Habital Reclamation on Coal Mining

Landscapes

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About the North Dakota Public Service Commission







About the Reclamation Division



About the Abandoned Mine Lands Division

History of Coal Mining in ND

- First commercial mining began in 1873.
- By 1900, coal industry well established.
- Most early mines were underground but conversion to surface mining began in 1920's.
- Number of mines peaked in 1940 at 320.
- Mining activity decreased until late 1960's.
- Large scale mining began in 1970's.
- Currently (2017) 5 mines produce about 29 million tons of coal per year



North Dakota contains the largest deposit of lignite coal in the world, estimated at 25 billion strippable tons. Mineable reserves cover about 32,000 square miles in the western half of the state. Approximately 27.5 million tons of lignite are mined annually in North Dakota. At the current rate of mining, it would take about 800 years to exhaust the supply.

Coal Mining in North Dakota: Abandoned Mines

C A N A D A



The AML Division has about 1700 records for abandoned coal mines in western North Dakota



Falkirk Mine, Underwood, ND



Dakota Westmoreland Mine, Beulah, ND



Freedom Mine, Beulah, ND

Coal Mining in North Dakota: Rough Grading Spoil



Falkirk Mine, Underwood, ND

Coal Mining in North Dakota: Soil Respread and Seeding



Freedom Mine, Beulah, ND

Coal Mining in North Dakota: Reclamation: Topsoil, Seeding and Mulch



Falkirk Mine, Underwood, ND



Reclaimed land at the Freedom Mine, Beulah, ND



Reclaimed land at the Gascoyne Mine, Bowman County, ND

Coal Mining in North Dakota: Reclamation



Pronghorn Antelope grazing on reclaimed land at the Center Mine



Woody draw reclamation at the Glenharold Mine near Stanton, ND. About 250 acres of woodlands were planted on reclaimed land at this mine and the success of these plantings has been good.



Reclaimed wetland at the Freedom Mine, Beulah, ND

Coal Mining in North Dakota: Abandoned Coal Mines



Abandoned Surface Mine, Hazen-West AML Project, between Hazen and Beulah



The Hazen-West Project after Reclamation.



A reclaimed wetland at the Hazen-West Site.

Coal Mining in North Dakota: Abandoned Coal Mines



Abandoned Surface Mine, Velva, ND



Reclamation conducted in 2010 at the Velva Site



Reclaimed wetland at the Velva Site in 2016



A 1999 AML Project at the Custer Mine, near Garrison, ND, that included backfilling a dangerous surface mine highwall and forming a shoreline around an 8-acre trout pond and wetland.



This is the Carrick Site, located northwest of New Salem. It is one of two abandoned surface mines that will be reclaimed in 2018. A wetland and two tree plantings are planned for this site.









Coal Mining in North Dakota: Future Reclamation Challenges

Active Mine Reclamation

- Compaction
- Differential Settling
- Invasive Species
- Noxious Weed Control
- Design and management for habitat reclamation

Abandoned Mine Reclamation

- Funding!!
- Public Outreach
- Erosion control
 - Best Management Practices
- Vegetation Establishment
 - Soil/Spoil Quality
 - Soil Amendments
 - Adapted Species
 - Slope Aspect