Appendix C contains numerous maps showing the model mines used in the analysis and is not Section 508 compliant. Please contact Mark Gehlhar at OSMRE 202-208-2716 for assistance.
Pre-Mining
- 10 ft contours taken from USGS Seamless Server
- 7.4 acre ephemeral drainage requirement based on original streams delineated within permit files. Streams were generated based on drainage requirement until stream length was within 1% of the streams sampled from the permit file. This drainage requirement was then applied to the sample mine topography to generate the final streams. The Illinois Basin has multiple large production mines that produce coal strictly with continuous miner sections.

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams (7.4 acre drainage)
- Generated Streams-Intermittent (hydraulically defined)
- 100 ft stream offset
- Mineral Removal Area

Illinois Basin Region
Underground Room and Pillar Mine
Pre-Mining
Alternative 1

- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area
- Stream Impacts
  - 2,112 ft ephemeral stream impacts
  - 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7-8 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar
Alternative 1
Alternative 2
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment
Alternative 3
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7-8 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar
Alternative 3
Alternative 4
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment
Alternative 5
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar
Alternative 5
Alternative 6
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment
Alternative 7
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area
- Stream Impacts
  - 2,112 ft ephemeral stream impacts
  - 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar Alternative 7
Alternative 8
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area

Stream Impacts
- 2,112 ft ephemeral stream impacts
- 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7-8 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar
Alternative 8

Scale 1"=2500'
Alternative 9
- 2.1 million tpy
- 35 million tons coal resource
- 19.1 million tons recoverable coal
- 4,146 mine acres
- 45 acres of disturbed area
- Stream Impacts
  - 2,112 ft ephemeral stream impacts
  - 299 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainages)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Conventional R&P Area
- Refuse Impoundment

Illinois Basin Region
Underground Room and Pillar Alternative 9
Pre-Mining
- 10 ft contours taken from USGS Seamless Server
- 7.4 acre ephemeral drainage requirement based on original streams delineated within permit files. Streams were generated based on drainage requirement until stream length was within 1% of the streams sampled from the permit file. This drainage requirement was then applied to the sample mine topography to generate the final streams.
Alternative 1

- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend

- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine
Alternative 1
Alternative 2

- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend

- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine
Alternative 2
Alternative 3
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment
Alternative 4
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7-4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine Alternative 4
Alternative 5
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine Alternative 5
Alternative 6
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine Alternative 6

Prepared By: MORGAN WORLDWIDE CONSULTANTS
P.O. Box 888 Lexington, Kentucky 40588
Alternative 7

- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine Alternative 7

Prepared By:
*****
Alternative 8
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine
Alternative 8
Alternative 1
- 6 million tpy
- 129 million tons coal resource
- 106 million tons recoverable coal
- 11,265 mine acres
- 134 acres of disturbed area
- Stream Impacts
  - 5,173 ft ephemeral stream impacts
  - 1,756 ft intermittent stream impacts

Legend
- Original Topography (10 ft Ctrs)
- Generated Ephemeral Streams (7.4 acre drainage)
- Intermittent Streams
- 100 ft stream offset
- Mineral Removal Area
- Longwall Panel
- Refuse Impoundment

Illinois Basin Region
Underground Longwall Mine Alternative 9
Pre-Mining Information
- 10 ft contours taken from USGS Seamless Server
- 13.6 acre ephemeral drainage requirement based on original streams delineated within permit files. Streams were generated based on drainage requirement until stream length was within 1% of the streams sampled from the permit file. This drainage requirement was then applied to the sample mine topography to generate the final streams.
- Google Maps and Virtual Earth were used to delineate intermittent and perennial points where mining would not typically occur.

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- Generated Streams-Ephemeral (13.6 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Post-Mining Topography
Alternative 1
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 1
Alternative 2
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through
Alternative 3
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography
Alternative 4
- 27.2 million tons per year mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (hydrologically defined)
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 4
**Alternative 5**
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

*Legend*
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

**Northern Rocky Mountain Region**
Surface Area Mine
Alternative 5
Alternative 6
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1:2.1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 6
Alternative 7
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Stream-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 7
Alternative 4
- 27.2 million tons per year mined
- 1 billion tons coal resource
- 1:2:1 mining ratio
- 6,049 disturbed acres
- Stream Impacts:
  - 182,756 ft ephemeral stream mined through
  - 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
  - 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (hydrologically defined)
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 8
Alternative 1
- 27.2 million tpy mined
- 1 billion tons coal resource
- 1.2:1 mining ratio
- 6,049 disturbed acres

Stream Impacts:
- 182,756 ft ephemeral stream mined through
- 26,213 ft intermittent stream mined through (greater than one square mile of drainage)
- 12,102 ft hydrologically defined intermittent stream mined through

Legend
- Original Topography (10 ft Ctrs)
- Generated Streams-Intermittent (1 sq mi drainage definition)
- 100 ft stream offset
- Mineral Removal Area
- Hydrologically Intermittent Streams
- Post-Mining Topography

Northern Rocky Mountain Region
Surface Area Mine
Alternative 9
Pre-Mining

- 25 ft contours taken from USGS Seamless Server
- 8.4 acre ephemeral drainage requirement based on original streams delineated within permit files. Streams were generated based on drainage requirement until stream length was within 1% of the streams sampled from the permit file. This drainage requirement was then applied to the sample mine topography to generate the final streams.
- Ephemeral/Intermittent points based on information found in permit file. Ephemeral/intermittent point defined by highest coal seam mined. Intermittent/perennial point defined by lowest coal seam mined. Fill area stream are all below the coal outcrop, and permit file states that perennial stream begins 1600 ft below toe of fill; therefore, all stream in fill area is defined as intermittent.
Alternative 1
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through
Alternative 2

- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through

Legend
- Original Topography (25 ft Ctrs)
- Generated Streams (8.4 acre drainages)
- 100 ft stream offset
- Mineral Removal Area
- Excess Spoil Location
- Post-Mining Topography
- E/I Point
Alternative 3
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through

Legend
- Original Topography (25 ft Ctrs)
- Generated Streams (8.4 acre drainages)
- 100 ft stream offset
- Mineral Removal Area
- Excav SPO Location
- Post-Mining Topography
- E1 Point

Northwest Region
Surface Area Mine
Alternative 3
Alternative 4
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through

Legend
- Original Topography (25 ft Ctr)
- Generated Streams (8.4 acre drainage)
- 100 ft stream offset
- Mineral Removal Area
- Excess Spoil Location
- Post-Mining Topography
- E/I Point

Northwest Region
Surface Area Mine
Alternative 4
Alternative 5
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through
Alternative 6
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through

Legend
- Original Topography (25 ft Cts)
- Generated Streams (8.4 acre drainages)
- 100 ft stream offset
- Mineral Removal Area
- Excess Spoil Location
- Post-Mining Topography
- E/I Point

Northwest Region
Surface Area Mine
Alternative 6
Alternative 7
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through

Legend
- Original Topography (25 ft Ctrs)
- Generated Streams (8.4 acre drainages)
- 100 ft stream offset
- Mineral Removal Area
- Excess Spoil Location
- Post-Mining Topography
- E/I Point

Northwest Region
Surface Area Mine
Alternative 7
Alternative 4
- 2 million tpy
- 37 million tons coal resource
- 3.8:1 mining ratio
- 497 disturbed acres
- Stream Impacts
  - 7,141 ft ephemeral stream mined through
  - 7,903 ft intermittent stream mined through