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Fw: Partial Materials for today's announcement	09/11/2009 09:07 AM	

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10	443,671		Cliff Rader

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Note that the "MIRA legal and regulatory analysis" fact sheet has references to NEPA

----- Forwarded by Cliff Rader/DC/USEPA/US on 09/11/2009 09:06 AM -----

From: Christopher Hunter/DC/USEPA/US
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Cc: Brian Frazer/DC/USEPA/US@EPA

Date: 09/11/2009 08:13 AM
Subject: Partial Materials for today's announcement

Good Morning,
we're still waiting to see final copies of the press release, Q&As, and factsheet for the ECP announcement this morning, but I wanted to share the other public materials we do have. As far as I've heard this is still being made public sometime this morning, so **please do not distribute until after the official release**. If you have any questions, please let me know.

Thanks,
Chris

ECP_Initial_List_09-11-09.pdf
Matrix_Env_Concerns_09-10-09.pdf
MIRA_Factsheet_09-10-09.pdf
MIRA_Hierarchy_09-10-09.pdf
MIRA_Indicator_Definitions_09-10-09.pdf
MIRA_legal_and_regulatory_analysis_09-10-09.pdf
MIRA_Organization_09-10-09.pdf
MIRA_Preference_Sets_09-10-09.pdf
MIRA_Q&A_09-10-09.pdf
Proposed_Proj_Info_09-10-09.pdf

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U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
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	Permit Number listed in ECP	Corrected Permit Number	Applicant name	Project Name	County	State
1	LRH-2004-00336		Bear Fork	Bear Fork S.M	Pike	KY
2	LRH-2005-00934		Premier Elkhorn	U/T Old Beefhide	Letcher	KY
3	LRH-2006-00126		Consol of KY	Area 80	Knott	KY
4	LRH-2006-00127		Consol of KY	Slone Br Mine	Knott	KY
5	LRL-2005-00851		Cheyenne Resources	Cheyenne Resources	Letcher	KY
6	LRL-2006-01124		Matt/Co	Matt/Co	Floyd	KY
7	LRL-2006-01290		Licking River Resources	Licking River Resources	Magoffin	KY
8	LRL-2006-01296		Clintwood Elkhorn	Clintwood Elkhorn	Pike	KY
9	LRL-2007-00069		CAM Mining	Cane Branch	Pike	KY
10	LRL-2007-00193		Premier Elkhorn Coal	Premier Elkhorn Coal	Pike	KY
11	LRL-2007-00217		Leeco, Inc.	Stacy Branch Surface Mine	Perry	KY
12	LRL-2007-00335		Apex Energy	Apex Energy	Pike	KY
13	LRL-2007-00400		Argus Energy	Argus Energy	Lawrence	KY
14	LRL-2007-00400	LRL-2007-00401	Candle Ridge Mining	Candle Ridge Mining	Owsley	KY
15	LRL-2007-00594		Premier Elkhorn Coal	Premier Elkhorn Coal	Pike	KY
16	LRL-2007-00595		Leeco, Inc.	Elk Lick	Knott	KY
17	LRL-2007-00706		Johnson Floyd Coal	Johnson Floyd Coal	Johnson	KY
18	LRL-2007-00867		CAM Mining	CAM Mining	Pike	KY
19	LRL-2007-01026		Frasure Creek Mining	Frasure Creek Mining	Floyd	KY
20	LRL-2007-01044		Apex Energy	Apex Energy	Pike	KY
21	LRL-2007-01104		The Raven Co.	The Raven Co.	Floyd	KY
22	LRL-2007-01131		Miller Bros. Coal	Miller Bros. Coal	Floyd	KY
23	LRL-2007-01132		Miller Bros. Coal	Frasure Branch Mine	Floyd	KY
24	LRL-2007-01205		Matt/Co	Matt/Co	Floyd	KY
25	LRL-2007-01206		Frasure Creek Mining	Frasure Creek Mining	Magoffin	KY
26	LRL-2007-01224		Miller Bros. Coal	Miller Bros. Coal	Knott	KY
27	LRL-2007-01230		ICG Knott Co.	ICG Knott Co.	Knott	KY
28	LRL-2007-01301		CAM Mining	Tom's Branch Surface Mine	Floyd	KY
29	LRL-2007-01397		FCDC	FCDC	Floyd	KY
30	LRL-2007-01406		ICG Hazard	Bearville North	Knott	KY
31	LRL-2007-01445		FCDC	FCDC	Floyd	KY
32	LRL-2007-01504		CAM Mining	CAM Mining	Pike	KY
33	LRL-2007-01515		ICG Hazard	ICG Hazard	Perry	KY
34	LRL-2007-01518		Clintwood Elkhorn	Clintwood Elkhorn	Pike	KY
35	LRL-2007-01582		Miller Bros. Coal	Miller Bros. Coal	Breathitt	KY
36	LRL-2007-01660		Martin County Coal	Findlay Branch Mine	Martin	KY
37	LRL-2008-00095		Premier Elkhorn Coal	Premier Elkhorn Coal	Pike	KY
38	LRL-2008-00114		BDCC Holdings	Cherries Branch	Perry	KY
39	LRL-2008-00115		Wolverine Resources	Jake Fork and Stoney Branch Surface Mine	Floyd	KY
40	LRL-2008-00139		Apex Energy	Apex Energy	Pike	KY
41	LRL-2008-00226		Czar Coal	Czar Coal	Martin	KY

42	LRL-2008-00239	LRL-2009-00239	Frasure Creek Mining	Frasure Creek Mining	Breathitt	KY
43	LRL-2008-00408		Czar Coal	Czar Coal	Martin	KY
44	LRL-2008-00525		Middle Fork Dev.	Middle Fork Dev.	Magoffin	KY
45	LRL-2008-00654		Enterprise Mining	Enterprise Mining	Knott	KY
46	LRL-2008-00727		Miller Bros. Coal	Miller Bros. Coal	Breathitt	KY
47	LRL-2008-00781		Wolverine Resources	Wolverine Resources	Floyd	KY
48	LRN-2006-01647		Nally & Hamilton	Nally & Hamilton	Bell	KY
49	LRN-2007-00820		Nally & Hamilton	Nally & Hamilton	BELL	KY
50	LRH-2004-01152		Buckingham Coal	Buckingham Wash Plant	Perry	OH
51	LRH-2005-00421		Oxford	Peabody 3	Coshocton / Muskingum / Guernsey	OH
52	LRH-2005-01385		Oxford	Halls Knob	Guernsey	OH
53	LRH-2007-01021		Oxford Mining	Kaiser Mathias	Tuscarawas	OH
54	LRP-2006-00660		Ohio American Energy	Red Bird South	Belmont	OH
55	LRP-2007-01180		Oxford Mining Company LLC	Ellis Area	Jefferson	OH
56	LRN-2004-00062		Premium Coal	Area 19	ANDERSON	TN
57	LRH-2003-00065		Hobet Mining	Hewett	Boone	WV
58	LRH-2004-00624		Independence Coal Company	Consitution Surface Mine	Boone	WV
59	LRH-2004-01155		Brooks Run Mining	Brandy St & Cove Mtn	Webster	WV
60	LRH-2004-01451		Independence Coal Company	Glory Surface Mine	Boone	WV
61	LRH-2005-00217		Bluestone	ContourAuger1	Wyoming	WV
62	LRH-2005-01115		Green Valley Coal Company	Blue Branch Refuse	Nicholas	WV
63	LRH-2005-01198		Marrowbone Development	Taywood W & Marrowbone	Mingo	WV
64	LRH-2005-01211		Premium Energy, Inc.	Premium Mills Surface Mine	McDowell	WV
65	LRH-2006-00756	LRH-2006-00100	ICG Eastern, LLC	Jenny Creek Surface Mine	Mingo	WV
66	LRH-2006-02033		Wildcat	#2 Surface	Kanawha	WV
67	LRH-2006-02290		Colony Bay Coal Co.	Colony Bay Surface Mine	Boone	WV
68	LRH-2007-00182		Alex Energy, Inc.	Federal Surface Mine	Nicholas	WV
69	LRH-2007-00285		Alex Energy, Inc.	Lonestar Surface Mine	Nicholas	WV
70	LRH-2007-00286		Pioneer Fuel	MT5B	Raleigh	WV
71	LRH-2008-00491		CONSOL of Energy	Buffalo Mt. Surface Mine	Mingo	WV
72	LRH-2008-00562		Eastern Associated Coals	Huff Creek Surface Mine	Wyoming/ Logan	WV
73	LRH-2008-00791		Hobet Mining	Surface Mine No. 45	Lincoln	WV
74	LRH-2008-00805		Coyote Coal Company	Joes Creek Surface Mine	Boone/ Kanawha	WV
75	LRH-2008-00830		CoalMac, Inc.	Pine Creek Surface Min	Logan	WV
76	LRH-2008-01098		Frasure Creek Mining	Spring Fork Surface Mine NO. 2	Mingo	WV
77	LRH-2009-00428		Consol of Kentucky	Spring Branch No. 3 Deep Mine	Mingo	WV
78		LRH-2006-00760	Paynter Branch Mining	Paynter Branch South Surface Mine	Wyoming	WV
79		LRH-2007-00134	Atlantic Leasco	Muddlety Surface Mine No. 1	Nicholas	WV

Matrix of Potential Environmental Concerns using MIRA

Corps PN	Name of Mine	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
200300065	Hobet Mining - Hewett	X	X	X		X	X	X	X
200400062	Premium Coal - Area 19	X	X	X		X			
200400336	Bear Fork				X			X	X
200400624	Independence Coal Company - Constitution	X	X	X	X	X	X	X	X
200401152	Buckingham Coal - Buckingham Wash Plant		X	X		X			X
200401155	Brooks Run Mining - Brandy St & Cove Mtn							X	X
200401451	Glory	X	X	X	X	X	X	X	X
200500217	Bluestone - ContourAuger1						X	X	X
200500421	Oxford - Peabody 3							X	X
200500851	Cheyenne Resources - Cheyenne Resources								
200500934	Premier Elkhorn - U/T Old Beefhide								
200501115	Green Valley Coal Company - Blue Branch Refuse	X	X	X		X	X	X	X
200501198	Marrowbone Development - Taywood W & Marrowbone				X		X	X	
200501211	Premium Energy, Inc				X		X	X	X
200501385	Oxford - Halls Knob								
200600100	ICG Eastern, LLC - Jenny Creek	X	X	X	X		X	X	X
200600126	Consol of KY - Area 80								
200600127	Consol of KY - Slone Br								
200600660	Ohio American Energy - Red Bird South	X	X					X	X
200600760	Paynter Branch South				X		X	X	
200601124	Matt/Co								

Matrix of Potential Environmental Concerns using MIRA						
Corps PN	**Name of Mine**	**Mine Impact with an Emphasis on Stream Length**	**Environmental Condition**	**Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas**	**Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas**	**Mine Impact with an Emphasis on Conductivity**
200300065	Hobet Mining - Hewett		X	X		X
200400062	Premium Coal - Area 19		X	X		X
200400336	Bear Fork					
200400624	Independence Coal Company - Constitution	X	X	X		X
200401152	Buckingham Coal - Buckingham Wash Plant		X		X	
200401155	Brooks Run Mining - Brandy St & Cove Mtn					
200401451	Glory	X	X	X		X
200500217	Bluestone - ContourAuger1	X	X	X		
200500421	Oxford - Peabody 3					
200500851	Cheyenne Resources - Cheyenne Resources					
200500934	Premier Elkhorn - U/T Old Beefhide					
200501115	Green Valley Coal Company - Blue Branch Refuse	X	X	X		X
200501198	Marrowbone Development - Taywood W & Marrowbone	X		X		
200501211	Premium Energy, Inc	X		X	X	X
200501385	Oxford - Halls Knob					
200600100	ICG Eastern, LLC - Jenny Creek	X	X	X		X
200600126	Consol of KY - Area 80					
200600127	Consol of KY - Slone Br					
200600660	Ohio American Energy - Red Bird South		X		X	
200600760	Paynter Branch South	X	X	X		X
200601124	Matt/Co					

Matrix of Potential Environmental Concerns using MIRA									
Corps PN	**Name of Mine**	**Region 3**	**Region 4**	**Region 5**	**All Mine Impact**	**All Environmental Condition**	**Mine Impact and Mine Footprint**	**SAD, Stream Length and Conductivity**	**SAD and Conductivity**
200601290	Licking River Resources								
200601296	Clintwood Elkhorn				X				X
200601647	Nally & Hamilton								
200602033	Wildcat - #2	X	X	X	X		X	X	X
200602290	Colony Bay Coal Co.	X	X	X	X		X	X	X
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	X	X	X		X	X	X	X
200700182	Alex Energy, Inc. - Federal	X	X	X	X		X	X	X
200700193	Premier Elkhorn Coal							X	X
200700217	Leeco, Inc. - Stacy Branch	X	X	X	X		X	X	X
200700285	Alex Energy, Inc. - Lonestar		X	X			X	X	X
200700286	Pioneer Fuel - MT5B	X	X	X	X	X	X	X	X
200700335	Apex Energy								
200700400	Argus Energy						X	X	X
200700401	Candle Ridge Mining	X	X	X		X			
200700594	Premier Elkhorn Coal								
200700595	Leeco, Inc. - Elk Lick	X	X	X	X		X	X	X
200700706	Johnson Floyd Coal - Johnson Floyd Coal								
200700820	Nally & Hamilton	X	X	X		X	X	X	X
200701021	Oxford Mining - Kaiser Mathias	X	X	X		X		X	X
200701026	Frasure Creek Mining	X			X				X
200701044	Apex Energy								
200701104	The Raven Co.								
200701131	Miller Bros. Coal								
200701132	Miller Bros. Coal - Frasure Branch								
200701180	Oxford Mining Company LLC - Ellis Area				X			X	X
200701205	Matt/Co								

Matrix of Potential Environmental Concerns using MIRA						
Corps PN	**Name of Mine**	**Mine Impact with an Emphasis on Stream Length**	**Environmental Condition**	**Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas**	**Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas**	**Mine Impact with an Emphasis on Conductivity**
200601290	Licking River Resources					
200601296	Clintwood Elkhorn					X
200601647	Nally & Hamilton		X			
200602033	Wildcat - #2	X		X	X	X
200602290	Colony Bay Coal Co.	X	X	X		X
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	X	X	X		X
200700182	Alex Energy, Inc. - Federal	X	X	X		X
200700193	Premier Elkhorn Coal					
200700217	Leeco, Inc. - Stacy Branch	X		X	X	X
200700285	Alex Energy, Inc. - Lonestar	X	X	X		X
200700286	Pioneer Fuel - MT5B	X	X	X		X
200700335	Apex Energy					
200700400	Argus Energy	X	X	X		
200700401	Candle Ridge Mining		X	X		X
200700594	Premier Elkhorn Coal					
200700595	Leeco, Inc. - Elk Lick	X		X	X	X
200700706	Johnson Floyd Coal - Johnson Floyd Coal		X			
200700820	Nally & Hamilton	X	X	X		X
200701021	Oxford Mining - Kaiser Mathias		X		X	
200701026	Frasure Creek Mining					X
200701044	Apex Energy					
200701104	The Raven Co.					
200701131	Miller Bros. Coal					
200701132	Miller Bros. Coal - Frasure Branch					
200701180	Oxford Mining Company LLC - Ellis Area					
200701205	Matt/Co					

Matrix of Potential Environmental Concerns using MIRA									
Corps PN	**Name of Mine**	**Region 3**	**Region 4**	**Region 5**	**All Mine Impact**	**All Environmental Condition**	**Mine Impact and Mine Footprint**	**SAD, Stream Length and Conductivity**	**SAD and Conductivity**
200701206	Frasure Creek Mining							X	X
200701224	Miller Bros. Coal								
200701301	CAM Mining - Tom's Branch Surface Mine								X
200701397	FCDC				X				X
200701406	ICG Hazard - Bearville North						X	X	X
200701445	FCDC				X		X	X	X
200701504	CAM Mining				X				
200701515	ICG Hazard	X	X	X			X	X	X
200701518	Clintwood Elkhorn			X	X		X	X	X
200701582	Miller Bros. Coal						X	X	
200701660	Martin County Coal - Findlay Branch Mine								X
200800095	Premier Elkhorn Coal								
200800114	BDCC Holdings - Cherries Branch								
200800115	Wolverine Resources - Jake Fork and Stoney Branch								
200800139	Apex Energy	X	X	X		X			
200800226	Czar Coal								
200800408	Czar Coal								
200800491	CONSOL of Energy - Buffalo Mt.	X	X	X	X		X	X	X
200800562	Eastern Associated Coals - Huff Creek			X	X		X	X	X
200800654	Enterprise Mining	X	X	X	X		X	X	X
200800727	Miller Bros. Coal								
200800781	Wolverine Resources				X		X	X	
200800791	Hobet Mining - Surface Mine No. 45						X	X	X

Matrix of Potential Environmental Concerns using MIRA						
Corps PN	**Name of Mine**	**Mine Impact with an Emphasis on Stream Length**	**Environmental Condition**	**Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas**	**Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas**	**Mine Impact with an Emphasis on Conductivity**
200701206	Frasure Creek Mining					
200701224	Miller Bros. Coal					
200701301	CAM Mining - Tom's Branch Surface Mine					
200701397	FCDC			X		X
200701406	ICG Hazard - Bearville North					
200701445	FCDC			X		
200701504	CAM Mining					
200701515	ICG Hazard	X	X		X	X
200701518	Clintwood Elkhorn	X		X		X
200701582	Miller Bros. Coal	X				
200701660	Martin County Coal - Findlay Branch Mine					
200800095	Premier Elkhorn Coal					
200800114	BDCC Holdings - Cherries Branch		X			
200800115	Wolverine Resources - Jake Fork and Stoney Branch					
200800139	Apex Energy	X	X		X	X
200800226	Czar Coal					
200800408	Czar Coal					
200800491	CONSOL of Energy - Buffalo Mt.	X	X	X	X	X
200800562	Eastern Associated Coals - Huff Creek	X	X	X		X
200800654	Enterprise Mining	X	X		X	X
200800727	Miller Bros. Coal					
200800781	Wolverine Resources	X			X	
200800791	Hobet Mining - Surface Mine No. 45	X	X			

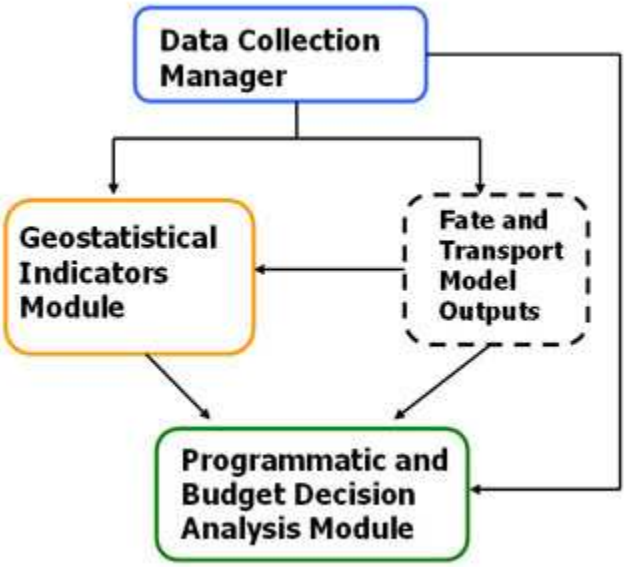
Matrix of Potential Environmental Concerns using MIRA									
Corps PN	**Name of Mine**	**Region 3**	**Region 4**	**Region 5**	**All Mine Impact**	**All Environmental Condition**	**Mine Impact and Mine Footprint**	**SAD, Stream Length and Conductivity**	**SAD and Conductivity**
200800805	Coyote Coal Company - Joes Creek	**X**	**X**	**X**	**X**		**X**	**X**	**X**
200800830	CoalMac, Inc. - Pine Creek							**X**	**X**
200801098	Frasure Creek Mining - Spring Fork NO. 2								
200900239	Frasure Creek Mining			**X**			**X**	**X**	**X**
200900428	Consol of Kentucky - Spring Branch No. 3								
200700069	CAM Mining Cane Branch	Insufficient information to be screened using MIRA							
200700867	CAM Mining	Insufficient information to be screened using MIRA							
200701230	ICG Knott	Insufficient information to be screened using MIRA							
200800525	Middle Fork Development	Insufficient information to be screened using MIRA							

Matrix of Potential Environmental Concerns using MIRA						
Corps PN	**Name of Mine**	**Mine Impact with an Emphasis on Stream Length**	**Environmental Condition**	**Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas**	**Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas**	**Mine Impact with an Emphasis on Conductivity**
200800805	Coyote Coal Company - Joes Creek	X	X	X	X	X
200800830	CoalMac, Inc. - Pine Creek					
200801098	Frasure Creek Mining - Spring Fork NO. 2					
200900239	Frasure Creek Mining	X	X	X		X
200900428	Consol of Kentucky - Spring Branch No. 3					
200700069	CAM Mining Cane Branch	Insufficient information to be screened using MIRA				
200700867	CAM Mining	Insufficient information to be screened using MIRA				
200701230	ICG Knott	Insufficient information to be screened using MIRA				
200800525	Middle Fork Development	Insufficient information to be screened using MIRA				

Multi-criteria Integrated Resource Assessment (MIRA)

Use: MIRA helps decision makers make more informed environmental decisions that include stakeholder concerns. MIRA is process that helps decision makers organize and rank decision criteria or indicators, link the data to a policy decision, use the decision context to determine the relative importance of the decision criteria, and explore alternative decision options.

Organization: The Tools in the MIRA Toolbox

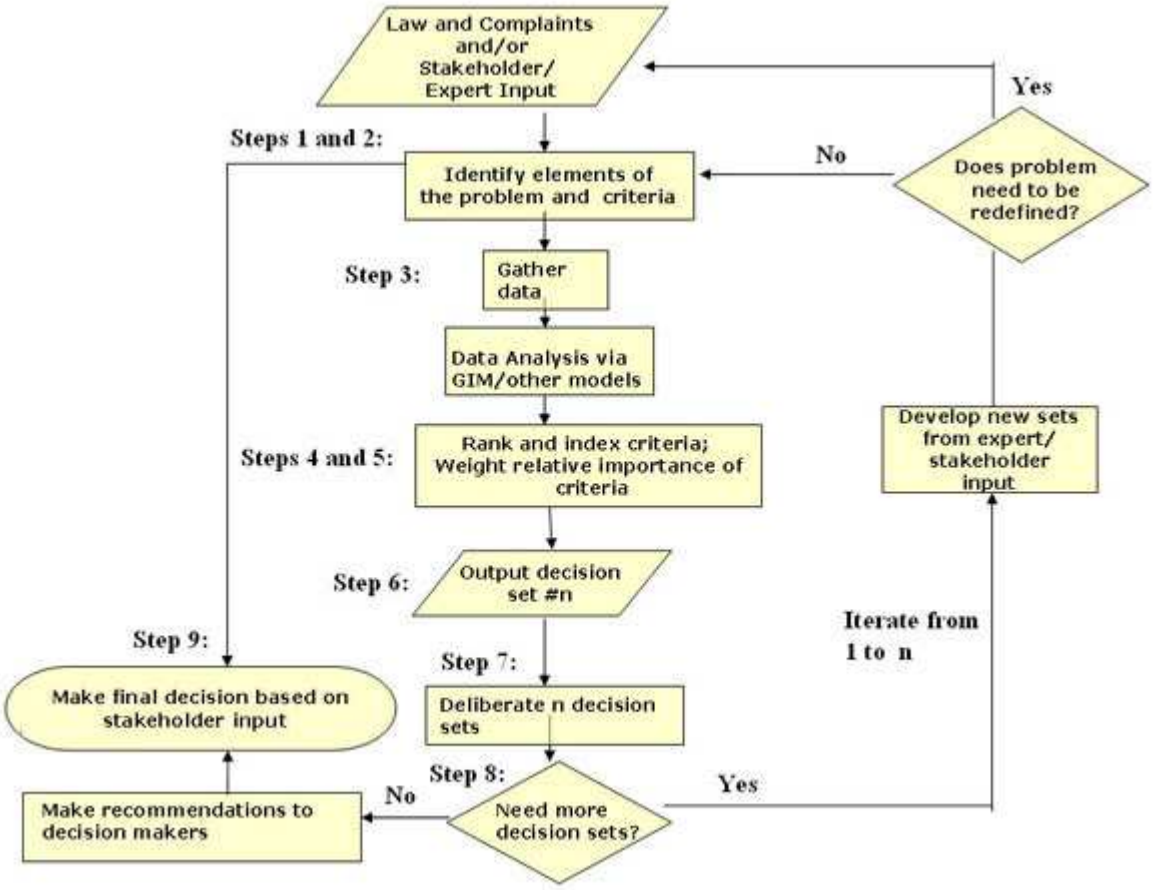


How the tools connect with each other and outside information: The **Data Collection Manager** allows users to store, sort, and retrieve data such as source emissions, demographics, and environmental quality values. The **Geostatistical Indicators Module** allows users to take spatial fields (i.e., maps) and collapse them into a single number in order to compare one map to another in making a decision. The **Programmatic and Budget Decision Analysis Module** provides a way to organize all decision criteria (i.e., indicators), include expert opinions and include what's important to stakeholders in making a decision. The **Fate and Transport Model Outputs** from Cause and Effect Models (from EPA and non-EPA sources) become inputs into MIRA; connects science with decision making (via the MIRA Decision Analysis Module)

10 Steps of the MIRA Process

1. define the decision question; decide on decision criteria based on that question
2. select the 'problem set' which is the set of elements (the decision options or pollutant sources) that are to be ranked using MIRA
3. gather the data needed for each criterion
4. index set of elements (expert input)
5. weigh the criteria (decision maker/stakeholder values)
6. create an initial 'decision set' (a problem set whose elements are ranked based on the data and criteria weighting)
7. create different decision sets for the initial problem set and modifying that problem set if appropriate as learning occurs and additional options are discovered;
8. discuss these with stakeholders
9. make the final decision
10. iterate

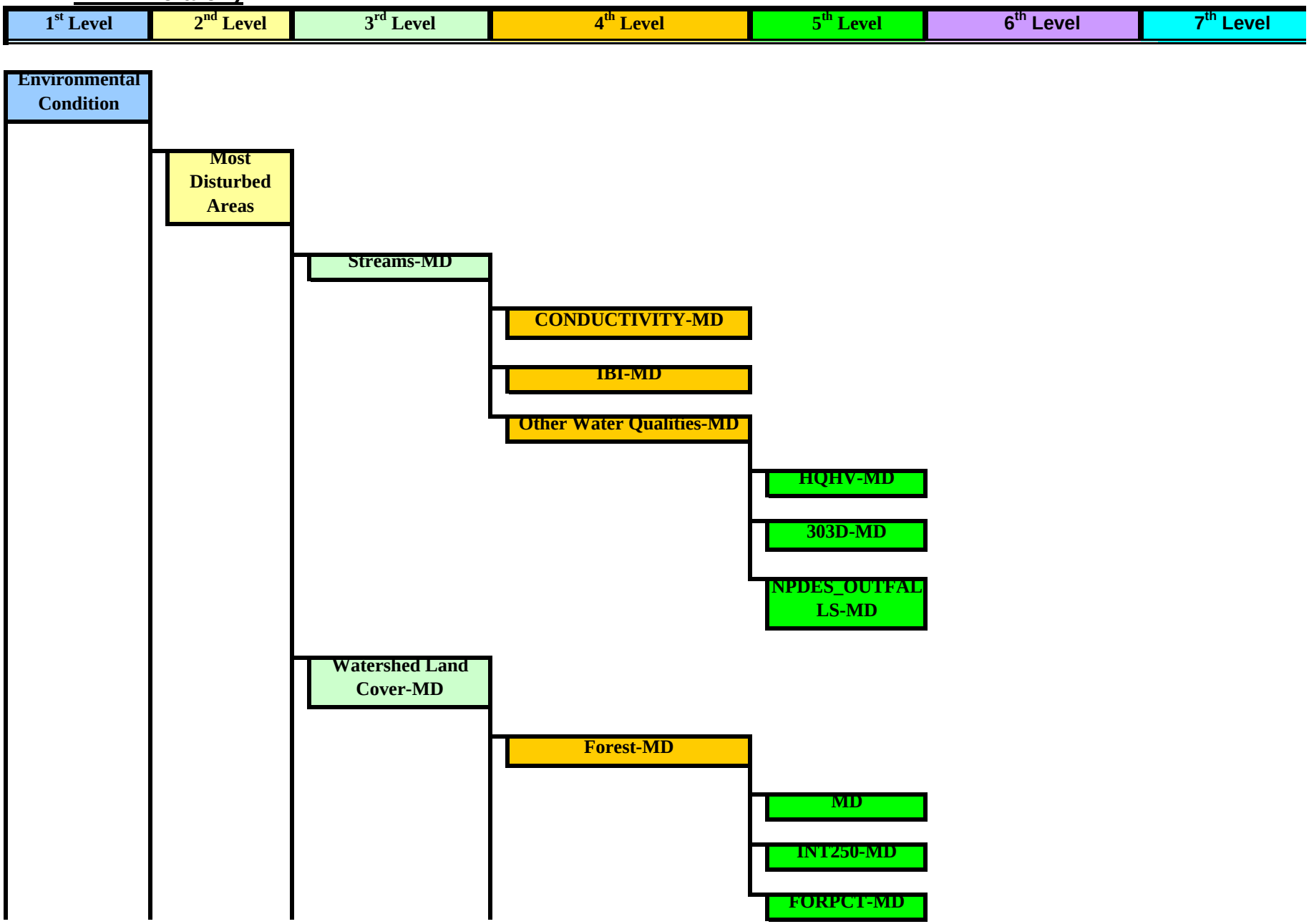
The data from the Data Collection Manager and from the Geostatistical Indicators Module, as well as other databases or models, are incorporated into the MIRA Process in step 3, as guided by the decision criteria and the problem set identified in steps 1 and 2. Users are key to the MIRA approach as it is these stakeholders that determine what criteria are used, which data adequately represent those criteria, how the criteria are weighted and the kinds of alternatives that will be examined.



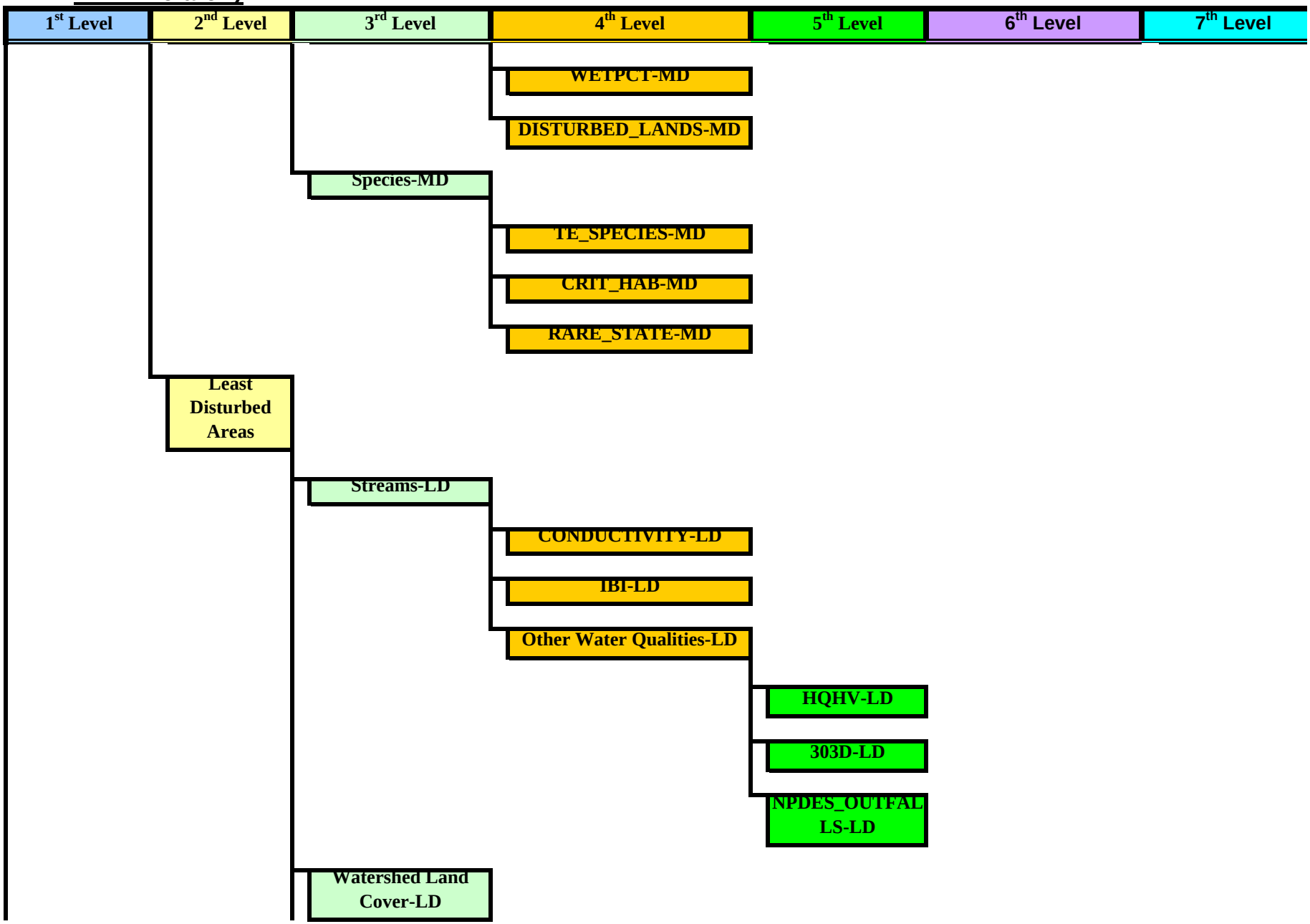
MIRA Process Flow

For information on where MIRA has been used and references on science and decision making visit: http://www.epa.gov/reg3esd1/data/mira.htm#more

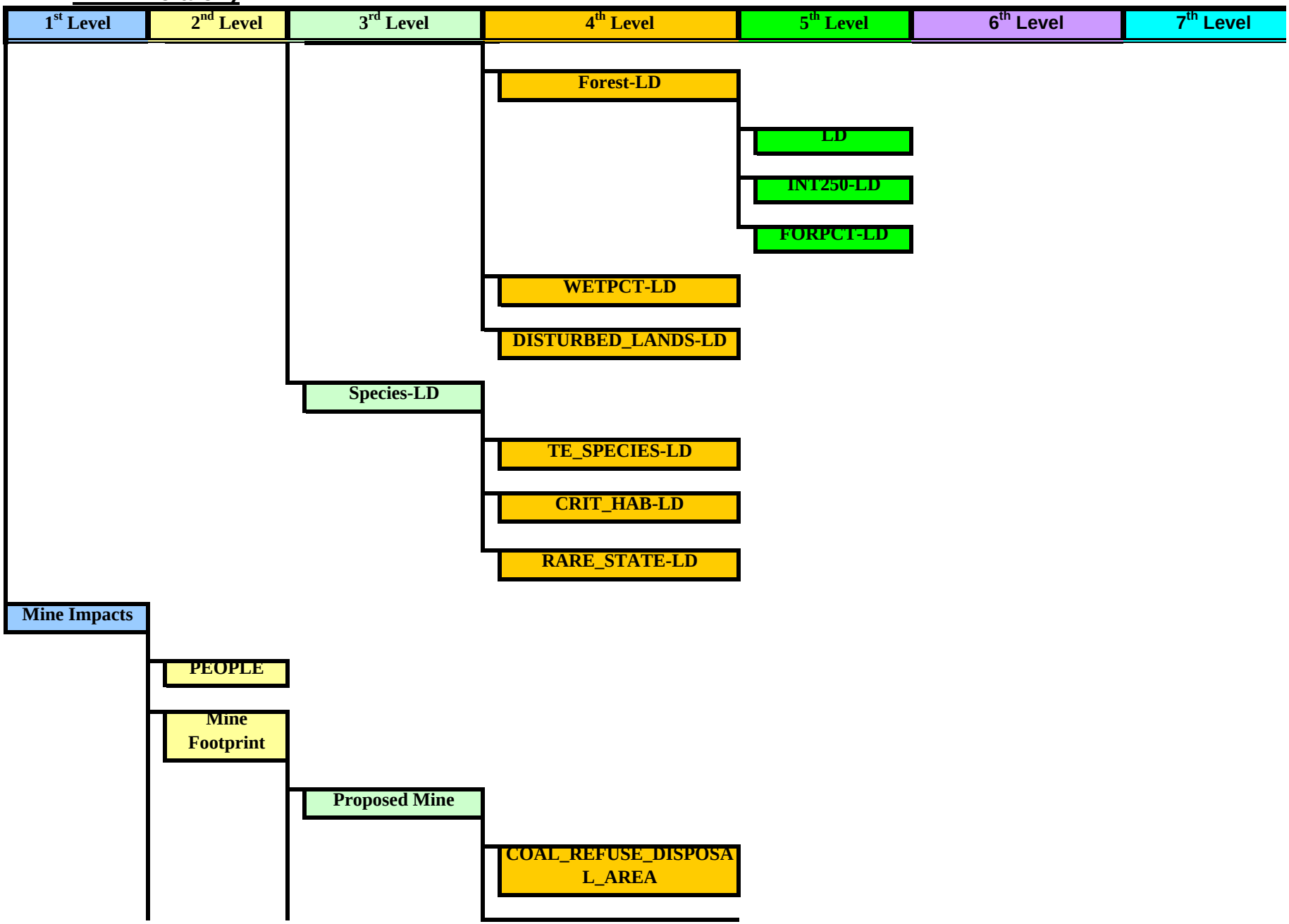
MIRA Hierarchy



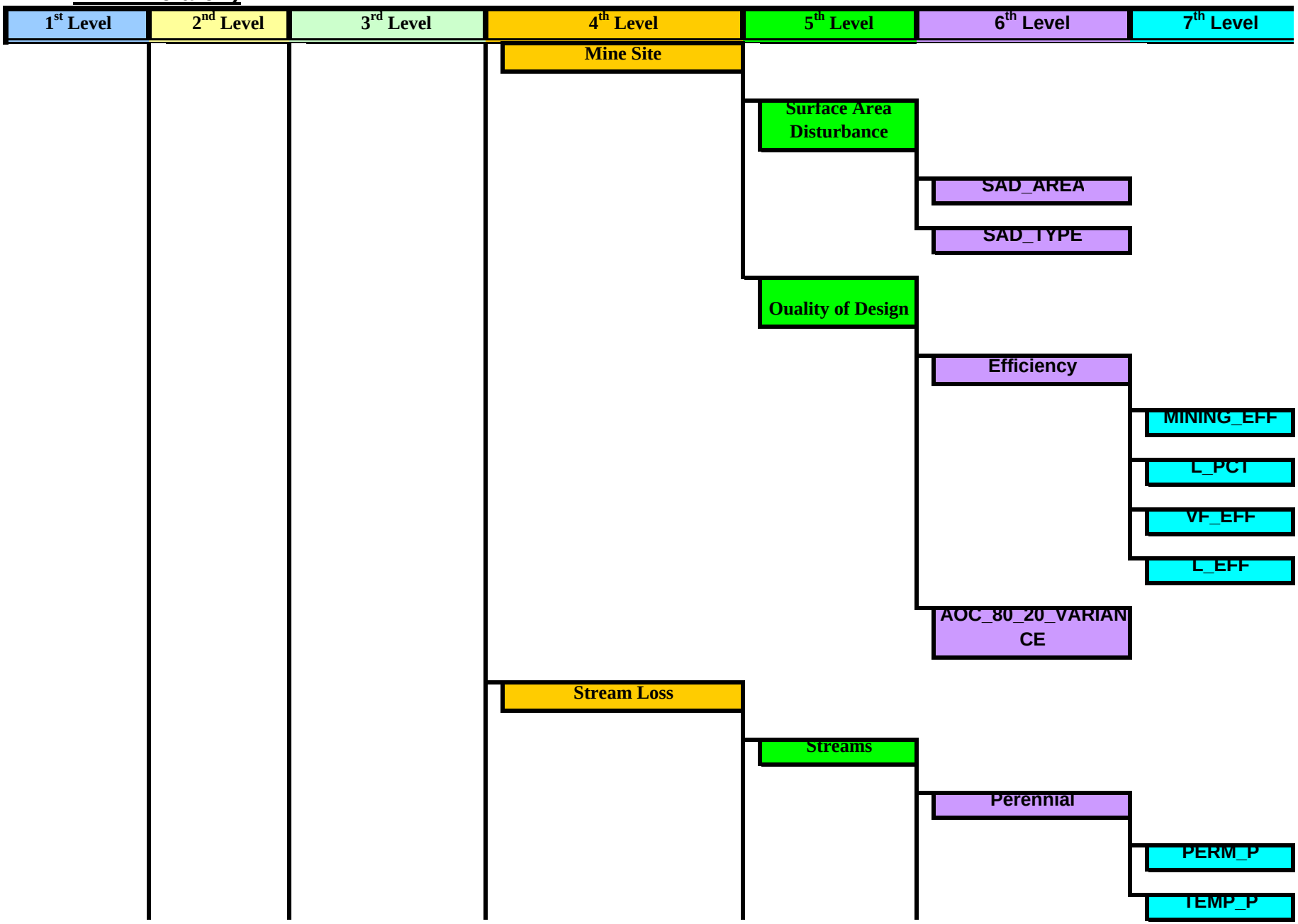
MIRA Hierarchy



MIRA Hierarchy



MIRA Hierarchy



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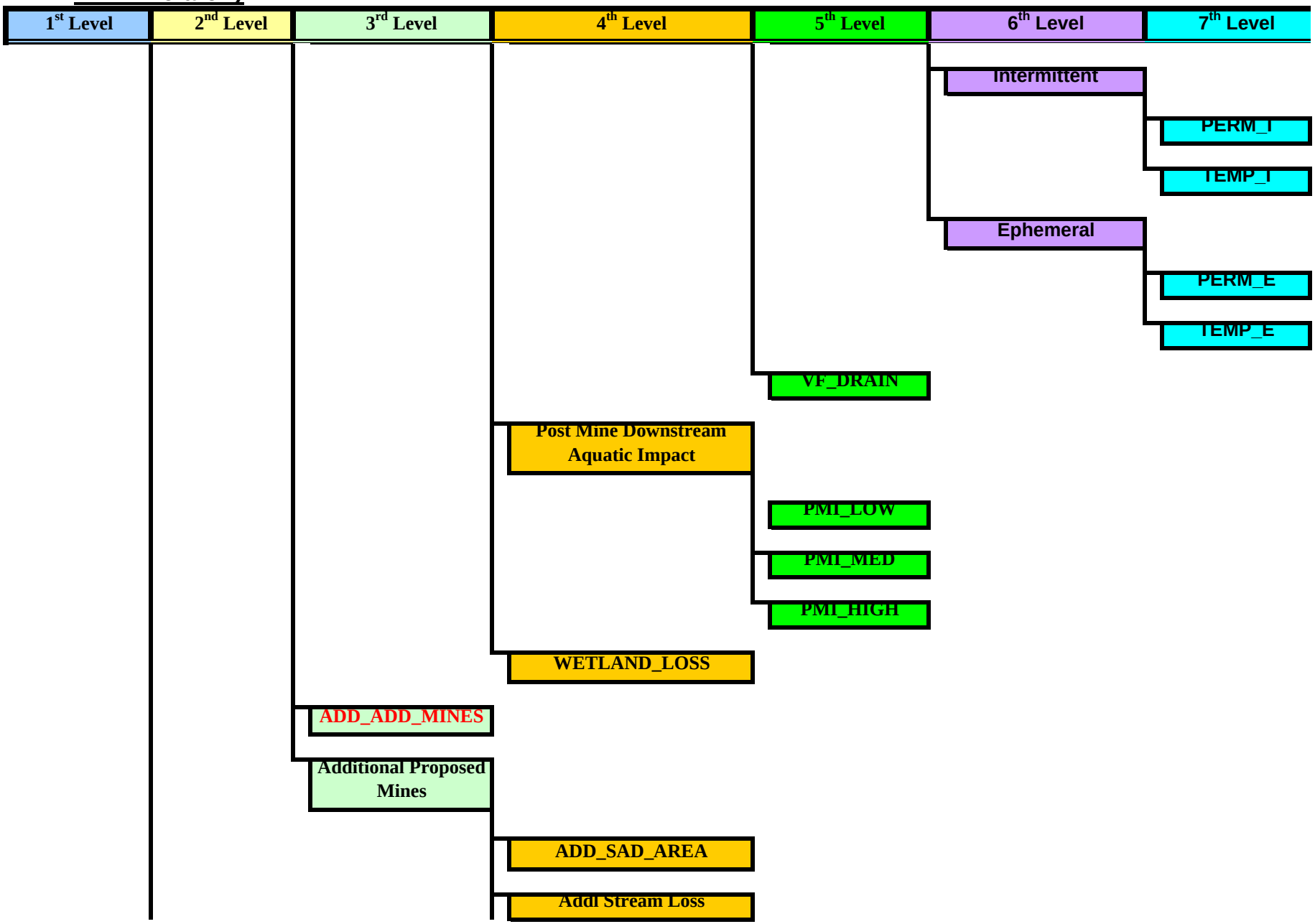
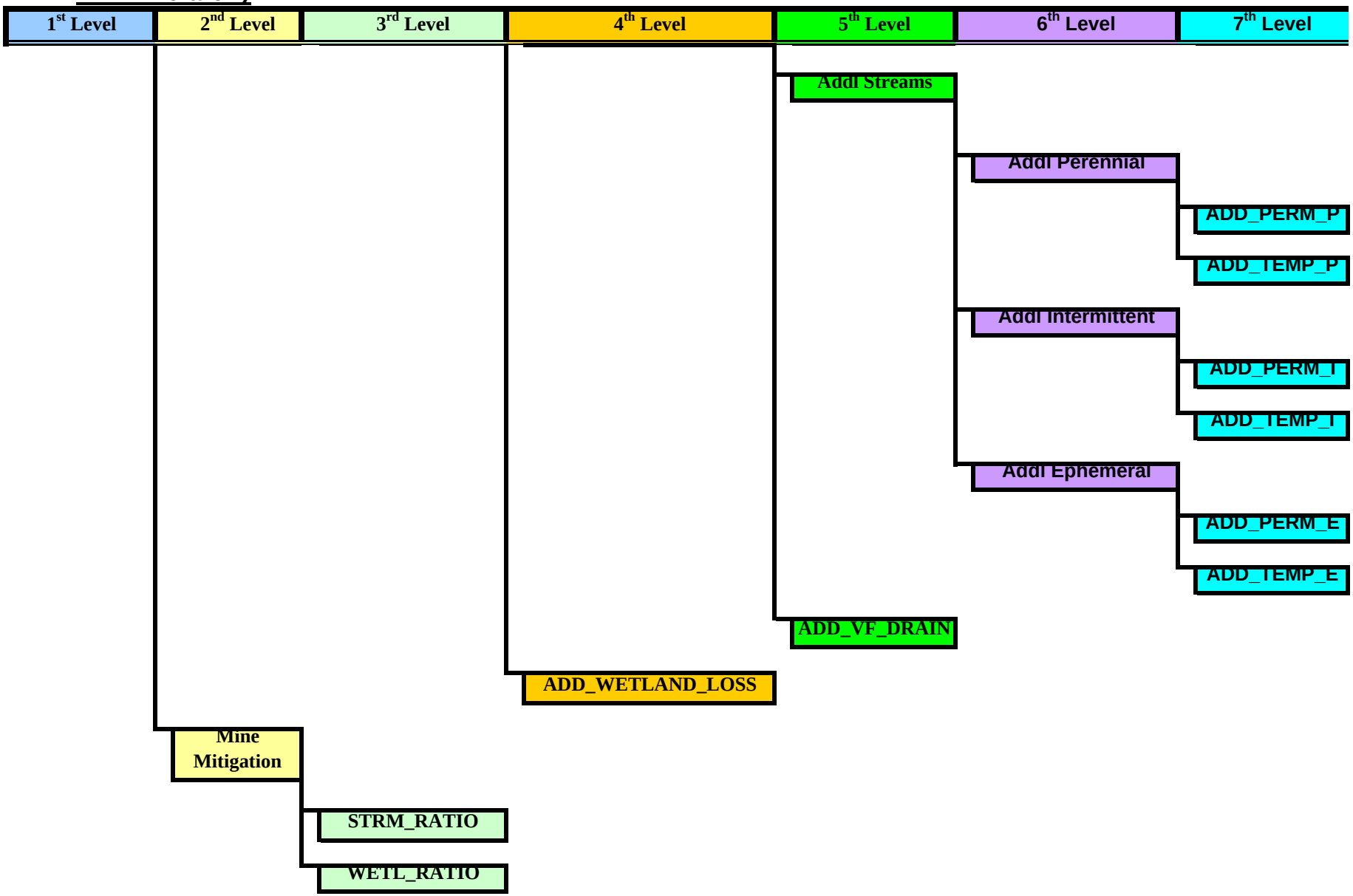


MIRA Hierarchy



MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
CONDUCTIVITY	Environmental Condition of underlying watershed	Conductivity of the HUC12 watershed(s) in which the mine is being proposed. Specific conductivity or Total Dissolved Solids (TDS - conductivity can be calculated from TDS) as measured at the proposed mining site. As such this relates to current environmental condition of the streams. The greater the value of CONDUCTIVITY-MD the worse the environmental conditon. UNITS: us/cm METHOD: Average of all reading within all HUCs impacted be the mine
IBI	Environmental Condition of underlying watershed	State actual measurments for all the HUCs impacted by the mine UNITS: Index Range 0-100 METHOD: Average of all reading within all HUCs impacted be the mine
HQHV	Environmental Condition of underlying watershed	Is there at least one stream length classified as High Quality/High Value in any of the HUC12 watersheds that are affected by the proposed mine? UNITS: (Y/N) 0 = N & 1= Y
303D	Environmental Condition of underlying watershed	Clean Water Act classified Section 303d impaired streams. The % streams in all of the HUC12s (where a proposed mine will be located) that are classified as 303d impaired. UNITS:: (%) METHOD: Average of all reading within all HUCs impacted be the mine
NPDES_OUTFALLS	Environmental Condition of underlying watershed	NPDES Outfalls. The Total # of NPDES existing discharges in all HUC impacted by the proposed mine . IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the sum of those affected HUC12 watersheds.
CHG_FORPCT	Environmental Condition of underlying watershed	Change in Forest Percent. The change in total forest % (from 1992 to 2001), in those HUC12 watersheds where the proposed mine will be locating. IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the average % weighted by HUC area of those affected HUC12 watersheds. Positive numbers mean increased forest UNITS: (%)

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
INT250	Environmental Condition of underlying watershed	Interior Core Forest > 250 acres. The % of the total area of Interior core forest (forest patches that are >= 250 acres) within the HUC12 watersheds where the proposed mine will be locating. IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the average % weighted by HUC area of those affected HUC12 watersheds. UNITS: (%)
FORPCT	Environmental Condition of underlying watershed	Forest Percent. The % forest in the HUC12 watersheds where the proposed mine will be locating. IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the average % weighted by HUC area of those affected HUC12 watersheds. UNITS: (%)
WETPCT	Environmental Condition of underlying watershed	Wetlands Percent. The % of wetlands, by area, in all the HUC12 watersheds that the proposed mine affects.. IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the average % weighted by HUC area of those affected HUC12 watersheds. UNITS: (%)
DISTURBED_LANDS	Environmental Condition of underlying watershed	Disturbed Lands. This indicator includes Urban + Barren. % over all HUCs that the proposed mine impacts. IF the surface area of the proposed mine includes more than one HUC12 watershed, this value will be the average % weighted by HUC area of those affected HUC12 watersheds. UNITS: (%)
TE_SPECIES	Environmental Condition of underlying watershed	Threatened and Endangered Species. Is thete at least one threatened or endangered aquatic or terrestrial species or candidate species in any of the HUC8 watersheds that are affected by the proposed mine? If there is the presence of at least one T&E or candidate species, there is cause for concern. UNITS: Y/N per HUC8 0 =N & 1 = y

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
CRIT_HAB	Environmental Condition of underlying watershed	Critical Habitat. Is there at least one Critical Habitate area in any of the HUC8 watersheds that are affected by the proposed mine? UNITS: (Y/N per HUC8) 0 = N & 1= Y
RARE_STATE	Environmental Condition of underlying watershed	Rare, State-listed Species. The total number of rare state listed aquatic or terrestrial species in the HUC watersheds that are affected by the proposed mine? UNITS: Y/N per HUC8 0 =N & 1 = y
PEOPLE	Environmental Condition of underlying watershed	Is the proposed mine planning to have a coal refuse disposal area? A coal refuse disposal area is often a slurry pond but could include other types. UNITS: (Y/N) 0 = N & 1= Y
COAL_REFUSE_DISPOSAL_AREA	Mine Impact	Is the proposed mine planning to have a coal refuse disposal area? A coal refuse disposal area is often a slurry pond but could include other types. UNITS: (Y/N) 0 = N & 1= Y
SAD_AREA	Mine Impact	Surface Area Disturbance Area. Total Surface Area of Disturbance (NEW+ EXPANSION + REMINE) area disturbed, including roads, mineral extraction area, valley fills of the proposed activity.
SAD_TYPE	Mine Impact	Surface Area Disturbance Type. This is a flag which represents the possible types of SAD that can be included in total area found in the terminal indicator "SAD_AREA" The possible flags and their definations are as follows: 1.. EXPANSION or REMINING 2. NEW UNITS: (Flag: 1 or 2)
MINING_EFF	Mine Impact	Mining Efficiency = tons of coal mined per acre of mine area. The higher this number the more efficient the use of the land. UNITS: (TONS/ACRE)

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
EXCESS_SPOIL_PCT	Mine Impact	Excess Spoil Percent. This is the ratio (expressed as a percentage) of the Excess Spoils to the Total Spoils. The higher the number, the worse environmentally (e.g., excess spoil disposal is often into valley fills resulting in stream impacts.) METRIC: (Excess Spoils/total spoils) UNITS: (%)
VF_EFF	Mine Impact	Valley Fill Efficiency = volume of excess spoils per linear ft of stream filled. The higher the number the lower the stream impact. UNITS: (cu.yd fill /linear ft. stream)
EXCESS_SPOIL_EFF	Mine Impact	Excess Spoil Efficiency = excess spoil per ton of coal. The lower this number the higher removal efficency meaning likely to have less aquatic resource impacts per ton of coal extracted. UNITS: (cu.yd/Ton)
AOC_80_20_VARIANCE	Mine Impact	Approximate Original Contour or Equivalent (i.e., 80-20) Variance. Does the applicant have a variance so that the area will not be brought back to AOC of the pre-mined land? If no, the area will be brought back to AOC (or AOC plus). UNITS: (Y/N) 0 = N & 1 = Y
PERM_P	Mine Impact	Permanent Perennial Stream Impact. Length of perennial stream filled or mined through permanently. UNITS: linear ft.
TEMP_P	Mine Impact	Temporary Perennial Stream Impact. Length of Perennial stream filled or mined through temporarily. UNITS: linear ft.
PERM_I	Mine Impact	Permanent Intermittent Stream Impact. Length of intermittent stream filled or mined through permanently. UNITS: linear ft.
TEMP_I	Mine Impact	Temporary Intermittent Stream Impact. Length of intermittent streams filled or mined through temporarily. UNITS: linear ft.

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
PERM_E	Mine Impact	Permanent Ephemeral Stream Impact. Length of ephemeral streams filled or mined through permanently. UNITS: linear ft.
TEMP_E	Mine Impact	Temporary Ephemeral Stream Impact. Length of ephemeral streams filled or mined through temporarily. UNITS: linear ft.
VF_DRAIN	Mine Impact	Valley Fill Drainage (applicable only to mountaintop mining) This indicator is a linear weighted sum of the number of valley fills that are proposed to be located in one of three drainage classes: i.e., 1) Drainage areas that are > 40 acres 2) Drainage areas that are >= 15 acres & <= 40 acres 3) Drainage areas that are < 15 acres METRIC: ∑(from i=1 to i=3) [DAwgt_i x VF_i] where: i=1 for drainage area > 40 acres i=2 for drainage area >= 15 acres & <= 40 acres i=3 for drainage area < 15 acres DAwgt_i is the weight (0-1) of the ith dranage area VF_i is the number of valley fills that are to be located in the ith drainage area Ecah of the valley fill drainage area classes above will be weighted based on the relative significance of these kinds of drainage areas. UNITS: (weighted Number)

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
PMI_LOW	Mine Impact	Post Mine Impact Low This indicator is designed to consider the impact that the proposed mine will have on aquatic resources if both the present conductivity of the proposed surface area disturbance and the conductivity of its closest area of adjacent mining are < the tipping point for a stream's conductivity (i.e. in general, 500 us/cm). Post Mine Impact Medium This indicator is designed to consider the impact that the proposed mine will have on aquatic resources if the present conductivity of the proposed surface area disturbance is less than the tipping point for a stream's conductivity (i.e. in general, 500 us/cm) and the conductivity of the closest adjacent mining areas is >= the tipping point. Post Mine Impact High This indicator is designed to consider the impact that the proposed mine will have on aquatic resources if both the present conductivity of the proposed surface area disturbance and the conductivity of its closest area of adjacent mining are >= than the tipping point for a stream's conductivity (i.e. in general, 500 us/cm).
PMI_MED	Mine Impact	Each of the three PMI terminal indicators relate to the impact on aquatic resources that the proposed mine is expected to have, based on an estimate of the conductivity that will result from the mining operations. Although the metric for thess three indicators is calculated in the same manner (based on a knowledge of the pre-mine coductivity and the conductivity of the closest adjacent) the value of the metrics will be indexed differently, since each indicator represents one of three possible cases that vary in the degree to which a proposed mine's impact will be significant. That is, the significance of the impact will depend on both the value of the metric and which of the following three cases apply. The three cases are as follows: 1) PMI_LOW: pre-mine & adjacent mine conductivities are < tipping point. 2) PMI_MED: pre-mine conductivity < 500 us/cm & adjacent mine conductivity >= tipping point. 3) PMI_HIGH: pre-mine & adjacent mine conductivities >= tipping point. The construction of these indicators is based on the concept of a tipping point above which a stream is expected to be impared.

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
PMI_HIGH	Mine Impact	The metric for PMI_LOW, PMI_MED & PMI_HIGH is calculated as follows: PMI_... = [(COND_Adj - CONDUCTIVITY)/(COND_Adj)] * [COND_Adj + CONDUCTIVITY] * [(COND_Adj)/CONDUCTIVITY)] The logic behine this metric is based on three principles: 1) the greater the expected precent increase in conductivity from pre to post mining conditions the greater the mine's impact (i.e. COND_Adj/CONDUCTIVITY0); 2) the greater the overall magnitude of both the pre and post mining conductivities the greater the mine's expected impact; and 3) the closer the pre and post mining cnductivities are the less the concern (e.g. consider a pre and post mine conductivity that were equal, such a situation would caues no concern, however greater the difference the greater the concern).
WETLAND_LOSS	Mine Impact	Wetland Loss = acres of wetlands removed by the proposed mine. UNITS: acres
ADD_ADD_MINES	Mine Impact	This colume contains the total number of mines, not evaluted individually by MIRA, that are in the regulatory pipeline and are proposed to be located (as defined by a single point --Lat/Long) within any HUC that the footprint of the mine being evaluated impacts. The manner in which this data is used in the analysis is as follows: The ADD_ADD_MINES Indicator is calculated by multiplying the # of ADD_ADD_MINES by the median of a subset of the values or the "Additional Proposed Mines" composite indicator. The subset is constructed of all proposed mines that have one and only one additional mine, from the proposed list of mines being evaluated, that impacts at least one of the same HUCs.
ADD_SAD_AREA	Mine Impact	Additional Mines Surface Area Disturbance Area. Total Surface Area of Disturbance (NEW+ EXPANSION + REMINE) area disturbed, including roads, mineral extraction area, valley fills of the additional proposed mines in all the affected watersheds. UNITS:(acres)
ADD_PERM_P	Mine Impact	Permanent Perennial Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Permanent Perennial stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
ADD_TEMP_P	Mine Impact	Temporary Perennial Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Temporary Perennial stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.
ADD_PERM_I	Mine Impact	Permanent Intermittent Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Permanent Intermittent stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.
ADD_TEMP_I	Mine Impact	Temporary Intermittent Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Temporary Intermittent stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.
ADD_PERM_E	Mine Impact	Permanent Ephemeral Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Permanent Ephemeral stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.
ADD_TEMP_E	Mine Impact	Temporary Ephemeral Stream Impacts due to additional proposed mines in the same watershed(s) as the proposed mine. Total length of Temporary Ephemeral stream that includes footage from additional proposed mines in the affected watersheds. UNITS: linear ft.

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
ADD_VF_DRAIN	Mine Impact	Valley Fill Drainage (applicable only to mountaintop mining) from additional proposed mines. This indicator is a linear weighted sum of the number of valley fills that are proposed to be located in one of three drainage classes from additional proposed mines in the same watersheds. Thes drainage classes are:: 1) Drainage areas, from the downstream sediment pond, that are > 40 acres 2) Drainage areas, from the downstream sediment pond, that are >= 15 acres & <= 40 acres 3) Drainage areas, from the downstream sediment pond, that are < 15 acres METRIC: ∑(from i=1 to i=3) [DAwgt_i x VF_i] where: i=1 for drainage area > 40 acres i=2 for drainage area >= 15 acres & <= 40 acres i=3 for drainage area < 15 acres DAwgt_i is the weight (0-1) of the ith dranage area VF_i is the number of valley fills that are to be located in the ith drainage area Ecah of the valley fill drainage area classes above will be weighted based on the relative significance of these kinds of drainage areas. UNITS: (weighted Number)
ADD_WETLAND_LOSS	Mine Impact	ADD Wetland Loss = acres of wetlands removed by additional proposed mines in the same watershed(s) as the porposed mine. UNITS: acres
STRM_RATIO	Mine Impact	Stream Mitigation Ratio. This indicator represents the % of impacted streams that the proposed mine intends to mitigate. The indicator is constructed as the ratio of the Total length of mitigated streams to the total length of mine impacted streams. UNITS: NON-DIM (0 - 1) NOTE: If the Total length of streams impacted = 0.00 then this indicator is set equal to 999.00
WETL_RATIO	Mine Impact	Wetlands Mitigation Ratio. This indicator represents the % of the impacted wetlands that the proposed mine intends to mitigate. The indicator is constructed as the ratio of the Total area of mitigated wetlands to the total area of mine impacted wetalnds. UNITS: Non-dimensional (0 - 1) NOTE: If the Total area of mine impacted wetalnds = 0.00 then this indicator is set equal to 999.00

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
Sum of Fills	Mine Impact	Sum of Stream Fills or Mined through: Total linear ft of all types of streams filled or mined through by the proposed mine (temporary and permanent impacts). UNITS: linear ft.
Excess Spoil	Mine Impact	Excess Spoils. UNITS: 10^6 cu yd. per valley fill
COND_Adj	Mine Impact	The specific conductivity or Total Dissolved Solids (TDS - conductivity can be calculated from TDS) as measured at the the existing mines within the watershed where the proposed mine is planning to locate. This is used in conjunction with the terminal PMI indicator to estimate post-mine aquatic impacts. See the 3 PMI terminal indicators. The data can be found in either the the Cumulative Hydrologic Impact Analysis or the EID (Environmental Information Document). UNITS: us/cm
COND_Pre	Mine Impact	Where baseline data was available from the application materials, it was used. Where baseline data was not available fromt he application materials the mean of the available data points for the streams closest to the proposed mine were used. Where no baseline measurements were available, the minimum value for the HUC was used. Where no HUC conductivity was available, the median of the minimum HUC12 conductivities was used.
Coal Extraction	Mine Impact	Coal extraction expected from each mine proposed UNITS: (million tons)
# of VF w/ Drain Area > 40 (VF)	Mine Impact	Number of VF in the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) greater than 40 acres
# of VF w/ Drain Area 15-40 (VF)	Mine Impact	Number of VF in the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) greater than or equal to 15 acres but smaller than or equal to 40 acres
# of VF w/ Drain Area < 15 (VF)	Mine Impact	Number of VF in the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) less than 15 acres
Addl # of VF w/ Drain Area > 40 (VF)	Mine Impact	Number of VF in the additional mining proposal(s) that are within the same watershed as the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) greater than 40 acres

MIRA Indicator Definitions		
Indicator	**Used for describing:**	**Description**
Addl # of VF w/ Drain Area 15-40 (VF)	Mine Impact	Number of VF in the additional mining proposal(s) that are within the same watershed as the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) greater than or equal to 15 acres but smaller than or equal to 40 acres
Addl # of VF w/ Drain Area < 40 (VF)	Mine Impact	Number of VF in the additional mining proposal(s) that are within the same watershed as the mining proposal with a drainage area (measured from the downstream sediment pond if available, otherwise from the toe of the fill) less than 15 acres
Stream mitigation (linear feet)	Mine Impact	Stream Mitigation proposed UNITS: linear ft.
Wetland mitigation (acreage)	Mine Impact	Wetland Mitigation proposed UNITS: acres.
Total Spoil (cu. yds.)	Mine Impact	Total Spoil UNITS: 10^6 cu.yrds.
New Mine (Y/N)	Mine Impact	New Mine or not UNITS: (Y/N) 0 = N & 1 = Y

REFERENCES:
Clean Water Act http://epw.senate.gov/water.pdf
Clean Water Act, Section 404 http://www.epa.gov/owow/wetlands/regs/sec404.html
Text of Section 404(b)(1) http://www.epa.gov/owow/wetlands/pdf/40cfrPart230.pdf
Corps Regulatory Materials http://www.usace.army.mil/CECW/Pages/reg_materials.aspx
NEPA Statutory & Regulatory Materials http://nepa.gov/nepa/nepanet.htm

GENERAL:

"Except in compliance with this section and sections ... 1344 of this title, the discharge of any pollutant by any person shall be unlawful." (CWA 301)

"The Secretary may issue permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into the navigable waters at specified disposal sites." (CWA 404(a))

"Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern." (40 CFR 230.1(c))

LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA):

"[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." (40 CFR 230.10(a)).

AVOIDANCE OF IMPACTS / MINIMIZATION OF IMPACTS:

"[N]o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." (40 CFR 230.10(a)).

“For the purposes of this requirement, practicable alternatives include, but are not limited to: (i) Activities which do not involve a discharge of dredged or fill material into a water of the United States.” (40 CFR 230.10(a)(1)).

“Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps.” (40 CFR 230.10(d)).

"The district engineer will issue an individual Section 404 permit only upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those which require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States." (33 CFR 332.1(c)).

See also 40 CFR 230.70-.77 (Subpart H) (Actions to Minimize Adverse Effects).

WATER QUALITY / SIGNIFICANT DEGRADATION:

"In order to carry out the objective of this chapter there shall be achieved -- (C) ... any more stringent limitation, including those necessary to meet water quality standards ..." (CWA 301(b)(1)(C))

"No discharge of dredged or fill material shall be permitted if it: (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard" (40 CFR 230.10(b)(1))

"[N]o discharge shall be permitted which will cause or contribute to significant degradation of the waters of the United States, ... [including] (1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites. (2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes; (3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability...." (40 CFR 230.10(c))

See also 40 CFR 230.31 (effect on fish, crustaceans, mollusks, and other aquatic organisms in the food web), 40 CFR 230.61(b)(3) (Chemical, Biological and Physical Evaluation and Testing -- effects on benthos), 40 CFR 230.22 (suitability of water bodies for populations of aquatic organisms). See also 33 CFR 320.4(d)

404(b)(1) / CUMULATIVE IMPACTS:

"Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern." (40 CFR 230.1(c)).

"*Determination of cumulative effects on the aquatic ecosystem.* (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. (2) Cumulative effects

attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. ... This information shall be documented and considered during the decision-making processes ...." (40 CFR 230.11(g))

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA):

"[A]ll agencies of the Federal Government shall (A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and decisionmaking which may have an impact on man's environment; ... (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement ...on -- (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." (42 USC 4332(2)).

"The Administrator shall review and comment in writing on the environmental impact of any matter ... contained in any ... (2) newly authorized Federal projects for construction and any major Federal agency action (other than a project for construction) to which section 4332(2)(C) of this title applies." (CWA 309(a))

See also 40 CFR 230.32 (Other wildlife) 33 CFR 320.4(c) (Fish and wildlife)

NEPA / CUMULATIVE IMPACTS:

"Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

NEPA / ALTERNATIVES ANALYSIS:

"[A]ll agencies of the Federal Government shall (A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and decisionmaking which may have an impact on man's environment; ... (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement ...on -- … (iii) alternatives to the proposed action …" (40 U.S.C. § 4332(2))

"Agencies shall adopt procedures (§1507.3) to ensure that decisions are made in accordance with the policies and purposes of the Act. Such procedures shall include but not be limited to: … (e) Requiring that the alternatives considered by the decisionmaker are encompassed by the range of alternatives discussed in the relevant environmental documents and that the decisionmaker

consider the alternatives described in the environmental impact statement. If another decision document accompanies the relevant environmental documents to the decisionmaker, agencies are encouraged to make available to the public before the decision is made any part of that document that relates to the comparison of alternatives." 40 C.F.R. 1505.1(e).

COMPENSATORY MITIGATION:

Applicable to applications submitted prior to June 9, 2008

Memorandum of Agreement Between The Department of the Army and The Environmental Protection Agency Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990)

Applicable only to applications submitted after June 9, 2008

" (a) *General considerations.* (1) The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to waters of the United States authorized by DA permits. The district engineer must determine the compensatory mitigation to be required in a DA permit, based on what is practicable and capable of compensating for the aquatic resource functions that will be lost as a result of the permitted activity. When evaluating compensatory mitigation options, the district engineer will consider what would be environmentally preferable. In making this determination, the district engineer must assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project. In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success. Compensatory mitigation requirements must be commensurate with the amount and type of impact that is associated with a particular DA permit. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts." 33 CFR 332.3(a)

See generally 33 CFR Part 332

<u>Indicators</u>:

Environmental Condition -- **NEPA, 404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

Most Disturbed Areas
Least Disturbed Areas -- **NEPA, 404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

Streams-MD
Streams - LD -- **NEPA, 404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

CONDUCTIVITY-MD
CONDUCTIVITY - LD -- **WQ/SIGNIFICANT DEGRADATION, 404(b)(1)/CI, NEPA/CI**

IBI-MD
IBI - LD -- **WQ/SIGNIFICANT DEGRADATION, 404(b)(1)/CI, NEPA/CI**

Other Water Qualities –MD
Other Water Qualities - LD -- **404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

HQHV-MD
HQHV-LD -- **404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

303D-MD
303D-LD -- **404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

NPDES_OUTFALLS-MD
NPDES_OUTFALLS-LD -- **404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

Watershed Land Cover -MD
Watershed Land Cover - LD **NEPA, 404(b)(1)/CI, NEPA/CI, WQ/SIGNIFICANT DEGRADATION**

Forest-MD
Forest - LD -- **NEPA, NEPA/CI, WQ/SIGNIFICANT DEGRADATION ***
(*Presence or absence of forest canopy has significant affect on water quality. For example, forest structure captures and slows

precipitation and runoff and thus has an effect on water circulation and fluctuation (see 40 CFR 230.11(b), 230.22, 230.23, 230.24), siltation, and scouring, which in turn may affect benthos habitat. Presence or absence of canopy also may affect water temperature).

CHG-FORPCT-MD
CHG-FORPCT-LD -- **NEPA, NEPA/CI, WQ/SIGNIFICANT DEGRADATION***

(*Presence or absence of forest canopy has significant affect on water quality. For example, forest structure captures and slows precipitation and runoff and thus has an effect on water circulation and fluctuation (see 40 CFR 230.11(b), 230.22, 230.23, 230.24), siltation, and scouring, which in turn may affect benthos habitat. Presence or absence of canopy also may affect water temperature).

INT250-MD
INT250-LD -- **NEPA, NEPA/CI, WQ/SIGNIFICANT DEGRADATION ***

(*Presence or absence of forest canopy has significant affect on water quality. For example, forest structure captures and slows precipitation and runoff and thus has an effect on water circulation and fluctuation (see 40 CFR 230.11(b), 230.22, 230.23, 230.24), siltation, and scouring, which in turn may affect benthos habitat. Presence or absence of canopy also may affect water temperature).

FOR_PCT-MD
FOR_PCT-LD -- **NEPA, NEPA/CI, WQ/SIGNIFICANT DEGRADATION ***

(*Presence or absence of forest canopy has significant affect on water quality. For example, forest structure captures and slows precipitation and runoff and thus has an effect on water circulation and fluctuation (see 40 CFR 230.11(b), 230.22, 230.23, 230.24), siltation, and scouring, which in turn may affect benthos habitat. Presence or absence of canopy also may affect water temperature).

WETPCT-MD
WETPCT - LD -- **404(b)(1)/CI, NEPA/CI**

DISTURBED_LANDS-MD
DISTURBED_LANDS - LD -- **404(b)(1)/CI, NEPA/CI**

Species-MD
Species - LD -- **40 CFR 230.10(b)(3); 40 CFR 230.30, 40 CFR 230.32**

TE-SPECIES-MD
TE-SPECIES-LD
CRIT_HAB-MD
CRIT-HAB-LD

RARE_STATE-MD
RARE_STATE-LD -- **40 CFR 230.10(b)(3); 40 CFR 230.30; 40 CFR 230.32**

Mine Impacts -- **LEDPA, AVOID/MINIMIZE, WQ/SIGNIFICANT DEGRADATION, NEPA, NEPA/ALTERNATIVES ANALYSIS**

PEOPLE -- **NEPA, 40 CFR Subpart F (Potential Effects on Human Use Characteristics)**

Mine Footprint **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Proposed Mine -- **NEPA, LEDPA, AVOID/MINIMIZE, 404(b)(1)/CI, NEPA/CI, NEPA/ALTERNATIVES ANALYSIS**

COAL_REFUSE_DISPOSAL_AREA -- **LEDPA, AVOID/MINIMIZE, NEPA ALTERNATIVES ANALYSIS**

Mine Site -- **NEPA, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Surface Area Disturbance - **NEPA, LEDPA, AVOID/MINIMIZE**

SAD_AREA -- **NEPA, LEDPA, AVOID/MINIMIZE**

SAD_TYPE -- **NEPA, LEDPA, AVOID/MINIMIZE**

Quality of Design -- **NEPA, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Efficiency -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

VF_EFF -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

MINING_EFF -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

EXCESS_SPOIL_PCT -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

EXCESS_SPOIL_EFF -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

AOC_80_20_VARIANCE -- **LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Stream Loss -- **NEPA, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Streams -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Perennial -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

PERM_P
TEMP_P -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Intermittent -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

PERM_I
TEMP_I -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

Ephemeral -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

PERM_E
TEMP_E -- NEPA**, LEDPA, AVOID/MINIMIZE, NEPA/ALTERNATIVES ANALYSIS**

VF_DRAIN -- **301/404, NEPA, LEDPA, AVOID/MINIMIZE**

Post Mine Downstream Aquatic Impact -- **WQ/SIGNIFICANT DEGRADATION, LEDPA**

PMI_LOW

PMI_MED
PMI_HIGH -- **WQ/SIGNIFICANT DEGRADATION, LEDPA**

WETLAND_LOSS -- **LEDPA, AVOID/MINIMIZE, NEPA, *See also* 40 CFR 230.41**

ADD_ADD_MINES -- **404(b)(1)/CI, NEPA/CI**

Additional Proposed Mines -- **404(b)(1)/CI, NEPA/CI**

ADD_SAD_AREA -- **404(b)(1)/CI, NEPA/CI**

Addl Stream Loss -- **404(b)(1)/CI, NEPA/CI**

Addl Streams -- **404(b)(1)/CI, NEPA/CI**

Addl Perennial -- **404(b)(1)/CI, NEPA/CI**

ADD_PERM_P
ADD_TEMP_P -- **404(b)(1)/CI, NEPA/CI**

Addl Intermittent -- **404(b)(1)/CI, NEPA/CI**

ADD_PERM_I
ADD_TEMP_I -- **404(b)(1)/CI, NEPA/CI**

Addl Ephemeral -- **404(b)(1)/CI, NEPA/CI**

ADD_PERM_E
ADD_TEMP_E -- **404(b)(1)/CI, NEPA/CI**

ADD_VF_DRAIN -- **404(b)(1)/CI, NEPA/CI**

ADD_WETLAND_LOSS -- **404(b)(1)/CI, NEPA/CI**

Mine Mitigation --**COMPENSATORY MITIGATION, NEPA**

STRM_RATIO -- **COMPENSATORY MITIGATION, NEPA**

WETL_RATIO -- **COMPENSATORY MITIGATION, NEPA**

Organization of Environmental Concerns Information

Background: The MIRA approach is designed to utilize decision-maker defined criteria in an organized framework that consistently and transparently provides information to decision makers. Starting with the articulation of the decision question, the MIRA approach guides decision makers through detailed discussions of which criteria and data are helpful to answering that decision question. For the screening analysis of 85 mining permits, the decision question is: "Which mining permits warrant further evaluation based on Clean Water Act environmental concerns?"

Using the decision criteria in an analytical hierarchy defined and designed by the decision makers, the MIRA approach allows decision makers to use expert judgment and a variety of perspectives to screen the mining permits. Each perspective is represented by a MIRA preference set. However, since MIRA is an iterative, learning-based approach, there is no single MIRA preference set that is "correct" and the purpose of using MIRA is to examine a large number of possible perspectives and applying the use of the criteria consistently to all permits using these perspectives.

Summary: EPA Regions III, IV and V decision makers gathered in several meetings to discuss the decision hierarchy, relevant criteria, available data and possible perspectives. The result of these meetings is the use of 58 criteria, considering both the underlying environmental condition of the watershed of the proposed mine as well as the proposed mine's impacts on water quality and its proposed mitigation.

Development of the MIRA Preference Sets: Construction of the MIRA preference sets was based on extensive discussions among the EPA regions regarding the decision question, the construction of the hierarchy, the decision criteria/indicators and the data used to populate those indicators. Particular attention was paid to the Clean Water Act Section 404(b)(1) guidelines and water quality parameters such as conductivity, index of biological integrity (IBI), and the types and lengths of streams affected. There was also extensive consideration of cumulative effects and how existing watershed condition and additional proposed impacts in the watershed are considered under the CWA 404(b)(1) guidelines. In general, mines with larger surface area disturbance, more streams affected, more valley fills, and greater impact on expected conductivity readings triggered more concern than those with fewer of those characteristics.

MIRA Preference Sets:

Region 3: The specific initial preferences identified by Region 3 staff and management using the full hierarchy and data set.

Region 4: The specific initial preferences identified by Region 4 staff and management using the full hierarchy and data set.

Region 5: The specific initial preferences identified by Region 5 staff and management using the full hierarchy and data set.

All Mine Impact: Only looking at the data relating to the proposed mine impacts.

All Environmental Condition: Only looking at the data relating to the existing environmental condition of the watershed(s) of the proposed mine.

Mine Impact / Mine Footprint: Full data included with emphasis on the proposed mine impacts to aquatic resources and the proposed mine's overall surface area of disturbance.

SAD / Stream Length / Conductivity: Full data included with emphasis on the proposed mine's surface area of disturbance, linear feet of stream impacts, and potential to degrade water quality by changing conductivity.

SAD / Conductivity: Full data included with emphasis on the proposed mine's surface area of disturbance and potential to degrade water quality by changing conductivity.

Mine Impact with an Emphasis on Stream Length: Full data included with additional emphasis on the proposed mine's impacts, specifically on the linear feet of stream impacts.

Environmental Condition: Full data included with additional emphasis on the existing condition in the watershed(s) of the proposed mine.

Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas: Full data included with additional emphasis on the proposed mine's impacts, specifically on avoiding least disturbed watersheds.

Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas: Full data included with additional emphasis on the proposed mine's impacts, specifically on avoiding the most disturbed watersheds.

Mine Impact with an Emphasis on Conductivity: Full data included with additional emphasis on the proposed mine's impacts, specifically the potential to degrade water quality by changing conductivity.

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
Environmental Condition	0.350	0.400	0.400	0.000	1.000	0.150	0.150	0.150
Mine Impacts	0.650	0.600	0.600	1.000	0.000	0.850	0.850	0.850
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Environmental Condition								
Most Disturbed Areas	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Least Disturbed Areas	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Mine Impacts								
PEOPLE	0.200	0.200	0.100	0.200	0.200	0.000	0.050	0.000
Mine Footprint	0.700	0.700	0.700	0.700	0.700	1.000	0.850	1.000
Mine Mitigation	0.100	0.100	0.200	0.100	0.100	0.000	0.100	0.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Most Disturbed Areas								
Streams-MD	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Watershed Land Cover-MD	0.250	0.300	0.250	0.300	0.300	0.250	0.250	0.250
Species-MD	0.250	0.200	0.250	0.200	0.200	0.250	0.250	0.250
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Least Disturbed Areas								
Streams-LD	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
Watershed Land Cover-LD	0.250	0.300	0.250	0.300	0.300	0.250	0.250	0.250
Species-LD	0.250	0.200	0.250	0.200	0.200	0.250	0.250	0.250
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Mine Footprint								
Proposed Mine	0.500	0.700	0.700	0.700	0.700	0.800	1.000	0.800
ADD_ADD_MINES	0.250	0.150	0.150	0.150	0.150	0.100	0.000	0.100
Additional Proposed Mines	0.250	0.150	0.150	0.150	0.150	0.100	0.000	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Mine Mitigation								
STRM_RATIO	0.500	0.500	0.500	0.500	0.500	0.800	0.800	0.800

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
WETL_RATIO	0.500	0.500	0.500	0.500	0.500	0.200	0.200	0.200
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Streams-MD								
CONDUCTIVITY-MD	0.350	0.250	0.250	0.250	0.250	0.200	0.200	0.200
IBI-MD	0.400	0.500	0.500	0.500	0.500	0.550	0.550	0.550
Other Water Qualities-MD	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Watershed Land Cover-MD								
Forest-MD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
WETPCT-MD	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
DISTURBED_LANDS-MD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Species-MD								
TE_SPECIES-MD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
CRIT_HAB-MD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
RARE_STATE-MD	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Streams-LD								
CONDUCTIVITY-LD	0.350	0.250	0.250	0.250	0.250	0.200	0.200	0.200
IBI-LD	0.400	0.500	0.500	0.500	0.500	0.550	0.550	0.550
Other Water Qualities-LD	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Watershed Land Cover-LD								
Forest-LD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
WETPCT-LD	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
DISTURBED_LANDS-LD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Species-LD								
TE_SPECIES-LD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
CRIT_HAB-LD	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
RARE_STATE-LD	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Proposed Mine								
COAL_REFUSE_DISPOSAL_AREA	0.05	0.200	0.200	0.200	0.200	0.05	0	0
Mine Site	0.250	0.200	0.200	0.200	0.200	0.250	0.333	0.500
Stream Loss	0.250	0.200	0.200	0.200	0.200	0.500	0.333	0.000
Post Mine Downstream Aquatic Impact	0.200	0.200	0.350	0.200	0.200	0.150	0.333	0.500
WETLAND_LOSS	0.250	0.200	0.050	0.200	0.200	0.050	0.000	0.000
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Additional Proposed Mines								
ADD_SAD_AREA	0.333	0.700	0.700	0.700	0.700	0.300	0.300	0.300
Addl Stream Loss	0.333	0.150	0.150	0.150	0.150	0.650	0.650	0.650
ADD_WETLAND_LOSS	0.333	0.150	0.150	0.150	0.150	0.050	0.050	0.050
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Water Qualities-MD								
HQHV-MD	0.400	0.450	0.450	0.450	0.450	0.450	0.450	0.450
303D-MD	0.400	0.450	0.450	0.450	0.450	0.350	0.350	0.350
NPDES_OUTFALLS-MD	0.2	0.100	0.100	0.100	0.100	0.2	0.2	0.2
	1.000					1.000	1.000	1.000
Forest-MD								
CHG_FORPCT-MD	0.200	0.200	0.200	0.200	0.200	0.400	0.400	0.400
INT250-MD	0.500	0.500	0.500	0.500	0.500	0.300	0.300	0.300
FORPCT-MD	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Other Water Qualities-LD								
HQHV-LD	0.400	0.450	0.450	0.450	0.450	0.450	0.450	0.450
303D-LD	0.400	0.450	0.450	0.450	0.450	0.350	0.350	0.350
NPDES_OUTFALLS-LD	0.2	0.100	0.100	0.100	0.100	0.2	0.2	0.2

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
	1.000					1.000	1.000	1.000
Forest-LD								
CHG_FORPCT-LD	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
INT250-LD	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500
FORPCT-LD	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Mine Site								
Surface Area Disturbance	0.500	0.500	0.500	0.500	0.500	0.900	0.900	0.900
Ouality of Design	0.500	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Stream Loss								
Streams	0.500	0.500	0.500	0.500	0.500	0.700	0.700	0.700
VF_DRAIN	0.500	0.500	0.500	0.500	0.500	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Post Mine Downstream Aquatic Impact								
PMI_LOW	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
PMI_MED	0.700	0.800	0.800	0.800	0.800	0.600	0.600	0.600
PMI_HIGH	0.200	0.100	0.100	0.100	0.100	0.300	0.300	0.300
	1.000	1.000		1.000	1.000	1.000	1.000	1.000
Addl Stream Loss								
Addl Streams	0.500	0.500	0.500	0.500	0.500	0.550	0.550	0.550
ADD_VF_DRAIN	0.500	0.500	0.500	0.500	0.500	0.450	0.450	0.450
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Surface Area Disturbance								
SAD_AREA	0.900	0.900	0.900	0.900	0.900	0.850	0.850	0.850
SAD_TYPE	0.100	0.100	0.100	0.100	0.100	0.150	0.150	0.150
	1.000					1.000	1.000	1.000
Ouality of Design								
Efficiency	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
AOC_80_20_VARIANCE	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Streams								
Perennial	0.450	0.450	0.450	0.450	0.450	0.600	0.600	0.600
Intermittent	0.300	0.450	0.450	0.450	0.450	0.300	0.300	0.300
Ephemeral	0.250	0.100	0.100	0.100	0.100	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Addl Streams								
Addl Perennial	0.450	0.450	0.450	0.450	0.450	0.600	0.600	0.600
Addl Intermittent	0.300	0.450	0.450	0.450	0.450	0.300	0.300	0.300
Addl Ephemeral	0.250	0.100	0.100	0.100	0.100	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Efficiency								
MINING_EFF	0.200	0.250	0.250	0.250	0.250	0.200	0.200	0.200
EXCESS_SPOIL_PCT	0.350	0.250	0.250	0.250	0.250	0.350	0.350	0.350
VF_EFF	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
EXCESS_SPOIL_EFF	0.200	0.250	0.250	0.250	0.250	0.200	0.200	0.200
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Perennial								
PERM_P	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
TEMP_P	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Intermittent								
PERM_I	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
TEMP_I	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ephemeral								
PERM_E	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
TEMP_E	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100

Preference Sets for MIRA

Primary Level	Region 3	Region 4	Region 5	All Mine Impact	All Environmental Condition	Mine Impact and Mine Footprint	SAD, Stream Length and Conductivity	SAD and Conductivity
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Addl Perennial								
ADD_PERM_P	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
ADD_TEMP_P	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Addl Intermittent								
ADD_PERM_I	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
ADD_TEMP_I	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Addl Ephemeral								
ADD_PERM_E	0.550	0.500	0.500	0.500	0.500	0.900	0.900	0.900
ADD_TEMP_E	0.450	0.500	0.500	0.500	0.500	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Preference Sets for MIRA					
Primary Level	**Mine Impact with an Emphasis on Stream Length**	**Environmental Condition**	**Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas**	**Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas**	**Mine Impact with an Emphasis on Conductivity**
Environmental Condition	0.150	0.850	0.400	0.400	0.300
Mine Impacts	0.850	0.150	0.600	0.600	0.700
	1.000	1.000	1.000	1.000	1.000
Environmental Condition					
Most Disturbed Areas	1.000	1.000	1.000	1.000	1.000
Least Disturbed Areas	1.000	1.000	1.000	1.000	1.000
Mine Impacts					
PEOPLE	0.050	0.050	0.200	0.200	0.100
Mine Footprint	0.850	0.850	0.700	0.700	0.800
Mine Mitigation	0.100	0.100	0.100	0.100	0.100
	1.000	1.000	1.000	1.000	1.000
Most Disturbed Areas					
Streams-MD	0.500	0.500	0.500	0.500	0.500
Watershed Land Cover-MD	0.250	0.250	0.300	0.300	0.250
Species-MD	0.250	0.250	0.200	0.200	0.250
	1.000	1.000	1.000	1.000	1.000
Least Disturbed Areas					
Streams-LD	0.500	0.500	0.500	0.500	0.500
Watershed Land Cover-LD	0.250	0.250	0.300	0.300	0.250
Species-LD	0.250	0.250	0.200	0.200	0.250
	1.000	1.000	1.000	1.000	1.000
Mine Footprint					
Proposed Mine	0.800	0.800	0.700	0.700	0.500
ADD_ADD_MINES	0.100	0.100	0.150	0.150	0.250
Additional Proposed Mines	0.100	0.100	0.150	0.150	0.250
	1.000	1.000	1.000	1.000	1.000
Mine Mitigation					
STRM_RATIO	0.800	0.800	0.500	0.500	0.500

Preference Sets for MIRA					
Primary Level	Mine Impact with an Emphasis on Stream Length	Environmental Condition	Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas	Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas	Mine Impact with an Emphasis on Conductivity
WETL_RATIO	0.200	0.200	0.500	0.500	0.500
	1.000	1.000	1.000	1.000	1.000
Streams-MD					
CONDUCTIVITY-MD	0.200	0.200	0.250	0.250	0.300
IBI-MD	0.550	0.550	0.500	0.500	0.350
Other Water Qualities-MD	0.250	0.250	0.250	0.250	0.350
	1.000	1.000	1.000	1.000	1.000
Watershed Land Cover-MD					
Forest-MD	0.400	0.400	0.400	0.400	0.400
WETPCT-MD	0.200	0.200	0.200	0.200	0.200
DISTURBED_LANDS-MD	0.400	0.400	0.400	0.400	0.400
	1.000	1.000	1.000	1.000	1.000
Species-MD					
TE_SPECIES-MD	0.400	0.400	0.400	0.400	0.400
CRIT_HAB-MD	0.400	0.400	0.400	0.400	0.200
RARE_STATE-MD	0.200	0.200	0.200	0.200	0.400
	1.000	1.000	1.000	1.000	1.000
Streams-LD					
CONDUCTIVITY-LD	0.200	0.200	0.250	0.250	0.300
IBI-LD	0.550	0.550	0.500	0.500	0.350
Other Water Qualities-LD	0.250	0.250	0.250	0.250	0.350
	1.000	1.000	1.000	1.000	1.000
Watershed Land Cover-LD					
Forest-LD	0.400	0.400	0.400	0.400	0.400
WETPCT-LD	0.200	0.200	0.200	0.200	0.200
DISTURBED_LANDS-LD	0.400	0.400	0.400	0.400	0.400
	1.000	1.000	1.000	1.000	1.000
Species-LD					
TE_SPECIES-LD	0.400	0.400	0.400	0.400	0.400

Preference Sets for MIRA					
Primary Level	Mine Impact with an Emphasis on Stream Length	Environmental Condition	Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas	Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas	Mine Impact with an Emphasis on Conductivity
CRIT_HAB-LD	0.400	0.400	0.400	0.400	0.200
RARE_STATE-LD	0.200	0.200	0.200	0.200	0.400
	1.000	1.000	1.000	1.000	1.000
Proposed Mine					
COAL_REFUSE_DISPOSAL_AREA	0.05	0.05	0.200	0.200	0.01
Mine Site	0.250	0.250	0.200	0.200	0.200
Stream Loss	0.500	0.500	0.200	0.200	0.250
Post Mine Downstream Aquatic Impact	0.150	0.150	0.200	0.200	0.440
WETLAND_LOSS	0.050	0.050	0.200	0.200	0.100
	1.000	1.000	1.000	1.000	1.000
Additional Proposed Mines					
ADD_SAD_AREA	0.300	0.300	0.700	0.700	0.400
Addl Stream Loss	0.650	0.650	0.150	0.150	0.500
ADD_WETLAND_LOSS	0.050	0.050	0.150	0.150	0.100
	1.000	1.000	1.000	1.000	1.000
Other Water Qualities-MD					
HQHV-MD	0.450	0.450	0.450	0.450	0.400
303D-MD	0.350	0.350	0.450	0.450	0.300
NPDES_OUTFALLS-MD	0.2	0.2	0.100	0.100	0.3
	1.000	1.000			1.000
Forest-MD					
CHG_FORPCT-MD	0.400	0.400	0.200	0.200	0.200
INT250-MD	0.300	0.300	0.500	0.500	0.500
FORPCT-MD	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000
Other Water Qualities-LD					
HQHV-LD	0.450	0.450	0.450	0.450	0.400
303D-LD	0.350	0.350	0.450	0.450	0.300
NPDES_OUTFALLS-LD	0.2	0.2	0.100	0.100	0.3

Preference Sets for MIRA					
Primary Level	Mine Impact with an Emphasis on Stream Length	Environmental Condition	Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas	Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas	Mine Impact with an Emphasis on Conductivity
	1.000	1.000			1.000
Forest-LD					
CHG_FORPCT-LD	0.200	0.200	0.200	0.200	0.200
INT250-LD	0.500	0.500	0.500	0.500	0.500
FORPCT-LD	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000
Mine Site					
Surface Area Disturbance	0.900	0.900	0.500	0.500	0.600
Ouality of Design	0.100	0.100	0.500	0.500	0.400
	1.000	1.000	1.000	1.000	1.000
Stream Loss					
Streams	0.700	0.700	0.500	0.500	0.500
VF_DRAIN	0.300	0.300	0.500	0.500	0.500
	1.000	1.000	1.000	1.000	1.000
Post Mine Downstream Aquatic Impact					
PMI_LOW	0.100	0.100	0.100	0.100	0.200
PMI_MED	0.600	0.600	0.800	0.800	0.500
PMI_HIGH	0.300	0.300	0.100	0.100	0.300
	1.000	1.000	1.000	1.000	1.000
Addl Stream Loss					
Addl Streams	0.550	0.550	0.500	0.500	0.700
ADD_VF_DRAIN	0.450	0.450	0.500	0.500	0.300
	1.000	1.000	1.000	1.000	1.000
Surface Area Disturbance					
SAD_AREA	0.850	0.850	0.900	0.900	0.900
SAD_TYPE	0.150	0.150	0.100	0.100	0.100
	1.000	1.000			1.000
Ouality of Design					
Efficiency	0.700	0.700	0.700	0.700	0.700

Preference Sets for MIRA

Primary Level	Mine Impact with an Emphasis on Stream Length	Environmental Condition	Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas	Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas	Mine Impact with an Emphasis on Conductivity
AOC_80_20_VARIANCE	0.300	0.300	0.300	0.300	0.300
	1.000	1.000	1.000	1.000	1.000
Streams					
Perennial	0.600	0.600	0.450	0.450	0.400
Intermittent	0.300	0.300	0.450	0.450	0.350
Ephemeral	0.100	0.100	0.100	0.100	0.250
	1.000	1.000	1.000	1.000	1.000
Addl Streams					
Addl Perennial	0.600	0.600	0.450	0.450	0.400
Addl Intermittent	0.300	0.300	0.450	0.450	0.350
Addl Ephemeral	0.100	0.100	0.100	0.100	0.250
	1.000	1.000	1.000	1.000	1.000
Efficiency					
MINING_EFF	0.200	0.200	0.250	0.250	0.200
EXCESS_SPOIL_PCT	0.350	0.350	0.250	0.250	0.350
VF_EFF	0.250	0.250	0.250	0.250	0.250
EXCESS_SPOIL_EFF	0.200	0.200	0.250	0.250	0.200
	1.000	1.000	1.000	1.000	1.000
Perennial					
PERM_P	0.900	0.900	0.500	0.500	0.550
TEMP_P	0.100	0.100	0.500	0.500	0.450
	1.000	1.000	1.000	1.000	1.000
Intermittent					
PERM_I	0.900	0.900	0.500	0.500	0.550
TEMP_I	0.100	0.100	0.500	0.500	0.450
	1.000	1.000	1.000	1.000	1.000
Ephemeral					
PERM_E	0.900	0.900	0.500	0.500	0.550
TEMP_E	0.100	0.100	0.500	0.500	0.450

Preference Sets for MIRA

Primary Level	Mine Impact with an Emphasis on Stream Length	Environmental Condition	Mine Impact with an Emphasis on Avoiding Impacts in Least Disturbed Areas	Mine Impact with an Emphasis on Avoiding Impacts in Most Disturbed Areas	Mine Impact with an Emphasis on Conductivity
	1.000	1.000	1.000	1.000	1.000
Addl Perennial					
ADD_PERM_P	0.900	0.900	0.500	0.500	0.550
ADD_TEMP_P	0.100	0.100	0.500	0.500	0.450
	1.000	1.000	1.000	1.000	1.000
Addl Intermittent					
ADD_PERM_I	0.900	0.900	0.500	0.500	0.550
ADD_TEMP_I	0.100	0.100	0.500	0.500	0.450
	1.000	1.000	1.000	1.000	1.000
Addl Ephemeral					
ADD_PERM_E	0.900	0.900	0.500	0.500	0.550
ADD_TEMP_E	0.100	0.100	0.500	0.500	0.450
	1.000	1.000	1.000	1.000	1.000

Multi-criteria Integrated Resource Assessment (MIRA)
Questions and Answers

Q: What is MIRA?
MIRA is an approach and tool that EPA has developed to assist program managers' consideration of a broad array of scientific and technical information in their program and policy decisions. MIRA assists program managers by organizing and comparing pieces of relevant project data and information. It allows decision makers to compare different decision options based upon one or more common criteria and become more informed regarding the various criteria and how those criteria can be considered. With respect to Appalachian surface coal mining, MIRA was used to organize an extensive set of technical data and generate summary information to facilitate program management decisions. In this case, the MIRA approach promoted consistency by allowing decision makers from three EPA regions to review, discuss and reach consistency and consensus using a common set of data for discussion and analysis.

Q: Was MIRA developed specifically for coal mining?
No. MIRA is an existing approach that EPA decision makers have utilized in a variety of contexts, including developing budgets and making certain designations under the Clean Air Act. More information about MIRA can be found on the EPA Region 3 website (http://www.epa.gov/reg3esd1/data/mira.htm).

Q: What information was used in the MIRA screening analysis?
The data in the MIRA screening analysis is available on EPA's website. The data was obtained from the Corps permit application, from the Surface Mining Control and Reclamation Act permit application and from watershed-level data available to EPA from public sources such as the USGS and State Section 303(d) lists. The same categories of data were entered for each permit application. The permit applicants were provided with an opportunity to confirm or correct certain categories of data and many took advantage of this opportunity. Each piece of data used in the MIRA analysis for this screening application was relevant to one or more of the considerations required by the Section 404(b)(1) Guidelines.

Q: How was the information generated by the MIRA analysis used by EPA to decide which permit applications would be subject to enhanced coordination?
MIRA was used by EPA officials to screen available information on the proposed projects and assist EPA decision makers so in their decisions about which permits to further evaluate. This process allowed EPA to organize the relevant data for all mines into a central location. Using the data, EPA reviewers were able to better understand the mining impacts, including cumulative impacts. Data that is relevant to evaluation under the Section 404(b)(1) Guidelines was gathered and input into MIRA. MIRA was then used to assist program managers in considering the data in various combinations, to identify potential areas of concern, and analyze the proposed mines in the context of the Section 404(b)(1) Guidelines. After reviewing the information provided through the MIRA screening and conducting additional analysis, EPA decision makers determined which permit applications would be on the initial list.

Q: Did EPA use MIRA to create a new standard for proposed permit review?
No. MIRA does not create a new standard. The data input into the MIRA analysis are the same data and criteria that would be considered pursuant to the Section 404(b)(1) Guidelines. In the end, each permit application is subject to review under the Section 404(b)(1) Guidelines. MIRA was not used as a substitute or surrogate for the Section 404(b)(1) Guidelines analysis. The advantage of using MIRA in this particular circumstance is to provide a consistent and timely relative review of all permit applications subject to the enhanced coordination procedures.

Q: How was the use of MIRA appropriate given that MIRA is not designed to make discrete decisions, such as decisions about a permit application?
The MIRA process did not make discrete decisions about particular permit applications. It simply facilitated the analysis and supported the discussions regarding the aquatic ecosystem, the proposed applications' effects on that ecosystem, and potential compliance with the Section 404(b)(1) Guidelines.

Q: What evaluation was conducted outside of MIRA?
Throughout the 45-day review period, EPA Regional experts have been evaluating available data on the proposed mines and condition of the watersheds in which they are proposed. This review focused on placing available data on environmental effects in the context of the 404(b)(1) Guidelines and evaluating the reasonable potential for the proposed action to violate one or more of the requirements of the Guidelines. Representatives from EPA Regions 3, 4, and 5 met on multiple occasions to discuss concerns and ensure all permit applications were evaluated in a consistent manner and using consistent criteria. EPA also consulted with representatives of the U.S. Fish and Wildlife Service, U.S. Geologic Service, and the Corps to solicit their professional knowledge and feedback.

Proposed Project Information													
Corps #	**Mining Company Name**	**Region**	**SMCRA Number**	**District**	**Coordinate PN/PCN**	**Lat**	**Long**	**WV**	**OH**	**KY**	**TN**	**VA**	**PA**
200300065	Hobet Mining - Hewett	3	S-5027-99	LRH	38838	38.139	-81.810	X					
200400062	Premium Coal - Area 19	4	3143	LRN	39598	36.141	-84.317				X		
200400336	Bear Fork	4	898-0715	LRH	38663	37.386	-82.594			X			
200400624	Independence Coal Company - Constitution	3	S-5025-97	LRH	38183	38.014	81.798	X					
200401152	Buckingham Coal - Buckingham Wash Plant	5	10296	LRH	39139	39.570	-82.066		X				
200401155	Brooks Run Mining - Brandy St & Cove Mtn	3	S-2001-05	LRH	38798	38.485	-80.633	X					
200401451	Independence Coal Company - Glory	3	S-5001-02	LRH	38786	37.951	81.664	X					
200500217	Bluestone - ContourAuger1	3	S-4014-01	LRH	38455	37.475	-81.425	X					
200500421	Oxford - Peabody 3	5	D-2295	LRH	39892	40.160	-81.712		X				
200500851	Cheyenne Resources - Cheyenne Resources	4	867-0440	LRL	39349	37.121	-82.856			X			
200500934	Premier Elkhorn - U/T Old Beefhide	4	898-5694 Am 5	LRH	38723	37.240	-82.627			X			
200501115	Green Valley Coal Company Blue Branch Refuse	3	O-10-83 IBR 9	LRH	38660	38.122	-80.681	X					
200501198	Marrowbone Development - Taywood W & Marrowbone	3	S-5008-02 S-5021-01	LRH	38663	37.890	-82.294	X					
200501211	Premium Energy, Inc	3	S-5020-99 AM3	LRH	39638	37.514	-81.841	X					
200501385	Oxford - Halls Knob	5	10400	LRH	39892	40.052	-81.494		X				
200600100	ICG Eastern, LLC - Jenny Creek	3	S-500801, S-50999, S-501799, O-500199, O-500299, O-500799	LRH	39849	37.912	-82.294	X					

Proposed Project Information										
Corps #	**Mining Company Name**	**County**	**401[1]**	**402[1]**	**CONDUCTIVITY**	**IBI**	**HQHV**	**303D**	**NPDES_ OUTFALLS**	**CHG_FORPCT**
200300065	Hobet Mining - Hewett	Boone	I	I	391	58	1	31	7	0.81
200400062	Premium Coal - Area 19	Anderson	I	I	150	81	1	0.00	7	-1.56
200400336	Bear Fork	Pike	W	I	440	0.00	0	0.00	23	1.70
200400624	Independence Coal Company - Constitution	Boone	I	I	346	67	1	41	8	-1.34
200401152	Buckingham Coal - Buckingham Wash Plant	Perry	I	I	1,290	4	0	100.00	2	-0.44
200401155	Brooks Run Mining - Brandy St & Cove Mtn	Webster	I	P	214	78.77	1	0.95	1	-1.38
200401451	Independence Coal Company - Glory	Boone	I	I	508	65	1	31	11	3.38
200500217	Bluestone - ContourAuger1	Wyoming	I	69	402	63	1	24	2	3.48
200500421	Oxford - Peabody 3	Coshocton/Muskingum/Guernsey	I	15	336	11.36	0	0.00	0	-0.49
200500851	Cheyenne Resources - Cheyenne Resources	Letcher	I	4	546	0.00	0	1.09	13	-3.98
200500934	Premier Elkhorn - U/T Old Beefhide	Letcher	I	9	380	0.00	0	0.00	7	-10.46
200501115	Green Valley Coal Company Blue Branch Refuse	Nicholas	I	0	161	78	1	21	1	0.22
200501198	Marrowbone Development - Taywood W & Marrowbone	Mingo	I	4	531	63	1	30	6	4.18
200501211	Premium Energy, Inc	McDowell	I	9	374	61	1	18	1	-8.37
200501385	Oxford - Halls Knob	Guernsey	I	2	1,190	65.67	0	0.00	0	0.22
200600100	ICG Eastern, LLC - Jenny Creek	Mingo	I	7	504	59	1	29	6	-3.77

Proposed Project Information									
Corps #	**Mining Company Name**	**INT250**	**FORPCT**	**WETPCT**	**DISTURBED_ LANDS**	**TE_SPECIES**	**CRIT_HAB**	**RARE_STATE**	**PEOPLE**
200300065	Hobet Mining - Hewett	97.34	85.05	0.02	7.43	1	0	1	5,085
200400062	Premium Coal - Area 19	123.59	93.32	0.00	1.51	1	1	1	473
200400336	Bear Fork	37.33	79.78	0.00	6.40	1	0	1	7,292
200400624	Independence Coal Company - Constitution	68.04	88.93	0.00	5.04	1	0	1	6,829
200401152	Buckingham Coal - Buckingham Wash Plant	21.38	81.50	0.00	9.65	1	0	1	1,128
200401155	Brooks Run Mining - Brandy St & Cove Mtn	90.80	91.63	0.00	8.36	1	0	1	886
200401451	Independence Coal Company - Glory	58.38	88.32	0.00	4.02	1	0	1	2,897
200500217	Bluestone - ContourAuger1	69.19	85.07	0.00	8.01	0	0	1	3,994
200500421	Oxford - Peabody 3	15.10	60.88	0.51	5.88	1	0	1	2,275
200500851	Cheyenne Resources - Cheyenne Resources	34.43	79.63	0.00	9.23	0	0	0	3,698
200500934	Premier Elkhorn - U/T Old Beefhide	34.77	73.86	0.00	11.73	1	0	1	2,883
200501115	Green Valley Coal Company Blue Branch Refuse	92.73	91.99	0.13	5.64	1	0	1	1,896
200501198	Marrowbone Development - Taywood W & Marrowbone	47.34	82.38	0.01	6.80	0	0	1	4,954
200501211	Premium Energy, Inc	33.77	79.93	0.00	8.45	0	0	1	3,033
200501385	Oxford - Halls Knob	27.57	74.21	0.01	7.98	1	0	1	2,803
200600100	ICG Eastern, LLC - Jenny Creek	53.56	82.92	0.01	8.28	0	0	1	4,032

Proposed Project Information									
Corps #	Mining Company Name	COAL_REFUSE_DISPOSAL_AREA	SAD_AREA	SAD from Digital footprint	SAD_TYPE	MINING_EFF	EXCESS_SPOIL_PCT	VF_EFF	EXCESS_SPOIL_EFF
200300065	Hobet Mining - Hewett	0	411	430	2	6,630	0.50	2,542	10.495
200400062	Premium Coal - Area 19	0	92		1	5,435	0.00	0	0.000
200400336	Bear Fork	0	682		1	6,158	0.36	3,064	7.062
200400624	Independence Coal Company - Constitution	0	1,550	1,553	2	11,613	0.28	2,388	4.511
200401152	Buckingham Coal - Buckingham Wash Plant	1	100			0	0.00	0	0.000
200401155	Brooks Run Mining - Brandy St & Cove Mtn	0	184		2	13,043	0.28	883	1.464
200401451	Independence Coal Company - Glory	0	980	966	1	14,849	0.45	2,843	4.254
200500217	Bluestone - ContourAuger1	0	513	619	2	10,620	0.38	844	2.681
200500421	Oxford - Peabody 3	0	889		1	1,350	0.00	0	0.000
200500851	Cheyenne Resources - Cheyenne Resources	0	365		1	21,644	0.22	944	1.318
200500934	Premier Elkhorn - U/T Old Beefhide	0	37		1	10,188	0.09	56	0.526
200501115	Green Valley Coal Company Blue Branch Refuse	1	80	165	1	0	0.00	0	0.000
200501198	Marrowbone Development - Taywood W & Marrowbone	0	601	609	2	12,642	0.22	453	1.434
200501211	Premium Energy, Inc	0	2,081	1,517	1	7,448	1.54	14,531	43.442
200501385	Oxford - Halls Knob	0	393		1	1,628	0.00	0	0.000
200600100	ICG Eastern, LLC - Jenny Creek	1	1,449	1,218	1	5,038	0.50	3,509	10.723

Proposed Project Information										
Corps #	Mining Company Name	AOC_80_20_ VARIANCE	PERM_P	TEMP_P	PERM_I	TEMP_I	PERM_E	TEMP_E	VF_DRAIN	PMI_LOW
200300065	Hobet Mining - Hewett	0	0	0	2,200	2,100	5,930	1,020	6.0	0
200400062	Premium Coal - Area 19	0	0	2,250	0	0	0	0	0.0	0
200400336	Bear Fork	0	165	0	5,975	0	3,540	0	4.0	0
200400624	Independence Coal Company - Constitution	1	0	0	16,600	8,600	8,800	0	7.0	0
200401152	Buckingham Coal - Buckingham Wash Plant	0	0	0	4,263	0	1,561	0	0.0	0
200401155	Brooks Run Mining - Brandy St & Cove Mtn	0	0	0	2,744	714	523	0	2.8	0
200401451	Independence Coal Company - Glory	0	0	0	14,130	2,396	5,025	220	5.0	0
200500217	Bluestone - ContourAuger1	0	0	0	5,550	550	10,350	850	8.6	0
200500421	Oxford - Peabody 3	0	3,223	0	2,011	0	799	0	0.0	0
200500851	Cheyenne Resources - Cheyenne Resources	0	0	0	7,090	2,140	1,800	0	4.0	0
200500934	Premier Elkhorn - U/T Old Beefhide	1	0	0	0	0	1,980	1,590	2.0	0
200501115	Green Valley Coal Company Blue Branch Refuse	0	6,848	1,114	60	0	0	0	0.0	0
200501198	Marrowbone Development - Taywood W & Marrowbone	0	0	0	14,857	4,563	2,789	1,877	11.2	0
200501211	Premium Energy, Inc	1	0	0	35,336	5,757	5,037	210	12.2	0
200501385	Oxford - Halls Knob	0	214	0	6,269	0	2,823	0	0.0	0
200600100	ICG Eastern, LLC - Jenny Creek	0	0	0	11,666	8,297	2,262	80	12.0	0

Proposed Project Information								
Corps #	**Mining Company Name**	**PMI_MED**	**PMI_HIGH**	**WETLAND _LOSS**	**ADD_ADD_ MINES**	**ADD_SAD_ AREA**	**ADD_PERM_P**	**ADD_TEMP_ P**
200300065	Hobet Mining - Hewett	9,337	0	0.00	0	0	0	0
200400062	Premium Coal - Area 19	9,450	0	0.00	0	0	0	0
200400336	Bear Fork	9,584	0	0.00	0	599	0	0
200400624	Independence Coal Company - Constitution	25,696	0	0.00	0	0	0	0
200401152	Buckingham Coal - Buckingham Wash Plant	60,828	0	0.00	0	0	0	0
200401155	Brooks Run Mining - Brandy St & Cove Mtn	186,805	0	0.00	0	0		
200401451	Independence Coal Company - Glory	6,677	0	0.00	0	899	0	0
200500217	Bluestone - ContourAuger1	6,619	0	0.00	1	0	0	0
200500421	Oxford - Peabody 3	9,450	0	0.41	0	0	0	0
200500851	Cheyenne Resources - Cheyenne Resources	8,817	0	0.00	0	802	0	2
200500934	Premier Elkhorn - U/T Old Beefhide	2,459	0	0.00	0	85	0	0
200501115	Green Valley Coal Company Blue Branch Refuse	20,753	0	0.97	0	0	0	0
200501198	Marrowbone Development - Taywood W & Marrowbone	1,266	0	0.00	0	1577	0	0
200501211	Premium Energy, Inc	5,159	0	0.00	0	870	0	215
200501385	Oxford - Halls Knob	0	1,163	0.18	0	0	0	0
200600100	ICG Eastern, LLC - Jenny Creek	22,534	0	0.00	0	204	0	0

Proposed Project Information									
Corps #	**Mining Company Name**	**ADD_PERM_I**	**ADD_TEMP_I**	**ADD_PERM_E**	**ADD_TEMP_E**	**ADD_VF_DRAIN**	**ADD_WETLAND_LOSS**	**STRM_RATIO**	**WETL_RATIO**
200300065	Hobet Mining - Hewett	0	0	0	0	0.0	0.0000	0.00	8.00
200400062	Premium Coal - Area 19	0	0	0	0	0.0	0.0000	1.00	8.00
200400336	Bear Fork	2,749	1,725	7,409	386	0.0	0.0000	1.00	8.00
200400624	Independence Coal Company - Constitution	0	0	0	0	0.0	0.0000	1.00	8.00
200401152	Buckingham Coal - Buckingham Wash Plant	0	0	0	0	0.0	0.0000	0.87	8.00
200401155	Brooks Run Mining - Brandy St & Cove Mtn					0.0		1.00	8.00
200401451	Independence Coal Company - Glory	12,288	5,890	5,660	355	0.2	0.0000	1.00	8.00
200500217	Bluestone - ContourAuger1	0	0	0	0	0.0	0.0000	0.00	8.00
200500421	Oxford - Peabody 3	0	0	0	0	0.0	0.0000	1.00	1.00
200500851	Cheyenne Resources - Cheyenne Resources	5,632	2,122	14,258	0	0.3	0.0000	0.30	8.00
200500934	Premier Elkhorn - U/T Old Beefhide	1,916	160	1,615	165	0.0	0.0000	0.83	8.00
200501115	Green Valley Coal Company Blue Branch Refuse	0	0	0	0	0.0	0.0000	1.00	1.00
200501198	Marrowbone Development - Taywood W & Marrowbone	11,666	8,297	2,262	80	0.7	0.0000	1.00	8.00
200501211	Premium Energy, Inc	31,767	8,605	6,541	0	0.0	0.0000	0.39	8.00
200501385	Oxford - Halls Knob	0	0	0	0	0.0	0.0000	0.61	1.00
200600100	ICG Eastern, LLC - Jenny Creek	4,983	1,530	935	630	0.1	0.0000	1.00	8.00

Proposed Project Information							
Corps #	**Mining Company Name**	**Sum of Fills**	**Excess Spoil**	**COND_Adj**	**COND_Pre**	**Coal Extraction**	**# of VF w/ Drain Area > 40 (VF)**
200300065	Hobet Mining - Hewett	11,250	28.600	1,450	220	2.725	6
200400062	Premium Coal - Area 19	2,250	0.000	1,200	150	0.500	0
200400336	Bear Fork	9,680	29.659	1,370	192	4.200	4
200400624	Independence Coal Company - Constitution	34,000	81.200	1,294	65	18.000	7
200401152	Buckingham Coal - Buckingham Wash Plant	5,824	0.000	3,780	234	0.000	0
200401155	Brooks Run Mining - Brandy St & Cove Mtn	3,981	3.5	2,204	26	2.400	2
200401451	Independence Coal Company - Glory	21,771	61.900	1,294	242	14.550	5
200500217	Bluestone - ContourAuger1	17,300	14.600	1,283	240	5.445	7
200500421	Oxford - Peabody 3	6,033	0.000	1,200	150	1.200	0
200500851	Cheyenne Resources - Cheyenne Resources	11,030	10.416	800	72	7.900	4
200500934	Premier Elkhorn - U/T Old Beefhide	3,570	0.200	610	143	0.380	2
200501115	Green Valley Coal Company Blue Branch Refuse	8,022	0.000	1,060	54	0.000	0
200501198	Marrowbone Development - Taywood W & Marrowbone	24,086	10.900	703	313	7.600	8
200501211	Premium Energy, Inc	46,340	673.358	1,175	255	15.500	8
200501385	Oxford - Halls Knob	9,306	0.000	1,380	916	0.640	0
200600100	ICG Eastern, LLC - Jenny Creek	22,305	78.276	1,008	45	7.300	12

Proposed Project Information						
Corps #	**Mining Company Name**	**# of VF w/ Drain Area 15-40 (VF)**	**# of VF w/ Drain Area < 15 (VF)**	**Addl # of VF w/ Drain Area > 40 (VF)**	**Addl # of VF w/ Drain Area 15-40 (VF)**	**Addl # of VF w/ Drain Area < 40 (VF)**
200300065	Hobet Mining - Hewett	0	0			
200400062	Premium Coal - Area 19	0	0			
200400336	Bear Fork	0	0	0.0265	0.0000	0.0000
200400624	Independence Coal Company - Constitution	0	0			
200401152	Buckingham Coal - Buckingham Wash Plant	0	0			
200401155	Brooks Run Mining - Brandy St & Cove Mtn	1	0			
200401451	Independence Coal Company - Glory	0	0	0.1756	0.0000	0.0000
200500217	Bluestone - ContourAuger1	2	0			
200500421	Oxford - Peabody 3	0	0			
200500851	Cheyenne Resources - Cheyenne Resources	0	0	0.3454	0.0000	0.0000
200500934	Premier Elkhorn - U/T Old Beefhide	0	0			
200501115	Green Valley Coal Company Blue Branch Refuse	0	0			
200501198	Marrowbone Development - Taywood W & Marrowbone	4	0	0.6824	0.0000	0.0000
200501211	Premium Energy, Inc	4	2	0.0318	0.0000	0.0000
200501385	Oxford - Halls Knob	0	0			
200600100	ICG Eastern, LLC - Jenny Creek	0	0	0.0638	0.0319	0.0000

Proposed Project Information							
Corps #	**Mining Company Name**	**Stream mitigation (linear feet)**	**Wetland mitigation (acreage)**	**Total Spoil (cu. yds.)**	**New Mine (Y/N)**	Corps #	HUC Area
200300065	Hobet Mining - Hewett	0	0.00	56.66	Y		
200400062	Premium Coal - Area 19	2,432	0	0.50	Y		
200400336	Bear Fork	12,970	0.00	81.82	N	200701104	33,492
200400624	Independence Coal Company - Constitution	37,005	0.00	287.30	Y		
200401152	Buckingham Coal - Buckingham Wash Plant	5,065	0.00	2.62	Y		
200401155	Brooks Run Mining - Brandy St & Cove Mtn	6,672	0.00	12.50	Y		
200401451	Independence Coal Company - Glory	26,333	0.00	136.73	N	200602290	20,482
200500217	Bluestone - ContourAuger1	0	0	38.86	Y		
200500421	Oxford - Peabody 3	6,033	0.62	0.00	N		
200500851	Cheyenne Resources - Cheyenne Resources	3,262	0.00	48.30	N	200700217	13,938
200500934	Premier Elkhorn - U/T Old Beefhide	2,955	0.00	2.30	N	200700069	21,239
200501115	Green Valley Coal Company Blue Branch Refuse	12,201	2.95	14.50	N		
200501198	Marrowbone Development - Taywood W & Marrowbone	43,935	0.00	49.61	N	200600100	23,336
200501211	Premium Energy, Inc	18,000	0.00	435.94	Y	200801098	18,831
200501385	Oxford - Halls Knob	5,679	0.48	0.00	Y		
200600100	ICG Eastern, LLC - Jenny Creek	27,377	0.00	156.55	N	200501198	23,336

Proposed Project Information		Data Used for The Analysis of Additonal VF_DRAIN						
Corps #	**Mining Company Name**	% area in HUC	Corps #	HUC Area	% area in HUC	Corps #	HUC Area	% area in HUC
200300065	Hobet Mining - Hewett							
200400062	Premium Coal - Area 19							
200400336	Bear Fork	0.009274819	200701132	33,492	0.008609275			
200400624	Independence Coal Company - Constitution							
200401152	Buckingham Coal - Buckingham Wash Plant							
200401155	Brooks Run Mining - Brandy St & Cove Mtn							
200401451	Independence Coal Company - Glory	0.043908904						
200500217	Bluestone - ContourAuger1							
200500421	Oxford - Peabody 3							
200500851	Cheyenne Resources - Cheyenne Resources	0.057538934	200700595	13,938	2.18895E-05			
200500934	Premier Elkhorn - U/T Old Beefhide	0.004008116						
200501115	Green Valley Coal Company Blue Branch Refuse							
200501198	Marrowbone Development - Taywood W & Marrowbone	0.012134777	200600100	28,931	0.044730634			
200501211	Premium Energy, Inc	0.009180974	200801098	14,916	0.006716771	200800791	22,641	0.026359283
200501385	Oxford - Halls Knob							
200600100	ICG Eastern, LLC - Jenny Creek	0.004701963	200501198	28,931	0.003275309			

Proposed Project Information							
Corps #	**Mining Company Name**	Corps #	HUC Area	% area in HUC			
200300065	Hobet Mining - Hewett						
200400062	Premium Coal - Area 19						
200400336	Bear Fork						
200400624	Independence Coal Company - Constitution						
200401152	Buckingham Coal - Buckingham Wash Plant						
200401155	Brooks Run Mining - Brandy St & Cove Mtn						
200401451	Independence Coal Company - Glory						
200500217	Bluestone - ContourAuger1						
200500421	Oxford - Peabody 3						
200500851	Cheyenne Resources - Cheyenne Resources						
200500934	Premier Elkhorn - U/T Old Beefhide						
200501115	Green Valley Coal Company Blue Branch Refuse						
200501198	Marrowbone Development - Taywood W & Marrowbone						
200501211	Premium Energy, Inc						
200501385	Oxford - Halls Knob						
200600100	ICG Eastern, LLC - Jenny Creek						

Proposed Project Information													
Corps #	**Mining Company Name**	**Region**	**SMCRA Number**	**District**	**Coordinate PN/PCN**	**Lat**	**Long**	**WV**	**OH**	**KY**	**TN**	**VA**	**PA**
200600126	Consol of KY - Area 80	4	860-0390 Am 4	LRH	38792	37.284	82.788			X			
200600127	Consol of KY - Slone Br	4	860-5260 Am 1	LRH	38791	37.378	82.839			X			
200600660	Ohio American Energy - Red Bird South	5	10395	LRP	39721	40.094	-81.007		X				
200600760	Paynter Branch South	3	S-4001-06	LRH	38988	37.711	-81.693	X					
200601124	Matt/Co	4	836-5488	LRL	39127	37.675	-82.688			X			
200601290	Licking River Resources	4	877-0167, 877-0168	LRL	39056	37.679	-83.248			X			
200601296	Clintwood Elkhorn	4	898-4150 A1	LRL	39209	37.442	-82.313			X			
200601647	Nally & Hamilton	4	807-0339	LRN	39014	36.759	-83.507			X			
200602033	Wildcat - #2	3	S-3016-06	LRH	39512	38.105	-81.492	X					
200602290	Colony Bay Coal Co.	3	S-7-81	LRH	39836	37.871	-81.671	X					
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	3	S-3004-07	LRH	39650	38.384	-80.745	X					
200700182	Alex Energy, Inc. - Federal	3	S-3011-07	LRH	39679	38.288	-81.066	X					
200700193	Premier Elkhorn Coal	4	898-0400	LRL	39155	37.252	-82.614			X			
200700217	Leeco, Inc. - Stacy Branch	4	897-0480	LRL	39189	37.245	-83.070			X			
200700285	Alex Energy, Inc. - Lonestar	3	S-3009-07	LRH	39666	38.325	-80.957	X					
200700286	Pioneer Fuel - MT5B	3	S-3010-06	LRH	39519	37.890	-81.294	X					
200700335	Apex Energy	4	898-0607	LRL	39204	37.450	-82.245			X			
200700400	Argus Energy	4	864-0195	LRL	39309	37.973	-82.568			X			
200700401	Candle Ridge Mining	4	895-0177	LRL	39210	37.268	-83.536			X			
200700594	Premier Elkhorn Coal	4	898-0800	LRL	39332	37.364	-82.594			X			
200700595	Leeco, Inc. - Elk Lick	4	860-0455	LRL	39329	37.252	-83.112			X			
200700706	Johnson Floyd Coal - Johnson Floyd Coal	4	858-0206	LRL	39282	37.767	-82.843			X			
200700820	Nally & Hamilton	4	807-0355	LRN	39729	36.735	-83.533			X			

Proposed Project Information										
Corps #	Mining Company Name	County	401[1]	402[1]	CONDUCTIVITY	IBI	HQHV	303D	NPDES_ OUTFALLS	CHG_FORPCT
200600126	Consol of KY - Area 80	Knott	I	6	885	51.75	0	0.00	16	-1.74
200600127	Consol of KY - Slone Br	Knott	I	8	690	53.38	0	0.00	36	-4.28
200600660	Ohio American Energy - Red Bird South	Belmont	I	8	1,740	31	0	100.00	0	0.43
200600760	Paynter Branch South	Wyoming	I	2	504	62	1	24	2	2.54
200601124	Matt/Co	Floyd	I	0	241	0.00	0	0.00	8	-1.57
200601290	Licking River Resources	Magoffin	I	7	243	24.68	0	11.66	0	-1.77
200601296	Clintwood Elkhorn	Pike	I	6	1,220	25.27	0	0.00	18	-6.32
200601647	Nally & Hamilton	Bell	I	7	294	76.01	0	6.61	11	4.71
200602033	Wildcat - #2	Kanawha	I	2	697	61	0	37	1	1.51
200602290	Colony Bay Coal Co.	Boone	I	6	696	60	1	33	11	5.46
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	Nicholas	I	6	358	74.34	1	25.41	1	0.59
200700182	Alex Energy, Inc. - Federal	Nicholas	I	2	446	67.80	1	36.90	1	5.18
200700193	Premier Elkhorn Coal	Pike	I	1	691	0	0	0.00	12	-10.88
200700217	Leeco, Inc. - Stacy Branch	Perry	I	5	457	32.27	0	7.77	10	-6.61
200700285	Alex Energy, Inc. - Lonestar	Nicholas	I	10	506	69.54	1	49.70	1	6.97
200700286	Pioneer Fuel - MT5B	Raleigh		4	247	61	1	25	2	3.89
200700335	Apex Energy	Pike	I	7	1,465	50.53	0	0.00	15	-11.51
200700400	Argus Energy	Lawrence	I	3	363	56.10	0	0.00	11	-1.82
200700401	Candle Ridge Mining	Owsley	I	4	99	75.37	1	4.35	5	-0.73
200700594	Premier Elkhorn Coal	Pike	I	8	857	31.23	0	0.00	8	-1.65
200700595	Leeco, Inc. - Elk Lick	Knott	I	8	354	21.51	0	5.18	23	-7.09
200700706	Johnson Floyd Coal - Johnson Floyd Coal	Johnson	I	3	936	61.21	0	0.00	6	-1.49
200700820	Nally & Hamilton	Bell	P	3	237	75.22	1	8.54	18	3.33

Proposed Project Information									
Corps #	Mining Company Name	INT250	FORPCT	WETPCT	DISTURBED_ LANDS	TE_SPECIES	CRIT_HAB	RARE_STATE	PEOPLE
200600126	Consol of KY - Area 80	53.42	83.99	0.00	6.36	0	0	1	2,213
200600127	Consol of KY - Slone Br	51.94	81.04	0.00	6.44	0	0	1	6,227
200600660	Ohio American Energy - Red Bird South	0.00	33.87	0.25	8.00	1	0	1	2,879
200600760	Paynter Branch South	72.23	86.02	0.00	6.93	0	0	1	6,254
200601124	Matt/Co	54.41	78.54	0.00	9.90	0	0	1	6,801
200601290	Licking River Resources	49.96	87.72	0.00	5.46	0	0	1	1,443
200601296	Clintwood Elkhorn	27.36	74.56	0.00	7.25	1	0	1	3,167
200601647	Nally & Hamilton	70.52	84.66	0.00	6.36	1	0	1	1,602
200602033	Wildcat - #2	64.34	88.05	0.00	6.37	1	0	1	1,719
200602290	Colony Bay Coal Co.	46.61	82.52	0.00	5.30	1	0	1	1,718
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	53.10	83.20	0.35	10.82	1	0	1	734
200700182	Alex Energy, Inc. - Federal	60.54	87.41	0.16	8.44	1	0	1	3,534
200700193	Premier Elkhorn Coal	27.83	70.52	0.00	13.32	1	0	1	5,423
200700217	Leeco, Inc. - Stacy Branch	18.04	74.03	0.00	12.61	0	0	0	4,724
200700285	Alex Energy, Inc. - Lonestar	46.81	83.53	0.03	10.69	1	0	1	1,972
200700286	Pioneer Fuel - MT5B	47.05	78.33	0.00	8.04	1	0	1	7,355
200700335	Apex Energy	18.80	67.77	0.00	9.73	1	0	1	1,211
200700400	Argus Energy	38.50	79.68	0.01	7.80	0	0	1	7,050
200700401	Candle Ridge Mining	56.67	90.54	0.04	4.36	0	0	0	517
200700594	Premier Elkhorn Coal	23.49	85.78	0.00	4.99	1	0	1	3,326
200700595	Leeco, Inc. - Elk Lick	17.08	71.30	0.00	16.71	0	0	0	13,317
200700706	Johnson Floyd Coal - Johnson Floyd Coal	45.86	83.31	0.00	6.48	0	0	1	2,692
200700820	Nally & Hamilton	70.13	82.60	0.00	6.30	1	0	1	5,171

Proposed Project Information									
Corps #	Mining Company Name	COAL_REFUSE_DISPOSAL_AREA	SAD_AREA	SAD from Digital footprint	SAD_TYPE	MINING_EFF	EXCESS_SPOIL_PCT	VF_EFF	EXCESS_SPOIL_EFF
200600126	Consol of KY - Area 80	0	112		1	2,589	0.21	539	4.069
200600127	Consol of KY - Slone Br	0	166		1	4,101	0.20	757	3.021
200600660	Ohio American Energy - Red Bird South	0	687		2	3,638	0.00	0	0.000
200600760	Paynter Branch South	0	507	507	2	4,446	0.14	210	3.191
200601124	Matt/Co	0	26		1	1,176	0.15	27	1.600
200601290	Licking River Resources	0	476		1	3,992	0.07	318	1.203
200601296	Clintwood Elkhorn	0	141		1	1,936	0.12	81	1.465
200601647	Nally & Hamilton	0	252		1	5,429	0.10	181	1.170
200602033	Wildcat - #2	0	1,008	1,006	1	10,615	0.26	1,751	4.271
200602290	Colony Bay Coal Co.	0	283	931	2	6,009	0.38	1,357	6.176
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	0	398		2	10,050	0.19	583	1.600
200700182	Alex Energy, Inc. - Federal	0	746		2	2,815	0.38	1,220	13.571
200700193	Premier Elkhorn Coal	0	2,072		1	772	1	192,571	421
200700217	Leeco, Inc. - Stacy Branch	0	744		1	7,083	0.20	737	3.104
200700285	Alex Energy, Inc. - Lonestar	0	532		2	7,522	0.30	1,534	4.650
200700286	Pioneer Fuel - MT5B	0	723	721	1	8,155	0.36	2,942	5.593
200700335	Apex Energy	0	370		1	2,687	0.33	1,008	7.228
200700400	Argus Energy	0	718		1	7,385	0.12	386	2.083
200700401	Candle Ridge Mining	0	53		1	5,639	0.05	20	0.383
200700594	Premier Elkhorn Coal	0	442		1	8,145	0.23	1,613	3.066
200700595	Leeco, Inc. - Elk Lick	0	482		1	5,189	1.13	659	5.792
200700706	Johnson Floyd Coal - Johnson Floyd Coal	0	288		2	6,952	0.23	798	2.644
200700820	Nally & Hamilton	0	724		1	2,831	0.07	4,306	4.659

Proposed Project Information										
Corps #	Mining Company Name	AOC_80_20_ VARIANCE	PERM_P	TEMP_P	PERM_I	TEMP_I	PERM_E	TEMP_E	VF_DRAIN	PMI_LOW
200600126	Consol of KY - Area 80	0	0	0	639	0	1,549	0	1.0	0
200600127	Consol of KY - Slone Br	0	0	0	1,600	0	1,121	0	1.0	0
200600660	Ohio American Energy - Red Bird South	0	411	0	2,222	0	0	0	0.0	0
200600760	Paynter Branch South	0	0	0	14,899	12,986	2,086	4,292	5.0	0
200601124	Matt/Co	0	0	0	1,490	0	300	0	1.0	0
200601290	Licking River Resources	0	0	0	0	4,005	3,180	0	6.1	621
200601296	Clintwood Elkhorn	1	1,800	2,280	0	0	830	0	1.8	0
200601647	Nally & Hamilton	0	4,507	610	3,711	0	0	0	2.0	0
200602033	Wildcat - #2	0	0	564	19,447	3,326	2,551	218	2.0	0
200602290	Colony Bay Coal Co.	0	0	0	4,271	1,720	1,380	368	4.0	0
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	0	2,580	1,487	860	4,812	374	859	2.0	0
200700182	Alex Energy, Inc. - Federal	0	0	0	14,611	3,515	5,110	130	5.0	0
200700193	Premier Elkhorn Coal	0	0	0	1,610	0	1,650	240	2.4	0
200700217	Leeco, Inc. - Stacy Branch		0	0	5,676	2,140	14,378	0	6.0	0
200700285	Alex Energy, Inc. - Lonestar	0	0	1,247	7,709	0	3,169	0	2.0	0
200700286	Pioneer Fuel - MT5B	0	0	0	7,945	1,961	1,161	150	5.0	0
200700335	Apex Energy	1	0	615	1,797	362	4,284	65	2.0	0
200700400	Argus Energy	1	0	0	9,912	4,199	14,507	0	6.9	0
200700401	Candle Ridge Mining	0	0	4,181	355	850	265	0	1.0	739
200700594	Premier Elkhorn Coal	1	0	0	300	535	5,515	495	4.4	0
200700595	Leeco, Inc. - Elk Lick	0	0	4,942	9,173	1,439	6,407	0	6.0	0
200700706	Johnson Floyd Coal - Johnson Floyd Coal	0	0	0	3,430	978	2,220	0	3.0	638
200700820	Nally & Hamilton	0	0	0	868	1,350	0	0	3.8	0

Proposed Project Information								
Corps #	Mining Company Name	PMI_MED	PMI_HIGH	WETLAND _LOSS	ADD_ADD_ MINES	ADD_SAD_ AREA	ADD_PERM_P	ADD_TEMP_ P
200600126	Consol of KY - Area 80	13,479	0	0.00	0	428	56	0
200600127	Consol of KY - Slone Br	19,321	0	0.00	0	249	576	780
200600660	Ohio American Energy - Red Bird South	0	1,278	5.40	0	0	0	0
200600760	Paynter Branch South	2,703	0	0.00	0	813	0	0
200601124	Matt/Co	1,345	0	0.00	0	131	0	0
200601290	Licking River Resources	0	0	0.00	1	181	0	0
200601296	Clintwood Elkhorn	20,527	0	0.00	1	1131	1,575	8,230
200601647	Nally & Hamilton	4,634	0	0.00	0	0	0	0
200602033	Wildcat - #2	81,735	0	0.28	1	933	1,520	863
200602290	Colony Bay Coal Co.	20,148	0	0.00	1	981	0	0
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	78,752	0	0.09	1	0	0	0
200700182	Alex Energy, Inc. - Federal	20,768	0	0.17	1	395	0	933
200700193	Premier Elkhorn Coal	9,450	0	0.00	0	282	0	0
200700217	Leeco, Inc. - Stacy Branch	142,308	0	0.00	1	806	0	4,636
200700285	Alex Energy, Inc. - Lonestar	56,659	0	0.00	0	408	0	0
200700286	Pioneer Fuel - MT5B	10,282	0	1.04	0	0	0	0
200700335	Apex Energy	11,463	0	0.00	0	19	64	274
200700400	Argus Energy	16,661	0	0.00	0	0	0	0
200700401	Candle Ridge Mining	0	0	0.00	0	4	0	0
200700594	Premier Elkhorn Coal	5,062	0	0.00	0	692	164	0
200700595	Leeco, Inc. - Elk Lick	142,308	0	0.00	2	1048	0	0
200700706	Johnson Floyd Coal - Johnson Floyd Coal	0	0	0.00	1	0	0	0
200700820	Nally & Hamilton	11,941	0	0.00	1	247	4,507	610

Proposed Project Information									
Corps #	Mining Company Name	ADD_PERM_I	ADD_TEMP_I	ADD_PERM_E	ADD_TEMP_E	ADD_VF_DRAIN	ADD_WETLAND_LOSS	STRM_RATIO	WETL_RATIO
200600126	Consol of KY - Area 80	737	0	3,360	0	0.0	0.0000	1.00	8.00
200600127	Consol of KY - Slone Br	4,493	0	7,604	70	0.0	0.0000	1.00	8.00
200600660	Ohio American Energy - Red Bird South	0	0	0	0	0.0	0.0000	1.00	1.00
200600760	Paynter Branch South	9,421	2,116	12,763	298	0.1	0.0000	1.00	8.00
200601124	Matt/Co	1,360	930	1,190	600	0.0	0.0000	1.00	8.00
200601290	Licking River Resources	1,855	1,773	612	71	0.0	0.0000	0.72	8.00
200601296	Clintwood Elkhorn	7,156	651	7,030	1,744	0.2	0.0000	1.00	8.00
200601647	Nally & Hamilton	0	0	0	0	0.0	0.0000	1.00	8.00
200602033	Wildcat - #2	16,093	1,991	1,844	29		0.6102	1.00	1.00
200602290	Colony Bay Coal Co.	11,697	8,302	2,273	80	0.6	0.0000	1.00	8.00
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	0	0	0	0	0.0	0.0000	1.00	1.00
200700182	Alex Energy, Inc. - Federal	5,770	0	2,372	0	0.0	0.0000	1.00	1.00
200700193	Premier Elkhorn Coal	0	0	0	0	0.3	0.0000	1.00	8.00
200700217	Leeco, Inc. - Stacy Branch	13,555	2,844	7,266	0	0.3	0.0000	0.92	8.00
200700285	Alex Energy, Inc. - Lonestar	0	0	0	0	0.1	#REF!	1.00	8.00
200700286	Pioneer Fuel - MT5B	0	0	0	0	0.0	0.0000	1.00	1.00
200700335	Apex Energy	145	0	26	57	0.0	0.0000	1.00	8.00
200700400	Argus Energy	0	0	0	0	0.0	0.0000	0.85	8.00
200700401	Candle Ridge Mining	78	119	50	0	0.0	0.0000	0.27	8.00
200700594	Premier Elkhorn Coal	6,006	156	3,615	67	0.3	0.0000	0.82	8.00
200700595	Leeco, Inc. - Elk Lick	10,626	3,634	15,635	0	0.4	0.0000	0.52	8.00
200700706	Johnson Floyd Coal - Johnson Floyd Coal	0	0	0	0	0.0	0.0000	1.00	8.00
200700820	Nally & Hamilton	3,711	0	0	0	0.0	0.0000	1.00	8.00

Proposed Project Information							
Corps #	**Mining Company Name**	**Sum of Fills**	**Excess Spoil**	**COND_Adj**	**COND_Pre**	**Coal Extraction**	**# of VF w/ Drain Area > 40 (VF)**
200600126	Consol of KY - Area 80	2,188	1.180	1,200	106	0.290	1
200600127	Consol of KY - Slone Br	2,721	2.060	1,435	106	0.682	1
200600660	Ohio American Energy - Red Bird South	2,633	0.000	1,820	1,290	2.500	0
200600760	Paynter Branch South	34,263	7.200	874	258	2.256	5
200601124	Matt/Co	1,790	0.048	519	177	0.030	1
200601290	Licking River Resources	7,185	2.286	340	150	1.900	0
200601296	Clintwood Elkhorn	4,910	0.400	1,984	190	0.273	1
200601647	Nally & Hamilton	8,828	1.600	850	151	1.368	2
200602033	Wildcat - #2	26,106	45.700	3,528	152	10.700	2
200602290	Colony Bay Coal Co.	7,739	10.500	1,853	169	1.700	4
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	10,972	6.399	1,375	24	4.000	2
200700182	Alex Energy, Inc. - Federal	23,366	28.500	1,430	98	2.100	5
200700193	Premier Elkhorn Coal	3,500	674	1,200	150	1.600	0
200700217	Leeco, Inc. - Stacy Branch	22,194	16.365	1,040	8	5.272	6
200700285	Alex Energy, Inc. - Lonestar	12,125	18.600	1,750	54	4.000	2
200700286	Pioneer Fuel - MT5B	11,217	33.000	1,649	258	5.900	5
200700335	Apex Energy	7,123	7.177	1,488	190	0.993	2
200700400	Argus Energy	28,618	11.041	1,186	84	5.300	0
200700401	Candle Ridge Mining	5,651	0.115	190	46	0.300	1
200700594	Premier Elkhorn Coal	6,845	11.039	1,370	347	3.600	2
200700595	Leeco, Inc. - Elk Lick	21,961	14.480	1,040	8	2.500	6
200700706	Johnson Floyd Coal - Johnson Floyd Coal	6,628	5.288	394	188	2.000	3
200700820	Nally & Hamilton	2,218	9.550	850	60	2.050	3

Proposed Project Information						
Corps #	**Mining Company Name**	**# of VF w/ Drain Area 15-40 (VF)**	**# of VF w/ Drain Area < 15 (VF)**	**Addl # of VF w/ Drain Area > 40 (VF)**	**Addl # of VF w/ Drain Area 15-40 (VF)**	**Addl # of VF w/ Drain Area < 40 (VF)**
200600126	Consol of KY - Area 80	0	0	0.0129	0.0000	0.0000
200600127	Consol of KY - Slone Br	0	0	0.0059	0.0000	0.0000
200600660	Ohio American Energy - Red Bird South	0	0			
200600760	Paynter Branch South	0	0	0.0969	0.0000	0.0000
200601124	Matt/Co	0	0	0.0078	0.0000	0.0000
200601290	Licking River Resources	7	1			
200601296	Clintwood Elkhorn	1	0	0.1531	0.0520	0.0000
200601647	Nally & Hamilton	0	0			
200602033	Wildcat - #2	0	0	#REF!	#REF!	#REF!
200602290	Colony Bay Coal Co.	0	0	0.6384	0.0000	0.0000
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	0	0			
200700182	Alex Energy, Inc. - Federal	0	0	0.0378	0.0000	0.0000
200700193	Premier Elkhorn Coal	3	0	0.1858	0.1062	0.0663
200700217	Leeco, Inc. - Stacy Branch	0	0	0.2572	0.0000	0.0000
200700285	Alex Energy, Inc. - Lonestar	0	0	0.0975	0.0000	0.0000
200700286	Pioneer Fuel - MT5B	0	0			
200700335	Apex Energy	0	0	0.0037	0.0018	0.0000
200700400	Argus Energy	8	1			
200700401	Candle Ridge Mining	0	0			
200700594	Premier Elkhorn Coal	3	0	0.2555	0.0000	0.0000
200700595	Leeco, Inc. - Elk Lick	0	0	0.4162	0.0000	0.0000
200700706	Johnson Floyd Coal - Johnson Floyd Coal	0	0			
200700820	Nally & Hamilton	1	0	0.0160	0.0000	0.0000

Proposed Project Information							
Corps #	**Mining Company Name**	**Stream mitigation (linear feet)**	**Wetland mitigation (acreage)**	**Total Spoil (cu. yds.)**	**New Mine (Y/N)**	Corps #	HUC Area
200600126	Consol of KY - Area 80	2,600	0.00	5.72	N	200600127	27,181
200600127	Consol of KY - Slone Br	3,939	0.00	10.14	N	200600126	27,181
200600660	Ohio American Energy - Red Bird South	2,633	8.10	0.00	Y		
200600760	Paynter Branch South	37,131	0.00	51.65	Y	200800562	33,567
200601124	Matt/Co	2,125	0.00	0.32	N	200701205	33,771
200601290	Licking River Resources	5,151	0.00	32.46	Y	200800525	21,123
200601296	Clintwood Elkhorn	6,530	0.00	3.30	N	200700335	19,935
200601647	Nally & Hamilton	9,190	0.00	16.30	N		
200602033	Wildcat - #2	26,405	1.13	174.24	Y	200600821	25,102
200602290	Colony Bay Coal Co.	15,394	0.00	27.40	Y	200401451	20,482
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1	23,038	0.20	32.91	Y		
200700182	Alex Energy, Inc. - Federal	36,216	0.34	75.18	Y	200700285	20,904
200700193	Premier Elkhorn Coal	12,719	0.00	700	N	200500934	21,240
200700217	Leeco, Inc. - Stacy Branch	20,346	0.00	81.90	N	200500851	13,938
200700285	Alex Energy, Inc. - Lonestar	26,397	0.00	62.06	Y	200700182	20,904
200700286	Pioneer Fuel - MT5B	18,169	2.15	90.86	N		
200700335	Apex Energy	8,709	0.00	21.86	N	200601296	19,935
200700400	Argus Energy	24,320	0.00	94.29	Y		
200700401	Candle Ridge Mining	1,551	0.00	2.33	Y	200501893	20,616
200700594	Premier Elkhorn Coal	5,615	0.00	48.70	Y	200400336	10,706
200700595	Leeco, Inc. - Elk Lick	11,489	0.00	12.80	N	200500851	13,938
200700706	Johnson Floyd Coal - Johnson Floyd Coal	9,300	0.00	22.59	Y		
200700820	Nally & Hamilton	2,235	0.00	132.47	Y	200601647	30,992

Proposed Project Information		Data Used for The Analysis of Additonal VF_DRAIN						
Corps #	**Mining Company Name**	% area in HUC	Corps #	HUC Area	% area in HUC	Corps #	HUC Area	% area in HUC
200600126	Consol of KY - Area 80	0.012945909	200701230	27,181	0.002784576			
200600127	Consol of KY - Slone Br	0.004731152	200701224	36,856	0.001208245	200701230	27181	0.002784576
200600660	Ohio American Energy - Red Bird South							
200600760	Paynter Branch South	0.024223393						
200601124	Matt/Co	0.003887361						
200601290	Licking River Resources	0.008566171						
200601296	Clintwood Elkhorn	0.018910373	200701301	20,291	0.011180606	200701518	19935	0.000905369
200601647	Nally & Hamilton							
200602033	Wildcat - #2	0.000915222	200800805	25,102	0.036272648			
200602290	Colony Bay Coal Co.	0.00010386	200600100	18,418	0.053154873			
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1							
200700182	Alex Energy, Inc. - Federal	0.018917568						
200700193	Premier Elkhorn Coal	0.013269653						
200700217	Leeco, Inc. - Stacy Branch	0.017155763				200700595	13938	2.18895E-05
200700285	Alex Energy, Inc. - Lonestar	0.019495945						
200700286	Pioneer Fuel - MT5B							
200700335	Apex Energy	3.55439E-05	200701518	19,935	0.000905369			
200700400	Argus Energy							
200700401	Candle Ridge Mining	0.00018776						
200700594	Premier Elkhorn Coal	0.063633705	200800095	10,644	0.000973982			
200700595	Leeco, Inc. - Elk Lick	0.017155763				200700217	13938	0.057538934
200700706	Johnson Floyd Coal - Johnson Floyd Coal							
200700820	Nally & Hamilton	0.007983175						

Proposed Project Information							
Corps #	**Mining Company Name**	Corps #	HUC Area	% area in HUC			
200600126	Consol of KY - Area 80						
200600127	Consol of KY - Slone Br						
200600660	Ohio American Energy - Red Bird South						
200600760	Paynter Branch South						
200601124	Matt/Co						
200601290	Licking River Resources						
200601296	Clintwood Elkhorn	200701518	20291	0.02510927			
200601647	Nally & Hamilton						
200602033	Wildcat - #2						
200602290	Colony Bay Coal Co.						
200700134	Atlantic Leasco - Muddlety Surface Mine No. 1						
200700182	Alex Energy, Inc. - Federal						
200700193	Premier Elkhorn Coal						
200700217	Leeco, Inc. - Stacy Branch	200700595	18035	0.031404472			
200700285	Alex Energy, Inc. - Lonestar						
200700286	Pioneer Fuel - MT5B						
200700335	Apex Energy						
200700400	Argus Energy						
200700401	Candle Ridge Mining						
200700594	Premier Elkhorn Coal						
200700595	Leeco, Inc. - Elk Lick	200700217	18035	0.000384107			
200700706	Johnson Floyd Coal - Johnson Floyd Coal						
200700820	Nally & Hamilton						

Proposed Project Information													
Corps #	**Mining Company Name**	**Region**	**SMCRA Number**	**District**	**Coordinate PN/PCN**	**Lat**	**Long**	**WV**	**OH**	**KY**	**TN**	**VA**	**PA**
200701021	Oxford Mining - Kaiser Mathias	5	10405	LRH	39839	40.441	-81.474		X				
200701026	Frasure Creek Mining	4	836-0341 A1	LRL	39429	37.560	-82.869			X			
200701044	Apex Energy	4	898-0712	LRL	39322	37.458	-82.147			X			
200701104	The Raven Co.	4	836-0292 A1	LRL	39327	37.504	-82.632			X			
200701131	Miller Bros. Coal	4	836-0335 A2	LRL	39394	37.557	-82.746			X			
200701132	Miller Bros. Coal - Frasure Branch	4	836-0349	LRL	39346	37.473	-82.689			X			
200701180	Oxford Mining Company LLC - Ellis Area	5	10399	LRP	39854	40.240	-80.698		X				
200701205	Matt/Co	4	836-0307	LRL	39421	37.557	-82.746			X			
200701206	Frasure Creek Mining	4	877-0182	LRL	39637	37.557	-82.908			X			
200701224	Miller Bros. Coal	4	860-5304	LRL	39384	37.354	-82.954			X			
200701301	CAM Mining - Tom's Branch Surface Mine	4	836-0355	LRL	39583	37.670	-82.633			X			
200701397	FCDC	4	836-0350	LRL	39741	37.516	-82.712			X			
200701406	ICG Hazard - Bearville North	4	860-0462	LRL	39637	37.354	-82.954			X			
200701445	FCDC	4	836-0339	LRL	39415	37.527	-82.734			X			
200701504	CAM Mining	4	898-0783 A3	LRL	39463	37.469	-82.396			X			
200701515	ICG Hazard	4	897-0456 A10	LRL	39421	37.364	-83.233			X			
200701518	Clintwood Elkhorn	4	898-0799	LRL	39421	37.446	-82.303			X			
200701582	Miller Bros. Coal	4	813-0319	LRL	39444	37.529	-83.167			X			
200701660	Martin County Coal - Findlay Branch Mine	4	880-0186	LRL	39580	37.701	-82.520			X			
200800095	Premier Elkhorn Coal	4	898-0817	LRL	39519	37.284	-82.658			X			
200800114	BDCC Holdings - Cherries Branch	4	897-0445 A1	LRL	39547	37.051	-83.125			X			
200800115	Wolverine Resources - Jake Fork and Stoney Branch	4	836-0356	LRL	39555	37.663	-82.930			X			
200800139	Apex Energy	4	898-0646 A1	LRL	39874	37.426	-82.161			X			
200800226	Czar Coal	4	880-8002 A4	LRL	39560	37.737	-82.617			X			

Proposed Project Information										
Corps #	Mining Company Name	County	401[1]	402[1]	CONDUCTIVITY	IBI	HQHV	303D	NPDES_ OUTFALLS	CHG_FORPCT
200701021	Oxford Mining - Kaiser Mathias	Tuscarawas	P	3	826	24.75	0	100.00	0	-2.44
200701026	Frasure Creek Mining	Floyd	P	6	642	40.24	0	10.06	6	-3.49
200701044	Apex Energy	Pike	I	1	726	48.33	0	0.00	31	-8.05
200701104	The Raven Co.	Floyd	I	2	293	0.00	0	0.00	15	-1.46
200701131	Miller Bros. Coal	Floyd	I	10	537	30.25	0	10.06	20	3.79
200701132	Miller Bros. Coal - Frasure Branch	Floyd	I	3	293	0.00	0	0.00	15	1.46
200701180	Oxford Mining Company LLC - Ellis Area	Jefferson	P	9	282	14.10	1	12.22	1	0.84
200701205	Matt/Co	Floyd	I	9	241	0.00	0	0.00	8	-1.57
200701206	Frasure Creek Mining	Magoffin	P	8	180	26.49	0	20.12	5	-4.10
200701224	Miller Bros. Coal	Knott	I	9	494	55.00	0	0.00	20	-6.15
200701301	CAM Mining - Tom's Branch Surface Mine	Floyd	P	8	833	24.40	0	0.00	7	-2.65
200701397	FCDC	Floyd	P	10	540	51.53	0	0.00	15	-1.84
200701406	ICG Hazard - Bearville North	Knott	P	2	830	59.35	1	13.71	10	-16.76
200701445	FCDC	Floyd	I	6	540	51.53	0	0.00	15	1.84
200701504	CAM Mining	Pike	I	0	948	50.27	0	0.00	25	-2.24
200701515	ICG Hazard	Perry	P	3	996	22.85	0	26.57	6	-8.40
200701518	Clintwood Elkhorn	Pike	P	8	1,220	25.27	0	0.00	18	-6.32
200701582	Miller Bros. Coal	Breathitt	I	3	726	27.30	0	27.47	12	-3.74
200701660	Martin County Coal - Findlay Branch Mine	Martin	I	8	1,038	50.96	0	0.00	25	-8.98
200800095	Premier Elkhorn Coal	Pike	P	9	1,127	66.23	0	0.00	2	-4.91
200800114	BDCC Holdings - Cherries Branch	Perry	P	9	470	85.38	0	0.00	14	-7.55
200800115	Wolverine Resources - Jake Fork and Stoney Branch	Floyd	P	5	264	25.02	0	9.58	1	-2.37
200800139	Apex Energy	Pike	I	1	1,390	62.78	0	38.03	41	-5.46
200800226	Czar Coal	Martin	I	7	1,682	47.41	0	0.00	14	-5.17

Proposed Project Information									
Corps #	Mining Company Name	INT250	FORPCT	WETPCT	DISTURBED_ LANDS	TE_SPECIES	CRIT_HAB	RARE_STATE	PEOPLE
200701021	Oxford Mining - Kaiser Mathias	12.55	57.59	0.02	8.38	1	0	1	5,129
200701026	Frasure Creek Mining	45.97	81.24	0.00	5.77	0	0	1	3,865
200701044	Apex Energy	24.60	70.81	0.00	7.31	0	0	1	2,848
200701104	The Raven Co.	42.42	78.19	0.00	6.79	0	0	1	5,581
200701131	Miller Bros. Coal	47.95	78.73	0.00	7.13	0	0	1	5,534
200701132	Miller Bros. Coal - Frasure Branch	42.42	78.19	0.00	6.79	0	0	1	5,581
200701180	Oxford Mining Company LLC - Ellis Area	14.22	64.26	0.08	13.70	1	0	1	8,105
200701205	Matt/Co	54.41	78.54	0.00	9.90	0	0	1	6,801
200701206	Frasure Creek Mining	46.40	82.68	0.00	5.19	0	0	1	938
200701224	Miller Bros. Coal	50.84	78.87	0.00	6.50	0	0	1	4,014
200701301	CAM Mining - Tom's Branch Surface Mine	43.86	80.03	0.00	5.89	1	0	1	6,087
200701397	FCDC	56.79	79.48	0.00	8.59	0	0	1	6,332
200701406	ICG Hazard - Bearville North	39.16	66.48	0.00	13.34	0	0	0	2,000
200701445	FCDC	56.79	79.48	0.00	8.59	0	0	1	6,332
200701504	CAM Mining	41.59	74.32	0.00	12.50	1	0	1	17,631
200701515	ICG Hazard	39.64	71.97	0.01	8.85	0	0	0	3,669
200701518	Clintwood Elkhorn	27.36	74.56	0.00	7.25	1	0	1	3,167
200701582	Miller Bros. Coal	50.20	79.58	0.02	5.00	0	0	0	1,035
200701660	Martin County Coal - Findlay Branch Mine	12.99	62.69	0.00	10.22	0	0	1	2,439
200800095	Premier Elkhorn Coal	20.32	81.94	0.00	6.32	1	0	1	2,564
200800114	BDCC Holdings - Cherries Branch	50.09	80.82	0.00	7.03	0	0	0	1,532
200800115	Wolverine Resources - Jake Fork and Stoney Branch	35.09	83.05	0.01	5.33	0	0	1	2,780
200800139	Apex Energy	38.82	77.80	0.00	6.99	1	0	1	6,030
200800226	Czar Coal	13.41	62.08	0.00	9.82	0	0	1	2,383

Proposed Project Information									
Corps #	Mining Company Name	COAL_REFUSE_DISPOSAL_AREA	SAD_AREA	SAD from Digital footprint	SAD_TYPE	MINING_EFF	EXCESS_SPOIL_PCT	VF_EFF	EXCESS_SPOIL_EFF
200701021	Oxford Mining - Kaiser Mathias	0	785		1	1,682	0.00	0	0.000
200701026	Frasure Creek Mining	0	193		1	50,780	0.64	23,122	0.637
200701044	Apex Energy	0	234		2	4,222	0.25	2,037	4.735
200701104	The Raven Co.	0	94		1	4,638	0.25	432	1.376
200701131	Miller Bros. Coal	0	152		1	7,895	0.43	1,637	6.583
200701132	Miller Bros. Coal - Frasure Branch	0	264		2	7,964	0.28	1,785	4.710
200701180	Oxford Mining Company LLC - Ellis Area	0	471		2	4,013	0.00	0	0.000
200701205	Matt/Co	0	80		1	8,750	0.23	395	2.300
200701206	Frasure Creek Mining	0	614		1	16,287	0.21	2,514	2.080
200701224	Miller Bros. Coal	0	55		1	6,422	0.06	40	0.920
200701301	CAM Mining - Tom's Branch Surface Mine	1	648		1	9,175	0.09	1,350	2.280
200701397	FCDC	0	202		1	6,931	0.32	1,892	5.500
200701406	ICG Hazard - Bearville North	0	481		2	8,945	0.15	759	2.641
200701445	FCDC	0	390		1	7,179	0.18	838	3.200
200701504	CAM Mining	0	74		1	8,108	12.20	12,196	40.167
200701515	ICG Hazard	0	373		1	11,544	0.03	181	0.417
200701518	Clintwood Elkhorn	0	537		1	5,028	0.19	347	2.022
200701582	Miller Bros. Coal	0	667		2	7,646	0.23	403	1.549
200701660	Martin County Coal - Findlay Branch Mine	0	194		1	5,670	0.48	446	4.333
200800095	Premier Elkhorn Coal	0	160		1	5,250	0.25	455	2.857
200800114	BDCC Holdings - Cherries Branch	0	214		1	3,672	0.30	230	3.846
200800115	Wolverine Resources - Jake Fork and Stoney Branch	0	366		2	5,464	0.24	757	5.529
200800139	Apex Energy	0	74		1	4,119	0.20	404	2.441
200800226	Czar Coal	1	145		1	0	0.00	8,795	0.000

Proposed Project Information										
Corps #	Mining Company Name	AOC_80_20_ VARIANCE	PERM_P	TEMP_P	PERM_I	TEMP_I	PERM_E	TEMP_E	VF_DRAIN	PMI_LOW
200701021	Oxford Mining - Kaiser Mathias	0	0	0	2,352	0	0	0	0.0	0
200701026	Frasure Creek Mining	0	0	0	270	0	0	0	1.0	0
200701044	Apex Energy	0	0	0	0	0	1,583	713	0.8	0
200701104	The Raven Co.	0	0	0	445	785	160	0	1.0	839
200701131	Miller Bros. Coal	0	0	0	3,702	494	629	0	2.0	0
200701132	Miller Bros. Coal - Frasure Branch	0	0	0	2,070	523	2,949	0	2.0	839
200701180	Oxford Mining Company LLC - Ellis Area	0	1,314	0	10,074	0	428	0	0.0	0
200701205	Matt/Co	0	0	0	1,360	930	1,190	600	2.0	0
200701206	Frasure Creek Mining	0	0	0	5,036	3,239	0	0	6.0	0
200701224	Miller Bros. Coal	0	520	780	3,581	0	3,020	70	1.0	0
200701301	CAM Mining - Tom's Branch Surface Mine	0	0	0	3,210	820	6,000	0	1.0	0
200701397	FCDC	0	0	0	2,200	740	1,000	130	3.0	0
200701406	ICG Hazard - Bearville North	0	0	0	7,025	1,744	6,191	0	2.6	0
200701445	FCDC	0	75	0	4,663	0	5,960	0	5.5	0
200701504	CAM Mining	1	0	0	0	352	1,624	0	1.0	0
200701515	ICG Hazard	0	0	0	4,998	948	3,959	0	4.0	0
200701518	Clintwood Elkhorn	0	1,575	7,615	4,229	0	633	1,679	5.6	0
200701582	Miller Bros. Coal	0	0	0	12,752	4,347	1,635	855	11.4	0
200701660	Martin County Coal - Findlay Branch Mine	1	0	0	6,765	1,170	2,760	0	1.6	0
200800095	Premier Elkhorn Coal	0	0	0	821	2,210	1,296	948	1.0	0
200800114	BDCC Holdings - Cherries Branch	0	0	0	7,955	0	5,211	0	2.0	0
200800115	Wolverine Resources - Jake Fork and Stoney Branch	0	0	0	6,282	4,441	3,796	81	6.2	0
200800139	Apex Energy	0	0	0	1,542	0	300	0	1.0	0
200800226	Czar Coal	1	0	0	1,593	0	419	0	1.0	0

Proposed Project Information								
Corps #	Mining Company Name	PMI_MED	PMI_HIGH	WETLAND _LOSS	ADD_ADD_ MINES	ADD_SAD_ AREA	ADD_PERM_P	ADD_TEMP_ P
200701021	Oxford Mining - Kaiser Mathias	3,293	0	0.98	0	0	0	0
200701026	Frasure Creek Mining	14,604	0	0.00	2	667	1,053	0
200701044	Apex Energy	1,883	0	0.00	1	1	0	0
200701104	The Raven Co.	0	0	0.00	0	291	1	0
200701131	Miller Bros. Coal	13,680	0	0.00	1	0	0	0
200701132	Miller Bros. Coal - Frasure Branch	0	0	0.00	0	3	1	0
200701180	Oxford Mining Company LLC - Ellis Area	128,310	0	0.03	0	0	0	0
200701205	Matt/Co	1,345	0	0.00	0	0	0	0
200701206	Frasure Creek Mining	14,604	0	0.00	0	56	0	0
200701224	Miller Bros. Coal	12,792	0	0.00	0	861	0	0
200701301	CAM Mining - Tom's Branch Surface Mine	1,586	0	0.00	1	123	3,311	9,621
200701397	FCDC	24,225	0	0.00	1	351	75	0
200701406	ICG Hazard - Bearville North	190,642	0	0.00	0	472	0	0
200701445	FCDC	24,225	0	0.00	1	235	0	0
200701504	CAM Mining	0	2,239	0.00	1	0	0	0
200701515	ICG Hazard	723,043	0	0.00	1	0	0	0
200701518	Clintwood Elkhorn	20,527	0	0.00	1	727	1,800	2,895
200701582	Miller Bros. Coal	1,840	0	0.00	0	368	289	716
200701660	Martin County Coal - Findlay Branch Mine	29,253	0	0.00	1	383	0	0
200800095	Premier Elkhorn Coal	0	6,131	0.00	0	41	0	0
200800114	BDCC Holdings - Cherries Branch	9,450	0	0.00	0	0	0	0
200800115	Wolverine Resources - Jake Fork and Stoney Branch	9,046	0	0.00	0	0	0	0
200800139	Apex Energy	4,712	0	0.00	2	189	0	0
200800226	Czar Coal	0	8,014	0.00	0	0	0	0

Proposed Project Information									
Corps #	Mining Company Name	ADD_PERM_I	ADD_TEMP_I	ADD_PERM_E	ADD_TEMP_E	ADD_VF_DRAIN	ADD_WETLAND_LOSS	STRM_RATIO	WETL_RATIO
200701021	Oxford Mining - Kaiser Mathias	0	0	0	0	0.0	0.0000	1.00	1.00
200701026	Frasure Creek Mining	7,292	3,310	618	0	0.2	0.0000	1.00	8.00
200701044	Apex Energy	0	0	0	0	0.0	0.0000	1.00	8.00
200701104	The Raven Co.	2,097	523	2,965	0	0.0	0.0000	1.00	8.00
200701131	Miller Bros. Coal	0	0	0	0	0.0	0.0000	0.58	8.00
200701132	Miller Bros. Coal - Frasure Branch	472	785	176	0	0.0	0.0000	0.92	8.00
200701180	Oxford Mining Company LLC - Ellis Area	0	0	0	0	0.0	0.0000	0.96	1.00
200701205	Matt/Co	0	0	0	0	0.0	0.0000	1.00	8.00
200701206	Frasure Creek Mining	595	71	91	0	0.0	0.0000	1.00	8.00
200701224	Miller Bros. Coal	1,136	0	796	0	0.0	0.0000	0.90	8.00
200701301	CAM Mining - Tom's Branch Surface Mine	4,084	0	1,437	1,622	0.0	0.0000	1.00	8.00
200701397	FCDC	4,133	0	5,640	0	0.1	0.0000	0.62	8.00
200701406	ICG Hazard - Bearville North	3,689	3,405	6,911	0	0.1	0.0000	1.00	8.00
200701445	FCDC	2,200	740	1,000	130	0.0	0.0000	0.61	8.00
200701504	CAM Mining	0	0	0	0	0.0	0.0000	0.85	8.00
200701515	ICG Hazard	0	0	0	0	0.0	0.0000	0.71	8.00
200701518	Clintwood Elkhorn	2,927	651	7,227	65	0.1	0.0000	0.41	8.00
200701582	Miller Bros. Coal	1,301	539	883	0	0.1	0.0000	0.75	8.00
200701660	Martin County Coal - Findlay Branch Mine	2,552	3,424	1,653	478	0.0	0.0000	1.00	8.00
200800095	Premier Elkhorn Coal	0	0	0	0	0.0	0.0000	0.14	8.00
200800114	BDCC Holdings - Cherries Branch	0	0	0	0	0.0	0.0000	0.97	8.00
200800115	Wolverine Resources - Jake Fork and Stoney Branch	0	0	0	0	0.0	0.0000	0.56	8.00
200800139	Apex Energy	0	0	0	0	0.0	0.0000	0.82	8.00
200800226	Czar Coal	0	0	0	0	0.0	0.0000	0.08	8.00

Proposed Project Information							
Corps #	**Mining Company Name**	**Sum of Fills**	**Excess Spoil**	**COND_Adj**	**COND_Pre**	**Coal Extraction**	**# of VF w/ Drain Area > 40 (VF)**
200701021	Oxford Mining - Kaiser Mathias	2,352	0.000	1,190	385	1.320	0
200701026	Frasure Creek Mining	270	6.243	1,150	90	9.800	1
200701044	Apex Energy	2,296	4.678	859	333	0.988	0
200701104	The Raven Co.	1,390	0.600	445	192	0.436	1
200701131	Miller Bros. Coal	4,825	7.900	1,150	96	1.200	2
200701132	Miller Bros. Coal - Frasure Branch	5,542	9.892	445	192	2.100	2
200701180	Oxford Mining Company LLC - Ellis Area	11,816	0.000	5,057	199	1.890	0
200701205	Matt/Co	4,080	1.610	519	177	0.700	2
200701206	Frasure Creek Mining	8,275	20.800	1,150	90	10.000	6
200701224	Miller Bros. Coal	7,971	0.322	1,435	159	0.350	1
200701301	CAM Mining - Tom's Branch Surface Mine	10,030	13.544	992	477	5.942	1
200701397	FCDC	4,070	7.700	1,520	95	1.400	3
200701406	ICG Hazard - Bearville North	14,960	11.357	2,720	39	4.300	1
200701445	FCDC	10,698	8.960	1,520	95	2.800	3
200701504	CAM Mining	1,976	24.100	1,400	673	0.600	1
200701515	ICG Hazard	9,905	1.792	2,390	8	4.300	4
200701518	Clintwood Elkhorn	15,731	5.460	1,984	190	2.700	4
200701582	Miller Bros. Coal	19,589	7.900	877	351	5.100	9
200701660	Martin County Coal - Findlay Branch Mine	10,695	4.766	2,340	186	1.100	0
200800095	Premier Elkhorn Coal	5,275	2.400	3,080	1,280	0.840	1
200800114	BDCC Holdings - Cherries Branch	13,166	3.027	1,200	150	0.787	2
200800115	Wolverine Resources - Jake Fork and Stoney Branch	14,600	11.058	794	69	2.000	3
200800139	Apex Energy	1,842	0.744	1,200	288	0.305	1
200800226	Czar Coal	2,012	17.696	3,080	1,047	0.000	1

Proposed Project Information						
Corps #	**Mining Company Name**	**# of VF w/ Drain Area 15-40 (VF)**	**# of VF w/ Drain Area < 15 (VF)**	**Addl # of VF w/ Drain Area > 40 (VF)**	**Addl # of VF w/ Drain Area 15-40 (VF)**	**Addl # of VF w/ Drain Area < 40 (VF)**
200701021	Oxford Mining - Kaiser Mathias	0	0			
200701026	Frasure Creek Mining	0	0	0.1556	0.0000	0.0000
200701044	Apex Energy	1	0	0.0001	0.0000	0.0000
200701104	The Raven Co.	0	0	0.0176	0.0000	0.0000
200701131	Miller Bros. Coal	0	0			
200701132	Miller Bros. Coal - Frasure Branch	0	0	0.0004	0.0000	0.0000
200701180	Oxford Mining Company LLC - Ellis Area	0	0			
200701205	Matt/Co	0	0			
200701206	Frasure Creek Mining	0	0	0.0046	0.0000	0.0000
200701224	Miller Bros. Coal	0	0	0.0234	0.0000	0.0000
200701301	CAM Mining - Tom's Branch Surface Mine	0	0	0.0060	0.0060	0.0000
200701397	FCDC	0	0	0.0300	0.0000	0.0500
200701406	ICG Hazard - Bearville North	2	0	0.0649	0.0325	0.0000
200701445	FCDC	0	5	0.0201	0.0000	0.0000
200701504	CAM Mining	0	0			
200701515	ICG Hazard	0	0			
200701518	Clintwood Elkhorn	2	0	0.0551	0.0061	0.0000
200701582	Miller Bros. Coal	3	0	0.0428	0.0285	0.0000
200701660	Martin County Coal - Findlay Branch Mine	2	0	0.0494	0.0000	0.0000
200800095	Premier Elkhorn Coal	0	0	0.0078	0.0117	0.0000
200800114	BDCC Holdings - Cherries Branch	0	0			
200800115	Wolverine Resources - Jake Fork and Stoney Branch	4	0			
200800139	Apex Energy	0	0	0.0000	0.0086	0.0000
200800226	Czar Coal	0	0			

Proposed Project Information							
Corps #	**Mining Company Name**	**Stream mitigation (linear feet)**	**Wetland mitigation (acreage)**	**Total Spoil (cu. yds.)**	**New Mine (Y/N)**	Corps #	HUC Area
200701021	Oxford Mining - Kaiser Mathias	2,352	1.47	0.00	Y		
200701026	Frasure Creek Mining	3,590	0.00	9.82	N	200701131	24,273
200701044	Apex Energy	2,323	0.00	18.72	Y	200800139	22,077
200701104	The Raven Co.	2,635	0.00	2.42	N	200400336	33,492
200701131	Miller Bros. Coal	2,797	0.00	18.30	N		
200701132	Miller Bros. Coal - Frasure Branch	5,113	0.00	35.55	Y	200400336	33,492
200701180	Oxford Mining Company LLC - Ellis Area	11,388	0.03	0.00	Y		
200701205	Matt/Co	4,545	0.00	6.95	N		
200701206	Frasure Creek Mining	10,984	0.00	100.14	Y	200701131	24,273
200701224	Miller Bros. Coal	7,148	0.00	5.68	Y	200600127	36,856
200701301	CAM Mining - Tom's Branch Surface Mine	17,540	0.00	147.67	N	200601296	20,291
200701397	FCDC	2,527	0.00	23.94	Y	200701445	35,112
200701406	ICG Hazard - Bearville North	24,868	0.00	76.80	Y	200900239	29,058
200701445	FCDC	6,500	0.00	49.99	Y	200701397	35,112
200701504	CAM Mining	1,682	0.00	1.98	N		
200701515	ICG Hazard	7,059	0.00	64.45	N		
200701518	Clintwood Elkhorn	6,465	0.00	28.63	Y	200601296	19,935
200701582	Miller Bros. Coal	14,676	0.00	35.10	Y	200800727	25,794
200701660	Martin County Coal - Findlay Branch Mine	10,695	0.00	10.00	N	200800408	23,248
200800095	Premier Elkhorn Coal	747	0.00	9.49	Y	200700594	10,644
200800114	BDCC Holdings - Cherries Branch	12,765	0.00	10.24	N		
200800115	Wolverine Resources - Jake Fork and Stoney Branch	8,236	0.00	46.50	Y		
200800139	Apex Energy	1,515	0.00	3.70	N	200701044	22,077
200800226	Czar Coal	154	1.38	0.00	N		

Proposed Project Information		Data Used for The Analysis of Additonal VF_DRAIN						
Corps #	**Mining Company Name**	% area in HUC	Corps #	HUC Area	% area in HUC	Corps #	HUC Area	% area in HUC
200701021	Oxford Mining - Kaiser Mathias							
200701026	Frasure Creek Mining	0.002324917	200701206	24,273	0.025165575			
200701044	Apex Energy	6.56269E-05						
200701104	The Raven Co.	9.2089E-05	200701132	33,492	0.008609275			
200701131	Miller Bros. Coal							
200701132	Miller Bros. Coal - Frasure Branch	9.2089E-05						
200701180	Oxford Mining Company LLC - Ellis Area							
200701205	Matt/Co							
200701206	Frasure Creek Mining	0.002324917						
200701224	Miller Bros. Coal	0.023353891						
200701301	CAM Mining - Tom's Branch Surface Mine	0.006041829						
200701397	FCDC	0.010009898						
200701406	ICG Hazard - Bearville North	0.016229158						
200701445	FCDC	0.006695151						
200701504	CAM Mining							
200701515	ICG Hazard							
200701518	Clintwood Elkhorn	3.55439E-05	200601296	20,291	0.006041829	200700335	19935	0.018910373
200701582	Miller Bros. Coal	0.014267568						
200701660	Martin County Coal - Findlay Branch Mine	0.016455198						
200800095	Premier Elkhorn Coal	0.003889363						
200800114	BDCC Holdings - Cherries Branch							
200800115	Wolverine Resources - Jake Fork and Stoney Branch							
200800139	Apex Energy	0.008583423						
200800226	Czar Coal							

Proposed Project Information							
Corps #	**Mining Company Name**	Corps #	HUC Area	% area in HUC			
	Oxford Mining - Kaiser						
200701021	Mathias						
200701026	Frasure Creek Mining						
200701044	Apex Energy						
200701104	The Raven Co.						
200701131	Miller Bros. Coal						
200701132	Miller Bros. Coal - Frasure Branch						
200701180	Oxford Mining Company LLC - Ellis Area						
200701205	Matt/Co						
200701206	Frasure Creek Mining						
200701224	Miller Bros. Coal						
200701301	CAM Mining - Tom's Branch Surface Mine						
200701397	FCDC						
200701406	ICG Hazard - Bearville North						
200701445	FCDC						
200701504	CAM Mining						
200701515	ICG Hazard						
200701518	Clintwood Elkhorn	200701301	20291	0.011180606			
200701582	Miller Bros. Coal						
200701660	Martin County Coal - Findlay Branch Mine						
200800095	Premier Elkhorn Coal						
200800114	BDCC Holdings - Cherries Branch						
200800115	Wolverine Resources - Jake Fork and Stoney Branch						
200800139	Apex Energy						
200800226	Czar Coal						

Proposed Project Information													
Corps #	**Mining Company Name**	**Region**	**SMCRA Number**	**District**	**Coordinate PN/PCN**	**Lat**	**Long**	**WV**	**OH**	**KY**	**TN**	**VA**	**PA**
200800408	Czar Coal	4	880-0156	LRL	39582	37.720	-82.566			X			
200800491	CONSOL of Energy - Buffalo Mt.	3	S-5018-07	LRH	39785	37.733	-82.232	X					
200800562	Eastern Associated Coals - Huff Creek	3	S-4005-08	LRH	39713	37.769	-81.637	X					
200800654	Enterprise Mining	4	860-0464	LRL	39658	37.251	-82.945			X			
200800727	Miller Bros. Coal	4	813-0310 A1	LRL	39871	37.565	-83.231			X			
200800781	Wolverine Resources	4	836-0348	LRL	39660	37.627	-82.903			X			
200800791	Hobet Mining - Surface Mine No. 45	3	S-5002-07	LRH	39701	38.109	81.984	X					
200800805	Coyote Coal Company - Joes Creek	3	S-3001-08	LRH	39892	38.079	81.529	X					
200800830	CoalMac, Inc. - Pine Creek	3	S-5006-07	LRH	39706	37.737	82.046	X					
200801098	Frasure Creek Mining - Spring Fork NO. 2	3	S-5018-08	LRH	39839	37.541	81.886	X					
200900239	Frasure Creek Mining	4	813-0328	LRL	39892	37.420	-83.141			X			
200900428	Consol of Kentucky - Spring Branch No. 3	3	U-5031-08	LRH	39850	37.800	-82.192	X					
200700069	CAM Mining Cane Branch	4	898-0803	LRL	02/07/07	37.224	-82.555			X			
200700867	CAM Mining	4	898-0779	LRL	08/15/07	37.666	-82.597			X			
200701230	ICG Knott	4	860-8012	LRL	11/27/07	37.321	-82.799			X			
200800525	Middle Fork Development	4	877-0191	LRL	01/08/09	37.707	-83.065			X			

Proposed Project Information										
Corps #	**Mining Company Name**	**County**	**401[1]**	**402[1]**	**CONDUCTIVITY**	**IBI**	**HQHV**	**303D**	**NPDES_ OUTFALLS**	**CHG_FORPCT**
200800408	Czar Coal	Martin	I	5	1,131	49.54	0	0.00	14	-7.54
200800491	CONSOL of Energy - Buffalo Mt.	Mingo	P	4	602	60	1	26	9	3.89
200800562	Eastern Associated Coals - Huff Creek	Wyoming/ Logan	P	9	640	57.53	1	29.98	1	3.87
200800654	Enterprise Mining	Knott	P	0	1,191	0.00	0	9.03	10	5.40
200800727	Miller Bros. Coal	Breathitt	P	8	574	59.55	0	37.49	4	-1.14
200800781	Wolverine Resources	Floyd	P	1	544	34.67	0	6.38	2	-2.57
200800791	Hobet Mining - Surface Mine No. 45	Lincoln	P	1	1,094	76.19	1	25.82	0	17.99
200800805	Coyote Coal Company - Joes Creek	Boone/ Kanawha	P	6	759	65.13	1	32.05	3	6.93
200800830	CoalMac, Inc. - Pine Creek	Logan	I	2	872	45.81	0	30.03	5	-4.92
200801098	Frasure Creek Mining - Spring Fork NO. 2	Mingo	P	8	341	64.21	1	18.60	2	5.56
200900239	Frasure Creek Mining	Breathitt	P	8	79	79.54	1	16.89	6	-13.35
200900428	Consol of Kentucky - Spring Branch No. 3	Mingo	P	8	559	53.87	1	23.16	4	3.05
200700069	CAM Mining Cane Branch	Pike	I							
200700867	CAM Mining	Pike	I							
200701230	ICG Knott	Knott	P							
200800525	Middle Fork Development	Magoffin	P							

Proposed Project Information									
Corps #	**Mining Company Name**	**INT250**	**FORPCT**	**WETPCT**	**DISTURBED_ LANDS**	**TE_SPECIES**	**CRIT_HAB**	**RARE_STATE**	**PEOPLE**
200800408	Czar Coal	4.14	56.70	0.00	13.34	0	0	1	1,314
200800491	CONSOL of Energy - Buffalo Mt.	73.87	81.62	0.00	9.12	0	0	1	14,958
200800562	Eastern Associated Coals - Huff Creek	71.05	84.26	0.00	8.13	0	0	1	6,326
200800654	Enterprise Mining	18.21	76.55	0.00	8.26	0	0	0	2,413
200800727	Miller Bros. Coal	41.02	80.28	0.02	4.61	0	0	0	1,407
200800781	Wolverine Resources	39.07	81.82	0.00	5.71	0	0	1	5,707
200800791	Hobet Mining - Surface Mine No. 45	41.00	71.16	0.01	13.02	0	0	1	1,145
200800805	Coyote Coal Company - Joes Creek	70.49	83.52	0.03	6.88	1	0	1	5,274
200800830	CoalMac, Inc. - Pine Creek	92.93	84.13	0.00	7.90	0	0	1	4,056
200801098	Frasure Creek Mining - Spring Fork NO. 2	41.80	82.73	0.00	5.78	0	0	1	4,293
200900239	Frasure Creek Mining	54.69	75.39	0.01	10.29	0	0	0	1,143
200900428	Consol of Kentucky - Spring Branch No. 3	74.30	83.55	0.01	7.61	0	0	1	2,792
200700069	CAM Mining Cane Branch								
200700867	CAM Mining								
200701230	ICG Knott								
200800525	Middle Fork Development								

Proposed Project Information									
Corps #	**Mining Company Name**	**COAL_REFUSE_ DISPOSAL _AREA**	**SAD_AREA**	**SAD from Digital footprint**	**SAD_TYPE**	**MINING_EFF**	**EXCESS_ SPOIL_PCT**	**VF_EFF**	**EXCESS_ SPOIL_EFF**
200800408	Czar Coal	0	333		1	5,405	0.32	950	4.278
200800491	CONSOL of Energy - Buffalo Mt.	0	2,313	2,315	2	7,263	0.44	2,862	8.843
200800562	Eastern Associated Coals - Huff Creek	0	846		2	6,738	0.38	2,379	10.456
200800654	Enterprise Mining	0	782		1	10,487	0.31	3,917	5.829
200800727	Miller Bros. Coal	0	116		1	4,741	0.37	521	8.909
200800781	Wolverine Resources	1	408		1	4,413	1	47,067	374
200800791	Hobet Mining - Surface Mine No. 45	0	602		1	14,568	0.00	0	0.000
200800805	Coyote Coal Company - Joes Creek	0	1,655		2	10,391	0.10	1,679	3.988
200800830	CoalMac, Inc. - Pine Creek	0	759		2	18,841	0.48	4,268	4.337
200801098	Frasure Creek Mining - Spring Fork NO. 2	0	527		2	13,283	0.67	2,739	6.900
200900239	Frasure Creek Mining	0	474		2	7,806	0.07	393	1.486
200900428	Consol of Kentucky - Spring Branch No. 3	0	57		2	50,073	0.00	0	0.000
200700069	CAM Mining Cane Branch								
200700867	CAM Mining								
200701230	ICG Knott								
200800525	Middle Fork Development								

Proposed Project Information										
Corps #	**Mining Company Name**	**AOC_80_20_ VARIANCE**	**PERM_P**	**TEMP_P**	**PERM_I**	**TEMP_I**	**PERM_E**	**TEMP_E**	**VF_DRAIN**	**PMI_LOW**
200800408	Czar Coal	1	0	0	2,552	3,424	1,653	478	3.0	0
200800491	CONSOL of Energy - Buffalo Mt.	1	12,152	7,330	23,354	1,530	7,508	40	13.0	0
200800562	Eastern Associated Coals - Huff Creek	0	0	0	9,596	2,155	13,000	304	4.0	0
200800654	Enterprise Mining	0	0	0	8,094	1,048	2,944	118	2.0	0
200800727	Miller Bros. Coal	0	729	1,805	3,278	1,359	2,226	0	4.6	0
200800781	Wolverine Resources	0	4,567	0	7,466	0	2,287	0	23	0
200800791	Hobet Mining - Surface Mine No. 45	0	606	215	24,476	2,031	5,362	0	0.0	0
200800805	Coyote Coal Company - Joes Creek	0	2,915	1,655	31,110	1,364	3,764	55	4.0	0
200800830	CoalMac, Inc. - Pine Creek	0	0	0	9,999	2,923	1,608	0	3.0	0
200801098	Frasure Creek Mining - Spring Fork NO. 2	0	0	0	13,281	2,208	2,147	0	2.0	0
200900239	Frasure Creek Mining	0	0	0	3,689	3,405	6,911	0	5.6	0
200900428	Consol of Kentucky - Spring Branch No. 3	0	0	0	2,278	1,072	276	0	2.0	0
200700069	CAM Mining Cane Branch									
200700867	CAM Mining									
200701230	ICG Knott									
200800525	Middle Fork Development									

Proposed Project Information								
Corps #	**Mining Company Name**	**PMI_MED**	**PMI_HIGH**	**WETLAND _LOSS**	**ADD_ADD_ MINES**	**ADD_SAD_ AREA**	**ADD_PERM_P**	**ADD_TEMP_ P**
200800408	Czar Coal	0	7,450	0.00	1	165	0	0
200800491	CONSOL of Energy - Buffalo Mt.	5,072	0	0.02	0	57	0	0
200800562	Eastern Associated Coals - Huff Creek	9,197	0	0.00	0	505	0	0
200800654	Enterprise Mining	531,727	0	0.00	2	0	0	0
200800727	Miller Bros. Coal	26,493	0	0.00	0	309	0	0
200800781	Wolverine Resources	9,450	0	0.00	0	588	0	0
200800791	Hobet Mining - Surface Mine No. 45	37,440	0	0.00	0	509	0	0
200800805	Coyote Coal Company - Joes Creek	11,795	0	1.30	1	1032	0	0
200800830	CoalMac, Inc. - Pine Creek	12,520	0	0.00	0	0	0	0
200801098	Frasure Creek Mining - Spring Fork NO. 2	2,667	0	0.00	0	1518	0	0
200900239	Frasure Creek Mining	190,642	0	0.00	0	204	0	0
200900428	Consol of Kentucky - Spring Branch No. 3	24,816	0	0.00	0	1605	8,418	5,078
200700069	CAM Mining Cane Branch			0.0				
200700867	CAM Mining			0.0				
200701230	ICG Knott			0.0				
200800525	Middle Fork Development			0.0				

Proposed Project Information									
Corps #	**Mining Company Name**	**ADD_PERM_I**	**ADD_TEMP_I**	**ADD_PERM_E**	**ADD_TEMP_E**	**ADD_VF_DRAIN**	**ADD_WETLAND_LOSS**	**STRM_RATIO**	**WETL_RATIO**
200800408	Czar Coal	4,510	780	1,840	0	0.0	0.0000	0.76	8.00
200800491	CONSOL of Energy - Buffalo Mt.	2,278	1,072	276	0	0.0	0.0000	1.00	0.00
200800562	Eastern Associated Coals - Huff Creek	14,838	12,933	2,077	4,274	0.1	0.0000	1.00	8.00
200800654	Enterprise Mining	0	0	0	0	0.0	0.0000	0.85	8.00
200800727	Miller Bros. Coal	5,946	2,027	762	399	0.1	0.0000	0.96	8.00
200800781	Wolverine Resources	6,490	4,441	3,796	81	0.1	0.0000	0.72	8.00
200800791	Hobet Mining - Surface Mine No. 45	8,869	1,445	1,264	53	0.3	0.0000	0.66	8.00
200800805	Coyote Coal Company - Joes Creek	0	1,279			0.0	0.0835	1.00	1.00
200800830	CoalMac, Inc. - Pine Creek	0	0	0	0	0.0	0.0000	1.00	8.00
200801098	Frasure Creek Mining - Spring Fork NO. 2	39,692	330	5,757	0	1.0	0.0000	1.00	8.00
200900239	Frasure Creek Mining	3,312	822	2,918	0	0.0	0.0000	0.24	8.00
200900428	Consol of Kentucky - Spring Branch No. 3	16,178	1,060	5,201	28	0.6	0.0139	0.30	8.00
200700069	CAM Mining Cane Branch								8.0
200700867	CAM Mining								8.0
200701230	ICG Knott								8.0
200800525	Middle Fork Development								8.0

Proposed Project Information							
Corps #	**Mining Company Name**	**Sum of Fills**	**Excess Spoil**	**COND_Adj**	**COND_Pre**	**Coal Extraction**	**# of VF w/ Drain Area > 40 (VF)**
200800408	Czar Coal	8,107	7.700	2,340	674	1.800	3
200800491	CONSOL of Energy - Buffalo Mt.	51,914	148.566	1,175	259	16.800	13
200800562	Eastern Associated Coals - Huff Creek	25,055	59.600	1,204	155	5.700	4
200800654	Enterprise Mining	12,204	47.800	10,000	188	8.200	2
200800727	Miller Bros. Coal	9,397	4.900	877	29	0.550	3
200800781	Wolverine Resources	14,320	674	1,200	150	1.800	14
200800791	Hobet Mining - Surface Mine No. 45	32,690	0.000	1,500	60	8.770	0
200800805	Coyote Coal Company - Joes Creek	40,863	68.600	2,022	337	17.200	4
200800830	CoalMac, Inc. - Pine Creek	14,530	62.014	824	54	14.300	3
200801098	Frasure Creek Mining - Spring Fork NO. 2	17,636	48.300	747	195	7.000	2
200900239	Frasure Creek Mining	14,005	5.500	2,720	39	3.700	4
200900428	Consol of Kentucky - Spring Branch No. 3	3,626	0.000	1,081	47	2.850	2
200700069	CAM Mining Cane Branch	4,955				1.800	
200700867	CAM Mining	3,293				0.500	
200701230	ICG Knott	3,364				0.000	
200800525	Middle Fork Development	6,308				1.000	

Proposed Project Information						
Corps #	**Mining Company Name**	**# of VF w/ Drain Area 15-40 (VF)**	**# of VF w/ Drain Area < 15 (VF)**	**Addl # of VF w/ Drain Area > 40 (VF)**	**Addl # of VF w/ Drain Area 15-40 (VF)**	**Addl # of VF w/ Drain Area < 40 (VF)**
200800408	Czar Coal	0	0	0.0000	0.0142	0.0000
200800491	CONSOL of Energy - Buffalo Mt.	0	0	0.0035	0.0000	0.0000
200800562	Eastern Associated Coals - Huff Creek	0	0	0.0752	0.0000	0.0000
200800654	Enterprise Mining	0	0			
200800727	Miller Bros. Coal	2	0	0.1080	0.0360	0.0000
200800781	Wolverine Resources	8	5	0.0628	0.0709	0.0000
200800791	Hobet Mining - Surface Mine No. 45	0	0	0.1798	0.0899	0.0449
200800805	Coyote Coal Company - Joes Creek	0	0			
200800830	CoalMac, Inc. - Pine Creek	0	0			
200801098	Frasure Creek Mining - Spring Fork NO. 2	0	0	0.6824	0.3412	0.1706
200900239	Frasure Creek Mining	2	0	0.0070	0.0140	0.0000
200900428	Consol of Kentucky - Spring Branch No. 3	0	0	0.6371	0.0000	0.0000
200700069	CAM Mining Cane Branch					
200700867	CAM Mining					
200701230	ICG Knott					
200800525	Middle Fork Development					

Proposed Project Information							
Corps #	**Mining Company Name**	**Stream mitigation (linear feet)**	**Wetland mitigation (acreage)**	**Total Spoil (cu. yds.)**	**New Mine (Y/N)**	Corps #	HUC Area
200800408	Czar Coal	6,187	0.00	24.10	N	200701660	23,248
200800491	CONSOL of Energy - Buffalo Mt.	68,389	0.00	338.15	Y	200900428	32,739
200800562	Eastern Associated Coals - Huff Creek	29,859	0.00	155.43	Y	200600760	33,567
200800654	Enterprise Mining	10,350	0.00	151.93	Y		
200800727	Miller Bros. Coal	9,061	0.00	13.25	N	200701582	25,794
200800781	Wolverine Resources	10,331	0.00	700	Y	200800115	16,652
200800791	Hobet Mining - Surface Mine No. 45	21,652	0.00	177.08	Y	200501211	22,641
200800805	Coyote Coal Company - Joes Creek	43,839	2.80	664.25	Y	200500167	12,287
200800830	CoalMac, Inc. - Pine Creek	63,701	0.00	129.42	Y		
200801098	Frasure Creek Mining - Spring Fork NO. 2	21,708	0.00	72.22	Y	200501211	18,831
200900239	Frasure Creek Mining	3,405	0.00	80.80	N	200701406	29,058
200900428	Consol of Kentucky - Spring Branch No. 3	1,072	0.00	1.37	Y	200800491	32,739
200700069	CAM Mining Cane Branch	2,313	0.00		N		
200700867	CAM Mining	3,123	0.00		E		
200701230	ICG Knott	3,930	0.00		E		
200800525	Middle Fork Development	9,607	0.00		N		

Proposed Project Information		Data Used for The Analysis of Additonal VF_DRAIN						
Corps #	**Mining Company Name**	% area in HUC	Corps #	HUC Area	% area in HUC	Corps #	HUC Area	% area in HUC
200800408	Czar Coal	0.007107119						
200800491	CONSOL of Energy - Buffalo Mt.	0.001748616						
200800562	Eastern Associated Coals - Huff Creek	0.015044359						
200800654	Enterprise Mining							
200800727	Miller Bros. Coal	0.011996001						
200800781	Wolverine Resources	0.009529967	200800115	23,407	0.008191222	200701026	24590.0752	0.009654741
200800791	Hobet Mining - Surface Mine No. 45	0.022473783						
200800805	Coyote Coal Company - Joes Creek	0.000304066	200600821	23,989	0.000915222	200602033	23989	0.041966785
200800830	CoalMac, Inc. - Pine Creek							
200801098	Frasure Creek Mining - Spring Fork NO. 2	0.062832006	200501211	14,916	0.022473783			
200900239	Frasure Creek Mining	0.007014599						
200900428	Consol of Kentucky - Spring Branch No. 3	0.049010656						
200700069	CAM Mining Cane Branch							
200700867	CAM Mining							
200701230	ICG Knott							
200800525	Middle Fork Development							

Proposed Project Information							
Corps #	**Mining Company Name**	Corps #	HUC Area	% area in HUC			
200800408	Czar Coal						
200800491	CONSOL of Energy - Buffalo Mt.						
200800562	Eastern Associated Coals - Huff Creek						
200800654	Enterprise Mining						
200800727	Miller Bros. Coal						
200800781	Wolverine Resources						
200800791	Hobet Mining - Surface Mine No. 45						
200800805	Coyote Coal Company - Joes Creek						
200800830	CoalMac, Inc. - Pine Creek						
200801098	Frasure Creek Mining - Spring Fork NO. 2						
200900239	Frasure Creek Mining						
200900428	Consol of Kentucky - Spring Branch No. 3						
200700069	CAM Mining Cane Branch						
200700867	CAM Mining						
200701230	ICG Knott						
200800525	Middle Fork Development						