water management and treatment facilities
- Sand and gravel (borrow) and quarry operations
- Explosives storage facility.

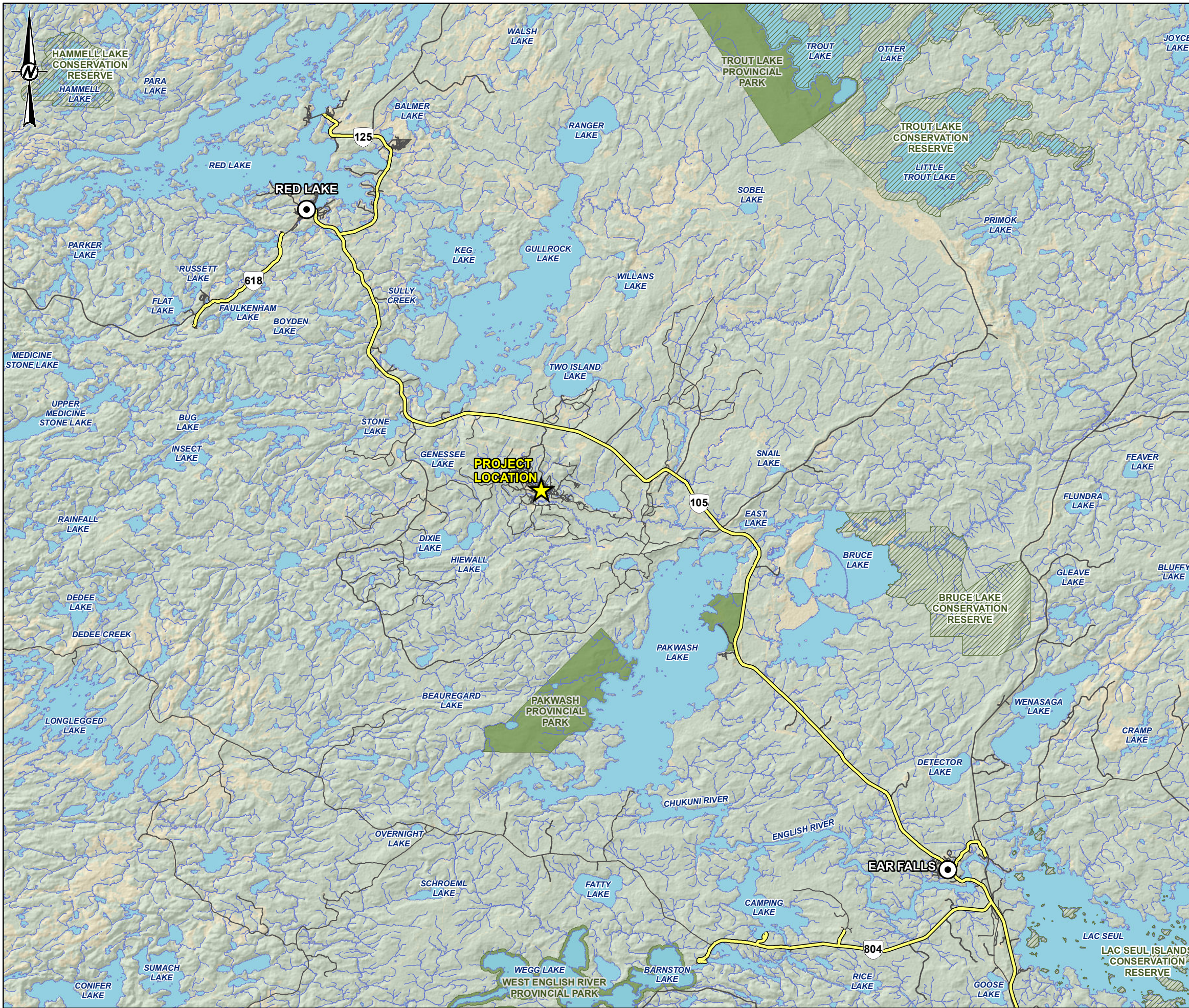
Construction of the mine site and associated infrastructure is expected to take approximately three years. Underground and open pit mining are expected to occur concurrently, with operation of the LP Central pit for up to about nine years, followed by underground mining only for an additional 17 years, for a total operations period of approximately 26 years. Active closure of the site will follow operations and is expected to take up to three years and will be followed by a period of environmental monitoring and continued operation of the surface water management system pending filling of the open pits with water and obtaining acceptable water quality for passive discharge to the environment.

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## 1.2 OBJECTIVE

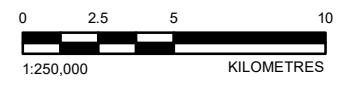
This *Mine Site Water Balance Report* has been prepared by WSP Canada Inc. (WSP) to describe the mine site water balance modeling that has been conducted in support of the Project design and Impact Statement. The scope of work includes:

- Developing a water balance model that reflects the water management plan for the construction, operations, decommissioning and closure (closure), and post-closure phases of the Project.
- Estimating the quantity of potential fresh water takings and discharge of treated effluent to the environment.
- Provide the basis of the mine site water quality model and assessment.



**LEGEND**

- PROJECT LOCATION
- TOWN
- CONSERVATION RESERVE
- PROVINCIAL PARK
- HIGHWAY
- LOCAL ROAD
- RESOURCE/ RECREATION ROAD
- WATERCOURSE
- WATERBODY



**NOTE(S)**  
 1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**  
 1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO  
 2. WATERCOURSES AND WATERBODY ACQUIRED FROM LAND INFORMATION ONTARIO (MNR) AND MODIFIED TO MATCH AERIAL IMAGERY AND LIDAR.  
 3. ROADS INFORMATION PROVIDED BY GREAT BEAR RESOURCES, AUGUST 2022.  
 4. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT  
 GREAT BEAR RESOURCES

PROJECT  
 GREAT BEAR PROJECT

TITLE  
 PROJECT LOCATION

CONSULTANT	DATE
YYYY-MM-DD	2025-02-18
DESIGNED	---
PREPARED	MD
REVIEWED	---
APPROVED	---

PROJECT NO. CA0031271 CONTROL 0001 REV. A FIGURE 1-1

PATH: X:\CANCAN\300-CAKAMS-FB1-Project\2023\Project\OHE\MA\2025\_Kinross\_Creat\_Bear\_Enviz\_GIS\Hydrology\Site\_Maps\_Balmer\MXD\Project\_Location\_2.mxd PRINTED ON: 2025-02-18 AT: 7:23:44 AM

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# 2 WATER MANAGEMENT OVERVIEW

This section summarizes the water management components as related to the mine site water balance model. It describes the way in which the Project's contact water will be collected, managed and discharged throughout the various phases of the Project. For the purpose of the water balance model described herein, four Project phases were considered:

- Construction phase
- Operations phase
- Closure phase (including active closure and passive closure periods)
- Post-closure.

Figure 2-1 shows the approximate timeline of these phases, as well as some of the key events within each of the phases that will affect water management. The site plans and watershed maps for the construction and operations phases are provided in Figures 2-2 and 2-3. Further details on the water management plan for each phase, as they relate to the water balance, are provided in the following sub-sections.

---

## 2.1 APPROACH AND DESIGN CRITERIA

The overall water management for the Project is based on the following approach:

- Separate contact and non-contact water as reasonable, while complying with the regulatory requirements to collect runoff and seepage from Project components.
- Non-contact water will be intercepted and diverted away from Project components as practical.
- Contact water will be captured and discharged to the environment after treatment as needed in the integrated water management system. Surface water infrastructure such as ditching, berms, and pumps will be used to convey contact water to water storage facilities for re-use, or for treatment and discharge.
- Non potentially acid generating (NPAG) and potentially acid generating (PAG) mine rock will be managed together in the MRS.

The contact water management system is designed to collect, store, convey and treat contact water for an Environmental Design Flood (EDF), defined as the 100-year return period events during the operations and closure phases. The 20-year EDF was applied to the construction phase. A 1:20 or 1:100 return period refers to a flooding event with a likelihood of being exceeded occurring once in a 20- or 100- year period. These are typical water management design criteria in the mining industry and align with the engineering studies carried out in previous engineering studies.

The water management approach was developed for the operations phase, then revised to reflect other Project phases. For this reason, the operations phase water management plan is presented first, followed by the water management for the other phases.

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## 2.2 OPERATIONS PHASE

The operations phase extends from Year 1 to Year 26. During this time, water from the entire Project site and process plant is actively managed. The LP Central pit produces ore only during Years 1 through 8, but is planned to remain in a dewatered condition until closure. The site plan and watershed map for the ultimate operations phase is provided in Figure 2-2. Water management during operations is described in two sub-phases.

During the first sub-phase, which addresses the majority of operations (Year 1 to 15), the majority of contact water from the Project's watershed (1,768 hectares) will be directed to the water treatment plant

(WTP), with the exception of the TMF and TMF pond which will be directed for membrane filtration. Treated effluent from both streams will be combined in the AEX treated water pond and then discharged via a pipeline to the Chukuni River on a year-round basis at a discharge location southeast of the main site (Figure 1-2).

Contact water is collected in one of three primary storage facilities:

- The TMF pond, located downstream of the TMF, will collect runoff and bleed water (excess process water from the deposition of tailings) from the TMF. It will be the primary source of reclaim water for the process plant. Excess water from the TMF pond will be pumped for membrane filtration.
- The AEX mine water pond will manage runoff from its local watershed as well as underground dewatering. It will also receive pumped inflows from other areas of the Project, and act as a surge pond for the WTP.
- Following depletion of the east Viggo pit, it will be repurposed as a concentrate tailings and water management facility, referred to as the east VMF. Collection of site runoff from the eastern side of the Project (CWP, MRS, overburden stockpiles, and LP Central pit) in the east VMF will be facilitated by the main collection channel which extends from the service and administration area to the east VMF. Water will be transferred from the east VMF to AEX mine water pond, then treated at the WTP. The east VMF will maintain a water cover over the deposited concentrate tailings. For the purposes of this water balance, the minimum water cover was assumed to be 1 m throughout the operations phase (WSP 2024).

As the east VMF continues to receive and store concentrate tailings during the operations phase, the available storage capacity in the east VMF for water storage decreases. Sub-phase two starts at approximately Year 16, which is when the capacity of the east VMF approaches the volume that has been set aside as contingency, to store runoff from a potential EDF design event. At that time, a MWP will be constructed downstream of the TMF pond to provide additional water storage for sub-phase two. Once available, runoff from watershed 103 will be directed to the MWP instead of the east VMF. Excess water in the MWP will be pumped to the AEX mine water pond for treatment at the WTP.

Water management flow schematics for the operations phase are presented in Figures 2-4 and 2-5. Additional elements of the water management concept, not summarized above, are detailed below:

- A water diversion berm and ditch, referred to as the east pond dam and channel, will be constructed northeast of the MRS, diverting natural runoff from approximately 135 ha away from the Project, and into Unnamed Waterbody 6.
- TMF:
  - Tailings will be deposited at the north end of the TMF, creating a surface gradient towards the TMF south dam. The TMF dams will be constructed out of a rockfill and granular material that will allow water to pass through the dam and allow the desulphurized tailings to consolidate (WSP 2024). As such, runoff and water in the deposited tailings will flow by gravity to the southern end of the TMF, where it will flow by gravity to the TMF pond through the south dam, or via an overflow channel.
  - Runoff from the surface of the TMF north and west dams, as well as seepage through or beneath the dams will be captured by pump stations 2 and 3, where it will be pumped back into the TMF.
  - Construction of the TMF north dam and associated infrastructure will result in a diversion of approximately 27 ha towards Unnamed Watercourse 8b.
- TMF pond:
  - Runoff from the surface of the TMF pond dam, as well as seepage through or beneath the dams will be captured by pump station 1, where it will be pumped back into the TMF pond.
  - The TMF pond will be the primary source of reclaim water for the process plant. A winter storage volume will be maintained in the fall, to provide reclaim water throughout the winter.

- Excess water will be pumped to the membrane filtration plant. The treated effluent from membrane filtration and the WTP will be combined in the TWP and discharged to the Chukuni River.
- The membrane filtration plant will produce reject solution, in addition to treated effluent. The reject solution will be sequestered in paste backfill to the extent possible. Excess reject solution will be stored on surface. The management of reject solution is detailed further in Section 4.4,
- Contact water from dewatering the underground mine will be pumped to the AEX mine water pond and subsequently pumped to the WTP for treatment.
- Runoff, groundwater and seepage reporting to the LP Central pit will be pumped to the main collection channel and conveyed to the east VMF.
- Runoff from the process plant will be directed to the CWP and the main collection channel.
- The CWP will also collect runoff from its local watershed and will be pumped to the main collection channel.
- Seepage and runoff from the MRS will drain by gravity to the main collection channel. Progressive reclamation of the PAG portion of the MRS will take place between Years 7 and 10. During this three year period, overburden will be placed on the MRS and revegetated.
- The main collection channel will extend from Tuzyk's road at the service and administration area to the east VMF and will convey water by gravity to the east VMF. In addition to the water pumped into the main collection channel from the CWP and LP Central pit, runoff and seepage from the MRS watershed 103, and overburden stockpile 1 will be directed to it by gravity.
- West VMF will be used to manage reject solution produced by membrane filtration after Year 12 (discussed in Section 4.4). Prior to Year 12, it has been assumed that runoff, groundwater and seepage reporting to the west VMF will be pumped to the east VMF.
- East VMF:
  - As noted above, the east VMF will receive contact water from the CWP, MRS, overburden stockpiles and LP Central pit via the main collection channel running alongside the haul road. It will also receive contact water from the west VMF until Year 12.
  - Concentrate tailings will be deposited in the east VMF as a slurry. Deposited tailings will be kept under a continuous water cover during operations (and subsequently).
  - Contact water in the east VMF may be used as a supplemental source of reclaim to the process plant. Water levels will be controlled at approximately 313 masl to provide room to store a potential design event. Excess water will be pumped to the AEX mine water pond, then the WTP for treatment.

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## 2.3 CONSTRUCTION PHASE

The construction phase occurs from Year -3 to Year -1. During construction, runoff from areas disturbed for construction will be managed locally, avoiding watercourses, and tested for total suspended solids (TSS) and nitrogen species from explosives use, prior to discharge to its existing (pre-development) watersheds. Runoff from areas that may contain potentially deleterious material, will be collected and treated by the AEX ETP prior to discharge, or stored for process plant commissioning and start-up.

The following is a summary of the key construction works that are reflected in the construction water management plan and water balance:

- During the initial nine months of construction, runoff from newly developed areas will be managed locally for TSS and nitrogen species and discharged to their local, existing conditions watershed. Only runoff from the AEX Program and groundwater inflows from the AEX underground operations will be treated at the AEX ETP (assumed average capacity of 150 m<sup>3</sup>/hr) and discharged to the Chukuni River.
- In the fourth quarter of Year -3, development of the west and east Viggo pits (collectively referred to as Viggo pit) is proposed to commence. This will generate construction materials, ore and mine rock. It is assumed that a portion of the of the MRS (approximately 20 ha) will be prepared to store the initial Viggo pit mine rock. The runoff will be pumped to the AEX mine water pond, where it will be combined with water from the AEX local watershed and underground mine dewatering. The combined flows will be treated by the AEX ETP and discharged to the Chukuni River. Runoff from other newly developed areas will continue to be managed locally, and tested for TSS and nitrogen species from explosives use, prior to discharge to their existing conditions watersheds.
- In early Year -2, the MRS will grow to 45 ha, and LGO stockpile 1 (10 ha) will be developed, increasing runoff to the AEX ETP. The main haul road and CWP will be developed over this year. The flow in the watercourses that these development areas cross will be maintained until the Project is ready to initiate commissioning and start-up in Year -1. Runoff from other newly developed areas will continue to be managed locally, and tested for TSS and nitrogen species from explosives use, prior to discharge their existing conditions watersheds.
- In early Year -1, the TMF pond dam will be complete, reducing flow to Unnamed Waterbody 1. Water from the TMF and TMF pond watershed will be stored behind the dam, which will be used for process plant commissioning and start-up purposes. Operation of the AEX ETP may be paused, and contact water that was feeding the AEX ETP (AEX runoff and underground mine dewatering, PAG stockpile runoff, LGO stockpile runoff, Viggo pit runoff) will be stored primarily in the TMF pond, to support commissioning and start-up. The watershed areas collected at this time are presented in Figure 2-3. The main WTP will be complete, but no water will be routed to it until commissioning and start-up begins.
- In mid Year -1, following the spring freshet, mining of the west and east Viggo pits will be complete, and they will become the west and east VMF. At this stage all of the operational water management systems will be ready for operation and any temporary culverts in the haul road will be removed, and the main collection channel will be operating. All operational areas from the Project will be collected directed to the main WTP for treatment and ultimate discharge to the Chukuni River. It is assumed that water from the TMF and TMF Pond during Year -1 is suitable for treatment in the WTP, and that membrane filtration is not yet necessary. Commissioning and start-up takes place in the last two quarters of Year -1.

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## 2.4 CLOSURE PHASE

The Project will enter active closure after operations cease. During this time, site reclamation activities will be carried out. The majority of active site reclamation activities will be carried out within the active closure period (a water management sub-phase), and are expected to be completed by Year 30 (within three years of the cessation of operations). The Project will then transition from the active closure period to the passive closure period (a water management sub-phase).

A closure plan will be prepared as required by the Ontario *Mining Act*, prior to the start of construction. The proposed reclamation measures most relevant to site water management include the following:

- TMF will be recontoured, covered and revegetated.
- MRS will be covered and revegetated.
- CWP dam will be breached and allowed to passively overflow to the LP Central pit.
- Main collection channel will be modified to direct runoff from the MRS watershed, watershed 103, process plant and overburden stockpile 1 to the LP Central pit to facilitate filling with water.

- Excess site contact water will be pumped from the AEX mine water pond to the LP Central pit to facilitate filling with water, requiring new infrastructure. This will include contributions from the TMF pond and MWP.
- Water and reject solution in the west VMF will be pumped to the underground mine within one year.

Effluent discharge and operation of the WTP will cease, and fresh water will be drawn from the Chukuni River through the treated effluent pipeline, to actively fill the LP Central pit, west and east VMF and the underground workings with water. The west and east VMF will form one ponded surface area at approximately 350 masl, referred to as the Viggo pit lake. Once water-filled, the underground is expected to overflow to LP Central pit by one of the vent raises (WSP 2025a).

In both the active and passive closure sub-phases, it is conservatively assumed that runoff from the entire site is not yet suitable for direct discharge to the environment. As such, the LP Central pit lake and Viggo pit lake may only be filled to the active / passive closure water levels that maintain sufficient storage to contain the environmental design flood. This has been approximated as 343 masl in the LP Central pit and 352 masl in the Viggo pit. Storage for the environmental design flood will be maintained by pumping excess water to the WTP, for treatment and discharge with other treated waters to the Chukuni River. The Viggo pit lake is estimated to fill to its active closure water level (352 masl approximately) in under one year, and the LP Central pit lake (343 masl) is estimated to take approximately four years under average climate conditions. The period in which the pits and underground workings are being filled is expected to span the active closure sub-phase and extend one year into the passive closure sub-phase. Figure 2-6 presents the water management flow schematic during the pit filling period.

In order to evaluate potential effects from the scenario where site water quality is not yet suitable for passive discharge to the environment following pit filling, it has been assumed that passive closure will extend a minimum of three full calendar years after LP Central pit lake has filled. For example, if LP Central pit lake is expected to fill in mid Year 30, post-closure will begin Year 34. During this time, water management will remain the same as pit filling, but water from the LP Central pit lake and Viggo pit lake will require treatment and discharge (Figure 2-7). The duration of this period will be dependent on water quality.

It has been assumed that membrane filtration will no longer be necessary during the closure phase, and contact water from the TMF and TMF pond will be suitable quality for treatment through the WTP. This assumption is based on the understanding that membrane filtration is only necessary to manage process discharge, which ceases at the end of operations. Excess water from the TMF pond will be pumped to the AEX mine water pond and treated through the WTP prior to discharge during the closure phase.

Once the LP Central pit lake is filled with water, site runoff and waters in the LP Central pit lake and Viggo pit lake are suitable for direct discharge to the environment and regulatory approval is obtained, the WTP will be decommissioned, and the Project will enter post-closure.

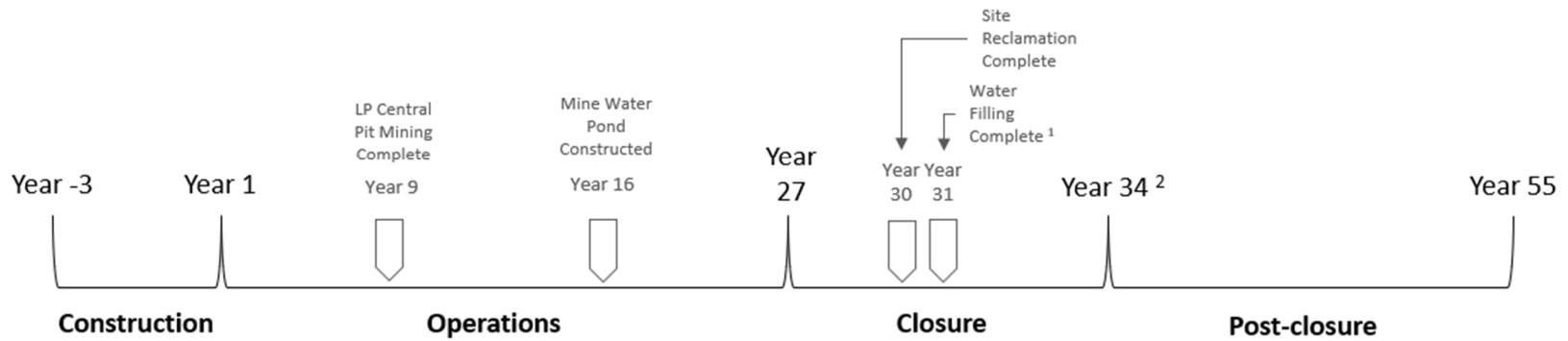
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## 2.5 POST-CLOSURE

Post-closure is representative of the long-term, steady state condition where water treatment is no longer required. During post-closure, the contingency storages in the LP Central pit lake and Viggo pit lake, allocated to store design events will fill with water, and the Project site will drain passively to the environment. The flow schematic for post-closure is presented in Figure 2-8. Key site changes that occur for the passive closure phases are as follows:

- TMF pond dam will be modified to reduce storage capacity and allow for passive discharge to the MWP.
- MWP dam will be modified to reduce storage capacity and allow for passive discharge to the Dixie Creek via Unnamed Watercourse 1.
- Water previously captured by pump stations 2 and 3 will be allowed to overflow to the environment.
- Runoff from the process plant and AEX Program will be allowed to passively flow to Dixie Creek.

- The water-filled underground mine will continue to overflow to LP Central pit lake by one of the vent raises (WSP 2025).
- The LP Central pit lake will fill to its post-closure water level and flow passively either directly or indirectly to Dixie Creek. The post-closure water level is estimated to be approximately 348 masl (5 m above the active / passive closure water level that was maintained for design event storage).
- Runoff from restored areas will be naturalized, where possible.
- Water levels in the Viggo pit lake will stabilize at the natural groundwater level of approximately 353.8 masl as per WSP (2025a), which is 1.8 m above the active / passive closure water level that was maintained for EDF design event storage). The lowest elevation of the natural perimeter of Viggo pit is approximately 358 masl.



**Figure 2-1: Project Timeline – Water Balance Phases**

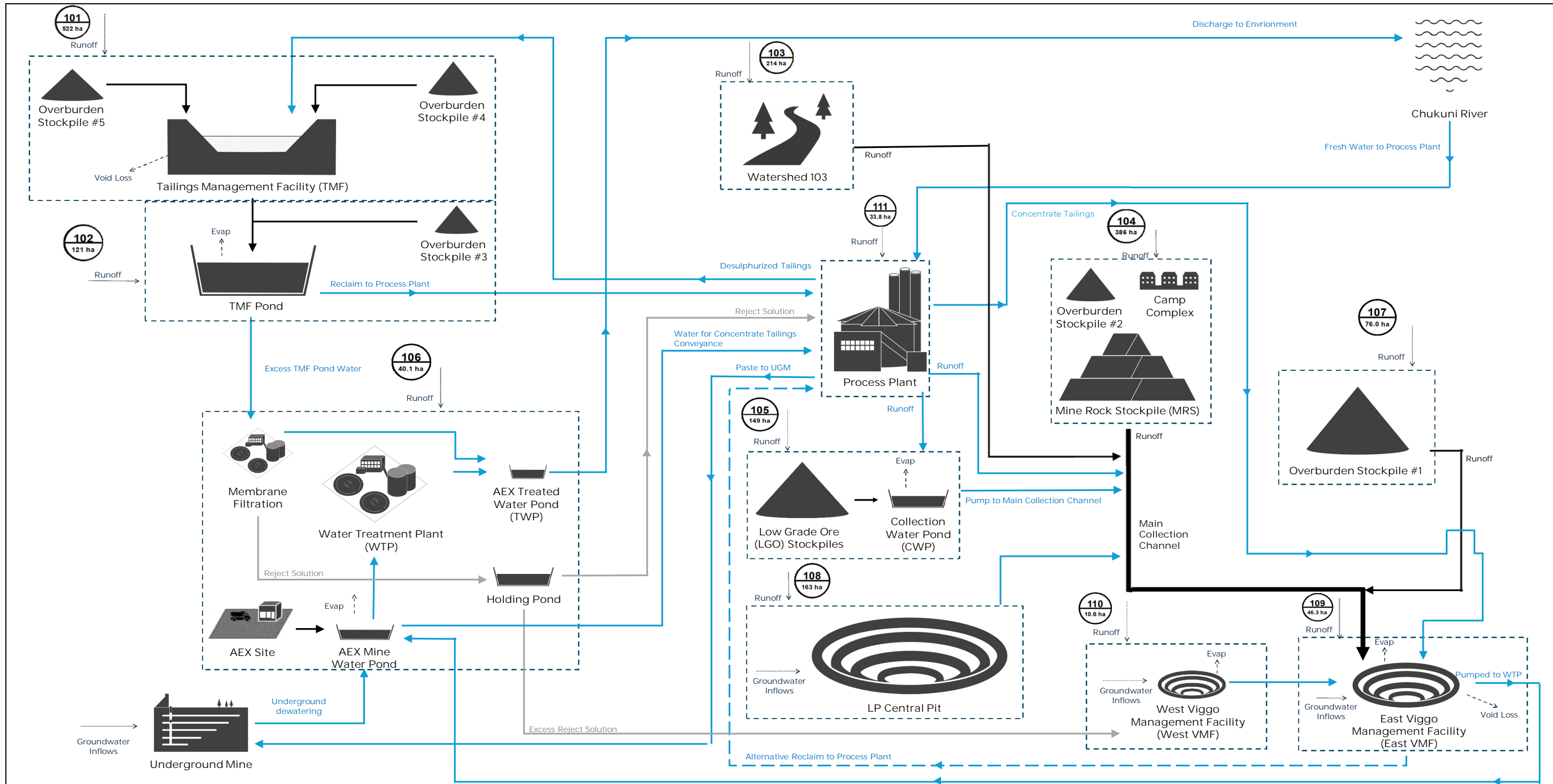
**Notes:**

Years indicated on the timeline represent the first day of the year.

- 1 Filling of the Viggo pit lake, LP Central pit lake and underground mine with site contact water and freshwater from the Chukuni River is expected to take approximately four years with the closure water management strategy described in Section 2.4.
- 2 Post closure will begin once site contact water no longer requires water treatment. This will be dependent on site water quality. For the purposes of this model, it is assumed to commence three calendar years (January to December) after LP Central pit lake has filled to its target water level. For example, if the LP Central pit lake is anticipated to fill in August Year 30, post closure is modeled to begin Year 34.







**LEGEND:**

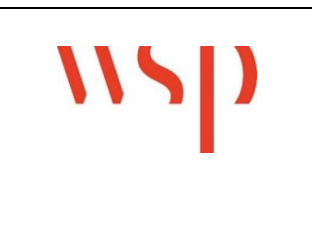
- Pumped Flow
- - - - - Contingency Pumped Flow (Not Modeled)
- Reject Solution Flow
- Gravity Flow
- ← Input
- - - - - Loss
- Watershed



GREAT BEAR RESOURCES

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WSP Canada Inc.  
6925 Century Avenue, Suite 600  
Mississauga, Ontario, Canada, L5N 7K2



GREAT BEAR PROJECT

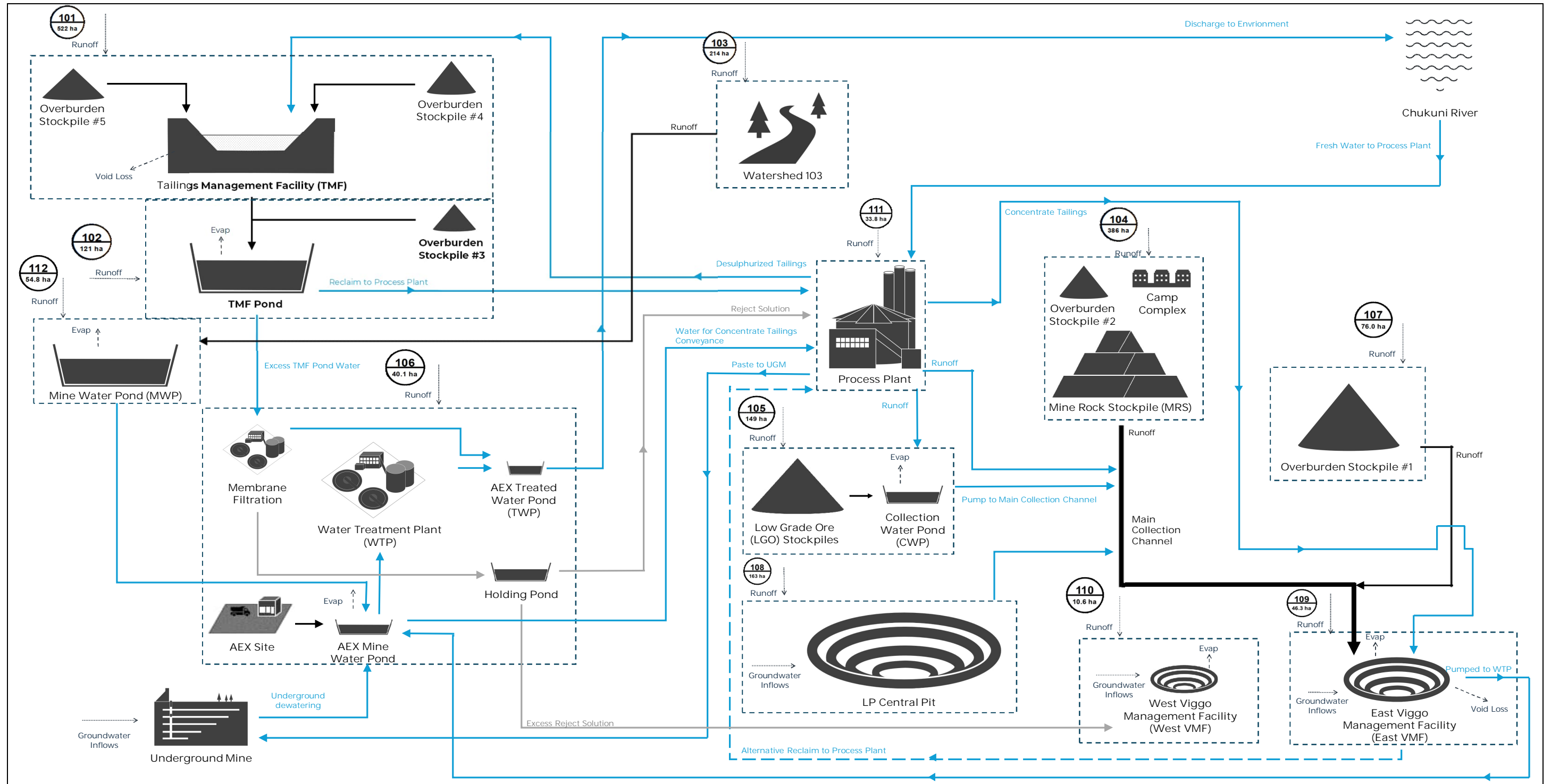
MINE SITE WATER BALANCE

---

DRAWING TITLE:

FLOW SCHEMATIC - OPERATIONS PHASE  
(SUB-PHASE 1 PRIOR TO MWP CONSTRUCTION)

DATE:	AUGUST 2025
PROJECT NO:	OMEMA2303
FIGURE NO:	2-4



**LEGEND:**

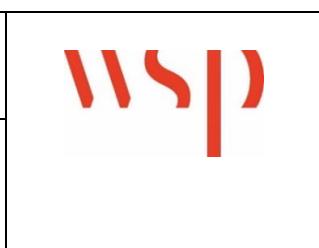
- Pumped Flow
- - - Contingency Pumped Flow (Not Modeled)
- Reject Solution Flow
- Gravity Flow
- ⋯ Input
- - - Loss
- Watershed



GREAT BEAR RESOURCES

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GREAT BEAR PROJECT

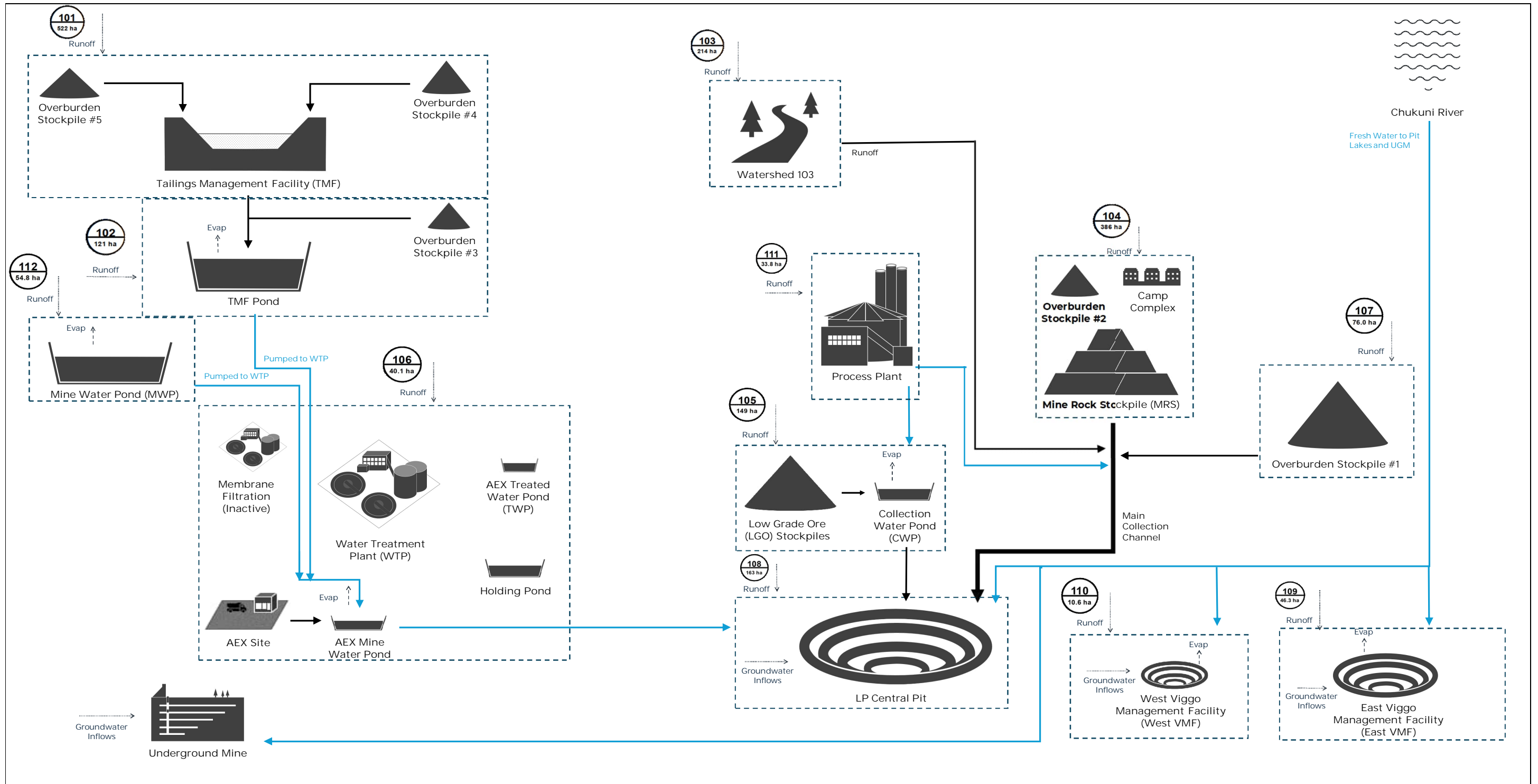
MINE SITE WATER BALANCE

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DRAWING TITLE:

FLOW SCHEMATIC - OPERATIONS PHASE  
(SUB-PHASE 2 FOLLOWING MWP CONSTRUCTION)

DATE:	AUGUST 2025
PROJECT NO:	OMEMA2303
FIGURE NO:	2-5



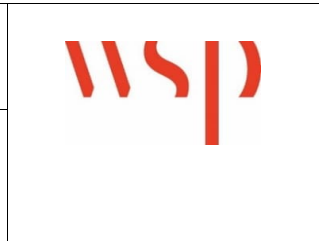
LEGEND:

	Pumped Flow
	Gravity Flow
	Input
	Loss
	Watershed



GREAT BEAR RESOURCES

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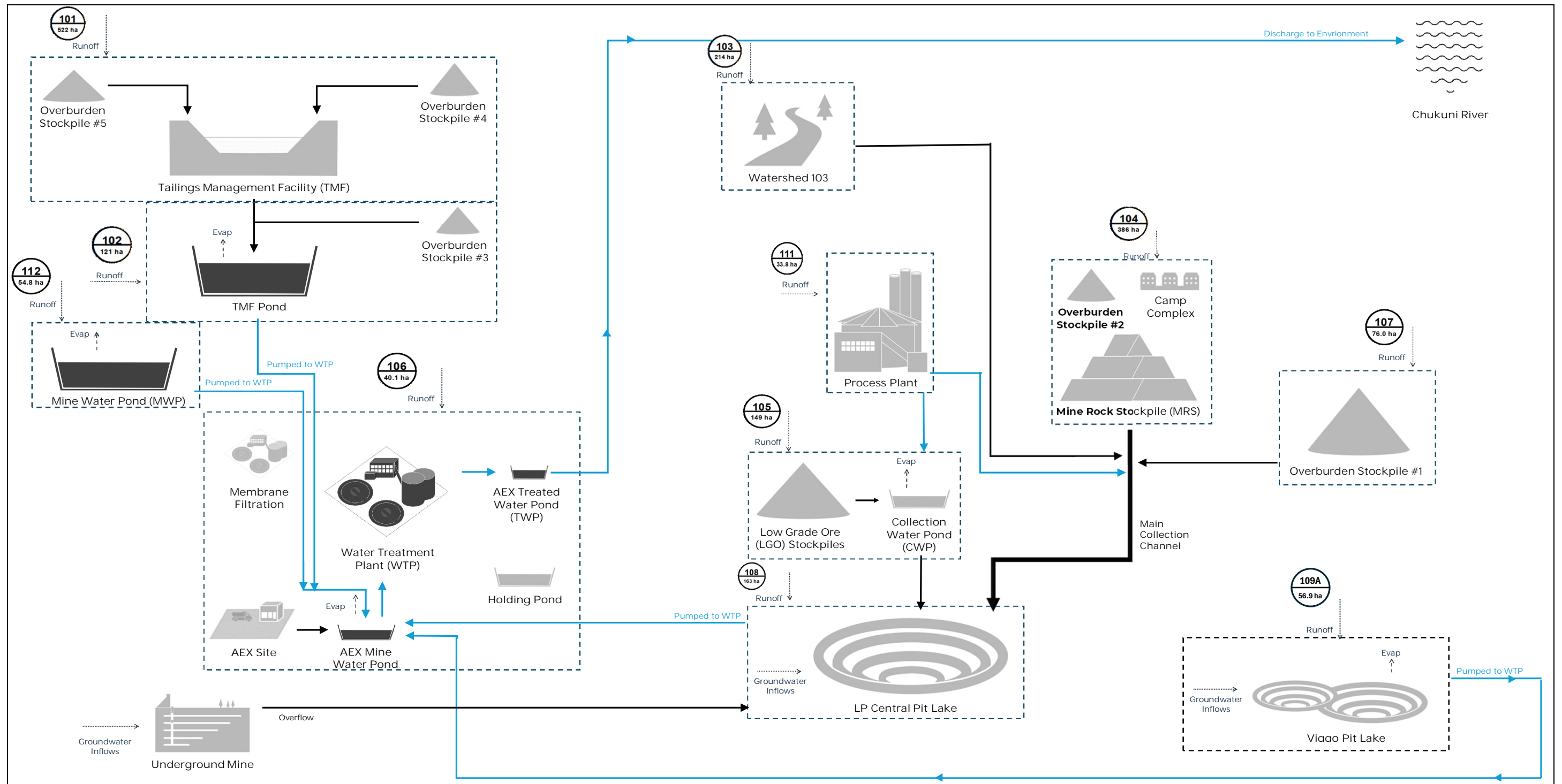


GREAT BEAR PROJECT

MINE SITE WATER BALANCE

DRAWING TITLE:  
FLOW SCHEMATIC - CLOSURE PHASE  
DURING UNDERGROUND AND PIT FILLING

DATE:	AUGUST 2025
PROJECT NO:	OMEMA2303
FIGURE NO:	2-6



LEGEND:

	Reclaimed
	Potential Pumped Flow
	Gravity Flow
	Input
	Loss
	Watershed



GREAT BEAR RESOURCES



GREAT BEAR PROJECT

MINE SITE WATER BALANCE

WSP Canada Inc.  
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Mississauga, Ontario, Canada, L5N 7K2

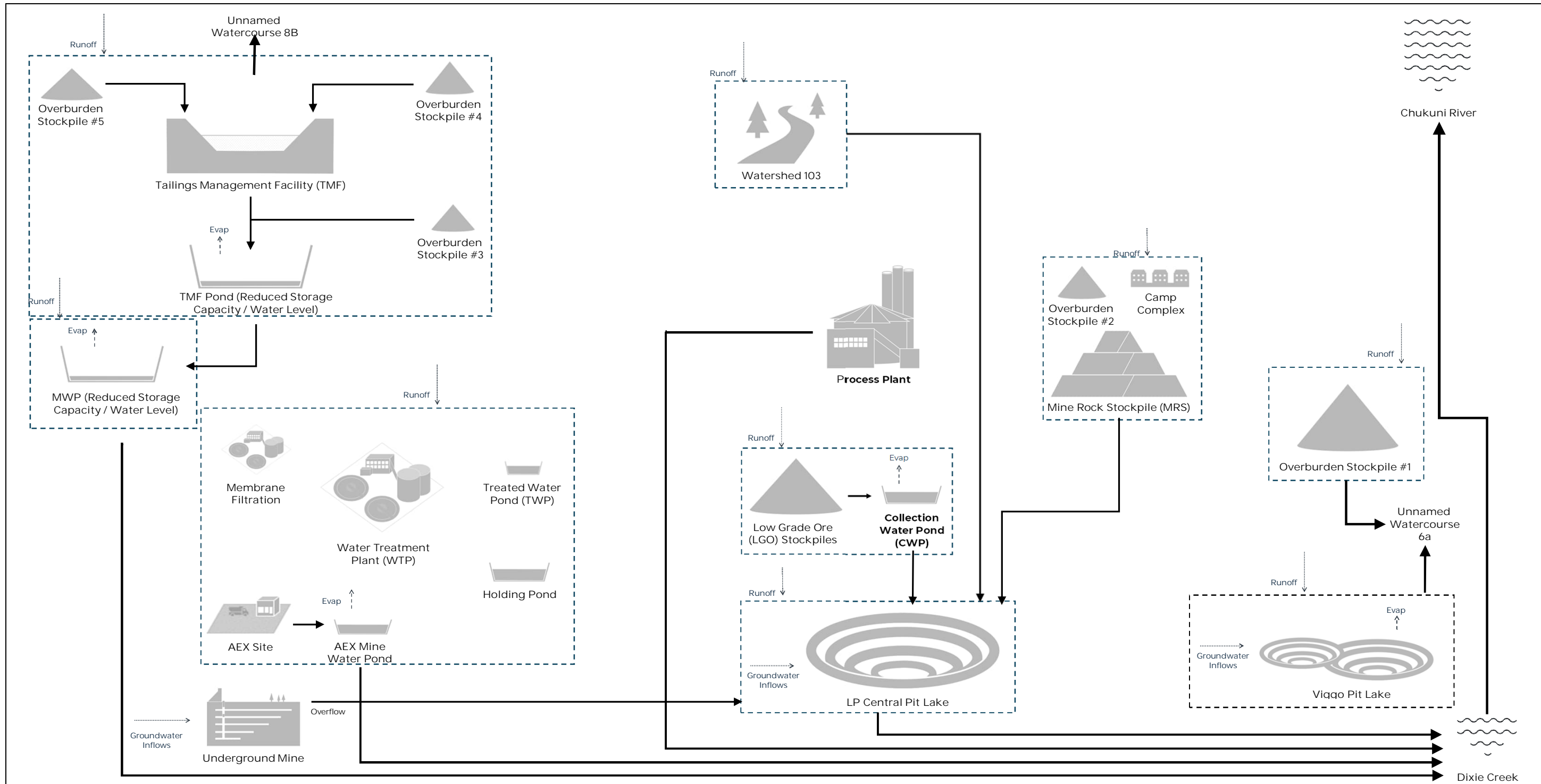
DRAWING TITLE:

FLOW SCHEMATIC - CLOSURE PHASE WITH FILLED VMF / LP CENTRAL / UNDERGROUND MINE  
(WATER TREATMENT CONTINUING)

DATE:  
AUGUST 2025

PROJECT NO:  
OMEMA2303

FIGURE NO:  
2-7



**LEGEND:**

	Reclaimed
	Passive Gravity Flow
	Input
	Loss
	Watershed



GREAT BEAR RESOURCES

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Mississauga, Ontario, Canada, L5N 7K2



GREAT BEAR PROJECT

MINE SITE WATER BALANCE

DRAWING TITLE:  
FLOW SCHEMATIC - POST - CLOSURE

DATE:	AUGUST 2025
PROJECT NO:	OMEMA2303
FIGURE NO:	2-8

# 3 METHODOLOGY

The mine site water balance model was developed using Goldsim version 14.0 using a daily timestep. The Project phases were simulated as a continuous time series, from Year 1 to 55 as identified in Figure 2-1. The model was run deterministically under various climate conditions. A total of five climate scenarios were simulated to evaluate the greatest potential effects on the receiving environment during each phase:

- **Scenario 1 (average conditions):** Average annual precipitation conditions were simulated across all Project phases. Critical years were identified from this simulation to support the wet and dry simulations (Scenarios 2 and 3).
- **Scenario 2 (average conditions with wet years at highest discharge years):** Average annual precipitation conditions were simulated, with 1:100 wet years inserted at the most critical point in each phase. The exception being the construction phase, during which the 1:20 wet year was considered:
  - Operations phase: Year 26 was selected as the most critical year in which to insert a 1:100 wet year, as it is expected to produce the greatest site discharge in the operations phase, as a result of the site being at its full extent, resulting in the greatest runoff and groundwater inflows. Additionally, the process plant is operating at a reduce capacity during this year, resulting in lesser loss of water to tailings voids.
  - Construction phase: Year -1 was selected as the most critical year in which to insert a 1:20 wet year, as it is when the site is largest and most developed, before operations begins.
  - Closure phase: Year 32 was selected as the most critical year in which to insert a 1:100 wet year, after pit filling is achieved and when discharge of the full Project footprint resumes via the WTP.
  - Post-closure: Year 37 was selected, as it is beyond when passive discharge and seepage will have stabilized.
- **Scenario 3 (average conditions with dry years at lowest discharge years):** Average annual precipitation conditions were simulated, with 1:100 dry years inserted at the most critical point in each phase. The exception being the construction phase, during which the 1:20 dry year was considered:
  - Operations phase: Year 1 was selected at the critical year in which to insert a 1:100 dry year, as it is expected to produce the least site discharge in the operations phase. The LP Central pit and underground mine are at early stages of development and receiving lower groundwater inflows. Void losses and process demands are also at the highest rate, due to the process plant operating at maximum capacity, and paste backfill underground being relatively low.
  - Construction phase: Year -1 was selected as the most critical year in which to insert a 1:20 dry year, as it is when the collection of water takes place for process plant commissioning and start-up.
  - Closure phase: Year 30 was selected as the critical dry year within the active / passive closure sub-phases, as it is the last year in which filling of the pit with water is ongoing, reducing the required treatment and discharge. At Year 30 site reclamation will have been completed, resulting in reduced site runoff.
  - Post-closure: Year 35 was selected as the critical dry year, as it is expected to produce the least discharge during post-closure.
- **Scenario 4 (historical sequence):** A 73-year historical climate sequence was simulated to assess the potential effects of inter-annual climate variability. The historical precipitation, evaporation and temperature sequences were looped to extend the full model simulation. The start date of the historical sequence was selected to generate the highest discharge during the operations phase.
- **Scenario 5 (average conditions with climate change impacts):** Average annual precipitation conditions were simulated, with climate change effects applied from the end of operations phase onward.

# 4 MODEL INPUTS AND ASSUMPTIONS

---

## 4.1 CLIMATE DATA

---

### 4.1.1 PRECIPITATION

Precipitation inputs for the mine site water balance are consistent with the detailed climate dataset sourced primarily from Environment and Climate Change Canada meteorology station Red Lake A and infilled with data from Environment and Climate Change Canada meteorology station Ear Falls, followed by regional climate stations and reanalysis data (WSP 2025b).

Annual precipitation for the average year, 1:100 wet year and 1:100 dry years are 633.0 mm, 1026.9 mm, and 343.8 mm, respectively (Table 4-1). Annual precipitation for 1:20 wet year and 1:20 dry year are 874.9 mm and 403.6 mm, respectively (Table 4-1). Table 4-2 summarizes the average year monthly precipitation distribution. This distribution is applied to all climate scenarios, with the exception of the historical sequence (Scenario 4) and post-closure in the climate change scenario (Scenario 5).

The historical precipitation series spans a 73-year length (1950 to 2022). The maximum and minimum annual precipitation depths within the historical series are 1063 and 290.9 mm, which exceed the 1:100 wet and 1:100 dry annual conditions. The annual precipitation totals for each year in the historical record are provided in Figure 4-1 and Table 4-6.

---

### 4.1.2 TEMPERATURE

Monthly average and historical sequence temperature data are consistent with the detailed climate dataset (WSP 2025b). Temperature data is used in the model to evaluate whether precipitation falls as rainfall or snowfall. Monthly average temperature data is provided in Table 4-3.

---

### 4.1.3 SNOWFALL AND SNOWMELT

Precipitation was allocated as either rainfall or snowfall, based on the monthly average temperature. When the average temperature is above 0°C, precipitation is allocated as rainfall, otherwise it is allocated as snowfall. With Scenarios 1 to 3, this results in precipitation as rainfall from April to October, and snowfall from November to March.

The same approach is applied to the historical sequence (Scenario 4), although a historical temperature series is applied.

Precipitation as snowfall is assumed to accumulate as snowpack. An assumed monthly snowmelt distribution (percent of snowpack that melts) is provided in Table 4-4 and was applied for all climate scenarios, with the exception of the climate change scenario. The monthly distribution of snowmelt was estimated with monthly runoff coefficients (Section 4.3) to align with long-term regional flow data from nearby Water Survey of Canada (WSC) stations as described in (WSP 2025d). The resulting (modeled) generation of natural ground runoff, compared to the WSC flows, are provided in Figure 4-2.

Snowmelt under a climate change scenario is discussed in Section 4.1.5.

---

### 4.1.4 EVAPORATION

Lake evaporation data is consistent with the detailed climate dataset (WSP 2025b). As described in that document, lake evaporation is calculated using a modified Hargreaves method, which includes adjustments for months with temperatures at or below freezing.

The mean annual lake evaporation for the Project is estimated to be approximately 585 mm. The average monthly lake evaporation is presented in Table 4-5.

For Scenario 4, a historical lake evaporation sequence is used, calculated using the same methodology described above. The annual lake evaporation totals for each year in the historical record are provided in Table 4-6.

The lake evaporation rate has been applied to ponded land types and a portion of the desulphurized tailings in the TMF that is assumed to be wet. This is detailed further in Section 4.2.1.

---

#### 4.1.5 CLIMATE CHANGE

Potential climate change effects on the closure phase (Scenario 5) were modeled to evaluate the potential long-term effects of climate change on the closure water balance. Changes in precipitation and evaporation were applied, as estimated in WSP (2025b). Changes in snowmelt were also applied, based on projected changes to streamflow, consistent with WSP (2025c).

##### 4.1.5.1 PRECIPITATION, TEMPERATURE AND LAKE EVAPORATION

It is generally estimated that temperatures and precipitation will increase at the Property in the future. Climate projections for 2071 to 2100 (2080s or end-of-century) were utilized for modeling, and the 50th percentile values were adopted, as recommended by WSP (2025b). The use of the longer-term projections (2071 to 2100) was considered more conservative than the use of the shorter-term projections (2041 to 2060).

Anticipated climate change effects to precipitation and evaporation are applied as a percentage change to the monthly average values. The climate change effects on precipitation and evaporation are provided in Tables 4-7 and 4-8, respectively. Precipitation in an average year is expected to increase 6.4% (from 633.0 to 673.5 mm), while evaporation is expected to increase 11.3% (from 584.7 to 650.6 mm).

Average temperatures in each month are expected to increase, with the monthly effects ranging from 3.0 to 5.0 °C. The average change in monthly temperature is expected to be 3.6 °C. Monthly climate change effects on temperature are provided in Table 4-9.

##### 4.1.5.2 SNOWMELT

The snowmelt distribution under a climate change scenario has been adjusted, as presented in Table 4-4, to reflect the projected changes to runoff in the Project's watershed.

*Canada's Changing Climate Report* (Bush et al. 2019) summarizes anticipated changes to mean annual runoff as a result of climate change. Projected higher temperatures will result in a shift from more snowmelt dominated regimes toward rainfall dominated regimes. In some areas, reduced summer flows have already been observed and are expected to continue to decline. Projected increases in extreme precipitation are expected to increase the potential for flooding.

There have been no consistent trends in estimated annual streamflow amounts across Canada as a result of climate change. Rivers in southern and northern Manitoba are projected to have an increase in flow. In Ontario, the projected changes in future annual runoff are mixed, while in Quebec the majority of studies project an increase in annual flows. Annual mean flow is anticipated to increase in northern regions and decrease in the south (Bush et al. 2019). The Quebec study (CEHQ 2015) indicated that southern rivers will be characterized by earlier and smaller spring peak flow and lower summer runoff.

One of the Manitoba studies (Poitras et al. 2011) reviewed changes in streamflow in the Nelson River watershed, in which the Project area is located. The study indicated that between 2041 to 2070 mean annual flows for the entire Nelson River basin would increase approximately 13%, however the spatial distribution of projected changes indicated that the changes in mean annual flows were not substantial for the eastern portion of the basin that extends into Ontario and corresponds to the location of the Project area watersheds.

Given the uncertainty regarding future streamflow under a climate change condition, and aligning with the Manitoba study above, no change in mean annual flow was modeled. However, to account for the changes in annual distribution of flow, changes in monthly streamflow from the Quebec study (CEHQ 2015) were implemented. The average change in monthly flow for the higher climate change scenario (RCP 8.5) was extracted for the Rouyn-Noranda region (similar projected change to annual precipitation resulting from climate change) and applied to the WSC Golden Creek station. The resulting changes to monthly runoff are provided in Figure 4-2. The changes generally result in higher flows in the winter, a less intense spring freshet, and lower summer flows.

---

## 4.2 WATERSHED AREAS AND LAND TYPES

The mine site area was divided into 12 watersheds based on a review of the Property's topography and mapping of planned surface water management infrastructure (i.e., diversions, ditches, berms, and similar) required to contain and manage water. Figure 2-2 and Table 4-10 presents the Project watershed areas as well as the diverted areas. The total Project watershed area is approximately 1,768 ha prior to the construction of the MWP. Runoff from the future MWP area is considered non-contact water and will not be managed by the contact water management system. Collection of water from the MWP watershed will begin once the MWP is constructed, increasing the Project watershed to 1,816 ha.

In order to prepare the mine site water balance, land types for modeling purposes were assigned to all areas, based on previous engineering studies, staged site plans and the production schedule (Section 4.5). The following sub-sections discuss the assumptions related to the transition of the various land types over the course of each phase. Modeled land types applied over duration of the Project are provided in Appendix A.

---

### 4.2.1 OPERATIONS PHASE

Assumptions regarding the modeled land types over the operations phase are outlined below:

- The TMF pond, AEX site, CWP, overburden stockpiles 1 and 2, process plant and accommodations area will be fully developed by the start of the operations phase. Land types will remain static until end of operations.
- TMF deposition area is assumed to be cleared ground (i.e., cleared of trees) at the start of operations. Deposited desulphurized tailings land types will gradually increase, while cleared ground decreases. It has been assumed that a portion of the tailings surface remains wet during the operations phase as a result of continuous tailings deposition. Throughout the operations phase, the portion of wet tailings is approximately 30%, but varies based on the deposition rate. These saturated tailings surfaces are assumed to have higher evaporation rates similar to lake evaporation.
- LP Central pit watershed is assumed to be cleared of trees at the start of operations, with a preliminary mining area exposed. The LP Central pit will continue to develop until Year 9, however, it is assumed the maximum areal extent will be reached by Year 4.
- Land types in watershed 103 are considered primarily natural and quarried. It is assumed that these will remain static throughout the Project life cycle.
- A portion of the MRS will have been placed by the start of operations as a result of construction activities, Viggo pit development and pre-development of the LP Central pit. The growth of the stockpile has been simulated from its construction phase footprint (approximately 49% of its maximum areal extent in Year -1) and its full areal extent by Year 4. The MRS will undergo progressive reclamation between Years 7 and 10, resulting in a revegetated cover.
- The east Viggo pit will be repurposed as the east VMF at the end of the construction phase. The concentrate tailings stored in the east VMF from the start of operations will have a full water cover during operations, and therefore a ponded land type has been adopted.

- The west Viggo pit will be repurposed as the west VMF at the end of the construction phase. It will remain dry, with exposed pit walls until Year 12, after which a pond will form.
  - The MWP will be constructed by the start of Year 16, adding an additional 48 ha to the site area.
- 

#### 4.2.2 CONSTRUCTION PHASE

Runoff from areas that may contain potentially deleterious material increases over the construction period, as described in Section 2.3. This runoff requires water treatment prior to discharge to the environment. Assumptions regarding the collected area and modeled land types are outlined below:

- At the start of Year -3, the AEX Program (37 ha) is assumed to be developed, requiring contact water management. By the fourth quarter of Year -3, a portion of the PAG MRS (approximately 20 ha) and Viggo pit (approximately 23 ha) will be developed, increasing the collection area to approximately 80 ha.
  - At the start of Year -2, the PAG MRS will have grown to approximately 45 ha and LGO stockpile 1 (10 ha) will be developed, increasing the total collection area to 115 ha.
  - At the start of Year -1, the TMF area will be largely cleared of trees, all dams will have been constructed and water will begin collecting behind the TMF pond. The total collection area will increase to approximately 765 ha.
- 

#### 4.2.3 CLOSURE PHASE

Immediately after the end of operations, the active closure phase will begin. The Property will undergo an initial active closure phase which is assumed to take three years (Year 27 to 29). Assumptions regarding the modeled land types over this period are outlined below:

- Developed / disturbed, quarry and cleared ground land types will be converted to a revegetated ground land type.
- The tailings surface of the TMF will be revegetated.
- As the LP Central pit lake and Viggo pit lake fill with water, pit walls will transition to a ponded land type.
- The MWP, TMF pond, CWP ponded areas will remain constant, as the ponds will continue to operate into the closure phase.
- At post-closure, flow from the VMF watershed, with the exception of the VMF itself, will be restored to its pre-development watershed.

Once active site reclamation is complete, the passive closure period will continue until the VMF, LP Central pit and underground mine are filled with water, and the site water quality becomes suitable for passive discharge to the environment. The land types will remain constant throughout the remainder of passive closure period and post-closure.

---

### 4.3 RUNOFF COEFFICIENTS

Tables 4-11 and 4-12 present the runoff coefficients adopted for various land types. These values are representative of surface runoff and interflow (defined as water that has infiltrated the subsurface and returned to surface as overland flow).

The runoff coefficient applied to natural ground conditions was developed on a monthly basis based on gauged flow records from the Project site and local WSC gauges, as documented in the baseline hydrology study (WSP 2025d). The baseline hydrology study indicated that the hydrograph shape from the Golden Creek WSC station should be utilized for smaller watersheds, however the total annual runoff should be prorated to that of the Long-Legged WSC station (200 mm). A comparison of the simulated

runoff using the selected natural ground runoff coefficients to the natural analogue WSC station (prorated Golden Creek) is provided in Figure 4-2. The natural ground runoff coefficient of 0.32 produces an annual runoff of 202 mm, consistent with the baseline hydrology study.

For the extreme dry conditions (1:100 year return period), the hydrology baseline report indicated an annual runoff of 45 mm, given an annual precipitation of 343 mm. This would correspond to a natural ground runoff coefficient of approximately 0.13, which is substantially lower than the average year condition. To accurately represent natural ground runoff in the extreme dry year (1:100 year return period), reduced monthly runoff coefficients were implemented (Table 4-12). During the 1:20 dry year simulated in the construction phase in scenario 3, average runoff coefficients were used. The extreme wet year runoff coefficients did not diverge as much from the average year coefficients and were therefore not modified.

Cleared ground and revegetated surfaces are expected to behave in a similar pattern to natural ground, and the selected runoff coefficients were informed by the natural ground coefficient. Runoff coefficients for developed areas were selected based on engineering judgement and are consistent with other Projects in northern Ontario. This includes mining-related water balance models for both environmental assessments and more progressed engineering studies.

Lastly, the selected runoff coefficients were reviewed in comparison with one another to confirm they compared in a rational manner. For example, hardened surfaces (disturbed ground) should generate higher runoff than natural surfaces.

---

### 4.3.1 OUTWASH AREA (WATERSHED 103) RUNOFF SIMULATION

Watershed 103 is located to the east of the TMF and west of the process plant area, and includes the aggregate pits adjacent to Tuzyk's Road as illustrated on Figure 2-2. The watershed has an area of approximately 209 ha and is principally underlain by glacial outwash deposits. Unnamed Waterbody 5 is in a low-lying area between the two aggregate pits and receives runoff from most of the watershed area outside of the aggregate pits. The watershed is located within the Property.

Detailed review of the available topographic data and lidar imagery, as well as field inspection during the 2024 spring freshet found no clear outlet from Unnamed Waterbody 5, indicating high levels of infiltration in the watershed and more specifically, the areas adjacent the esker ridge in which the existing aggregate pits are located. To simulate this effect, it is assumed that watershed 103 does not contribute surface runoff to the Project's water management system until it receives an assumed value of 120 mm precipitation in 31 days, at which point runoff is generated and contributes to the system.

---

## 4.4 REJECT SOLUTION MANAGEMENT

During the operations phase, excess water from the TMF pond will be treated with membrane filtration. This will produce reject solution (10% of volume of water treated) and treated effluent (90%). The volume of reject solution will vary over the operations phase and with climate conditions, as it is a factor of the amount of membrane filtration required, which is a function of the inflows the TMF pond receives and the reclaim required by the process plant.

Reject solution will be held temporarily in the holding pond, then sequestered to the underground mine within the paste backfill. Reject solution that cannot be used in paste backfill or held in the holding pond will be pumped to the west VMF. Reject solution and contact water in the west VMF will be stored below the saddle elevation to keep it separate from the east VMF. West VMF capacity at this elevation is discussed in Section 4.9.

The volume of reject solution that may be used in paste backfill is a factor of process plant and paste production. During the first 12 years of operations in all modeled scenarios, the amount of reject solution produced is less than what may be used in paste backfill. Therefore, no reject solution is pumped to the west VMF. Shortly after Year 12, paste production will slow and the amount of reject solution produced will exceed what can be used in paste backfill. At this time, excess reject solution will be pumped to the

west VMF. The volume of reject solution produced, sequestered in paste, and pumped to the west VMF under each modeled scenario is described in Section 5.

Reject solution that is pumped to the west VMF will mix with local inflows (runoff and groundwater). The mixed solution will be stored until the end of operations. The capacity of the west VMF will be reached in the final years of operations (Years 23 to 25, depending on the climate scenario). At this time, excess water from the west VMF will be pumped to a sequestered area of the LP Central pit. At the start of active closure, the contents of the west VMF and sequestered portion of the LP Central pit will be sequestered (pumped) to the underground mine. Storage of all the reject solution and local inflows (following Year 12) is a conservative assumption from a water management and storage planning perspective, as Great Bear Resources will likely treat and discharge this water if effluent water quality criteria can be met.

---

## 4.5 PROCESS PLANT

Water requirements for the process plant (including paste production) include fresh water takings from the Chukuni River, reject solution from the holding pond, reclaim water from the TMF pond. If the TMF pond is unable to meet the reclaim demand, the process plant may also be supplied from the east VMF or from the AEX mine water pond. Water will also be taken from the AEX mine water pond to help convey concentrate tailings to the east VMF.

Tailings produced by the process plant will be directed to one of three streams:

- High-density thickened desulphurized tailings to the TMF.
- Slurried concentrate tailings to the east VMF.
- Paste backfill to the underground mine.

The distribution of tailings between these three streams varies throughout operations and is driven by the throughput rate of the process plant and the annual utilization of the paste plant (Table 4-13). As a result, fresh water requirements and reclaim demand for the process plant (and paste plant) also vary throughout operations, as presented in Table 4-13.

The process plant will be decommissioned at the end of operations.

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## 4.6 VOID LOSSES

As tailings are deposited in the TMF and east VMF, void space within them is anticipated to trap water, acting as a loss term to the water balance. These losses will only be generated during operations when tailings are being deposited.

Void loss in the TMF and east VMF were calculated based on the tonnage of tailings summarized in Table 4-13, and the material properties provided in Table 4-14. Void losses are larger in the TMF than the east VMF, due to the greater tonnage of material deposited.

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## 4.7 GROUNDWATER INFLOWS

The mine site water balance incorporates groundwater inflows to various site features, based on hydrogeological modeling completed by WSP (2025a). The methods and assumptions used in calculating these values are provided in WSP (2025a).

The report presents results of the hydrogeological model for different, but overlapping, phases as those evaluated by the mine site water balance model. For this reason, the mine site water balance model interpolates between the hydrogeological modeling results, as necessary.

Groundwater inflows to underground mine, LP Central pit, east and west VMF, AEX mine water pond, MWP, and pump stations around the TMF and TMF pond are presented in Figure 4-3 for all Project phases. These values are representative of subsurface flow from areas where infiltration does not

originate from other site locations. Seepage between site features is presented separately and discussed in Section 4.8.

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## 4.8 SEEPAGE FLOWS

The hydrogeological modeling carried out by WSP (2025a) estimates the seepage rates out of key site features (TMF, TMF pond, MWP, VMF, LGO stockpiles and MRS). Seepage will be captured by seepage collection systems, to the extent feasible, as well as other mine site features such as the LP Central pit and underground mine. Fugitive seepage that bypasses the various collection systems has also been estimated.

The mine site water balance incorporates both captured and fugitive seepage. Fugitive seepage to the environment is represented as a loss to the mine site water balance and is quantified and discussed in the WSP (2025d) and WSP (2025a). Seepage rates out of the TMF, LGO and MRS are considered constant (regardless of climate condition) and supplied in the model by a recharge component, which is conceptually the amount of water that infiltrated. Seepage rates out of the TMF pond, VMF and MWP are modeled using a constant demand, supplied from the available water in each pond.

The seepage rates out of each site feature are shown in Figures 4-4 to 4-9, and summarized below:

- Once constructed, the MWP will generate shallow seepage which will be captured by pump station 1 and pumped to the TMF pond. This is supplied by surface water in the MWP. The MWP is also estimated to seep to underground mine and the receiving environment (as fugitive seepage).
  - The majority of TMF seepage bypassing the TMF pond will report to the perimeter runoff and seepage collection system (pump stations 1, 2 and 3), which will be captured and returned to the TMF until post-closure. A bypass seepage capture system will further reduce fugitive seepage from the TMF to Unnamed Watercourse 8b and Dixie Creek as described in WSP (2025a). This bypass collection system will direct a portion of captured seepage back to the TMF, which will ultimately report to the TMF pond.
  - Seepage from the TMF pond will also report to the underground mine and environment, although a bypass seepage capture system will reduce fugitive seepage from the TMF pond to Dixie Creek as described in WSP (2025a). These shallow seepages are supplied by surface water in the TMF pond.
  - Seepage from the east VMF during operations will report to the underground mine. Once water begins to accumulate in the west VMF, seepage will report to the underground mine and to the east VMF. When water filling is completed in the closure phase, seepage from the filled Viggo pit lake will report to Dixie Creek and Unnamed Watercourse 6a.
  - Seepage from the MRS will primarily report to the ditches surrounding the facility, with a smaller proportion reporting to the LP Central pit and underground mine. During Years 7 to 10, the MRS will be progressively reclaimed, resulting in reduced infiltration and therefore reduced seepage.
  - Seepage from the LGO stockpiles will report to the LP Central pit.
- 

## 4.9 POND STORAGES AND PUMP CAPACITIES

The primary contact water storage facilities present on the Project are the AEX mine water pond, TMF pond, MWP, CWP, east VMF, and LP Central pit once pit filling commences. Storage and pump capacities (Table 4-15) for each pond were assumed based on previous engineering studies and meet the 100-year frequency of bypass EDF design criteria. Reject solution will be stored in the holding pond and west VMF.

The membrane filtration capacity of 370 m<sup>3</sup>/hr was selected to match the inflow rate from the TMF pond, while the WTP discharge capacity of 1,330 m<sup>3</sup>/hr was adopted from previous engineering studies. However, the combined total discharge is limited to 1,330 m<sup>3</sup>/hr, therefore the WTP will only treat at 960 m<sup>3</sup>/day when the membrane filtration plant is in operation. These treatment rates are contingent on

the assumed storage capacities, and subject to change upon further engineering studies. Treated effluent from the WTP and membrane filtration are combined in the TWP and discharged to the Chukuni River throughout the year. The TWP was modeled as a flow-through cell (without storage).

The LP Central pit was also conservatively modeled as a flow-through cell, as the available storage and pump rates will change with pit development, and effectively dampen the peak discharge rates.

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## 4.10 FRESH WATER DEMANDS AND SEWAGE TREATMENT PLANT

In addition to providing fresh water to the process plant, the Chukuni River will supply water for civil works and to the accommodations complex. The accommodations complex is anticipated to require an average of 6.6 m<sup>3</sup>/hr during the operations phase, with an increased demand of 17.9 m<sup>3</sup>/hr during the construction phase. This water will be collected and treated in the sewage treatment plant. Treated water will be combined with WTP effluent, and discharged to the Chukuni River as a combined stream.

Additional water takings from the Chukuni River during the construction phase were also simulated for the batch plant and dust suppression purposes. The batch plant has an average water demand of 4.2 m<sup>3</sup>/hr. Water takings to the batch plant are assumed to be permanently trapped in site civil works. Dust suppression has an approximate requirement of 2.1 m<sup>3</sup>/hr. Similarly, this water is assumed to be lost via evapotranspiration and is not simulated to in the surface water management system.

The truck wash facility will require 0.4 m<sup>3</sup>/hr during the operations phase only, however this water will primarily be sourced from the treated WTP effluent. Wastewater from the truck wash facility will be recycled through the WTP.

At the start of active closure, the WTP pump (1,330 m<sup>3</sup>/hr) and pipeline will be reversed to draw water from the Chukuni River to actively fill the west and east VMF, underground mine and LP Central pit. This will take place until filled, as described in Section 2.4.

**Table 4-1: Annual Precipitation**

Climate Scenario	Annual Precipitation (mm)
Average	633
1:100 Wet	1026.9
1:20 Wet	874.9
1:100 Dry	343.8
1:20 Dry	403.6

Source: WSP (2025b)

**Table 4-2: Monthly Precipitation Distribution**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Monthly Precipitation (mm)	29.1	20.1	27.1	34.3	62.8	89.2	90.4	81.8	75.1	53.8	38.7	30.4	633.0
Percent of Annual Total (%)	4.6	3.2	4.3	5.4	9.9	14.1	14.3	12.9	11.9	8.5	6.1	4.8	100

Source: WSP (2025b)

**Table 4-3: Monthly Average Temperature**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Monthly Temperature (°C)	-19.2	-15.9	-7.9	1.5	9.3	15.2	18.3	16.9	11.0	4.1	-5.8	-15.5

Source: WSP (2025b)

**Table 4-4: Monthly Snowmelt Distribution**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Monthly Snowmelt Distribution	0%	0%	0%	20%	50%	100%	100%	100%	100%	100%	0%	0%
Average Monthly Snowmelt Distribution under Climate Change	10%	10%	20%	50%	85%	100%	100%	100%	100%	100%	70%	10%

Source: WSP (2025b)

Note:

Snowmelt percentage refers to percent of the accumulated snowpack present in that month, including snowfall within the month.

**Table 4-5: Monthly Average Lake Evaporation**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Monthly Evaporation (mm)	0	0	0	0	107.9	131.9	140.5	112.1	63.0	29.3	0	0	584.7

Source: WSP (2025b)

**Table 4-6: Historical Sequence Annual Precipitation and Lake Evaporation**

Year	Annual Precipitation (mm)	Annual Lake Evaporation (mm)
1950	554.0	533.8
1951	514.8	589.1
1952	544.5	581.9
1953	466.4	591.6
1954	604.1	561.6
1955	599.8	606.2
1956	290.9	574.0
1957	453.5	592.9
1958	547.8	553.2
1959	802.3	557.7
1960	592.6	582.8
1961	438.7	645.1
1962	632.8	585.3
1963	505.8	604.6
1964	663.4	561.9
1965	670.0	542.1
1966	555.4	572.7
1967	602.1	574.8
1968	695.6	518.1
1969	728.8	533.3
1970	808.2	579.9
1971	545.3	566.4
1972	597.9	591.2
1973	684.9	558.5
1974	794.9	542.0
1975	714.9	580.7
1976	412.6	624.8
1977	682.0	565.3
1978	605.8	592.8
1979	630.7	580.4
1980	560.6	593.9
1981	535.2	608.3
1982	646.9	572.7
1983	536.9	613.6
1984	714.4	592.3
1985	678.5	542.5
1986	644.7	590.7
1987	372.8	618.4
1988	643.9	639.6
1989	657.2	637.7
1990	700.6	592.0
1991	718.2	612.0
1992	702.7	551.6
1993	568.7	530.5
1994	588.1	599.0
1995	702.1	601.4
1996	640.8	601.0
1997	675.6	595.5
1998	615.7	605.8
1999	681.3	574.2
2000	897.4	563.1
2001	595.0	601.9
2002	644.6	567.3
2003	641.1	617.0
2004	804.8	534.2
2005	767.3	569.5
2006	676.5	623.3
2007	914.6	575.0
2008	744.7	564.5
2009	816.1	531.6
2010	1063.2	568.9
2011	737.9	630.7
2012	809.3	617.4
2013	608.4	595.9
2014	556.4	570.0
2015	709.1	588.3
2016	678.5	576.4
2017	495.9	577.4
2018	444.7	636.7
2019	611.1	602.0
2020	440.7	600.1
2021	407.0	646.1
2022	617.7	604.4

Source: WSP (2025b)

**Table 4-7: 50th Percentile Climate Change Projections for 2080s - Precipitation**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2080s Climate Change Effect on Precipitation (%)	20	12	21	17	15	3	-7	-6	3	13	14	17	6.4%
Current Average Year Monthly Precipitation (mm)	29.1	20.1	27.1	34.3	62.8	89.2	90.4	81.8	75.1	53.8	38.7	30.4	633.0
Projected Average Year Monthly Precipitation with Climate Change (mm)	34.9	22.5	32.8	40.2	72.3	91.9	84.1	76.9	77.4	60.8	44.1	35.6	673.5

Source: WSP (2025b)

**Table 4-8: 50th Percentile Climate Change Projections for 2080s - Evaporation**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2080s Climate Change Effect on Evaporation (%)	74	43	21	16	11	9	10	13	14	16	24	48	11.3
Current Average Monthly Evaporation (mm)	0.0	0.0	0.0	0.0	107.9	131.9	140.5	112.1	63.0	29.3	0.0	0.0	584.7
Projected Average Monthly Evaporation with Climate Change (mm)	0.0	0.0	0.0	0.0	119.8	143.8	154.6	126.7	71.8	34.0	0.0	0.0	650.6

Source: WSP (2025b)

**Table 4-9: 50th Percentile Climate Change Projections for 2080s – Temperature**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2080s Climate Change Effect on Mean Monthly Temperature (°C)	+4.9	+3.5	+3.0	+3.1	+3.1	+3.1	+3.4	+3.7	+3.5	+3.2	+3.8	+5.0
Current Mean Monthly Temperature (°C)	-19.2	-15.9	-7.9	1.5	9.3	15.2	18.3	16.9	11.0	4.1	-5.8	-15.5
Projected Mean Monthly Temperature with Climate Change (°C)	-14.3	-12.4	-4.9	4.6	12.4	18.3	21.7	20.6	14.5	7.3	-2.0	-10.5

Source: WSP (2025b)

**Table 4-10: Project Watershed Areas for Operations Phase**

<b>Watershed</b>	<b>Watershed ID</b>	<b>Area (ha)</b>
TMF	101	502
Pump 2	101A	10
Pump 3	101B	10
TMF pond	102	121
Pump 1	102A	7 <sup>1</sup>
Watershed 103	103	214
MRS	104	386
CWP	105	149
AEX	106	40
OVV stockpile 1	107	76
LP Central pit	108	163
East Viggo pit / East VMF	109	46
West Viggo pit / West VMF	110	11
North process plant	111	34
<b>Total (prior to MWP construction)</b>		<b>1768</b>
MWP	112	55 <sup>(1)</sup>
<b>Total (following MWP construction)</b>		<b>1816</b>

Note:

1 MWP watershed overprints Pump 1 watershed when constructed. Result is a net increase of 48 ha.

**Table 4-11: Runoff Coefficient by Land Type and Month for Average and Wet Climate Condition**

Land Use	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Ground	0.35	0.35	0.35	0.45	0.40	0.25	0.25	0.25	0.30	0.40	0.35	0.35
Cleared Ground	0.40	0.40	0.40	0.50	0.45	0.30	0.30	0.30	0.35	0.45	0.40	0.40
Dam Rock	0.50	0.50	0.50	0.70	0.70	0.50	0.40	0.40	0.50	0.55	0.55	0.50
NPAG	0.50	0.50	0.50	0.75	0.75	0.55	0.50	0.50	0.50	0.55	0.55	0.50
PAG	0.50	0.50	0.50	0.75	0.75	0.55	0.50	0.50	0.50	0.55	0.55	0.50
Developed/Disturbed	0.80	0.80	0.80	0.90	0.85	0.60	0.60	0.60	0.70	0.80	0.80	0.80
Low Grade Ore	0.50	0.50	0.50	0.75	0.75	0.55	0.50	0.50	0.50	0.55	0.55	0.50
Overburden Stockpile	0.70	0.70	0.70	0.85	0.85	0.60	0.50	0.50	0.60	0.70	0.70	0.70
Pit Walls	0.90	0.90	0.90	0.95	0.95	0.90	0.85	0.85	0.90	0.90	0.90	0.90
Quarry	0.70	0.70	0.70	0.90	0.90	0.80	0.60	0.60	0.70	0.70	0.70	0.70
Aggregate Source	0.50	0.50	0.50	0.70	0.70	0.50	0.40	0.40	0.50	0.55	0.55	0.50
Desulphurized Tailings	0.70	0.70	0.70	0.85	0.85	0.65	0.60	0.55	0.60	0.80	0.70	0.70
Pond	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Revegetated	0.40	0.40	0.40	0.50	0.45	0.30	0.30	0.30	0.35	0.45	0.40	0.40
Revegetated Tailings Cover	0.50	0.50	0.50	0.60	0.60	0.40	0.40	0.50	0.50	0.55	0.50	0.50
Revegetated MRS Cover	0.40	0.40	0.40	0.50	0.50	0.40	0.30	0.30	0.40	0.40	0.40	0.40

**Table 4-12: Runoff Coefficient by Land Type and Month for 1:100 Dry Year Climate Conditions**

Land Use	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Natural Ground	0.14	0.14	0.14	0.18	0.16	0.10	0.10	0.10	0.12	0.16	0.14	0.14
Cleared Ground	0.20	0.20	0.20	0.24	0.22	0.16	0.16	0.16	0.18	0.22	0.20	0.20
Dam Rock	0.20	0.20	0.20	0.28	0.28	0.20	0.16	0.16	0.20	0.22	0.22	0.20
NPAG	0.20	0.20	0.20	0.30	0.30	0.22	0.20	0.20	0.20	0.22	0.22	0.20
PAG	0.20	0.20	0.20	0.30	0.30	0.22	0.20	0.20	0.20	0.22	0.22	0.20
Developed/Disturbed	0.32	0.32	0.32	0.37	0.35	0.24	0.24	0.24	0.28	0.32	0.32	0.32
Low Grade Ore	0.20	0.20	0.20	0.30	0.30	0.22	0.20	0.20	0.20	0.22	0.22	0.20
Overburden Stockpile	0.28	0.28	0.28	0.35	0.35	0.24	0.20	0.20	0.24	0.28	0.28	0.28
Pit Walls	0.37	0.37	0.37	0.39	0.39	0.37	0.35	0.35	0.37	0.37	0.37	0.37
Quarry	0.28	0.28	0.28	0.37	0.37	0.32	0.24	0.24	0.28	0.28	0.28	0.28
Aggregate Source	0.20	0.20	0.20	0.28	0.28	0.20	0.16	0.16	0.20	0.22	0.22	0.20
Desulphurized Tailings	0.28	0.28	0.28	0.35	0.35	0.26	0.24	0.22	0.24	0.32	0.28	0.28
Pond	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Revegetated	0.16	0.16	0.16	0.20	0.18	0.12	0.12	0.12	0.14	0.18	0.16	0.16
Revegetated Tailings Cover	0.20	0.20	0.20	0.24	0.24	0.16	0.16	0.20	0.20	0.22	0.20	0.20
Revegetated MRS Cover	0.16	0.16	0.16	0.20	0.20	0.16	0.12	0.12	0.16	0.16	0.16	0.16

**Table 4-13: Process Plant Configurations**

Year		July Year -1 (Commissioning)	Years 1 to 3	Years 4 to 13	Years 14 to 24	Year 25	Year 26
Plant Throughput	tonnes/day	4,650	10,000	10,000	8,000	3,704	890
Paste Plant Utilization	%	0%	26%	57%	72%	52%	8%
Fresh Water Required	m3/day	465	1000	1000	800	370	89
Process Plant Reclaim Required	m3/day	2,812	5,532	4,887	3,675	1,739	524
Demand for Reject Solution to Paste*	m3/day	0	147	330	331	142	4
TMF Water in Tailings	m3/day	2,903	5,558	4,701	3,449	1,647	536
TMF Void Losses	m3/day	1,405	2,690	2,275	1,669	869	260
VMF Water in Tailings	m3/day	804	1,746	1,769	1,424	658	154
East VMF Void Losses	m3/day	95	181	153	112	58	17
Water in Paste Underground	m3/day	0	438	987	989	331	12

Source: Great Bear Resources

\*Represents the maximum capacity for reject solution in the paste. If insufficient reject solution is available to meet this rate, the remainder will be taken from the process plant reclaim sources.

**Table 4-14: Deposited Tailings Parameters**

Parameter	Desulphurized Tailings to TMF	Concentrate Tailings to VMF
Void Ratio	1.0	0.9
Specific Gravity	2.83	2.95

Source: WSP (2024)

**Table 4-15: Assumed Storage and Pump Capacities for Model**

<b>Location</b>	<b>Storage Capacity (m<sup>3</sup>)</b>	<b>Pump Capacity (m<sup>3</sup>/hr)</b>
AEX mine water pond	140,000	210
TMF pond	3,110,000	370
CWP	126,000	400
West VMF	1,276,000 <sup>(1)</sup>	250 <sup>(2)</sup>
East VMF	4,725,000 <sup>(1)</sup>	800
Viggo pit lake <sup>(3)</sup>	6,807,000	100
LP Central pit	58,190,000	N/A
MWP	2,410,000	N/A <sup>(4)</sup>

**Notes:**

- 1 Corresponds to the volume contained below the saddle elevation (350 m).*
- 2 Pumping ceases once reject solution is deposited in west VMF.*
- 3 Combined east and west VMF once pit filling is complete.*
- 4 Assumed that the MWP is pumped to the WTP with a variable rate pump, depending on capacity in the WTP.*

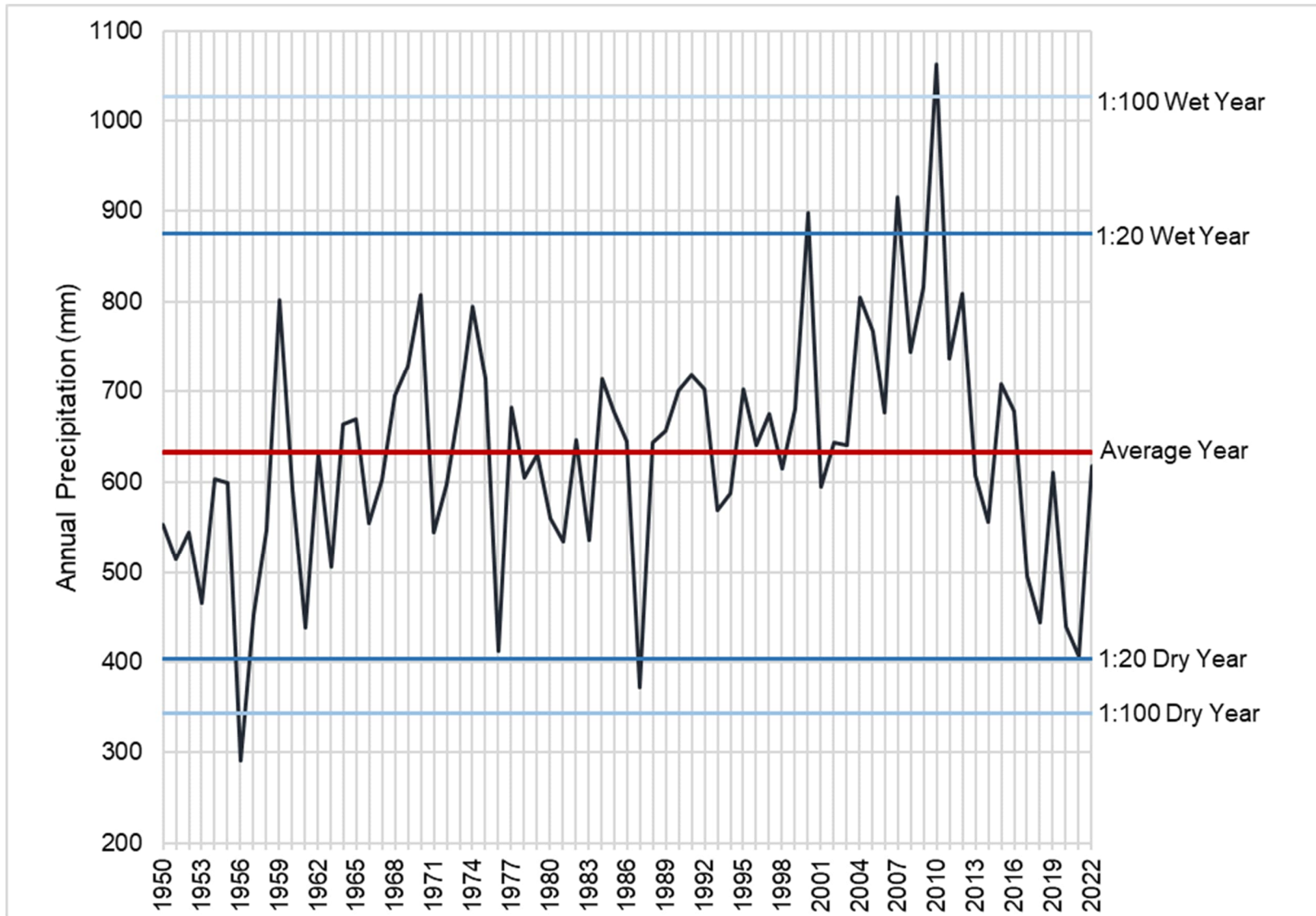
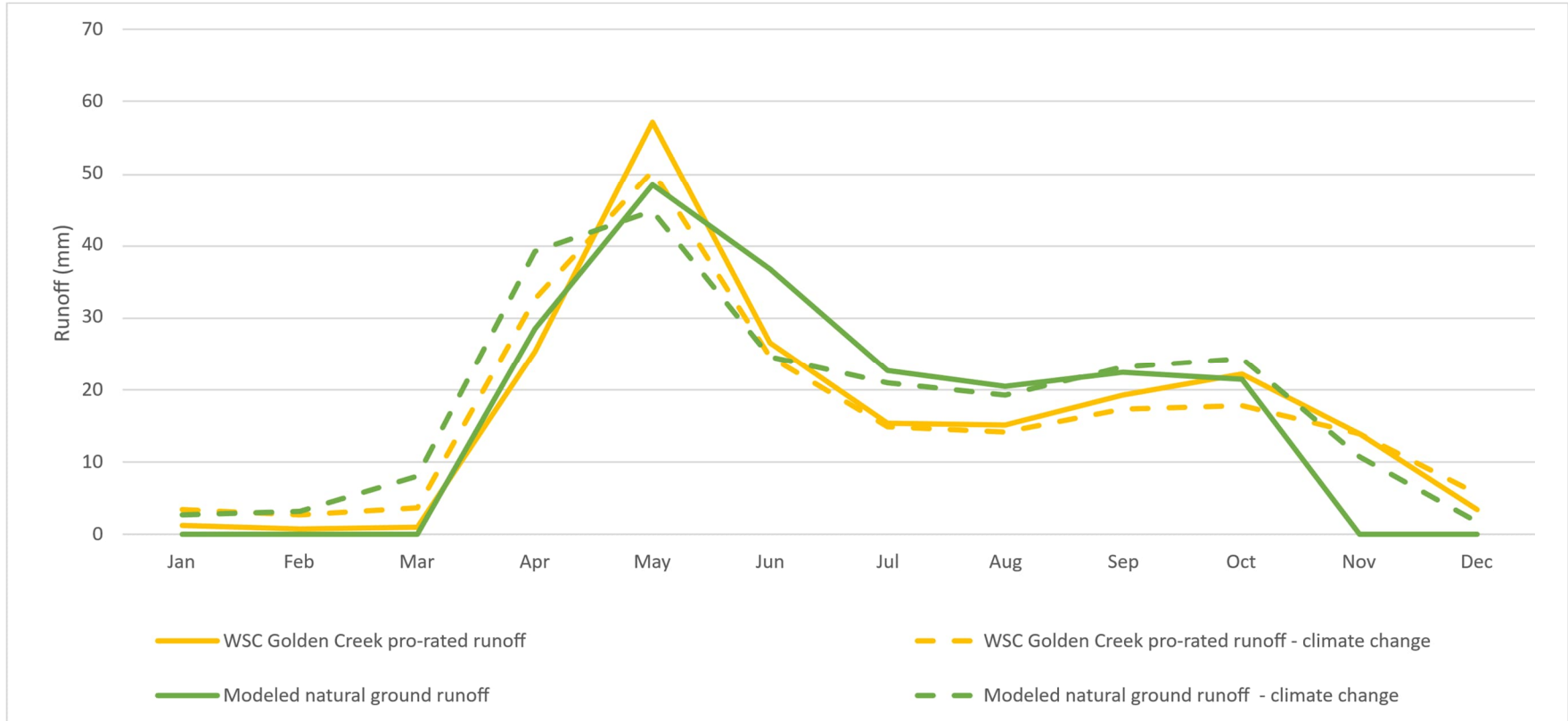


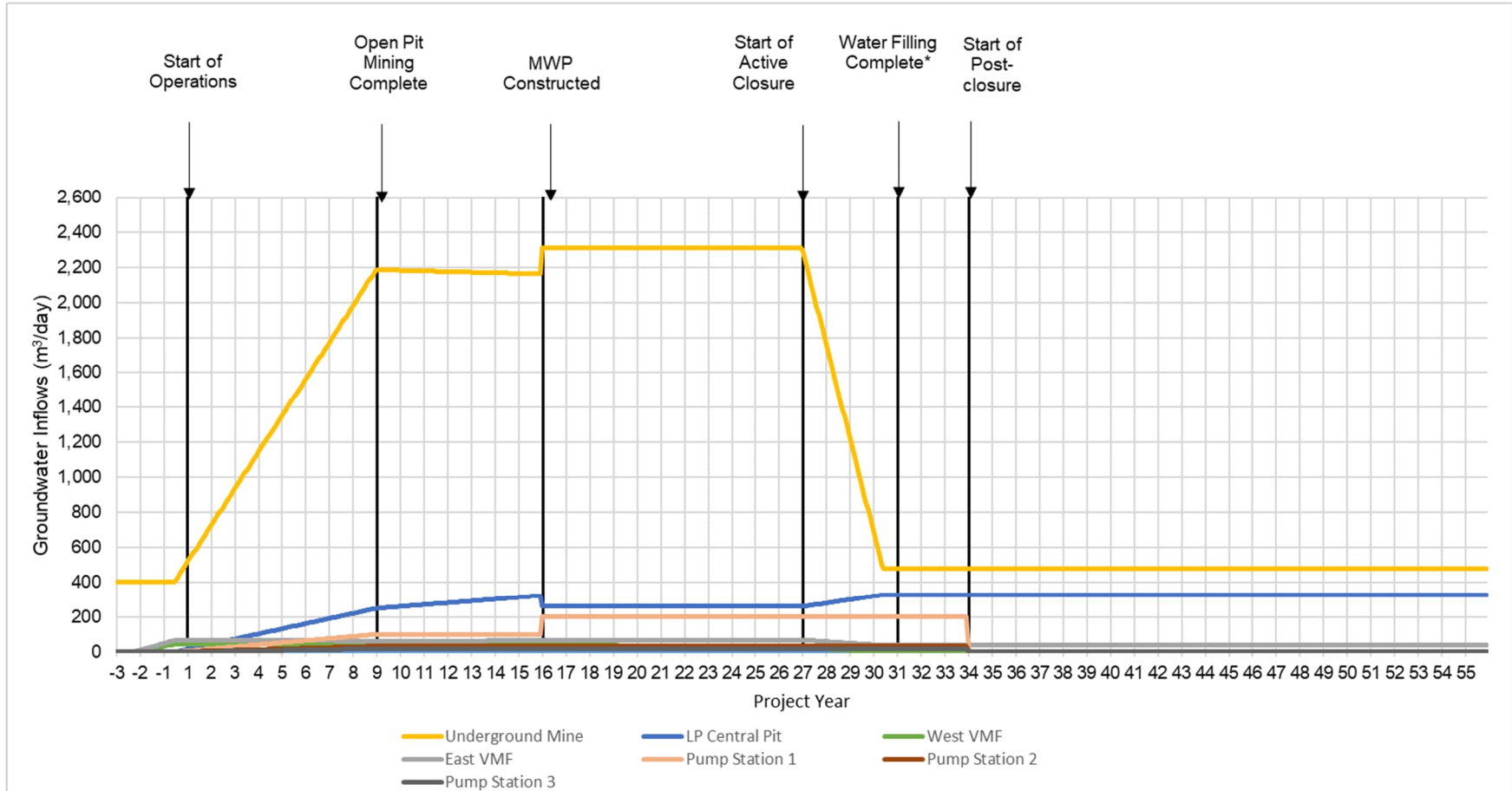
Figure 4-1: Historical Precipitation Time Series (Scenario 4)



**Figure 4-2: Average Year Modeled Monthly Runoff versus WSC Golden Creek Runoff**

*Notes:*

- WSC Golden Creek (05QC006) monthly runoff distribution has been pro-rated to WSC Long-Legged River (05QE012) total annual runoff, as described in WSP (2025d).
- Modeled natural ground runoff demonstrates the runoff produced with the assumed snowpack, snowmelt, and runoff coefficients described in this report.

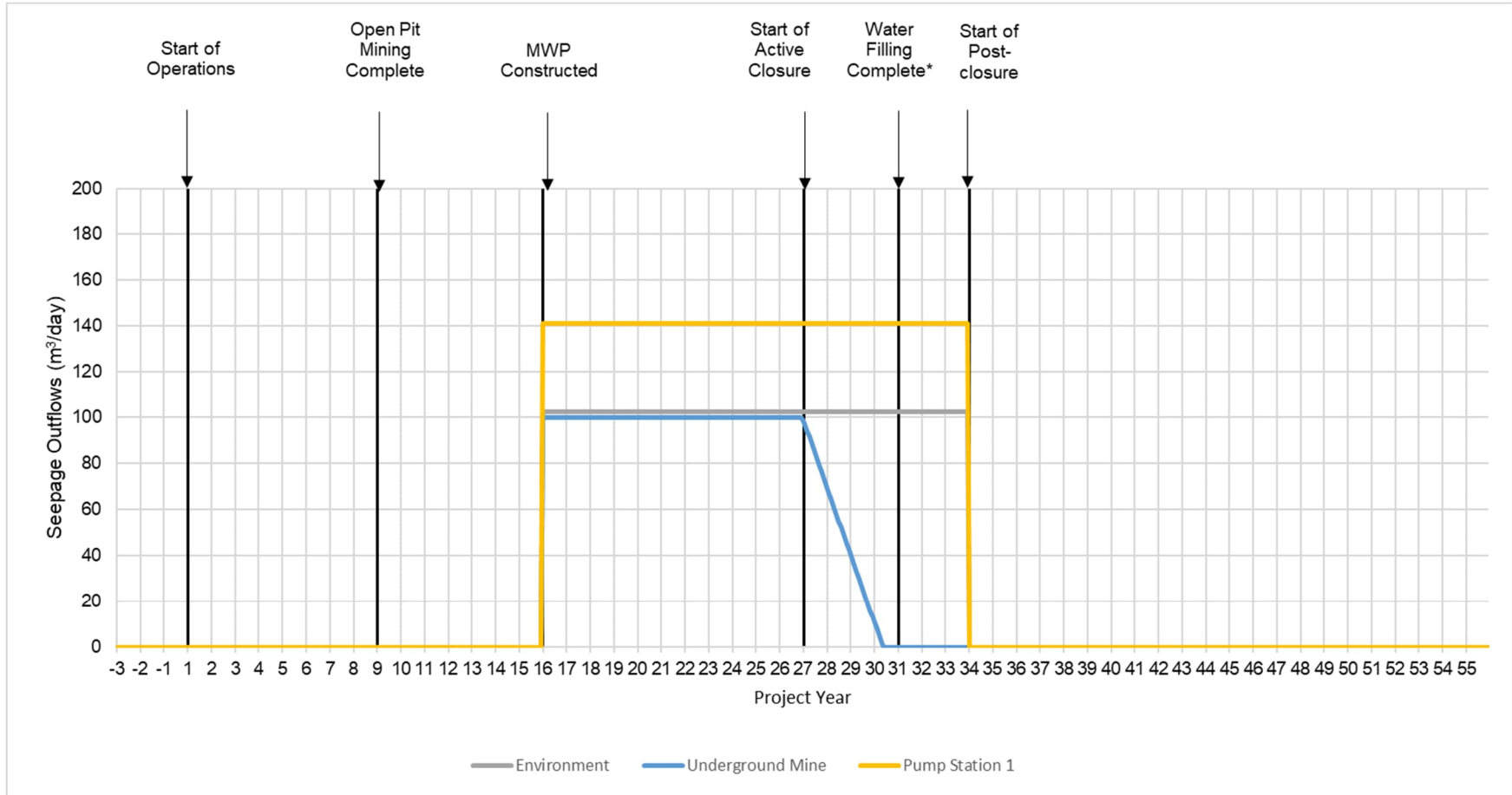


**Figure 4-3: Groundwater Inflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- Groundwater inflows do not include seepage originating from other Project features, as described in Sections 4.7 and 4.8.
- “Water Filling” refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

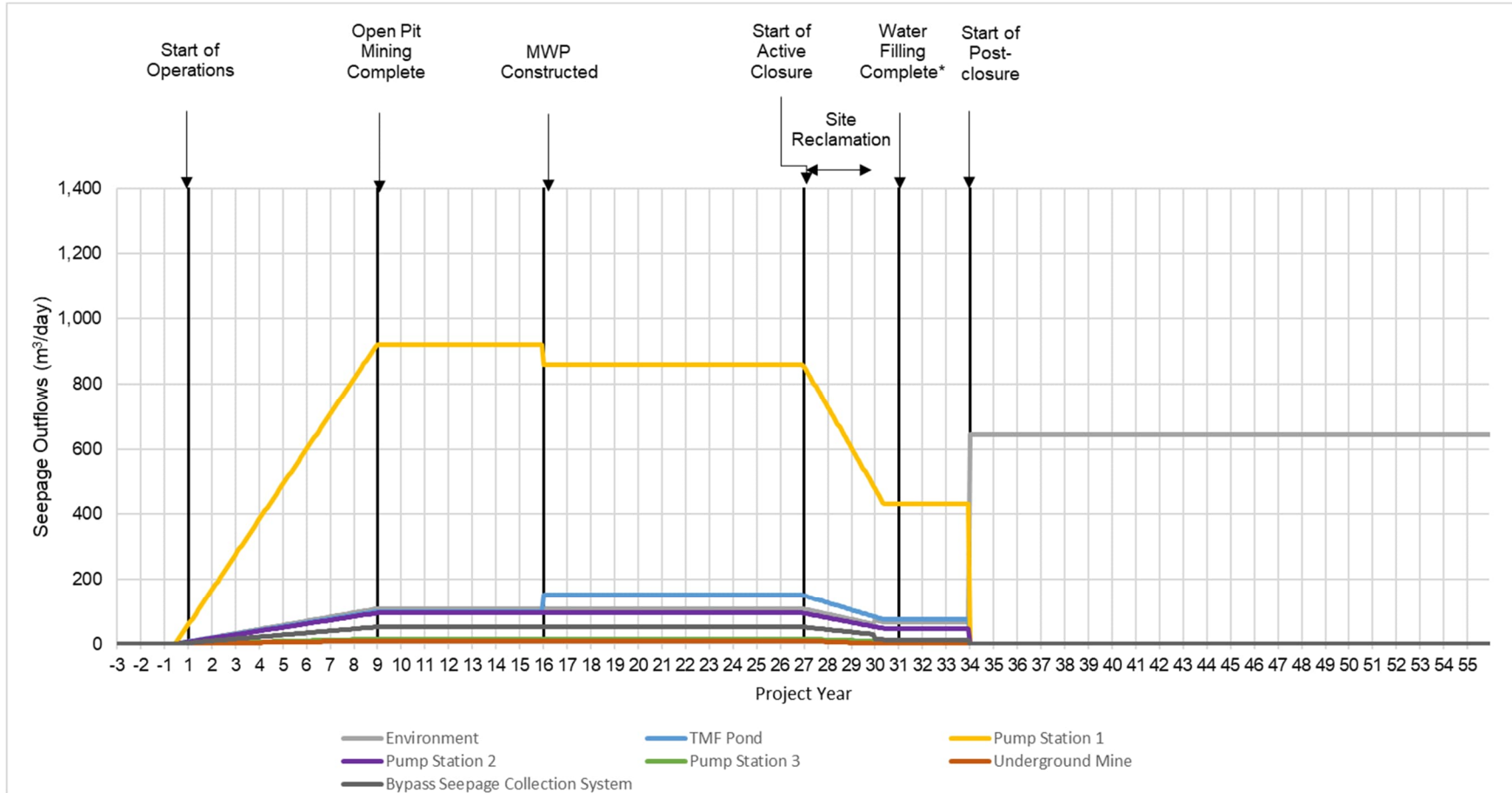


**Figure 4-4: MWP Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

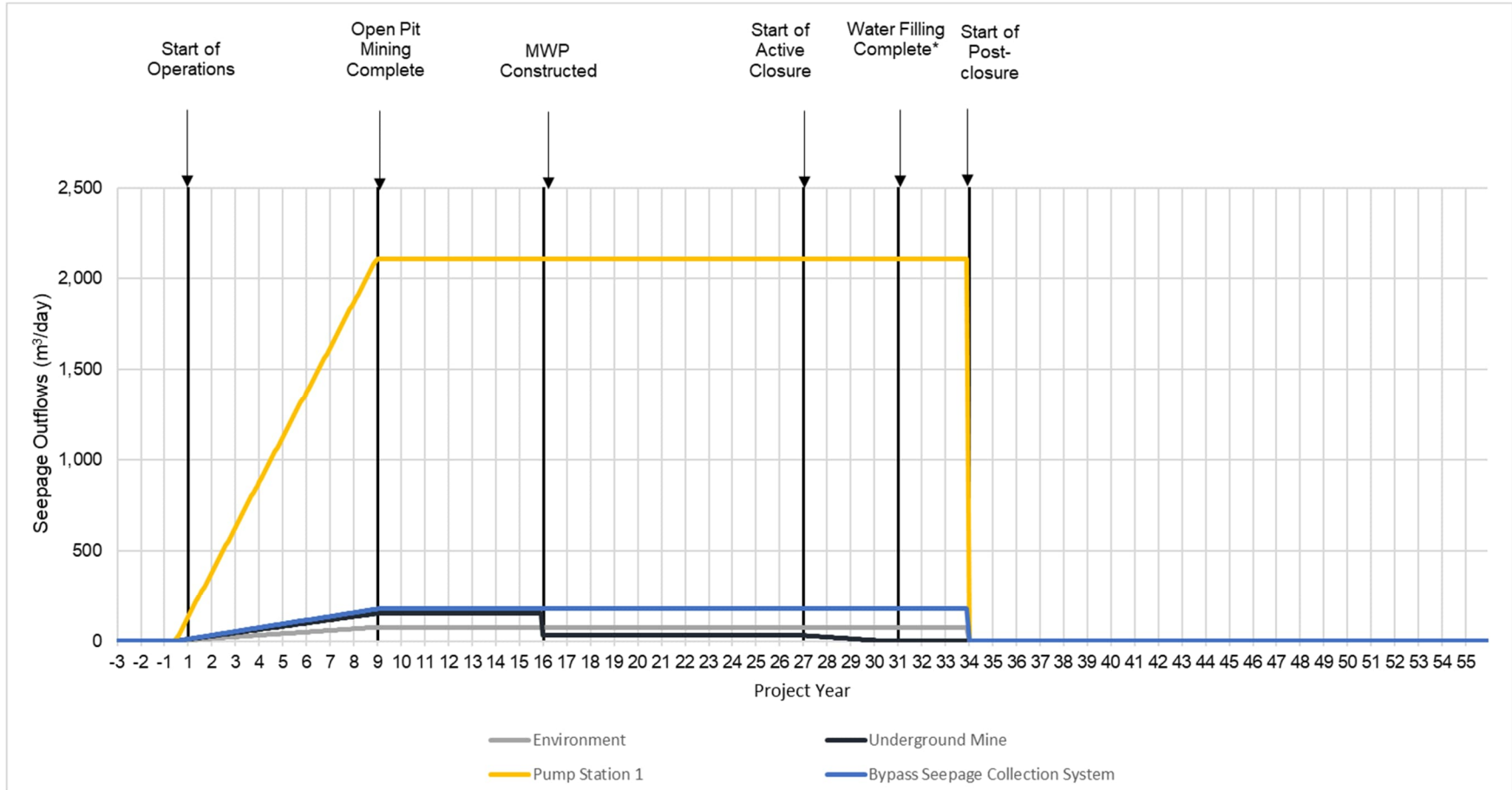


**Figure 4-5: TMF Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

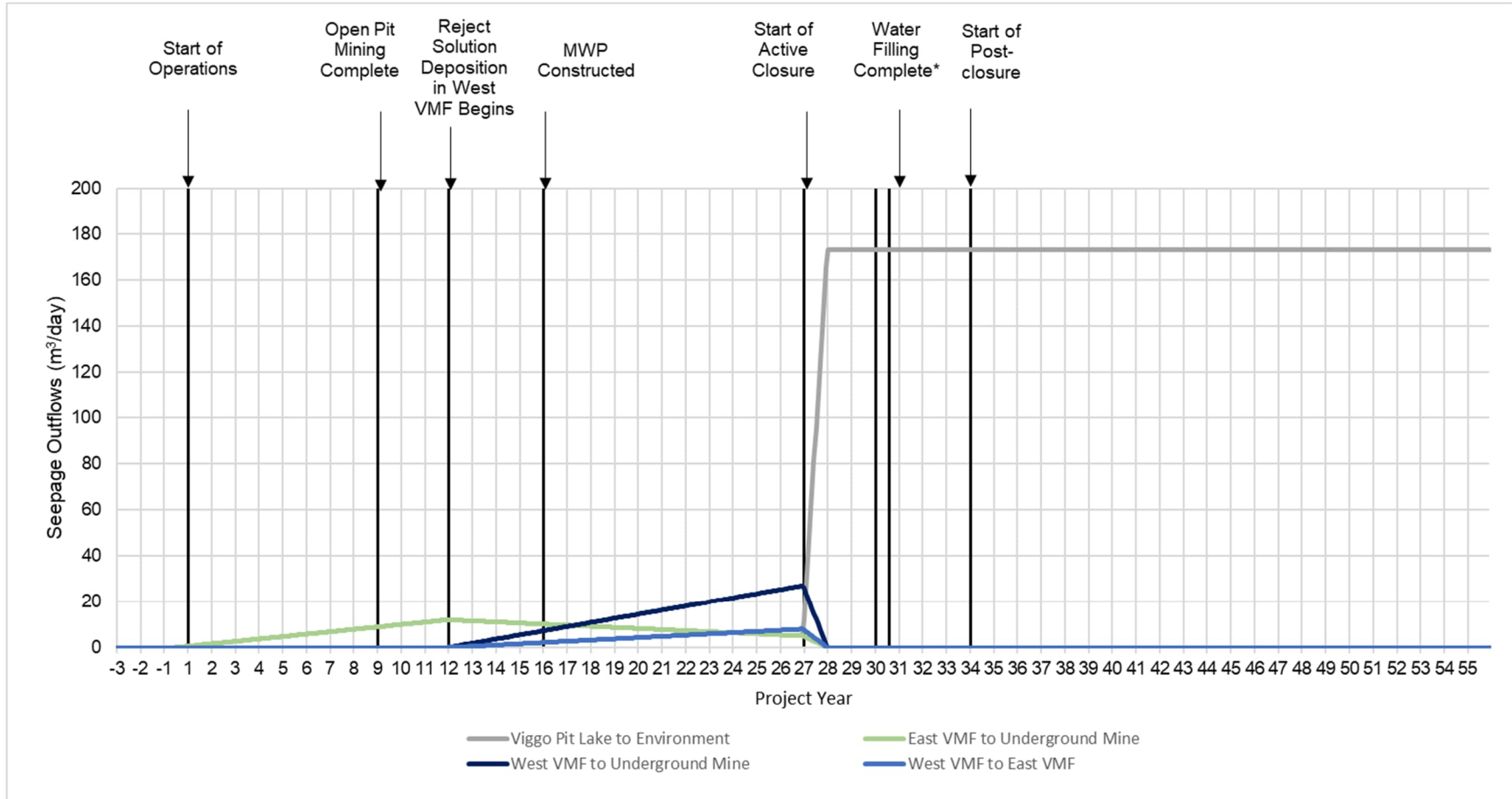


**Figure 4-6: TMF Pond Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

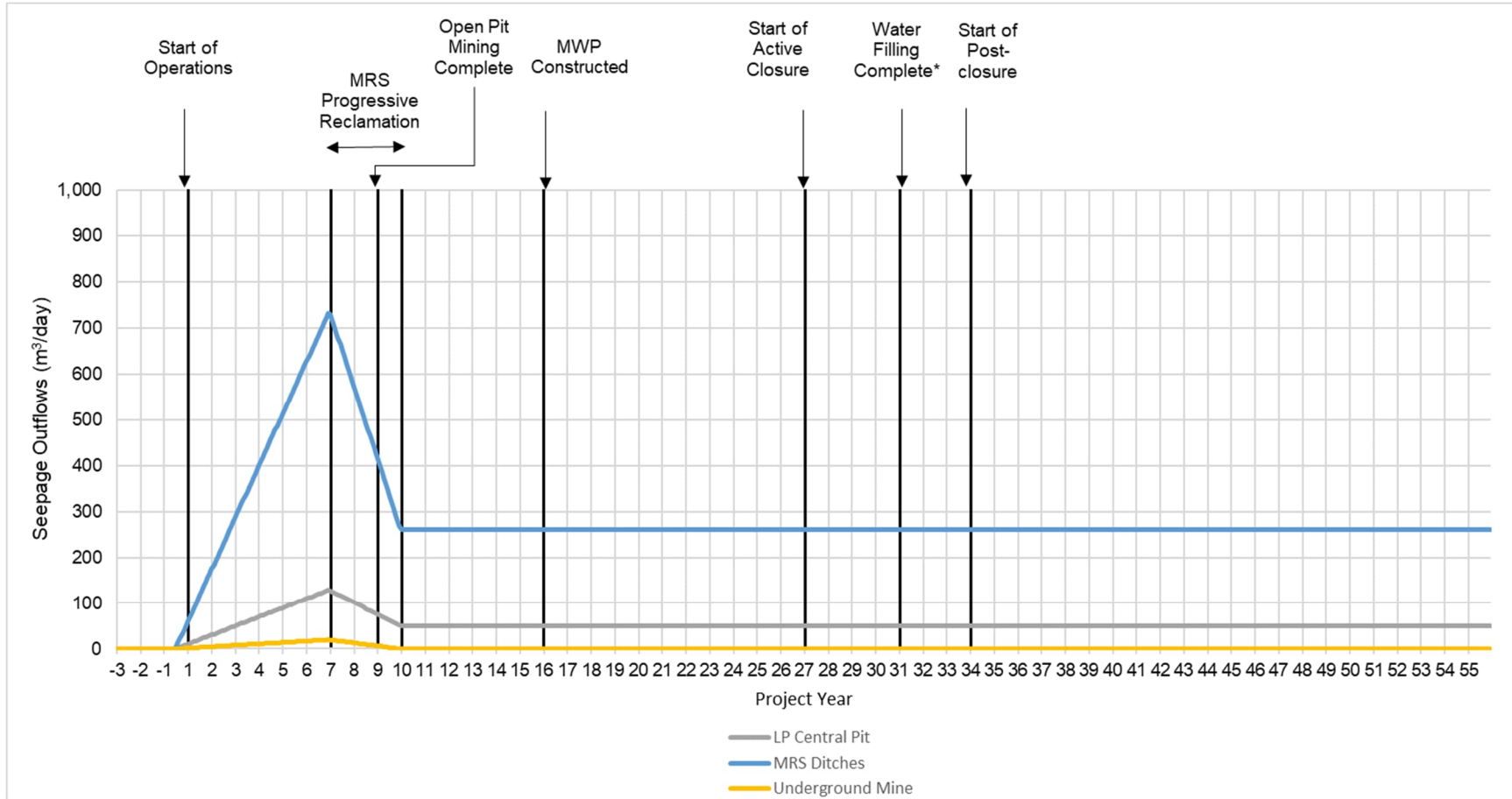


**Figure 4-7: VMF Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

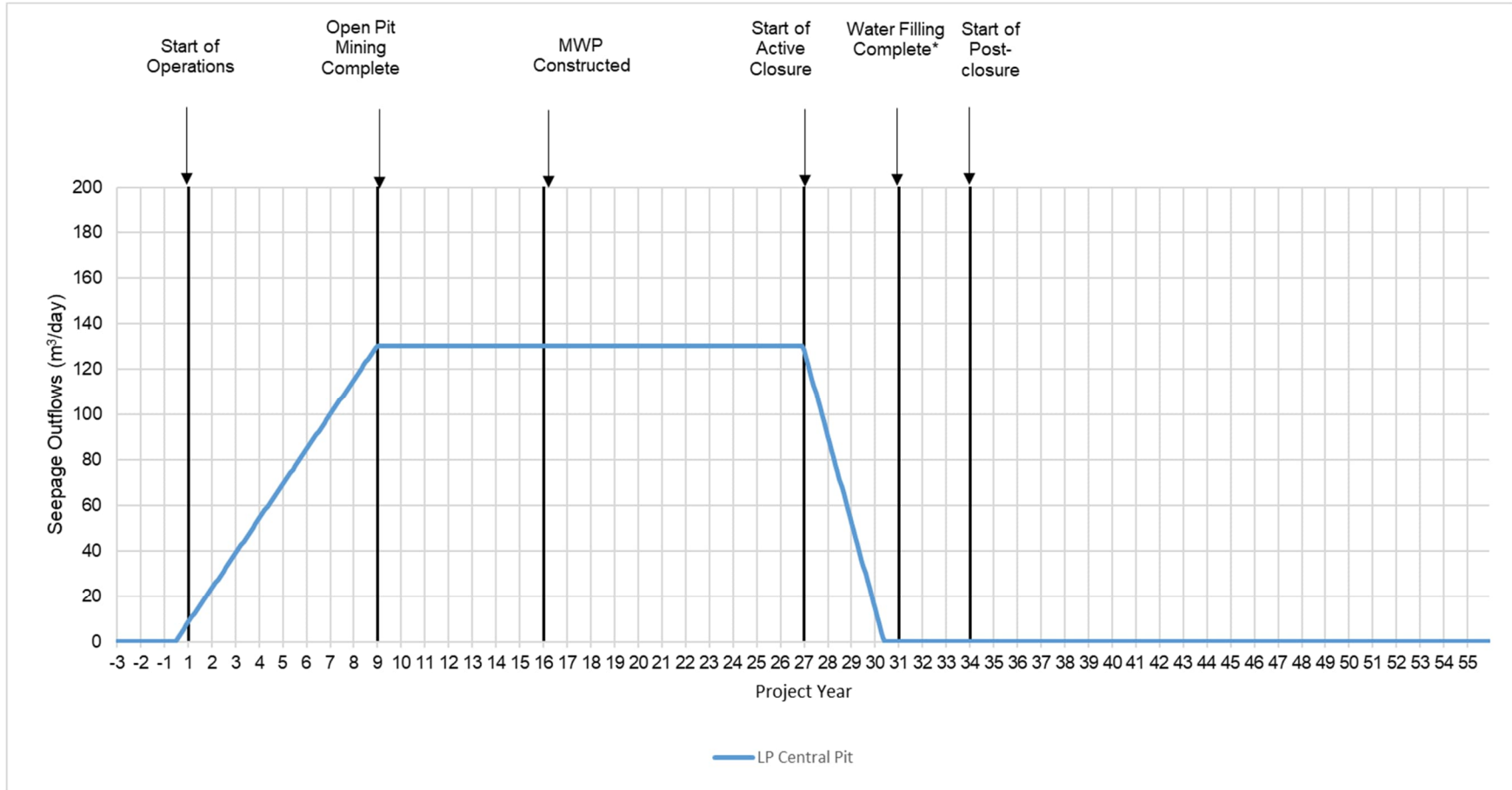


**Figure 4-8: MRS Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- The MRS will be progressively reclaimed between Years 7 and 10.
- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 4-9: LGO Stockpiles Seepage Outflows by Destination**

Source: WSP (2025a)

Notes:

- Post-closure will begin a minimum of three calendar years (January to December) following filling of LP Central pit. For example, if the LP Central pit fills in mid-Year 30, post-closure will begin at the start of Year 34.
- "Water Filling" refers to the filling of the LP Central pit, Viggo pit lake and underground mine with water from the Project site and fresh water from the Chukuni River.

# 5 RESULTS

Detailed tables summarizing the annual model results for each climate scenario are provided in Appendix B. The total annual site discharge for all Project phases under:

- Average climate conditions (Scenario 1) is provided in Figure 5-1.
- The wet and dry year conditions (Scenarios 2 and 3), compared against average conditions are presented in Figures 5-2 and 5-3.
- The historical sequence, compared against average conditions, is presented in Figure 5-4.
- Post-closure conditions with climate change effects applied, compared to current average conditions are provided in Figure 5-5.

Monthly site discharge for all Project phases, under the average, wet and dry year conditions are provided in Appendix C.

Fresh water takings are driven by the process plant and accommodations complex demand. Reclaim water requirements are managed through utilization of site storage, which eliminates the need for additional fresh water takings. As a result, water takings are the same across all climate scenarios, and are presented in Figure 5-6.

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## 5.1 OPERATIONS PHASE

Discharge during the operations phase is highest when compared to other Project phases (Figure 5-1). This is attributed to increased inflows caused by improved drainage and developed land types, fresh water takings to supply the process plant, and groundwater inflows to the dewatered LP Central pit and underground mine. Losses are also the greatest during the operations phase, due to water losses in the void space of deposited tailings in the TMF and east VMF.

Average annual discharge to the environment from membrane filtration, WTP and sewage treatment plant climbs from 4.64 to 7.22 Mm<sup>3</sup> during the operations phase (Figure 5-1, Table B-1). This is driven by increased runoff from the expansion of LP Central pit, deposition of tailings, and increased groundwater inflows due to the expansion of the underground mine. Discharge from the TWP is required throughout all months of the operations phase (Figures C-1 to C-3).

Average fresh water takings to supply the process plant and accommodations complex vary from 0.09 to 0.42 Mm<sup>3</sup> per year during the operations phase. Fresh water takings throughout the operations phase are provided in Figure 5-6.

Results from the 1:100 wet year simulation (Scenario 2) indicate that discharge to the environment may reach 8.80 Mm<sup>3</sup> per year in the operations phase (Figure 5-2, Table B-2). An additional 2.53 Mm<sup>3</sup> of surface water is stored onsite following the 1:100 wet year, which would need to be discharged over the next calendar year. Monthly discharge from the TWP during the 1:100 wet year are presented in Figure C-2. TWP discharge will reach a maximum 960,000 m<sup>3</sup>/month (1,293 m<sup>3</sup>/hour). This is equivalent to the assumed WTP and membrane filtration capacity of approximately 1,330 m<sup>3</sup>/hour after reject solution is removed.

Results from the 1:100 dry year simulation (Scenario 3) indicate that annual discharge to the environment may be reduced to 0.06 Mm<sup>3</sup> in the first year of the operations phase (Figure 5-3, Table B-3). This consists solely of sewage treatment plant discharge, no WTP or membrane filtration is simulated under a 1:100 dry climate year in Year 1 of operations phase. Annual water takings remain the same as under average climate conditions.

Results from the historical sequence (Scenario 4, Figure 5-4, Table B-4) produce a peak annual discharge of 9.28 Mm<sup>3</sup> per year, which exceeds the peak discharged observed under the 1:100 wet year in Scenario 2 (8.80 Mm<sup>3</sup>). This is expected, as the precipitation in this year of the historical sequence

exceeds that of the 1:100 wet year (as described in Section 3) and is preceded by a series of greater than average precipitation years.

The amount of reject solution produced by membrane filtration, as well as where it is stored is summarized in Table 5-1.

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## 5.2 CONSTRUCTION PHASE

Site discharge during the construction phase is less than during operations (Figure 5-1).

During Years -3 and -2, increasing volumes of treated water from 0.31 to 0.78 Mm<sup>3</sup>/year, will be discharged by the AEX ETP, which has an assumed capacity of 150 m<sup>3</sup>/hr.

During the first half of Year -1, site discharge is assumed to pause, as water is stored in preparation for the process plant commissioning and start-up. This is visible in the monthly discharge figures presented in Appendix C.

During the second half of Year -1, during commissioning and start-up, the full WTP is available and discharge increases (Figure C-1).

Fresh water is taken from the Chukuni River at 36,000 m<sup>3</sup>/year and 18,000 m<sup>3</sup>/year for the batch plant and dust suppression, respectively, from Years -3 to -1, while 156,000 m<sup>3</sup>/year are taken to supply the 1000-person construction accommodations complex throughout Years -3 and -2. Annual fresh water requirements for the accommodations complex drop to 58,000 m<sup>3</sup>/year, as the accommodations complex transitions to the 300-person operations camp in mid-way through Year -1 (Figure 5-6).

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## 5.3 CLOSURE PHASE

As described in Section 2.4, at the beginning of closure phase the Project site will be pumped and diverted to the LP Central pit to accelerate the filling of the pit from direct precipitation and natural groundwater inflow. As such, there will be no discharge to the environment during this period of pit filling (Figure 5-1, Table B-1). During this period, additional fresh water will be sourced from the Chukuni River to expedite the filling of the VMF, LP Central pit and underground mine. TWP discharge pumps will be reversed to draw water at 1,330 m<sup>3</sup>/hr. This results in water takings of 11.65 Mm<sup>3</sup>/year until filling of the VMF, LP Central pit and underground mine is achieved. No other material water takings are required during the closure phase.

To evaluate potential effects from the scenario where site water quality is not yet suitable for passive discharge to the environment following filling, it has been assumed that passive closure will extend three calendar years after the VMF, LP Central pit and underground mine have filled. During this time, any surface water directed to the LP Central pit or VMF above their active / passive closure water levels will be pumped to the WTP for treatment and discharge. In effect, the whole site area will be treated via the WTP at this point and discharged from the TWP, but with reduced runoff and groundwater inflows (when compared to the operations phase). The annual TWP discharge during this period will range from 1.35 to 4.57 Mm<sup>3</sup>. Monthly discharge will range seasonally from 0 to 762,000 m<sup>3</sup>/month (0 to 1,024 m<sup>3</sup>/hr), as presented in Figure C-1.

Results from the 1:100 wet year analysis (Scenario 2) indicate that annual TWP discharge may increase to 6.97 Mm<sup>3</sup> (Figures 5-2, Table B-2). Monthly discharge will peak at 850,000 m<sup>3</sup>/month (1,142 m<sup>3</sup>/hr), as presented in Figure C-2.

Results from the 1:100 dry year analysis (Scenario 3) indicate that TWP discharge may decrease to 0.18 Mm<sup>3</sup> once LP Central pit filling is complete during the closure phase (Figures 5-3, Table B-3).

Results from the climate change scenario (Scenario 5) indicate that TWP discharge during the period after which pit filling is complete may range from 1.97 to 5.05 Mm<sup>3</sup>. This corresponds to an increase of 0.62 to 0.48 Mm<sup>3</sup>, respectively, over the average climate scenario (Scenario 1). Monthly discharge during this period will range from 0 to 850,000 m<sup>3</sup>/month.

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## 5.4 POST-CLOSURE

Once post-closure is initiated, discharge to the Chukuni River will cease, the WTP will be decommissioned, and runoff from the Property will be allowed to passively discharge (Figure 5-1, Table B-1). Gravity runoff to Dixie Creek will be reinstated, with small portions draining to Unnamed Watercourses 8b and 6a.

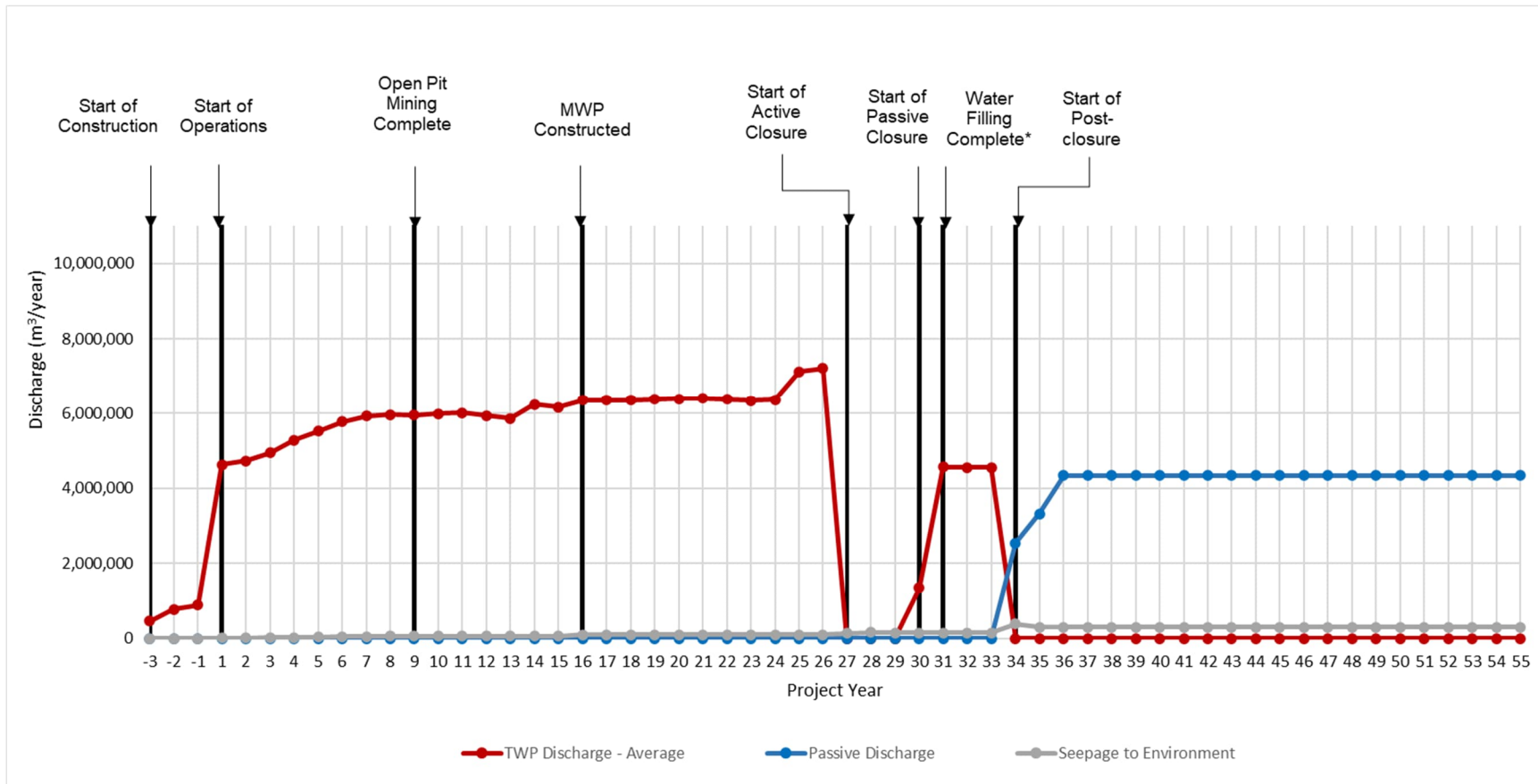
Passive discharge increases over the first two years of post-closure, as the remaining storage capacity in the VMF and LP Central pit fill. Annual passive discharge to the environment, across 1,816 ha, stabilizes at 4.35 Mm<sup>3</sup>. This equates to 239 mm under average climate conditions.

The 1:100 wet and dry year analyses (Scenarios 2 and 3) indicate that passive discharge during the post-closure period may rise to 7.18 Mm<sup>3</sup> or drop to 0.39 Mm<sup>3</sup>.

Results from the climate change scenario (Scenario 5) suggest that average annual passive discharge may increase to 4.67 Mm<sup>3</sup> (Figure 5-5, Table B-5) from 4.35 Mm<sup>3</sup>.

**Table 5-1: Reject Solution Production and Storage**

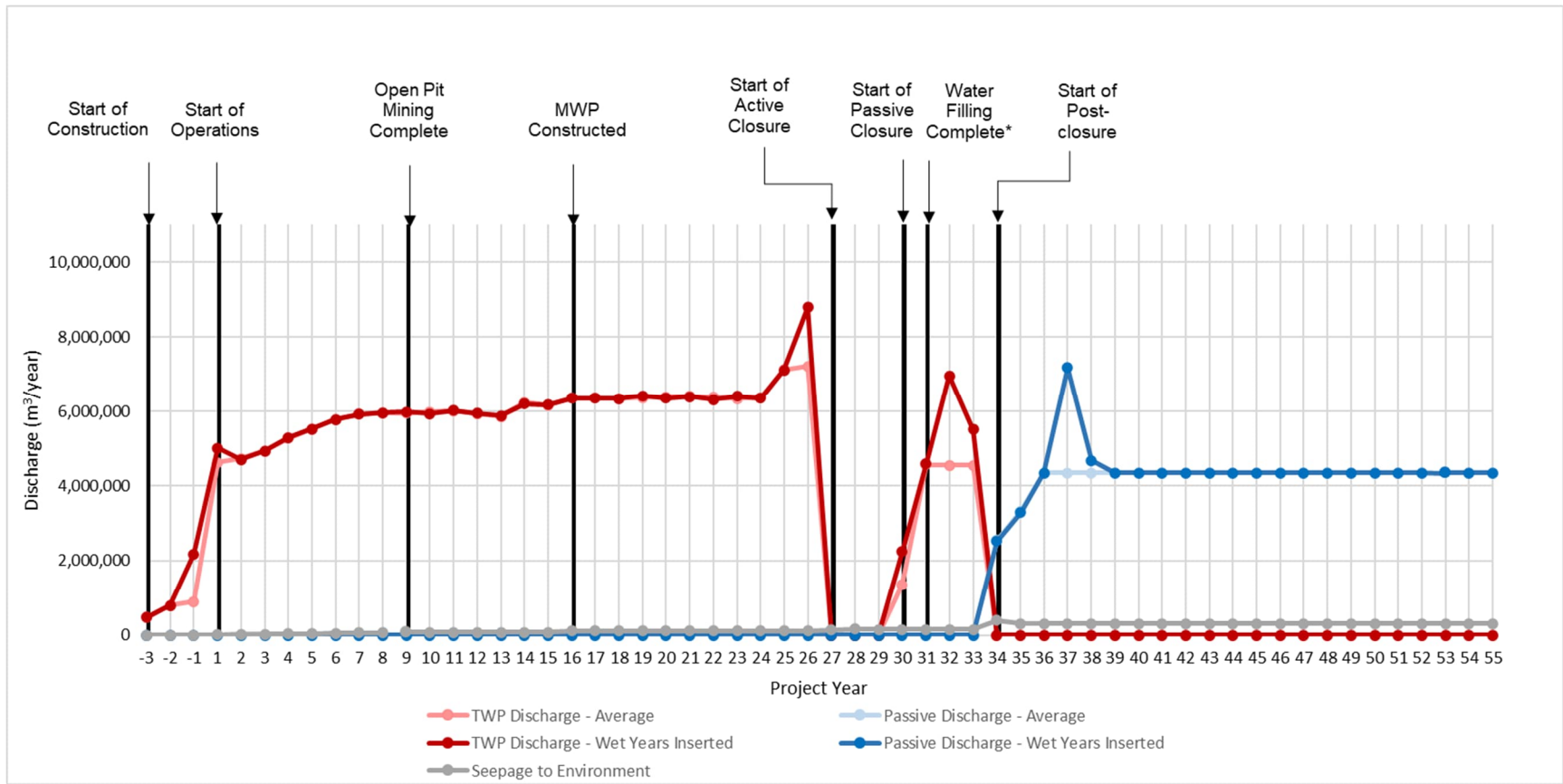
Scenario	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
	All Average Climate Conditions	1:100 Wet Years Inserted	1:100 Dry Years Inserted	Historical sequence	Average Climate Conditions with Climate Change Effects
Total Reject Solution Produced (Mm <sup>3</sup> )	3.1	3.1	3.0	3.5	3.1
Sequestered in paste (Mm <sup>3</sup> )	2.3	2.3	2.3	2.3	2.3
Directed to west VMF (Mm <sup>3</sup> )	0.7	0.7	0.7	1.1	0.7



**Figure 5-1: Annual Site Discharge – All Average Climate Years (Scenario 1)**

Note:

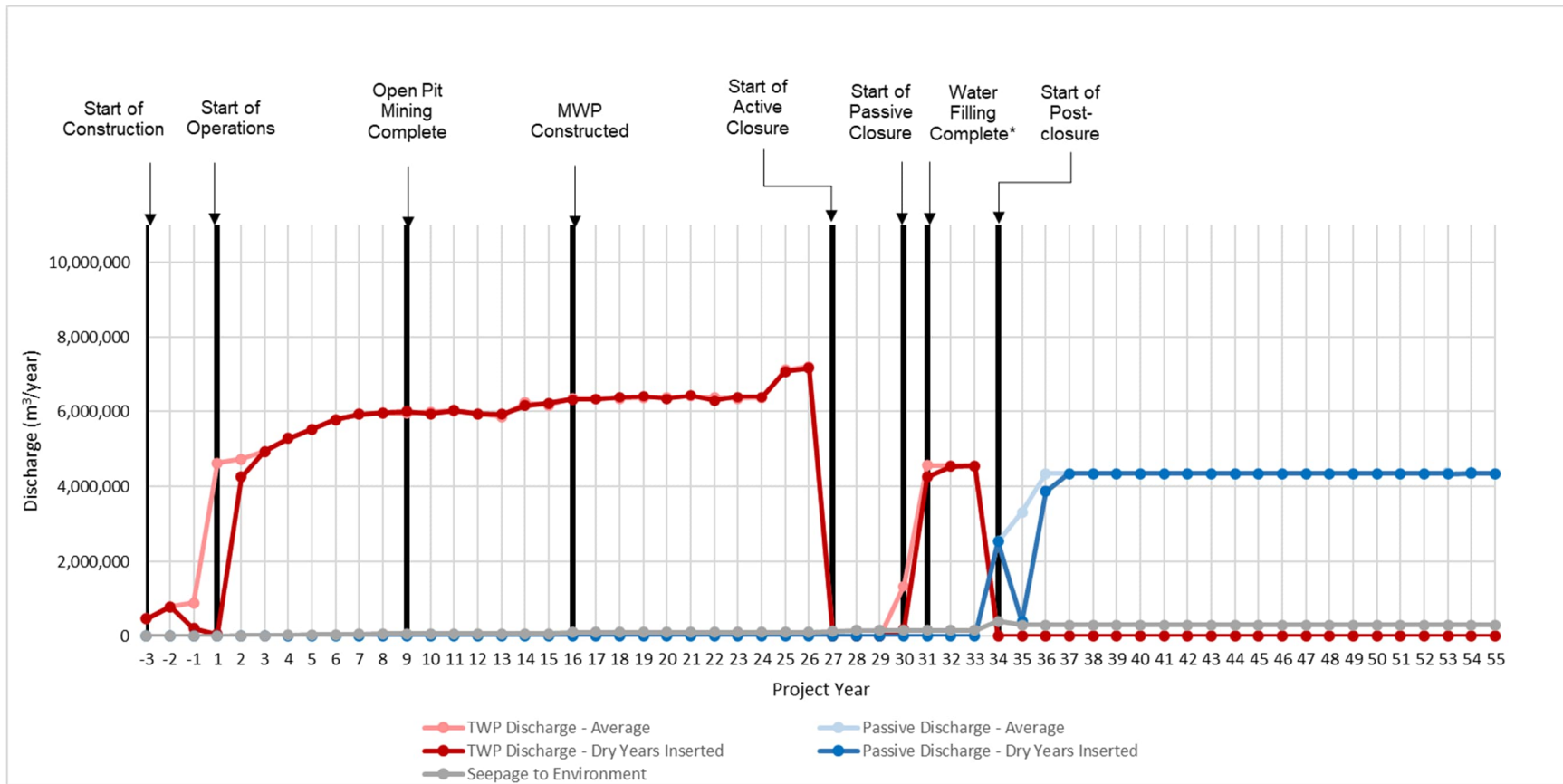
- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 5-2: Annual Site Discharge – Average Climate Years with 1:100 Wet Years Inserted (Scenario 2)**

Note:

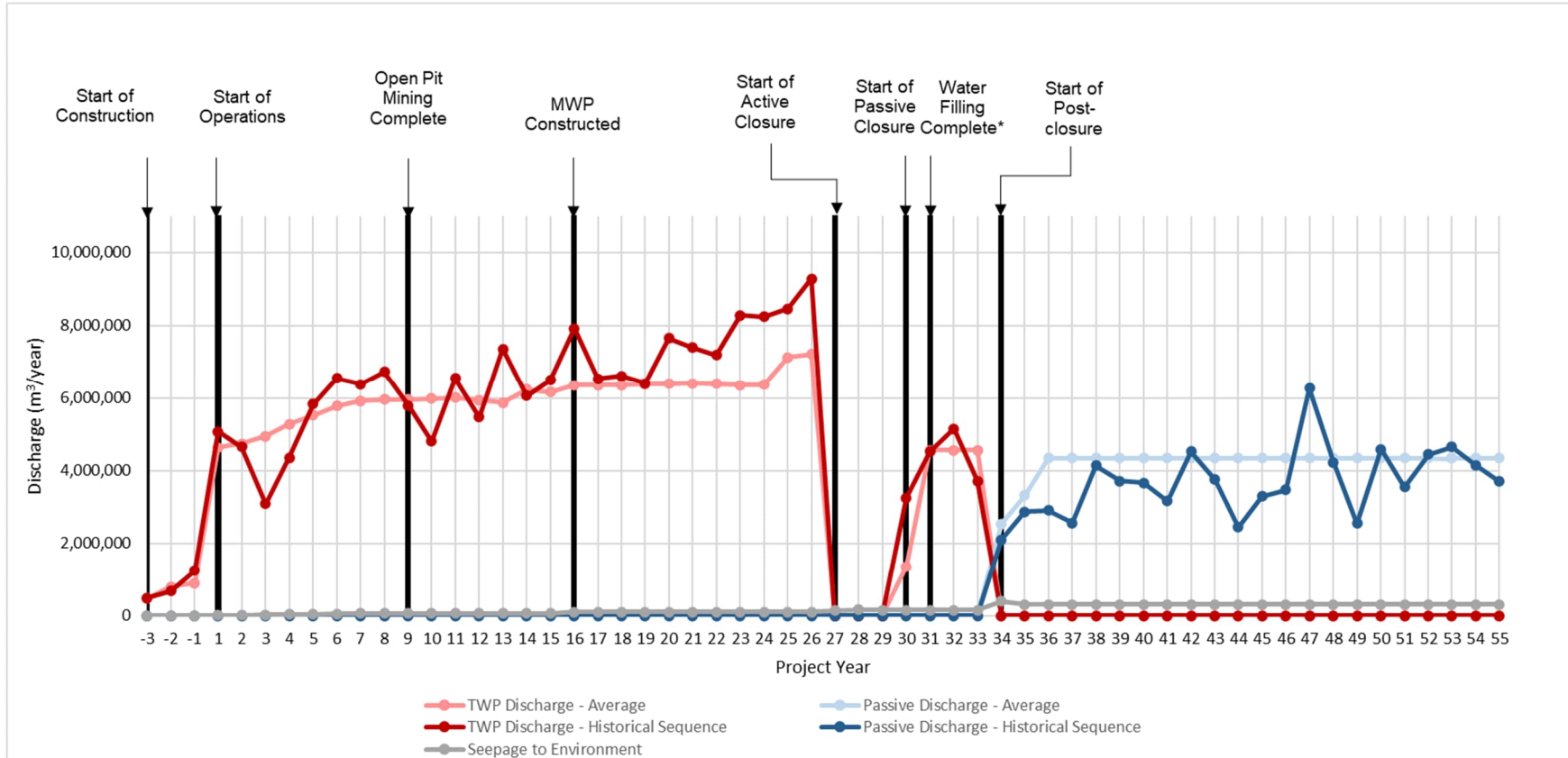
- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 5-3: Annual Site Discharge – Average Climate Years with 1:100 Dry Years Inserted (Scenario 3)**

Note:

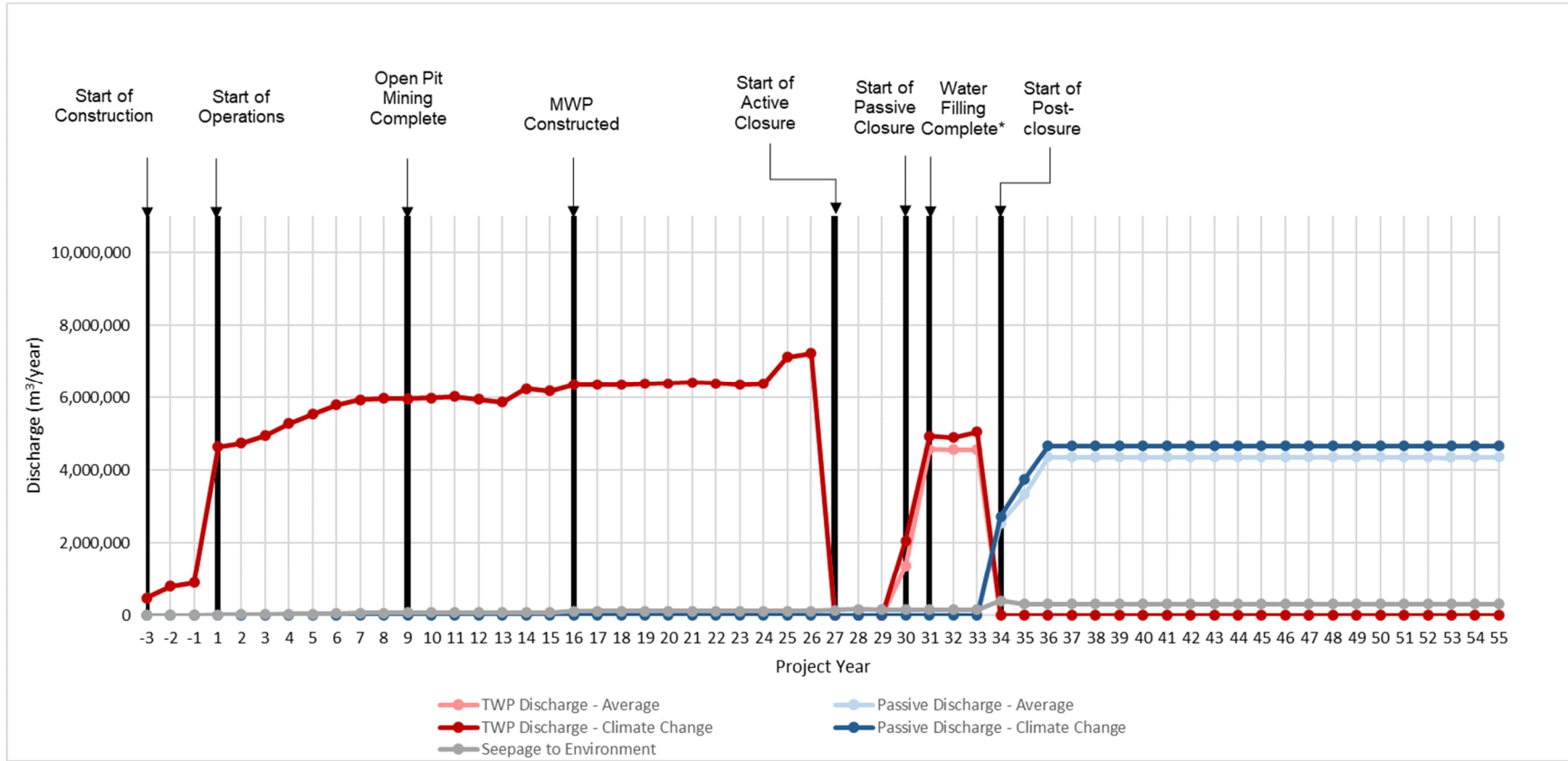
- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 5-4: Annual Site Discharge – Historical Climate Sequence (Scenario 4)**

Note:

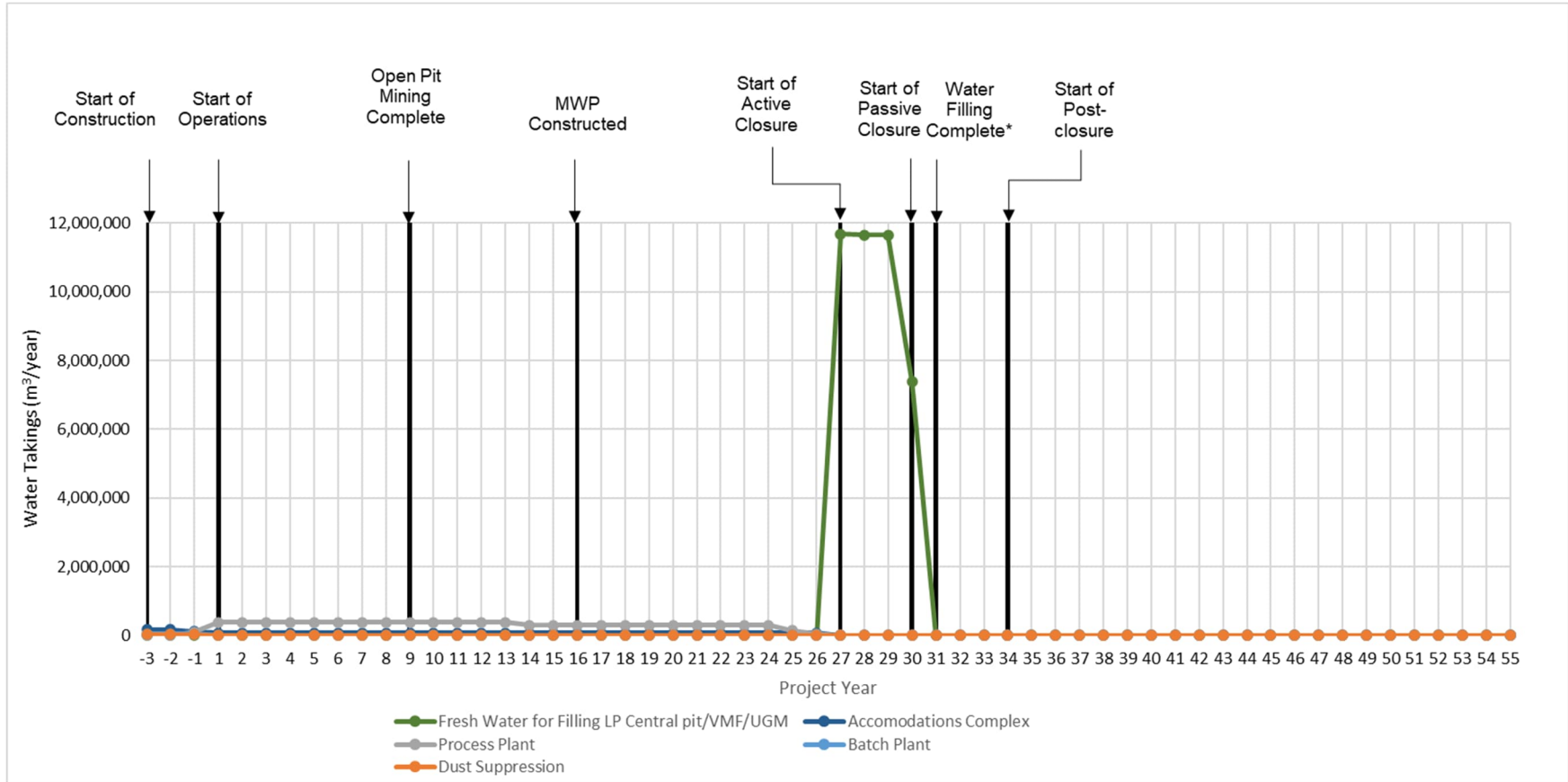
- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 5-5: Annual Site Discharge– Average Climate Years with Climate Change Effects (Scenario 5)**

Note:

- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.



**Figure 5-6: Annual Fresh Water Takings from Chukuni River**

Note:

- "Water Filling" refers to the filling of the LP Central pit, VMF and underground mine with water from the Project site and fresh water from the Chukuni River.

## 6 SUMMARY

A mine site water balance model has been developed for the Great Bear Project to support the Impact Statement. The primary objectives were to estimate the quantity of water taking requirements and discharge to the environment to support the receiver water quality and flow effects assessment, and to quantify runoff from the various modeled land types to support the mine site water quality model.

The full life cycle of the Project was considered: construction; operations and closure phases; and post-closure. The model was developed in GoldSim and evaluated under five climate scenarios including average conditions, 1:100 wet and dry year conditions, a historical climate sequence, and climate change projections. Model inputs were in a daily or monthly format, to capture seasonal variation in the water balance.

The Project site occupies 1,768 ha for the majority of the operations phase, expanding to its ultimate footprint of 1,816 ha upon construction of the mine water pond in Year 16. Throughout all phases and scenarios, inflows to the Project are largely driven by site runoff, accounting for 6.4 Mm<sup>3</sup> per year during the final year of the operations phase (Year 26) under average climate conditions and before evaporative losses from ponded surfaces. Averaged over the year, this is equivalent to approximately 730 m<sup>3</sup>/hr. Groundwater inflows (primarily to the underground mine and LP Central pit) account for the second greatest inflow, reaching a maximum of 1.1 Mm<sup>3</sup> per year (136 m<sup>3</sup>/hr).

Discharge of treated effluent to the Chukuni River increases during the construction phase (Years -3 to -1) from 0.31 to 0.78 Mm<sup>3</sup> per year (35 to 89 m<sup>3</sup>/hr) as the Project site develops. Average annual discharge during the operations phase (Years 1 to 26) will increase from 4.6 to 7.2 Mm<sup>3</sup> per year (530 to 820 m<sup>3</sup>/hr). During extreme 1:100 dry year conditions, effluent discharge may be reduced to 0.06 Mm<sup>3</sup> per year (7 m<sup>3</sup>/hr) and during extreme 1:100 wet year conditions effluent discharge may reach 8.8 Mm<sup>3</sup> per year (1,000 m<sup>3</sup>/hr). During the active closure sub-phase, site reclamation will be carried out and all surface water will be directed to the VMF and LP Central pit to expedite the filling process. During this time operation of the WTP and effluent discharge to the Chukuni River will pause. A passive closure sub-phase was evaluated to simulate site water quality following pit filling where the water quality is not yet suitable for passive discharge to the environment. During this passive closure sub-phase, treatment and discharge to the Chukuni River will resume, discharging up to 4.6 Mm<sup>3</sup> per year (520 m<sup>3</sup>/hr). The reduction in site discharge compared to the operations phase is driven by reduced runoff and groundwater inflows, due to site reclamation activities.

Water taking requirements from the Chukuni River during the construction and operations phases are to address the accommodations complex fresh water demands, dust suppression, batch plant and process plant. The greatest water takings required by the Project are during the active closure sub-phase when the VMF, underground mine and LP Central pit are being actively filled with water from the Chukuni River. Water takings during these approximately four years are approximately 12 Mm<sup>3</sup> to per year (1,330 m<sup>3</sup>/hr). During construction, fresh water demands reach a maximum of 0.16 Mm<sup>3</sup> per year (18 m<sup>3</sup>/hr), during the operations phase, demands reach 0.42 Mm<sup>3</sup> to per year (48 m<sup>3</sup>/hr) during peak mine production.

Once water quality objectives are achieved, post-closure will be initiated. Excess water from the Project site will be allowed to passively discharge to Dixie Creek, with small portions draining to Unnamed Watercourses 8b and 6a. Annual passive discharge under average climate conditions are estimated to stabilize at 4.4 Mm<sup>3</sup> per year (500 m<sup>3</sup>/hr). Under climate change conditions, this may increase to 4.7 Mm<sup>3</sup> per year (540 m<sup>3</sup>/hr).

# 7 REFERENCES

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- WSP. 2025b. Great Bear Project - Detailed Climate Change Dataset. February 2025.
- WSP. 2025c. Great Bear Project – Receiver Water Balance. February 2025.
- WSP. 2025d. Great Bear Project – Hydrology Baseline Report . September 2025.

**Appendix A**  
**Modeled Watershed Land Types**



Figure A-1: TMF Watershed Land Types over Model Duration

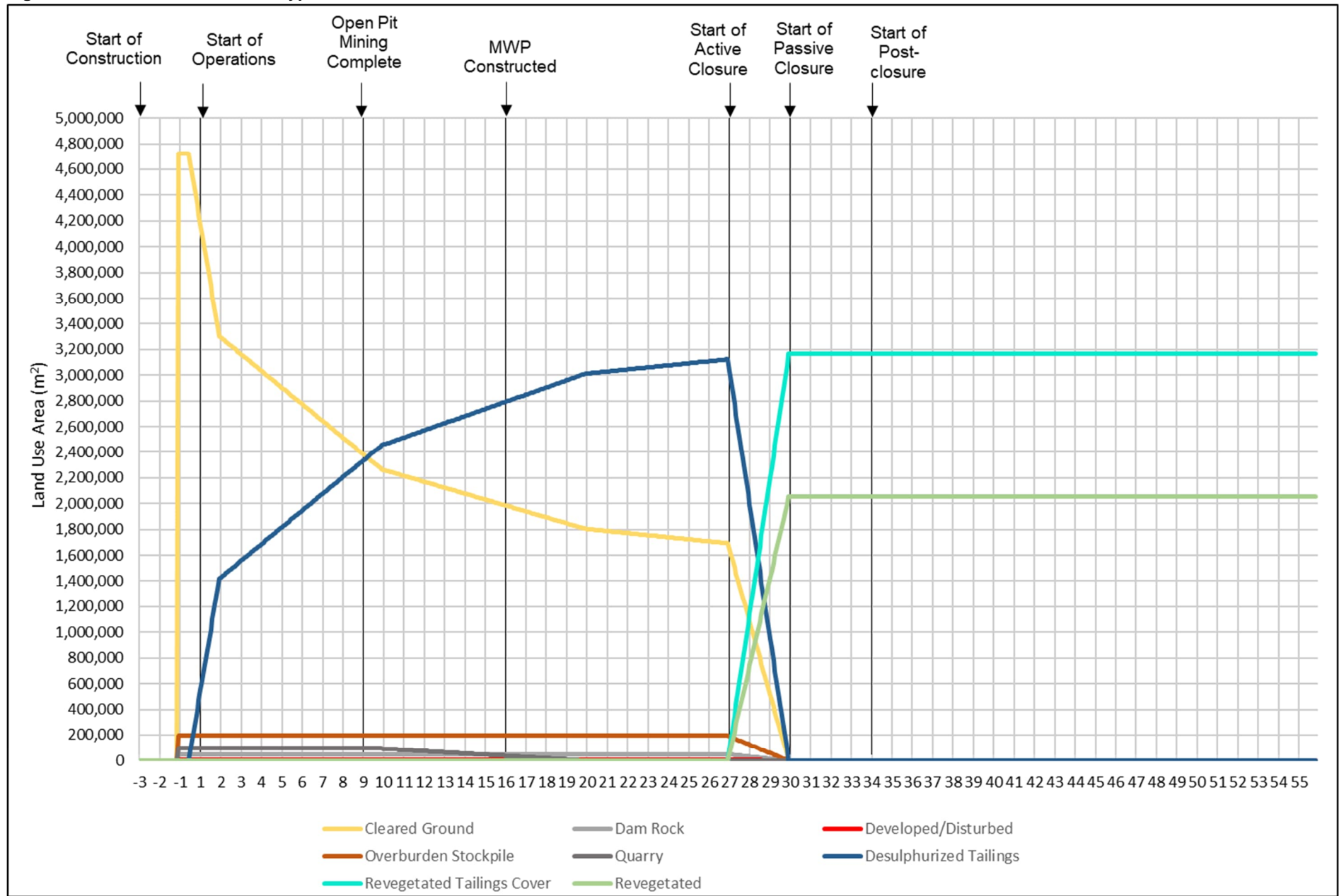


Figure A-2: TMF pond Watershed Land Types over Model Duration

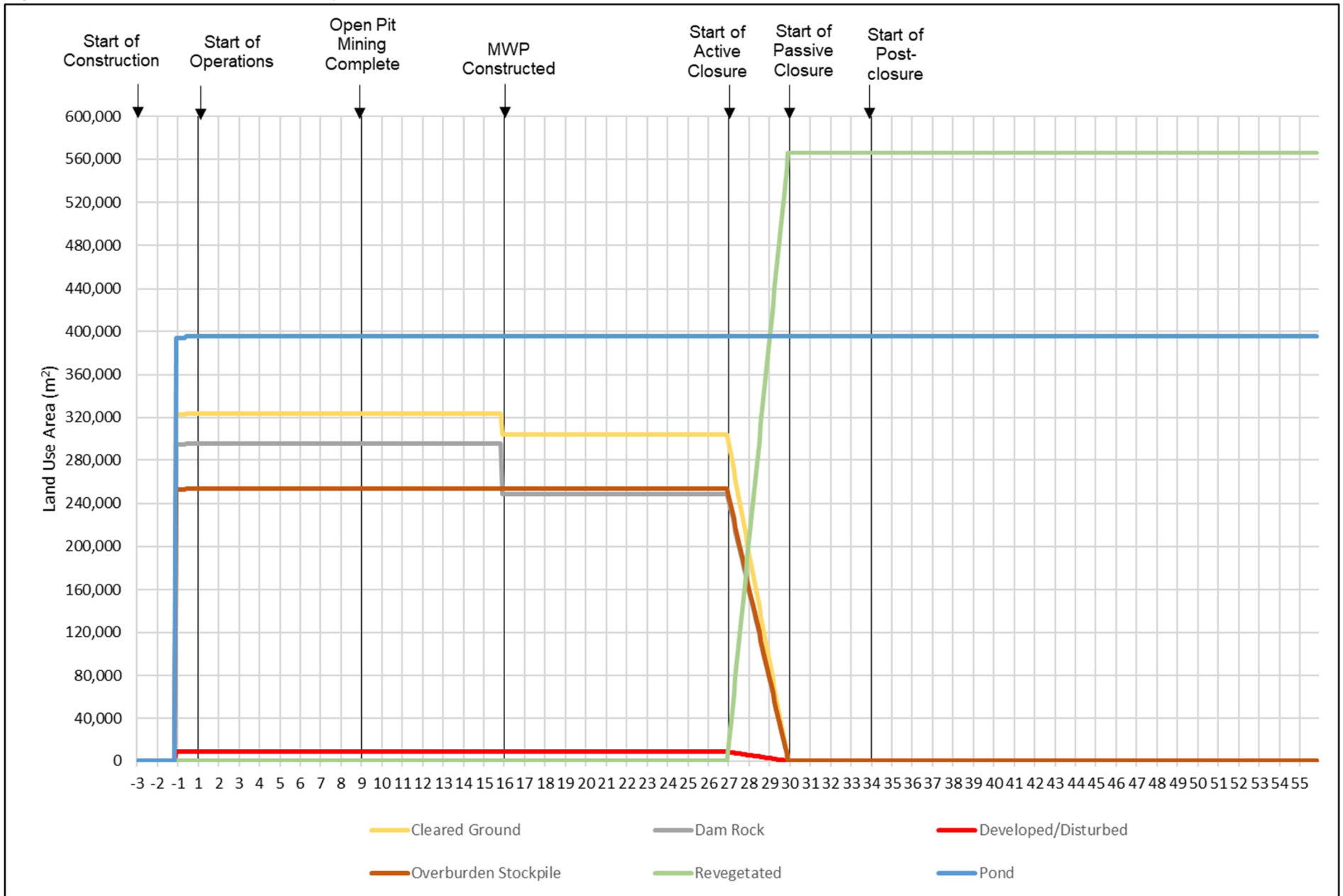


Figure A-3: Watershed 103 Land Types over Model Duration

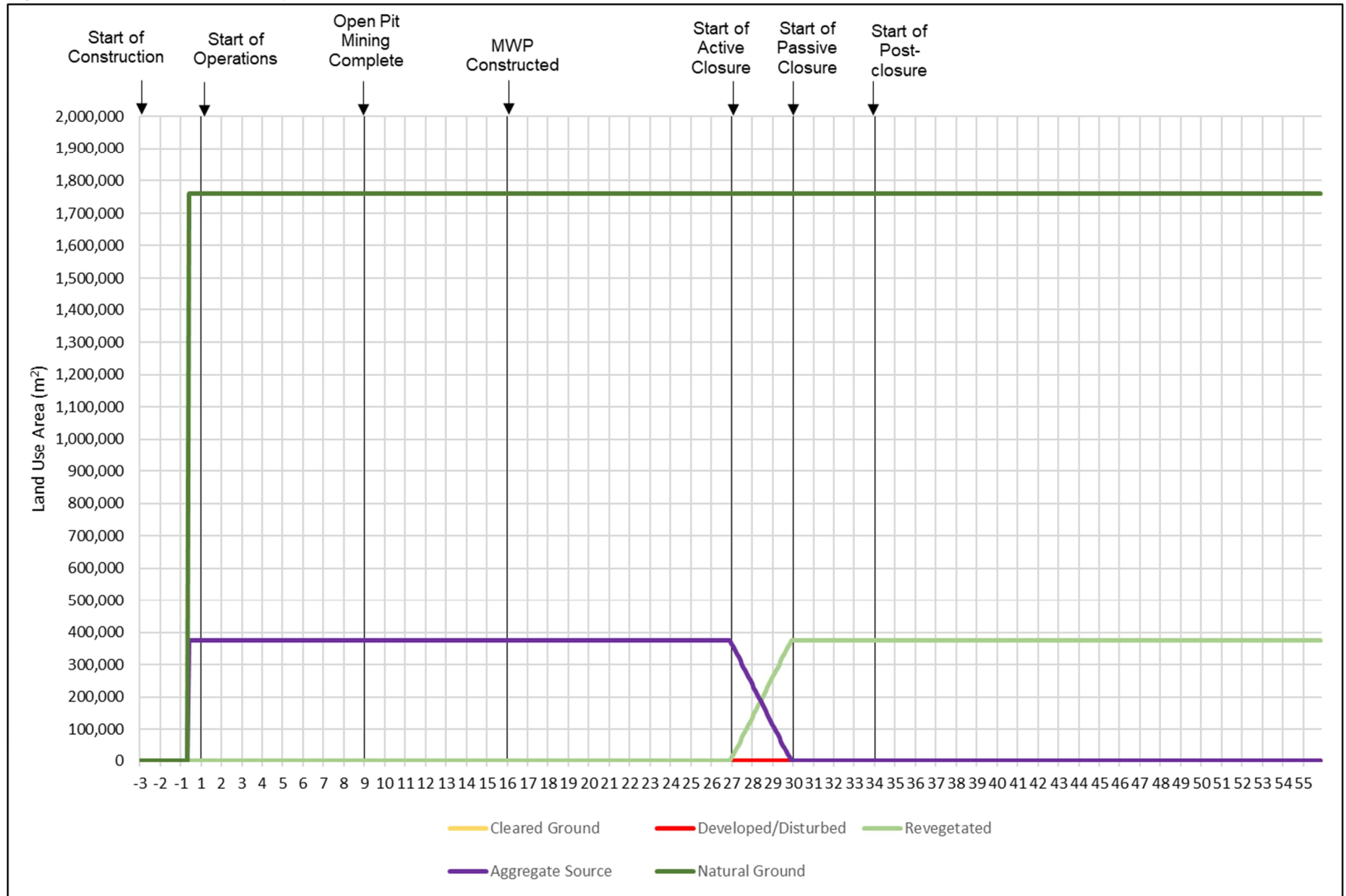


Figure A-4: MRS Watershed Land Types over Model Duration



Figure A-5: CWP Watershed Land Types over Model Duration



Figure A-6: AEX Site Watershed Land Types over Model Duration



Figure A-7: OVB1 Watershed Land Types over Model Duration

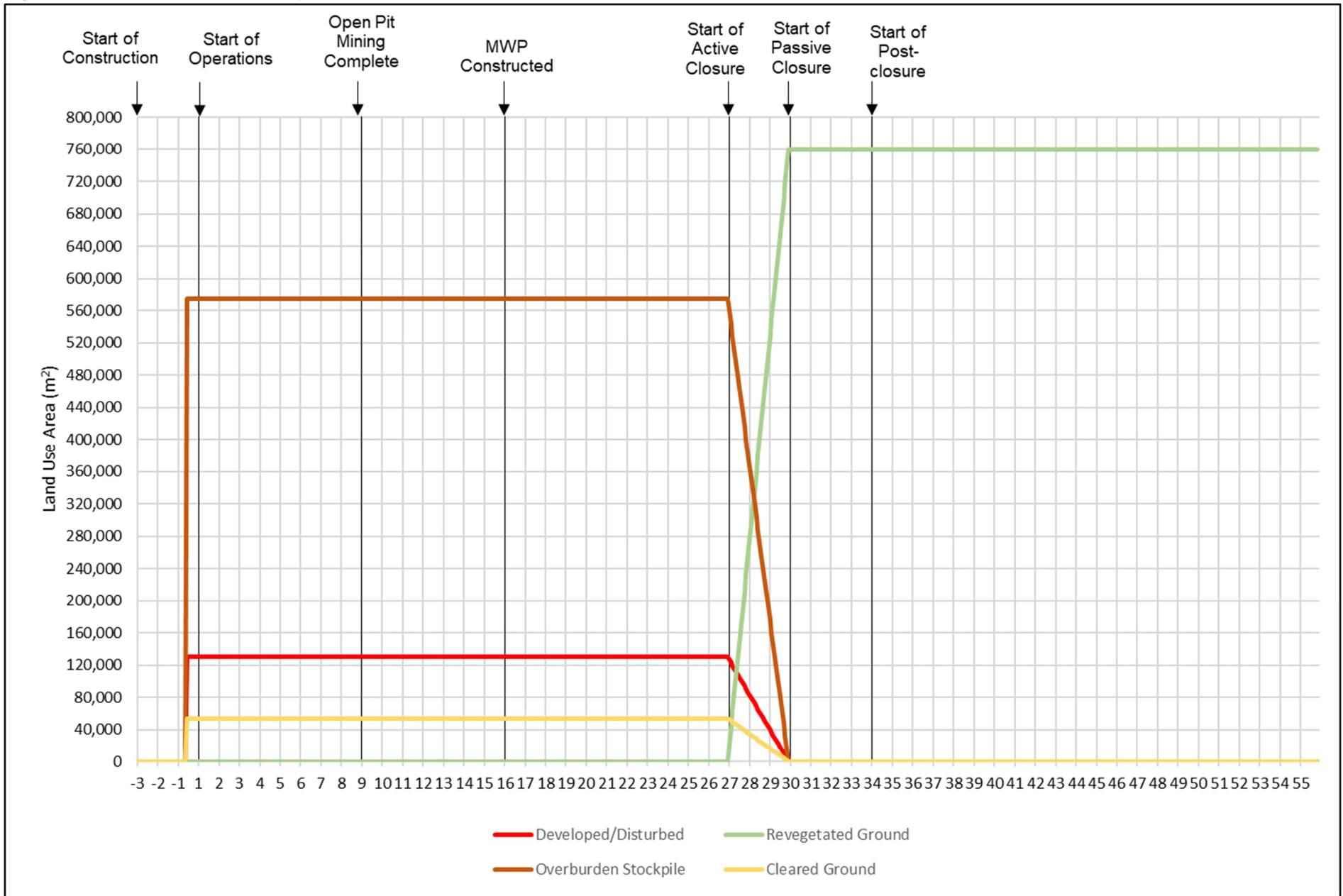


Figure A-8: LP Central Pit Watershed Land Types over Model Duration

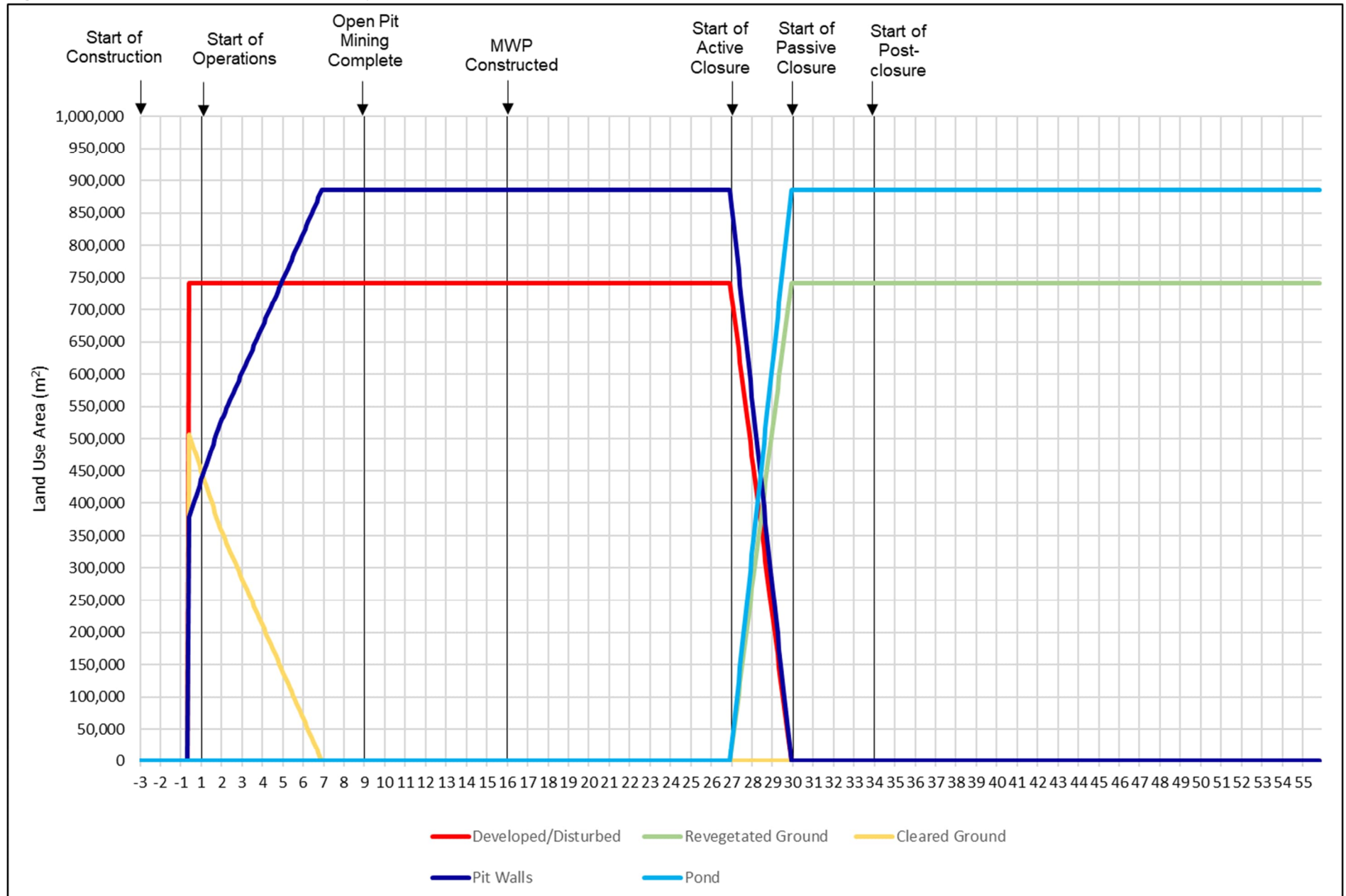


Figure A-9: West VMF Watershed Land Types over Model Duration

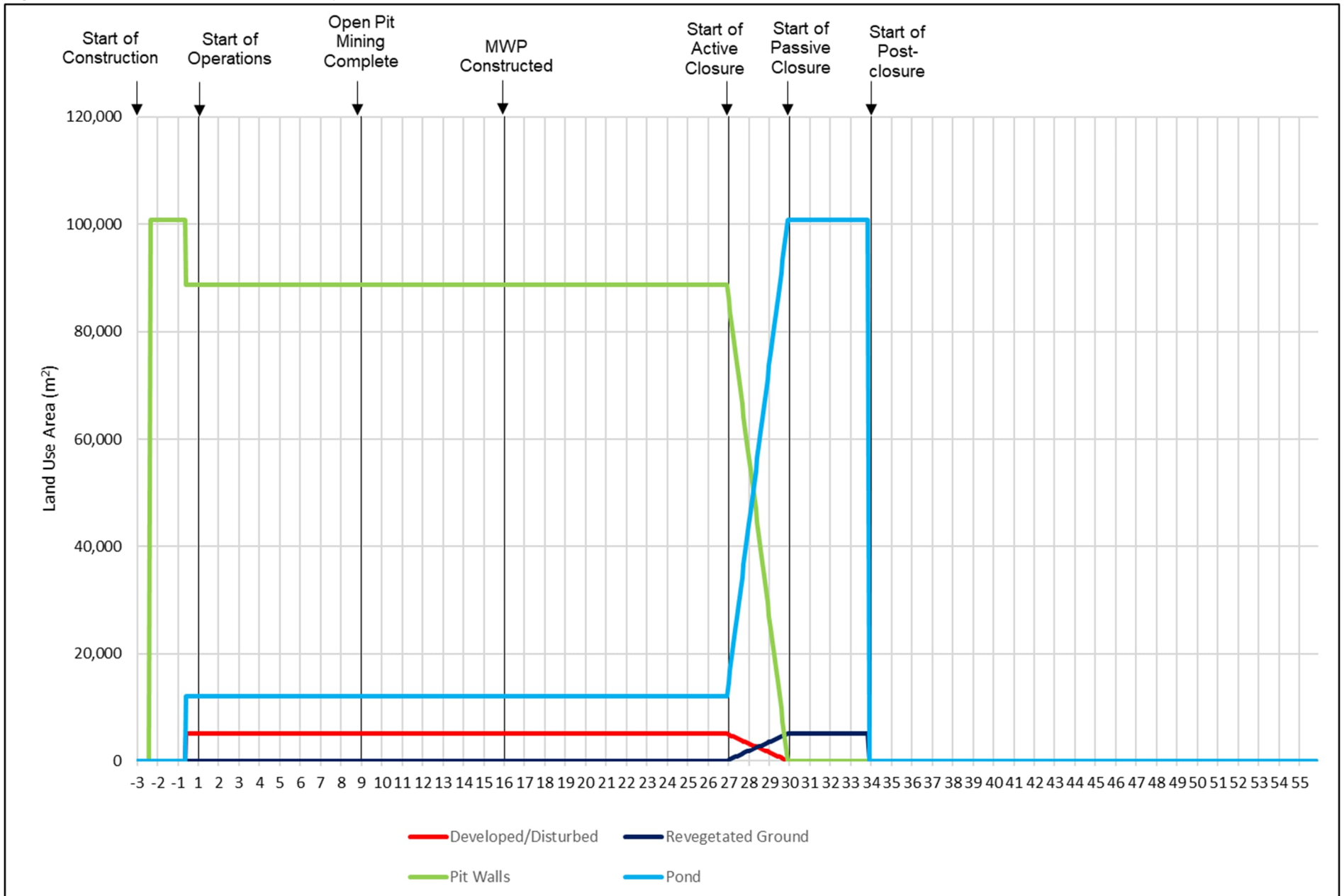


Figure A-10: East VMF Watershed Land Types over Model Duration

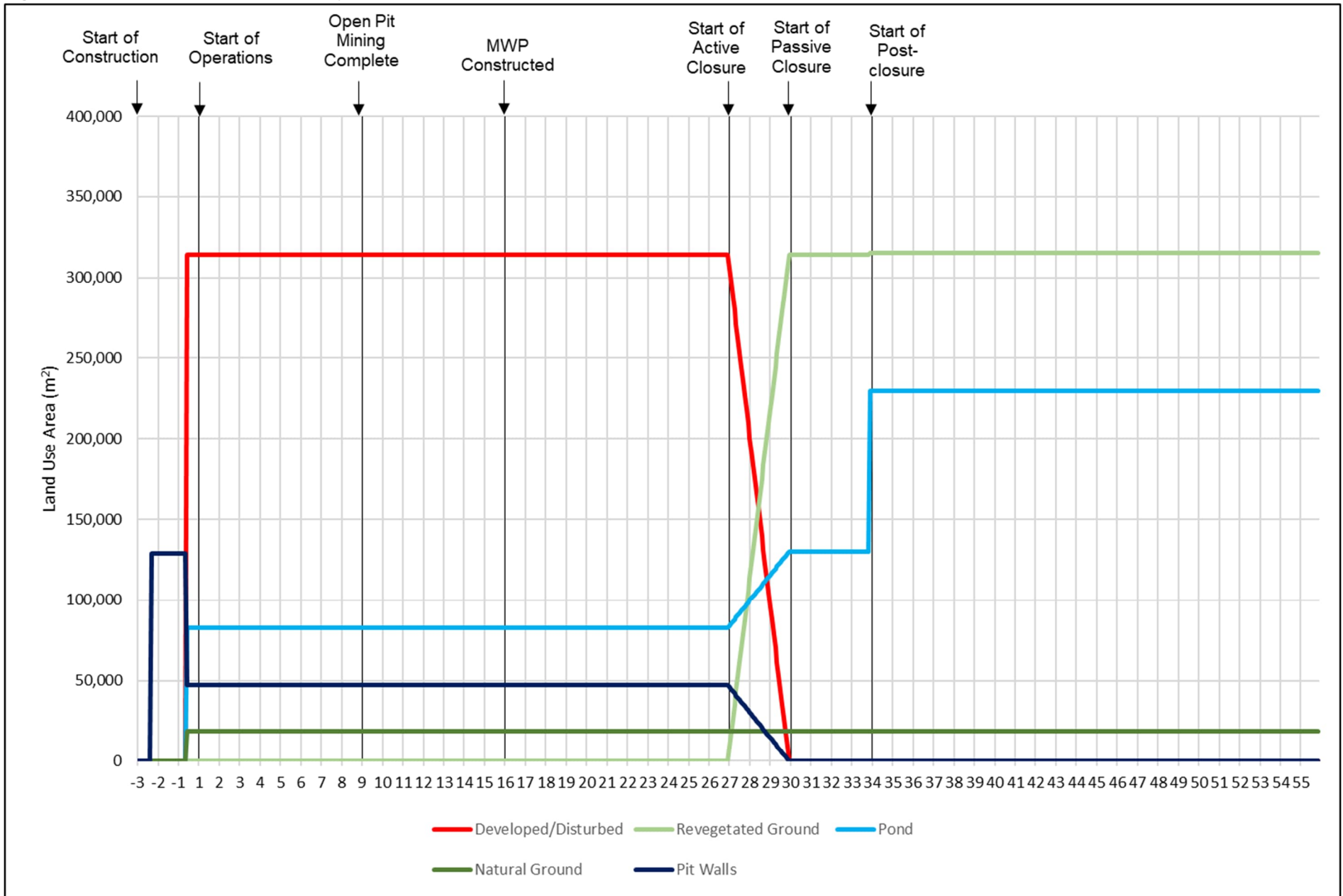


Figure A-11: North Process Plant Watershed Land Types over Model Duration

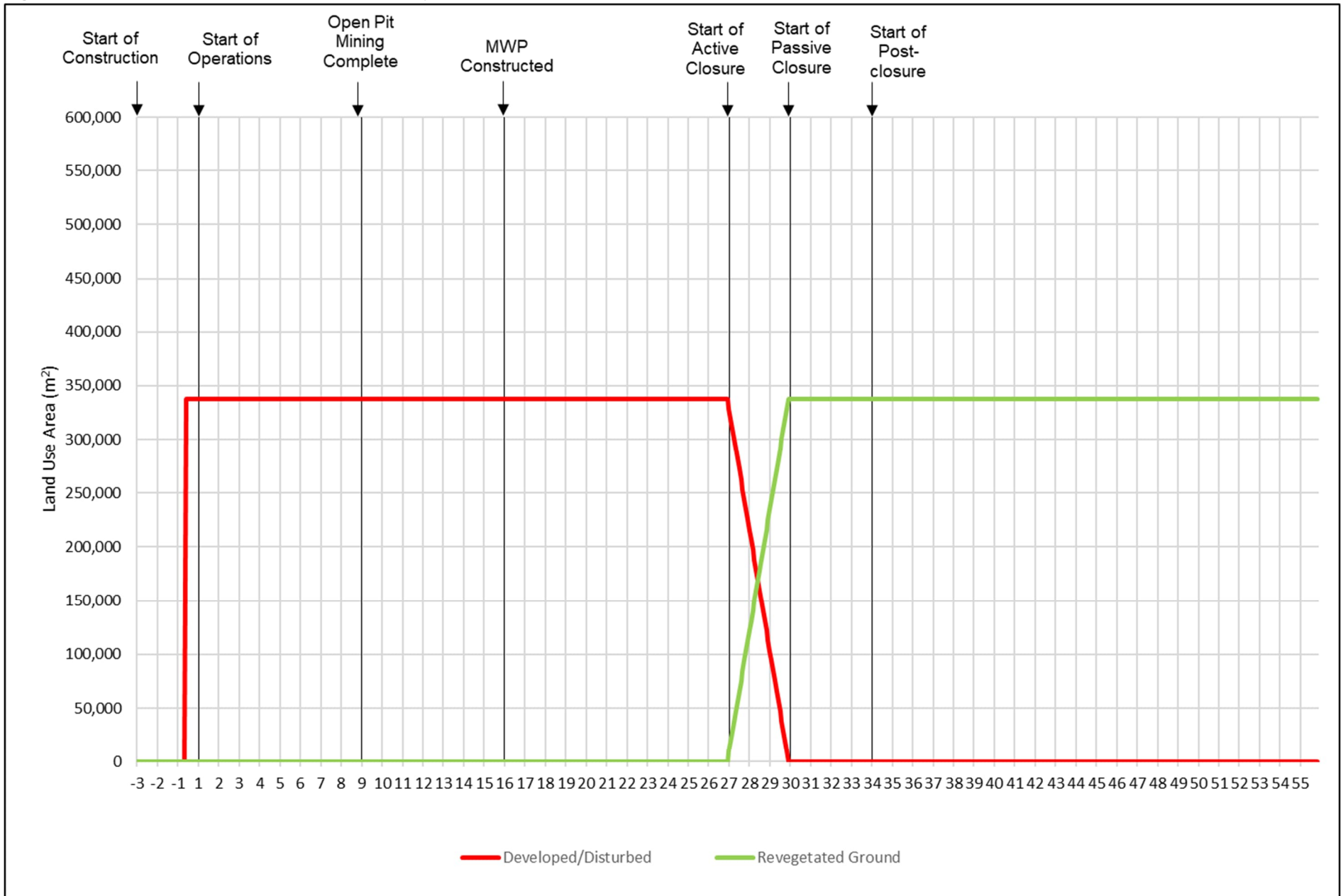
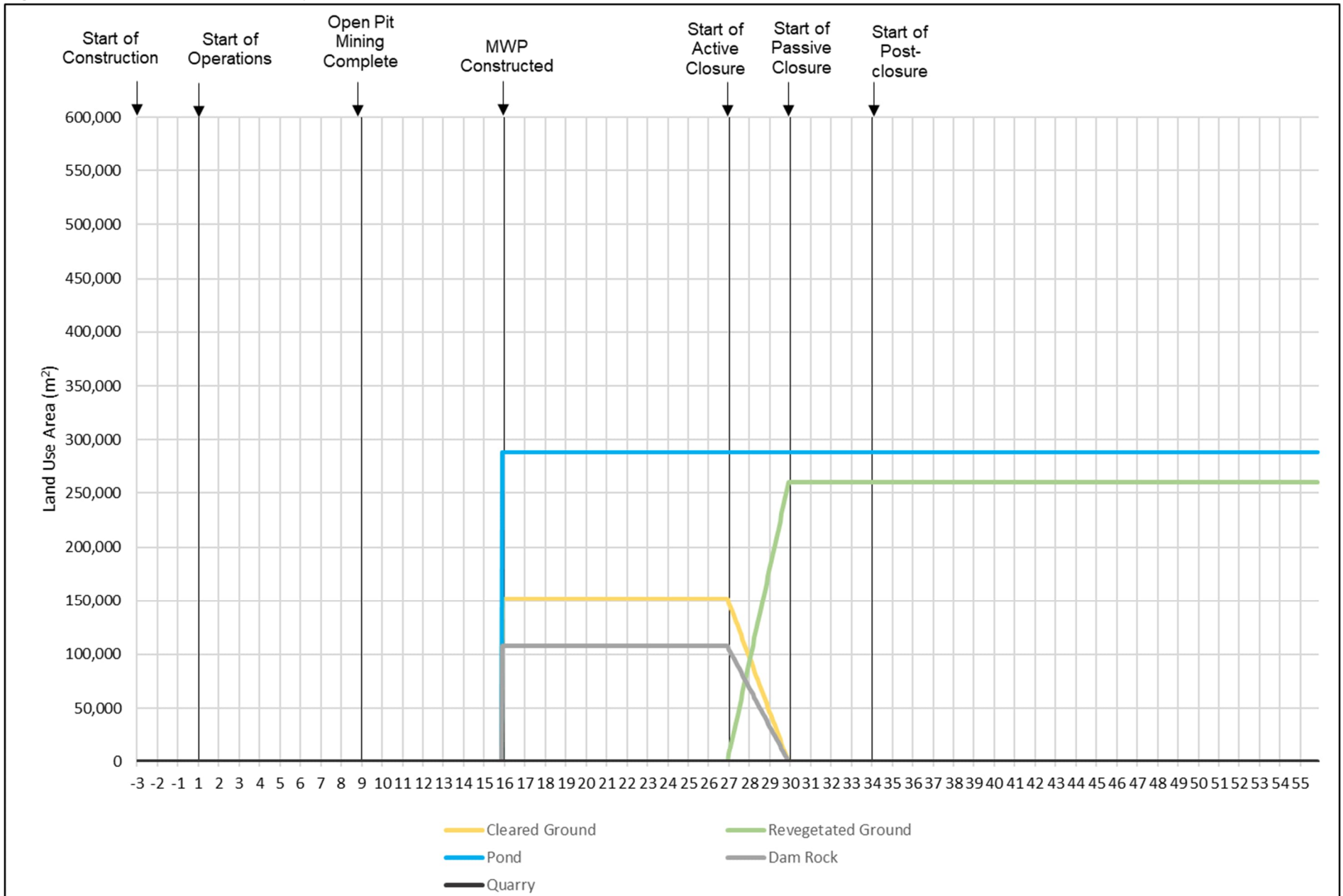


Figure A-12: MWP Watershed Land Types over Model Duration



**Appendix B**  
**Detailed Annual Water Balance**  
**Results**



Table B-1: Average Climate Conditions (Scenario 1) Annual Water Balance Results

Phase	Construction			Operations																								Active Closure			Passive Closure						
	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
<b>Result (Mm3/year)</b>																																					
<b>Inflows</b>																																					
Water in Ore	0.00	0.00	0.03	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Water Takings	0.16	0.16	0.19	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.19	0.09	11.68	11.65	11.65	7.41	0.00	0.00	0.00
Camp Water	0.16	0.16	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Freshwater Takings to Process Plant	0.00	0.00	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplemental Water Takings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Water Takings for LPC Pit/VMF/UGM Filling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.68	11.65	11.65	7.41	0.00	0.00	0.00	
Total Site Runoff	0.19	0.51	3.72	5.75	5.92	5.99	6.05	6.10	6.15	6.16	6.14	6.11	6.10	6.11	6.12	6.13	6.14	6.14	6.39	6.40	6.41	6.41	6.42	6.42	6.43	6.43	6.43	6.44	6.44	6.18	5.58	5.04	4.76	4.76	4.76	4.76	
TMF Runoff (101)	0.00	0.00	1.29	1.47	1.59	1.61	1.64	1.67	1.69	1.72	1.75	1.77	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.90	1.90	1.83	1.69	1.55	1.48	1.48	1.48	1.48		
TMF Pond Runoff (102)	0.00	0.00	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.49	0.47	0.47	0.47	0.47	0.47		
Watershed 103 Runoff (103)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MRS Runoff (104)	0.01	0.17	0.71	1.46	1.49	1.51	1.52	1.52	1.49	1.44	1.38	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.28	1.14	1.00	0.92	0.92	0.92	0.92		
CWP Runoff (105)	0.00	0.04	0.30	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.60	0.51	0.43	0.38	0.38	0.38	0.38		
AEX Runoff (106)	0.17	0.17	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.15	0.12	0.11	0.11	0.11	0.11		
OVB1 Runoff (107)	0.00	0.00	0.13	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.29	0.24	0.20	0.18	0.18	0.18	0.18		
LP Central pit Runoff (108)	0.00	0.00	0.30	0.70	0.73	0.75	0.78	0.80	0.83	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.82	0.79	0.75	0.73	0.73	0.73	0.73		
East/Combined VMF Runoff (109)	0.01	0.07	0.14	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.19	0.17	0.16	0.16	0.16	0.16	0.16		
West VMF Runoff (110)	0.00	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
North Process Plant Runoff (111)	0.00	0.00	0.07	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.11	0.09	0.08	0.08	0.08	0.08		
MWP Runoff (112)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Total Groundwater Inflows	0.15	0.17	0.20	0.29	0.39	0.49	0.59	0.68	0.78	0.88	0.98	1.03	1.03	1.04	1.03	1.03	1.03	1.04	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.03	0.84	0.67	0.52	0.50	0.50	0.50	
AEX Groundwater Inflows	0.15	0.15	0.15	0.13	0.11	0.10	0.08	0.06	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LP Central Pit Groundwater Inflows	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12		
MWP Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TMF Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TMF Pond Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PS1 Groundwater Inflows	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
PS2 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
PS3 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
UGM Groundwater Inflows	0.00	0.00	0.01	0.09	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.80	0.80	0.80	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.85	0.84	0.84	0.75	0.55	0.35	0.19	0.18	0.17	0.17		
West VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
East/Combined VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01		
MRS Ditches Groundwater Inflows	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.07	0.09	0.10	0.10	0.10	0.10		
Recharge	0.00	0.00	0.01	0.11	0.22	0.33	0.44	0.56	0.67	0.72	0.71	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.66	0.56	0.47	0.39	0.39	0.38	0.38		
<b>Total Inflows</b>	<b>0.50</b>	<b>0.83</b>	<b>4.15</b>	<b>6.69</b>	<b>7.06</b>	<b>7.35</b>	<b>7.62</b>	<b>7.88</b>	<b>8.14</b>	<b>8.31</b>	<b>8.36</b>	<b>8.35</b>	<b>8.30</b>	<b>8.32</b>	<b>8.32</b>	<b>8.33</b>	<b>8.24</b>	<b>8.26</b>	<b>8.65</b>	<b>8.66</b>	<b>8.67</b>	<b>8.68</b>	<b>8.68</b>	<b>8.69</b>	<b>8.69</b>	<b>8.70</b>	<b>8.69</b>	<b>8.49</b>	<b>8.36</b>	<b>19.55</b>	<b>18.64</b>	<b>17.82</b>	<b>13.08</b>	<b>5.65</b>	<b>5.65</b>	<b>5.65</b>	
<b>Losses</b>																																					
Total Site Evaporation	0.03	0.03	0.55	1.13																																	



Table B-2: 1:100 Wet Year Climate Conditions (Scenario 2) Annual Water Balance Results

Phase	Construction			Operations																								Active Closure			Passive Closure					
	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
<b>Result (Mm3/year)</b>																																				
<b>Inflows</b>																																				
Water in Ore	0.00	0.00	0.03	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Water Takings	0.16	0.16	0.19	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.19	0.09	11.68	11.65	11.65	5.68	0.00	0.00	0.00
Camp Water	0.16	0.16	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Freshwater Takings to Process Plant	0.00	0.00	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplemental Water Takings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Takings for LPC Pit/VMF/UGM Filling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.68	11.65	11.65	5.68	0.00	0.00	0.00
Total Site Runoff	0.19	0.51	5.12	6.01	5.92	5.99	6.05	6.10	6.15	6.16	6.14	6.11	6.10	6.11	6.12	6.13	6.14	6.14	6.39	6.40	6.41	6.41	6.42	6.42	6.43	6.43	6.43	6.44	10.25	6.64	5.58	5.04	4.76	4.76	7.64	5.11
TMF Runoff (101)	0.00	0.00	1.73	1.54	1.59	1.61	1.64	1.67	1.69	1.72	1.75	1.77	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.90	2.94	1.97	1.69	1.55	1.48	1.48	2.29	1.58	
TMF Pond Runoff (102)	0.00	0.00	0.71	0.56	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.80	0.54	0.49	0.47	0.47	0.47	0.72	0.50	
Watershed 103 Runoff (103)	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MRS Runoff (104)	0.01	0.17	0.98	1.53	1.49	1.51	1.52	1.52	1.52	1.49	1.44	1.38	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	2.09	1.38	1.14	1.00	0.92	0.92	1.43	0.99	
CWP Runoff (105)	0.00	0.04	0.42	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	1.00	0.64	0.51	0.43	0.38	0.38	0.59	0.41	
AEX Runoff (106)	0.17	0.17	0.24	0.20	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.30	0.19	0.15	0.12	0.11	0.11	0.17	0.12	
OV1 Runoff (107)	0.00	0.00	0.18	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.48	0.31	0.24	0.20	0.18	0.18	0.27	0.19	
LP Central pit Runoff (108)	0.00	0.00	0.42	0.73	0.73	0.75	0.78	0.80	0.83	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.30	0.88	0.79	0.75	0.73	0.73	1.14	0.78	
East/Combined VMF Runoff (109)	0.01	0.07	0.19	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.35	0.23	0.19	0.17	0.16	0.16	0.25	0.17	
West VMF Runoff (110)	0.00	0.06	0.08	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.09	0.07	0.00	0.00	0.00	0.00	0.00	0.00	
North Process Plant Runoff (111)	0.00	0.00	0.09	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.23	0.15	0.11	0.09	0.08	0.08	0.12	0.08	
MWP Runoff (112)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.39	0.27	0.25	0.25	0.25	0.25	0.39	0.27	
Total Groundwater Inflows	0.15	0.17	0.20	0.29	0.39	0.49	0.59	0.68	0.78	0.88	0.98	1.03	1.03	1.04	1.03	1.03	1.03	1.04	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.03	0.84	0.67	0.52	0.50	0.50	0.50
AEX Groundwater Inflows	0.15	0.15	0.15	0.13	0.11	0.10	0.08	0.06	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LP Central Pit Groundwater Inflows	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.12
MWP Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Pond Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PS1 Groundwater Inflows	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
PS2 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PS3 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
UGM Groundwater Inflows	0.00	0.00	0.01	0.09	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.80	0.80	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.75	0.55	0.35	0.19	0.18	0.17	0.17	0.17
West VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
East/Combined VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01
MRS Ditches Groundwater Inflows	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Recharge	0.00	0.00	0.01	0.11	0.22	0.33	0.44	0.56	0.67	0.72	0.71	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.66	0.56	0.47	0.39	0.39	0.38	0.38	
<b>Total Inflows</b>	<b>0.50</b>	<b>0.83</b>	<b>5.55</b>	<b>6.95</b>	<b>7.06</b>	<b>7.35</b>	<b>7.62</b>	<b>7.88</b>	<b>8.14</b>	<b>8.31</b>	<b>8.36</b>	<b>8.35</b>	<b>8.30</b>	<b>8.32</b>	<b>8.32</b>	<b>8.33</b>	<b>8.24</b>	<b>8.26</b>	<b>8.65</b>	<b>8.66</b>	<b>8.67</b>	<b>8.68</b>	<b>8.68</b>	<b>8.69</b>	<b>8.69</b>	<b>8.70</b>	<b>8.69</b>	<b>8.49</b>	<b>12.17</b>	<b>20.01</b>	<b>18.64</b>	<b>17.82</b>	<b>11.35</b>	<b>5.65</b>	<b>8.53</b>	<b>5.99</b>
<b>Losses</b>																																				
Total Site Evaporation	0.03	0.03	0.55																																	



Table B-3: 1:100 Dry Year Climate Conditions (Scenario 3) Annual Water Balance Results

Phase	Construction			Operations																								Active Closure			Passive Closure					
	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
<b>Result (Mm3/year)</b>																																				
<b>Inflows</b>																																				
Water in Ore	0.00	0.00	0.03	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Water Takings	0.16	0.16	0.19	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.19	0.09	11.68	11.65	11.65	9.17	0.00	0.00	0.00
Camp Water	0.16	0.16	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Freshwater Takings to Process Plant	0.00	0.00	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplemental Water Takings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Water Takings for LPC Pit/VMF/UGM Filling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.68	11.65	11.65	9.17	0.00	0.00	
Total Site Runoff	0.19	0.51	2.47	1.49	5.59	5.99	6.05	6.10	6.15	6.16	6.14	6.11	6.10	6.11	6.12	6.13	6.14	6.39	6.40	6.41	6.41	6.42	6.42	6.43	6.43	6.43	6.44	6.44	6.18	5.58	5.04	1.55	4.51	4.76	4.76	
TMF Runoff (101)	0.00	0.00	0.88	0.38	1.50	1.61	1.64	1.67	1.69	1.72	1.75	1.77	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.90	1.90	1.83	1.69	1.55	0.35	1.40	1.48	1.48	
TMF Pond Runoff (102)	0.00	0.00	0.36	0.21	0.51	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.49	0.47	0.20	0.44	0.47	0.47	
Watershed 103 Runoff (103)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MRS Runoff (104)	0.01	0.17	0.46	0.33	1.40	1.51	1.52	1.52	1.52	1.49	1.44	1.38	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.28	1.14	1.00	0.22	0.87	0.92	0.92	
CWP Runoff (105)	0.00	0.04	0.19	0.16	0.61	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.60	0.51	0.43	0.11	0.36	0.38	0.38	
AEX Runoff (106)	0.17	0.17	0.12	0.06	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.15	0.12	0.04	0.10	0.11	0.11	
OV1 Runoff (107)	0.00	0.00	0.08	0.07	0.29	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	
LP Central pit Runoff (108)	0.00	0.00	0.19	0.16	0.69	0.75	0.78	0.80	0.83	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.82	0.79	0.75	0.37	0.70	0.73	0.73	
East/Combined VMF Runoff (109)	0.01	0.07	0.09	0.07	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.21	0.19	0.17	0.07	0.15	0.16	0.16	
West VMF Runoff (110)	0.00	0.06	0.04	0.02	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
North Process Plant Runoff (111)	0.00	0.00	0.04	0.03	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
MWP Runoff (112)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Total Groundwater Inflows	0.15	0.17	0.20	0.29	0.39	0.49	0.59	0.68	0.78	0.88	0.98	1.03	1.03	1.04	1.03	1.03	1.04	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.03	0.84	0.67	0.52	0.50	0.50	
AEX Groundwater Inflows	0.15	0.15	0.15	0.13	0.11	0.10	0.08	0.06	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LP Central Pit Groundwater Inflows	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12	
MWP Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TMF Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TMF Pond Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PS1 Groundwater Inflows	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
PS2 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
PS3 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
UGM Groundwater Inflows	0.00	0.00	0.01	0.09	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.80	0.80	0.79	0.79	0.79	0.79	0.84	0.84	0.85	0.84	0.84	0.85	0.84	0.84	0.85	0.84	0.84	0.75	0.55	0.35	0.19	0.18	0.17	0.17	
West VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
East/Combined VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01		
MRS Ditches Groundwater Inflows	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Recharge	0.00	0.00	0.01	0.11	0.22	0.33	0.44	0.56	0.67	0.72	0.71	0.67	0.64	0.64	0.64	0.64	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.66	0.56	0.47	0.39	0.39	0.38	
<b>Total Inflows</b>	<b>0.50</b>	<b>0.83</b>	<b>2.90</b>	<b>2.43</b>	<b>6.74</b>	<b>7.35</b>	<b>7.62</b>	<b>7.88</b>	<b>8.14</b>	<b>8.31</b>	<b>8.36</b>	<b>8.35</b>	<b>8.30</b>	<b>8.32</b>	<b>8.32</b>	<b>8.33</b>	<b>8.24</b>	<b>8.26</b>	<b>8.65</b>	<b>8.66</b>	<b>8.67</b>	<b>8.68</b>	<b>8.68</b>	<b>8.69</b>	<b>8.69</b>	<b>8.70</b>	<b>8.69</b>	<b>8.49</b>	<b>8.36</b>	<b>19.55</b>	<b>18.64</b>	<b>17.82</b>	<b>11.63</b>	<b>5.40</b>	<b>5.65</b>	
<b>Losses</b>																																				
Total Site Evaporation	0.03	0.03	0.55	1.05	1.13	1.13	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	0.84	0.84	1.01	1.02	1.02	1.02</														



Table B-4: Historical Sequence (Scenario 4) Annual Water Balance Results

Phase	Construction			Operations																								Active Closure			Passive Closure					
	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
<b>Result (Mm3/year)</b>																																				
<b>Inflows</b>																																				
Water in Ore	0.00	0.00	0.03	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Water Takings	0.16	0.16	0.19	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.19	0.09	11.68	11.65	11.65	4.18	0.00	0.00	0.00
Camp Water	0.16	0.16	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Freshwater Takings to Process Plant	0.00	0.00	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	
Supplemental Water Takings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Water Takings for LPC Pit/VMF/UGM Filling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.68	11.65	11.65	4.18	0.00	0.00	
Total Site Runoff	0.20	0.40	4.19	6.20	5.53	4.08	5.37	6.43	6.91	6.54	6.70	5.81	4.98	6.66	5.64	7.54	5.99	6.40	8.38	6.26	6.57	6.49	7.62	7.48	7.31	9.32	7.32	8.78	9.93	7.66	7.17	4.68	4.35	4.71	5.18	3.84
TMF Runoff (101)	0.00	0.00	1.41	1.55	1.47	1.10	1.44	1.72	1.89	1.79	1.88	1.66	1.47	1.94	1.67	2.22	1.79	1.89	2.33	1.83	1.91	1.87	2.18	2.15	2.13	2.64	2.13	2.52	2.79	2.25	2.13	1.44	1.33	1.42	1.59	1.17
TMF Pond Runoff (102)	0.00	0.00	0.59	0.58	0.50	0.37	0.48	0.56	0.61	0.57	0.59	0.51	0.44	0.58	0.49	0.65	0.52	0.56	0.67	0.50	0.53	0.52	0.61	0.60	0.58	0.73	0.58	0.69	0.77	0.62	0.62	0.44	0.43	0.46	0.51	0.37
Watershed 103 Runoff (103)	0.00	0.00	0.02	0.09	0.00	0.00	0.02	0.06	0.00	0.09	0.04	0.06	0.00	0.08	0.00	0.10	0.00	0.06	0.23	0.00	0.02	0.07	0.10	0.11	0.09	0.30	0.09	0.22	0.39	0.11	0.13	0.01	0.01	0.09	0.02	0.03
MRS Runoff (104)	0.01	0.13	0.82	1.55	1.39	1.03	1.33	1.58	1.71	1.55	1.56	1.28	1.09	1.45	1.25	1.64	1.31	1.39	1.72	1.32	1.38	1.35	1.58	1.55	1.52	1.89	1.51	1.78	1.98	1.57	1.43	0.91	0.85	0.87	1.00	0.75
CWP Runoff (105)	0.00	0.03	0.35	0.68	0.60	0.44	0.57	0.67	0.72	0.67	0.70	0.61	0.52	0.69	0.59	0.78	0.62	0.66	0.82	0.63	0.65	0.64	0.75	0.73	0.72	0.90	0.72	0.85	0.95	0.73	0.64	0.39	0.35	0.37	0.41	0.31
AEX Runoff (106)	0.18	0.14	0.20	0.21	0.18	0.13	0.17	0.20	0.22	0.20	0.21	0.18	0.16	0.21	0.18	0.23	0.19	0.20	0.25	0.19	0.20	0.19	0.23	0.22	0.22	0.27	0.22	0.26	0.29	0.22	0.19	0.11	0.10	0.11	0.12	0.09
OVB1 Runoff (107)	0.00	0.00	0.15	0.33	0.29	0.21	0.27	0.32	0.35	0.32	0.33	0.29	0.25	0.33	0.28	0.37	0.30	0.32	0.39	0.30	0.32	0.31	0.36	0.35	0.35	0.43	0.34	0.41	0.45	0.35	0.31	0.18	0.16	0.17	0.19	0.14
LP Central pit Runoff (108)	0.00	0.00	0.35	0.75	0.68	0.51	0.70	0.84	0.93	0.89	0.92	0.81	0.69	0.91	0.77	1.01	0.82	0.87	1.09	0.81	0.86	0.85	0.99	0.97	0.94	1.19	0.95	1.13	1.27	1.00	1.00	0.71	0.68	0.74	0.80	0.59
East/Combined VMF Runoff (109)	0.01	0.06	0.16	0.24	0.21	0.15	0.20	0.23	0.25	0.24	0.24	0.21	0.18	0.24	0.21	0.27	0.22	0.23	0.29	0.22	0.23	0.23	0.26	0.26	0.25	0.32	0.25	0.30	0.34	0.26	0.24	0.16	0.15	0.16	0.17	0.13
West VMF Runoff (110)	0.01	0.05	0.07	0.07	0.06	0.04	0.06	0.06	0.07	0.07	0.07	0.06	0.05	0.07	0.06	0.07	0.06	0.06	0.08	0.06	0.06	0.06	0.07	0.07	0.07	0.09	0.07	0.08	0.09	0.07	0.00	0.00	0.00	0.00	0.00	
North Process Plant Runoff (111)	0.00	0.00	0.08	0.16	0.14	0.10	0.13	0.16	0.17	0.16	0.16	0.14	0.12	0.16	0.14	0.18	0.15	0.16	0.19	0.15	0.15	0.15	0.18	0.17	0.17	0.21	0.17	0.20	0.22	0.17	0.14	0.08	0.07	0.07	0.08	0.06
MWP Runoff (112)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.25	0.26	0.26	0.30	0.30	0.29	0.36	0.29	0.35	0.39	0.31	0.33	0.24	0.24	0.26	0.28	0.20	
Total Groundwater Inflows	0.15	0.17	0.20	0.29	0.39	0.49	0.59	0.68	0.78	0.88	0.98	1.03	1.03	1.04	1.03	1.03	1.04	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.03	0.84	0.67	0.52	0.50	0.50	0.50	
AEX Groundwater Inflows	0.15	0.15	0.15	0.13	0.11	0.10	0.08	0.06	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LP Central Pit Groundwater Inflows	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.12
MWP Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Pond Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PS1 Groundwater Inflows	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
PS2 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PS3 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
UGM Groundwater Inflows	0.00	0.00	0.01	0.09	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.80	0.80	0.80	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.75	0.55	0.35	0.19	0.18	0.17	0.17
West VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East/Combined VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.01
MRS Ditches Groundwater Inflows	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.07	0.09	0.10	0.10	0.10	0.10
Recharge	0.00	0.00	0.01	0.11	0.22	0.33	0.44	0.56	0.67	0.72	0.71	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.66	0.56	0.47	0.39	0.39	0.38	0.38	0.38
<b>Total Inflows</b>	<b>0.51</b>	<b>0.72</b>	<b>4.62</b>	<b>7.13</b>	<b>6.67</b>	<b>5.44</b>	<b>6.93</b>	<b>8.21</b>	<b>8.90</b>	<b>8.68</b>	<b>8.93</b>	<b>8.05</b>	<b>7.18</b>	<b>8.87</b>	<b>7.84</b>	<b>9.74</b>	<b>8.10</b>	<b>8.52</b>	<b>10.65</b>	<b>8.52</b>	<b>8.83</b>	<b>8.76</b>	<b>9.88</b>	<b>9.74</b>	<b>9.58</b>	<b>11.58</b>	<b>9.58</b>	<b>10.84</b>	<b>11.85</b>	<b>21.03</b>	<b>20.23</b>	<b>17.47</b>	<b>9.44</b>	<b>5.60</b>	<b>6.07</b>	<b>4.72</b>



Table B-5: Average Climate Conditions with Climate Change in Closure and Post-closure (Scenario 5) Annual Water Balance Results

Phase	Construction			Operations																								Active Closure			Passive Closure						
	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
<b>Result (Mm3/year)</b>																																					
<b>Inflows</b>																																					
Water in Ore	0.00	0.00	0.03	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total Water Takings	0.16	0.16	0.19	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.19	0.09	11.68	11.65	11.65	6.29	0.00	0.00	0.00	
Camp Water	0.16	0.16	0.11	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
Freshwater Takings to Process Plant	0.00	0.00	0.09	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Supplemental Water Takings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Water Takings for LPC Pit/VMF/UGM Filling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.68	11.65	11.65	6.29	0.00	0.00	0.00	
Total Site Runoff	0.19	0.51	3.72	5.75	5.92	5.99	6.05	6.10	6.15	6.16	6.14	6.11	6.10	6.12	6.13	6.14	6.14	6.39	6.40	6.41	6.41	6.42	6.42	6.43	6.43	6.43	6.44	6.44	6.99	6.06	5.48	5.18	5.18	5.18	5.18	5.18	
TMF Runoff (101)	0.00	0.00	1.29	1.47	1.59	1.61	1.64	1.67	1.69	1.72	1.75	1.77	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.88	1.89	1.89	1.89	1.90	1.90	2.08	1.84	1.69	1.61	1.61	1.61	1.61	1.61	
TMF Pond Runoff (102)	0.00	0.00	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.57	0.53	0.51	0.50	0.50	0.50	0.50	0.50	
Watershed 103 Runoff (103)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MRS Runoff (104)	0.01	0.17	0.71	1.46	1.49	1.51	1.52	1.52	1.52	1.49	1.44	1.38	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.46	1.24	1.09	1.01	1.01	1.01	1.01		
CWP Runoff (105)	0.00	0.04	0.30	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.68	0.56	0.47	0.42	0.42	0.42	0.42		
AEX Runoff (106)	0.17	0.17	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.17	0.14	0.12	0.12	0.12	0.12	0.12	
OV1 Runoff (107)	0.00	0.00	0.13	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.33	0.27	0.22	0.20	0.20	0.20	0.20		
LP Central pit Runoff (108)	0.00	0.00	0.30	0.70	0.73	0.75	0.78	0.80	0.83	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.92	0.85	0.81	0.79	0.79	0.79	0.79	0.79	0.79	
East/Combined VMF Runoff (109)	0.01	0.07	0.14	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.24	0.21	0.18	0.17	0.17	0.17	0.17	0.17	0.17	
West VMF Runoff (110)	0.00	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
North Process Plant Runoff (111)	0.00	0.00	0.07	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.16	0.13	0.10	0.09	0.09	0.09	0.09	0.09	
MWP Runoff (112)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
Total Groundwater Inflows	0.15	0.17	0.20	0.29	0.39	0.49	0.59	0.68	0.78	0.88	0.98	1.03	1.03	1.04	1.03	1.03	1.03	1.04	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.11	1.11	1.11	1.03	0.84	0.67	0.52	0.50	0.50	0.50	0.50
AEX Groundwater Inflows	0.15	0.15	0.15	0.13	0.11	0.10	0.08	0.06	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LP Central Pit Groundwater Inflows	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.12	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12
MWP Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TMF Pond Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PS1 Groundwater Inflows	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
PS2 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PS3 Groundwater Inflows	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
UGM Groundwater Inflows	0.00	0.00	0.01	0.09	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.80	0.80	0.79	0.79	0.79	0.79	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.85	0.84	0.84	0.84	0.75	0.55	0.35	0.19	0.18	0.17	0.17	0.17	0.17
West VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
East/Combined VMF Groundwater Inflows	0.00	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	
MRS Ditches Groundwater Inflows	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Recharge	0.00	0.00	0.01	0.11	0.22	0.33	0.44	0.56	0.67	0.72	0.71	0.67	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.66	0.56	0.47	0.39	0.39	0.38	0.38	0.38	
<b>Total Inflows</b>	<b>0.50</b>	<b>0.83</b>	<b>4.15</b>	<b>6.69</b>	<b>7.06</b>	<b>7.35</b>	<b>7.62</b>	<b>7.88</b>	<b>8.14</b>	<b>8.31</b>	<b>8.36</b>	<b>8.35</b>	<b>8.30</b>	<b>8.32</b>	<b>8.32</b>	<b>8.33</b>	<b>8.24</b>	<b>8.26</b>	<b>8.65</b>	<b>8.66</b>	<b>8.67</b>	<b>8.68</b>	<b>8.68</b>	<b>8.69</b>	<b>8.69</b>	<b>8.70</b>	<b>8.69</b>										



# **Appendix C**

## **Monthly Discharge Plots**



Figure C-1: Monthly TWP Discharge – Average Climate Conditions (Scenario 1)

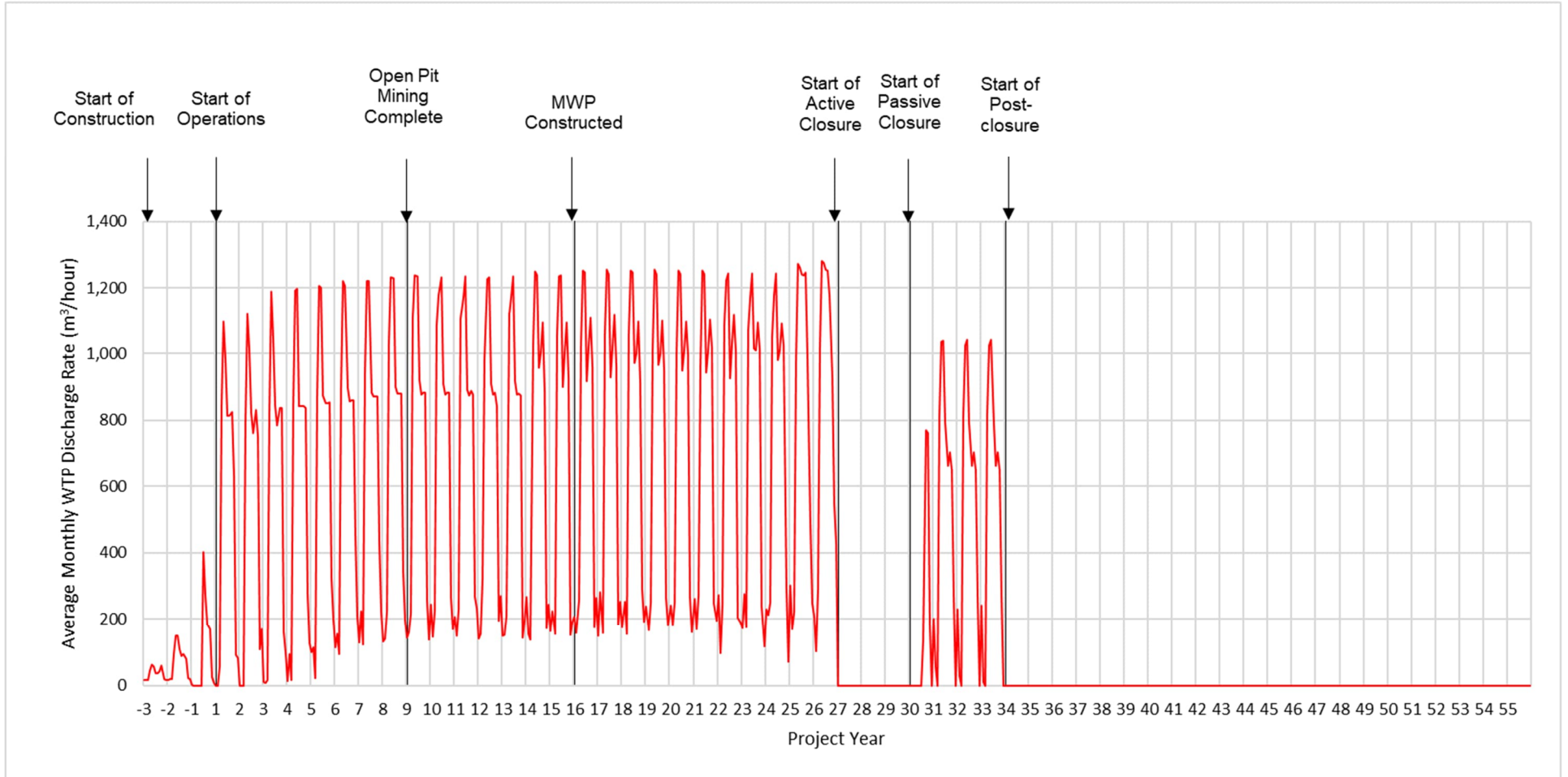
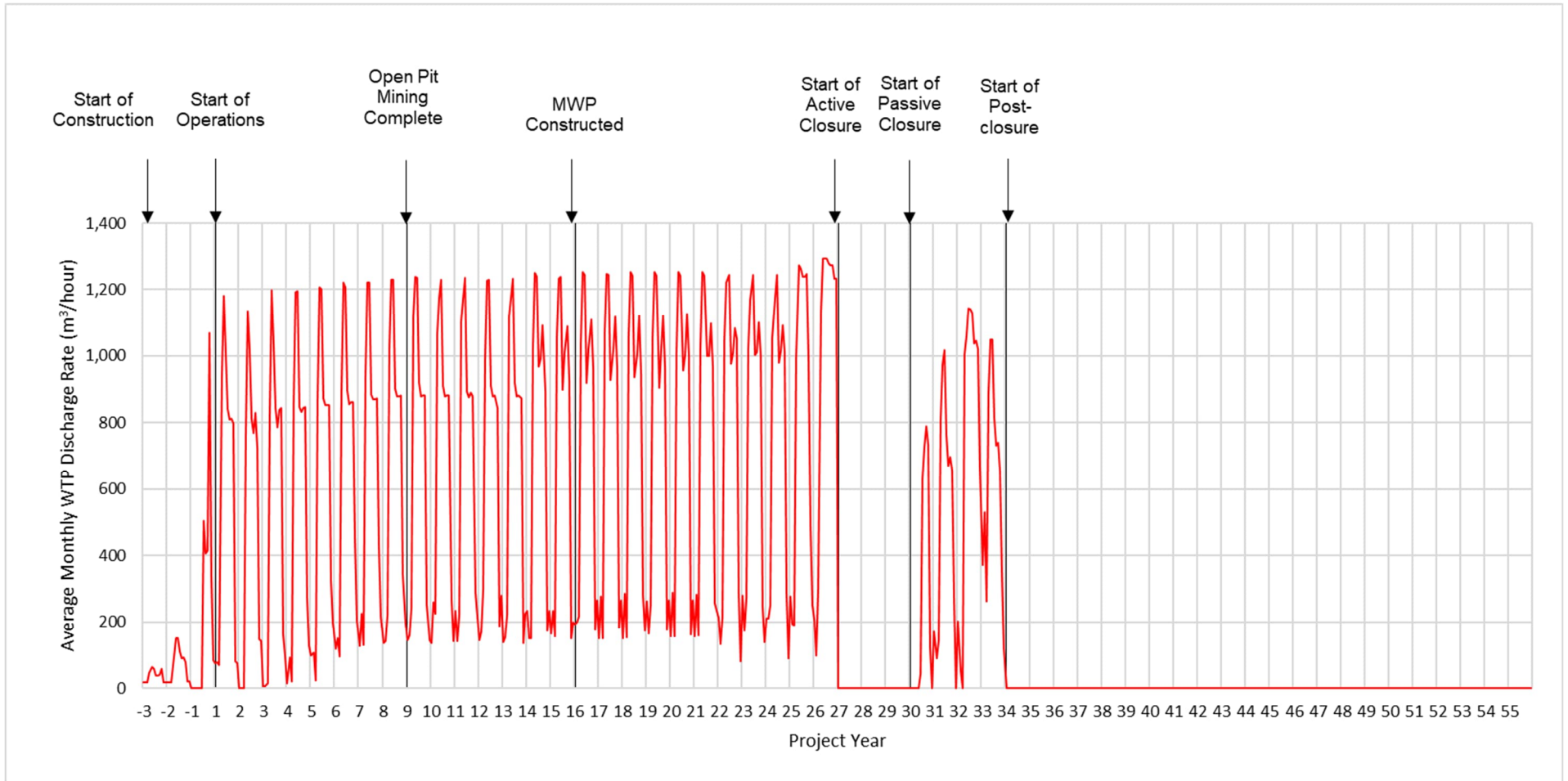
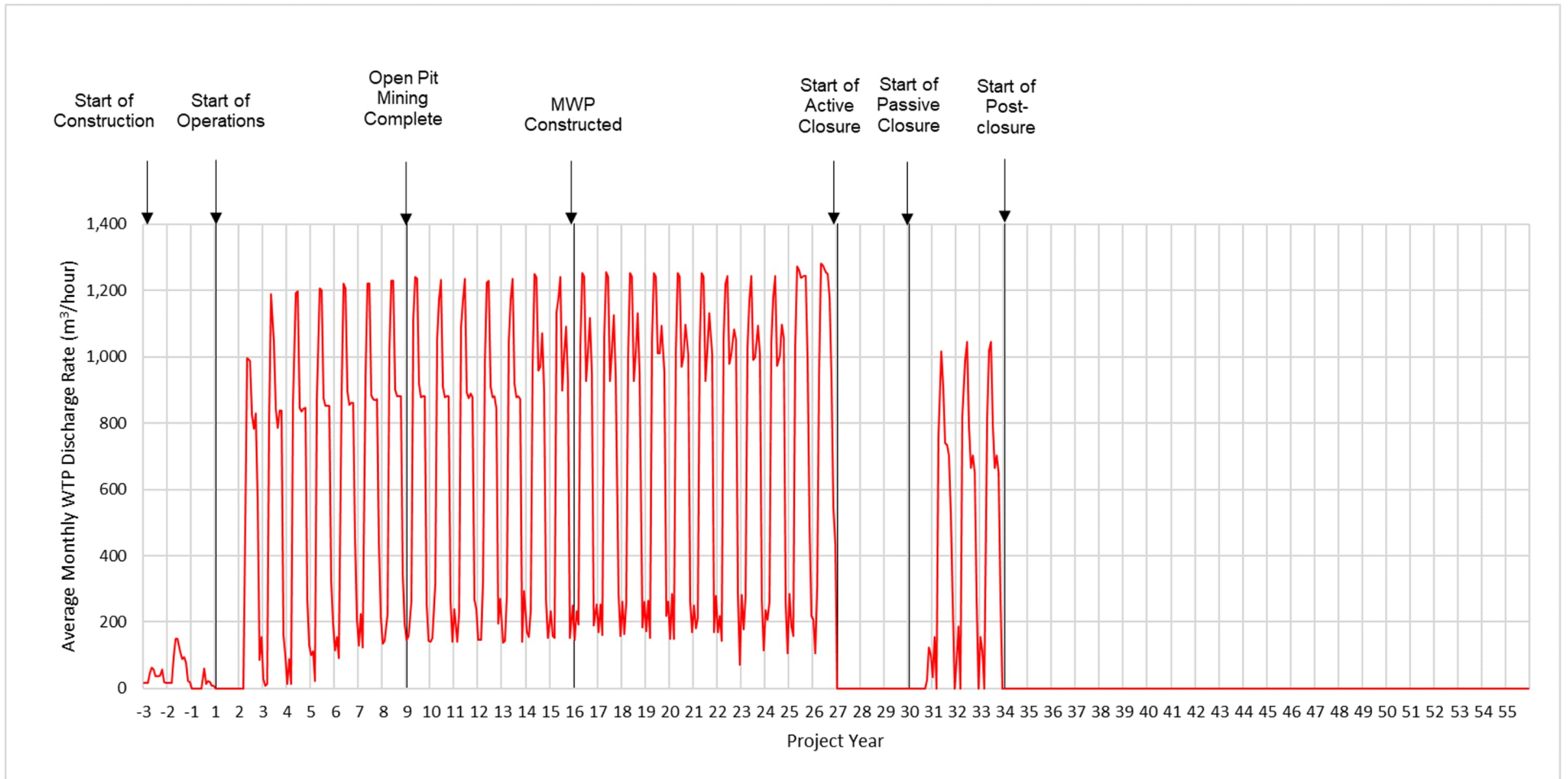


Figure C-2: Monthly TWP Discharge – 1:100 Wet Years Inserted (Scenario 2)



Note:  
1:20 wet year inserted in Year -1. 1:100 wet year inserted in Years 26, 32, and 37.

Figure C-3: Monthly TWP Discharge – 1:100 Dry Years Inserted (Scenario 3)



Note:  
1:20 dry year inserted in Year -1. 1:100 dry year inserted in Years 1, 30, and 35.