

# MINING & RECLAMATION

## TENAS PROJECT

### 1 Removal of Vegetation and Topsoil

Trees are harvested.  
Brush is mixed in with topsoil as both are salvaged.  
Salvaged topsoil is stored for future reclamation activities.

### 2 Excavation of Overburden

Loose material (overburden) below topsoil is removed with excavators, dozers, and trucks.  
Overburden is used to build dams, buttresses, and backfill mined out pits, or stored outside of the open pit.

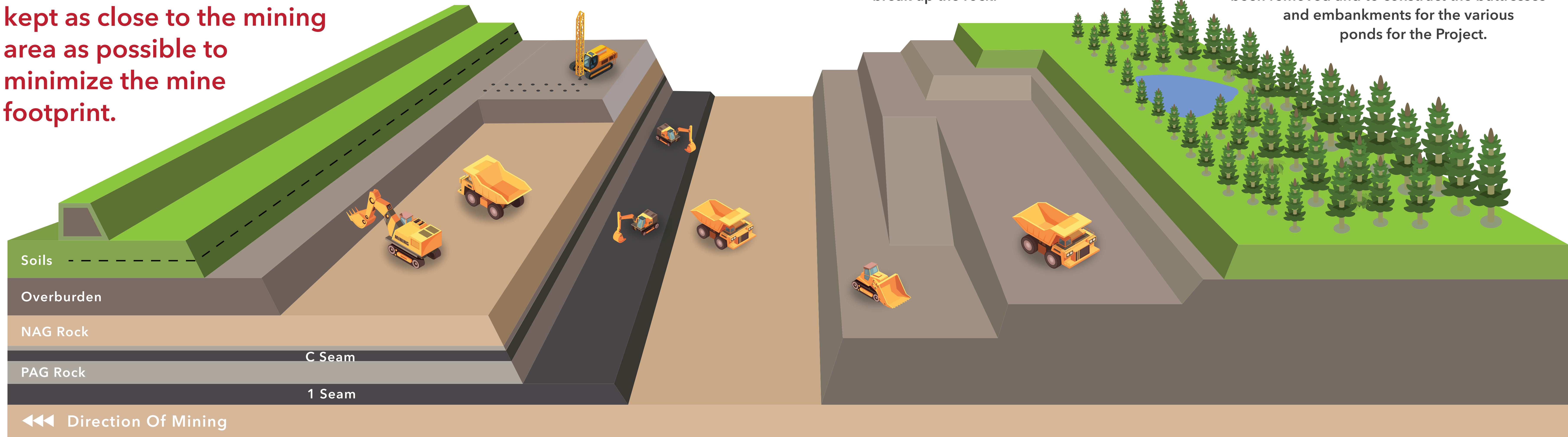
### 3 Drilling and Blasting of Rock

Rock requires blasting to break it into manageable size for loading.  
A drill creates a series of holes in the rock forming a blast pattern.  
Explosives are then loaded into the blast pattern and it is detonated to break up the rock.

### 4 Excavation of Rock

Once the rock is blasted, it is moved out of the way to uncover the coal.  
Potentially Acid Generating (PAG) rock is placed into the management ponds.  
Non-PAG rock is used to backfill areas in the open pit where all the recoverable coal has been removed and to construct the buttresses and embankments for the various ponds for the Project.

**Most material moved is kept as close to the mining area as possible to minimize the mine footprint.**



### 5 Mining of Coal

Coal is mined with excavators, trucks, and other support equipment.  
Coal is not blasted to reduce the amount of fine particles, and minimize the addition of mine rock.  
Coal is hauled to the Coal Processing Plant to separate the coal from the mine rock.

### 6 Backfill of Completed Mine Areas

Once coal has been removed, the open pit area can be used to backfill non-PAG rock or overburden.  
This keeps the mine footprint as small as possible, and allows progressive reclamation to occur.

### 7 Reshaping of Backfill

Once the backfill material achieves the desired height, it will be reshaped to smooth out the surface to allow topsoil placement, which makes it ready for revegetation.

### 8 Replacement of Topsoil and Vegetation

Once the reshaping is complete, the topsoil is placed on top.  
Native and non-native vegetation species are used to complete the reclamation process

**Only Processed Coal is removed from the Project Area for sale.**

### General Mining Information

- Open Pit (surface mining) Operation.
- A Strip Ratio of 3.6 – the number of bank cubic meters (BCM, 1m by 1m by 1m of undisturbed material) excavated per metric tonne of coal recovered.
- Material Movement of between 4,000,000 to 9,000,000 BCM/year for the Project.
- Producing 775,000 to 825,000 metric tonnes per year of metallurgical coal for sale.
- Expected Mine Life (construction to completion of reclamation) is approximately 25 years.
- Expected Footprint of operation (including rail, powerline, and Tenas Access Corridor) of approximately 1,050 hectares (ha).
- Water Retaining Structures for water storage, sedimentation control, and PAG management.
- Conventional Excavator/Truck Operation.

### Materials Moved

Topsoil – Surface soil usually including the organic layer in which plants have most of their roots.

Overburden – Glacial sediment overlaying the bedrock. Other common words are Till, Glacial Till, or Unconsolidated Material.

Bedrock or Rock – Any naturally occurring solid mass or aggregation of minerals. 3 main types of Rock exist: Igneous, Metamorphic and Sedimentary.

Coal – Any material deemed economically recoverable for the seaborne marketplace.

### Proposed Equipment Types

- Mining Excavators – 12 cubic metres (m<sup>3</sup>) bucket.
- Motorized Graders – 14 foot (') blade length (equivalent to a Cat 14M).
- Track Dozers – 435hp size (equivalent to a Cat D8T).
- Rotary Drill – 8-inch (") to 10 5/8" Bit size.
- Rigid Frame Haul Trucks – 90 metric tonne size.
- Wheel Loaders – 12.5 m<sup>3</sup> (15 metric tonnes).
- Maintenance Support Vehicles.
- Crew Busses.
- Light Vehicles (Pickup Trucks).

