

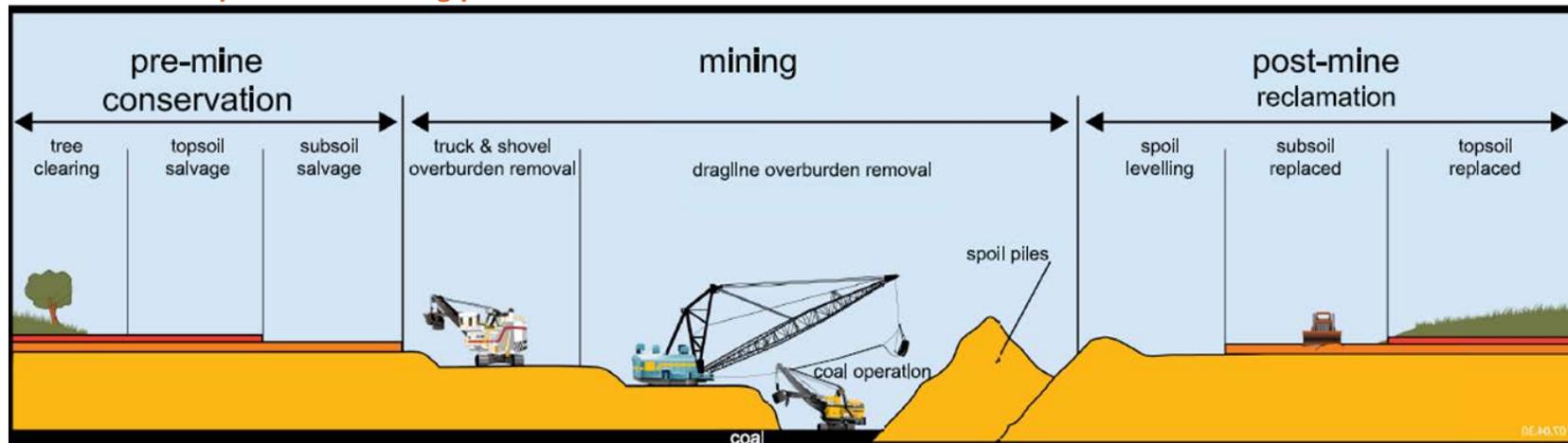
## Land Reclamation – Highvale Mine

TransAlta fully incorporates land reclamation into its long-term plans in all of its mining activities. Before any land is disturbed an extensive assessment of the land within the mine permit boundary is provided to the regulatory bodies through an Environmental Impact Assessment for the future mine permit. Information is collected providing baseline data for water (surface and ground water); soil; agricultural capability and vegetation. To open and operate a mine pit within the permit area, TransAlta applies to the regulator for a mine licence (up for renewal after 10 years) until end-of-life for the mine.

### Reclamation process starts well before mining activities

Pre-disturbed land is assessed to determine its agricultural capability during the Environmental Impact Assessment and license application processes. This information helps to determine the final goal for each land classification. At the Highvale Mine, agricultural land classifications are an aggregate value over the entire mine area. The objective of final reclamation at the Highvale Mine is to provide a landscape with equivalent agricultural capability to that which existed prior to mining.

### Reclamation as part of the mining process



#### Prior to mining, land is prepared by:

- Clearing trees – about two years ahead of major mine disturbance
- Soil conservation – topsoil and subsoil are salvaged and stored (stockpiled) for later use

#### Mining

- Pre-strip fleet (truck/shovel) removes material ahead of the dragline sequence; material is hauled to the spoil side to cover dragline spoil piles
- The dragline side casts face-cut rock into the spoils to uncover the coal; coal is extracted and hauled to the power plant

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### Post Mining Reclamation

Spoil piles are:

- leveled and contoured to create farmable land and wetlands/reforested areas
- surface water features (wetlands, drainage) are re-established where practical
- long-term road replacement is included within the dump strategy

Leveled spoils can receive:

- Subsoil
  - 1.0 m or 0.35 m depending on agricultural capability classification
  - Micro-leveled and rocks picked
- Topsoil
  - 20 cm thick (preferably replaced when subsoil is frozen to avoid compaction)
  - Cultivate and assess for thin areas
  - Pick rocks
  - Re-vegetation and land management

### Reclamation Certification Process

This process takes five to seven years after land reclamation is completed. For agricultural lands a recorded history of plant nutrients, crop yields, erosion and drainage maintenance are provided to the regulator. A third-party agrologist is retained to study the area and report findings. A reclamation certificate application is submitted to the Alberta Energy Regulator (AER) and after review of the report a field audit is conducted. Once the AER is satisfied a certificate is granted.

Reclamation is a partnership between industry, regulators and other stakeholders to ensure proper reclamation process and certification. Throughout the reclamation timeline, TransAlta monitors agricultural production, ground and surface water, erosion, vegetation and weeds to demonstrate the capability and sustainability of the reclaimed land.



Dozer contouring land --  
Highvale Mine Pit 07 (2013)

Topsoil placed  
on reclaimed  
land Pit 07 –  
ready for  
seeding  
(May 2015)

