



ENGINEERING AND CONSULTING DIVISION
MINING ENGINEERING, SURVEYING AND PERMITTING SERVICES
PERMITTING

- COAL ASH BENEFICIAL USE PERMITTING
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- BITUMINOUS UNDERGROUND MINE, PREPARATION AND REFUSE DISPOSAL PERMITTING
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- SLOPE STABILITY ANALYSES



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COAL ASH BENEFICIAL USE PERMITTING

Miltech Energy Services, Inc. (Miltech) routinely works with the Department of Environmental Protection (DEP) in States such as Pennsylvania and West Virginia to identify potential active mine reclamation projects, abandoned mine reclamation projects or other sites where ash from power plants or CFB projects can be used for beneficial use purposes. Upon selection of a potential site for beneficial use Miltech works with the client and the DEP to obtain necessary permitting for the landfilling of fly ash or CFB ash in compliance with the codes of the State involved.

Miltech has the in-house capabilities to develop permits for these Coal/Ash Beneficial Use Sites including the detailed slope analyses required.

See also:

- Bituminous and Anthracite Surface Mine Permitting
- Slope Stability Analyses



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UNDERGROUND MINE INJECTION PERMITTING

It is sometimes advantageous to inject waste slurries such as water treatment sludge or power plant fly ash into abandoned underground mines, or into abandoned areas of active underground mines. Waste slurries are normally injected from the surface to underground mines via bore holes. State and/or local (county etc.) permits are required to inject slurries into underground mines. If permits are already in place, they sometimes need to be modified, if the system is modified. As an example, putting in a new injection bore hole and extending the slurry transportation pipeline to the new bore hole for slurry injection into a different area of the underground mine would be a system modification.

County permits pertaining to erosion and sedimentation controls are usually required for significant earth disturbances such as drilling bore holes or installing pipelines. State permits are normally required to drill bore holes into mines, and to inject slurries into underground mines. If the pipeline is to cross a state road, a permit from the Department of Transportation will be required. If a county or township road is to be crossed, county or township approval of the crossing plan will be required. Building permits for structures such as pump buildings may also be required.

Miltech Energy Services, Inc. provides permit application preparation services for underground mine injection systems, and other permit application preparation services as required by the mining and power generation industries. Miltech is experienced in preparing and submitting permit applications, and acquiring permit approvals. Miltech prepared the permits required for a coal burning power plant to extend a 16" fly ash injection pipeline over 6,000' to a new injection bore hole location. Boring under a highway was proposed for the pipe crossing, so a highway occupancy permit application was required. Miltech also prepared the other required state, county, and township applications and submissions.

For additional related information see:

- Underground Mine Injection System Design
- Slurry Transport Design System
- Bituminous Underground Mine, preparation, and Disposal Permitting
- Bituminous and Anthracite Surface Mine Permitting



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BITUMINOUS UNDERGROUND MINE, PREPARATION AND REFUSE DISPOSAL
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Underground coal mines require permit approvals before the mines can be opened. An underground mining permit is called a Coal Mine Activity Permit (CMAP). Permits are also required to operate coal preparation plants, and coal refuse disposal areas.

Miltech Energy Services, Inc. has the expertise and capability to prepare permits of all kinds, including mining, preparation, and refuse disposal permits. Maps and drawings are prepared using AutoCAD. Designs and calculations are based on regulatory requirements, and sound engineering principles.

For additional related information see:

- Underground Mine Injection Permitting
- Bituminous and Anthracite Surface Mine Permitting
- Coal Ash and Beneficial Use Permitting



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BITUMINOUS AND ANTHRACITE SURFACE MINE PERMITTING

Surface coal mines, whether they are bituminous or anthracite surface coal mines, require permit approvals before the mines can be opened. Permits are issued by the State in which the mine is located. Permit application preparation requires expertise in permitting procedures, engineering design, surveying, mapping, etc.

Miltech Energy Services, Inc. has the experience, expertise, and capability to prepare permit applications of all kinds, including applications for bituminous and anthracite surface coal mines. Maps and drawings are prepared using AutoCAD. Designs and calculations are based on regulatory requirements, and sound engineering principles.

For additional related information see

- Underground Mine Injection Permitting
- Bituminous Underground Mine, Preparation and Disposal Permitting
- Coal Ash and Beneficial Use Permitting
- Large and Small Non-Coal Permitting



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LARGE AND SMALL NON-COAL PERMITTING

Non-coal mines, such as limestone mines and quarries, require permit approvals before the mines can be opened. Permits are issued by the State in which the mine is located. During the life of the mine, permit renewals, modifications, and other changes to the permit are often desired. Permit application preparation requires expertise in permitting procedures, engineering design, surveying, mapping, etc.

Miltech Energy Services, Inc. has the expertise and capability to prepare permit applications of all kinds, including applications for non-coal mines, whether they be large or small mines, new mine applications, or modifications to existing permits. Maps and drawings are prepared using AutoCAD. Designs and calculations are based on regulatory requirements, and sound engineering principles.

For additional related information see

- Underground Mine Injection Permitting
- Bituminous Underground Mine, Preparation and Disposal Permitting
- Coal Ash and Beneficial Use Permitting
- Bituminous and Anthracite Surface Mine Permitting



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SLOPE STABILITY ANALYSES

Miltech Energy Services, Inc. has the in-house capability to provide slope stability analyses acceptable to the enforcement agencies of various states.

The stability analyses for CFB/refuse sites are done using the REAME computer program developed by the University of Kentucky Civil Engineering Department.

Two types of failure mechanisms are normally considered in stability analyses. First, the Spencer Method is used to consider a sliding failure for both a static and seismic case and second, the Simplified Bishop Method is used to consider a rotational failure for the same static and seismic case. For both methods and both cases, best and worst case assumptions are assessed.

Designs, cross sections and detailed stability analyses for the ash deposition are developed and provided to the client and the state department involved.