# INTERIM AMENDMENT TO THE

# RECORD OF DECISION FOR THE

# EMF SUPERFUND SITE

# SIMPLOT PLANT OPERABLE UNIT

# POCATELLO, IDAHO

## PREPARED BY:

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
## REGION 10
## SEATTLE, WA

## JANUARY 2010

# DECLARATION FOR THE AMENDMENT TO THE RECORD OF DECISION

## SITE NAME AND LOCATION

Eastern Michaud Flats Superfund Site
Simplot Plant Operable Unit
Pocatello, Idaho
EPA ID# IDD984666610

## STATEMENT OF BASIS AND PURPOSE OF AMENDMENT

This decision document presents the selected interim amended remedy for the Simplot Plant Operable Unit (Simplot OU) of the Eastern Michaud Flats (EMF) Superfund Site located in Pocatello, Idaho. The Simplot OU remedy was selected in 1998 by the United States Environmental Protection Agency (EPA) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 USC §§ 9601 *et seq.* (CERCLA), and the National Contingency Plan , 40 CFR Part 300 (NCP) and was documented in the Record of Decision (ROD) at that time. Subsequent to the ROD, EPA determined that a ROD Amendment would be required to address additional concerns associated with phosphorus and other contaminants within the Simplot OU. Because the Simplot Don Plant is an operating facility and is expected to remain so for the foreseeable future, and because additional evaluation of remedial actions are expected at the time of plant closure, this is an Interim ROD Amendment that selects an interim action and is not a final decision for the Simplot OU. The interim amended remedy has also been selected in accordance with CERCLA and the NCP. The remedy and selected interim amended remedy decisions are based on the Administrative Record for the Simplot OU.

Additionally, the State of Idaho has entered into a Voluntary Consent Order/Compliance Agreement (VCO) between the Idaho Department of Environmental Quality and the J.R. Simplot Company signed April 11, 2008 to address phosphorus impacts to the Portneuf River by Don Plant operations. It is expected that the work under the Interim ROD Amendment and the VCO will be coordinated as appropriate.

## ASSESSMENT OF THE SUBSITE

In accordance with Section 106 of CERCLA (42 U.S.C. § 9606), the interim amended remedy selected in this Interim ROD Amendment is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances, pollutants, and/or contaminants into the environment from the Simplot OU.

## DESCRIPTION OF THE AMENDED REMEDY

The 1998 selected remedy for the Simplot OU addresses metals, radionuclides, and other contaminants of concern (COCs) identified in soils, fill, and groundwater at the OU. The interim amended remedy will add the hazardous substance phosphoric acid as another COC to the 1998 ROD, and require additional actions to quantify and prevent the migration of COCs above

Maximum Contaminant Levels (MCLs) or Risk Based Concentrations (RBCs) into the Off-Plant area, including the Portneuf River. The interim amended remedy will also assist in achieving the long-term objective for the Simplot OU of meeting all RBCs or MCLs. The hazardous substance phosphoric acid is measured as total phosphorus or dissolved orthophosphorus and will be referred to as phosphorus in this Interim ROD Amendment.

The major components for the interim amended remedy selected by EPA for the Simplot Plant OU include:

- Addition of phosphoric acid as a hazardous substance and Contaminant of Concern (COC) at the site;

- Description and quantification of ongoing and past releases of COCs at or near Simplot's phosphoric acid plant;

- Development and implementation of a verifiable plan to control the sources of phosphorus and other COC releases to the environment at or from the Simplot OU;

- Installation of a synthetic liner on the receiving surface of the gypsum stack to reduce the infiltration of contaminated water through the stack into groundwater;

- Subsequent to source control, development of protective numerical cleanup levels for COCs in groundwater migrating toward the Portneuf River consistent with the Total Daily Maximum Load (TMDL) established for the River, and identification of monitoring points in the River and groundwater;

- Continuation of the development, operation, maintenance and augmentation to the extent necessary, of the groundwater extraction system selected in the 1998 ROD to keep COCs levels at or below cleanup standards.

## STATUTORY DETERMINATIONS

Consistent with 40 CFR 300.430(a)(i)(B) and 40 CFR 300.430(f)(1)(ii)(C)(1), the remedial action selected by this Interim ROD Amendment is an interim measure and will neither be inconsistent with nor preclude implementation of the final remedy that will be identified in subsequent decision documents.

The measures selected in this remedy will provide an adequate level of protectiveness of human health and the environment; comply with federal and state requirements that are applicable or relevant and appropriate within the scope of the Selected Remedy; result in cost effective action; utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The selected interim amended remedy also satisfies the statutory preference for remedies that employ treatment as a principal element because the groundwater extraction system and subsequent reuse in the plant processes (with treatment for any excess) is a principal element of this remedy.

Because the interim amended remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within 5 years after initiation of the remedial action to ensure that the interim amended remedy is or will be protective of human health and the environment.

AUTHORIZING SIGNATURE

This amendment to the Record of Decision documents an interim remedy to address source control and groundwater contamination emanating from the Eastern Michaud Flats Superfund Site, Simplot OU.

EPA Region 10 approves the selected remedy as described in this ROD Amendment.

Lori Cohen

1/20/10

Lori Cohen, Acting Director
Office of Environmental Cleanup

Date

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## 1.0 INTRODUCTION TO THE SITE AND STATEMENT OF PURPOSE

The Eastern Michaud Flats (EMF) Superfund Site is located in Southeast Idaho, approximately 2.5 miles northwest of Pocatello, Idaho (Figure 1, Regional Setting). The Site includes two adjacent phosphate ore processing plants, the former FMC Corporation Elemental Phosphorus Plant (FMC) and the J.R. Simplot Company Don Plant (Simplot). Both began operating in the 1940s. The FMC plant ceased operations in December 2001 and was subsequently demolished. These plant areas occupy approximately 2,475 acres (approximately 1,450 for FMC, and 1,025 for Simplot). The Simplot Operable Unit (OU) is one of three OUs that constitute the EMF Superfund Site. The other two are the FMC OU, and the Off-Plant OU. Figure 2 presents land ownership around the FMC and Simplot plants. The EMF Superfund Site encompasses the areal extent of contamination at or from both plants including what the ROD described as the Off-Plant Subarea for portions of the Site beyond plant properties. The term "off-site" has been mistakenly used at times to describe this area in documents in the Administrative Record. This Interim ROD Amendment only addresses the Simplot OU.

In 1998, the Environmental Protection Agency (EPA), issued a Record of Decision (ROD) for clean up of the Site, including the Simplot OU. The ROD addressed several media including groundwater. This Interim ROD Amendment enhances remedial action for groundwater and surface water at the Simplot OU and consists of: 1) adding the hazardous substance phosphoric acid (measured as total phosphorus or dissolved orthophosphorus) as a Contaminant of Concern (COC) to the other COCs identified in the 1998 ROD; 2) describing and quantifying ongoing and past releases of COCs at or near Simplot's phosphoric acid plant; 3) developing and implementing a verifiable plan to control the sources of COC releases to the environment within the Simplot OU; 4) installing a synthetic liner on the receiving surface of the gypsum stack to reduce the infiltration of contaminated water through the stack into groundwater; 5) developing a protective numerical cleanup level for phosphorus in groundwater migrating toward the Portneuf River consistent with the Total Daily Maximum Load (TMDL) established for the River and identifying groundwater and surface water monitoring points within the vicinity of the River; and 6) continuing the development, operation, maintenance and augmentation to the extent necessary, of the groundwater extraction system selected in the ROD to keep COC levels at or

below cleanup standards. This Interim ROD Amendment selects an interim action for groundwater. A final remedial action will be selected in a future decision document.

The ROD and this Interim ROD Amendment present remedial actions selected in accordance with Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 USC §§ 9601 *et seq*. (CERCLA), and the National Contingency Plan , 40 CFR Part 300 (NCP).

This Interim ROD Amendment will become part of the Administrative Record file consistent with Section 300.825(a)(2) of the NCP. The Administrative Record contains the information on which selection of the remedial action was based and is available for review at the following locations:

**Idaho State University Library**
Government Documents
850 South 9th Avenue
Pocatello, Idaho 83209
(208) 282-3152

**Shoshone-Bannock Library**
Tribal Business Center
Pima Drive and Bannock Avenue
Fort Hall, Idaho 83203
(208) 478-3882

**EPA Region 10 Superfund Records Center**
1200 Sixth Avenue, Suite 900, ECL-076 (7th Floor)
Seattle, WA 98101
(206) 553-4494

## 2.0 HISTORY, CONTAMINATION, AND SELECTED REMEDY

### 2.1 SIMPLOT OU

The Simplot OU is defined as those properties and plant facilities owned by the J.R. Simplot Company. The main plant area is shown in detail in Figure 3. The Don Plant area is the portion located to the south of the Union Pacific Railroad tracks which run parallel to Highway 30. The Don Plant began operating in the late 1940s and the operations area includes all ore processing,

byproduct and product handling, and byproduct and waste storage facilities. The northern Simplot properties are all contiguous property owned by Simplot to the north of the Don Plant northern fence line. The northern Simplot properties include ponds used to store and discharge various wastewater streams and storm water from the Don Plant to a permitted land application operation. The Portneuf River flows through the northeastern portion of the Simplot OU, but the ROD included the River in its entirety in the Off-Plant OU. Remedial action within the Simplot OU to address Simplot sources to groundwater and the Portneuf River are Simplot OU remedies, not Off-Plant OU remedies. The Simplot OU is not located within the Fort Hall Indian Reservation boundary. However, the Portneuf River flows back onto the Fort Hall Indian Reservation just north of the Simplot Don Plant. The river runs through an area of the Reservation known as "the Bottoms" where a majority of Shoshone-Bannock traditional and ceremonial activities occur, including fishing and gathering of native plants. In addition, some tribal members rely on fish from the river as a food source.

The Simplot plant processes phosphate rock into phosphoric acid and other fertilizers. The phosphate rock is ground and slurried at the mine and transported to the plant by pipeline where it is reacted with sulfuric acid to produce phosphoric acid and by-product gypsum (calcium sulfate). The phosphoric acid is used to make various grades of fertilizer or is concentrated to produce stronger acids which are feed stocks to subsequent production lines. Baghouses, scrubbers, and other systems are used to control air emissions. The gypsum is slurried with water and transported to an unlined gypsum stack south of the processing facilities. Other process effluent waters are collected in a series of lined ponds. The water is nutrient rich and sold for irrigation/fertilization through a permitted land application operation.

## 2.2 SUSPECTED CAUSES OF CONTAMINATION AND CONTAMINATED MEDIA

As part of ongoing operations since the 1940's, the Don Plant has released COCs to soil and groundwater via the phosphogypsum that is slurried, pumped, and deposited onto the pile to the south of the plant known as the gypsum stack or "gypstack." Some of the process water utilized to convey the gyp-slurry percolates down through the gypstack to groundwater. Historic incidental releases within the main plant operating area have also contributed to the mass loading of COCs to groundwater. These sources of contamination release significant quantities of

phosphorus to groundwater. The pH of groundwater samples from beneath the main plant operating area has been less than 2, and also exceeded the toxicity characteristic for certain metals. Groundwater beneath the gypstack and main plant operating area flows to the north and mixes with regional groundwater flow coming from the south and east resulting in a dilution of COCs in groundwater. Releases of COCs from the plant area and from the gypstack contribute the majority of the phosphorus mass loading to the groundwater and Portneuf River in the vicinity of the EMF site. The contaminated groundwater eventually discharges to a series of springs along the banks of the Portneuf River and as underflow through the river bed.

## 2.3 SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The Site has been the subject of many historical investigations. Appendix A of the 1996 RI Report and March 2009 Proposed Plan provide a summary of the previous investigations in the vicinity. 1973 IDEQ groundwater sampling revealed levels of arsenic, lead, and cadmium above the Primary Federal Drinking Water Standards. A 1977 U.S. Geologic Survey Environmental Impact Statement related to the development of phosphate resources in southeast Idaho detected elevated levels of phosphate in Batiste Spring attributed to Site sources. Subsequent studies documented elevated levels of mercury, arsenic, and cadmium in Batiste Spring as well as phosphorus. A 1987 EPA inspection of both plants concluded that underlying water-bearing intervals contained metals at concentrations exceeding Maximum Contaminant Levels (MCLs). In pond, waste, and soil samples, EPA also found elevated levels of cadmium, chloride, total chromium, copper, fluoride, and selenium. The RI Report remains the most comprehensive study to date of the Site. More than 1,500 groundwater samples were taken which confirmed that COCs were released at the Site to the groundwater and were migrating to the Portneuf River.

## 2.4 1998 RECORD OF DECISION

The 1998 ROD (ROD) identified several COCs in soil, groundwater, and air (see attached Table 1, which is modified from Table 36 from the 1998 EMF ROD). Selected remedial actions for soil and air releases are not changed by this Interim ROD Amendment. The ROD also determined that COCs released from Site sources to groundwater were discharging to surface water in a series of springs and river underflow to the north. Arsenic was found in groundwater in excess of the Maximum Contaminant Level (MCL) of the Safe Drinking Water Act, and the

discharge point at the springs was identified in the ROD as the point of compliance. The ROD recognized that other COCs in groundwater also required remediation but concluded that by capturing sufficient quantities of arsenic to meet the MCL at the point of compliance, sufficient quantities of other COCs, including phosphorus, which were co-located in the groundwater, would be captured. The selected remedy for the Simplot OU included design and installation of a groundwater extraction system combined with source control (improvements to the gypsum stack decant system) to reduce the levels of COCs in groundwater to achieve MCLs or Risk Based Concentrations (RBCs) with a performance standard of the MCL for arsenic at the discharge point at the springs. The ROD also included the use of institutional controls to prevent the use of affected groundwater for drinking. Operation and maintenance of the extraction system would continue until COCs in the groundwater throughout the Simplot OU are reduced below the MCLs or RBCs, or until EPA determines that continued groundwater extraction would not be expected to result in additional meaningful practicable reduction in contaminant concentrations within the Simplot OU.

## 2.5 REMEDIAL DESIGN

In 2002, following entry of a remedial design/remedial action Consent Decree in Idaho District Court, Simplot initiated the design for the groundwater extraction system selected in the ROD. Simplot had installed two extraction wells in the late 1990s and had begun groundwater extraction voluntarily at that time. In 2004, the first in a series of groundwater extraction wells to address the ROD requirements were installed and began pumping. The approach for design and operation of the groundwater extraction system, most specifically to arrive at a necessary minimum pumping extraction rate to meet the MCL for arsenic at the points of compliance, has been and continues to be iterative. Toward this end, a variety of ongoing quarterly, semiannual, annual, and special event groundwater monitoring campaigns have been conducted to evaluate how COC and other indicator constituent concentrations are changing with time.

The State of Idaho has entered into a Voluntary Consent Order/Compliance Agreement (VCO) between the Idaho Department of Environmental Quality and the J.R. Simplot Company signed April 11, 2008 to address phosphorus impacts to the Portneuf River generated by Don Plant

operations. It is expected that the work under the Interim ROD Amendment and the VCO will be coordinated as appropriate.

## 3.0 BASIS FOR THE DOCUMENT

In the course of developing and implementing the ROD described above to date, additional studies related to the Portneuf River Total Daily Maximum Load (TMDL) have been performed, and data and other information have been collected that demonstrate that COC releases of greater significance than EPA had recognized in the 1998 ROD are ongoing at the facility.

There are two primary sources of phosphorus loading to groundwater in the Simplot OU. First, the migration of process waters percolating through the gypsum stack has contributed to the phosphorus loading to groundwater. Second, releases within the main plant area have contributed to phosphorus loading to groundwater. These releases are contributing to the phosphorus loading to the Portneuf River to a degree that EPA had not appreciated when it issued the ROD.

In order to reduce phosphorus and other COC concentrations in groundwater and surface water, additional actions must be taken. Therefore, a fundamental change is being made to the remedy selected in the ROD to reduce phosphorus loading to groundwater and prevent the migration of COCs above MCLs or RBCs into the Portneuf River through source control measures.

### 3.1 PHOSPHORUS

In 1999, the Idaho Department of Environmental Quality (IDEQ) prepared a Water Body Assessment and TMDL for phosphorus (measured as total phosphorus or dissolved orthophosphorus) for the Portneuf River. The TMDL, and Water Body Assessment and TMDL, concluded that the springs north of source areas of the EMF Site (non-point sources) were responsible for the largest mass loading of phosphorus to the Portneuf River, approximately 75 to 80 percent of total observed loading levels from all sources. In 2003, the Portneuf River TMDL Implementation Plan identified mass reduction goals for identified contributing sources, including an approximately 95% reduction for EMF Site sources. In the Plan, including written contributions from identified sources, Simplot described meeting its first phase TMDL goal (i.e.,

reduction of approximately 80% of its loading) primarily by implementing the selected remedy in the ROD. Although the selected remedy was designed primarily to capture arsenic, co-located phosphorus in the groundwater was anticipated to also be captured in what EPA and Simplot believed would be sufficient quantities. Phosphorus in any of its forms was therefore not identified as a COC in the ROD with a specific performance standard. Subsequently it has become clear that the removal or containment of sufficient quantities of phosphorus loading from Simplot sources could not be accomplished by achieving the MCL for arsenic at the points of compliance as the ROD had concluded. Further, because of the complex source characteristics and geology and hydrogeology, as identified by the phased implementation of the extraction system, it has been concluded that it may not be technically feasible to contain groundwater to achieve phosphorus targets by extraction alone.

EPA has therefore determined that augmentation of the selected remedy utilizing additional actions is necessary to meet the phosphorus mass reduction goals and target concentration of 0.075 mg/L phosphorus defined in the TMDL process to adequately address risks to aquatic receptors in the Portneuf River posed by elevated phosphorus levels that were not adequately addressed by the selected remedy in the ROD.

## 3.2 SUMMARY OF SITE RISKS

Although several COCs have been detected in groundwater beneath the Simplot OU, meeting MCLs and RBCs for arsenic and phosphorus (measured as total phosphorus or dissolved orthophosphorus) in groundwater at their respective points of compliance will sufficiently reduce or eliminate risks to human health and the environment from all other COCs. Risks to human health and the environment due to COCs in other media (e.g., soil or air) are not part of the action addressed in this ROD Amendment.

Human health risks posed by arsenic in groundwater are primarily associated with ingestion of drinking water. Although at high enough concentrations phosphorus can also present risks to human health, risks posed by phosphorus are primarily associated with excessive phosphorus loading of surface water resulting in significant alteration or loss of ecological habitat and the decline of various species. The concentration of arsenic in groundwater in the Don Plant portion

of the Simplot OU was as high as 814 µg/L (Well 340) during the 3rd quarter of 2008 (the MCL is 10 µg/L). After dilution and attenuation in groundwater, arsenic levels in water discharging near the Portneuf River have recently been as high as 37µg/L (reported in 2007) measured at Batiste Springs. The concentration of phosphorus in groundwater in the main plant area was as high as 5,200 mg/L (Well 340) during the 3rd quarter of 2008. After dilution and attenuation in groundwater, phosphorus levels in water discharging near the Portneuf River have recently been as high as 29 mg/L (reported in 2007) measured at Batiste Springs. As part of the investigation of releases in the phosphoric acid plant area in 2009, levels of phosphorus in excess of 10,000 mg/L and a pH < 2 have been measured in groundwater in Well 419. Data collected from the Portneuf River shows a pH drop of approximately 1 between river mile 20 and 10. While there is no MCL or other regulatory standard for phosphorus in groundwater or surface water, the Portneuf River TMDL set a target total phosphorus criterion of 0.075 mg/L.

## 3.3 RISK AND IMPACTS ASSOCIATED WITH HIGH LEVELS OF PHOSPHORUS IN GROUNDWATER

Historic releases of acidic processing liquids from the site provide the source of phosphorus in the unsaturated and saturated zone and result in a significant reduction of natural pH conditions. Elevated concentrations of total nickel, total chromium, total cadmium, total and dissolved iron, total phosphorus, total thallium, total uranium, total vanadium, total zinc, gross alpha, total antimony, total beryllium, total mercury, radium-226 and radium-228 are correlated with decreased pH. This occurs because these constituents tend to complex, sorb, or coprecipitate with hydrolyzed species or complexes with anions, including bicarbonate, sulfate, carbonate, chloride, fluoride and nitrate as groundwater pH increases. In addition, as groundwater pH decreases, the solubility of hydrous iron oxides or manganese oxide minerals increases and trace metals preferentially sorbed to hydrous oxide mineral surfaces will be released into the groundwater. The observed increase in iron concentration in groundwater in the Phosphoric Acid Plant (PAP) area as pH decreases is consistent with the expected dissolution of existing iron oxide minerals. As sources of acidic releases are controlled, the groundwater pH in the PAP area should return to ambient conditions (pH range of about 5.5 to 7), iron will precipitate out of solution as the hydrous iron oxide becomes less soluble, and metals will be removed from

solution by sorption to new iron oxide surfaces and coprecipitation with other mineral phases, including calcium-phosphate minerals.

### 3.4 GENERAL IMPACTS OF PHOSPHORUS ON RIVERS AND RESERVOIRS

Excessive levels of phosphorus in a river can lead to excess growth of aquatic plants, such as periphyton (algae growing on rock surfaces), rooted and non-rooted macrophytes, and phytoplankton. Increased growth of aquatic plants can result in changes to the ecological communities in the river, thereby altering available prey species for fish in the ecosystem. Phosphorus introduced to a river can be transported in the water column in both soluble and particulate forms. Soluble phosphorus is utilized for growth by floating and non-rooted macrophytes (e.g. epiphyton attached to rooted plants). Particulate phosphorus can settle to the river bed and support the growth of rooted plants.

In addition to creating a nuisance for recreational use of the river, the increased photosynthesis from the plant community can have a detrimental effect on water quality, particularly diel pH and dissolved oxygen (DO). This deterioration of water quality in turn, can have a detrimental effect on fish and other aquatic life inhabiting the water, including reduced reproduction and growth of fish and invertebrates.

EPA's Environmental Monitoring and Assessment Program (EMAP) program has collected samples of water, fish, and macroinvertebrates from a large number of water bodies from arid regions of the western United States. Correlating the concentrations of phosphorus, fish, and macroinvertebrates densities provides empirical evidence that elevated phosphorus is an indirect stressor on aquatic life. The data demonstrate that waters with elevated phosphorus concentrations are substantially more likely to have impacted fish and macroinvertebrate communities.

### 3.5 SPECIFIC IMPACTS OBSERVED IN THE PORTNEUF RIVER

Phosphorus concentrations in the Portneuf River, downstream of the groundwater plume confluence, are over 10 times higher than the Portneuf River TMDL target. This To Be

Considered (TBC) value is an important indicator for the to-be-selected phosphorus cleanup standard.

The Portneuf River between Batiste Road and Siphon Road is a "gaining" stream, with very large influxes of groundwater entering the river from distinct springs and indistinct upwelling directly into the river channel. Groundwater affected by arsenic, phosphorus, and other COCs also enters the river in this stretch. The range of diel DO at points between Batiste road and Siphon Road is greater than upstream monitoring points. Downstream of Batiste Springs, the minimum daily DO concentration drops as much as 3 mg/L, and is routinely measured below the Idaho water quality standard of 6 mg/L in the early morning hours in late summer.

Downstream of Batiste Road, the macrophyte biomass increases by two orders of magnitude compared to areas immediately upstream of the Site, and this part of the river exhibits low macroinvertebrate diversity, consistent with water quality and habitat degradation associated with nutrients and other stressors.

Phosphorus levels in the Portneuf River are sufficient to contribute significantly to water quality and habitat degradation in the American Falls Reservoir due to excessive blue-green algal growth and associated reductions in hypolimnetic DO. Despite contributing less than 6% of the average annual inflow to American Falls Reservoir, the Portneuf River contributes approximately two-thirds of the total phosphorus load to the reservoir in an average flow year.

The phosphorus levels in the River have resulted in significant reduction in the natural DO levels of the river. Reduced DO results in substantial risk to ecological receptors. The substantial risks of these ecological effects, the morbidity, mortality, reproduction and growth effects on various biota in the River are the basis for the need to implement the selected interim remedy.

## 4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES

### 4.1 REMEDIAL ACTION OBJECTIVES

Implementation of the selected interim amended remedy is necessary to protect the ecological receptors in the Portneuf River (and American Falls Reservoir) and to address low pH conditions

in the PAP area associated with high levels of phosphorus. Further, Section 121(d)(2)(A)(ii) of CERCLA requires that remedial action selected by EPA "shall require a level or standard of control which at least attains MCLs and water quality criteria established under section 303 or 304 of the Clean Water Act (citations omitted), where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release." With respect to groundwater, if it is potable, i.e., suitable for drinking in its natural state, MCLs are relevant and appropriate.

The remedial action objectives (RAOs) for the Simplot OU from the 1998 ROD are as follows:

- Reduce the exposure to radon that would occur in future buildings constructed within the Plant Areas under a future industrial scenario.
- Prevent external exposure to radionuclides in soils at levels that pose estimated excess cancer risks greater than $1 \times 10^{-4}$, or site specific background levels where that is not practicable.
- Prevent ingestion or inhalation of soils containing Contaminants of Concern (COCs) at levels that pose estimated excess risks above $1 \times 10^{-4}$, a non cancer risk HQ of 1, or site specific background levels where that is not practicable.
- Reduce the release and migration of COCs to the ground water from facility sources that may result in concentrations in ground water exceeding risk-based concentration (RBCs) or chemical specific Applicable or Relevant and Appropriate Requirement (ARAR) specifically Maximum Contaminant Levels (MCLs).
- Prevent ingestion of ground water containing COCs having concentrations exceeding RBCs or MCLs (chemical specific ARARs). The RBCs shown on Table 36 correspond to a cancer risk of $10^{-6}$ or a Hazard Index of 1.
- Restore ground water that has been impacted by site sources to meet all RBCs or MCLs for the COCs.

This Interim ROD Amendment adds the following RAOs to those identified in the 1998 ROD:

- Reduce the release and migration of COCs to surface water from facility sources that result in concentrations exceeding risk-based concentrations (RBCs) or Applicable or

Relevant and Appropriate Requirements (ARARs), including ambient water quality criteria (AWQC) pursuant to the Clean Water Act.

- Achieve source control for the existing gypsum stack and phosphoric acid plant area within the shortest practicable timeframe.

In addition, this Interim ROD Amendment modifies the cleanup level for arsenic from 50 ug/L to 10 ug/L. This is based on the MCL change for arsenic since the 1998 ROD was issued. Human health and ecological RBC targets for phosphorus will be defined. Table 36 from the ROD identifies all other cleanup levels for the site.

## 4.2 DESCRIPTION OF THE SELECTED INTERIM AMENDED REMEDY

The selected interim amended remedy adopts the groundwater remedy selected in the ROD, adds phosphorus as a COC, and requires an assessment of ongoing and past releases of COCs at or near Simplot's phosphoric acid plant along with the development and implementation of a verifiable plan to control the sources of phosphorus and other COCs within the Simplot OU. It also requires the installation of a synthetic liner on the receiving surface of the gypsum stack to reduce water from infiltrating through the stack into groundwater, the development of a protective numerical cleanup level for phosphorus in groundwater consistent with the TMDL for the Portneuf River, the identification of monitoring points in and in the vicinity of the Portneuf River, and the continued development, operation, maintenance and augmentation to the extent necessary, of the groundwater extraction system to keep COC levels at or below cleanup standards.

The installation of the liner will be performed in three phases over a 5 year period. The installation of the enhanced groundwater extraction and monitoring system will be completed in a similar time frame. The estimated cost for implementing the selected amended remedy is $50.6M.

An enhanced groundwater extraction and monitoring design will be developed to address the addition of phosphorus as a COC. Figure 4 provides the conceptual basis for the enhanced groundwater and extraction design.

Simplot will develop for EPA approval, protective numerical phosphorus cleanup levels (RBCs) in groundwater and surface water by back-calculating based on meeting the TMDL for total phosphorus as it has been defined for the lower Portneuf River by IDEQ. Additional up gradient monitoring points, and/or targets, in surface water and groundwater will be similarly developed by back-calculating using the surface water RBC and will be based upon appropriate flow and transport assumptions to ensure consistency with the TMDL.

Attainment of the RAOs and associated RBCs will be measured through the monitoring of COC levels in groundwater and surface water. A groundwater and surface water monitoring plan will be developed and implemented to ensure RAOs are met.

## 5.0 COMPARISON OF SELECTED AMENDED REMEDY AND ALTERNATIVES

Nine criteria are used to evaluate the different remedial alternatives individually and against each other in order to select a remedy. This section compares the relative performance of the selected remedy in the 1998 ROD (as a no further action alternative), the selected amended remedy, and another remedial alternative that was not selected against the nine criteria. The selected remedy in the ROD and the selected amended remedy are fully described above. The alternative that was not selected included the installation of a greatly enhanced network of groundwater extraction wells to pump at a rate that would allow sufficient extraction of phosphorus (as well as arsenic) to meet cleanup standards at the points of compliance despite the current mass loading rate. Extracted contaminated groundwater would have to be used within the operating plant to the extent possible with the excess treated and then discharged to the Portneuf River pursuant to effluent limitations required by the Clean Water Act for point source discharges. EPA estimated the necessary extraction rate at approximately 6,500 gallons per minute (gpm), with a 1,500 gpm maximum capacity for reuse within the plant, leaving approximately 5,000 gpm for treatment and discharge. This would require a wastewater treatment plant with a 7.2 million gallon per day (MGD) capacity. It is uncertain whether the enhanced groundwater extraction could meet the RAOs due to the complex source characteristics and geology and hydrogeology, as well as the lack of source control measures.

The nine criteria are in three categories; threshold, primary balancing, and modifying criteria. Threshold criteria must be met by an alternative for it to be eligible for selection. Primary balancing criteria are used to weigh major trade-offs among eligible alternatives. Modifying criteria by their nature are fully considered after comment on the Proposed Plan.

| **EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES** |
|---|
| ***Threshold Criteria*** |
| **Overall Protectiveness of Human Health and the Environment** requires that an alternative adequately eliminates, reduces, or controls threats to public health, welfare or the environment through all the means it selects, including institutional controls. |
| **Compliance with ARARs** requires that an alternative meets all federal and stricter state environmental statutes and regulations, or that such requirements be formally waived. |
| ***Primary Balancing Criteria*** |
| **Long Term Effectiveness and Permanence** compares the capacity of alternatives to maintain protection of human health, welfare and the environment over time. |
| **Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment** compares the use of treatment to reduce the harmful effects, ability to move in the environment, and quantity of principal contaminants of concern. |
| **Short-term Effectiveness** compares the length of time needed to implement alternatives and the risks to workers, residents, and the environment during implementation. |
| **Implementability** compares the technical and administrative feasibility of implementing alternatives, including factors such as relative availability of goods and services. |
| **Cost** compares estimated capital and annual operation and maintenance (O&M) costs expressed as present-worth costs. Present-worth is the total cost of an alternative over time in terms of current value. Cost estimates are expected to be accurate within a range of +50 to -30 percent. |
| ***Modifying Criteria*** |
| **State/Support Agency Acceptance** compares state/support agency preferences/views on EPA's remedy selection and analyses as compiled in the Proposed Plan. |
| **Community Acceptance** compares affected community preferences/views as reflected in public comments on EPA's remedy selection and analyses as compiled in the Proposed Plan . |

## 5.1 THRESHOLD CRITERIA

1. Overall Protection of Human Health and Environment

The 1998 ROD selected protection of human ingestion of contaminated groundwater through a combination of institutional controls and a groundwater extraction system to contain arsenic and other COCs associated with releases from the gypstack. The ROD included an RAO, which was linked to plant shutdown, to restore ground water that has been impacted by site sources to meet all RBCs or MCLs for the COCs. While the selected remedy reduces contaminant loading to groundwater and the Portneuf River, phosphorus was presumed to be adequately addressed if arsenic is adequately controlled. It was therefore not expressly identified as a COC in the ROD. The remedy selected in 1998 does not adequately reduce phosphorus loading and is therefore not adequately protective of the environment. In addition, the remedy selected in 1998 did not address how the long-term objective of groundwater restoration would be achieved within a reasonable timeframe through the proposed remedy. This selected interim amended remedy meets this threshold criterion by enhancing the existing groundwater extraction system, preventing the migration of COCs to the river above acceptable levels, updating the arsenic MCL, implementing source control measures for the gypstack and other additional sources as necessary in the PAP area, and developing protective cleanup standards for phosphorus. The alternative that was not selected would similarly meet this criterion but solely by means of an enhanced groundwater extraction and an associated groundwater treatment plant. The selected interim amended remedy should be less energy intensive, have a smaller carbon footprint to implement, which makes it overall more protective of the environment as compared to he enhanced extraction alternative.

2. Compliance with ARARs

The ROD cleanup standard for arsenic was the MCL, which was 50 ug/L in 1998. Due to the subsequent reduction in the arsenic MCL for potable water from 50 ug/L to 10 ug/L in January of 2006, the selected interim amended remedy adopts the new MCL as the groundwater cleanup

level for arsenic. By meeting the new MCL the selected interim amended remedy ensures that ARARs for other COCs in groundwater and surface water will also be met. The alternative that was not selected (enhanced extraction) would not achieve MCLs upgradient of the extraction zone and would not align with the long-term objective for groundwater at all Superfund sites, which is to ultimately restore groundwater impacted by site sources to meet all RBCs or MCLs for all COCs.

## 5.2 BALANCING CRITERIA

3. Long-Term Effectiveness and Permanence

Based on the information obtained during the implementation of the ROD it was determined that the 1998 remedy would not provide long-term effectiveness and permanence because it did not adequately consider mass loading of phosphorus from the Simplot OU. The selected interim amended remedy will provide long-term effectiveness for groundwater and surface water through source control and groundwater extraction which should be inversely proportional to one another- the more source control measures reduce phosphorus loading, the less extraction will be necessary, and vice versa. Furthermore the selected interim amended remedy provides a greater degree of certainty by removing or addressing source material before it enters the groundwater. The alternative not selected (enhanced extraction) may perform similarly except for the greater degree of certainty provided by source control.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment

The toxicity, mobility, and volume of the COCs in groundwater will be reduced to a far greater extent by the selected interim amended remedy than by either of the other considered alternatives. The selected interim amended remedy's source control components will substantially reduce future phosphorus loading, and resulting mobility and toxicity of COCs in groundwater and surface water. Mass loading of the Portneuf River would be similarly reduced by the alternative not selected (enhanced extraction).

5. Short-Term Effectiveness

Each of the alternatives provides a high level short-term effectiveness. In each case risks would be minimized by following proper precautions. For construction workers, proper protective equipment, decontamination procedures, and Occupational Safety and Health Administration safety standards would be employed and/or met. Risks to the community would be reduced by limiting access to construction areas, equipment, and treatment facilities if any (the Don Plant is an operating industrial facility and community access is already controlled), along with dust suppression and monitoring.

6. Implementability

The selected interim amended remedy would be easiest to implement. The technology, material, and labor associated with lining the gypsum stack, source control actions in the plant area, and expansion of the groundwater extraction system (if needed) are readily available. The design, construction, and operation of the alternative not selected (a 7.2 MGD wastewater treatment plant for phosphorus/orthophosphate) may have been significantly challenging. Most treatment technologies are designed to remove low levels of phosphorus (<10 mg/L) from wastewater. A pilot study would likely be required to confirm the effectiveness of alternative designs for much higher levels of phosphorus removal from extracted water.

7. Costs

The capital, O&M, and net present value costs for the remedies considered are provided in the table below. Costs to implement the ROD have been adjusted for inflation as compared to those reported in the ROD. Costs for all alternatives assume a 15 year operating period.

**Capital, O&M, and Net Present Value for the Original and Amended Selected Remedy**

| Alternative | Meet RAOs? (Y/N) | Time to Implement (Years) | Capital Costs ($) | Operation and Maintenance Costs ($/yr) | Net Present Value ($) |
|---|---|---|---|---|---|
| ROD | N | 15 | 2,900,000 | 328,000 | 5,900,000 |
| Alternative Not Selected | Y | 15 | 16,000,000 | 23,671,000 | 231,624,000 |
| Selected Interim Amended Remedy | Y | 15 | 48,000,000 | 247,000 | 50,571,000 |

The capital costs include all costs for equipment purchases and installation, site improvements, utility connections, contractor fees, engineering design fees, permitting fees, and sales tax. O&M costs include expenses for labor, energy, disposable supplies, repairs, routine maintenance, and monitoring costs. Net present value is calculated from present capital and annual O&M, costs based on the expected project duration of 15 years and a future interest rate of 7%.

The total cost for installation of the liner has been estimated based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

## 5.3 MODIFYING CRITERIA

8. State and Tribal Acceptance

EPA sought letters of concurrence from the state of Idaho and the Shoshone Bannock Tribes on the amended selected remedy. The state response from IDEQ Director Toni Hardersty, dated January 19, 2010, and the tribal response from Shoshone Bannock Environmental Waste Program Director, Arnoild Appleney, dated January 15, 2010, are attachments to this IRODA.

9. Community Acceptance

Community acceptance was evaluated after the public comment period for the Proposed Plan. The input from public meetings and written comments were carefully reviewed and a Responsiveness Summary is presented in Section 9 below. The selected interim amended remedy has not changed materially from the Preferred Alternative in the Proposed Plan.

## 6.0 STATE AND TRIBAL COMMENTS

IDEQ has reviewed this Interim ROD Amendment and supports its conclusions. Comments from the Shoshone Bannock Tribes and EPA responses are included in the Responsiveness Summary.

## 7.0 STATUTORY DETERMINATIONS

Pursuant to Section 121 of CERCLA and the NCP, the lead Agency must select remedies that are protective of human health and the environment, comply with ARARs, are cost effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the selected remedy meets these statutory requirements.

### 7.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected interim amended remedy, through source control and groundwater extraction, will protect human health and the environment. The unacceptable risks associated with COCs, including phosphorus, in groundwater will be reduced to acceptable levels by preventing COC releases into groundwater and the capture and use of COC-contaminated groundwater for process water as a part of plant operations. Mass loading of COCs to the Portneuf River will be substantially reduced and COC concentrations in surface and groundwater will meet RBCs and MCLs.

## 7.2 COMPLIANCE WITH ARARS

The selected interim amended remedy will comply with all the ARARs:

- **40 CFR Part 141, Safe Drinking Water Act.** MCLs and non-zero MCLGs are relevant and appropriate requirements for the groundwater and surface water at the site.
- **Clean Water Act Water Quality Criteria 40 CFR Part 131.** Fresh water federal ambient water quality criteria (AWQC) are relevant and appropriate for surface water such as springs and the Portneuf River to the extent that they are part of the Site.
- **Idaho Groundwater Standards (IDAPA Sec. 58.01.11.001-999).** To the extent these standards are stricter than federal standards (MCLs) they are applicable.
- **Clean Water Act National Pollutant Discharge Elimination System 40 CFR Part 122, 124, 136.** This regulation requires best management practices and other efforts to minimize pollutants in discharges to surface water. These regulations would be applicable if extracted groundwater were discharged to surface water.
- **Idaho Rules and Standards for Hazardous Waste (IDAPA Sec. 58.01.05).** These regulations adopted Resource Conservation and Recovery Act 42 USC 6901-6987 40 CFR 261-264; 268 and are applicable or relevant and appropriate.
- **Idaho Surface Water Quality Standards (IDAPA Section 58.01.02).** To the extent these standards related to surface water are stricter than federal standards they are applicable. The State surface water quality standard for cadmium (IDAPA 58.01.02.210.01) is more stringent than federal standards.

In addition to the ARARs identified above the Portneuf River TMDL: Waterbody Assessment and Total Maximum Daily Load and Addendum, Pocatello Regional Office, Idaho Department of Environmental Quality Pocatello 2001 has been identified as a to be considered (TBC) for the selected remedy. The TMDL for the Portneuf River developed loading limits for constituents discharged to the Portneuf River which will be considered in developing the cleanup level for phosphorus.

## 7.3 COST EFFECTIVENESS

The selected interim amended remedy is cost effective. A remedy shall be cost effective if costs are proportional to its overall effectiveness. NCP §300.430(f)(1)(ii)(D). The estimated net present value of the amended selected remedy is $50,600,000, less than half of EPA's estimate for the alternative not selected, the only other adequately protective remedy considered.

## 7.4 UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT

The selected interim amended remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Simplot OU. It provides the best balance of trade-offs in terms of the five balancing criteria while also considering the statutory preference for treatment as a principal element and bias against off-site treatment and disposal. It also offers superior long-term effectiveness and an acceptable reduction of volume and mobility through treatment. Implementation of source control and groundwater extraction should reduce the contamination levels in groundwater to action levels protective of surface water within approximately 15 years. Groundwater monitoring is currently being performed and will continue to be performed to assess the performance of the extraction system and source actions. Groundwater data will be evaluated annually to assure that the expected reduction in release and migration of site COCs to the groundwater from facility sources is occurring. The intent of ongoing groundwater and surface water monitoring is to ensure that RAOs are met.

## 7.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

Principal threats at the Simplot OU consist of the contaminated groundwater (some with a pH less than 2), phosphoric acid releases, and source materials present at the OU. Source control and groundwater extraction will reduce the contamination levels in groundwater and surface water to remediation goals in approximately 15 years. The contaminated groundwater will be reused to the extent possible within the plant process, with treatment for any excess. The statutory preference for remedies that employ treatment as a principal element is satisfied by the selected amended remedy as the groundwater extraction system and subsequent reuse in plant processes (with treatment for any excess) is a principal element of this remedy.

## 7.6 FIVE-YEAR REVIEW REQUIREMENT

Because the selected interim amended remedy will result in hazardous substances, pollutants, or contaminants remaining on the Site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the remedial action to ensure the remedy is and will be protective of human health and the environment. The five-year review process will begin at the time of issuance of this Amendment. The first such review will be completed by May 2014.

## 8.0 PUBLIC PARTICIPATION COMPLIANCE

The Proposed Plan for this ROD Amendment was issued for public comment in accordance with Section 117 of CERCLA, as amended, and Section 300.435(c)(2)(ii) of the NCP. The Proposed Plan was made available on March 13, 2009 in the Administrative Record file at the following locations:

**Idaho State University Library**
Government Documents
850 South 9th Avenue
Pocatello, Idaho 83209
(208) 282-3152

**Shoshone-Bannock Library**
Tribal Business Center
Pima Drive and Bannock Avenue
Fort Hall, Idaho 83203
(208) 478-3882

**EPA Region 10 Superfund Records Center**
1200 Sixth Avenue, Suite 900, ECL-076 (7th Floor)
Seattle, WA 98101
(206) 553-4494

A public notice was published in the following publications announcing the commencement and length of the public comment period and the availability of the Administrative Record file for public review.

- March 8, Idaho State Journal – Pocatello
- March 9, Blackfoot Morning News
- March11, Power County Press
- March 12, ShoBan News

In addition, notices were posted in public locations around the Fort Hall Reservation on March16, 2009.

Two public meetings were held to present details related to the Proposed Plan and to solicit public comments. The first public meeting was held on March 17, 2009 at Pocatello City Hall. The second was held on March 18, 2009 at the Fort Hall Business Council. A public comment period was held from March 16 through May 15, 2009. The attached Responsiveness Summary addresses comments received on the Proposed Plan during the public comment period.

## 9.0 RESPONSIVENESS SUMMARY

EPA with concurrence from IDEQ made a preliminary selection of the preferred remedial alternative in the Proposed Plan. The preferred remedial alternative did not differ from the selected interim amended remedy in this Interim ROD Amendment. In accordance with 40 CFR §300.45(c)(2)(ii)(D), the opportunity for a public meeting was provided during the public comment period. The public meeting was advertised in over 650 fact sheets to individuals and other interested parties as well as in the Idaho State Journal. During the public comment period, 18 individuals submitted more than 52 comments, and testimony was heard from 13 people at the public meetings held in Pocatello and Fort Hall. These comments and testimony, and EPA's response to the comments and testimony, is included in following section.

### Response to Comments Received During the Public Comment Period

1. Simplot has a cleanup agreement in place with IDEQ. Why is EPA involved in this process?

   **Response:** As explained in the recent Proposed Plan and this Interim ROD Amendment, EPA significantly underestimated Simplot's phosphorus releases, mistakenly believed

they were essentially only from the gypstack, and mistakenly concluded in the ROD that capturing arsenic as specified would adequately address phosphorus releases. In the 2002 Consent Decree (CD) with Simplot for the implementation of the ROD, phosphorus releases from the facility from sources other than the gypstack were not covered (Paragraph 84(g)). Superfund sites select remedies that necessarily meet two threshold criteria; protectiveness of human health and the environment, and meet ARARs (federal and any stricter state environmental laws and regulations). This Interim ROD Amendment is premised on EPA's conclusion that the selected remedy in the ROD cannot adequately meet the protectiveness criterion. Where a ROD fails to meet a criteria of CERCLA, it is appropriate to amend the ROD and to address the deficiency in a legal mechanism expressly authorized by CERCLA. EPA anticipates entering an Amendment to the Simplot OU CERCLA CD in Idaho District Court requiring performance of the amended selected remedy in accordance with the terms and conditions of the CD as amended under EPA oversight consistent with the rest of the Simplot OU remedy.

2. How does EPA know that groundwater, aquifer, and spring contamination has not spread further than the area sampled?

   **Response:** EPA oversees quarterly data collection from a network of groundwater monitoring wells which continues to be expanded or refined as necessary. It has revealed that the general flow of groundwater is to the northeast from the facilities until it ultimately discharges to the Portneuf River. Should sampling results indicate contamination has migrated beyond the existing sampling area, new monitoring wells or surface water sampling locations will be added.

3. What treatment will be used for the contaminated groundwater that will be extracted under the proposed remedy for the site?

   **Response:** EPA projects that source controls measures in the amended selected remedy should allow Simplot to recycle the extracted groundwater back into its plant processes. Best estimates are that Simplot can reuse up to 1,500 gpm. If Simplot ultimately has to extract more water than it can use, it will have to treat it in a manner approved by EPA.

4. Why is EPA only seeking to reduce phosphorus contamination to the river from Simplot rather than other sources such as FMC residuals and runoff from lawn chemicals?

   **Response:** The CERCLA process is limited to the EMF Superfund Site. It is therefore addressing Site sources of contributions to the Portneuf River but not contributions from other sources like Pocatello wastewater which is subject to Clean Water Act effluent permitting or local runoff issues the state oversees. The IDEQ Portneuf River Total Maximum Daily Load (TMDL) study has shown that the EMF Site is by far the largest contributor of phosphorus to the River, and EPA believes Simplot is a significantly larger contributor than FMC. EPA is evaluating phosphorus releases and remedial action for both the Simplot and FMC OUs.

5. Is the American Falls Reservoir contaminated? Is it safe to swim in the American Falls Reservoir?

   **Response:** The American Falls Reservoir is impacted by phosphorus releases from the Site. The Risk Assessment performed in 1996 as part of the remedial investigation/feasibility study (RI/FS) concluded that no significant risk would be incurred by swimming in the Reservoir. The extent of ecological effects in the Reservoir was not documented. See the IDEQ American Falls Reservoir TMDL. Note: Anyone swimming in open water in Idaho as a matter of course should regularly check for the latest information and updates on waterborne advisories through the Idaho Department of Health at http://healthandwelfare.idaho.gov/health/DiseasesConditions/WaterborneIllness/tabid/113/Default.aspx.

6. What has kept EPA from acting? Is there a way to expedite the process of cleanup?

   **Response**: Superfund site cleanups generally are expensive. As a result, EPA's relationship with responsible parties performing cleanups is usually, as here, consensual and cooperative but still adversarial. The RI/FS performed by Simplot and FMC in the 1990s under EPA oversight missed the significance and extent of phosphorus releases from the Site which the River TMDL process revealed. This Interim ROD Amendment both explains how EPA will address phosphorus releases from the Site, and gives EPA the authority under CERCLA to address them.

   As spelled out in the Simplot OU CD attachments as amended, the CERCLA cleanup process works through a series of specific plans or proposals submitted by responsible parties to EPA for approval. These submittals are reviewed by EPA and by IDEQ and other interested parties like the Shoshone Bannock Tribes. EPA and responsible parties, as well as other reviewers, often disagree over the content of the submittals, with potentially large costs riding on one approach as opposed to another. EPA uses this process to try to refine the best and most efficient alternatives. It can cause delay, especially when technical uncertainties or reasonable differences of opinion among technical experts of various parties arise. This Interim ROD Amendment is critical to moving the process forward.

7. Is it safe to eat fish, deer, and elk from the Portneuf River or the area? Is bioaccumulation of heavy metals a concern for individuals that eat these animals?

   **Response:** Fish-eating advisories are currently in place regarding fish from the Portneuf River due to mercury bioaccumulation in the fish. A statewide advisory has been issued for bass due to mercury contamination.

   - Women who are pregnant, planning to become pregnant, nursing and children under age 15 should not eat more than 2 meals a ***MONTH*** of Bass.
   - The general population (women not of child bearing age, those older than age 15) should not eat more than 1 meal a ***WEEK*** of Bass.

- All people ***SHOULD NOT*** eat any other fish during the month if you eat these amounts of Bass caught in Idaho.

In addition there is a trout advisory for the Portneuf River due to mercury bioaccumulation in fish.

- Pregnant women, women who are nursing or planning to become pregnant can safely eat up to 3 meals a month of all trout.
- Children under the age of 15 years can safely eat up to 3 meals a month of all trout.
- General public (people not in the first two groups) can safely eat up to 10 meals a month of all trout.

For more information, visit the Idaho Department of Health at http://www.idahohealth.org and search for "Fish Advisories" to stay informed on the most up to date information regarding fish-eating advisories for Idaho State and for the American Falls Reservoir.

After evaluating data related to mercury and the Portneuf River, it does not appear that significant amounts of mercury present in the fish, water, sediment, and soil are from the EMF Superfund Site.

To date, no known studies have been performed to specifically assess the quantity of heavy metals in deer and elk in the vicinity of Pocatello. Therefore it is unknown if ingesting meat from deer and elk pose a risk to human health. However, we are currently re-evaluating potential risks to wildlife and the environment in the area attributable to contamination from the Site. With the possible exception of fluoride, it does not appear that contaminant levels in surface soils outside of the plant boundaries pose a significant risk to the environment, which would include both deer and elk. EPA expects the results of the re-evaluation to be available to the public in late 2009.

8. Can people become ill or develop cancer from the contamination in the Portneuf River?

**Response:** The Risk Assessment performed in 1996 as part of the RI/FS indicated no significant risk to humans becoming ill or developing cancer due to contamination in the Portneuf River. In 2005, EPA completed a PA/SI on the Lower Portneuf River that assessed the Portneuf River for potential CERCLA response action apart from the EMF Site. The PA/SI concluded that there were not sufficient cancer or other risks to people or the environment to warrant proceeding further.

9. Artificial wetlands and microbiotechnologies have been used as a method to reduce contamination elsewhere. Has EPA considered these technologies for this site?

**Response:** Artificial wetlands and microbiotechnologies have not been considered as remedial actions for the EMF Superfund Site, and are not believed to be a promising technology at this stage of their development for the contaminated process water that is

placed on the gypsum stack, which infiltrates through the gypsum stack into the groundwater, or for source control.

10. Other technologies have been used to line landfills. Has EPA considered using single, composite, or double liners like those used in landfills to line the gypsum stack?

    **Response:** Various methods of lining the gypsum stack have been considered during the proposal phase. Liners like those used in landfills have been considered to line the gypsum stack. Gypsum settles differently than landfill refuse and requires additional design considerations that ensure the stability of the gypsum stack. The design will also allow for additional gypsum slurry to be placed on top of the stack as part of ongoing plant operations. Simplot has already begun designing the liner. This design will be reviewed by EPA, IDEQ and other reviewers under the Simplot OU CD as amended for EPA approval. IDEQ will also review the liner design under the State's VCO.

11. Can the gypsum be sold or used otherwise for profit?

    **Response:** Some gypsum can be used or otherwise sold for profit. However, Simplot to EPA's knowledge has been unable to identify a commercial use for the gypsum it produces. In many gypsum stacks, including the one managed by Simplot, Raduim-226, Radon-222, and other COCs commonly found in gypsum make it unsuitable for housing or road construction and many other uses. See 40 CFR 61.200-210 for more information regarding gypsum regulations and management.

12. What will happen to the gypsum stacks after Simplot ceases operations?

    **Response:** The gypsum stacks will be properly closed and managed. A closure plan will be developed by Simplot and will be reviewed and approved by EPA and IDEQ. The closure plan must include long term stabilization and monitoring.

13. Can the gypsum be relocated from the Simplot site entirely?

    **Response:** No. Relocating the entire gypsum stack would be cost prohibitive unless a commercially viable market for Simplot's gypsum is identified.

14. Is there a liner material that has a longer lifespan than HDPE?

    **Response:** High density polyethylene (HDPE) was selected as liner material in part due to its strength, suitability, and life span. Because the HDPE liner only needs to maintain its integrity during the operating life of the gypsum stack, it is expected to meet this design requirement. When the gypsum stack is closed, Simplot will cease placing gypsum slurry on the gypsum stack and the HDPE liner will no longer be needed as long as potential rainwater/storm water infiltration is properly managed, see response to comment 24 below. Should the liner fail prior to plant closure, Simplot may be required to repair the existing liner, install a new liner, or close the gypsum stack.

15. Is a 60 mil liner an adequately thick barrier to prevent water infiltration through the gypsum stack?

    **Response:** Yes. The 60 mil HDPE liner will be adequately thick to prevent water infiltration through the gypsum stack while the stack is in a state of dewatering.

16. What role will the Tribe play in the oversight of liner installation?

    **Response:** Tribal representatives will review Simplot submittals to EPA and have been and will continue to be invited to participate in meetings related to the liner and liner installation. Tribal representatives have in the past, and continue to provide valuable input in the CERCLA process. EPA anticipates participation of Tribal representatives during liner installation and post-installation review.

17. Projected Simplot operations are at least 50 years and the liner lifespan is projected to be at least 30 years. What is the long-term plan for managing the liner and gypsum stack past the liner lifespan?

    **Response:** The intent of the liner is to prevent water infiltration due to continued placement of gypsum slurry on the gypsum stack and during the period of gypsum dewatering. Once the liner is installed, the gypsum beneath the liner will dewater and compress. As gypsum slurry is placed on top of the liner, water will no longer percolate through the gypsum stack and will need to be removed and returned to the plant process through a decant water removal system. Although Simplot may remain in operation for 50 years or more, the existing gypsum stack has an expected operating life of less than 30 years after which time it will be closed. The HDPE liner will no longer be needed after plant closure. To continue operations beyond this time, a new gypsum stack, or perhaps some alternative technology developed in the future prior to closure of the current stack, would be required if the plant continues to operate similarly to the way it does at this time.

18. What is the contingency plan in case of liner rupture? What is the contingency plan in the event of an earthquake?

    **Response:** Contingencies for liner rupture and earthquakes are a necessary part of the liner design process which EPA will review and approve.

19. Will a liner be placed at the bottom of the new gypsum stack scheduled to be built on the Blackrock land?

    **Response:** To date, Simplot has not provided any formal plans for constructing a new gypsum stack. This Interim ROD Amendment does not address any new gypsum stack that Simplot may construct in the future.

20. Liners used on the FMC property have had leaks in the past. How will the integrity of the liner used for the gypsum stack be confirmed?

**Response:** Prior to installation a rigorous series of quality control and quality assurance measures will be used to ensure the integrity of the liner itself. Installation of the liner will be monitored closely to ensure that it adheres to the technical specifications and construction quality assurance plan.

21. Are there presently enough monitoring wells to accurately characterize the extent of contamination?

    **Response:** Yes, EPA believes there are currently enough monitoring wells to adequately characterize the extent of the contamination plumes at the EMF Superfund Site. Additional monitoring wells are currently proposed and will be installed to better characterize the flow of contaminants within the known area of contamination. The new and existing monitoring well network should enable EPA to better evaluate the effectiveness of the amended selected remedy.

22. What role will the Tribe play in monitoring river contamination along with Simplot and EPA?

    **Response:** See the response to comment 16 above. The Tribes will continue to have the right to review all Simplot submittals, and to review and comment and meet with EPA on every aspect of the cleanup process at the Site.

23. Can the Tribe provide input for the minimum standards that are determined by EPA?

    **Response:** Yes, along with input on every other part of the cleanup process.

24. How will surface runoff be controlled? What happens to surface water on the gypsum stack when it rains?

    **Response:** A lined perimeter containment dike and surface water control ditch will be provided around the entire perimeter of the lined gypsum stack. A perimeter ditch will receive and transfer decant water and rainfall runoff from the active gypsum stack. This water will be conveyed to a lined decant pond. Although the final decant pond design is not complete, the decant pond will have sufficient capacity to simultaneously accommodate runoff from significant rainfall, such as a 24-hour, 100-year storm event, concurrently with a multi-day plant shutdown.

25. Can liner installation be subsidized by the Obama Stimulus Plan rather than paid in full by Simplot?

    **Response:** No. Simplot has the financial responsibility to complete remedial actions associated with this Interim ROD Amendment. Government revenue is never used for superfund site cleanups where there are viable fully responsible parties for the cleanup.

26. Will there be job losses in the region due to the cost of Simplot installing this liner?

**Response:** Simplot has told EPA it intends to operate the Don Plant into the foreseeable future and is committed to making necessary substantial capital improvements for the protection of human health and the environment. EPA does not expect job losses in the region due any superfund cleanup costs, but Simplot is not a publicly traded corporation and its current and future business plans, and current or future financial health and stability, are not known to EPA. This sort of inquiry is best addressed to Simplot.

27. Rather than reducing costs, would EPA err on the side of caution and safety for the sake of human life?

**Response:** EPA is required under CERCLA to prioritize protection of human health and the environment in its decision making, and to consider cost. These at times competing values often raise difficult issues requiring best professional scientific judgment on which reasonable experts in good faith may differ. See the response to comment 6 above on the difficulties this raises. The ultimate question of the value of human life (or e.g., clean water) is one court and juries, and all branches of government including regulatory agencies, face everyday.

28. Why will installation of liners take 15 years to complete? Can EPA expedite the process?

**Response:** The projected timeline for liner installation of both the lower and upper gypsum stack is 5 years. After liner installation, contaminated water under the liner will continue to drain from the gypsum stack into groundwater over the next several years, at which point the gypsum stack will no longer contain enough moisture to drain. Placing the liner on the gypsum stack will prevent the infiltration of contaminated water that will continue to be placed on the gypsum stack. This water will be decanted off the gypsum stack and will report to the decant pond. The groundwater extraction system will collect the contaminated groundwater. Due to the size of the gypsum stack, the length of time required install the liner, and the amount of time required to drain the gypsum stack, EPA expects it will take up to 15 years to meet the remedial action objectives. See also the response to comment 6 above.

29. The current review process for a remedy is to re-evaluate it every 5 years. Can EPA re-evaluate this remedy more frequently?

**Response:** CERCLA requires EPA to re-evaluate all superfund sites at which hazardous substances or pollutants or contaminants are left on-site above cleanups standards at least every 5 years for protectiveness of human health and the environment. EPA continually reviews data and reports associated with the EMF Superfund Site as part of the ongoing process. The five-year review process was created to ensure at least five-year periodic reviews of sites after the remedial action phase has been completed if contaminants remain on-site at potentially harmful levels. This site has not reached the post-remedial action re-evaluation stage yet. However, if needed, EPA can evaluate the remedy more often or earlier than 5 years.

30. Does the current extraction system adequately reduce contaminants entering the Portneuf River?

    **Response:** The current groundwater extraction system is not adequate for reducing the levels of phosphorus in the Portneuf River. The existing groundwater extraction system was designed to remove arsenic and other COCs that were identified in the ROD, with the erroneous assumption that this would also adequately address phosphorus releases. With the addition of phosphorus as a COC in the Interim ROD Amendment, the remedy is being redesigned and expanded as necessary to reduce the levels of all COCs to meet the remedial action objectives.

31. If the aquifer and gypsum are already contaminated, how will a liner prevent further contamination to groundwater and Portneuf River.

    **Response:** Groundwater that is already contaminated will be collected by the groundwater extraction system that is being built. The liner will prevent additional contaminants from ongoing operations from migrating to groundwater.

32. What are the other alternatives? Why was this alternative chosen and can the public have an opportunity to comment on other alternatives?

    **Response:** Three alternatives were presented in the Proposed Plan. These include a no further action alternative, an enhanced groundwater extraction/groundwater treatment alternative without source control components, and the selected alternative, a combination of source control and enhanced groundwater extraction. These alternatives were presented in the Proposed Plan and it and the Interim ROD Amendment, specifically pages 15-20 explaining and applying the nine CERCLA remedy selection criteria, provide the rationale for the selected remedy.

33. Where is information regarding the Interim ROD Amendment and other alternatives located?

    **Response:** Updates and presentation material can be found online at http://yosemite.epa.gov/R10/cleanup.nsf/sites/emichaud

    In addition, the Administrative Record for the EMF Superfund Site contains a comprehensive inventory of data, studies, and reports related to the site, including the Proposed Plan and the Interim ROD Amendment. Copies of the Administrative Record can be found at the following locations:

    **Idaho State University Library**
    Government Documents
    850 South 9th Avenue
    Pocatello, Idaho 83209
    (208) 282-3152

**Shoshone-Bannock Library**
Tribal Business Center
Pima Drive and Bannock Avenue
Fort Hall, Idaho 83203
(208) 478-3882

**EPA Region 10 Superfund Records Center**
1200 Sixth Avenue, Suite 900, ECL-076 (7th Floor)
Seattle, WA 98101
(206) 553-4494

34. The risk assessment for the site did not address risks to tribal culture from contamination on tribal lands. These risks should be addressed due to the essential interconnectedness of the tribal community, its religions, and environment.

    **Response:** EPA acknowledges that the standard risk assessment process may not have included scenarios to evaluate risks to Tribal cultural and spiritual values. EPA requested that the Tribes provide information to support the development of these scenarios. Specifically, when the Tribes inquired about potential risks from tribal use of plants in the area for various tribal purposes, i.e., as medicines, herbs, drinks, in ceremonies or other tribal uses, EPA agreed to delay finalization of the risk assessment to attempt these evaluations and asked for specific information to identify specific plants and their specific uses, frequency of use, and exposure pathways (e.g., ingestion, inhalation, etc.) necessary for risk assessments. The Tribes ultimately declined to provide this information due to concerns about confidentiality of this information. EPA is not aware of any other potential Tribal scenario that could result in unacceptable risks to Tribal members.

35. Many comments were received supporting the addition of phosphorus as a contaminant of concern and the enhanced remedial action to reduce contaminant loading of the Portneuf River. One individual was highly critical of the Interim ROD Amendment and referred to the amended selected remedy as a "band-aid".

    **Response:** EPA appreciates all input, whether in support or opposition, and encourages everyone to provide comments. EPA will continue to assess the status of the EMF Superfund Site and take action, as needed, to protect human health and the environment.. The band-aid metaphor usually refers to just covering over a problem. Source control generally eliminates a problem at its source, and extraction is removal of a problem after it has migrated beyond its source. EPA believes both are much more than covering over. Time and monitoring after remedial action has been constructed, up to and including five year reviews, will tell whether the amended selected remedy has met remedial action objectives. If the amended selected remedy proves unsuccessful, EPA will assess further action.

36. Many comments were received regarding the ecological risk of contaminants in the Portneuf River and American Falls Reservoir. One individual discussed the reduction of

migratory birds using the American Falls Reservoir over the past five years. Other individuals were concerned about mercury and heavy metals contaminating fish and invertebrates in the River.

**Response:** The remedies proposed in the Interim ROD Amendment will decrease the amount of contaminants released to the Portneuf River from the EMF Superfund Site. In turn, this will reduce the mass of contaminants in the American Falls Reservoir. As levels of contaminants decrease, so will risks to human health and the environment. Generally, however mercury levels in the River and Reservoir are primarily from sources other than the Site. See response to comment 7 about the risks from fish and other wildlife consumption, response 5 on Reservoir risks, and responses 8, 27, 34 (tribal risks) and 36 on health risks more generally, as well as the EMF Risk Assessment in the Administrative Record.

37. EPA should consider re-opening the draft ROD to provide data and explore clean-up alternatives of other contaminants, including, but not limited to selenium since selenium levels exceed the IDEQ surface water standard in the Portneuf River.

**Response:** We are not aware of any exceedance of surface water standards for selenium in the Portneuf River. However, the 1998 ROD identified selenium in addition to other constituents as COCs. The Interim ROD Amendment simply adds phosphorus as a COC while the other constituents, including selenium, will remain COCs and will continue to be monitored by EPA.

38. Monitoring of surface water cannot be delegated to IDEQ due to budget cuts. 14 selenium-impaired streams segments have been identified by IDEQ in Nov 2008 in the Blackfoot Sub basin but a TMDL will be deferred until an unspecified time. Efforts to monitor the effects of selenium in the Portneuf River associated with Simplot OU must be performed by EPA's RODA.

**Response:** Simplot conducts regular quarterly groundwater and surface water monitoring that includes a wide variety of COCs as part of their regular testing. While not measured during every quarter or in every well, selenium is measured in groundwater with enough frequency to characterize the amount of selenium that migrates to surface water from the Simplot facility.

39. Fugitive dust emission from moved gypsum could cause re-entrainment of gypsum constituents downwind during gypsum stack lining construction. EPA should install particulate matter (PM) samplers down-wind of the gypsum stack during the construction projects to monitor fugitive dust from gypsum and earthen movement.

**Response:** Air and dust monitoring will be conducted during construction to ensure dust levels are managed adequately. These activities will be conducted in accordance with the Health and Safety Plan, the Quality Assurance Project Plan, and the Gypsum Stack Lining Construction Plan.

40. As extracted water is reused in the Simplot process and slurried to the top of the gypsum stack, are contaminants of concern becoming concentrated on top of the gypsum stack?

    **Response:** CERCLA does not regulate the treatment of extracted groundwater or Simplot's operating processes. It is possible when a constituent is present in a solution at high concentrations that saturation will occur and once soluble constituents will begin to precipitate. If COCs were to precipitate on top of the gypsum stack, the gypsum stack liner would prevent infiltration of contaminated water associated with the precipitates from percolating through the gypsum stack and into the groundwater.

41. The stability of the gypsum stack is of concern due to the varying compositions of gypsum layered throughout the stack. Operational changes have occurred in Simplot over the years which in turn change the concentrations of the components which make up the gypsum by-product. The components which make up gypsum on the lower half of the stack are different than the components which make up the upper half the gypsum stack. How will stack stability be ensured during construction and post-construction lining of the gypsum stack? How will stack stability be ensured as more gypsum is placed on top of the lined gypsum stack?

    **Response:** Simplot has hired an architectural/engineering firm with significant experience with phosphogypsum lining and expansion. The firm has generated a preliminary design that includes additional quality assurance and quality control measures as well as design elements which are specific to the composition and varying physical properties of the gypsum and specifically addresses stack stability for future gystack expansion. The design and construction plan was generated by a Registered Professional Engineer with experience on similar projects.

42. The 1998 Feasibility Study presents that Simplot stated a liner could not be used as a Remedial Action because of stresses and shear forces placed on liner due to addition of gypsum and heavy equipment. Why is this technology being considered now?

    **Response:** Simplot has hired an architectural/engineering firm with significant experience with placing liners on gypsum stacks. The firm has generated a preliminary design that includes additional quality assurance and quality control measures and design elements, which were not considered as part of the 1998 Feasibility Study. According to the design engineer, these elements will minimize the risk of liner failure. In the event the liner should fail, it may either be repaired to contain leakage or the gypsum stack will be closed.

43. EPA should amend the ROD by placing a contingency requirement that Simplot employ the pump and treat option if Alternative 3 fails to meet Remedial Action Objectives by 2016.

    **Response:** Simplot has installed and is expanding a groundwater extraction system as part of this Remedial Action. The design and implementation has been an iterative process. Since 2004 Simplot has continued to expand and operate the groundwater extraction system and will continue to do so until Remedial Action Objectives are attained.

44. EPA should require a combination of other protective measures to ensure that in the event of liner breakage other source controls would be engaged to prevent releases to the groundwater and Portneuf River.

    **Response:** Liner leak-detection methods are currently in the design process. Should liner breakage occur, the expanded pump and treat extraction system would extract contaminated groundwater during liner repair.

45. Statistical and graphical analyses presented in Interim ROD Amendment do not include data from 1970s nor is it inclusive of data from off-site groundwater regions. What are the plans to included long-term sampling data as well as off-site monitoring data?

    **Response:** Data is currently being collected and used to evaluate groundwater monitoring over the long-term to ensure that remedial action goals are being met. A comprehensive data set was not included in the Interim ROD Amendment or Proposed Plan because it was not necessary in order to present the need for remedial action. Simplot will continue to monitor ground and surface water on a quarterly basis. This information is available for review in the Administrative Record for the project.

46. Groundwater collected seems to exclude areas south and east of project boundary. Future investigation should clearly identify and report 3D nature of groundwater paths and monitoring.

    **Response:** Groundwater monitoring is not required south and east of the Simplot project boundary in order to identify the contaminants of concern from the Simplot plant or gypsum stack because groundwater does not flow east or south of the plant boundary. Monitoring locations east and south of Simplot are periodically sampled in order to determine what level of constituents are present in groundwater entering the Eastern Michaud Flats Superfund Site. Additionally, three dimensional groundwater paths are currently in the process of being defined by EPA and additional monitoring wells will be installed in order to better assess the remedial actions of the Interim ROD Amendment.

47. Hydraulic conductivity of vadose zone is very high. Releases may go undetected as contaminants are quickly flushed off-site. Vadose zone monitoring should be installed to verify that leaks have not been undetected.

    **Response:** The hydraulic conductivity of the unsaturated vadose zone is great enough that to continually monitor this zone is unnecessary, as groundwater can be easily and effectively monitored to identify releases.

48. What data have been collected at wells WHP 1, 2, 3, and 4? This information should be made publically available.

    **Response:** Past Groundwater, surface water, soil borings, and air sampling efforts for the Eastern Michaud Flats Superfund Site are available to the public and can be found online at http://yosemite.epa.gov/R10/cleanup.nsf/sites/emichaud/ or at any of the locations listed in the response to comment #16.

49. What are the phosphorus concentrations being sent to the municipal sewers? Residents of Idaho and Pocatello should not be forced to pay for supplemental treatment.

    **Response:** The scope of the Interim ROD Amendment does not include the evaluation of the amount of phosphorus sent to or processed by municipal sewers. However, the Pocatello Water Pollution Control plant does have a permit from EPA under the National Pollutant Discharge Elimination System (NPDES). This permit defines limits on certain contaminant levels that can be discharged from the Plant to the Portneuf River. The permit also requires regular monitoring for contaminants, including phosphorus. A copy of the permit and Fact Sheet can be found by accessing the following link:

    http://yosemite.epa.gove/r10/water.nsf/NPDES+Permits/Current+ID1319

50. EPA should require the expanded extraction well system to be completed by 2010 and that it should be designed to hydraulically control groundwater movement to the river, especially under conditions of liner breach.

    **Response:** The currently proposed expanded groundwater extraction system will be installed and operating during 2010. However, the liner is expected to provide more control of contaminated water than the pump and treat system by reducing contamination to groundwater. Should the liner fail, Simplot will either repair the liner and leak, or close the gypsum stack.

51. The Draft Interim ROD Amendment does not provide information available for public comment in regards to:
    - phased liner construction and source control details
    - rational for delayed Remedial Action Objectives completion schedule, source control technology, performance, method, and schedule at the Phosphoric Acid Plant
    - the conditions where and when extraction well augmentation will be initiated and the extent to which it is to be deployed
    - any description of performance criteria of the extraction wells or sufficient detail of Simplot with respect to groundwater monitoring of COCs under the proposed lined areas

    Lack of explanation and alternative-selection of the proposed source control at the Phosphoric Acid Plant results in a failure to meet the CERCLA guidance to provide information supporting the ROD decision on the alternatives and results in a vagueness that renders the Interim ROD Amendment not protective of human health and the environment.

    **Response:** EPA held two public meetings on March 17, 2009 at the Pocatello City Hall and on March 18, 2009 at the Fort Hall Reservation to provide the public the opportunity to comment on the Proposed Plan for the Interim ROD Amendment. In addition, a 60-day public comment period (March 16, 2009 – May 15, 2009) was opened to provide the

public an opportunity to provide written comments on the Proposed Plan. The Proposed Plan provided information on the general design, schedule, and other alternatives considered. EPA does not solicit public comment on the Interim ROD Amendment. Once the Interim ROD Amendment is signed, Simplot will develop detailed construction plans for the installation of the liner and will also develop detailed plans for source control measures that will be taken in the main plant area. These types of plans are rarely developed prior to the signing of a Interim ROD Amendment. EPA will be reviewing the development of these plans to ensure they are protective of human health and the environment.

52. Failure to mention all COCs in the Interim ROD Amendment is misleading to the general public as it implies that there are no other metals, radioisotopes, or other contaminants that are important enough to be mentioned. List each COC thoroughly and consistently along with MCLs to avoid appearance that you are minimizing the scope of the contamination.

    **Response:** All COCs defined in the original 1998 ROD are continually monitored on the EMF Superfund Site. The purpose of the Interim ROD Amendment is to add phosphorus to the list of previously defined COCs. The general public may find information regarding the past and present state of various COCs on the EMF Superfund Site online at http://yosemite.epa.gov/R10/cleanup.nsf/sites/emichaud/ or at any of the following libraries:

    **Idaho State University Library**
    Government Documents
    850 South 9th Avenue
    Pocatello, Idaho 83209
    (208) 282-3152

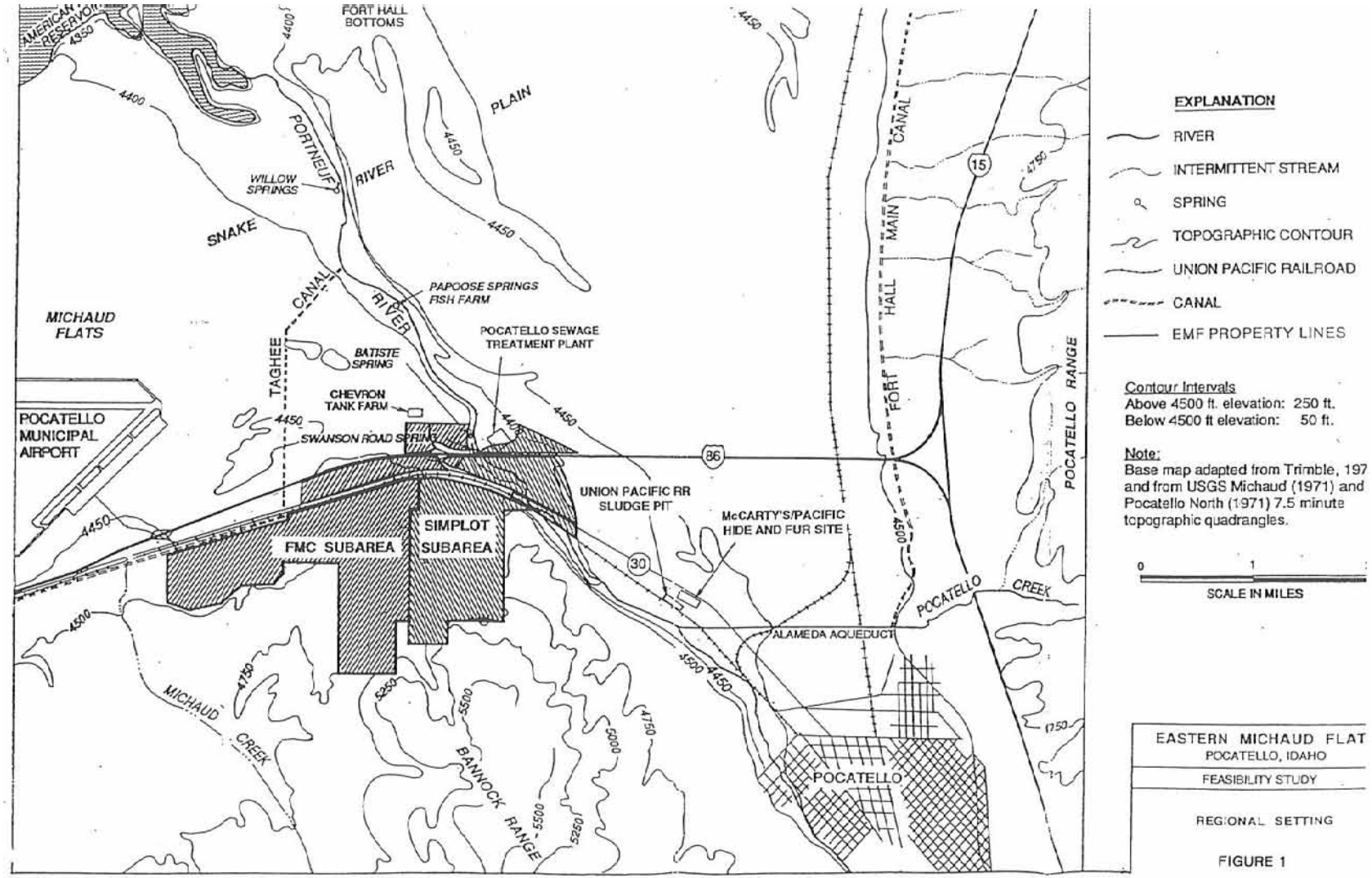
    **Shoshone-Bannock Library**
    Tribal Business Center
    Pima Drive and Bannock Avenue
    Fort Hall, Idaho 83203
    (208) 478-3882

    **EPA Region 10 Superfund Records Center**
    1200 Sixth Avenue, Suite 900, ECL-076 (7th Floor)
    Seattle, WA 98101
    (206) 553-4494

## LIST OF ACRONYMS USED IN THE IRODA

| | |
|---|---|
| ARAR | Applicable or Relevant and Appropriate Requirements |
| CERCLA | Comprehensive Environmental Response Compensation and Liability Act |
| COC | Contaminant of Concern |
| CWA | Clean Water Act |
| DO | Dissolved Oxygen |
| EMAP | Environmental Monitoring and Assessment Program |
| EMF | Eastern Michaud Flats (superfund site) |
| EPA | Environmental Protection Agency |
| gpm | gallons per minute |
| HDPE | High Density polyethylene |
| IDAPA | Idaho Administrative Procedures Act |
| IDEQ | Idaho Department of Environmental Quality |
| MCL | Maximum Contaminant Level |
| ug/L | micrograms per liter |
| mg/L | milligrams per liter |
| MGD | million gallons per day |
| NCP | National Contingency Plan |
| OU | Operable Unit |
| O&M | Operations and Maintenance |
| RAO | Remedial Action Objective |
| RBC | Risk Based Concentration |
| RI/FS | Remedial Investigation/Feasibility Study |
| ROD | Record of Decision |
| RODA | Record of Decision Amendment |
| RPM | Remedial Project Manager |
| SBT | Shoshone Bannock Tribes |
| TMDL | Total Maximum Daily Load |
| WQC | Water Quality Criteria |
| WQS | Water Quality Standard |

# FIGURES


AMERICAN RESERVOIR
FORT HALL BOTTOMS
PLAIN
PORTNEUF RIVER
WILLOW SPRINGS
SNAKE RIVER
PAPOOSE SPRINGS FISH FARM
MICHAUD FLATS
TAGHEE CANAL
BATISTE SPRING
POCATELLO SEWAGE TREATMENT PLANT
CHEVRON TANK FARM
SWANSON ROAD SPRING
POCATELLO MUNICIPAL AIRPORT
FMC SUBAREA
SIMPLOT SUBAREA
UNION PACIFIC RR SLUDGE PIT
McCARTY'S/PACIFIC HIDE AND FUR SITE
ALAMEDA AQUEDUCT
MICHAUD CREEK
BANNOCK RANGE
POCATELLO
FORT HALL MAIN CANAL
POCATELLO RANGE
POCATELLO CREEK
15
30
86
4400
4450
4500
4750
5000
5250
5500
EXPLANATION
RIVER
INTERMITTENT STREAM
SPRING
TOPOGRAPHIC CONTOUR
UNION PACIFIC RAILROAD
CANAL
EMF PROPERTY LINES
Contour Intervals
Above 4500 ft. elevation: 250 ft.
Below 4500 ft elevation: 50 ft.
Note:
Base map adapted from Trimble, 197 and from USGS Michaud (1971) and Pocatello North (1971) 7.5 minute topographic quadrangles.
0
1
SCALE IN MILES
EASTERN MICHAUD FLAT
POCATELLO, IDAHO
FEASIBILITY STUDY
REGIONAL SETTING
FIGURE 1

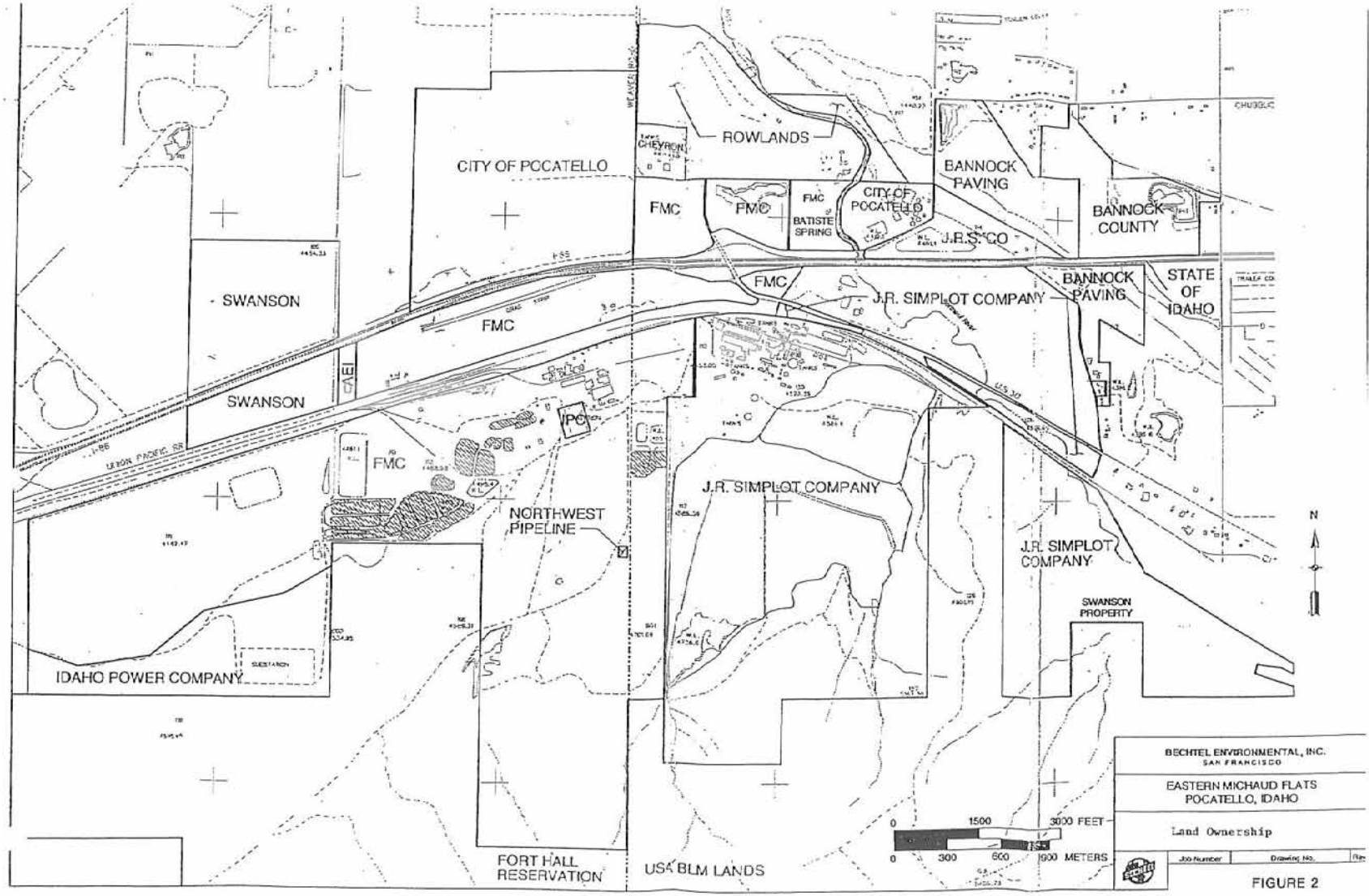

CITY OF POCATELLO
ROWLANDS
CHEVRON
FMC
FMC
BATISTE SPRING
CITY OF POCATELLO
BANNOCK PAVING
BANNOCK COUNTY
J.R.S. CO
SWANSON
FMC
J.R. SIMPLOT COMPANY
BANNOCK PAVING
STATE OF IDAHO
SWANSON
FMC
FMC
J.R. SIMPLOT COMPANY
NORTHWEST PIPELINE
J.R. SIMPLOT COMPANY
SWANSON PROPERTY
IDAHO POWER COMPANY
FORT HALL RESERVATION
USA BLM LANDS
N
0 1500 3000 FEET
0 300 600 900 METERS
BECHTEL ENVIRONMENTAL, INC.
SAN FRANCISCO
EASTERN MICHAUD FLATS
POCATELLO, IDAHO
Land Ownership
Job Number
Drawing No.

FIGURE 2

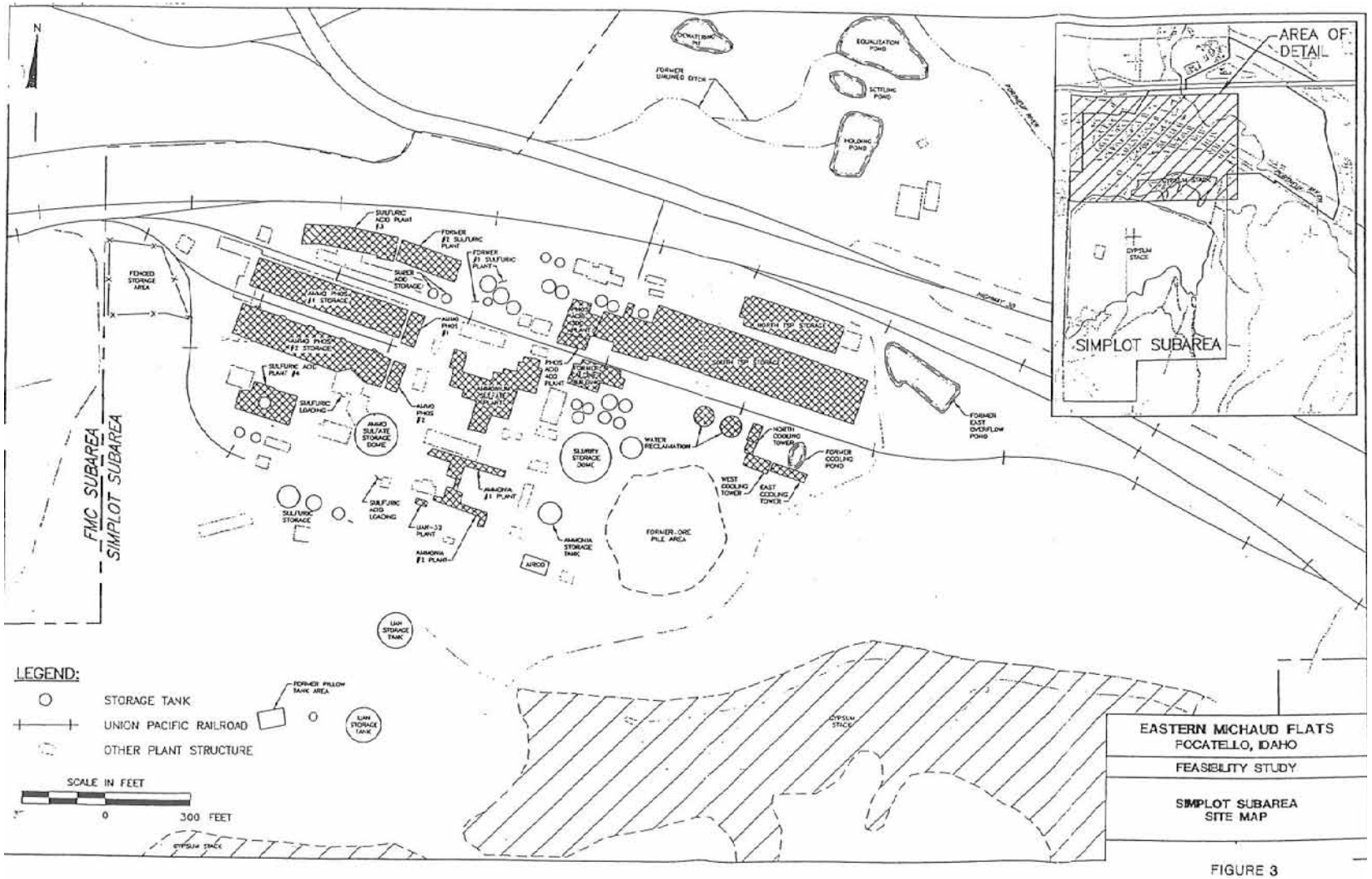
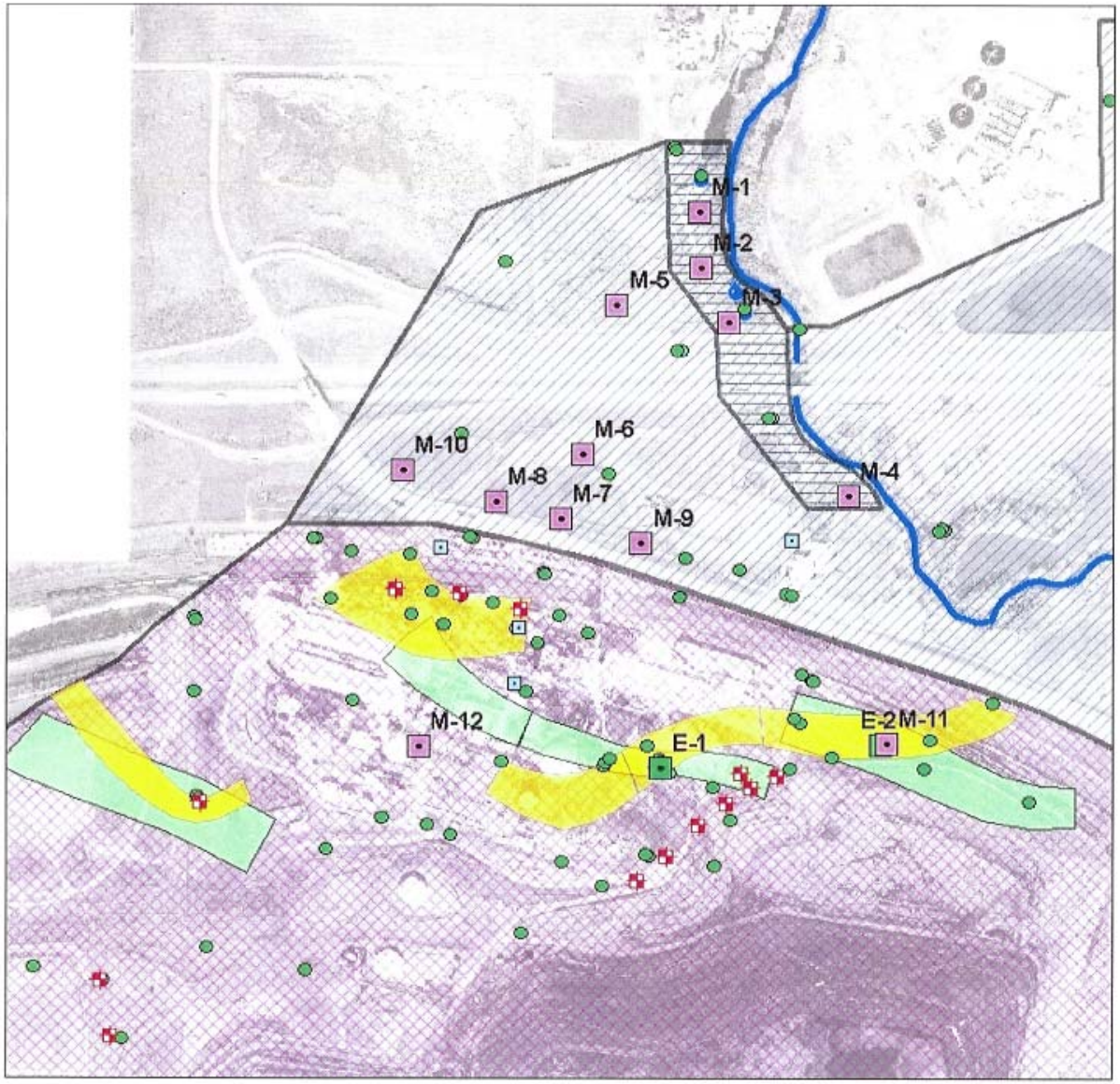

N
AREA OF DETAIL
SIMPLOT SUBAREA
FMC SUBAREA
SIMPLOT SUBAREA
EQUALIZATION POND
SETTLING POND
HOLDING POND
FORMER UNLINED DITCH
PONDER RUN
HIGHWAY 30
SULFURIC ACID PLANT #3
FORMER #1 SULFURIC PLANT
FORMER #1 SULFURIC PLANT
SULFURIC ACID STORAGE
AMMO PHOS #1 STORAGE
AMMO PHOS #2 STORAGE
SULFURIC ACID PLANT #4
SULFURIC LOADING
AMMO PHOS #1
AMMO PHOS #2
AMMONIUM NITRATE NEUTRALIZER
PHOS ACID 400 PLANT
FORMER UNLINED SULFURIC ACID POND
NORTH TSP STORAGE
SOUTH TSP STORAGE
FORMER EAST OVERFLOW POND
AMMO SULFATE STORAGE DOME
SLURRY STORAGE DOME
WATER RECLAMATION
NORTH COOLING TOWER
FORMER COOLING POND
WEST COOLING TOWER
EAST COOLING TOWER
SULFURIC STORAGE
SULFURIC ACID LOADING
AMMONIA #1 PLANT
UAN-32 PLANT
AMMONIA #1 PLANT
AMMONIA STORAGE TANK
AIROD
FORMER ORC PILE AREA
UAN STORAGE TANK
GYPSUM STACK
FORMER PILLOW TANK AREA
UAN STORAGE TANK
LEGEND:
STORAGE TANK
UNION PACIFIC RAILROAD
OTHER PLANT STRUCTURE
SCALE IN FEET
0
300 FEET
EASTERN MICHAUD FLATS
POCATELLO, IDAHO
FEASIBILITY STUDY
SIMPLOT SUBAREA
SITE MAP

FIGURE 3




**Legend**

- New Monitoring Wells
- New Extraction Wells
- Existing Extraction Wells
- Supply Wells
- Monitoring Locations
- Springs

**Groundwater Monitoring Areas**

- Compliance Area
- Assessment Area
- Don Plant Area
- Target Capture - Upper Zone
- Target Capture - Lower
- Portneuf River

FIGURE 4

0 N 1,500

Feet

# TABLES

## TABLE 1

| RISK BASED AND MAXIMUM CONCENTRATION OF CONTAMINANTS OF CONCERN IN GROUNDWATER | | | | | |
|---|---|---|---|---|---|
| Substance of Concern | Units | Maximum Detected Concentration | Risk Based Concentration[a] | Maximum Contaminant Level (MCL) | Clean Up Level |
| Antimony | mg/l | 1.07 | .006 | .006 | .006 |
| Arsenic | mg/l | 5.53 | .000048 | .01[e] | .01 |
| Beryllium | mg/l | .083 | .000019 | .004 | .004 |
| Boron | mg/l | 89 | 1.36 | - | |
| Cadmium | mg/l | 3.9 | .008 | .005 | .005 |
| Chromium | mg/l | 7.58 | .077 | 0.1 | .1 |
| Fluoride | mg/l | 2,815 | .93 | 4 | 4 |
| Manganese | mg/l | 91.2 | .077 | - | |
| Mercury | mg/l | .0043 | .0046 | .002 | .002 |
| Nickel | mg/l | 3.46 | .299 | .1 | .1 |
| Nitrate | mg/l | 660 | 25.03 | 10 | 10 |
| Phosphorus[d] | mg/l | 10,000 | TBD | - | TBD |
| Radium-226 | pCi/L | 7.09 | .39 | 5* | 5 |
| Selenium | mg/l | 19.73 | .07 | .05 | .05 |
| Thallium | mg/l | 9.09 | .001 | .002 | .002 |
| Vanadium | mg/l | 22.317 | .108 | - | |
| Zinc | mg/l | 28.9 | 3.92 | - | |
| Tetrachloroethene | mg/l | .035 | .001 | .005 | .005 |
| TrichloroetheneGross | mg/l | .028 | .002 | .005 | .005 |
| Gross Alpha[b] | pCi/L | 1,690 | - | 15 | 15 |
| Gross Beta[c] | pCi/L | 1,355 pCi/l | - | 4 mrem/yr | 4 mrem/yr |

Key:

* Combined Ra 226 and Ra 228

[a] RBCs for ground water based on drinking water and watering homegrown produce. RBC value based on cancer risk of $10^{-6}$ or HQ=1

[b] Individual radionuclides potentially responsible for elevated gross alpha and gross beta levels are also COPCs. These include, but are not limited to, Lead-210, Polonium-210, Potassium-40, Thorium-230, Uranium-234, and Uranium-238.

[c] Beta particle and photon activity based on consumption of 2 liters/day.

[d] RBC for phosphorus will be developed by 2013.

[e] MCL was changed from 0.050 mg/l to 0.010 mg/l in 2006.

**Shaded chemicals are COCs identified in the FS**

The SHOSHONE-BANNOCK TRIBES

FORT HALL INDIAN RESERVATION
AGRICULTURAL RESOURCE MANAGEMENT
PHONE (208) 478-3860/3878
FAX (208) 478-3893

LAND USE DEPARTMENT
P. O. BOX 306
FORT HALL, IDAHO 83203

January 15, 2010

Ms. Lori Cohen, Acting Director
Office of Environmental Cleanup
Region 10 EPA
1200 Sixth Avenue
Seattle, WA

**RE: INTERIM AMENDMENT TO THE RECORD OF DECISION**
**EASTERN MICHAUD FLATS SUPERFUND SITE - SIMPLOT OERABLE UNIT**

Dear Ms. Cohen:

The Shoshone-Bannock Tribes are encouraged by recent increased efforts of the Environmental Protection Agency to address ongoing contamination from the J.R. Simplot facility. As you know, this site has long been a source of groundwater contamination on the Fort Hall Reservation and impacts the resources of the Shoshone-Bannock Tribes. The recent Interim Amendment to the Record of Decision (IRODA) for the Simplot Operable Unit is a milestone for those who have worked on this site for many years.

The Tribes support many aspects of this amendment, including adoption of the groundwater remedy selected in the ROD, the addition of phosphorus as a contaminant of concern (COC), and the requirement that an assessment be performed regarding ongoing and past releases of COCs at or near Simplot's phosphoric acid plant, along with the development and implementation of a verifiable plan to control the sources of phosphorus and other COCs within the Simplot Operable Unit (OU). The Tribes also support the installation of a synthetic liner on the receiving surface of the gypsum stack to reduce water from infiltrating through the stack into groundwater, the development of protective numerical cleanup levels for phosphorus and other COCs in groundwater consistent with the Total Maximum Daly Load (TMDL) for the Portnuef River, the identification of monitoring points in and in the vicinity of the Portnuef River, and the continued development, operation, maintenance and augmentation, to the extent necessary, of the groundwater extraction system to keep COC levels at or below cleanup standards.

The Tribes are not, however, in agreement with certain provisions of the IRODA. Section 3.2 (Summary of Site Risks) states that "meeting MCLs and RBCs for arsenic and phosphorus (measured as total phosphorus or dissolved orthophosphorus) in groundwater at their respective points of compliance will sufficiently reduce or eliminate risks to human health and the environment from all other COCs." The Tribes do not concur.

The Simplot facility has continuing current releases of acidic processing and waste liquids, the full extent of which is yet to be known. We do know that releases have contributed to groundwater contaminants, including nickel, chromium, cadmium, thallium, uranium, vanadium, zinc, gross alpha, antimony, beryllium, boron, fluoride, mercury, radium-226 and radium-228, measured at the facility site. Groundwater contaminants from the facility are moving off the property boundary and into the Portnuef River. Each of these contaminants exerts varying human health and ecological effects, separate and distinct from those of arsenic and phosphorus. In addition, the synergistic effects from the combination of one or more of these metals, varying pH levels and the other unknown conditions at this site contribute to increased risks posed by the contaminants.

The IRODA is insufficient to fully protect human health and environment in other respects as well. The Tribes are concerned with the ambiguities surrounding the extraction system, the monitoring performance criteria and the timeframe in which we can expect to be able to fully utilize our trust resources: the Portnuef River and all ecological systems supported by this resource.

The monitoring assessment and compliance points for COCs are fundamental in determining the effectiveness of the remedial actions proposed. These points include monitoring wells between the facility boundary and Portnuef River, including two locations within the River. These monitoring points allow for contaminated groundwater to migrate off the facility boundary. The Tribes believe Simplot should control groundwater contamination within their facility boundary.

In addition, EPA estimates that it will take approximately fifteen years for implementation of source control and groundwater extraction to reduce the contamination levels in groundwater to action levels protective of surface water. The Tribes are concerned with this timeframe. Fifteen years of continued groundwater contamination migrating from this facility, entering the Portnuef River, and flowing onto the Fort Hall Reservation is unacceptable.

Equally concerning are the uncertainties surrounding the current extraction system. EPA estimated that, if an enhanced extraction system were selected as the remedy, the necessary extraction rate would be approximately 6500 gallons per minute (gpm) in order to meet cleanup standards for phosphorus and arsenic at the points of compliance. Of this volume, EPA estimated that 1500 gpm was the maximum capacity Simplot could reuse within the plant, which thus would require Simplot to treat and discharge up to 7.2 million gallons per day of water. Because of the costs involved and the uncertainties surrounding increased benefits, the current remedy was selected instead. Now, the Interim ROD Amendment allows Simplot to extract a fraction of this groundwater while the rest migrates off-site. Moreover, the remedy assumes the extracted groundwater will be re-used within the operating plant. However, recently groundwater extracted from wells has been characterized as hazardous waste which cannot be reused within the facility process. There have been indications that if well water is characterized as hazardous

waste in the future because of pH and levels of contaminants measured, the plant may simply be shut down in an effort to prevent the expense of treating the volume of waste.

The Tribes' remaining concerns involve the references to the Voluntary Consent Order/Compliance Agreement (VCO) between the Idaho Department of Environmental Quality and the J.R. Simplot Company. This agreement was negotiated without public input and lacks transparency, as it fails to identify all the benefits derived by parties involved.

The Interim ROD Amendment is premised on EPA's conclusion that the selected remedy in the 1998 ROD cannot adequately meet the protectiveness criterion. The IRODA acknowledges that, in the 1998 Record of Decision, EPA significantly underestimated Simplot's phosphorus releases, mistakenly believed they were essentially only from the gypstack, and mistakenly concluded that capturing arsenic as specified would adequately address phosphorus releases. (See Section 9.0 {Responsiveness Summary}, Response No. 1.) We are hopeful with the progress made but remain concerned that this amendment does not go far enough to protect human health and the environment.

We recognize the complexities surrounding source characteristics, geology and hydrogeology at this site but sincerely hope EPA remains diligent in their effort to require Simplot to remedy all COC contamination within their facility boundary.

Sincerely,

for Arnold Appenay Director

Arnold Appenay Director,
Shoshone-Bannock Environmental Waste Management Program

.cc: FHBC (7)
Bill Bacon, General Counsel
Tony Galloway, LUPC Chairman
Jill Grant, Special Legal Counsel
Susan Hanson, EWMP Contractor
Kira Lynch, EPA RPM
Roger Turner, Air Quality Manager
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STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
Toni Hardesty, Director

January 19, 2010

Michelle Pirzadeh, Acting Regional Administrator
EPA - Region 10
1200 6th Ave., Suite 900
Seattle, WA. 98101

**Re: State of Idaho Concurrence on the Eastern Michaud Flats Interim Record of Decision Amendment**

Dear Ms. Pirzadeh,

The DEQ has reviewed and provided comment on draft versions of the EPA proposed plan for the interim Record of Decision Amendment (IRODA) for the East Michaud Flats (EMF) Superfund site in Pocatello, Idaho and participated in public meetings held during the comment period. Subsequently, DEQ reviewed and provided comment on draft versions of the IRODA and Responsiveness Summary.

This letter notifies the Environmental Protection Agency (EPA) that the State of Idaho concurs with the IRODA. In making this concurrence, Idaho would point out that the Final IROD (last paragraph of Section 3.) states:

> *"The phosphorus levels in the River have resulted in significant reduction in the natural DO levels of the river. Reduced DO results in substantial risk to ecological receptors. The substantial risks of these ecological effects, the morbidity, mortality, reproduction and growth effects on various biota in the River are the basis for the need to implement the selected interim remedy."*

DEQ does not fully concur with this paragraph. The conditions in the lower Portneuf are more complex than is reflected in these statements. For example, dissolved oxygen (DO) levels upstream of the major phosphorus inputs from the Simplot Don Plant are also below the assumed natural DO levels in the river and, at times, drop below the coldwater aquatic life criterion. Moreover, the specific effects of the Portneuf River's DO regime on the morbidity and mortality of various biota in the River have not been measured as the above statement implies. Notwithstanding, it is apparent that the violation of the State's water quality standard for DO in the reach of river affected by excessive phosphorus loading from the Don Plant poses a presumptive risk and thus constitutes the basis for this ROD Amendment. Accordingly, the

State's preferred language to accurately reflect the current knowledge base and to support the implementation of the selected interim remedy is as follows:

> *"The excess phosphorus levels in the River have contributed to violations of Idaho's water quality standards for DO in the river. DO levels below the State's standard result in unacceptable risk to ecological receptors and may negatively impact reproduction and growth rates in aquatic life. This impairment to water quality and the presumed associated ecological effects on the morbidity and mortality of various biota in the River are the basis for the need to implement the selected interim remedy."*

Regardless of our differing view concerning this language, I am pleased that our respective staff have worked cooperatively to implement EPA's responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision and DEQ's responsibilities under the 2008 Voluntary Consent Order/Compliance Agreement (VCO/CA) between the J.R. Simplot Co. (Simplot) and the Idaho Department of Environmental Quality (DEQ). I am confident that with continued cooperation and hard work we will achieve our mutual goals.

Sincerely,

Toni Hardesty
Director

cc: Kira Lynch, EPA Region 10
Cami Grandinetti, EPA Region 10
Bruce Olenick, DEQ Pocatello Regional Office
Darrell Early, Deputy Attorney General