

- G. Performance standards. The Permanent Closure Plan shall be developed to address the following performance standards.
1. Phosphogypsum Stack System Closure shall be designed to protect human health and the environment by:
    - a. Controlling, minimizing or eliminating the post closure escape of Phosphogypsum, Process Wastewater, Leachate, and contaminated runoff to Groundwater and Surface Waters;
    - b. Minimizing stack infiltration other than allowed Process Wastewater recirculation as described in Appendix 8 (Initial Closure Plan);
    - c. Being compatible with any required Groundwater or Surface Water Corrective Action Plan; and
    - d. Minimizing the need for further maintenance.
- H. A Permanent Closure Plan for Phosphogypsum Stacks, Phosphogypsum Stack Systems or Components thereof shall include a Final Cover designed to protect human health and the environment by:
1. Promoting drainage off the Phosphogypsum Stack;
  2. Minimizing ponding, if necessary;
  3. Minimizing erosion;
  4. Minimizing infiltration into the Phosphogypsum Stack (except as allowed through Process Wastewater recirculation and evaporation); and,
  5. Functioning with little or no maintenance.
- I. Closure of ponds and drainage conveyances storing Process Wastewater and Leachate shall be designed to protect human health and the environment by:
1. Treating or removing from the ponds and drainage conveyances all Process Wastewater and Leachate through:
    - a. The return of the Process Wastewater and Leachate to the manufacturing process; or
    - b. Returning Process Wastewater and Leachate to the Phosphogypsum Stack for evaporation; or,

- c. Transfer of Process Wastewater and Leachate to another pond permitted in accordance with this Appendix; or
    - d. In-situ treatment of the Process Wastewater and Leachate, or
    - e. Treatment and subsequent discharge of the Process Wastewater and Leachate under an appropriate discharge permit.
  - 2. Placing any Phosphogypsum and/or sludges removed from a pond, settling basin, or drainage conveyance into an Active Phosphogypsum Stack operated in accordance with this Section or an Inactive Phosphogypsum Stack undergoing Phosphogypsum Stack System Closure in accordance with this Section. The Permanent Closure Plan shall contain a detailed description of procedures for removing and/or treating the Phosphogypsum and/or sludges, methods for sampling and testing surrounding soils and criteria for determining the extent of removal required to satisfy the closure performance standards.
- J. Closure Overview, Schedule and Environmental Considerations: To meet the requirements in Section III.G, the Permanent Closure Plan for the Facility will incorporate the following design elements and approximate schedule.
- 1. Process Water and Leachate management.
    - a. As the annual net evaporation at the Facility is over 37 inches, the proposed water management plan for this Facility relies on evaporating a significant portion of the remaining Phosphogypsum Stack System Wastewater during the initial 13-year period following deactivation.
    - b. On or before Year 12, Simplot will construct a treatment plant that is capable of treating all drainage water seeping from the Phosphogypsum Stack with limestone and lime to reach a pH of 7.0. A lower treatment pH may be considered by EPA if Simplot can demonstrate that treatment objectives (metals removal and neutralization of acidity) can be met. During Year 13 both evaporation and treatment will occur. The treatment plant will treat all Phosphogypsum Stack drainage water in Year 14.
  - 2. Treated water, solids management and closure schedule.

- a. The treated water and associated lime treatment solids will be stored and evaporated in lined ponds that will be constructed on top of the closed Phosphogypsum Stack.
- b. The Phosphogypsum Stack System will be closed in phases as expeditiously as practicable. The following is an approximate plan and schedule for closure that will be the basis for the schedule described in the Phosphogypsum Stack System closure operation plan in Section M. EPA may approve, within its discretion, a request to adjust this schedule if the information provided by Simplot substantiates its request for a schedule change.

Phase 1 – (Years 1 through 5)

- Close all side slope areas and surface areas of the Phosphogypsum Stack, with the exception of: 1) areas that are utilized to store or evaporate excess Process Wastewater; and 2) active portions of the lined return water flow channel to the surge pond and return water pump station.
- Construct benches and install seepage collection drains on the side slopes as necessary to allow for the collection of drainage.
- Install perimeter seepage collection Toe Drains on the north and west sides of the Phosphogypsum Stack and at any other locations as necessary to control water flow.
- For stormwater control, construct lined Surface Water swales and Toe ditches on the north and west sides of the Phosphogypsum Stack.
- Once seepage has subsided, finish grade, amend and cover side slopes of Phosphogypsum Stack with 12-inches of locally available soil and grass/vegetate slopes.
- Grade and construct lined Surface Water detention pond on west side of Phosphogypsum Stack. The detention pond will be provided with a 60-mil HDPE bottom Liner and a vegetated, two-foot thick vegetated soil cover. All Surface Water run-off from the closed Phosphogypsum Stack side slopes will be routed through this pond. Surface areas that are no longer needed for treatment and closure operations will be closed and revegetated.

Phase 2 – (Years 6 through 15)

- All top ponds will be used on an as needed basis for Process Wastewater irrigation and evaporation through year 11.
- On or before Year 12, Simplot will begin construction of a double lime treatment plant that will be capable of treating all Phosphogypsum Stack drainage water by Year 14. It is also anticipated that by the end of Year 13 three of the existing top ponds that will ultimately be used for lime sludge storage and evaporation of treated water will be regraded and provided with a 60-mil HDPE bottom Liner.
- Lining of the remaining top ponds will commence after Year 13 and should be complete by the end of Year 15. Final cover will include a 40-mil HDPE Liner covered with a protective, two-foot thick vegetated soil cover. Surface Water control structures will be installed as needed to direct runoff from the closed top ponds to perimeter Surface Water swales or ditches and then to the lined detention pond on the west side of the Phosphogypsum Stack.
- Process water treatment will commence during Year 13.

Phase 3 – (Years 16 through 50)

- After closure of the top ponds, bench and install seepage collection drains on the remaining side slopes of the Phosphogypsum Stack at locations where they do not already exist.
- Install perimeter seepage collection Toe Drains on the east and south sides of the Phosphogypsum Stack once the return water flow channel has been taken out of service.
- Lined lime sludge storage and evaporation ponds on top of the closed Phosphogypsum Stack will be closed incrementally once seepage rates from the closed Phosphogypsum Stack have reduced sufficiently to warrant closure. Closure of the sludge ponds will include dewatering and drying of the lime sludge materials to a stable consistency that will allow

placement of a one-foot thick, vegetated soil cover. Any exposed HDPE Liner materials on the side slopes of the pond, above the top surface of the lime deposits, will be covered with a protective, two-foot thick vegetated soil cover.

- Commence fifty-year Long-Term Care and maintenance program for the closed Facility once final closure activities are completed and certified.

3. Additional environmental requirements.

- a. Simplot will conduct a monthly measurement to assess whether fluoride atmospheric emissions from the Phosphogypsum Stack during closure are less than or equal to such emissions during plant operation. Simplot will describe in detail the method used to calculate the emissions. If the emissions are greater than the emissions during plant operation, then Simplot will report to EPA the steps necessary to reduce emissions below the target levels.
- b. Fencing shall be installed, and measures shall be taken to prevent human and wildlife intrusion.
- c. The areas on top of the Phosphogypsum Stacks that are used for spray irrigation and evaporation and not used for lined sludge/evaporation ponds will be lined with 40-mil HDPE, covered with two (2) feet of soil and planted in native vegetation. Prior to lining these areas, the upper one to two feet of Phosphogypsum will be flushed with treated water. The depth of treated water applied will not be less than four (4) inches over the entire surface to be covered. This flush will reduce the acidity of the upper zone of the Phosphogypsum Stack.

- K. Closure design plan. A closure design plan, which includes water and solids management, shall be prepared to meet the performance standards and requirements specified in Section III.G and III.H, above, and shall be based on the area information report, Groundwater monitoring plan, and assessment of the effectiveness of the existing Phosphogypsum Stack System design and operation. The closure design plan shall consist of engineering plans and a report on closing procedures that shall apply to the closing of the Phosphogypsum Stack System and the monitoring and maintenance during the Long-Term Care period. The closure design plan shall include the following information:

1. A plan sheet showing phases of site closing;
2. Drawings showing existing topography and proposed final elevations and grades;
3. For Phosphogypsum Stack Systems or Components thereof, Final Cover installation plans will show the sequence of applying Final Cover, including thickness and type of material that will be used. All Phosphogypsum Stacks, and Components thereof shall have a Final Cover designed to meet the performance standards set forth below. Final Cover shall be placed over the entire surface of the Phosphogypsum Stack. The Final Cover shall be vegetated (to the extent possible in arid climates) with drought-resistant species to control erosion, whose root systems will not penetrate any required low-permeability barrier layer on the top gradient (or an alternative cover approved in accordance with the Consent Decree or Section K). Water balance calculations, based on available climatic data, shall be prepared that estimate the rates and volumes of water infiltrating the cover systems, collected by any Leachate control system, and migrating out of the bottom of the Phosphogypsum Stack or Liner system. Final Cover may consist of synthetic membranes, soils, or chemically or physically amended soils or Phosphogypsum.
  - a. Top gradients of Final Cover on Phosphogypsum Stacks shall be designed to prevent or minimize ponding or low spots, and minimize erosion and at a minimum meet one of the following design standards specified in (i) - (iii), below:
    - i. The Final Cover on the top gradient shall consist of a barrier soil layer at least 18 inches thick, emplaced in six (6)-inch thick lifts. A final, eighteen (18)-inch thick layer of soil or amended Phosphogypsum that will sustain vegetation to control erosion shall be placed on top of the barrier layer. For unlined Phosphogypsum Stacks, the barrier layer shall have a maximum permeability of  $1 \times 10^{-7}$  cm/sec; for lined Phosphogypsum Stacks, the barrier layer shall have a maximum permeability of  $1 \times 10^{-5}$  cm/sec. If less permeable soils are used, then the thickness of the barrier layer may be decreased to twelve (12) inches, provided that infiltration is minimized to an equivalent

degree. A geosynthetic clay Liner system that minimizes infiltration to an equivalent degree may also be used.

- ii. A Geomembrane may be used as an alternative to the low-permeability soil barrier for a Final Cover, constructed to preclude precipitation infiltration into the Phosphogypsum Stack. A Geomembrane used in Final Cover shall be a semi-crystalline thermoplastic at least forty (40) mils thick, or a non-crystalline thermoplastic at least thirty (30) mils thick, with a maximum water vapor transmission rate of 2.4 grams per square meter per day, have chemical and physical resistance to materials it may come in contact with, and withstand exposure to the natural environmental stresses and forces throughout the installation, seaming process, and settlement of the Phosphogypsum during the closure and Long-Term Care period. A protective soil or amended Phosphogypsum layer at least twenty-four (24) inches thick shall be put on top of the Geomembrane prior to final closure. Material specifications, installation methods, and compaction specifications shall be adequate to protect the barrier layer from root penetration, resist erosion, and remain stable on the final design slopes. This layer shall include soils or amended Phosphogypsum that will sustain vegetative growth.
  - iii. In areas where historically evaporation and evapotranspiration exceed precipitation, the Geomembrane option in III.(K)(3)(a)(ii), above, may be used in conjunction with an alternative top cover design in lieu of the twenty-four (24)-inch-thick layer of protective soil or amended Phosphogypsum placed above the Geomembrane. The request for an alternate top cover design must be submitted for approval to EPA.
- b. Side slopes and all other grades shall be designed to minimize erosion of the Final Cover material and infiltration except for the following:
- i. Top gradient;

- ii. Return Ponds;
  - iii. AHP;
  - iv. Lime treatment ponds with the definition of the Phosphogypsum Stack System;
  - v. Process Wastewater and Leachate channels, cooling channels and ditches; and
  - vi. Toe drainage swales.
- c. Such designs shall consider the erosion susceptibility of the material proposed for Final Cover relative to historical precipitation patterns for the area, the ability to establish and maintain vegetation and special maintenance procedures proposed to address infiltration and erosion. In addition, for the side slopes of the Phosphogypsum Stack, the following criteria shall be applicable:
- i. The side slopes shall be no steeper than two (2)-feet horizontal run to one (1)-foot vertical rise (2H:1V). If the side slopes of any Phosphogypsum Stack are steeper than 2H:1V, then the closure design plan shall include a stability analysis (accounting for seismic considerations) demonstrating the long-term stability of the area.
- d. Cover for the side slope swales, if an aspect of the Phosphogypsum Stack closure design, shall be designed to minimize ponding and low spots, minimize erosion, and infiltration, and at a minimum consist of:
- i. A barrier layer which may be either a Geomembrane Liner or re-compacted soil;
  - ii. An adequate protective soil layer over the barrier layer (if a Geomembrane) that can sustain vegetation;
  - iii. Unless an alternative cover is approved by EPA, the barrier layer and the protective soil layer for the side slope swales shall conform to the minimum criteria of applicable provisions of Section III, except that the minimum thickness of the Geomembrane, if used in side slope swales, shall be 60-mil (e.g., 60-mil HDPE). The alternative cover, if requested, shall be designed to meet the

performance standards for the Final Cover and provide, at a minimum, the equivalent degree of protection (e.g., minimize infiltration, erosion, etc.) as would be achieved if the Final Cover conformed to the criteria set forth in Section III.

- e. The Final Cover for Components of the Phosphogypsum Stack System shall be designed to:
  - i. Control, minimize or eliminate the post closure escape of Phosphogypsum and other materials contained within the Phosphogypsum Stack, Process Wastewater, Leachate and contaminated runoff to Surface Water and the ground;
  - ii. Minimize ponding (except in such circumstances where EPA approves use of a Component for Process Wastewater storage);
  - iii. Minimize infiltration; and
  - iv. Minimize erosion and future maintenance.
- f. The closure design plan, depending on the activities under Section III and the performance standards herein, shall provide for the following:
  - i. May require providing a suitable barrier layer (e.g., Geomembrane, re-compacted soil) and an adequate protective soil layer that can sustain vegetation;
  - ii. Shall, at a minimum, include material specifications (e.g., soil, fill material), vegetation type, installation methods (e.g., grading, excavation), and compaction specifications adequate to meet the performance standards;
  - iii. Shall describe provisions for cover material for Long-Term Care erosion control, filling other depressions, maintaining berms, and general maintenance of the Phosphogypsum Stack System; and

- iv. Shall specify the anticipated source and amount of material necessary for proper closure of the Phosphogypsum Stack System.
  - 4. The type of Leachate control system proposed. The Leachate control system shall be designed to prevent releases of Leachate from the Phosphogypsum Stack System.
  - 5. Compliance with Groundwater requirements. The closure design plan shall demonstrate how the Phosphogypsum Stack System will meet applicable Groundwater quality standards of the State of Wyoming. The Groundwater monitoring and sampling schedule may be adjusted for a Phosphogypsum Stack System where Groundwater contamination is not evident or corrective measures have been taken to correct contamination.
  - 6. The proposed method of stormwater control. This shall include control of stormwater on the Phosphogypsum Stack System. Stormwater or other Surface Water that mixes with Leachate shall be considered Leachate and if discharged, shall be treated to meet the permit or regulatory requirements of the State of Wyoming. The stormwater control plan shall meet the requirements of the State of Wyoming.
  - 7. The proposed method of access control. The closure design plan shall describe how access to the closed Phosphogypsum Stack System shall be restricted to prevent any future waste dumping or use of the Phosphogypsum Stack System by unauthorized persons. Restricted access shall remain in force until the Phosphogypsum Stack System is stabilized and there is no evidence that the property is being used as an unauthorized dump site.
  - 8. A description of any proposed final use of the Phosphogypsum Stack and Phosphogypsum Stack System or Component thereof.
- L. Closure construction quality assurance plan. A detailed construction quality assurance plan shall be developed for construction activities associated with the closure of the Phosphogypsum Stack System, including each Component of the Final Cover system. The plan shall specify quality assurance test procedures and sampling frequencies. Records shall be kept to document construction quality and demonstrate compliance with plans and specifications. Upon completion of

closure activities, a final construction quality assurance report shall be submitted to EPA, prepared by an engineer. The final report shall include at least the following information:

1. Listing of personnel involved in closure construction and quality assurance activities;
2. Scope of work;
3. Outline of construction activities;
4. Quality assurance methods and procedures;
5. Test results (destructive and non-destructive, including laboratory results); and
6. Record drawings.

M. Phosphogypsum Stack System Closure Operation Plan. This plan, as part of the Permanent Phosphogypsum Stack System Closure Plan, shall be designed to protect human health and the environment by:

1. Describing the actions that shall be taken to close the Phosphogypsum Stack System, such as placement of cover, grading, construction of berms, ditches, roads, retention-detention ponds, installation or closure of wells and boreholes, installation of fencing or seeding of vegetation, protection of on-site utilities and easements;
2. Providing a time schedule for completion of closure and Long-Term Care;
3. Containing appropriate references to the closure design plan, area information report, Groundwater monitoring plan, and other supporting documents;
4. Providing an updated Cost Estimate in accordance with Appendix 2 (Financial Assurance);
5. Indicating any additional equipment and personnel needed to complete Stack Closure of the Phosphogypsum Stack System; and
6. Describing any proposed use of the system for water storage or water management.

N. Certification by an Engineer. Information, plans, and drawings presented in support of a closure plan shall be prepared under the direction of, and certified by, an engineer. A letter of appointment shall be submitted by the proper company official confirming that the engineer is authorized to prepare plans and specifications. The engineer shall be required to make periodic inspections during the closing of Phosphogypsum Stack System to ensure closure is being

accomplished according to the Permanent Phosphogypsum Stack System Closure Plan.

- O. Nothing in this Section is intended to preclude the construction of a lined Return Pond or AHP, sludge storage pond or Evaporation Pond on top of an Inactive or closed Phosphogypsum Stack, as long as the pond is constructed in accordance with the applicable provisions of Appendix 1.B (Phosphogypsum Stack System Construction and Operational Requirements), and as long as the design is included in the closure plan. Within such a Return Pond, AHP, solids or Evaporation Pond, while in use, the requirements for minimizing ponding and establishing vegetation cover are not applicable.

#### **IV. Temporary Deactivation of Phosphogypsum Stack Systems and Components of Phosphogypsum Stack Systems**

- A. Simplot may request, in writing, a determination by EPA that the provisions of Section III may be deferred in limited circumstances when a Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof will temporarily cease to receive Phosphogypsum or Process Wastewater but Simplot intends for the Phosphogypsum Stack System or Component thereof to become Active in the future. In such circumstances, Simplot shall request approval of a Temporary Deactivation of the Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof. This request must be submitted on a yearly basis until the Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof becomes Active. EPA may authorize a Temporary Deactivation approval for each individual Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof in accordance with this subsection or deny the request for such an approval.
- B. Each request shall set forth at least the following information:
  - 1. The specific Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof for which approval of a Temporary Deactivation is sought;
  - 2. A demonstration that current economic or other conditions justify a Temporary Deactivation of the Phosphogypsum Stack or Phosphogypsum Stack System or Component thereof;

3. An estimate of the duration of the Temporary Deactivation of Phosphogypsum Stack System and a demonstration that the Phosphogypsum Stack System or Component thereof is reasonably expected to become Active within this estimated time period; and
  4. The most recent ISSMP.
- C. If EPA determines that other information is necessary to ascertain if a Temporary Deactivation is warranted, then the applicant must submit the additional information upon request.
  - D. Upon approval of the Temporary Deactivation by EPA, Simplot must implement the procedures set forth in the approved ISSMP immediately upon the Phosphogypsum Stack System deactivation. The applicant shall also provide any additional such information requested by EPA.
  - E. If, after review of the information submitted pursuant to (B) and (C) above, EPA determines that Temporary Deactivation has not been justified by Simplot, then Simplot may continue to operate the Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof or permanently close the Phosphogypsum Stack, Phosphogypsum Stack System or Component thereof in accordance with the provisions of Section III.
  - F. If, at any time during the approved Temporary Deactivation period, EPA requires information to ascertain if the criteria under (B)(1)-(3) of this Section are being met, then Simplot will provide such information within thirty (30) days of the request by EPA.
  - G. If, after review of the information submitted pursuant to (F) above or otherwise, EPA determines that Simplot has not demonstrated that it satisfies the criteria specified in (B)(1)-(4), then EPA will so notify Simplot of its determination and the provisions of Section III will apply.

## **V. Stack Closure Procedures**

- A. Stack Closure inspections. The Permanent Closure Plan must specify which particular closing steps or operations must be inspected and approved by EPA before proceeding with subsequent closure actions.

- B. Final survey and record drawings. A final survey shall be performed, after permanent closure is complete, by an engineer or a registered third-party land surveyor to verify that final contours and elevations of the Phosphogypsum Stack System or Component thereof that is the subject to the Permanent Closure Plan are in accordance with the plan as approved by EPA. Aerial mapping techniques that provide equivalent survey accuracy may be substituted for the survey.
1. The survey or aerial mapping information shall be included in a report along with information reflecting the record drawings of the Phosphogypsum Stack System or Component thereof. Contours should be shown at no greater than five (5)-foot intervals.
  2. Simplot shall submit this report to EPA in accordance with the closing schedule.
- C. Certification of closure construction completion. A certification of closure construction completion, signed, dated and sealed by a Third-Party Engineer shall be provided to EPA and Wyoming DEQ upon completion of closure.
- D. Official date of Stack Closure. Upon receipt of the documents required in (B) and (C) of this Section, EPA shall acknowledge by letter to Simplot that notice of termination of operations and Stack Closure has been received. The date of this letter shall be the official date of closure for purposes of determining the beginning of the Long-Term Care period.
- E. Use of closed Phosphogypsum Stack Systems. Closed Phosphogypsum Stack Systems or Components thereof, if disturbed, are a potential hazard to public health, Groundwater and the environment. Consultation with and approval by EPA is required before conducting activities that may disturb the closed Phosphogypsum Stack Systems or Components thereof, except for routine maintenance activities.

## **VI. Long-Term Care for Phosphogypsum Stacks/ Phosphogypsum Stack Systems/Components**

- A. Long-Term Care period. Simplot shall be responsible for monitoring and maintenance of the Facility, including the applicable requirements of Section III , in accordance with an approved Permanent Phosphogypsum Stack System Closure Plan for fifty (50) years from the date of closure as specified Section V.D

above unless a reduced Long-Term Care period is approved by EPA in accordance with (C), below.

B. Before the expiration of the Long-Term Care monitoring and maintenance period, EPA may extend the time period if it is determined that:

1. The closure design or closure operation plan under the Permanent System Closure Plan was ineffective in meeting the standards herein; or
2. The extension of the Long-Term Care period is necessary to protect human health and the environment.

C. Reduced Long-Term Care period. Simplot may request, in writing, a reduced Long-Term Care schedule. EPA may approve, within its discretion, the request if the information provided by Simplot substantiates its claim that the reduced period is sufficient to protect human health and the environment. The request must, at a minimum, demonstrate that the Phosphogypsum Stack System or a Component thereof addresses the criteria of (1)-(4), below and provide any other information relevant to establishing that the reduced period is sufficient to protect human health and the environment:

1. The Phosphogypsum Stack System has been constructed and operated in accordance with approved standards, and has a Leachate control system and/or a Liner that has controlled, minimized or eliminated releases;
2. The Phosphogypsum Stack System has been closed with appropriate Final Cover, that the vegetative cover (or alternative approved in accordance with this Section) has been established, and a monitoring system has been installed and is operating as intended;
3. The Phosphogypsum Stack System has a twenty (20)-year history after the date of closure of no unresolved violations of water quality standards or criteria detected in the monitoring system, and no increases over Background water for any monitoring parameters that may be expected to result in violations of water quality standards or criteria; and
4. The Phosphogypsum Stack System has had no detrimental erosion of the cover system.

- D. Replacement of monitoring devices. If a monitoring well or other device required by the monitoring plan is destroyed or fails to operate for any reason, Simplot shall, as soon as possible but no later than seven (7) days after discovery, notify EPA in writing. All inoperative monitoring devices shall be replaced with functioning devices within sixty (60) days or as soon as is practicable to accommodate weather and equipment availability, of the discovery of the malfunctioning devices unless Simplot is notified otherwise in writing by EPA.
- E. Certification of Long-Term Care Completion. A certification of Long-Term Care completion signed, dated and sealed by a Third-Party Engineer, shall be provided by Simplot to EPA upon completion of Long-Term Care.

**VII. Closure of Unlined Systems in Phosphogypsum Stacks/ Phosphogypsum Stack Systems**

- A. No Phosphogypsum or Process Wastewater shall be placed in an unlined Phosphogypsum Stack System after five (5) years of the Effective Date. For purposes of this Section VII, “unlined” means that the Phosphogypsum Stack System was constructed without an installed Liner meeting those standards outlined in Appendix 1.B, Section VI (Construction Requirements for New Phosphogypsum Stacks, Lateral Expansions of Existing Phosphogypsum Stack Systems or Components), except a Liner system or an alternative Liner previously approved by EPA and memorialized in Paragraph 25 of the Consent Decree and Appendix 7 (Alternative Liner Requirements).

## **APPENDIX 1.D - CRITICAL CONDITIONS AND TEMPORARY MEASURES**

### **I. Requirements for Perimeter Dikes**

- (1) If a critical condition is confirmed, then EPA shall be notified immediately and the defective area of any Perimeter Dike shall be inspected daily in accordance with Section VIII of Appendix 1.B, until corrective maintenance has cured such defect. A written report of the condition and the actions taken or to be taken for its correction shall be made to the EPA within seven (7) days from the time existence of the critical condition is confirmed.
- (2) Any of the following items shall be considered as indicating a critical condition that requires immediate investigation and may require emergency maintenance action:
  - (a) Concentrated seepage on the downstream slope, at the slope Toe, or downstream from the slope Toe (e.g., a gypsum boil, soil cone, spring, or delta);
  - (b) Evidence of slope instability including sloughing, bulging or heaving of the downstream slope, or subsidence of any Perimeter Dike slope or crest;
  - (c) Structurally significant cracking of surface on crest or either face of the Perimeter Dike slope;
  - (d) General or concentrated seepage in the vicinity of or around any conduit through the Perimeter Dike; or
  - (e) Observed or suspected damage to the Liner system where there is a release or the potential for a release from the Liner system.

### **II. Temporary Measures for Use of Design Freeboard to Prevent Release**

#### **(1) Temporary Use of the Freeboard**

- (a) Temporary use of the Freeboard of a Perimeter Dike or a Gypsum Dike is authorized when the water level is at the design Freeboard and when such use is necessary to prevent the release of untreated Process Wastewater. Such use of the Freeboard shall only be allowed when a Third-Party Engineer has approved such use; and
- (b) When documentation demonstrating the continued safety and stability of the Dike is submitted to EPA. Such documentation shall include a listing of any operational limitations or constraints recommended by the Third-Party Engineer as set forth in this Section together with confirmation that

Simplot will comply with such recommendations. The Third-Party Engineer shall base recommendations on:

- (i) An inspection of the Phosphogypsum Stack System;
- (ii) Dike design and construction information;
- (iii) Results of seepage and stability analyses (including monitoring of seepage pressures within the Dike if such monitoring is deemed necessary); and
- (iv) Wind Surge and Wave Height and Run-up analyses.

(c) The report by the Third-Party Engineer shall specify conditions under which such use may be undertaken so as not to jeopardize the integrity of the Dike, such as:

- (i) Acceptable wind speeds in forecast;
- (ii) Increased inspection frequencies; and
- (iii) Weekly monitoring of piezometric levels within the mass of the Dike, if and as needed.

(d) The Third-Party Engineer shall evaluate the Phosphogypsum Stack System each time use of the design Freeboard is proposed by Simplot. The EPA shall be informed of the proposed use and the engineer's recommendations prior to or within 24 hours of each such occurrence.

(2) If the Perimeter Dike of the Phosphogypsum Stack System is an above-grade Dike, then the Phosphogypsum Stack System may incorporate an emergency spillway to allow for the controlled release of Process Wastewater during emergencies and to avoid overtopping of the Perimeter Dike. The spillway shall be located so as to minimize the environmental impact of any release to the extent practicable. This provision shall not be deemed to authorize a discharge from the spillway and shall not be construed to limit EPA's exercise of enforcement discretion in the event that such discharge causes or contributes to a violation of applicable federal and/or state regulations.

### **III. Requirements for Actively Operated Phosphogypsum Stack Systems**

(1) When a critical condition is suspected during any inspection, the inspector shall ensure that a competent technical representative of Simplot is made aware of the condition immediately. If the existence of the critical condition is confirmed, then EPA shall be notified immediately. A written report of the condition and the

actions proposed for its correction shall be made to EPA within seven (7) days from the time existence of the critical condition is confirmed.

(2) Any of the following items shall be considered as indicating a critical condition that requires immediate investigation and may require emergency maintenance action:

- (a) Concentrated seepage (e.g., springs or boils) on the face of a Phosphogypsum Stack slope, at the slope Toe, or beyond the slope Toe with active signs of Piping at the point of seepage (e.g., a gypsum or soil cone or delta at the point of seepage);
- (b) Evidence of slope instability including sloughing, bulging or heaving of the face of the Phosphogypsum Stack or the slope Toe;
- (c) Continued and increasing lateral movement or subsidence of the slope or crest of the Phosphogypsum Stack;
- (d) Formation of new non-shrinkage cracks or enlargement of wide cracks in the surface of the slope or crest of the Phosphogypsum Stack, excluding locations of newly constructed features that have not dried and/or received final grading and compaction;
- (e) Observed or suspected damage to the Liner system where there is a release or the potential for a release from the Liner system;
- (f) Drains discharging turbid water;
- (g) Concentrated seepage (i.e., springs or boils) in the vicinity of a decant pipe.

#### **IV. Emergency Diversion Impoundment (EDI)**

- (1) Simplot may temporarily use an approved EDI in accordance with applicable state authorization to receive and store discharges of process water from the Phosphogypsum Stack System to avoid safety-related problems and/or to avoid or reduce the unpermitted discharge of process water from the Phosphogypsum Stack System to Surface Waters of the State.
- (2) Simplot shall provide to EPA a list of previously designated EDIs (as reflected in applicable permits or water management plans) prior to the Effective Date of the Consent Decree. Any additional EDIs that Simplot wishes to designate after the Effective Date of the Consent Decree must be authorized by the State of Wyoming prior to use.

- (3) Simplot shall transport process water to/from the EDI through an emergency spillway or by pumping where necessary.
- (4) Following any emergency discharge into an EDI, and within 60 days after such discharge is initiated, Simplot shall submit a detailed remedial plan to EPA for approval. After submission of the plan, Simplot will initiate all steps necessary in accordance with the plan to remove the discharge from the EDI and remediate the area, if necessary, to return that impoundment to its prior use.

**Appendix 1.E - Phosphogypsum Stack System Permanent Closure Application****PART I – INSTRUCTIONS**

Phosphogypsum Stack Systems must be closed pursuant to the Consent Decree entered in the United States of America v. \_\_\_\_\_ (Court Name, Civil Action Number: \_\_\_\_\_), Appendix 1.B and 1.C and in accordance with conditions set forth in the Consent Decree. The applicant shall complete Part II and submit this form, certified by the applicant and its Third-Party Engineer. This form should be typed or printed. If additional space is needed, separate, properly identified sheets of paper may be attached. All blanks shall be filled or modified N/A (not applicable).

In addition to the information listed on this form and otherwise required by the Consent Decree, including Appendix 1.B and 1.C, the applicant shall submit all information necessary to evaluate the proposed closure plan to ensure the Phosphogypsum Stack System will pose no significant threat to public health or the environment. A minimum of four copies of this application (preferably in a large binder) shall be submitted to the EPA. Please complete applicable Sections of the application.

**PART II - GENERAL INFORMATION**

(1) Application for permanent closure:

☐ Phosphogypsum Stack    ☐ Collection ponds or surge ponds    ☐ Other

(2) Facility name: \_\_\_\_\_

(3) Facility RCRA EPA ID No.: \_\_\_\_\_

(4) Facility location (main entrance): \_\_\_\_\_

(5) Location: Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Section\_Township\_\_Range\_\_\_\_\_UTMs: Zone\_\_\_\_\_km E\_km N

(6) Applicant Name (Operating Authority): \_\_\_\_\_

Street Address & P. O. Box: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Zip: \_\_\_\_\_

Contact Person-Name \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

(7) Authorized Agent/Consultant Name: \_\_\_\_\_

Street Address & P. O. Box: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Zip: \_\_\_\_\_

Contact Person-Name \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

(8) Land Owner  
(if different from applicant): \_\_\_\_\_

Address of Landowner:  
Street & P. O. Box: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Zip: \_\_\_\_\_

### **PART III - CLOSURE GENERAL REQUIREMENTS**

APPLICATIONS AND SUPPORTING INFORMATION SHALL INCLUDE THE FOLLOWING:

- (1) Four copies of the completed application form, all supporting data, and reports;
- (2) A letter of transmittal to the EPA;
- (3) A table of contents listing the main section of the application;
- (4) Third-Party Engineer certification;
- (5) Third-Party Engineer's letter of appointment if applicable;
- (6) Closure Plan, Consent Decree Appendix 1.C;
- (7) Copy of any lease agreement, transfer of property agreement with right-of-entry for Long-Term Care, or any other agreement between operator and property owner by which the closure and Long-Term Care of the Facility may be affected.

**PART IV - CLOSURE PLAN REQUIREMENTS**

The following information items must be included in the application or an explanation given if they are not applicable. These are general references. Please see Appendix 1.C for the complete requirements of each section.

**(1) General Information Report:**

- (a) Identification of the Phosphogypsum Stack System
- (b) Name, address, and phone number of primary contact person
- (c) Name of person(s) or consultants preparing closure plan
- (d) Present property owner(s) and operator
- (e) Locations of main entrance or operator's office of the Phosphogypsum Stack System by: township, range, section and latitude and longitude
- (f) Total acreage of Phosphogypsum Stack System and total acreage of Facility property
- (g) Legal description of property on which the Phosphogypsum Stack system is located
- (h) History of Phosphogypsum Stack System construction and operations

**(2) Area Information Report:**

- (a) Topography

|                                                                                                                                              | Completeness<br>Check    | Binder Location |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|
| (1) General Information Report                                                                                                               | <input type="checkbox"/> | _____           |
| (a) Identification of the Phosphogypsum Stack System                                                                                         | <input type="checkbox"/> | _____           |
| (b) Name, address, and phone number of primary contact person                                                                                | <input type="checkbox"/> | _____           |
| (c) Name of person(s) or consultants preparing closure plan                                                                                  | <input type="checkbox"/> | _____           |
| (d) Present property owner(s) and operator                                                                                                   | <input type="checkbox"/> | _____           |
| (e) Locations of main entrance or operators office of the Phosphogypsum Stack System by: township, range, section and latitude and longitude | <input type="checkbox"/> | _____           |
| (f) Total acreage of Phosphogypsum Stack System and total acreage of Facility property                                                       | <input type="checkbox"/> | _____           |

|                                                                                                 | Completeness<br>Check    | Binder Location |
|-------------------------------------------------------------------------------------------------|--------------------------|-----------------|
| (g) Legal description of property on which the Phosphogypsum Stack system is located            | <input type="checkbox"/> | _____           |
| (h) History of Phosphogypsum Stack System construction and operations                           | <input type="checkbox"/> | _____           |
| (2) Area Information Report                                                                     | <input type="checkbox"/> | _____           |
| (a) Topography                                                                                  | <input type="checkbox"/> | _____           |
| (b) Hydrology                                                                                   | <input type="checkbox"/> | _____           |
| (c) Geology                                                                                     | <input type="checkbox"/> | _____           |
| (d) Hydrogeology                                                                                | <input type="checkbox"/> | _____           |
| (e) Ground and Surface Water quality                                                            | <input type="checkbox"/> | _____           |
| (f) Land use information                                                                        | <input type="checkbox"/> | _____           |
| (3) Groundwater monitoring plan containing site specific information (Appendix 1.A)             | <input type="checkbox"/> | _____           |
| (4) Assessment of the effectiveness of existing Phosphogypsum Stack System design and operation | <input type="checkbox"/> | _____           |
| (a) Effectiveness and results of Groundwater investigation                                      | <input type="checkbox"/> | _____           |
| (b) Effects of Surface Water runoff, drainage pattern and existing storm water control          | <input type="checkbox"/> | _____           |

|                                                                                                                                                                                                  | Completeness<br>Check    | Binder Location |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|
| (5) Performance Standards                                                                                                                                                                        | <input type="checkbox"/> |                 |
| (a) Approach used for:                                                                                                                                                                           | <input type="checkbox"/> |                 |
| 1. Controlling, minimizing or eliminating the post closure escape of Phosphogypsum, Process Wastewater, Leachate, and contaminated runoff to Groundwater and Surface Waters                      | <input type="checkbox"/> |                 |
| 2. Minimizing Leachate generation                                                                                                                                                                | <input type="checkbox"/> |                 |
| 3. Detecting, collecting, and removing Leachate and Process Wastewater efficiently from the Phosphogypsum Stack System and promoting drainage of Process Wastewater from the Phosphogypsum Stack | <input type="checkbox"/> |                 |
| 4. Minimizing the need for further maintenance                                                                                                                                                   | <input type="checkbox"/> |                 |
| (b) Discussion of approach used to ensure that the Final Cover system is designed to protect human health and the environment:                                                                   | <input type="checkbox"/> |                 |
| 1. Promoting drainage off the Phosphogypsum Stack                                                                                                                                                | <input type="checkbox"/> |                 |
| 2. Minimizing ponding                                                                                                                                                                            | <input type="checkbox"/> |                 |
| 3. Minimizing erosion                                                                                                                                                                            | <input type="checkbox"/> |                 |
| 4. Minimizing infiltration into the Phosphogypsum Stack                                                                                                                                          | <input type="checkbox"/> |                 |
| 5. Functioning with little or no maintenance                                                                                                                                                     | <input type="checkbox"/> |                 |
| (c) Closure of ponds and drainage conveyances storing Process Wastewater                                                                                                                         | <input type="checkbox"/> |                 |

|                                                                                            | Completeness<br>Check    | Binder Location |
|--------------------------------------------------------------------------------------------|--------------------------|-----------------|
| (6) Closure design plan                                                                    | <input type="checkbox"/> |                 |
| (a) Phasing of site closure                                                                | <input type="checkbox"/> |                 |
| (b) Existing topography and proposed final grades                                          | <input type="checkbox"/> |                 |
| (c) Final Cover installation plans                                                         | <input type="checkbox"/> |                 |
| (d) Type of Leachate control system proposed                                               | <input type="checkbox"/> |                 |
| (e) Compliance with Groundwater protection requirements of the Wyoming DEQ                 | <input type="checkbox"/> |                 |
| (f) Proposed method of stormwater control                                                  | <input type="checkbox"/> |                 |
| (g) Proposed method of access control                                                      | <input type="checkbox"/> |                 |
| (h) Proposed final use of Phosphogypsum Stack System property                              | <input type="checkbox"/> |                 |
| (7) Closure construction quality assurance plan                                            | <input type="checkbox"/> |                 |
| (a) Listing of personnel involved in closure construction and quality assurance activities | <input type="checkbox"/> |                 |
| (b) Scope of work                                                                          | <input type="checkbox"/> |                 |
| (c) Outline of construction activities                                                     | <input type="checkbox"/> |                 |
| (d) Quality assurance methods and procedures                                               | <input type="checkbox"/> |                 |
| (e) Test results                                                                           | <input type="checkbox"/> |                 |
| (f) Record drawings                                                                        | <input type="checkbox"/> |                 |

|                                                                                  | Completeness<br>Check    | Binder Location |
|----------------------------------------------------------------------------------|--------------------------|-----------------|
| (8) Closure Operation Plan                                                       | <input type="checkbox"/> | _____           |
| (a) Describe actions which will be taken to close the Phosphogypsum Stack System | <input type="checkbox"/> | _____           |
| (b) Time schedule for completion of closure and long term care                   | <input type="checkbox"/> | _____           |
| (c) Equipment and personnel needs to complete closure                            | <input type="checkbox"/> | _____           |
| (d) Appropriate references to design closure plan                                | <input type="checkbox"/> | _____           |
| (e) Proposed use of the system for water storage or water management             | <input type="checkbox"/> | _____           |

(3) Engineer certification

## PART V - CERTIFICATION BY APPLICANT AND THIRD-PARTY ENGINEER

(1) Applicant

The undersigned applicant or authorized representative<sup>1</sup> of \_\_\_\_\_ is aware that statements made in this form and the attached information are an application for closure approval from the EPA and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief.

Signature of Applicant or Authorized Representative

\_\_\_\_\_ By \_\_\_\_\_  
*Date* *Name* \_\_\_\_\_  
*Title* \_\_\_\_\_

(2) Professional Engineer registered in \_\_\_\_\_ or Public Officer as required in [State code].

This is to certify that the engineering features of this Facility's Permanent Phosphogypsum Stack System Closure Plan have been designed/examined by me

<sup>1</sup> Attach letter of authorization if representative is not the owner or a corporate officer.

and found to conform to engineering principles applicable to such facilities. In my professional judgment, this Facility's Permanent Phosphogypsum Stack System Closure Plan, when properly executed, will comply with the requirements of Appendix 1.B and 1.C of the Consent Decree (Civil Action No.: \_\_\_\_\_

). It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and closure of the Facility.

\_\_\_\_\_ By \_\_\_\_\_  
*Date* *Name* \_\_\_\_\_  
*Title* \_\_\_\_\_

Mailing Address \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone Number  
 (including area code): \_\_\_\_\_

State Registration Number: \_\_\_\_\_

(Please affix seal)