

**Local Interagency Working Agreement  
for Coal Mine Permitting, Compliance and Enforcement Actions  
in Tennessee  
Under the Clean Water Act,  
the Surface Mining Control and Reclamation Act, and  
the Endangered Species Act**

The June 11, 2009 National Memorandum of Understanding (MOU) was signed by the Department of the Interior, Department of the Army, and the Environmental Protection Agency (EPA) in recognition that the Appalachian Mountains possess unique biological diversity, forests, and freshwater streams. With the June 11, 2009 MOU, the federal signatory agencies announced a plan designed to reduce the harmful environmental consequences of Appalachian surface coal mining operations, while ensuring that future mining remains consistent with federal laws. The Federal government has made a commitment to move America towards a 21<sup>st</sup> century clean energy economy based on the recognition that sustainable economy and environment must work hand in hand. The MOU committed the federal agencies to work in coordination with regional, state, and local entities to implement processes and procedures which are embodied in the MOU.

The purpose of this Local Interagency Working Agreement (LIWA) is to improve agency communication and coordination during the coal mine permitting process in Tennessee under the respective state and federal permitting, enforcement, and compliance reviews required by the Clean Water Act (CWA), the Surface Mining Control and Reclamation Act (SMCRA), and the Endangered Species Act (ESA).

The Tennessee Department of Environment and Conservation (TDEC), the Nashville District of the Corps of Engineers, The Cookeville Field Office of the US Fish and Wildlife Service (USFWS), the Knoxville Field Office of the Office of Surface Mining Reclamation and Enforcement (OSM), and Region 4 of the EPA have worked together since the national MOU was signed to develop standard operating procedures (SOPs) covering major activities that agencies undertake in their joint reviews of mining operations in Tennessee. These SOPs will enhance integration and efficiency of each agency's operations, provide better information and data for permitting decisions, and make these processes more transparent. These SOPs will provide the public and the regulated industry with guidance on agency expectations for data and information needs and are designed to ensure environmental protection while expediting the decision process. It is the intent of these agencies to continue to work on common goals and to include other groups (i.e., Tennessee Wildlife Resources Agency, Tennessee Department of Agriculture/Division of Forestry, etc.) to accomplish the common goal of protecting the human and natural environment.

The agencies will implement the LIWA and modify as necessary to provide continuous improvement of the review and coordination process and to incorporate any changes in national policies or regulations. The SOPs currently included in the LIWA are: Jurisdictional

Determinations, Avoidance and Minimization, Mitigation and Restoration, Section 401 and 404 CWA Permit Verification and Enforcement Notification, Cumulative Hydrologic Impact Assessment (CHIA), Public Participation, Endangered Species Act, National Historic Preservation Act (NHPA), Revision Coordination, and Water Quality Data. SOPs currently under development are National Environmental Policy Act (NEPA) and Permit Renewals. Additional SOPs will be developed on an as needed basis. The conceptual framework is laid out in the process flowchart found in Appendix 1.

The LFWA, including its associated SOPs, does not create any rights, either substantive or enforceable by any party. This document does not and is not intended to impose any legally binding requirements on state or federal agencies, the regulated community or public, and does not restrict the authorities of signatory agencies to exercise their discretion in each case to make a regulatory decision based on their judgment about specific facts and application of relevant statutes and regulations. Nothing in this document or associated SOPs are intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the involved agencies or relieve these parties of their obligations under federal and state law. Nothing in this working agreement will be construed as indicating a financial commitment by the agencies to expend funds. Any agency can withdraw at anytime from this working agreement by providing written notice to the other agencies; however, the working agreement will continue to remain in effect for other agencies.

TDEC, Knoxville Environmental Field Office *Paul D. ...* 12/20/10  
 USFWS, Cookeville Field Office *Mary P. ...* 12/20/2010  
 OSM, Knoxville Field Office *S. ...* 12/20/10  
 Corps of Engineers, Nashville District *Ronald E. ...* 12/20/2010  
 EPA, Region 4 *C. ...* 12/20/2010

**Appendix 1. Process Flowchart**

**List of SOPs**

- Jurisdictional Determinations SOP
- Avoidance and Minimization SOP
- Mitigation/Restoration SOP
- Section 401 and 404 CWA Permit Verification and Enforcement Notification
- Cumulative Hydrological Impact Assessment SOP
- Public Participation SOP
- Endangered Species Act SOP
- National Historic Preservation Act SOP
- Revision Coordination SOP
- Water Quality Data SOP

## Appendix 1 Process Flowchart

### STEP 1 - Jurisdictional Determination Process (Reference SOPs: JD, Avoidance and Minimization, NHPA and ESA)

- 402 application (TDEC)
- Complete JD Report submitted with hydrologic features map (USACE/TDEC)
- JD site verification scheduled with USACE/TDEC/OSM (Agencies notified)
- JD site walk(s) with agencies, ESA and SHPO discussion onsite (USACE/TDEC/OSM)
- JD approved or returned (USACE/TDEC)

**Time Frame:** 60 to 90 days after JD Report is determined complete

**PRODUCT:** JD verified

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### STEP 2 - Pre Application Meeting (Reference SOPs: WQ, Avoidance and Minimization, Mitigation and ESA)

- Applicant schedules a pre-application meeting with OSM (Agencies notified)
- Agencies provided with ERM (1" -400') indicating hydrologic features verified by TDEC/USACE: proposed WQ monitoring, biological and geologic sampling points; and proposed treatment structures
- Pre-application Biological and WQ monitoring points, frequency and duration established during the pre-application meeting
- Monitoring requirements are identified by the appropriate agencies (SMCRA, 402 and ESA).
- Mitigation discussed (USACE/TDEC/USFWS)

**Time Frame:** 60 days after JD verification

**PRODUCT:** Guidance for Permit Process

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### STEP 3 - SMCRA Application (Reference SOPs: NEPA and CHIA)

- SMCRA application submitted and determined to be administratively complete (OSM)
- SMCRA application Pre-mine site inspection scheduled by OSM (Agencies notified)

**Time Frame:** 45 to 60 days

**PRODUCT:** Complete Application

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### STEP 4 - CWA and ARAP Application (Reference SOPs: WQ, Avoidance and Minimization, NHPA, Mitigation, ESA, and NEPA)

- 404 and 401/ARAP application submitted and the 402 application is revised

**Time Frame:** 15-30 days

**PRODUCT:** Complete Applications/ Draft 402 Permit

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### STEP 5 - Public Participation Process (Reference SOPs: Public Participation)

- Coordinated public hearing process

**Time Frame:** 90 to 120 days

**PRODUCT:** Public Participation Process Complete

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### STEP 6 - Regulatory Coordination (Reference SOPs: NEPA, ESA, NHPA, Mitigation, Avoidance and Minimization, and WQ)

- SMCRA and 404 NEPA decision document.
- 401/ARAP and 402 permit decision

**Time Frame:** 180 to 360 days

**PRODUCT:** Completed Decision

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### STEP 7- Regulatory Decision

- SMCRA permit is issued or denied.
- 401/404/ARAP and 402 permits are issued or denied subsequent to the SMCRA permit decision.

**Time Frame:** 30 days after Decision Document

**PRODUCT:** Permit issued or denied

## **Standard Operating Procedure Performing/Approving Jurisdictional Determinations for Coal Mine Permitting Actions in Tennessee**

### **Purpose**

The purpose of this document is to establish an interagency Standard Operating Procedure (SOP) to coordinate and complete Jurisdictional Determinations (JD) among the Federal and State agencies involved in coal mine permitting actions in the State of Tennessee. This SOP was developed in support of a Local Interagency Working Agreement among those agencies that have jurisdiction by law under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA) and/or the Tennessee Water Quality Control Act regulatory programs. These agencies include the Tennessee Department of Environment and Conservation (TDEC), the United States Army Corps of Engineers (USACE), the United States Environmental Protection Agency Region 4 (EPA), the United States Fish and Wildlife Service (USFWS), and the Office of Surface Mining Reclamation and Enforcement (OSM).

### **Scope**

This SOP applies to those decisions related to proposed coal mine permitting actions in Tennessee, in which Federal and State authority is concerned. This shall include, but is not limited to, new permit applications and revisions to existing permits for which a JD has not been completed.

### **Introduction**

The JD process is critically important in the development of a coal mine permit application and provides definition of existing water resources prior to submittal to the SMCRA application. The JD process is used to officially designate all water features within the proposed permit and adjacent areas. The objective of conducting the JD process prior to submitting a formal SMCRA application is to identify any permitting obstacles related to drainage control, stream restoration/mitigation, and reconciling the mine plan with applicable State and Federal regulations.

TDEC verifies Waters of the State (WOS) and has provisions for ephemeral streams, locally known as wet weather conveyances, and other features associated with streams and wetlands per TDEC's Regulations and State Law. The USACE verifies the jurisdictional limits of Waters of the United States (WOUS) including wetlands.

A USACE JD means a written determination that a wetland and/or water body is subject to regulatory jurisdiction under Section 404 of the Clean Water Act. Additionally, the term includes a written re-verification of expired JDs and a written re-verification of JDs where new information has become available that may affect the previously written determination. All USACE JDs will be in writing and will be identified as either Preliminary or Approved.

**Preliminary JDs (PJD)** are USACE written indications that there may be WOUS on a parcel or indications of the approximate location(s) of WOUS on a parcel. Preliminary JDs are advisory in nature and may not be appealed.

**Approved JDs (AJD)** means a USACE document stating the presence or absence of WOUS on a parcel or a written statement and map identifying the limits of WOUS on a parcel. Approved JDs are clearly designated appealable actions and will include a basis of JD with the document.

This field process for performing jurisdictional determinations is conducted jointly by TDEC, USACE, OSM, and USEPA. The TDEC and the USACE field review the proposed JD information provided by the applicant. The goal of the field review is to reach concurrence on the JD while meeting each agency's respective regulatory mandate concerning stream identification.

## **Process**

### **1. NPDES Application**

The applicant submits a National Pollutant Discharge Elimination System (NPDES) application to TDEC including a site location map (portion of USGS Quadrangle Map) and a 1:400 scale watershed map depicting blue line streams, the proposed mining permit boundary, and the locations of point source discharges. If another agency receives first contact regarding a new project, they will direct the applicant to USACE and TDEC for JD submittal.

### **2. JD Submittal**

The applicant submits a JD report to the TDEC, USACE and USEPA including a site location map and a 1:400 watershed map. Report requirements are located in the Appendix of this SOP. This report can be included in the NPDES application for the TDEC. The request shall include a USACE PJD form (see Attachment #1) and an Environmental Resources Map that identifies WOS and the WOUS. The proposed JD Report must be complete and meet all agency approvals prior to conducting the field investigation. All items must be addressed on the JD check list (see Attachment #2). An AJD maybe requested by the applicant in lieu of a PJD.

### **3. Agency Coordination**

When the TDEC, OSM, and USACE determine the proposed JD Report is complete, the USACE and the TDEC will schedule a joint site visit with the applicant/consultant within 30 days. The TDEC shall notify the USEPA, the OSM, and the USFWS of the scheduled JD site visit with a normal lead time of two weeks.

### **4. Site Investigation**

TDEC conducts field investigations to verify WOS determinations made by the applicant and designates status of the water body (stream or wet weather conveyance). The USACE verifies the extent of the WOUS and flow regime (perennial, intermittent, ephemeral) of each stream reach and the boundaries of jurisdictional wetlands. OSM will ensure the JD meets the needs and purposes of SMCRA and USEPA will provide concurrence on JDs.

**5. JD Revision**

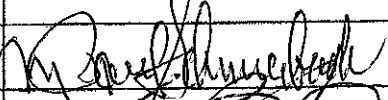
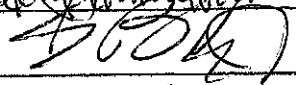
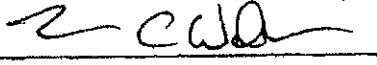
Based on recommendations made in the field, the applicant shall revise the proposed JD Report, if necessary, and submit any revisions to the USACE, USEPA, TDEC, and OSM within 14 days of the last site visit. The TDEC and USACE will verify the applicable jurisdictional determinations and send a copy of the JD to the applicant, OSM, USFWS, and USEPA.

**6. Verification**

The applicant shall revise the proposed JD report, if necessary, and submit any revisions to the USACE, USEPA, and TDEC within 60 days for approval. TDEC will review the revised JD report, recommend changes, and send copies to the applicant, USACE, OSM, USFWS, and USEPA. Upon approval of a final Jurisdictional Determination Report, the USACE forward a copy of the verification letter (PJD or AJD), including the water resource summary tables and map, to the TDEC, OSM, USEPA, and USFWS.

**7. Non-JD Determination Procedure**

If a water resource feature does not exhibit jurisdictional characteristics, such as an existing mine pit with no surface-water outlet, then the TDEC, OSM, and USACE will field verify these conditions. The TDEC, OSM, and USACE personnel will document all non-JD features and report these features with appropriate narrative and location in the confirmation submittal to the applicant.

Agency	Signatory	Date
TDEC		12/20/10
OSM		12/20/10
USEPA		12/20/2010
USACE	Ronald E. Batten	12/20/2010
USFWS	Mary Jennings	12/20/2010

As described in the Local Interagency Working Agreement (LIWA), this SOP does not create any rights, either substantive or enforceable by any party. This document does not and is not intended to impose any legally binding requirements on state or federal agencies, the regulated community or public, and does not restrict the authorities of signatory agencies to exercise their discretion in each case to make a regulatory decision based on their judgment about specific facts and application of relevant statutes and regulations. Nothing in this document is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the involved agencies or relieve these parties of their obligations under federal and state law. Nothing in this document will be construed as indicating a financial commitment by the agencies to expend funds.

**ATTACHMENT #1**

**PRELIMINARY JURISDICTIONAL DETERMINATION FORM**

**BACKGROUND INFORMATION**

- A. Report Completion Date for Preliminary Jurisdictional Determination (JD):**
  
- B. Name and Address of Person Requesting Preliminary JD:**
  
- C. District Office, File Name, and Number:**
  
- D. Project Locations and Background Information:  
(Use the attached table to document multiple water-bodies at different sites)**

**State:**

**County:**

**City:**

**Longitude:**

**Latitude:**

**Nearest Water-body:**

**Identify (estimate) amount of waters in review area:**

**Non-wetland waters:**

**Wetlands:**

**Name of any water-body on site that has been identified as Section 10 waters:**

**Tidal:**

**Non-Tidal:**

- E. Review Performed for Site Evaluation (Check All That Apply)**

**Office (Desk) Determination Date:**

**Field Determination Date(s):**

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:



**SUPPORTING DATA:** Date reviewed for preliminary JD (check all that apply – checked items should be included in case file, where checked and requested, appropriately reference sources below):

Maps, plans, plots, or plat submitted by or on behalf of the applicant/consultant:

Data Sheets prepared/submitted by or on behalf of the applicant/consultant:

Data Sheets dated

Office concurs with data sheets/delineation report

Office does not concur with data sheets/delineation report

Data sheets prepared by Corps:

Corps Navigable Water Study:

U.S. Geological Survey Hydrologic Atlas:

USGS NHD Data

USGS 8 & 12 digit HUC Maps

U.S. Geological Survey Map(s). Cite scale and quad name:

USDA Natural Resources Conservation Service Soil Survey - Citation:

National Wetlands Inventory Map(s) - Cite name:

State/Local Wetland Inventory Map(s):

FEMA/FIRM maps:

100-year Floodplain Elevation is:

Photographs:  Aerial (Name & Date):

Other (Name & Date):

Previous Determination(s): File no. and date of response letter:

Other information (please specify):

**IMPORTANT NOTE:** The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

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Signature and date of  
Regulatory Project Manager  
(Required)

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Signature & Date of Person  
Requesting Preliminary JD  
(Required unless obtaining  
Signature is impracticable)

**Table 1**

**Aquatic Resources at Review Site**

<b>Site number &amp; Stream name</b>	<b>Latitude &amp; Longitude</b>	<b>Flow Regime or Cowardin Class</b>	<b>Estimated Length and/or acreage of aquatic resource in review area</b>	<b>Class of Aquatic Resource</b>	<b>Other Pertinent Information</b>

## ATTACHMENT #2

### Jurisdictional Determination Report Checklist for TN Coal Mining Projects

Checklist to complete and submit to the USACE, OSM, USEPA and TDEC for verification of waters of the state and WOUS.

- Completed USACE Preliminary JD form.
  - Excel Table with stream lengths, wetland acreage, longitude and latitude in decimal degrees indicating center point for wetlands, downstream confluence for streams; total for each flow regime stream lengths (perennial, intermittent, ephemeral), wetland acreage, ponds/impoundments acreage; names of receiving streams.
- Environmental Resources Map that identifies waters of the state and WOUS.
  - Map includes location of wetlands, ponds, impoundments, streams, drainage features and any other waters identified. Spring and seep locations should be provided if information is available. Wetland sampling data points should be indicated identified on the map by Plot ID from Routine Wetland Determination form. Scale appropriate for evaluation must be used.
    - Streams should be labeled with headwaters as HW, ephemeral/intermittent transition points as E/I, intermittent/perennial transition points as I/P. Provide GPS coordinates for each determination point.
    - North arrow, title block with date, scale, drawing number, revision dates, roads, and waterway names.
- Data forms and methodologies
  - Routine Wetland Determination Forms utilizing the 1987 USACE Wetland Delineation Manual and any applicable Regional Supplement. A sufficient number of upland and wetland data forms must be provided to delineate each wetland boundary. For each wetland, provide information concerning the presence or absence of a hydrologic connection to the nearest stream in the 'Remarks' section of form. Please note, delineation methodology should be appropriate to size and complexity of the site.
- Reference information (information from aerial photographs, NWI maps, soil surveys, FEMA floodplain mapping, and/or local floodplain studies, USGS Quadrangle map). All information should have source, date, and a scale.
- Photographs that are representative of each aquatic resource on-site. More than one photograph should be provided if a single stream is characterized by more than one flow regime or a wetland is characterized by more than one vegetative community. Photographs should be clearly labeled with captions to include the date, location of photographer, direction of view and precisely what the photograph is intended to depict.

- Optional items that can be supplied that will assist in subsequent permit evaluations: Current land use; proposed and existing structures and contours identified on **separate site mapping** and clearly defined as such; stream drainage areas and size; general geologic and topographic conditions, Cowardin Classification of wetland areas.
  - Field Marking Requirements: All aquatic resources should be clearly identified in the field with labeled flagging. Streams should be labeled with numbers, i.e., Stream 1....Stream 13. Wetlands should be identified with letters, i.e., wetland A.....wetland Z. Streams should be flagged beginning at the headwaters, at each flow regime transition point (e.g., E/I, I/P) and at the downstream confluence. Labeling on mapping should match field flagging. The person who performed the assessment/delineation should be present for the field verification.
- \*\*\* The USACE, OSM, and TDEC reserve the right to require any or all of the above items. The USACE, OSM, and TDEC will use discretion to determine on a case by case basis if any of the above items will not be required prior to scheduling a site visit.

# Standard Operating Procedures for Avoidance and Minimization as Related to Coal Mining Projects in Tennessee

## **Purpose**

The purpose of this document is to establish an interagency Standard Operating Procedure (SOP) to enhance the avoidance and minimization process among the Federal agencies involved in coal mine permitting actions in the State of Tennessee. This SOP is developed in support of a Local Interagency Working Agreement (LIWA) among those agencies that have jurisdiction by law under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA), and the Tennessee Water Quality Control Act regulatory programs. These agencies include the Tennessee Department of Environment and Conservation (TDEC), the United States Army Corps of Engineers (USACE), The United States Environmental Protection Agency (USEPA), the United States Fish and Wildlife Service (USFWS) and the Office of Surface Mining Reclamation and Enforcement (OSM).

## **Scope**

This SOP applies to those decisions related to proposed coal mine permitting actions in Tennessee in which Federal and State authorities are involved. This shall include but is not limited to new permit applications and revisions to existing permits for which the avoidance and minimization process have not been adequately addressed.

## **CWA and SMCRA Permits**

The LIWA among the USACE, USEPA, USFWS, and OSM is the primary guidance for the coordination of the issuance of CWA (§401 certifications and §402 / §404 permits) and SMCRA permits for coal mining in Tennessee. TDEC has been delegated by USEPA to review and issue Section 402 permits and to certify water quality standards as required by §401C. TDEC also has state permits that comply with the Tennessee Water Quality Control Act and state regulations 1200-4-7, 1200-4-3 and 1200-4-4.

The USACE shall require the following avoidance and minimization process consistent with the Section 404(b)(1) Guidelines to ensure potential impacts have been avoided to the maximum extent practicable. No discharge of fill or dredged material into waters of the United States (WOUS) shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Appropriate and practicable steps to minimize the adverse impacts will be required through project modifications and permit conditions.

The USACE will make a determination that potential impacts have been avoided to the maximum extent practicable. Remaining unavoidable impacts will then be mitigated to the extent

appropriate by requiring steps to minimize impacts, and, finally, compensate for aquatic resource values. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. The objective of mitigation for unavoidable impacts is to offset environmental losses.

The USACE, USEPA, OSM and TDEC will look for mitigation opportunities that involve restoration or rehabilitation to repair ecosystems damaged by past actions. The amount of compensatory mitigation required by the USACE, USEPA, OSM and TDEC is discussed further in the Evaluating Mitigation/Restoration Proposals SOP. The site mitigation must comply with the Tennessee Stream Mitigation Guidelines July 1 2004 and meet the requirements of the 2008 Mitigation Rule .

All stream alterations related to coal mine activities must comply with amended Tennessee Water Quality Act Part I, 69-3-108 Section (f).

### **Tennessee Water Quality Control Act "Responsible Miner's Act"**

In 2009, the Tennessee legislative body amended the Tennessee Water Quality Control Act to include the protection of streams encountered during coal mining. The amendment is as follows:

#### **Title 69, Chapter 3, Part 1, 69-3-108 Section (f) "Responsible Miner's Act"**

**(f)** With regard to permits for activities related to the surface mining of coal:

**(1)** No permit shall be issued that would allow removal of coal from the earth from its original location by surface mining methods or surface access points to underground mining within one hundred feet (100) of the ordinary high water mark of any stream or allow overburden or waste materials from removal of coal from the earth by surface mining of coal to be disposed of within one hundred feet (100) of the ordinary high water mark of a stream; provided, however, that a permit may be issued or renewed for stream crossings, including, but not limited to, rail crossings, utilities crossings, pipeline crossings, minor road crossings, for operations to improve the quality of stream segments previously disturbed by mining and for activities related to and incidental to the removal of coal from its original location, such as transportation, storage, coal preparation and processing, loading and shipping operations within one hundred feet (100) of the ordinary high water mark of a stream if necessary due to site specific conditions that do not cause the loss of stream function and do not cause a discharge of pollutants in violation of water quality criteria. Nothing in this subdivision (f)(1) shall apply to placement of material from coal preparation and processing plants.

**(2)** Without limiting the applicability of this section, if the commissioner determines that surface coal mining at a particular site will violate water quality standards because acid mine drainage from the site will not be amenable to treatment with proven technology both during the permit period or subsequent to completion of mining activities, the permit shall be denied.

The Rules of the Tennessee Water Quality Control Board {Chapter 1200-4-7.01(1)} require that consideration must be given to ways to avoid or minimize impacts. Avoidance and minimization are not defined in Tennessee regulations that would pertain to this activity. However, the implementation of Chapter 1200-4-7.01(1) would address the issues as a best professional

judgment as related to specific projects by reducing the stream and wetland impacts. This permit action must comply with water quality standards for specifically Antidegradation Statement as presented in Tennessee Rule 1200-4-3.06.

Avoidance and minimization are also considered during the OSM site review and includes the implementation of the OSM Rule for Stream Buffer Zone protection. Presently, OSM requires 100 feet and must establish a buffer zone waiver if the applicant encroaches within the stream zone.

Thus, all agencies involved with coal mine permitting have statutory requirements that address the avoidance and minimization of impacts on streams as a result of coal mining activities.

Agency	Signatory	Date
TDEC	<i>M. [Signature]</i>	12/20/10
OSM	<i>[Signature]</i>	12/20/10
USEPA	<i>[Signature]</i>	12/20/2010
USACE	<i>Ronald E. Gallin</i>	12/20/2010
USFWS	<i>Mary E. Jennings</i>	12/20/2010

As described in the Local Interagency Working Agreement (LIWA), this SOP does not create any rights, either substantive or enforceable by any party. This document does not and is not intended to impose any legally binding requirements on state or federal agencies, the regulated community or public, and does not restrict the authorities of signatory agencies to exercise their discretion in each case to make a regulatory decision based on their judgment about specific facts and application of relevant statutes and regulations. Nothing in this document is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the involved agencies or relieve these parties of their obligations under federal and state law. Nothing in this document will be construed as indicating a financial commitment by the agencies to expend funds.

## **Standard Operating Procedure Evaluating Mitigation/Restoration Proposals for Mining Projects in Tennessee**

### **Purpose**

The purpose of this document is to establish an interagency Standard Operating Procedure (SOP) for review and approval of mitigation/restoration proposals associated with coal mining activities in Tennessee. This SOP is developed in support of the Local Interagency Working Agreement (LIWA) among those agencies that have jurisdiction by law under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA), and the Tennessee Water Quality Control Act regulatory programs. These agencies include the Tennessee Department of Environment and Conservation (TDEC), the United States Army Corps of Engineers (USACE), the United States Environmental Protection Agency (USEPA), the United States Fish and Wildlife Service (USFWS), and the Office of Surface Mining Reclamation and Enforcement (OSM).

### **Scope**

This SOP applies to those decisions related to proposed coal mine permitting actions in Tennessee in which Federal and State authorizations are involved. This shall include but is not limited to new permit applications, and applies also to revisions to existing permits for which a mitigation/restoration plan has not been adequately addressed or is inconsistent with USACE Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (33 CFR Parts 325 and 332).

### **Required Components**

The mitigation plan shall be submitted in accordance with the USACE Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (33 CFR Parts 325 and 332) published April 10, 2008. The mitigation plan must also include the detailed plans and supporting data for compliance with TDEC Rules 1200-4-3 and 1200-5-7 and "Stream Mitigation Guidelines for the State of Tennessee" and the specific items listed must be integrated into critical components for plan and rule compliance.

**1. Mitigation Objectives for proposed project:** Provide a general discussion of the objectives of the mitigation plan including types and quality of resources impacted and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.

This section shall consist of a general summary of the overall mitigation plan indicating how the mitigation project would compensate for project impacts and demonstrate improvements in watershed status.

**2. Mitigation Site Selection (33 CFR 332.3(d)):** Provide a description of the factors considered during the site selection process. This should include consideration of watershed



needs, on-site alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration at the compensatory mitigation site.

This section should clearly discuss opportunities for on-site restoration and any factors evaluating selection of the off-site mitigation site. Off-site mitigation may be used to compensate for temporal loss and/or where on-site mitigation is not feasible. OSM, TDEC and USACE will also consider the use of out-of-kind mitigation if it will serve the aquatic resource needs of the watershed. Out-of-kind means a resource of a different structural and functional type from the impacted resource. TDEC will not allow the use of the In-lieu fee program for mining projects in Tennessee.

**3. Mitigation Site Protection Instrument (33 CFR 332.7(a)):** Provide a description of the legal arrangements and instrument, including site ownership that will be used to ensure the long-term protection of the compensatory mitigation site.

The USACE mitigation rule, where practicable, requires perpetual protection through a conservation easement, deed transfer, or other legally binding site protection instrument. These property protections are included as a permit condition in any Clean Water Act authorization and ARAP when deemed necessary.

TDEC does not have any regulations that would require this legal action. TDEC's stream mitigation guidelines discuss this issue and may be an element of the permit.

*If the applicant proves that it is impracticable for them to obtain perpetual site protection, information regarding the risk associated with the failure to permanently protect the mitigation site shall be submitted to and evaluated by TDEC and USACE. The applicant shall provide information regarding the proposed post mining land use and identify how it is achievable and feasible and if the site is able to support the proposed use. The applicant shall provide any landowner agreements or requests and potential threats to long term sustainability of the mitigation site. Based on these risk factors a determination of the amount of additional mitigation for the project will be calculated.*

**4. Baseline Information:** Provide a description of the ecological characteristics of aquatic resources identified on the proposed impact site and mitigation site. All baseline aquatic resources and proposed mitigation sites shall be identified on the Environmental Resources Map.

**Wetlands:** For wetlands, include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions and supporting wetland delineation data forms.

**Streams:** The following information shall be submitted for each stream impact area and proposed stream mitigation area (e.g. Stream-1) with the application form.

A. Physical Characteristics

- I. Pre-disturbance Impact site Ecological Characteristics
  - a. Provide pre-impact stream length
  - b. Provide pre-impact flow and duration
  - c. Provide pre-impact stream assessment data

- i. Habitat assessment data sheet for high/low gradient streams
- ii. Provide description of each Habitat Parameter
- d. Provide gradient of existing stream channel
- e. Provide valley form of existing stream channel
- f. Identify flow up gradient of the impact/mitigation stream reach
- g. Provide photos of stream conditions within reach of proposed alterations
- h. Environmental Resources Map depicting existing stream locations

**B. Biological Characteristics (for intermittent and perennial streams)**

1. Provide a biological assessment using the most recent version of TDEC, Division of Water Pollution Control Quality System Standard Operating Procedure (QSSOP) for Macroinvertebrate Stream Surveys. Provide information to determine if the stream is meeting use support.
2. When the proposed project areas include headwater streams that are not of appropriate watershed size to collect Semi-Quantitative In-Stream Habitat (SQH) evaluation sample, refer to QSOPP Section I.I page two of three which designates the appropriate method. One option is to proceed downstream of the project area to the appropriate watershed or stream order. The QSSOP protocol requires a comparison of biology of existing stream to a designated reference stream to determine appropriate status of biological use support or TDEC reference stream.

**C. Chemical Characteristics**

1. Provide numeric water quality data for the following parameters: pH, Dissolved Oxygen, Temperature, and Specific Conductance.
2. **Test for Metals, Cyanide, Total Phenols, Fe, Mn, and Sulfates and report results.**

Applicants must sample for the pollutants listed under this Part on Page V-3 of Form 2C. Water sample analysis must use an appropriate and approved EPA testing methodology.

Pollutants are as follows:

Antimony	Zinc	Beryllium	Phenols, Total	Chromium
Selenium	Lead	Thallium	Arsenic	Cyanide
Cadmium	Nickel	Copper	Silver	Mercury

If the data submitted indicates the need for additions or changes in permit effluent limitations or permit conditions to protect the classified uses of the receiving streams, the SMCRA and NPDES permit shall be modified or revoked and reissued to accomplish those changes.

The applicant must submit all three major components (Physical, Biological and Chemical Characteristics). This information is used to determine whether each site is currently meeting the narrative and numeric Water Quality Standards and use support.

**5. Determination of Credits (33 CFR 332.3(f)):** Explain how the compensatory mitigation site will provide compensation for unavoidable impacts to aquatic resources resulting from the mining activity. Mitigation credits shall be determined in accordance with the Stream Mitigation Guidelines for the State of Tennessee and Department Rule 1200-4-7. USACE may require mitigation in addition to that required by TDEC for disturbance of ephemeral streams. Any

additional mitigation required by USACE may be applied to the TDEC 401C/ARAP for overall credit to the project or other projects within the watershed or Hydrologic Unit.

**6. Mitigation Work Plan:** Provide detailed specifications and work descriptions for each compensatory mitigation site including the geographic boundaries, construction methods, timing, sequence, source of water, connections to existing waters and uplands, and methods for establishing the desired plant community. This section should include a detailed punch list of activities to meet site-specific conditions.

A. Stream Reconstruction Plan shall identify the following for each site (e.g. Stream-1) describing the proposed physical attributes of each stream reach to be constructed:

1. length of stream proposed for restoration
2. channel alignment
3. channel gradient
4. channel valley form
5. channel lining/integrity
6. channel dimensions
7. in-stream habitat
8. channel stability status
9. particle size distribution for proposed new channel (e.g. D-50)  
(should be within the range of the reference stream)
10. source of water, connection to upstream water source (e.g. runoff, groundwater influence)
11. plan to maintain continuous flow through mitigation site
12. stream length proposed as ephemeral flow
13. stream length proposed as intermittent flow
14. species and planting rates to be used for riparian corridor

B. Construction methods:

1. describe type of equipment to be used and how each item in reconstruction plan will be performed
2. describe stabilization techniques
3. describe steps to be employed to maintain flow
4. describe sequencing of all proposed stream alterations include links to/with SMCRA mining and reclamation plan

C. Schedule of work:

1. describe sequence of work plan
2. describe timing of work plan

**7. Maintenance Plan:** Provide a description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

**8. Ecological Performance Standards (33 CFR 332.5):** Describe the ecologically-based standards that will be used to determine whether the mitigation project is achieving desired objectives. Performance standards must be based on attributes that are objective, verifiable and

can be measured in a practicable manner. These performance standards should be based on the initial functional assessment and a predicted functional assessment after construction.

- A. Provide the predicted habitat assessment data sheet for high/low gradient streams for end of five year monitoring period.
- B. Provide documentation regarding if the restored stream reaches meets the numeric and narrative water quality standards.
- C. Provide a discussion regarding if the restored stream reaches meet the terms and conditions of the permit then the permittee must provide cause and present remedial measures with specific timeframes for corrective measures with a time line.

**9. Monitoring Requirements (33 CFR 332.6):** Provide a description of parameters monitored to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. Include a schedule for monitoring and reporting monitoring results.

**10. Long-term management plan (33 CFR 332.7(d)).** Provide a description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.

**11. Adaptive Management Plan (33 CFR 332.7(c)).** Provide a management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures. Describe the contingency plan if the performance standards are not met. Identify off site restoration or out-of-kind mitigation.

**12. Financial Assurances (33 CFR 332.3(n)).** Provide a description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed, in accordance with the performance standards.

Agency	Signatory	Date
TDEC	<i>[Signature]</i>	12/20/10
OSM	<i>[Signature]</i>	12/20/10
USEPA	<i>[Signature]</i>	12/20/2010
USACE	Ronald E. Antolin	12/20/2010
USFWS	<i>[Signature]</i>	12/20/2010

As described in the Local Interagency Working Agreement (LIWA), this SOP does not create any rights, either substantive or enforceable by any party. This document does not and is not intended to impose any legally binding requirements on state or federal agencies, the regulated community or public, and does not restrict the authorities of signatory agencies to exercise their discretion in each case to make a regulatory decision based on their judgment about specific facts and application of relevant statutes and regulations. Nothing in this document is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the involved agencies or relieve these parties of their obligations under federal and state law. Nothing in this document will be construed as indicating a financial commitment by the agencies to expend funds.

**Standard Operating Procedure  
Water Quality Requirements for Coal Mine Permitting Actions  
in Tennessee Under the Clean Water Act  
and Surface Mining Control and Reclamation Act**

**Purpose**

The purpose of this Standard Operation Procedure (SOP) is to enhance coordination among the federal and state agencies involved in coal mine permitting actions in the State of Tennessee. This SOP is developed in support of a Local Interagency Working Agreement among those agencies that have regulatory authority in areas related to coal mining. This document establishes a coordinated water quality monitoring and assessment protocol that meets the requirements of the Federal and State agencies involved in coal mine permitting actions in the State of Tennessee. This SOP is developed in support of a Local Interagency Working Agreement among those agencies that have jurisdiction by law under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA), and the Tennessee Water Quality Control Act regulatory programs. These agencies include the Tennessee Department of Environment and Conservation (TDEC), the United States Army Corps of Engineers (USACE), the United States Environmental Protection Agency (USEPA), the United States Fish and Wildlife Service (USFWS) and the Office of Surface Mining Reclamation and Enforcement (OSM).

**Scope**

This SOP applies to those decisions related to proposed coal mine permitting actions in Tennessee in which Federal and State authorizations are involved. This shall include but is not limited to new permit applications and significant revisions to existing permits.

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## 1 Statutory Requirements, Implementation, and Coordination

Water quality data collection is important in the development of coal mine permits. This SOP describes the water quality data requirements for coal mining activities in Tennessee and reduces data collection redundancy. Procedures for sample site selection, water quality parameters, sample frequency, and coordination of the information are discussed in this SOP.

The water quality SOP is organized for the collection of each agency's water quality data needs to meet the regulatory requirements as below.

- SMCRA permit application (OSM)
- CWA § 401/404 permit application (USACE/TDEC/EPA)
- CWA § 402 permit application (TDEC/EPA)
- ESA § 7 (USFWS)

## 2 Water Quality Information Needs for Permit Applications

### 2.A Effluent Data

Effluent data is only required for the CWA § 402 permit application.

1. Frequency and Duration – The sample frequency and duration shall be sufficient enough to completely characterize the wastewater to be discharged from the facility. Enough effluent data must be submitted by the applicant to enable a reasonable potential analysis to be completed prior to permit issuance. At a minimum, the result of one sample is required. For new outfalls, a representative outfall sample from another mine shall be used. The applicant should perform effluent sampling at a minimum of one outfall for each receiving water body. The selection of representative outfalls shall be coordinated with TDEC.
2. Location – Samples shall be taken at the outfall before mixing occurs with the surface water (if present).
3. Sample Type – Grab samples shall be taken. A grab sample is defined as an individual sample of a sufficient volume meeting sampling requirements as specified in "Standard Methods for the Examination of Water and Wastewater".
4. Protocols and Test Methods
  - a. Division of Water Pollution Control Standard Operating Procedure – Mining (NPDES, Mining Law, ARAP, and Construction) Permits (August 1999)
  - b. Wastewater characteristics must be sampled and measured using sufficiently sensitive<sup>1</sup> analytical methods referenced in 40 Code of Federal Regulations (CFR) 136
  - c. Quality System Standard Operating Procedure (QSSOP) for Chemical and Bacteriological Sampling of Surface Water (Dec 2009)
  - d. Short-Term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms
  - e. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms
5. Parameters – see Appendix 1

<sup>1</sup> NPDES permit applicants should use an EPA-approved test method and the most sensitive low-level analytical methods in 40 CFR Part 136 to quantify the presence of pollutants in a given discharge. EPA considers a method to be "sufficiently sensitive" when the method's quantification level (MQL) is at or below the level of the applicable water quality standard (WQS) for the pollutant or the MQL is above the applicable WQS, but the pollutant amount in the facility's discharge is greater than the method detects and quantifies the level of pollutant in the discharge. EPA method 200.8 should be used for all metals except for mercury. Mercury should be analyzed using EPA method 1631E or EPA method 245.7.

## 2.B Surface Water – Chemical Data

Surface water chemical data is required by OSM, TDEC and USFWS. The locations of the surface water monitoring points must be approved by the regulatory authorities on a project specific basis. Sample locations and parameters will be determined at the pre-application meeting.

1. Frequency and Duration
  - a. OSM – Sufficient samples to characterize seasonal variation of receiving water quality, minimally six samples per year
  - b. § 401/404 – See proposed mitigation SOP (freq/duration TBD)
  - c. § 402 – Sufficient samples to characterize seasonal variation of receiving water quality
  - d. If threatened and/or endangered species (T/E) are present, the sampling frequency will be determined by OSM/USFWS.
2. Location - Each agency shall coordinate the location of the in-stream surface water monitoring points prior to beginning surface water sampling.
  - a. OSM – Upstream and downstream of the confluence with each receiving water body (RWB). The locations should sufficiently capture the projects impacts on the RWB and downstream RWB.
  - b. § 402 – Typical sample locations may include, but are not limited to, the following:
    - i. One sampling point located upstream of each representative outfall. If there is no upstream location, an appropriate background location within the 12-digit hydrologic unit code should be used.
    - ii. One sampling point located immediately downstream of each outfall
    - iii. One sampling point located upstream and downstream of the first intervening tributary
  - c. OSM/USFWS (if T/E or critical habitat is present) –if blackside dace (BSD) are present, see BSD protection and enhancement plan guidelines.
3. Sample Type – Grab samples shall be taken.
4. Protocols and Test Methods
  - a. OSM/USFWS
    - i. Most current edition of “Standard Methods for the Examination of Water and Wastewater,” or the methodology in 40 CFR parts 136 and 434
    - ii. Coal Mining in Tennessee Minimum Guidelines for the Development of protection and enhancement plans for BSD
  - b. § 401/404 and § 402
    - i. QSSOP for Chemical and Bacteriological Sampling of Surface Water (Dec 2009)
    - ii. Division of Water Pollution Control Standard Operating Procedure – Mining (NPDES, Mining Law, ARAP, and Construction) Permits (August 1999)
    - iii. Wastewater characteristics must be sampled and measured using sufficiently sensitive analytical methods referenced in 40 CFR 136
5. Parameters – see Appendix I

## 2.C Surface Water – Biological Data

Sample locations and parameters will be determined at the pre-application meeting.

1. Frequency, and Duration
  - a. § 402 – One biological survey performed one year prior to permit issuance and annually thereafter for the duration of the permit

2. Location
  - a. § 402 - Typical sample locations may include, but are not limited to, the following:
    - i. One sampling point located immediately downstream of each representative outfall.
    - ii. One sampling point located upstream and downstream of the first intervening tributary.
3. Protocols and Test Methods
  - a. § 402 –QSSOP for Macroinvertebrate Stream Surveys (revised Oct 2006)
4. Parameters – see Appendix 1

#### 2.D Surface Water – Biological Data (for the protection of T/E species)

Surface water biological data are required by OSM and USFWS for the protection of T/E species and critical habitat.

1. Frequency and Duration – One sample two years prior to permit issuance.
2. Location – in consultation with OSM and USFWS
3. Protocols and Test Methods
  - a. Most current edition of "Standard Methods for the Examination of Water and Wastewater," or the methodology in 40 CFR parts 136 and 434
  - b. Coal Mining in Tennessee Minimum Guidelines for the Development of protection and enhancement plans for BSD
4. Parameters – see Appendix 1

#### 2.E Ground Water Data

Ground water data is only required by OSM.

1. Frequency and Duration – Sufficient samples to characterize seasonal variation of groundwater quality. This should consist minimally of six samples evenly spaced throughout the year.
2. Location – in consultation with OSM pursuant to the ground water monitoring plan.
3. Protocols and Test Methods – Most current edition of "Standard Methods for the Examination of Water and Wastewater," or the methodology in 40 CFR parts 136 and 434
4. Parameters – see Appendix 1

### 3 Data Management and Sharing

#### 3.A Effluent Data Management

Effluent water quality data is not required for OSM, § 401/404, and USFWS. Effluent data is only required for CWA § 402 permitting. In order to have a complete NPDES permit application, the applicant must provide data that characterizes the effluent to TDEC. Effluent water quality data must be submitted to TDEC prior to issuance of a § 402 permit. TDEC will store the data electronically in a database and on the internet for dissemination to other agencies.

#### 3.B Surface Water – Chemical Data Management

Surface water chemical data is required by OSM and USFWS if T/E or critical habitat is present. Additional surface water chemical data collection is proposed for the § 402 permit application. In order to have a complete SMCRA and NPDES permit application, the applicant must provide data that properly characterizes surface water chemistry to OSM, TDEC, and USFWS (if applicable). Surface water chemical data must be submitted to TDEC and OSM prior to permit issuance.



Chemical data will be stored electronically in a database and on the internet by OSM or TDEC for dissemination to other agencies.

**3.C Surface Water – Biological Data Management**

Surface water biological data is required for § 402. Additional surface water chemical data collection is proposed for the § 404 permit application. The applicant must provide data that properly characterizes surface water biology to TDEC. Surface water biological data must be submitted to TDEC prior to issuance of a § 402 permit and to USACE prior to issuance of a § 404 permit. Biological data will be stored electronically in a database and on the internet by OSM or TDEC for dissemination to other agencies.

**3.D Surface Water – Biological Data Management (for the protection of T/E species)**

Surface water biological data is required by OSM and USFWS for the protection of T/E species and critical habitat (including BSD as outlined in the BSD protection and enhancement plan). Surface water biological data is required for the § 402 permit application and highly desired for the § 404 permit application. For surface mining operations, significant amounts of surface water biological data are generated as part of the application process. In order to have a complete SMCRA permit application and meet the requirements of the BSD protection and enhancement plan, the applicant must provide data that properly characterizes surface water biology to OSM and USFWS. Surface water biological data pertaining to T/E species and critical habitat must be submitted to USFWS and TDEC prior to issuance of a § 402 permit and to OSM prior to issuance of a SMCRA permit. Biological data will be stored electronically in a database and on the internet by OSM or TDEC for dissemination to other agencies.

**3.E Ground Water Data Management**

Ground water data is only required by OSM. In order to have a complete SMCRA permit application, the applicant must provide data that properly characterizes ground water to OSM. Ground water data must be submitted to OSM prior to issuance of a SMCRA permit. Ground water data will be stored electronically in a database and on the internet by OSM or TDEC for dissemination to other agencies.

Agency	Signatory	Date
TDEC	<i>[Signature]</i>	12/20/10
OSM	<i>[Signature]</i>	12/20/10
USEPA	<i>[Signature]</i>	12/20/2010
USACE	<i>[Signature]</i>	12/20/2010
USFWS	<i>[Signature]</i>	12/20/2010

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## Appendix 1 – Water Quality Data Needs Organized by Agency

Water Quality Data	Agency			
	OSM	EPA/TDEC/USA CE (§ 401 & 404)	EPA/TDEC (§ 402)	USFWS
<b>2.A Effluent</b>				
Frequency/Duration	-	-	>= 1 sample/application representative outfall within each RWB	-
Location	-	-	1, 2, 3	-
Sampling Protocols	-	-	-	-
Parameters				
Form 2C, Item V, Part A	-	-	Yes (as applicable)	-
Form 2C, Item V, Part B	-	-	Yes (as applicable)	-
Form 2C, Item V, Part C	-	-	Yes (as applicable)	-
WET testing results	-	-	Yes (if applicable)	-
Bicarbonate Alkalinity	-	-	- <sup>8</sup>	-
Chlorides	-	-	- <sup>3</sup>	-
Specific Conductivity (SC)	-	-	- <sup>8</sup>	-
Total Calcium	-	-	- <sup>8</sup>	-
Total/Dissolved Chromium (III)	-	-	- <sup>8</sup>	-
Total/Dissolved Chromium (VI)	-	-	- <sup>6</sup>	-
Total/Dissolved Solids (TDS)	-	-	- <sup>5</sup>	-
Total Potassium	-	-	- <sup>3</sup>	-
Total Sodium	-	-	- <sup>3</sup>	-
<b>2.B Surface Water - Chemical</b>				
Frequency/Duration	<sup>5</sup>	-	<sup>5</sup>	Yes <sup>7</sup>
Location	site specific, US/DS in RWB	-	use OSM data plus additional locations	Yes <sup>7</sup>
Protocols	<sup>4</sup>	-	1, 2, 3	Yes <sup>7</sup>
Parameters				
Acidity	Yes (if acid forming)	-	-	-
Alkalinity	Yes (if acid forming)	-	- <sup>8</sup>	Yes (if T/E species and/or critical habitat present)
Dissolved Oxygen	-	-	- <sup>8</sup>	Yes ()
Flow	Yes <sup>4</sup>	-	- <sup>8</sup>	Yes ()
Iron	Yes	- <sup>5</sup>	-	Yes ()
Manganese	Yes	-	-	Yes ()
pH	Yes	-	-	Yes ()
SC or TDS	Yes	- <sup>3</sup>	-	Yes ()
Settleable Solids	-	-	-	Yes ()
Sulfates	-	- <sup>8</sup>	- <sup>3</sup>	Yes ()
Supplemental	Yes (if	-	-	-

Data	applicable)			
Temperature	-	-	-	Yes ( )
Total Suspended Solids (TSS)	Yes	-	-	Yes ( )
Chlorides	-	-	-	-
Hardness	-	-	-	-
Total Calcium	-	-	-	-
Total Cyanide	-	-	-	-
Total/Dissolved Antimony	-	-	-	-
Total/Dissolved Arsenic	-	-	-	-
Total/Dissolved Beryllium	-	-	-	-
Total/Dissolved Cadmium	-	-	-	-
Total/Dissolved Chromium (III)	-	-	-	-
Total/Dissolved Chromium (VI)	-	-	-	-
Total/Dissolved Copper	-	-	-	-
Total/Dissolved Lead	-	-	-	-
Total/Dissolved Manganese	-	-	-	-
Total/Dissolved Nickel	-	-	-	-
Total/Dissolved Silver	-	-	-	-
Total/Dissolved Thallium	-	-	-	-
Total/Dissolved Zinc	-	-	-	-
Total Magnesium	-	-	-	-
Total Phenols	-	-	-	-
Total Potassium	-	-	-	-
Total Recoverable Selenium	-	-	-	-
Total Sodium	-	-	-	-
2.C Surface Water - Biological				
Frequency/Duration	-	-	1/annually site specific,	-
Location	-	-	1/RWB, same as 4.2.B	-
Protocols	-	-		-
Parameters				
Benthic Macroinvertebrate Assessments	-	-	Yes	-
2.D Surface Water - Biological (for protection of T/E species)				
Frequency/Duration	Yes <sup>7</sup>	-	-	Yes <sup>7</sup>
Location	Yes <sup>7</sup>	-	-	Yes <sup>7</sup>
Protocols	7	-	-	7
Parameters				
Benthic Macroinvertebrate Assessments	Yes	-	-	Yes
Habitat Assessment	Yes	-	-	Yes

	T/E survey	Yes	-	-	Yes
2.E Ground Water Data					
	Frequency/Duration	<sup>5</sup>	-	-	-
	Location	selected GW resources	-	-	-
	Protocols	<sup>4</sup>	-	-	-
	Parameters				
	Flow	Yes	-	-	-
	SC or TDS	Yes	-	-	-
	pH	Yes	-	-	-
	Iron	Yes	-	-	-
	Manganese	Yes	-	-	-
	Supplemental Data	Yes (if applicable)	-	-	-

**Notes**

<sup>1</sup> Wastewater characteristics must be sampled and measured using sufficiently sensitive analytical methods referenced in 40 CFR 136

<sup>2</sup> Division of Water Pollution Control Standard Operating Procedure - Mining (NPDES, Mining Law, ARAP, and Construction) Permits (August 1999)

<sup>3</sup> TDEC Quality System Standard Operating Procedure (QSSOP) for Chemical and Bacteriological Sampling of Surface Water (Dec 2009)

<sup>4</sup> Most current edition of "Standard Methods for the Examination of Water and Wastewater," or the methodology in 40 CFR parts 136 and 434

<sup>5</sup> Sufficient samples to characterize seasonal variation of receiving water quality, minimally six samples per year

<sup>6</sup> TDEC QSSOP for Macroinvertebrate Stream Surveys in latest revision

<sup>7</sup> Per BSD guidelines or site specific for other T/E species

<sup>8</sup> The data will be collected during the §402 application.

**Legend**

-	Not Required
BSD	Blackside Dace
PEP	Protection and Enhancement Plan
RWB	Receiving Water Body

**Standard Operating Procedure**  
**Section 401 and 404 Clean Water Act Permit Verification and Enforcement Notification**

**Purpose**

The purpose of this SOP is to describe the procedures the Office of Surface Mining Reclamation and Enforcement Knoxville Field Office (OSM) and the United States Army Corps of Engineers (USACE) staff will use in verifying issuance of Clean Water Act Section 404 Permits and providing notification of potential enforcement situations. This SOP is developed in support of a Local Interagency Working Agreement among those agencies who have jurisdiction by law under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA) and/or the Tennessee Water Quality Control Act regulatory programs. These agencies include OSM, USACE, the Tennessee Department of Environment and Conservation (TDEC), the United States Environmental Protection Agency (USEPA), and the United States Fish and Wildlife Service (USFWS).

**Scope**

This SOP applies to Federally issued coal mining operations in Tennessee to ensure compliance with the requirements for conducting coal mining activities in or adjacent to (i.e. within 100 feet) waters identified on the Environmental Resources Map (ERM). The ERM is developed with input from TDEC and USACE (see Jurisdictional Determination SOP). All streams (perennial, intermittent, and ephemeral) and jurisdictional wetlands boundaries are shown on the ERM.

**Procedures**

**A. Previously Issued SMCRA Permits with Active Coal Production**

OSM will provide the USACE with a list of SMCRA permits which are active or likely to become active that may require Section 404 permits to assist the USACE with enforcement. The USACE will review the list, evaluate whether the operation has a Section 404 permit, where in the process each permit stands, and advise OSM regarding the permit status.

OSM inspectors will verify that the permittee has complied with any permit terms or conditions requiring the permittee to obtain an authorization or certification under Sections 401 or 404 of the CWA before initiating certain activities.

OSM inspectors will verify that the operation has a valid Section 404 permit for all existing stream buffer zone incursions.

Where an incursion has occurred on existing permits or on the first potential incursion into the stream buffer zone, the OSM inspector will verify with the permittee that a valid 404 permit exists. If the permittee fails to produce the permit, the inspector will advise the permittee to contact the USACE. The inspector will also contact the USACE at (615) 369-7500 to inform

that the operation is approaching a buffer zone and the operator did not produce a permit. Inspectors will document findings and record all contacts with the USACE in inspection reports.

**B. New Permits**

All new SMCRA permits issued by OSM depict Aquatic Resource Alteration Permits which require a 401 certification and a 404 permit on the approved mining operation map.

When mining activities are approaching the first stream requiring a 404 permit, including road construction and clearing and grubbing activities, the inspector will verify with the permittee that a valid 404 permit exists. If the permittee fails to produce the permit, the inspector will advise the permittee to contact the USACE. The inspector will also contact the USACE District Office at (615) 369-7500 to inform that the operation is approaching a buffer zone and the operator did not produce a permit. Inspectors will document findings and record all contacts with the USACE in inspection reports.

C. USACE, USEPA, USFWS, OSM and TDEC will each follow its own enforcement procedures and notify USACE, USEPA, USFWS, OSM and TDEC of all enforcement actions involving steam buffer zones and related permitting requirements. Notification will be sent to:

- USACE: Chief, Regulatory Branch
- USEPA: Chief, Clean Water Enforcement Branch
- USFWS: Field Supervisor
- OSM: Chief, Inspection Group and Chief, Technical Group
- TDEC: NPDES Program Manager

Agency	Signatory	Date
TDEC	<i>[Signature]</i>	12/20/10
OSM	<i>[Signature]</i>	12/20/10
USEPA	<i>[Signature]</i>	12/20/2010
USACE	<i>Ronald E. Katlin</i>	12/20/2010
USFWS	<i>Mary E. Jennings</i>	12/20/2010

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## **Standard Operating Procedure Cumulative Hydrologic Impact Assessment in Tennessee Under the Clean Water Act and Surface Mining Control and Reclamation Act**

### **Purpose:**

The purpose of this Standard Operating Procedure (SOP) is to describe procedures the Office of Surface Mining (OSM) Knoxville Field Office (KFO) staff will use in the preparation of the Cumulative Hydrologic Impact Assessment (CHIA) for the permit decision document. This SOP supports the Local Interagency Working Agreement among the Tennessee Division of Environment and Conservation (TDEC), the U.S. Army Corps of Engineers (USACE), the Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), Cookeville Field Office, and the Office of Surface Mining Reclamation and Enforcement (OSM)

### **Scope:**

The OSM Knoxville Field Office is the primary authority for developing the CHIA document. OSM staff may consult with the TDEC, USACE, the USEPA, and the USFWS during the permitting process to address specific items of concern in the SMCRA application. The resolution of all mining related hydrologic issues for the cumulative impact area (CIA) will be addressed in the CHIA document.

### **Introduction:**

The CHIA manual was written by the OSM KFO staff in 2005 to provide general guidance and a standardized format. The document is titled *Cumulative Hydrologic Impact Assessment (CHIA) for the Federal Program for Tennessee* (OSM 2005) and is available upon request.

The purpose of the CHIA procedures is to provide general guidance to help identify the "additive effects," from mining as well as standardize approaches and formats for the overall CHIA process. This document is comprised of two sections: *Procedures for Cumulative Hydrologic Impact Assessment (the Procedures Manual)* and the *Support Manual for the Cumulative Hydrologic Impact Assessment (the Support Manual)* with associated appendices. The *Procedures Manual* provides the general approaches to CHIA development. The *Support Manual* provides more details on material damage, cumulative impact area (CIA) delineations, CHIA sampling protocols, and additional reference information on sampling and modeling approaches.

### **General Procedures:**

The general structure of the CHIA is outlined in the 2005 CHIA manual and is summarized as follows:

- Describe the Surface and Ground-water CIAs,
- Describe and summarize the mining history of active and proposed sites within the CIA,
- Discuss the hydrologic baseline conditions in both the surface and ground water CIA,
- Identify all the hydrologic concerns raised in the PHC and Cumulative Impact Areas (CIAs) and will include a description of the parameters under consideration (water quality/quantity parameters),

- Identify material damage criteria for parameters of interest and based on the stream use classifications within the CIA,
- Identify any stream buffer zone encroachments proposed by the applicant that would require appropriate findings as required in 30 CFR 816/817.57(a),
- Describe, quantify, and assess the projected cumulative impacts on surface water and ground water from the identified parameters of interest,
- Compare the resultant cumulative impact of parameters of concern against the material damage thresholds determined to be applicable in the CIA,
- Make a permitting decision based on CHIA and engineering assessments,
- If no material damage likely from proposed operation, prepare written finding that the proposed operation has been designed to prevent material damage outside the permit area in compliance with 30 CFR 773.16(e).

All CHIA documents should follow this same general format. However, the level of detail and types of information needed to make the material damage finding will vary between CHIA documents. Likewise, the amount of baseline data and the sophistication of the predictive techniques will vary based on the magnitude of mining, the sensitivity of the watershed, and the types of resources requiring protection.

The OSM CHIA reviewer will prepare an appropriately scaled map(s), to be included with all CHIA documents, that delineates the extent of the CIA's. Maps may be combined with other information as appropriate provided the maps are legible. These map(s) will clearly show: (1) the location and extent of the ground and surface-water CIA, (2) Surface mine permits (SMP) used in development of the CHIA, (3) the location of existing and proposed mining within the CIA areas, and (4) the CIA trend station (TS), surface and ground water monitoring points, and biological monitoring data points or station.

All tabular data used in the development of the CHIA will be included in the Appendix or clearly referenced in the document. A summary table or copy of the data input sheet(s) will be used to clearly identify applicant information considered as part of the CHIA evaluation. The tables may also include physical material properties used as input for the CHIA mass balance equations. Such information should be broken down in a manner so that the next CHIA for a permit application within the same CIA can be built from the previous CHIA without having to search for, or recreate source information for subsequent CHIA's.

Any field testing methods and results, reference materials (methods or textbook values) used, or formulas for calculating draw downs, ground-water movement, base flow recession, and regression analysis hydrograph separation, or other hydraulic functions should be clearly documented so that the next CHIA can be built using the same information. Hydrologic models will be saved to an internal server to allow the next reviewer to run the model for additional mining. Any and all reference materials cited or used in the CHIA should be accurately documented and included in the bibliography or reference section of the report.

#### **Interagency Participation:**

Each agency has the opportunity to review each new application and make comments concerning their respective areas of expertise. If a significant issue exists in a CIA that concerns any



agency, the concern(s) should be addressed during the review phase of the application process to give the applicant and OSM the opportunity to address the issue(s). OSM will consider all comments on the application and will reconcile as appropriate. Issues requiring regulatory consultation such as ESA section 7 consultations will be conducted as outlined in the Endangered Species Act SOP.

The CHIA is a compilation and assessment of hydrologic data from all previous permitting actions in a CIA. All issues outlined in the Probable Hydrologic Consequences section of the proposed permit application and raised during the application review process will be addressed in the CHIA document. As stated above, each agency has the opportunity to make comments concerning their respective areas of expertise during the permit application review process. If a significant issue exists in the watershed that concerns any agency, the concern(s) should be addressed during the OSM review phase of the application process to give the applicant and OSM the opportunity to address the issue(s). OSM will consider all comments and reconcile as appropriate in accordance with SMCRA. Copies of the CHIA will be made available upon completion.

### **Sample of a General Outline for CHIA**

*(Procedures for Cumulative Hydrologic Impact Assessment, 2005)*

#### **Baseline Information**

##### **I. Discussion of CHIA process elements**

##### **A. Cumulative impact area determination (CIA)**

- 1) Delineation of watershed on appropriately scaled map
  - a. Discuss delineation and location of surface and ground water CIAs
  - b. Discuss and locate existing and anticipated mining operations

##### **B. Hydrologic baseline conditions within CIA**

- 1) Discuss adequacy of available hydrologic data
  - a. Surface-water data
  - b. Ground-water data
  - c. Biological assessment summary
- 2) Characterization of the hydrologic system
  - a. Surface water system
    - i. Physical description of surface-water system
    - ii. Seasonal variation in flow and water quality
    - iii. Inventory surface-water usage
  - b. Ground water system
    - i. Physical description of ground-water system
    - ii. Seasonal water level and water quality variation
    - iii. Inventory ground-water usage

##### **C. Hydrologic concerns and associated indicator parameters**

- 1) Surface water concerns

- a. Identify and discuss each hydrologic concern and rationale applied to reconciling each concern
  - b. Select material damage threshold parameters and discuss rationale in selecting each parameter used to evaluate surface-water concerns
  - c. Impact assessment sites
    - i. Discuss site selection for impact evaluation
    - ii. Locate assessment sites on CIA map
- 2) Ground water concerns
- a. Identify and discuss each concern and rationale applied to reconciling each concern
  - b. Select material damage threshold parameters and discuss rationale in selecting each parameter used to evaluate ground water concerns
  - c. Impact assessment sites
    - i. Discuss site selection for impact evaluation
    - ii. Locate assessment sites on CIA map
- 3) Biological Concerns
- a. Identify and discuss each concern and rationale applied to reconciling each concern
  - b. Discuss biologic thresholds to be used to evaluate biological resources
  - c. Impact assessment sites
    - i. Discuss site selection for impact evaluation
    - ii. Locate assessment sites on CIA map

### **Analysis and Prediction Information**

#### **D. Assessment of cumulative impacts of mining on surface and ground water resources**

- 1) Surface Water
  - a. Identify, discuss, and evaluate hydrologic concerns and cumulative impacts within CIA
    - i. Discuss methods used to evaluate hydrologic cumulative impacts within surface water CIA
    - ii. Provide technical basis for using particular assessment methods
      - A. Discuss assumptions of the methods
      - B. Discuss data requirements of the methods
      - C. Discuss procedure used to calibrate method
  - b. Surface Water indicator parameter values
    - i. Discuss quantity parameters for each site
    - ii. Discuss quality parameters for each site
- 3) Ground water
  - a. Identify, discuss, and evaluate hydrologic concerns and cumulative impacts within CIA
    - i. Discuss methods used to evaluate hydrologic cumulative impacts within ground water CIA
    - ii. Provide technical basis for using particular assessment methods
      - A. Discuss assumptions of the methods
      - B. Discuss data requirements of the methods

- C. Discuss procedure used to calibrate method
- c. Identify indicator parameter values
  - i. Discuss difference in procedure to obtain short and long term parameter values
  - ii. Discuss quantity parameters for each site
  - iii. Discuss quality parameters for each site

**II. Determination and statement of findings**

**A. Determination of material damage potential**

- 1) Surface water
  - a. Assessment and discussion of projected parameter values in relation to baseline conditions and material damage criteria
  - b. Assessment and discussion of material damage to the surface-water system resulting from the proposed operation
- 2) Ground water
  - a. Assessment and discussion of projected parameter values in relation to baseline conditions and material damage criteria
  - b. Assessment and discussion of material damage to the surface-water system resulting from the proposed operation

**B. Statement of findings**

- 1) Summary of hydrologic cumulative impacts findings (Including Stream Buffer Zone Issues)

Agency	Signatory	Date
TDEC	<i>M. [Signature]</i>	12/20/10
OSM	<i>[Signature]</i>	12/20/10
USEPA	<i>[Signature]</i>	12/20/2010
USACE	<i>Ronald E. [Signature]</i>	12/20/2010
USFWS	<i>Mary [Signature]</i>	12/20/2010

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