

## **CASE STUDY**

# **Abandoned Bituminous Coal Mines Southeast Ohio**

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**Prepared by  
The Interstate Technology & Regulatory Council  
Mining Waste Team**

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**TABLE OF CONTENTS**

1. SITE INFORMATION .....1  
    1.1 Contacts.....1  
    1.2 Name, Location and Description.....1  
2. REMEDIAL ACTION AND TECHNOLOGIES.....2  
3. PERFORMANCE.....2  
4. COSTS .....2  
5. REGULATORY CHALLENGES .....2  
6. STAKEHOLDER CHALLENGES .....2  
7. OTHER CHALLENGES AND LESSONS LEARNED .....3  
8. REFERENCES .....3

**LIST OF FIGURES**

Figure 1-1. Abandoned mine drainage relative to Raccoon Creek, Monday Creek,  
Sunday Creek, and Huff Run Creek in Southeast Ohio .....1

# ABANDONED BITUMINOUS COAL MINES, SOUTHEAST OHIO

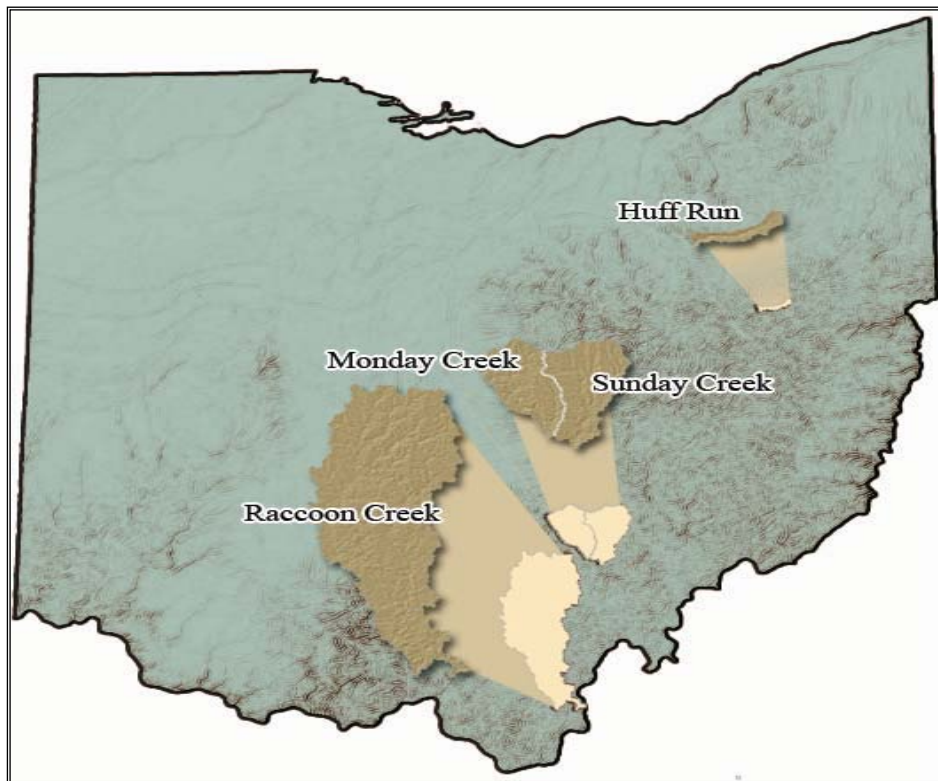
## 1. SITE INFORMATION

### 1.1 Contacts

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### 1.2 Name, Location and Description

Multiple sites in southeast Ohio (Figure 1-1) with abandoned bituminous coal mines produce acidic conditions in surface water streams, pool water, ponds, and lakes. The primary problems in these water sheds are remaining coal process waste in soil and sediment contamination which then produce acidity of the water, releasing primary contaminants of aluminum and iron.



**Figure 1-1. Abandoned mine drainage relative to Raccoon Creek, Monday Creek, Sunday Creek, and Huff Run Creek in Southeast Ohio.**

## **2. REMEDIAL ACTION AND TECHNOLOGIES**

The Remedial Actions at these sites and must comply with the Clean Water Act (CWA), the Surface Mining and Reclamation act (SMCRA), and the Ohio Abandoned Mine Land Program. The site cleanup goal is mitigation of ecological risk in the stream environment and is measured using contaminant concentrations in water. Each watershed has its own cleanup levels developed through negotiations between Ohio EPA and the primary consultant in each watershed. Each cleanup concentration is based on the water body's designated use.

Since this is a description of multiple sites in four separate watershed of the expanse of southeast Ohio, multiple technologies are used:

- anoxic limestone drain—downflow wetlands or SAPS
- backfilling/subaqueous disposal—backfill toxic spoil and gob
- capping/covers/grading—cover toxic spoil and gob
- chemical precipitation—raise pH with limestone, steel slag systems
- chemical stabilization—lime stabilization of precipitants, gob, spoil
- constructed treatment wetlands—aerobic
- excavation and disposal—move and backfill gob

All have been operated at full scale for years, and there is a long-term right of entry for operation and maintenance of all treatment technologies.

## **3. PERFORMANCE**

No information reported; however, contaminant concentrations in water are monitored to evaluate the effectiveness of each treatment technology. This case study is reporting on multiple sites throughout southeast Ohio.

## **4. COSTS**

Cost of activities at these site are reported as a total:

- Capital: \$2–3 million annually
- Operation and maintenance: ~\$100,000 annually

## **5. REGULATORY CHALLENGES**

No information available.

## **6. STAKEHOLDER CHALLENGES**

No information available.

## **7. OTHER CHALLENGES AND LESSONS LEARNED**

No information available.

## **8. REFERENCES**

Go to [www.watersheddata.com](http://www.watersheddata.com) for a more thorough description of the Non-Point-Source Project.