



**December 2012**

Investigations to assess potential impacts of phosphate mining on human health and the environment have been ongoing in southeast Idaho since 1996. Investigations at P4 Production, LLC's (P4's) historic Ballard, Henry, and Enoch Valley mines, collectively referred to as the P4 sites, were performed between 2004 and 2009 as part of an investigation under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Since then, environmental monitoring has been ongoing at the sites.

In 2009, P4 entered into a voluntary agreement with the U.S. Environmental Protection Agency (EPA), the Idaho Department of Environmental Quality (DEQ), the Department of Agriculture, the U.S. Forest Service, the Department of the Interior, the Bureau of Land Management, and the Shoshone-Bannock Tribes to conduct a more thorough remedial investigation and feasibility study (RI/FS) at each of the P4 sites.

### **Project Location**

The P4 mine sites are located approximately 12 to 19 miles north-northeast of the city of Soda Springs in southeast Idaho and are on lands that are a mix of private and public ownership with much of the land privately owned.

### **Site Background**

The P4 sites were mined for phosphate ore between 1951 and 2004. The Ballard Mine is the oldest of the three mines being addressed in the RI/FS and was mined from 1951 to 1969. The Henry Mine was active between 1969 and 1989, and the Enoch Valley Mine was active between 1989 and 2004. P4's other mines in the district are not included in this project.

The primary contaminant of concern in the area is selenium, which is widely present in most rocks and soils. Mining practices bring selenium-bearing rocks and soils to the surface, which significantly accelerates the physical and chemical breakdown of the waste rock and makes selenium and other contaminants more easily released into the environment. Selenium is a necessary micro-nutrient for humans, livestock, and wildlife; however, elevated levels can be harmful. Selenium has been detected at elevated levels in soil, water, and plants on and near phosphate mines in southeast Idaho.

In 1996, several horses were diagnosed with high levels of selenium. Other incidents involving sheep and cattle have

occurred since 1996, including the loss of 95 sheep in 2012. Until more permanent remedies are in place, access to the area has been limited with signs and fences.

### **Previous Investigations**

Following the diagnosis of the horses in 1996, investigations to assess potential impacts of phosphate mining on human health and the environment began in southeast Idaho. These investigations were conducted on a regional (or area-wide) basis, involving numerous phosphate mines in southeast Idaho, until approximately 2004 when the investigations began focusing on specific mines. An area-wide human health and ecological risk assessment was performed by DEQ in 2002 using the data collected throughout the region. The findings of that risk assessment can be found at: <http://yosemite.epa.gov/r10/cleanup.nsf/sites/p4mines>.

### **RI/FS**

The objectives of the RI/FS are to: (1) determine the nature and extent of contamination and any threat to human health or the environment caused by the release or potential release of contaminants from the sites; and (2) determine and evaluate alternatives for a remedial action to address the release or potential release of contaminants from the sites.



The RI/FS process includes:

- Field investigation
- Sample analysis and validation
- Data evaluation
- Risk assessment
- Treatability studies and pilot testing
- Remedial alternative development and screening
- Feasibility study reporting
- Community involvement.

**Status**

The Ballard Mine RI/FS work plan was completed in 2011. This is a required planning document that presents the background, methods, and procedures for conducting the RI/FS. The RI/FS work plan is available in the Administrative Record.

Field investigation work at Ballard Mine has been completed, although some ongoing monitoring will continue. A study was initiated in 2011 at the Ballard site to test and evaluate a treatment method to remove selenium from contaminated water. The method is a semi-passive treatment system that involves piping water into a series of tanks (or bio-reactors) where bacteria remove selenium from the water. This study is on-going, but initial results appear promising.

During the next year, a remedial investigation report, including a risk assessment and site characterization, will be

completed for Ballard Mine, and a feasibility study will be conducted to evaluate cleanup alternatives. Once the Ballard RI/FS is complete, the agencies will propose a cleanup plan, seek input from the public, and then select a cleanup alternative. (The graphic below summarizes the CERCLA process.)

Following Ballard Mine, the process will continue for the Henry Mine and then the Enoch Valley Mine.

**Community Involvement**

In 2008 and 2009, community interviews were conducted to determine community interest and areas of concern regarding selenium issues in southeast Idaho. A Community Involvement Plan was issued in 2010 and updated in 2012. Along with the project work plans and reports, the Community Involvement Plan is available online at <http://yosemite.epa.gov/r10/cleanup.nsf/sites/p4mines> and in the Administrative Record (see sidebar for locations).

Future work plans and project reports will be available to the public as they are developed. Public meetings will be scheduled, as needed, and the following representative from the EPA is available to discuss ongoing work:

Dave Tomten  
 EPA Idaho Operations Office  
 1435 North Orchard Street  
 Boise, ID 83706  
 (208) 378-5763  
[tomten.dave@epa.gov](mailto:tomten.dave@epa.gov)

**Administrative Record and Information Repository**

Required by CERCLA, a project Administrative Record is the collection of documents that forms the basis for selecting a response action at an environmental restoration site.

CERCLA also requires that information developed, received, or published related to response actions be available for public inspection and copying at an Information Repository at or near the sites.

The Administrative Record and Information Repository for the P4 mine sites are available for public review at the following locations:

Soda Springs Library  
 149 South Main Street  
 Soda Springs, ID 83276

Shoshone-Bannock Tribes Library  
 Tribal Business Center  
 HRDC Building  
 Pima Drive and Bannock Ave.  
 Fort Hall, ID 83203

EPA Region 10 Office  
 1435 North Orchard Street  
 Boise, ID 83706

IDEQ Pocatello Regional Office  
 444 Hospital Way #300  
 Pocatello, ID 83201

