

**TAILINGS FACILITY OPERATING PROCEDURES
ADDENDUM TO THE FACILITY OPERATING PLAN
PIÑON RIDGE MILL**

1.0 INTRODUCTION

This addendum describes the tailings facility operating procedures that will be in place from startup through the pre-closure period. The procedures are designed to limit radon flux and fugitive dust emissions to as low as reasonably achievable (ALARA) levels while still allowing for efficient closure and capping of the cells as they reach capacity. Radon flux and fugitive dust are primarily controlled by maintaining the tailings in a saturated state until such time that the cell cover is to be constructed.

The underflow from the mill's counter-current-decantation (CCD) circuit will be approximately 50 percent solid waste and 50 percent solution at a pH of approximately 3 standard units. This waste stream will be mixed with vanadium raffinate (i.e., waste water from the vanadium solvent extraction system), which reduces the solid proportion to about 27 percent while raising the pH to approximately 3.4. This slurried waste or tailings will then be pumped at an average rate of about 250 gallons per minute to the operating tailings cell via high-density polyethylene (HDPE) pipe located within secondary containment (i.e., 60-mil HDPE liner).

The tailings will be discharged to a tailings cell via HDPE distribution pipes located around the perimeter of the cell. One line will extend around the east side of the tailings cell and a second will extend around the west side. Slotted spigots will be extended from the distribution lines to the tailings surface and will be opened and closed using acid/corrosion resistant valves. HDPE wear strips will be placed under pipes, walkways, and other locations where system components could potentially tear or abrade the primary liner.

2.0 STARTUP AND SUBCELL PROCEDURES

At startup, there will be two subcells in Tailings Cell A. Each subcell will have its own LCRS and solution recovery system. One subcell will be used for initial tailings deposition while the other will likely be used for storage of fresh makeup water until such time that the water pool in the other subcell is large enough to provide the necessary

make-up water. From that point on, tailings discharge will be alternated between the two subcells.

The barge-mounted pumpback systems will be placed on the opposite end from where the tailings are being discharged into each subcell. The coarser particles in the tailings discharge settle out first, followed by the finer particles resulting in a pond of clarified solution forming at the opposite end of the tailings subcell. The locations of the tailings discharge point and the barge are changed periodically through the life of the tailings subcell so that layers of coarser material and layers of finer material become interlayered throughout the subcell. This condition is expected to provide a more stable base for future closure activities.

During initial operations, the tailings discharge will be located immediately above the underdrain sump as shown on Figure 1. This results in coarser tailings being deposited as the first layer over the underdrain system and minimizes the possibility of finer materials infiltrating and sealing off the drainage system. Once the coarse layer of tailings is in place, tailings discharge points will be varied as described above.

The tailings subcells are relatively small in area with an initial base area of 2.4 acres expanding to 8.2 acres at the height of the central berm. Because of the relatively small area for tailings disposal, the water pool will extend across most of each subcell. The only portion of the solid tailings that could be exposed is the sand beach created at the discharge point. However, this area is expected to remain saturated due to the continual discharge of new tailings on top of the existing tailings.

3.0 COMBINED CELL PROCEDURES

Once the tailings in the two adjoining subcells reach the height of the central berm, the operating plan will change due to the larger surface areas involved (i.e., initially 16.5 acres expanding to 30.5 acres at full capacity). The two barge-mounted recycle pumps will be moved to the southeast and southwest corners of the combined tailings area and the tailings discharge will be distributed evenly around the remaining perimeter of the cell on a rotating schedule. This configuration results in coarser tailings sands (comprising 60 percent of the tails) being deposited around most of the cell perimeter and finer tailings (comprising 40 percent of the tails) being deposited in the southeast and southwest corners of the tailings cell where the water pools and barges are located. Once Tailings Cell B is constructed, the barge in the southwest corner of Tailings Cell A will

be relocated to Tailings Cell B leaving the single barge in the southeast corner of Cell A as shown on Figure 2.

The fine-grained tailings contain considerably more radium than the coarse-grained tailings because the finer clays and silts readily attenuate radium. Based on modeling results it is expected that the fine tailings will have activity levels four times higher than the coarse tailings (i.e., 1,200 pCi/g compared to 300 pCi/g for the coarse tailings). Radon emissions from the fine tailings will be controlled by the water cover over these areas while radon emissions from the coarse tailings will be controlled by keeping these sands saturated. As discussed above, tailings discharge will be evenly distributed around the perimeter of the cell on a rotating schedule. This will allow the coarser sands to be maintained in a saturated state as they are periodically covered with new tailings. If necessary, water can also be recycled for dust suppression purposes from the cell's water pool or from the evaporation ponds during the warmer summer months. This water would be distributed over the coarse tailings using slotted irrigation pipe.

4.0 PRE-CLOSURE PROCEDURES

The combined cell operating plan described above is designed to reduce radon emissions to ALARA levels; however, it creates the following undesirable features from a closure standpoint.

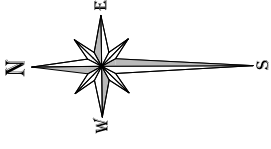
- Saturated fine-grained tailings are concentrated in the center and southeast corner of the cell within the area shown as a water pool on Figure 2. These tailings, commonly referred to as slimes, do not provide a competent base for construction of the final tailings cell cover.
- Slimes also have higher activity levels than the coarser tails and would require more soil cover to adequately suppress radon emissions after closure.

Because of the physical characteristics of the tailings, the coarse perimeter tailings are expected to be approximately fifteen feet higher than the slimes in the center and southeast corner of the impoundment as the cell nears full capacity. To maximize tailings cell capacity and correct the undesirable features described above, Energy Fuels plans to remove the pump barge and construct internal berms within each cell at that point in the operation as shown on Figure 3. These internal berms will be constructed of the coarse beach sands using a low-ground-pressure dozer. The discharge point will then be moved






to the spigots in the southeast corner. This discharge configuration will allow coarser sands to build up above the slimes.

As the sands build up in height, additional internal berms will be constructed in stair-step fashion as illustrated on Figure 4. The top of the internal berms will be at least 3 feet below the cell crest so that if tailings solution breaches an internal berm, it will still be contained within the cell. A skid-mounted pump will be placed next to the shallow water pool created within the internal berms. As the tailings solids settle out, the excess water will be pumped out and used to flood irrigate any areas of the tailings cell that are drying out. As the tailings deposition area decreases in size, the majority of the tailings disposal activity will shift to the new tailings cell so that the solids have sufficient time to settle out of solution.

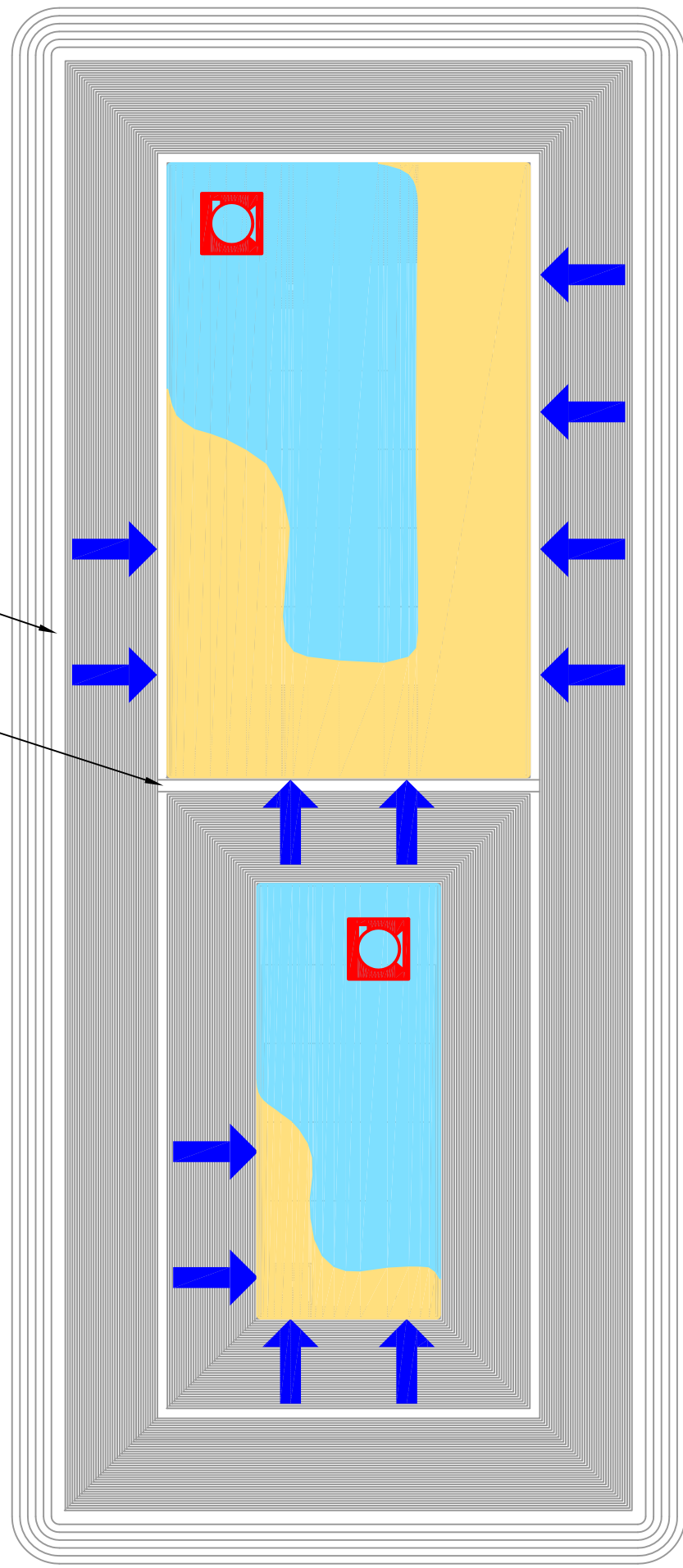
Once the final set of internal berms is filled with tailings, construction of the closure cover will begin. Low-ground-pressure dozers will be used to grade additional coarse tailings from the perimeter over the finer tailings in the center of the cell. This may require the installation of a geotextile fabric over the slimes to prevent heaving as the higher density coarse tailings are placed on top of the lower density slimes. After the tailings surface has been re-graded to the required grades and slopes, a two-foot thick native soil interim cover will be placed immediately over the tailings surface. The interim cover will prevent dust emissions from the tailings surface and the extra weight of the soil will enhance tailings consolidation and removal of tailings water from the underdrain system. Engineering studies predict that the tailings will consolidate sufficiently in 1 to 2 years after placement of the interim cover to allow for construction of the permanent cover.



LEGEND

-  2-FOOT CONTOUR
-  DEPOSITION POINT
-  WATER POOL
-  BARGE-MOUNTED PUMP
-  TAILINGS

CENTRAL DIVIDER BERM
TAILINGS CELL CREST

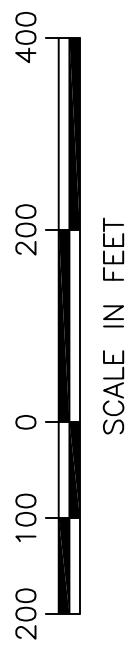


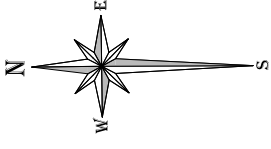
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FIGURE 1
TYPICAL TAILINGS DEPOSITION
TWO SUBCELLS

Scale 1" = 200'
Created July 7, 2010
Drawn by ZTR

Tailings Cell Contours.dwg

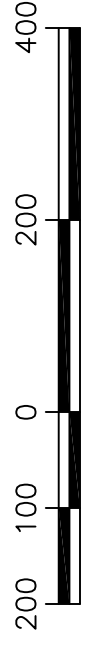
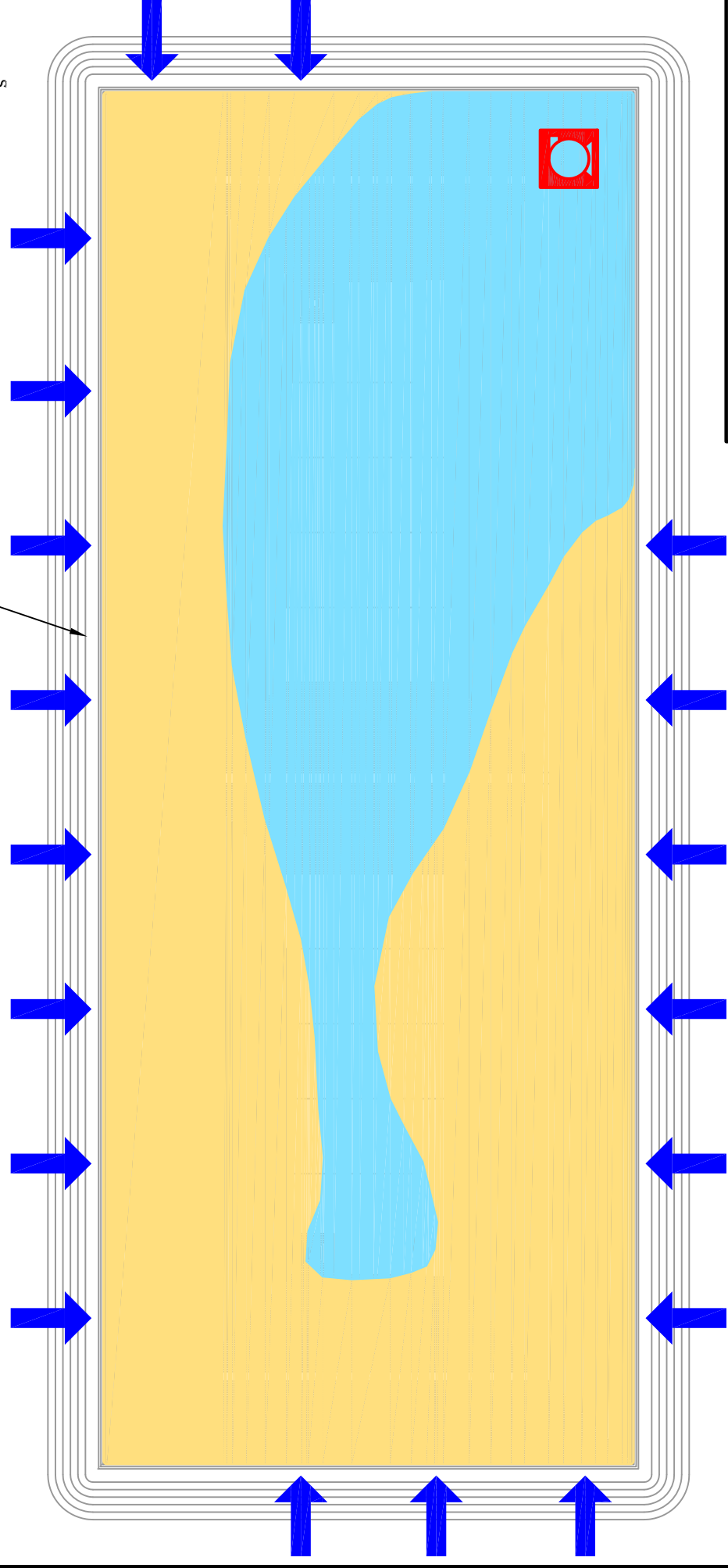




LEGEND

- 2-FOOT CONTOUR
- WATER POOL
- TAILINGS
- ➔ DEPOSITION POINT
- BARGE-MOUNTED PUMP

TAILINGS CELL CREST

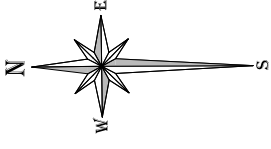


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FIGURE 2
TYPICAL TAILINGS DEPOSITION
ONE CELL

Scale 1" = 200'
Created July 7, 2010
Drawn by ZTR

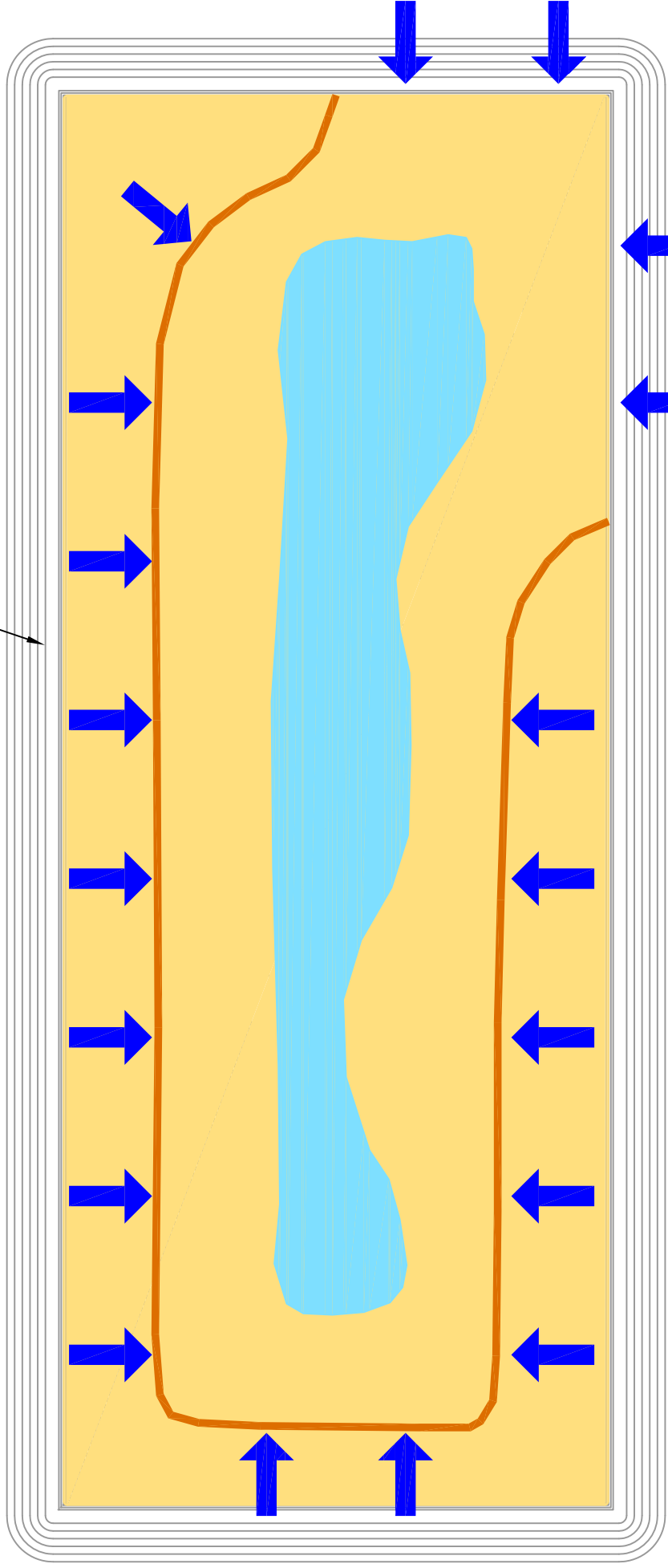
Tailings Cell Contours.dwg



LEGEND

- 2-FOOT CONTOUR
- INTERNAL BERM
- WATER POOL
- TAILINGS

TAILINGS CELL CREST

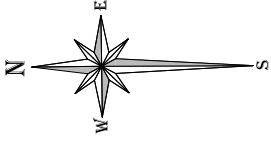


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SCALE IN FEET

FIGURE 3
PHASE I INTERNAL BERM LAYOUT



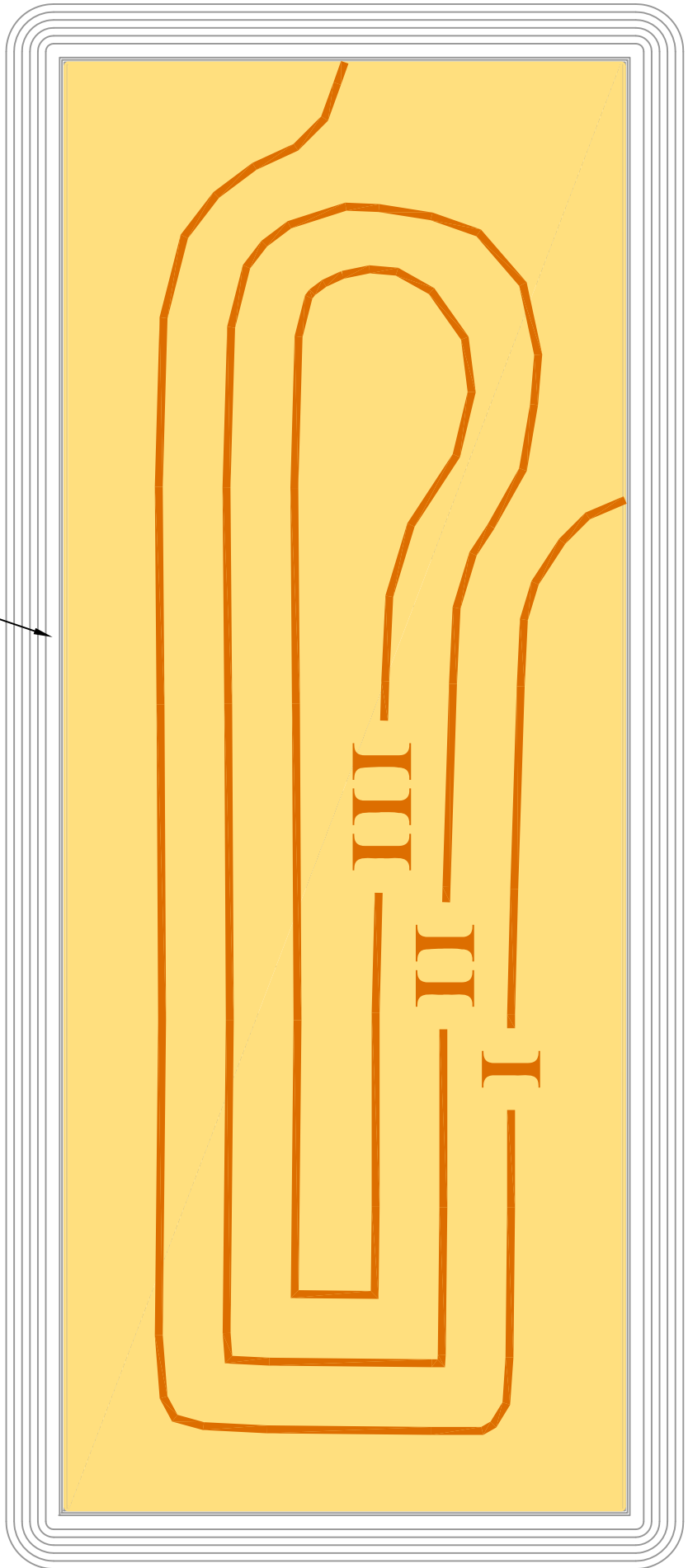
LEGEND

— 2-FOOT CONTOUR

— I — INTERNAL BERM AND PHASE

■ TAILINGS

TAILINGS CELL CREST



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FIGURE 4
PHASED CONSTRUCTION
OF INTERNAL BERMS

