



Kentucky Pre-Application Coordination Process

Coal Facilities

Table of Contents

1. Acronym List for Interagency Coordination.....	1
2. Purpose/Benefits	4
3. Pre-Application Coordination Overview	5
APPENDIX A – KDOW INFORMATION.....	1
Appendix A – KDOW Information	2
1.1 KPDES Determination.....	2
1.2. Pre-Application Minimum Requirements for Individual Permit Applications.....	2
1.2.1. Pre-Application Sampling Requirements.....	2
1.2.2. Pre-Application Sampling and Submission Process	3
1.3. Additional Permit Provisions for CAH Streams.....	3
1.3.1	3
1.3.2. Provisions for CAH Streams.....	3
1.4. Additional Permit Provisions for non-T&E OSRW/Exceptional Water Streams.....	4
1.4.2. Provisions for non-T&E OSRW/Exceptional Water Streams.....	4
1.5. Additional Permit Provisions for T&E OSRWs.....	5
1.5.1. Provisions for T&E OSRW Streams.....	5
APPENDIX B – PRE-APPLICATION SAMPLING SUMMARY TABLES	1
1. Pre-Application Surface Water Sampling Sites	2
Pre-Application Sampling Summary Tables.....	3
1.1. Pre-Application Sampling Requirements for Coal Facilities (KPDES GP Coverage).....	3
1.2. Pre-Application Sampling Requirements for Coal Facilities (KPDES Standard IP Coverage)	1
1.3. Pre-Application Sampling Requirements for Coal Facilities (KPDES IP Coverage for non-T&E OSRW & CAH).....	4
1.4. Pre-Application Sampling Requirements for Coal Facilities (KPDES IP Coverage for T&E OSRW).....	6
APPENDIX C – USACE INFORMATION	1

Appendix C – USACE Information.....	2
1.1 Jurisdictional Determination of Waters of the U.S. (Waters) and Flow Regime Boundaries Walk.....	2
2.1 Checklist for Submittal of a Request for a Verification of a Delineation of “Waters of the U.S.” on Proposed Coal Mine Sites.....	2
1.1.1 Information to be Submitted to USACE.....	2
1.1.2 Information for the Site Verification Visit.....	3
1.1.3 Suggested Format for Jurisdictional Determination Data Submittal.....	4
APPENDIX D – SMCRA PRELIMINARY APPLICATION SUBMISSION.....	1
1.1 SMCRA Preliminary Application Submission.....	2
1.1.1 SMCRA Preliminary Walk.....	2
1.1.2 SMCRA KDMP Review and Walk.....	2
APPENDIX E – USFWS ADDITIONAL INFORMATION.....	1
Appendix E.....	2
APPENDIX F – USEPA-R4 INFORMATION.....	1
1.1. Minimum Baseline Information.....	2
1.1.1 Pre-Application Sampling Recommendations.....	2
1.1.2. Pre-Application Sampling Locations.....	3
APPENDIX G – AGENCY CONTACT LIST.....	1
Agency Contact List.....	2

1. Acronym List for Interagency Coordination

Acronym	Agency	Definition
401 WQC	KDNR for mining, KDOW for others	Clean Water Act, Section 401 Water Quality Certification
402 Permit	USEPA, KDOW	Clean Water Act, Section 402 Permit (KPDES in Kentucky)
404 Permit	USACE	Clean Water Act, Section 404 Permit (for dredge and fill activities)
AAA	KDMP	Application Administratively Acceptable
BMP	Various	Best Management Practice
BMP Plan	Various	Best Management Practices Plan
CAH	KDOW	Cold Water Aquatic Habitat
CHIA	KDNR/OSMRE	Cumulative Hydrologic Impact Assessment
KDMP-CRRS	KDMP	Critical Resources Review Section
CWA	Various	Clean Water Act (Federal Water Pollution Control Act)
DocTree	KDNR	KY Document management system for coal mine permitting, inspection, enforcement information
EKSAP	Various	Eastern Kentucky Stream Assessment Protocol
ERI Map	KDMP	Environmental Resource Information Map (SMCRA Application)
ERSS	KDMP-CRRS	Environmental Review Summary Sheet
ESA	USFWS	Endangered Species Act
FPOP	KDNR, USACE	Fill Placement Optimization Process
JD	USACE	Jurisdictional Determination (Waters of the United States)
JD, Proposed	USACE	Jurisdictional Determination as proposed by permit applicant
JD, Verified	USACE	Jurisdictional Determination verified by USACE
KDEP	KY EEC	Kentucky Department for Environmental Protection
KDFWR	KY TAHC	Kentucky Department of Fish and Wildlife Resources
KDMP	KY EEC	Kentucky Division of Mine Permits (KY EEC DNR)
KDNR	KY EEC	Kentucky Department for Natural Resources
KDOW	KY EEC	Kentucky Division of Water (KY EEC DEP)
KPDES	KDOW	Kentucky Pollutant Discharge Elimination System (CWA 402)

Acronym	Agency	Definition
KY EEC	KY EEC	Kentucky Energy and Environment Cabinet
KHC	KY TAHC	Kentucky Heritage Council
KY TAHC	KY TAHC	Kentucky Tourism, Arts and Heritage Cabinet
MOU	Various	Memorandum of Understanding
MRP Map	KDMP	Mining and Reclamation Plan Map (SMCRA Application)
NPDES	USEPA	National Pollutant Discharge Elimination System (CWA, Section 402)
OSMRE	OSMRE	Office of Surface Mining Reclamation and Enforcement
OSMRE-LFO	OSMRE	Office of Surface Mining Reclamation and Enforcement - Lexington Field Office
OSRW	KDOW	Outstanding State Resource Water
PEP	USFWS	Protection and Enhancement Plan
QAPP	KDOW	Quality Assurance Project Plan
RPA	KDOW	Reasonable Potential Analysis
SHPO	KY TAHC	State Historic Preservation Office (KY TAHC KHC)
SMCRA	KDNR/OSMRE	Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87)
SMIS	KDNR	Surface Mining Information System (publicly accessible searchable database)
SOP	Various	Standard Operating Procedure
SWPB	KDOW	Surface Water Permits Branch
T & E Species	USFWS	Threatened and Endangered Species (Listed or candidates for listing)
TAC	KDMP	Application Technically Approved
USACE	USACE	United States Army Corps of Engineers
USACE-LRD	USACE	United States Army Corps of Engineers – Great Lakes and Ohio River Division
USACE-LRL	USACE	United States Army Corps of Engineers - Louisville District
USACE-LRN	USACE	United States Army Corps of Engineers - Nashville District
USDA	USDA	United States Department of Agriculture
USEPA	USEPA	United States Environmental Protection Agency
USEPA-R4 404	USEPA	United States Environmental Protection Agency - Region 4, 404 Reviewers
USFS	USDA	USDA Forest Service (Federal land manager in Kentucky - Daniel Boone, Land between the Lakes)
USFWS	USFWS	United States Fish and Wildlife Service

Acronym	Agency	Definition
USGS	USGS	United States Geological Survey

2. Purpose/Benefits

- 1) Reduce cumulative time required for review of permit applications for SMCRA and CWA 402 and 404 permits and 401 WQC.
- 2) Eliminate unnecessary re-design and re-review of mine plans by discussing alternatives and avoidance/minimization measures and identifying regulatory requirements up front.
- 3) Consolidate pre-permitting sampling and analysis efforts to reduce time and expense to the applicant.
- 4) Identify critical resources or other features that will require further characterization (surveys, documentation) or special consideration in the mine plan.
- 5) Assure consistency of information provided to all agencies to avoid approval of conflicting plans.

3. Pre-Application Coordination Overview

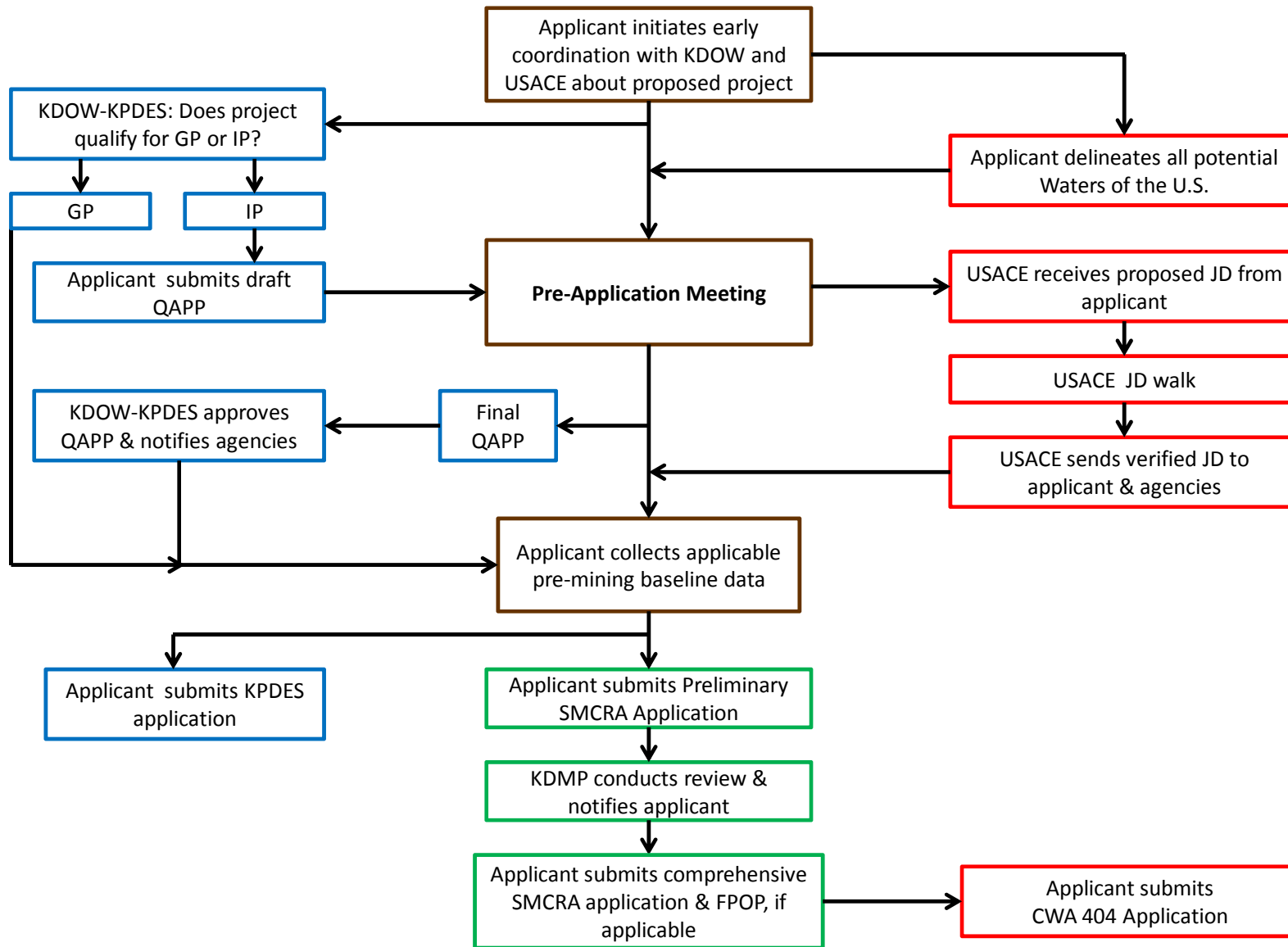
The placement of fills and ponds, as well as mine-through areas, is affected by the USACE jurisdictional determinations, the KPDES permit conditions, and analysis conducted pursuant to the CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230; the Guidelines). The coordination process will be most efficient when the applicant begins the permitting process by contacting KDOW, USACE, USEPA and other involved resource agencies (e.g. KDMP, USFWS, KDFWR, etc.) prior to submitting the SMCRA Preliminary Application.

The applicant is encouraged to attend a pre-application meeting with the agencies. At that meeting, the applicant will introduce conceptual project plans, and the agencies will advise the applicant on procedural aspects of the permit application and review process. The agencies will also clarify the specific site analyses necessary for each agency to thoroughly and expeditiously review applicable permit applications consistent with each agency's respective regulatory roles and responsibilities. It is envisioned that this pre-application meeting will significantly enhance the efficiency of the permit application process, provide for synoptic collection of necessary site information, and minimize requests for additional information from the agencies during the permit application review process.

KDOW will advise the applicant about KPDES permitting issues, including sampling requirements and eligibility for general permit coverage, while the appropriate USACE District Office will advise the applicant about submittal and verification of a proposed jurisdictional determination (jd) for all Waters of the United States (Waters) on the proposed permit area. USEPA, in collaboration with the other agencies, will advise the applicant concerning the minimum baseline data requirements necessary to allow USEPA to conduct an effective evaluation of the project's compliance with the Guidelines. This approach provides the applicant early on with the information that is most likely to affect the design and potential economic viability of the proposed mining plan for the permit area, and will help avoid the costs and delays of resampling and redesign.

The accompanying flowchart shows the general sequence of steps and interagency coordination that should occur during the pre-application process. The applicant initiates information gathering for the permitting process by contacting KDOW-SWPB to begin the KPDES permitting process, drafting a QAPP, if applicable, and performing a field delineation of all potential waters of the U.S. These actions by the applicant are then followed by the pre-application meeting, where all agencies will advise the permit applicant of required or recommended baseline environmental sampling. Following the pre-application meeting, or if the applicant elects not to attend a pre-application meeting, he submits a proposed jurisdictional determination to the appropriate USACE District Office and finalizes the QAPP (if applicable). Following receipt of a verified JD from the USACE and collection of baseline data, the applicant conducts an analysis using the Fill Placement Optimization Process (RAM #145), if applicable, and submits appropriate permit applications to KDOW, KDMP and USACE.

Appendix G contains contact information for each agency. Information in red denotes that the contact person for the item is listed with the agency in Appendix G.



Pre Application Process

1. Applicant initiates early coordination with KDOW and USACE about proposed project;
 For KDOW Process go to step.....2
 For USACE Process go to step.....3

2. Applicant requests General Permit or Individual KPDES Permit from KDOW;
 2a) If GP is granted, go to step.....8
 2b) If IP is required, go to step.....4

3. Applicant assesses and delineates all potential WOUS within the proposed project boundary; Go to step.....5

4. Applicant submits draft QAPP to KDOW for Individual KPDES permit application; Go to step.....5

5. Applicant attends Pre-Application meeting with KDNR, USEPA, USACE, & KDOW;
 5a) To continue KDOW Process, go to step.....6
 5b) To continue USACE Process, go to step.....7

6. Applicant submits Final QAPP to KDOW for Individual KPDES Permit and awaits KDOW approval and notification to interested agencies; Go to step.....8

7. Applicant submits proposed JD to USACE and schedules JD walk. Following the JD verification walk with USACE personnel, USACE sends verification to the applicant and interested agencies; Go to Step.....8

8. Applicant collects applicable pre-mining baseline data; Go to step.....9

9. Applicant submits KPDES application; Go to step.....10

10. Applicant Submits Preliminary SMCRA application; Go to step.....11

11. Applicant awaits to be notified following KDMP; Go to step.....12

12. Applicant submits comprehensive SMCRA application and FPOP analysis; Go to step.....13

13. Applicant submits CWA Section 404 permit application to USACE.

Color Key: USACE, KDOW, and KDMP

APPENDIX A – KDOW INFORMATION

Appendix A – KDOW Information

1.1 KPDES Determination

- a) Initiated by Applicant
- b) Purpose:
 - i) To identify impaired or special use waters or other conditions that would exclude the project from Coal General KPDES permit coverage.
 - ii) To identify water quality or other on-site conditions that would impose constraints on mining activities (fill or pond construction, mine-throughs, road placement, etc.).
- c) Process:
 - i) Applicant contacts **KDOW-SWPB** regarding KPDES requirements for the proposed permit area.
 - (1) The applicant talks to **KDOW-SWPB** to identify impaired or special use waters or other conditions that would categorically exclude the project from coverage under the Coal General KPDES permit and require an individual permit with site-specific conditions.
 - (2) If an individual permit is required, the applicant must complete three pre-application requirements in sequence:
 - (a) Sample site proposal and acceptance by KDOW;
 - (b) QAPP proposal and acceptance by KDOW; and
 - (c) Reasonable potential analysis (RPA) data submission and acceptance and, for facilities with a surface mining component located in the Eastern coal fields, biological assessment submission and acceptance.

1.2. Pre-Application Minimum Requirements for Individual Permit Applications

KDOW relies on information provided in permit applications to make required regulatory decisions regarding permit conditions. Therefore, it is necessary for pre-application sampling to be conducted and the results provided with the application. KDOW has determined that in order to arrive at appropriate permit conditions, it is necessary for the applicant to provide instream and representative outfall data with all KPDES individual permit applications for coal facilities, including surface mining operations, underground operations, and preparation plants.

1.2.1. Pre-Application Sampling Requirements

Effective January 1, 2012, all individual permit applications for coal mining operations are required to include an accepted QAPP and a minimum of five (5) samples of effluent and instream data taken quarterly prior to the application submittal. New facilities with no existing outfalls must either include estimated data or data from a similar representative facility. Additionally, effective March 1, 2011, all facilities with a surface mining component located in the Eastern Kentucky coal fields are required to submit a baseline biological assessment prior to permit issuance. This requirement does not apply to facilities that are exclusively underground operations, exclusively preparation plants, or located in Western Kentucky. Facilities discharging to OSRWs or other sensitive waters may have additional sampling requirements as described on DOW's mining website, available at:

<http://water.ky.gov/permitting/Pages/Mining.aspx>.

[Section 1](#) details the parameters and test methodologies required for data collection. Method detection limits (MDLs) reported at 70% of the applicable water quality standard or higher will require continued monitoring after permit issuance.

1.2.2. Pre-Application Sampling and Submission Process

The pre-application sampling process includes a three (3) step process which must be completed in sequence so that the data may be considered valid prior to acceptance of the complete application. These steps include:

- 1) Sample site proposal and acceptance;
- 2) QAPP proposal and acceptance; and
- 3) Reasonable potential analysis (RPA) data submission and acceptance and, for facilities with a surface mining component located in the Eastern coal fields, biological assessment submission and acceptance.

Once these steps are completed in order, the application may be considered ready for submittal. Detailed guidance related to QAPP, standard operating procedures (SOPs), biological assessments and data submission requirements are available at <http://water.ky.gov/permitting/Pages/Mining.aspx>. This page is updated when new or revised documents and templates are made available, so please check for the latest documentation prior to submission.

1.3. Additional Permit Provisions for CAH Streams

1.3.1. CAHs are those surface waters and associated substrate that are able to support indigenous aquatic life or self-sustaining or reproducing trout populations on a year-round basis. As designated by EEC pursuant to 401 KAR 10:031, Section 4 (2), the following parameters and criteria are for the protection of productive coldwater aquatic communities and streams that support trout populations, whether self-sustaining or reproducing, on a year-round basis. The criteria adopted for the protection of warm water aquatic life also apply to the protection of coldwater habitats with the following additions:

- 1) Dissolved oxygen.
 - a) A minimum concentration of six and zero-tenths (6.0) mg/l as a twenty-four (24) hour average and five and zero-tenths (5.0) mg/l as an instantaneous minimum shall be maintained.
 - b) In lakes and reservoirs that support trout, the concentration of dissolved oxygen in waters below the epilimnion shall be kept consistent with natural water quality; and
- 2) Temperature. Water temperature shall not be increased through human activities above the natural seasonal temperatures.

1.3.2. Provisions for CAH Streams

- 1) A one (1) -year, pre-mining biological community assessment and semi-monthly physicochemical sampling is required prior to any land disturbance.
- 2) Prior to onset of sampling, a comprehensive study plan shall be submitted to and accepted by KDOW. This study plan must have all the requirements listed in the QAPP template. Copies of KDFWR collecting permits shall be included with the study plan.
- 3) No instream disturbances shall occur in the designated stream segment or in any biologically important tributaries of the designated stream segment as delineated by the USGS 7.5-minute Quadrangle Map unless approved by KDOW.
- 4) A 100-foot buffer zone shall be maintained for each designated stream segment including tributary streams. Width variances of the buffer zone may be granted on a case-by-case basis.

- 5) All underground mining within the immediate watershed of a designated stream segment shall adhere to a 150-foot minimum subsidence zone buffer so that no stream will be impacted by loss of flow and / or habitat disturbance.
- 6) Instream, physio-chemical parameters for pre-application monitoring are detailed in [Section 1](#). Semimonthly monitoring will be reduced in frequency to monthly monitoring during active resource extraction.

1.4. Additional Permit Provisions for non-T&E OSRW/Exceptional Water Streams

OSRWs are those surface waters designated by EEC pursuant to 401 KAR 10:031, Section 8. OSRWs are streams that contain populations of federally listed species, but also include certain unique waters of the commonwealth such as Kentucky wild rivers, waters flowing through Kentucky Nature Preserves and surface waters that have an undisturbed or relatively undisturbed watershed which can provide basic scientific data and possess outstanding water quality characteristics, or fulfill two (2) of the following criteria:

- 1) Support a diverse or unique native aquatic flora or fauna;
- 2) Possess physical or chemical characteristics that provide an unusual and uncommon aquatic habitat; or
- 3) Provide a unique aquatic environment within a physiographic region.

1.4.1. Exceptional Waters

Exceptional waters are those surface waters designated by EEC pursuant to 401 KAR 10:030, Section 1 (2), which meet any of the following criteria:

- 1) Surface water is designated as a Kentucky wild river and is not categorized as an outstanding national resource water;
- 2) Surface water is designated as an outstanding state resource water as established in 401 KAR 10:031, Section 8;
- 3) Surface water contains either of the following:
 - a) A fish community that is rated "excellent" by the use of the Index of Biotic Integrity included in *Development and Application of the Kentucky Index of Biotic Integrity (KIBI)* (2003); or
 - b) A macroinvertebrate community that is rated "excellent" by the Macroinvertebrate Bioassessment Index included in *The Kentucky Macroinvertebrate Bioassessment Index* (2003); or
- 4) Surface water in the cabinet's reference reach network.

1.4.2. Provisions for non-T&E OSRW/Exceptional Water Streams

- 1) A one (1) -year, pre-mining biological community assessment and semi-monthly physicochemical sampling is required prior to any land disturbance.
- 2) Prior to onset of sampling, a comprehensive study plan shall be submitted to and accepted by KDOW. This study plan must have all the requirements listed in the QAPP template. Copies of KDFWR collecting permits shall be included with the study plan.
- 3) No in-stream disturbances shall occur in the designated stream segment, in any blue-line tributary to the designated stream segment as delineated by the USGS 7.5 minute Quadrangle Map, or in any upstream segment of designated stream segment that demonstrate a reasonable potential to cause a loss of the OSRW designated use, unless approved by KDOW.

- 4) A 100-foot buffer zone shall be maintained for each designated stream segment. Width variances of the buffer zone may be granted on a case-by-case basis. The designated stream segment shall not be used for sediment control or permanent material storage without prior approval from KDOW.
- 5) All underground activities within the immediate watershed of the designated stream segment shall adhere to a 150-foot minimum subsidence zone buffer so that no stream will be impacted by loss of flow and / or habitat disturbance.
- 6) Instream, physio-chemical parameters for pre-application monitoring are detailed in [Section 1](#). Semimonthly monitoring will be reduced in frequency to monthly monitoring during active resource extraction.

1.5. Additional Permit Provisions for T&E OSRWs

As discussed in [Section 1](#), OSRWs are those surface waters designated by EEC pursuant to 401 KAR 10:031, Section 8, and includes certain unique waters of the commonwealth, including those with federally threatened or endangered species. KDOW is obligated by 10:031, Section 8(2) to protect the water quality and habitat of those streams supporting a federally listed endangered or threatened species. Federally listed species are afforded additional protection by Section 9 of the Endangered Species Act (ESA) of 1973, as amended, which prohibits any person subject to the jurisdiction of the United States to cause “take” of a listed species. Any significant habitat modification or degradation, including in this case, water quality degradation, which results in death or injury to a listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering would constitute “take” under the ESA.

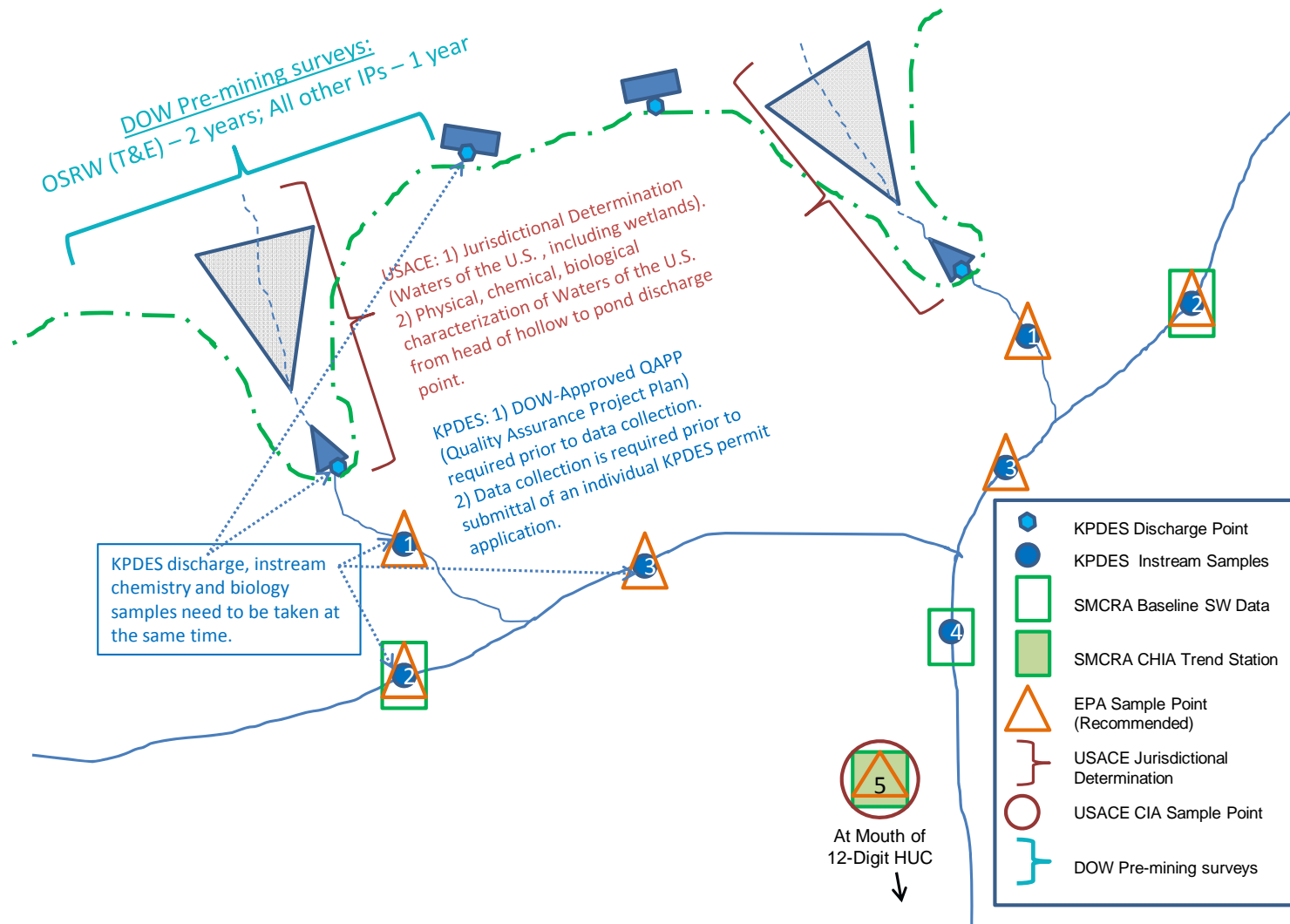
1.5.1. Provisions for T&E OSRW Streams

- 1) A two (2) -year, pre-mining biological community assessment and semi-monthly physicochemical sampling is required prior to any land disturbance.
- 2) Prior to onset of sampling, a comprehensive study plan shall be submitted to KDOW and USFWS-KYFO for review and acceptance by both agencies. This study plan must have all the requirements listed in the QAPP template. Copies of KDFWR and USFWS collecting permits shall be included with the study plan.
- 3) No in-stream disturbances shall occur in the designated stream segment or in any blue-line tributary stream as delineated by the USGS 7.5-minute Quadrangle Map unless approved by KDOW.
- 4) A 100-foot buffer zone shall be maintained for each designated stream segment including tributary streams. Width variances of the buffer zone may be granted on a case-by-case basis. Streams within the watershed of the OSRW shall not be used for sediment control or permanent material storage without prior approval from KDOW.
- 5) All underground activities within the immediate watershed of the designated stream segment shall adhere to a 150-foot minimum subsidence zone buffer so that no stream will be impacted by loss of flow and / or habitat disturbance.
- 6) Federally-listed fish and / or mussel population surveys must be completed only by those persons who hold a valid KDFWR Scientific Wildlife Collecting Permit and a USFWS Section 10 Recovery Permit.
- 7) Applicants must also contact USFWS-KYFO regarding the potential development of a Protection and Enhancement Plan (PEP).

Instream, physio-chemical parameters for pre-application monitoring are detailed in [Section 1](#). Semimonthly monitoring will be reduced in frequency to monthly monitoring during year two (2) of pre-application monitoring.

APPENDIX B – PRE-APPLICATION SAMPLING SUMMARY TABLES

1. Pre-Application Surface Water Sampling Sites



Pre-Application Sampling Summary Tables

*Instream point labels in parentheses correspond to point labels in Section **Error! Reference source not found.**

1.1. Pre-Application Sampling Requirements for Coal Facilities (KPDES GP Coverage)

Parameter Group	Parameter	Unit	Method ²	Frequency	Number of Samples	QAPP	Sampling Points					Agency						
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS	
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)							
Assessments	24-Hour Temperature and Conductivity Baseline Curves		KDOW SOP	N/A	N/A	N/A												
	Federally-listed Fish / Mussel Population Survey		KDOW SOP	N/A	N/A	N/A												
	Fish Community Assessment		KDOW SOP	N/A	N/A	N/A												
	Habitat Assessment		KDOW SOP	N/A	N/A	N/A												
	Identify Jurisdictional Waters & Wetlands		USACE SOP	Once	1	N/A	Entire permit area								X	X ¹		
	Macroinvertebrate Community Assessment		KDOW SOP	Once After Issuance	1	Study Plan Only	X	X	X	X				X	X			X ¹
	Pebble Count		KDOW SOP	N/A	N/A	N/A												
Physical & Chemical Stream Assessment		EKSAP	Once	1	N/A	Head of hollow to discharge point of pond & immediately adjacent riparian corridor									X	X ¹		
Groundwater-Only Parameters	Depth to water	ft	N/A	Monthly	6	N/A						X	X				X ¹	
	Iron, Total Dissolved	µg/l		Monthly	6	N/A						X	X				X ¹	
	Manganese, Total Dissolved	µg/l		Monthly	6	N/A						X	X				X ¹	
Total Recoverable Metals	Antimony	µg/l	EPA 200.8	Once	1	N/A					X				X		X ¹	
	Arsenic	µg/l	EPA 200.8	Once	1	N/A					X				X		X ¹	
	Beryllium	µg/l	EPA 200.8	Once	1	N/A					X				X		X ¹	
	Cadmium	µg/l	EPA 200.8	Once	1	N/A					X				X		X ¹	
	Chromium	µg/l	EPA 200.8	Once	1	N/A					X				X		X ¹	

¹ Only required if project occurs within the Upper Cumberland River basin.

² Method required as specified in table or as determined by lab’s Demonstration of Capability (DOC). Details on KDOW’s Laboratory DOC Procedure are available at: <http://water.ky.gov/permitting/Documents/Laboratory%20Demonstration%20of%20Capability%20Prodedure.pdf>

Parameter Group	Parameter	Unit	Method ²	Frequency	Number of Samples	QAPP	Sampling Points					Agency					
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Copper	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Lead	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
Total Recoverable Metals (continued)	Mercury	µg/l	EPA 1631E or 245.7	Once	1	N/A						X			X		X ¹
	Nickel	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Selenium	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Silver	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Thallium	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Zinc	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
Other Parameters	Aluminum, Total Recoverable	µg/l	EPA 200.8	Once	1	N/A						X			X		X ¹
	Cyanide, Free	µg/l	SM 4500-CN G	Once	1	N/A						X			X		X ¹
	Hardness	mg/l CaCO ₃	SM 2340 B	Once	1	N/A						X			X		X ¹
	Oxygen, Dissolved	mg/l	SM 4500-O G	N/A	N/A	N/A											
	Phenol, Total	µg/l	EPA 420.1	Once	1	N/A						X			X		X ¹
	Solids, Total Settleable (SS)	mg/l			N/A	N/A	N/A										
	Turbidity	NTU	N/A		N/A	N/A	N/A										
Salts	Calcium, Total	µg/l	EPA 200.7	N/A	N/A	N/A											
	Chloride, Total	mg/l	EPA 300.0	N/A	N/A	N/A											
	Magnesium, Total	µg/l	EPA 200.7	N/A	N/A	N/A											
	Potassium, Total	mg/l	EPA 200.7	N/A	N/A	N/A											
	Sodium, Total	mg/l	EPA 200.7	N/A	N/A	N/A											
SMCRA Parameters	Acidity	mg/l CaCO ₃		Monthly	6	N/A	X	X	X	X	X	X	X	X	X		X ¹
	Alkalinity, Bicarbonate	mg/l CaCO ₃	N/A	Monthly	6	N/A	X	X	X	X	X	X	X	X	X		X ¹
	Conductance, Specific (SC)	µS/cm	SM 2510 B	Monthly	6	N/A	X	X	X	X	X	X	X	X	X		X ¹
	Flow	cfs	N/A	Monthly	6	N/A	X	X	X	X	X	X	X	X	X		X ¹
	Iron, Total Recoverable	µg/l	EPA 200.7	Monthly	6	N/A	X	X	X	X	X	X		X	X		X ¹
	Manganese, Total Recoverable	µg/l	EPA 200.8	Monthly	6	N/A	X	X	X	X	X	X		X	X		X ¹

1.2. Pre-Application Sampling Requirements for Coal Facilities (KPDES Standard IP Coverage)

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points					Discharge	Groundwater	Agency				
							Instream *							KDNR	KDOW	USACE	USFWS	
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)							
Assessments	24-Hour Temperature and Conductivity Baseline Curves		KDOW SOP	N/A	N/A	N/A												
	Federally-listed Fish / Mussel Population Survey		KDOW SOP	N/A	N/A	N/A												
	Fish Community Assessment		KDOW SOP	Annual ¹	1	X	X	X	X	X						X		X ²
	Habitat Assessment		KDOW SOP	Annual	1	X	X	X	X	X						X		X ²
	Identify Jurisdictional Waters & Wetlands		USACE SOP	Once	1	N/A	Entire permit area								X	X ²		
	Macroinvertebrate Community Assessment		KDOW SOP	Annual ³	1	X	X	X	X	X			X	X				X ²
	Pebble Count		KDOW SOP	N/A	N/A	N/A												
Physical & Chemical Stream Assessment		EKSAP	Once	1	N/A	Head of hollow to discharge point of pond & immediately adjacent riparian corridor								X	X ²			
Groundwater-Only Parameters	Depth to water	ft	N/A	Monthly	6	N/A						X	X				X ²	
	Iron, Total Dissolved	µg/l		Monthly	6	N/A						X	X				X ²	
	Manganese, Total Dissolved	µg/l		Monthly	6	N/A						X	X				X ²	
Total Recoverable Metals	Antimony	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²	
	Arsenic	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²	
	Beryllium	µg/l	EPA 200.8	Quarterly	5	X					X				X		X ²	
	Cadmium	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²	
	Chromium	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²	
	Copper	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²	
Lead	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X	X				X		X ²		

¹ Fish community assessment required only for receiving streams with drainage area 200-500 mi². Index period is August 1 – October 31.

² Only required if project occurs within the Upper Cumberland River basin.

³ Macroinvertebrate community assessment required only for receiving streams with drainage area < 200 mi². Index periods are February 15 – May 31 for headwater streams (drainage area < 5 mi²) and May 1 – September 30 for wadeable streams (drainage area 5-200 mi²).

⁴ Method as specified in table or as determined by lab’s Demonstration of Capability (DOC). Details on KDOW’s Laboratory DOC Procedure are available at: <http://water.ky.gov/permitting/Documents/Laboratory%20Demonstration%20of%20Capability%20Prodedure.pdf>

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
Total Recoverable Metals (continued)	Mercury	µg/l	EPA 1631E or 245.7	Quarterly	5	X	X	X	X	X		X			X		X ²
	Nickel	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X		X			X		X ²
	Selenium	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X		X			X		X ²
	Silver	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X		X			X		X ²
	Thallium	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X		X			X		X ²
Zinc	µg/l	EPA 200.8	Quarterly	5	X	X	X	X	X		X			X		X ²	
Other Parameters	Aluminum, Total Recoverable	µg/l	EPA 200.8	N/A	N/A	N/A											
	Cyanide, Free	µg/l	SM 4500-CN ⁻ G	Quarterly	5	X	X	X	X	X		X			X		X ²
	Hardness	mg/l CaCO ₃	SM 2340 B	Quarterly	5	X	X	X	X	X		X			X		X ²
	Oxygen, Dissolved	mg/l	SM 4500-O G	Quarterly	5	X	X	X	X	X					X		X ²
	Phenol, Total	µg/l	EPA 420.1	Quarterly	5	X	X	X	X	X		X			X		X ²
	Solids, Total Settleable (SS)	mg/l		N/A	N/A	N/A											
Turbidity	NTU	N/A	Quarterly	5	X	X	X	X	X		X			X		X ²	
Salts	Calcium, Total	µg/l	EPA 200.7	Quarterly	5	X	X	X	X	X	X	X			X		X ²
	Chloride, Total	mg/l	EPA 300.0	Quarterly	5	X	X	X	X	X	X	X			X		X ²
	Magnesium, Total	µg/l	EPA 200.7	Quarterly	5	X	X	X	X	X	X	X			X		X ²
	Potassium, Total	mg/l	EPA 200.7	Quarterly	5	X	X	X	X	X	X	X			X		X ²
	Sodium, Total	mg/l	EPA 200.7	Quarterly	5	X	X	X	X	X	X	X			X		X ²
SMCRA Parameters	Acidity	mg/l CaCO ₃		Monthly	6	N/A	X	X	X	X	X	X	X	X	X		X ²
	Alkalinity, Bicarbonate	mg/l CaCO ₃	N/A	Quarterly ⁴	6	N/A	X	X	X	X	X	X	X	X	X		X ²
	Conductance, Specific (SC)	µS/cm	SM 2510 B	Quarterly	6	N/A	X	X	X	X	X	X	X	X	X		X ²

⁴ Five (5) quarterly samples required by KDOW; six (6) samples that reflect seasonal changes in quantity and quality required by KDNR.

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points					Agency					
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Sulfate, Total	mg/l SO ₄	EPA 300.0	Quarterly Er ror! Bookma rk not defined.	6	N/A	X	X	X	X	X	X	X	X		X ²	
	Temperature	°C		Quarterly Er ror! Bookma rk not defined.	6	N/A	X	X	X	X	X	X	X	X		X ²	

1.3. Pre-Application Sampling Requirements for Coal Facilities (KPDES IP Coverage for non-T&E OSRW & CAH)

Parameter Group	Parameter	Unit	Method ⁵	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
Assessments	24-Hour Temperature and Conductivity Baseline Curves		KDOW SOP	Annual ⁵	24	X	X	X	X	X				X		X ⁶	
	Federally-listed Fish / Mussel Population Survey		KDOW SOP	N/A	N/A	N/A											
	Fish Community Assessment		KDOW SOP	Annual ⁷	1	X	X	X	X	X				X		X ⁶	
	Habitat Assessment		KDOW SOP	Annual	1	X	X	X	X	X				X		X ⁶	
	Identify Jurisdictional Waters & Wetlands		USACE SOP	Once	1	N/A	Entire permit area								X	X ⁶	
	Macroinvertebrate Community Assessment		KDOW SOP	Annual ⁸	1	X	X	X	X	X			X	X		X ⁶	
	Pebble Count		KDOW SOP	Annual Error! Bookmark not defined.	X	X	X	X	X	X				X		X ⁶	
Physical & Chemical Stream Assessment		EKSAP	Once	1	N/A	Head of hollow to discharge point of pond & immediately adjacent riparian corridor								X	X ⁶		
Groundwater-Only Parameters	Depth to water	ft	N/A	Monthly	6	N/A						X	X			X ⁶	
	Iron, Total Dissolved	µg/l		Monthly	6	N/A						X	X			X ⁶	
	Manganese, Total Dissolved	µg/l		Monthly	6	N/A						X	X			X ⁶	
Total Recoverable	Antimony	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
	Arsenic	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	

⁵ 24-hour temperature and conductivity baseline curves and pebble count required for CAH receiving streams only.

⁶ Only required if project occurs within the Upper Cumberland River basin.

⁷ Fish community assessment required only for receiving streams with drainage area 200-500 mi². Index period is August 1 – October 31.

⁸ Macroinvertebrate community assessment required only for receiving streams with drainage area < 200 mi². Index periods are February 15 – May 31 for headwater streams (drainage area < 5 mi²) and May 1 – September 30 for wadeable streams (drainage area 5-200 mi²).

⁵ Method as specified in table or as determined by lab’s Demonstration of Capability (DOC). Details on KDOW’s Laboratory DOC Procedure are available at: <http://water.ky.gov/permitting/Documents/Laboratory%20Demonstration%20of%20Capability%20Prodedure.pdf>

Parameter Group	Parameter	Unit	Method ⁵	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
Metals	Beryllium	µg/l	EPA 200.8	Semimonthly	24	X						X		X		X ⁶	
	Cadmium	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Chromium	µg/l	EPA 200.8	Semimonthly	24	X						X		X		X ⁶	
	Copper	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Lead	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Mercury	µg/l	EPA 1631E or 245.7	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Nickel	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
Total Recoverable Metals (continued)	Selenium	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Silver	µg/l	EPA 200.8	Semimonthly	24	X						X		X		X ⁶	
	Thallium	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Zinc	µg/l	EPA 200.8	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
Other Parameters	Aluminum, Total Recoverable	µg/l	EPA 200.8	N/A	N/A	N/A											
	Cyanide, Free	µg/l	SM 4500-CN ⁻ G	Quarterly	5	X	X	X	X	X		X		X		X ⁶	
	Hardness	mg/l CaCO ₃	SM 2340 B	Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Oxygen, Dissolved	mg/l	SM 4500-O G	Semimonthly	24	X	X	X	X	X				X		X ⁶	
	Phenol, Total	µg/l	EPA 420.1	Quarterly	5	X	X	X	X	X		X		X		X ⁶	
	Solids, Total Settleable (SS)	mg/l		Semimonthly	24	X	X	X	X	X		X		X		X ⁶	
	Turbidity	NTU	N/A	Quarterly	5	X	X	X	X	X		X		X		X ⁶	
Salts	Calcium, Total	µg/l	EPA 200.7	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
	Chloride, Total	mg/l	EPA 300.0	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
	Magnesium, Total	µg/l	EPA 200.7	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
	Potassium, Total	mg/l	EPA 200.7	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
	Sodium, Total	mg/l	EPA 200.7	Semimonthly	24	X	X	X	X	X	X			X		X ⁶	
SMCRA Parameters	Acidity	mg/l CaCO ₃		Monthly	6	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Alkalinity, Bicarbonate	mg/l CaCO ₃	N/A	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Conductance, Specific (SC)	µS/cm	SM 2510 B	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Flow	cfs	N/A	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Iron, Total Recoverable	µg/l	EPA 200.7	Semimonthly	24	N/A	X	X	X	X	X	X		X	X	X ⁶	

Parameter Group	Parameter	Unit	Method ⁵	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Manganese, Total Recoverable	µg/l	EPA 200.8	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	pH	SU	SM 4500-H ⁺ B	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Solids, Total Dissolved (TDS)	mg/l	EPA 160.1	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Solids, Total Suspended (TSS)	mg/l	SM 2540 D	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
	Sulfate, Total	mg/l SO ₄	EPA 300.0	Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	
SMCRA Parameters (continued)	Temperature	°C		Semimonthly	24	N/A	X	X	X	X	X	X	X	X	X	X ⁶	

1.4. Pre-Application Sampling Requirements for Coal Facilities (KPDES IP Coverage for T&E OSRW)

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
Assessments	24-Hour Temperature and Conductivity Baseline Curves		KDOW SOP	N/A	N/A	N/A											
	Federally-listed Fish / Mussel Population Survey		KDOW SOP	Annual	2	X	As specified in SKDOW SOPs								X		X
	Fish Community Assessment		KDOW SOP	Annual ⁹	2	X	X	X	X	X					X		X
	Habitat Assessment		KDOW SOP	Annual	2	X	X	X	X	X					X		X
	Identify Jurisdictional Waters & Wetlands		USACE SOP	Once	1	N/A	Entire permit area									X	X

⁹ Fish community assessment required only for receiving streams with drainage area 200-500 mi². Index period is August 1 – October 31.

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Macroinvertebrate Community Assessment		KDOW SOP	Annual ¹⁰	2	X	X	X	X	X			X	X		X	
	Pebble Count		KDOW SOP	Annual	2	X	X	X	X	X				X		X	
	Physical & Chemical Stream Assessment		EKSAP	Once	1	N/A	Head of hollow to discharge point of pond & immediately adjacent riparian corridor										
Groundwater-Only Parameters	Depth to water	ft	N/A	Monthly	6	N/A						X	X				
	Iron, Total Dissolved	µg/l		Monthly	6	N/A						X	X				
	Manganese, Total Dissolved	µg/l		Monthly	6	N/A						X	X				
Total Recoverable Metals	Antimony	µg/l	EPA 200.8	Semimonthly ¹¹	36	X	X	X	X	X		X			X	X	
	Arsenic	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Beryllium	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X						X			X	X	
	Cadmium	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	

¹⁰ Macroinvertebrate community assessment required only for receiving streams with drainage area < 200 mi². Index periods are February 15 – May 31 for headwater streams (drainage area < 5 mi²) and May 1 – September 30 for wadeable streams (drainage area 5-200 mi²).

¹¹ Semimonthly monitoring will be reduced in frequency to monthly monitoring during monitoring year two.

⁴ Method as specified in table or as determined by lab’s Demonstration of Capability (DOC). Details on KDOW’s Laboratory DOC Procedure are available at: <http://water.ky.gov/permitting/Documents/Laboratory%20Demonstration%20of%20Capability%20Prodedure.pdf>

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Chromium	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X						X			X	X	
	Copper	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Lead	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Mercury	µg/l	EPA 1631E or 245.7	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Nickel	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
Total Recoverable Metals (continued)	Selenium	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points						Agency				
							Instream *					Discharge	Groundwater	KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Silver	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X						X			X	X	
	Thallium	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Zinc	µg/l	EPA 200.8	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
Other Parameters	Aluminum, Total Recoverable	µg/l	EPA 200.8	N/A	N/A	N/A											
	Cyanide, Free	µg/l	SM 4500-CN G	Quarterly	5	X	X	X	X	X		X			X	X	
	Hardness	mg/l CaCO ₃	SM 2340 B	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X		X			X	X	
	Oxygen, Dissolved	mg/l	SM 4500-O G	Semimonthly Error! Bookmark not defined.	36	X	X	X	X	X					X	X	
	Phenol, Total	µg/l	EPA 420.1	Quarterly	5	X	X	X	X	X		X			X	X	

Parameter Group	Parameter	Unit	Method ⁴	Frequency	Number of Samples	QAPP	Sampling Points					Discharge	Groundwater	Agency			
							Instream *							KDNR	KDOW	USACE	USFWS
							Below Pond (1)	Upstream (2)	Downstream (3)	Main Stem (4)	HUC-12 (5)						
	Solids, Total Dissolved (TDS)	mg/l	EPA 160.1	Semimonthly Error! Bookmark not defined.	36	N/A	X	X	X	X	X	X	X	X			X
	Solids, Total Suspended (TSS)	mg/l	SM 2540 D	Semimonthly Error! Bookmark not defined.	36	N/A	X	X	X	X	X		X	X			X
	Sulfate, Total	mg/l SO ₄	EPA 300.0	Semimonthly Error! Bookmark not defined.	36	N/A	X	X	X	X	X	X	X	X			X
SMCRA Parameters (continued)	Temperature	°C		Semimonthly Error! Bookmark not defined.	36	N/A	X	X	X	X	X	X	X	X			X

APPENDIX C – USACE INFORMATION

Appendix C – USACE Information

1.1 Jurisdictional Determination of Waters of the U.S. (Waters) and Flow Regime Boundaries Walk

- a) Applicant submits a complete jurisdictional determination (JD) request and delineation of “waters of the United States” to the appropriate USACE District (**USACE-LRL-EKY**, **USACE-LRL-WKY**, or **USACE-LRN-Field**).
- b) Purpose:
 - i) To verify the limits of “waters of the U.S.” in the permit area.
 - ii) To verify applicant’s delineation of stream flow regime and wetland boundaries.
- c) Importance:
 - i) Needed for design phase of SMCRA permit to do fill minimization and stream restoration plans.
 - ii) Needed for the 404 permit application for alternatives analysis, compensatory mitigation requirements, and avoidance/minimization determination.
 - iii) Needed for the 401 WQC.
- d) Process:
 - i) USACE will schedule JD walk after a complete JD proposal has been submitted. (See Items 1.1.1 below)
 - ii) Upon completion of the JD, USACE will send a Verified Preliminary or Approved JD to the applicant and a copy to **KDMRE** Inspector, **USFWS-KYFO**, **KDMP Director’s Office**, **USEPA-R4-404**, **KDMP-FPOP** and **KDMP-401**.

2.1 Checklist for Submittal of a Request for a Verification of a Delineation of “Waters of the U.S.” on Proposed Coal Mine Sites

The information below is being provided as a checklist for information that is needed for a successful JD/verification. Providing this information will greatly enhance and reduce time USACE personnel spend to verify each JD request.

1.1.1 Information to be Submitted to USACE

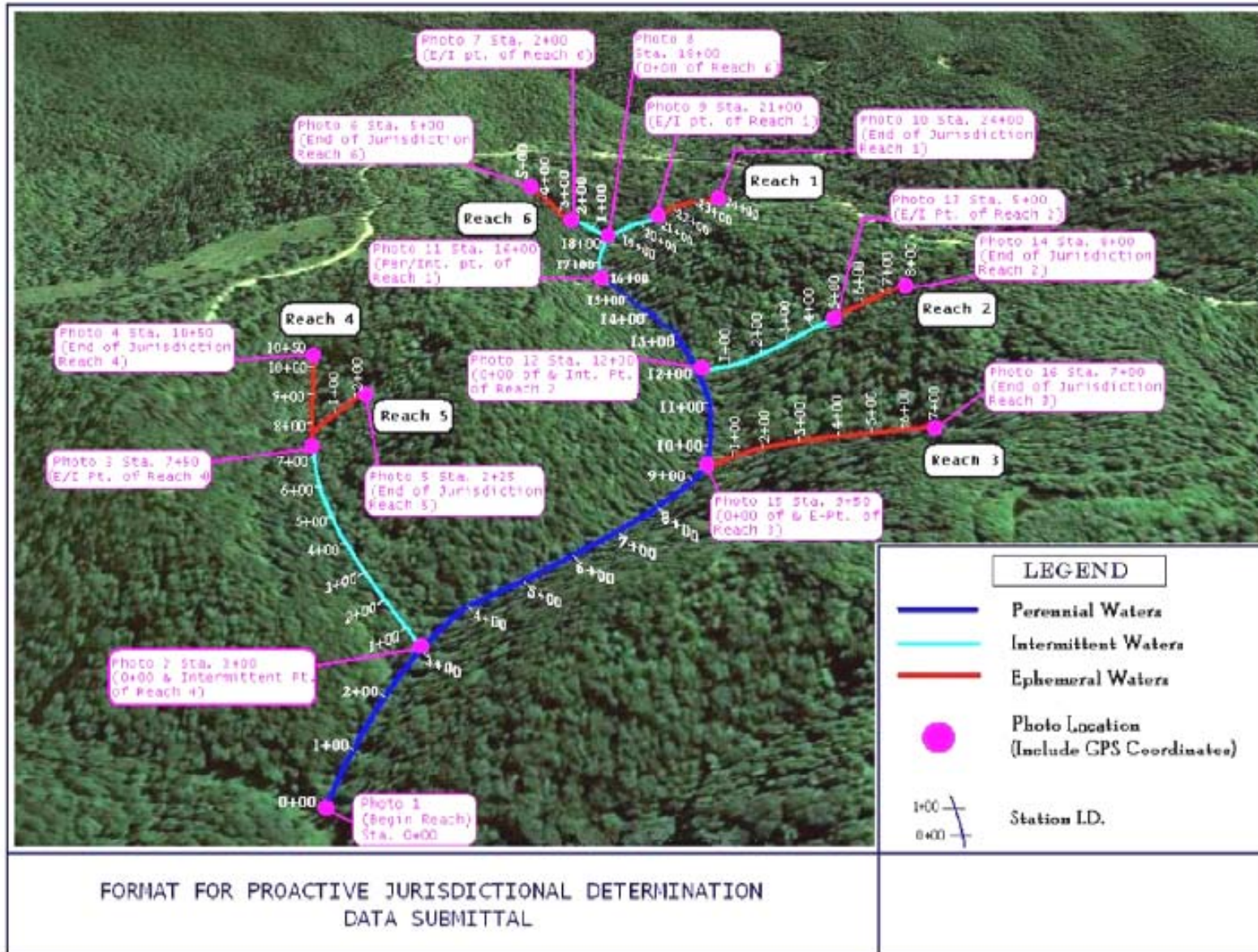
- 1) Written request for a delineation verification.
- 2) Completed JD request form.
- 3) Directions to the site.
- 4) Contact information of the applicant and agent including mailing address and telephone numbers.
- 5) Vicinity map including:
 - a) Exact location of the proposed project. The map should include the nearest intersection of two highways and identifiable reference points. (A 7.5-minute USGS Quadrangle map is preferred.)
 - b) Name(s) of nearest named streams (waterway(s)).

- 6) Site map with the location of all “waters of the U.S.” identified as well as waters that may be considered isolated.
 - a) Streams should be labeled with transition points; ephemeral/intermittent transition points should be labeled as E/I, intermittent/perennial transition points should be labeled as I/P. Provide GPS coordinates for each.
 - b) Streams should be labeled with unique identifiers, i.e. stream 1...stream 21. Wetlands should be identified with letters, i.e. wetland A...wetland Z.
 - c) North arrow, title block with date, scale, drawing number, revision dates, roads, and waterway names should be included.
- 7) Excel table with stream lengths, wetland acreage, and longitude and latitude in decimal degrees indicating the center point for wetlands and transition points and end of jurisdiction for streams. Total stream lengths for each flow regime, ponds/impoundments acreage and names of receiving streams are required.
- 8) Photographs that are representative of each aquatic resource on-site. More than one photograph should be provided at each flow regime break if a single stream is characterized by more than one (1) flow regime or a wetland is characterized by more than one (1) vegetative community. Photographs should be clearly labeled with captions to include the date, location of photograph, direction of view (looking upstream/downstream), and precisely what the photograph is intended to depict.
- 9) Provide completed field assessment sheets – including Routine Wetland Determination Forms, if applicable.
- 10) Provide completed Preliminary or Approved JD forms in MS Word format.
- 11) Optional information that may be provided includes reference material such as aerial photographs, NWI maps, soil surveys, floodplain maps, current land use, stream drainage areas, general geologic and topographic conditions, and Cowardin Classification of wetland areas.

1.1.2 Information for the Site Verification Visit

- 1) Permission from the current landowner to access the property for the purpose of making the jurisdictional determination.
- 2) The person(s) who performed the assessment/delineation present for the field verification.
- 3) Flag the beginning and end of each “water” and provide coordinates.
- 4) Flag streams at 100 foot intervals. Flag points where flow regimes change and flag end of jurisdiction. (Must have coordinates of beginning and end of jurisdiction of each tributary.)
- 5) Label streams with numbers; unique identifiers. Wetlands should be identified with letters, i.e. wetland A...wetland Z.

1.1.3 Suggested Format for Jurisdictional Determination Data Submittal



APPENDIX D – SMCRA PRELIMINARY APPLICATION SUBMISSION

Appendix D

1.1 SMCRA Preliminary Application Submission

Initiated by Applicant

1.1.1 SMCRA Preliminary Walk

- a) Purpose:
 - i) To identify features on the ground (seeps, streams, roads, structures, utilities, etc.) that will need special attention in the mining plan or that will need to be identified on the MRP map.
 - ii) To verify that all sedimentation ponds, spoil disposal areas, access roads, haul roads, and coal seams to be mined are marked on the MRP/ERI map and on the ground in the proposed permit area.
 - (1) Optional information: Geologic, surface water and groundwater sampling locations may be included on the map if the applicant wants feedback.
 - iii) To identify variances that will be needed for the proposed mine plan.
- c) Timeline:
 - i) To be conducted within fifteen (15) working days of receipt of preliminary application (ten (10) days by KDNR policy).
- d) Process:
 - i) KDMRE inspector schedules the walk within required timeline and notifies other potential attendees including KDMP-CRRS, applicant or representative, and representatives of appropriate local, state or federal agencies.
 - ii) DMRE Inspector fills out the worksheet and distributes it electronically to USFWS-KYFO, USEPA-R4-404, and USEPA-R4-402.

1.1.2 SMCRA KDMP Review and Walk

- a) Purpose:
 - i) To identify streams, habitat, and / or sites that will need surveys or special protection during mining.
 - ii) To identify conditions (special use waters, T&E species or habitat, drinking water intakes, and / or impaired waters) that might require an individual KPDES permit.
 - iii) To evaluate locations of geologic and hydrologic sampling points, if requested.
- b) Process:
 - i) **KDMP** receives copy of Preliminary Application.
 - ii) **KDMP** provides Preliminary Application to **SHPO**; **USFS** (if USFS land affected), **USEPA-R4-404**, **USFWS-KYFO**, and appropriate USACE District Office (**USACE-LRL-EKY**, **USACE-LRL-WKY**, or **USACE-LRN-Field**), as needed.
 - iii) Agencies have thirty (30) days to review and comment to **KDMP-Director's Office** on the Preliminary Application (SMCRA).
 - (1) **KDMP** determines whether a site walk by permitting personnel is needed.
 - (2) If a site walk is necessary, **KDMP-CRRS** notifies by email any needed agency: the appropriate USACE District Office (**USACE-LRL-EKY**, **USACE-LRL-WKY**, or **USACE-LRN-Field**), **USEPA-R4-404**, **USFWS-KYFO**, **KDOW-SWPB**, and **KDFWR** that a walk is scheduled. Upon request, the Site Inspection Report, including any photos and / or water quality data, is shared with **KDFWR**, **USFWS-KYFO**, **SHPO**, **USFS**, **USEPA-R4-404**, and the appropriate USACE District Office (**USACE-LRL-EKY**, **USACE-LRL-WKY**, or **USACE LRN-Field**).

APPENDIX E – USFWS ADDITIONAL INFORMATION

Appendix E

USFWS Additional Information

- 1) Potential impacts to the federally-endangered Indiana bat must be addressed through the most-recent version of the *Rangewide Indiana Bat Protection and Enhancement Guidelines*. A project-specific USFWS-KYFO approval letter / email will be required for all habitat assessments with a “no habitat” determination, Indiana Bat PEPs, Indiana Bat Surveys, and determinations of “no effect.”
- 2) Background water quality data, a habitat assessment, and any past fish survey data will be required for all projects occurring within watersheds that are known to support, or have the potential to support, federally listed aquatic species. Data gathered for the KDOW-SWPB permitting process should satisfy the USFWS-KYFO requirements. Based on the results of this information, the USFWS-KYFO may require specific surveys for listed aquatic species. If the USFWS-KYFO determines that the proposed project is likely to adversely affect listed aquatic species or their habitat, a USFWS-KYFO-approved, species-specific PEP will be required.
- 3) The KYFO will review the project area and determine if federally-listed species, in addition to those previously referenced, are likely to be present based on project-specific information and current database records. If it is likely that other federally-listed species may be present, additional consultation with USFWS-KYFO will be necessary and may include species-specific surveys or the implementation of appropriate avoidance and minimization measures.
- 4) Federally-threatened and -endangered species should be addressed in both Nationwide and Individual CWA 404 permit applications. The applicant should evaluate the potential for direct, indirect, cumulative, interrelated, and interdependent effects on listed species and / or their habitat(s) resulting from the action and should reference and ESA-related consultation with the USFWS-KYFO that has been completed.
- 5) Pursuant to the Fish and Wildlife Coordination Act, the project must demonstrate that action has been taken to prevent loss or damage to fish and wildlife resources and provides for the development and improvement of these resources.

All federally-listed species issues, including surveys, must be completed for the entire project before the USFWS-KYFO will issue an ESA-related clearance for the SMCRA or 404 permit.

These requirements are subject to change if new information reveals that coal facilities may affect listed species or critical habitat in a manner or to an extent not previously considered or if a new species is listed or critical habitat is designated that may be affected by coal facilities.

APPENDIX F – USEPA-R4 INFORMATION

Appendix F – USEPA-R4 Information

1.1. Minimum Baseline Information

USEPA-R4 relies largely on information provided in CWA Section 404 permit applications to evaluate the compliance of projects proposing to discharge dredged or fill material into waters of the United States with the CWA Section 404(b)(1) Guidelines (the Guidelines). All CWA Section 404 permit applications must comply with the Guidelines, which provide the substantive environmental criteria against which CWA Section 404 permit applications must be considered. USEPA-R4 recognizes that CWA Section 404 permits associated with coal mining activities in Kentucky are often not applied for until after numerous other state and federal regulatory permit applications have been initiated or submitted, or even after those authorizations have been issued (e.g., KPDES, SMCRA). Accordingly, a proactive evaluation of practicable alternatives consistent with the Guidelines must be initiated early in the planning and design phase of mine projects in order to avoid or minimize modifications to other permit applications or authorizations that may become necessary as a result of the CWA Section 404 permit application review process.

Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) there is a practicable alternative to the proposed discharge that would have a less adverse impact on the aquatic ecosystem; (2) the discharge causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard; or (3) the discharge would cause or contribute to significant degradation of waters of the United States. In addition, if the proposed discharge is associated with a non-water dependent activity, such as coal mining, and the discharge involves a special aquatic site, such as riffle and pool complexes typical of steep gradient headwater Appalachian streams, then upland alternatives are presumed to be available unless clearly demonstrated otherwise. Hence, all CWA Section 404 permit applications must demonstrate efforts to first avoid activities that would discharge dredged or fill material into waters of the United States and then also demonstrate efforts to minimize adverse impacts on the aquatic ecosystem if all such activities cannot be avoided.

Suitable baseline data must be collected from all practicable locations for deposition of dredged or fill material where those locations include jurisdictional aquatic resources of the United States within or proximate to a given project area. Otherwise, the resulting limited spatial extent and/or technical rigor of the assessment may not adequately demonstrate efforts to avoid and minimize impacts to waters of the United States as required by the Guidelines.

Specific physical, chemical and biological sampling recommendations by USEPA-R4 may in some cases be the same or similar as recommendations of other state and/or federal regulatory agencies. It is not the intent of the USEPA-R4 to require duplicate sampling. However, these recommendations will ensure that sufficient information exists to evaluate a proposed project's compliance with the Guidelines regardless of the information required by other agencies. In circumstances where USEPA-R4 recommends sampling that is materially equivalent to the recommendations or requirements of another agency, USEPA-R4 will accept the data collected pursuant to the other agency's requirements so long as that data is sufficient to allow for a defensible assessment of the project's compliance with the Guidelines.

The following USEPA-R4 baseline sampling recommendations are applicable only for projects where a CWA Section 404 permit application seeking authorization to discharge of dredged or fill material into waters of the United States is anticipated by the project sponsor.

1.1.1 Pre-Application Sampling Recommendations

In order to ensure that sufficient baseline data is collected to allow for a thorough review of a project's compliance with the Guidelines, the USEPA-R4 recommends that all permit applicants collect the level of pre-application baseline data required by the KDOW for an individual KPDES permit, even in circumstances where the project may be covered by the KPDES general permit for coal mining. However, USEPA-R4 recognizes that each project site is unique and that sample locations and level of effort may vary based on site specific conditions, as well as applicable authorizations required by other state and federal agencies. USEPA-R4 encourages sampling plans and locations (e.g., QAPP's) to be coordinated with all state and federal regulatory agencies early in the pre-application process (i.e., at the pre-application meeting) to avoid duplication of effort and maximize efficient use of resources. All resultant data should be submitted to the agencies for review consistent with their respective authorities and regulations. USEPA-R4 believes that the minimum level of pre-application baseline monitoring should include the following elements:

- 1) Analytical and in-situ water quality of streams on the proposed mine site that are generally consistent with KDOW individual KPDES permit requirements, but determined on an as-needed basis during the pre-application coordination process;
- 2) Minimum six (6) months of baseline specific conductivity data collected semi-monthly, ideally encompassing applicable biological assessment index periods defined in KDOW SOPs;
- 3) Minimum of one (1) benthic macroinvertebrate sampling event coincident with baseline specific conductivity monitoring;
- 4) Calculation of applicable bioassessment indices, as defined in KDOW SOPs;
- 5) Physical stream and riparian zone habitat assessment for each stream reach defined by (a) a change in stream order; (b) a change in hydrologic flow status (i.e., ephemeral, intermittent, or perennial); or (c) a clear change in field conditions even within a given stream order or flow status where such conditions have an obvious effect on physical stream or habitat quality (e.g., a cleared riparian zone, major input of sediment, historic or contemporary channelization);
- 6) Watershed size (in acres) for each transition point demarking a change in hydrologic flow status (i.e., ephemeral, intermittent, perennial) for each stream assessed; and
- 7) Analytical and in-situ water quality and biological communities of streams monitored for adjacent mining projects, where such information is available to the permit applicant.

1.1.2. Pre-Application Sampling Locations

USEPA-R4 recommends that physical, chemical, and biological sampling be conducted as part of the pre-application baseline condition assessment in all waters of the United States for which a discharge of dredged or fill material may be considered practicable in order to adequately define and assess the full suite of alternatives to any given proposed discharge of dredged or fill material. Ultimately, the objective is to identify the fill configuration alternative that satisfies the overall project purpose with the fewest possible adverse impacts on the aquatic ecosystem, as required by the Guidelines. The term practicable is defined at 40 CFR 230.3(q) to mean available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

In addition, because the fundamental objective of the USEPA-R4 recommended baseline sampling is to document the existing physical, chemical and biological conditions of aquatic resources of the United States that may be affected as a result of either direct or secondary impacts attributable to authorized discharges of dredged or fill material into waters of the United States, baseline sampling should also take place in the next higher order stream into which directly impacted streams discharge (refer to the figure titled, “Pre-Application Surface Water Sampling Sites”).

APPENDIX G – AGENCY CONTACT LIST

Agency Contact List

Agency Acronym	Agency Name	Title of Contact	Point of Contact	Email	Email Size Limit (MB)	Office Phone	Mailing Address (Frankfort, KY 40601 unless noted)
KDMP-CRRS	KY Division of Mine Permits - Critical Resources Review Section	Branch Manager	Wes Jones	wes.jones@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDMP-FPOP	KY Division of Mine Permits - Fill Placement Optimization Process	Technical Assistance Branch Manager	Wes Jones	wes.jones@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDEP	KY Department for Environmental Protection	Commissioner	Bruce Scott	bruce.scott@ky.gov	2	(502) 564-2150	300 Fair Oaks Ln
KDFWR	KY Department of Fish and Wildlife Resources		Mike Hardin	mike.hardin@ky.gov	2	(502) 564-7109	1 Game Farm Rd
KDMP CHIA	Cumulative Hydrologic Impact Assessment	Environmental Scientist	Danita LaSage	danita.lasage@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDMP-Director's Ofc	KY Division of Mine Permits	Director	Allen Luttrell	allen.luttrell@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDMRE	KY Division of Mine Reclamation and Enforcement	Environmental Scientist II	Kristin Gale	kristin.gale@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDNR	KY Department for Natural Resources	Commissioner Policy Advisor	Steve Hohmann Jim Dickinson	steve.hohmann@ky.gov jim.dickinson@ky.gov	2	(502) 564-6940	2 Hudson Hollow
KDNR-401	Clean Water Act, Section 401 Water Quality Certification	Environmental Scientist	Danita LaSage	danita.lasage@ky.gov	2	(502) 564-2320	2 Hudson Hollow
KDOW	KY Division of Water	Director	Sandy Gruzesky	sandy.gruzesky@ky.gov	2	(502) 564-3410	200 Fair Oaks Ln 4 th Floor
KDOW QAPP	Quality Assurance Project Plan		Lisa Hicks	lisa.hicks@ky.gov	2	(502) 564-3410	200 Fair Oaks Ln 4 th Floor
KDOW-SWPB	KY Pollutant Discharge Elimination System		Sarah Beard	sarah.beard@ky.gov	2	(502) 564-3410	200 Fair Oaks Ln 4 th Floor
KSNPC	KY State Nature Preserves Commission	Director	Don Dott	don.dott@ky.gov	2	(502) 573-2886	801 Schenkel Ln
KY EEC	KY Energy and Environment Cabinet	Secretary	Len Peters	len.peters@ky.gov	2	(502) 564-3350	500 Mero St
OSMRE-LFO	Office of Surface Mining Reclamation and Enforcement - Lexington Field Office	Field Office Director	Joe Blackburn	jblackburn@osmre.gov	6	(859) 260-3902	2675 Regency Rd Lexington, KY 40503
SHPO	State Historic Preservation Office	Archaeology Review Coordinator	Kary Stackelbeck	kary.stackelbeck@ky.gov	2	(502) 564-7005	300 Washington St
USACE – Coal(LRD)	United States Army Corps of Engineers	Regional Coal Expert	William James	william.l.james@usace.army.mil		(615) 369-7508	3701 Bell Rd Nashville, TN 37214

Agency Acronym	Agency Name	Title of Contact	Point of Contact	Email	Email Size Limit (MB)	Office Phone	Mailing Address (Frankfort, KY 40601 unless noted)
USACE-LRL	United States Army Corps of Engineers - Louisville District	South Section Chief	Lee Anne Devine	lee.anne.devine@usace.army.mil		(502) 315-6692	P.O. Box 59 Louisville, KY 40202
USACE-LRL-EKY	United States Army Corps of Engineers - Louisville District East KY	Team Leader EKRO Regulatory Branch	David Baldrige	david.e.baldrige@usace.army.mil		(606) 642-3404	845 Sassafras Cr Rd Sassafras, KY 41759
USACE-LRL-WKY	United States Army Corps of Engineers - Louisville District - West KY	West Section Chief	Mike Ricketts	michael.s.ricketts@usace.army.mil		(812) 853-0472	6855 IN 66 Newburgh, IN 47630
USACE-LRN	United States Army Corps of Engineers - Nashville District	Eastern Section Chief	Tammy Fudge	tammy.r.fudge@lrm02.usace.army.mil		(615) 369-7501	3701 Bell Rd Nashville, TN 37214
USEPA-R4-404	United States Environmental Protection Agency - Region 4, Water Protection Division, Mining Section	Mining Section Chief	Duncan Powell	powell.duncan@epamail.epa.gov		(404) 562-9258	61 Forsyth St, SW Atlanta, GA 30303
USEPA-R4-402	United States Environmental Protection Agency - Region 4, Water Protection Division, NPDES Municipal and Industrial Permit Section	Pollution Control and Implementation Branch Chief	Chris Thomas	thomas.chris@epamail.epa.gov		(404) 562-9459	61 Forsyth St, SW Atlanta, GA 30303
USFS	USDA Forest Service	Forest Hydrologist	John Walker	jwalker@fs.fed.us		(859) 745-3100	1700 Bypass Rd Winchester, KY 40391
USFWS-KYFO	United States Fish and Wildlife Service	Wildlife Biologist	Carrie Allison	carrie_allison@fws.gov		(502) 695-0468	330 W Broadway Ste 265