

US EPA ARCHIVE DOCUMENT

MRAM DATA BASE

STUDIES RECEIVED 69

LIKE SITE CHARACTERISTICS: 12 Surface Mines and 8 Deep Mines
8 Groundwater sites (5 surface and 3 deep mines)

SITE CHARACTERISTICS: 40 Surface Mines and 15 Deep Mines

Mine Characteristics

- Mine name and location
- Mine dimensions and volume
- Placement dates and purpose
- Regulation and time of placement

CCB Placement Characteristics

- CCB Type
- CCB Aditives
- CCB Placement Volume
- Placement within Mine
- Permit Acreage
- Placement/Management Practice

Mine Site Characteristics

- Soil
- Bedrock Stratigraphy
- General Topolgy

ASH AND LEACHATE CHARACTERISTICS: 60 Surface Mines and 7 Deep Mines

- **CCB Source**
- **Solid Coal Ash Chemical Characteristics - major constituent indicators**
 - minor constituent indicators
- **Leachate Chemical Characteristics - Primary Drinking Water const.**
 - Secondary Drinking Water const.
 - Other constituents
 - pH

GROUNDWATER CHARACTERISTICS SUMMARY: 5 Surface Mines and 3 Deep Mines

- **Wells selected: Up-gradient, Placement/Injection Area, Down-gradient 1 or 2 of each type of well**
- **Sample date averages: pre-placement/injection, 1 Yr, 3 Yr, 5 Yr, 5Yr +**
- **Primary Drinking Water Constituents**
- **Secondary Drinking Water Constituents**
- **Eco-Toxicity and Other Constituents**
- **pH**

GROUNDWATER DATA

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LIKE SITE CHARACTERISTICS

Mine Name, Location	<i>Highvale, Canada</i>	<i>Universal, IN</i>	<i>Center, ND</i>	<i>Big Gorilla, PA</i>	<i>Knickerbocker, PA</i>	<i>"City," IN</i>	<i>Wilton, ND</i>	<i>Longridge, WV</i>
Mine Type	Surface	Surface	Surface	Surface	Surface	Deep	Deep	Deep
Climatic Region	Arid	Semiarid	Semiarid	Humid	Humid	Semiarid	Semiarid	Humid
AMD	Unknown	Yes	Yes	Yes	No	No	No	Yes
CCB Placement	Above GW	Above GW	Above Below GW	Below	Above GW	Above & Below GW	Below	Below
CCB Type	Ash	Ash	Ash & FGD	FBC	FBC	FGD & Ash	Ash	FBC
Concrete Additive	No	No	No	No	Yes	Yes (lime)	No	Yes
Drainage Control	Unknown	Cap and Runoff	No	No	No	No	No	No
Cap Material	Unknown	clay - 5' un-compacted	NA	NA	NA	NA	NA	NA
Liner	No	No	No	No	No	No	No	No
AMD Control	Unknown	Yes (NPDES discharge pump at sedimentation pond)	Natural acid buffering capacity of overburden	No	No	No	No	No
GW Quality Conclusion/Assessment	Inconclusive	No Change	Inconclusive	No Change	No Change	Inconclusive	Inconclusive	Degraded
Pre-injection GW data	None	5/88 - 1/89	5/77 - 6/81	8/89 - 7/97	8/97 - 8/98	1/94 - 7/94	None	1/98 - 12/98
Current/Post injection GW data	7/78 - 4/01	5/89 - 11/00	3/78 - 7/85	8/97 - 2/99	9/98 - 3/01	10/94 - 8/95	7/94 - 4/95	1/99 - 11/00
MCL exceedance	None	Pb	As, Ba, Cd, Cr, Pb, Se	None	Cd	Cd	None	As, Cd, Pb, Se
Final PH Assessment	Neutral to Slightly Basic	Slightly Acidic to Neutral	Neutral to Slightly Basic	Acidic	Slightly Acidic to Neutral	Slightly Acidic to Neutral	Slightly Acidic	Acidic