Removal of Vegetation and Topsoil

**Excavation of Overburden** 

**Drill and Blasting of Rock** 

**Excavation of Rock** 

Trees are harvested

Brush is recovered with topsoil

Topsoil is recovered with equipment and stored for later use in reclamation

Loose material below topsoil is removed with excavators, dozers, and trucks

Overburden is used to build dams, backfill mined out pits, or stored outside of the pit 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 this pattern and it is detonated to break up the 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 Acid Generating (NAG) rock is used to backfill areas in the pit where all the recoverable coal has been removed

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

Overburden

1 Seam

Mining of Coal

**Backfill of Completed** 

Reshaping of Backfill

Replacement of **Topsoil and Vegetation** 

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 rock

Coal is hauled to the Coal Processing Plant to separate the coal from the rock

Once coal has been removed, the pit area can be used to backfill NAG or Overburden

This keeps the mine footprint as small as possible, and allows progressive reclamation to occur

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

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 COAL is removed from the site for sale.

TFLKWA COAL

## **General Mining Information**

- Open Pit Operation
- A Prime Strip Ratio of 3.6 (the number of BCM per tonne of coal recovered)
- Material Movement of between 4,000,000 to 9,000,000 BCM/year (Bank Cubic Metre, 1m x 1m x 1m of undisturbed material)
- Producing 775,000 to 825,000 t/year of metallurgical coal for sale
- Expected Mine Life (construction to completion of reclamation) is 25 years
- Expected Footprint of operation (including rail, powerline, and road) ~1,050 ha
- Water Retaining Structures for water storage 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 is a sedimentary rock.

## **Proposed Equipment Types**

- Mining Excavators 12 m3 bucket
- Motorized Graders 14' blade length (equivalent to a Cat 14M)
- Track Dozers 435hp size (equivalent to a Cat D8T)
- Rotary Drill 9 7/8" to 10 5/8" Bit size
- Rigid Frame Dump Trucks 90-100t size
- Wheel Loaders 12.5 m³ (15 tonnes)
- Maintenance Support Vehicles
- Crew Busses
- Light Vehicles (Pickup Trucks)

