Statement of Basis

Final

J. R. Simplot Company
Don Siding Plant
Pocatello, Idaho
Facility ID No. 077-00006
Permit to Construct No. P-2009.0053

November 5, 2009
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Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EL	emissions screening levels
EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutants
hr/yr	hours per year
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	toxic air pollutants
T1	Tier I operating permit
T2	Tier II operating permit
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter

1. FACILITY INFORMATION

1.1 Facility Description

The facility is an integrated phosphate fertilizer manufacturing plant. The plant produces phosphoric acid, sulfuric acid, nitric acid, ammonia, several grades of solid and liquid fertilizers, and other commercial chemical products. A detailed process description can be found under each emissions unit group in the Tier I operating permit, as well as in the Tier I operating permit applications.

1.2 Permitting Action and Facility Permitting History

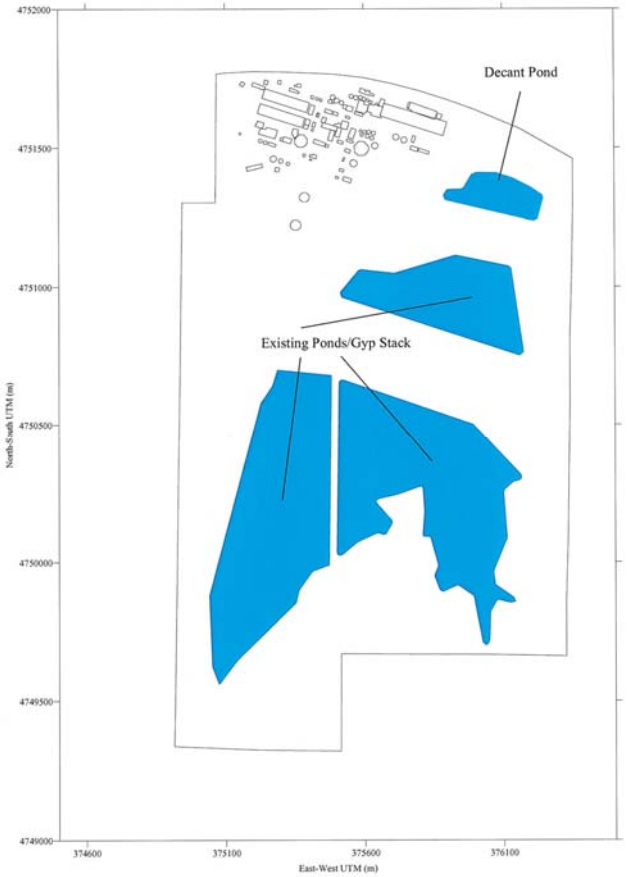
This PTC is for a modification at an existing Tier I facility. Refer to the current Tier I permit statement of basis for the permitting history.

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

The 10-acre decant pond is to be located north of the existing lower gypsum compartment and the existing gypsum stack ponds (refer to Figure 2.1), as part of the phosphogypsum stack lining project. The purpose of the project is to contain the by-product gypsum, associated stack system process waters, and any runoff from the active gypsum storage area within the lined limits of the stack vertical expansion, thereby minimizing future groundwater impacts. No facility-wide increase in fluoride emissions is expected as a result of this project; because no increase in process throughput has been proposed, actual cooling tower fluoride emissions are expected to decrease in direct relationship to any actual increase in fluoride emissions observed in the 10-acre decant pond.

Figure 2.1 EXISTING AND PROPOSED GYP STACK POND LOCATIONS



2.2 Application Chronology

April 22, 2009	DEQ received a pre-permit construction application and $1,000 application fee.
May 5, 2009	DEQ made available the draft permit and statement of basis for peer and Pocatello Regional Office review.
May 5 – May 20, 2009	DEQ provided an opportunity to request a public comment period on the permit application and proposed permit to construct.
May 6, 2009	DEQ approved the pre-permit construction approval application.
May 21, 2009	DEQ determined that the application was incomplete.
June 23, 2009	DEQ received supplemental information from the permittee concerning compliance with ambient air quality standards for fluorides.
June 26, 2009	DEQ made available the draft permit and statement of basis for facility review.
July 8, 2009	DEQ received the $2,500 PTC processing fee.
July 17, 2009	DEQ determined that the application was complete.
October 3 – November 2, 2009	DEQ provided a public comment period on DEQ's proposed permit action.
November 5, 2009	DEQ issued the final permit and statement of basis.

3. TECHNICAL ANALYSIS

3.1 Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Source Description	Emissions Controls
10-acre Decant Pond	None

3.2 Emissions Inventory

No facility-wide increase in fluoride emissions has been proposed or is expected as a result of this project. The 10-acre decant pond does result in a source-specific increase in potential emissions, from the standpoint that it is a new emissions source. However, because no increase in process throughput has been proposed, and based on data provided in the application, actual cooling tower fluoride emissions are expected to decrease in direct relationship to any actual increase in fluoride emissions observed in the 10-acre decant pond (refer to Section 3.3 and the application for a complete discussion). No increase in process throughput and no changes to permitted fluoride limits (lb/hr and T/yr) for existing sources have been proposed; existing emissions limits in active permits remain applicable.

A source-specific potential emissions estimate for the 10-acre decant pond was provided in the application, based on an emission factor from AP-42 Fourth Edition Sept 1985; Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources, and continuous operation (8,760 hr/yr). A review of recent versions of AP-42 did not find any updates to this emission factor. Potential emissions have been presented as uncontrolled in Table 3.2, which are above the TAP emissions screening level (EL) listed in IDAPA 58.01.01.585. The emissions inventory for this project has been included in Appendix B.

Table 3.2 TAP AND HAP UNCONTROLLED EMISSIONS SUMMARY EXCEEDING EL

TAP	HAP	Emissions Screening Level	24-hour Average[a]	Total HAP
		lb/hr	lb/hr	T/yr
Fluorides, as F	Hydrogen fluoride	0.167	0.667	2.92

a. 24-hour average applies to non-carcinogenic TAP.

3.3 Ambient Air Quality Impact Analysis

No facility-wide increase in fluoride emissions has been proposed or is expected as a result of this project. The 10-acre decant pond does result in a source-specific increase in potential emissions, from the standpoint that it is a new emissions source. However, because no increase in process throughput has been proposed, and based on data provided in the application, actual cooling tower fluoride emissions are expected to decrease in direct relationship to any actual increase in fluoride emissions observed in the 10-acre decant pond (refer to the application for a complete discussion). No increase in process throughput and no changes to permitted fluoride limits (lb/hr and T/yr) for existing sources have been proposed; existing emissions limits in active permits remain applicable.

The source-specific increase in potential emissions from the 10-acre decant pond was above the published modeling threshold[1] for fluorides in IDAPA 58.01.01.585, as indicated in Table 3.2. An ambient air impact analysis of fluoride emissions was provided, and the maximum predicted impact summarized in Table 3.3. The permittee has demonstrated preconstruction compliance with fluoride TAP emissions in accordance with IDAPA 58.01.01.210.06.b, because the modification's uncontrolled ambient concentration at the point of compliance is less than or equal to the applicable acceptable ambient concentration (AAC).

Table 3.3 FULL IMPACT ANALYSIS RESULTS FOR TAP

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Ambient Concentration ($\mu g/m^3$)	AAC ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percentage of Limit
Fluorides, as F	24-hr	46.2		46.2	125		37.0%

Although preconstruction compliance for the project was demonstrated in accordance with IDAPA 58.01.01.210.06.b, DEQ is cognizant of apparent violations by the permittee of the primary and secondary Ambient Air Quality Standards for Fluorides in IDAPA 58.01.01.577.06. In accordance with the procedures of IDAPA 58.01.01.203.02, no permit to construct shall be granted for a new or modified source unless the applicant shows to the satisfaction of DEQ that the stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.

Supplemental information has been provided by the permittee indicating that because no increase in process throughput has been proposed, actual cooling tower fluoride emissions are expected to decrease in direct relationship to any actual increase in fluoride emissions observed in the 10-acre decant pond. Supporting discussion provided in the application has been summarized below; refer to the application for a complete discussion.

Gypsum stack decant return water historically reported to the cold pit of the phosphoric acid plant's (PAP) reclaim cooling tower system. The decant return water has recently been removed from the cooling tower cold pit and routed directly to the gypsum thickener. The concentration of the PAP cooling tower water fluoride has decreased since the decant water was removed. (The Reclaim Cooling Towers have been the largest source of airborne fluoride at the Don Plant, contributing over 86 percent

[1] Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002 and IDAPA 58.01.01.585-586.

of the Don Plant allowable and actual point source total emissions.[2]) Assuming a direct relationship between concentration and emissions, a decrease in existing facility-wide emissions of fluoride (cooling tower emissions) is expected to offset the source-specific potential increase in emissions associated with operation of the decant pond. In conjunction with re-routing decant return water, the installation of the decant pond is necessary to fully isolate the decant water from the PAP cooling tower system. Occasionally the gypsum thickener system, which contains decant water, will overflow during upset operating conditions. Currently, this overflow reports to the east overflow pond, which currently returns to the PAP cooling towers. In order to avoid the co-mingling of the decant water, the overflow will be intercepted and routed directly to the proposed decant pond.

The supplemental information provided indicates that although the addition of a 10-acre decant pond will create an additional emission source at the facility, facility-wide fluoride emissions are not expected to increase as a result of this project. The permittee has demonstrated preconstruction compliance to DEQ's satisfaction that the source-specific potential increase in emissions due to this permitting action will not exceed any applicable AAC or AACC for TAP. The permittee has demonstrated preconstruction compliance to DEQ's satisfaction that actual emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard.

The supplemental information provided indicates that existing forage monitoring sites reside within the predicted area of impact of the proposed decant pond. As a result, changes are not recommended at this time to the existing monitoring sites or to other existing operating, monitoring, recordkeeping, and reporting requirements relevant to ensuring compliance with the primary and secondary ambient air quality standards for fluorides.

Although not within the scope of this air quality permitting action, it should be noted that the decant pond project is an integral part of the gypsum stack lining project. Groundwater discharging from the Don Plant area has been previously identified as a major source of phosphorus loading to the Portneuf River. Installation of a geosynthetic high-density polyethylene (HDPE) liner on the surface of the existing gypsum stack will result in the capture and re-routing of water for re-use in the process, and a corresponding reduction in the amount of water infiltrating through the stack and into the groundwater.

A summary of the results of the ambient air quality impact analysis for this project is included in Appendix C.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The Don Plant and phosphogypsum stacking areas are located in Sections 7 and 18 of Township 6 South, Range 34 East, just west of Pocatello, Idaho. The facility is located in Bannock County, which is designated as attainment or unclassifiable for PM_{10}, $PM_{2.5}$, CO, NO_2, SO_X, and Ozone. Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

The proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a permit to construct is required in accordance with IDAPA 58.01.01.201. This PTC will be processed in accordance with IDAPA 58.01.01.209.05.a; the applicable requirements contained in this PTC will be incorporated into the Tier I operating permit during renewal.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

[2] Fluoride Deposition Modeling Report, Simplot Don Plant, October 24, 2004.

The application was submitted for a permit to construct (refer to Section 4.2). Therefore, the procedures of IDAPA 58.01.01.401 are not applicable to this project.

4.4 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

The facility is classified as a major facility in accordance with IDAPA 58.01.01.008.10, because the estimated emissions of criteria pollutants and HAP have the potential to exceed major source thresholds. The facility is a designated facility as defined in IDAPA 58.01.01.006.30.

This project is not required to be processed as a significant permit modification in accordance with IDAPA 58.01.01.382, and may be processed in accordance with the minor permit modification procedures in IDAPA 58.01.01.383.

4.5 PSD Classification (40 CFR 52.21)

The facility is classified as an existing major stationary source, because the estimated emissions of criteria pollutants and HAP have the potential to exceed major stationary source thresholds. The facility is a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a).

40 CFR 52.21 .....Prevention of significant deterioration of air quality.

40 CFR 52.21(a)(2) .....Applicability procedures.

In accordance with §52.21(a)(2)(i), the requirements of this section apply to the construction of any new major stationary source or any project at an existing major stationary source in an area designated as attainment or unclassifiable. This project is proposed at an existing major stationary source in an area designated as attainment or unclassifiable (refer to Section 4.1).

In accordance with §52.21(a)(2)(ii), the requirements of paragraphs (j) through (r) of this section apply to the construction of any new major stationary source or the major modification of any existing major stationary source, except as this section otherwise provides. This project is not a major modification as defined in 40 CFR 52.21(b)(2)(i), because it does not result in a significant emissions increase in accordance with 40 CFR 52.21(b)(40). The source-specific emissions increase resulting from this project (actual facility-wide emissions have been predicted to remain the same or to decrease), including fugitive emissions from the 10-acre decant pond in accordance with 40 CFR 52.21(b)(1)(iii), is less than the significant level for fluorides of 3 T/yr as defined in 40 CFR 52.21(b)(23)(i). Therefore, the requirements of paragraphs 40 CFR 52.21(j) through (r) do not apply to this project unless otherwise provided.

In accordance with §52.21(a)(2)(iii), no new major stationary source or major modification to which the requirements of paragraphs (j) through (r)(5) of this section apply shall begin actual construction without a permit that states that the major stationary source or major modification will meet those requirements. As provided above, paragraphs (j) through (r)(5) are not applicable.

40 CFR 52.21(c).....Ambient air increments.

In accordance with §52.21(c), in areas designated as Class I, II or III, increases in pollutant concentration over the baseline concentration shall be limited to the values in the table provided. Fluorides are not listed in the table provided.

40 CFR 52.21(d) .....Ambient air ceilings.

In accordance with §52.21(d), no concentration of a pollutant shall exceed: (1) the concentration permitted under the national secondary ambient air quality standard, or (2) the concentration permitted under the national primary ambient air quality standard, whichever concentration is lowest for the

pollutant for a period of exposure. The primary and secondary standards do not specifically include fluorides.

40 CFR 52.21(r) .....Source obligation.

Applicable approval to construct and associated requirements are included in §52.21(r)(1) through (4).

In accordance with §52.21(r)(6), except as otherwise provided in paragraph (r)(6)(vi)(b) of this section, the provisions of this paragraph (r)(6) apply with respect to any regulated NSR pollutant emitted from projects at existing emissions units at a major stationary source in circumstances where there is a reasonable possibility, within the meaning of paragraph (r)(6)(vi) of this section, that a project that is not a part of a major modification may result in a significant emissions increase of such pollutant, and the owner or operator elects to use the method specified in paragraphs (b)(41)(ii)(a) through (c) of this section for calculating projected actual emissions.

Because the applicant used method (b)(41)(ii)(d) to quantify emissions, where in lieu of using the method set out in paragraphs (b)(41)(ii)(a) through (c) of this section, the emissions unit's potential to emit, in tons per year, as defined under paragraph (b)(4) of this section is used, the provisions of (r)(6) are not applicable. Because the emissions unit is part of one of the source categories listed in paragraph (b)(1)(iii) of this section and the emission unit is located at a major stationary source that belongs to one of the listed source categories, the unit's potential to emit includes fugitive emissions to the extent quantifiable.

Estimates of fugitive emissions from the 10-acre decant pond are based on unlimited operation, an uncontrolled emission factor of 1.6 pounds per acre per day, and 10 acres of pond surface area. Permit Condition 2.3 is included to ensure compliance with the emissions estimates provided in the application, and to ensure that additional PSD requirements are not also applicable.

4.6 NSPS Applicability (40 CFR 60)

The proposed 10-acre decant pond is not an affected facility subject to NSPS requirements, and does not alter the applicability status of existing affected facilities at the plant.

4.7 NESHAP Applicability (40 CFR 61)

The proposed 10-acre decant pond is not an affected source subject to NESHAP in 40 CFR 61, and does not alter the applicability status of existing affected sources at the plant.

4.8 MACT Applicability (40 CFR 63)

The proposed 10-acre decant pond is not an affected source subject to NESHAP in 40 CFR 63, and does not alter the applicability status of existing affected sources at the plant.

4.9 CAM Applicability (40 CFR 64)

The proposed 10-acre decant pond does not utilize a control device, or have a potential pre-control device emissions rate equal to or greater than 100 percent of the amount required for a source to be classified as a major source. Therefore, the 10-acre decant pond is not subject to the requirements of CAM in accordance with 40 CFR 64.2(a).

4.10 Permit Conditions Review

This section describes the permit conditions for this initial PTC. The requirements of this permit do not contravene and are not intended to contravene any permit conditions in any applicable Tier I, Tier II, or PTC permits (T1-040313, T2-990002, P-010312A, P-990015, P-000319, P-000318, etc.). The permittee must continue to comply with all applicable permits. Existing emissions limits, including but not limited to permit conditions addressing plant roads (refer to Section 13 of T1-040313) and permit conditions addressing the gypsum stack (refer to Section 10 of T1-040313) remain applicable. Facility-wide conditions included in active Tier I and Tier II permits are also generally applicable to the 10-acre decant pond, including but not limited to the requirements addressing fugitive dust (IDAPA 58.01.01.650-651); odors (IDAPA 58.01.01.775-776); and monitoring, testing, and reporting of ambient fluoride (IDAPA 58.01.01.750-751). Because the 10-acre decant pond is not included as a listed source in IDAPA 58.01.01.751.03, a source specific emissions limit was not required.

Initial Permit Condition 2.2

The 10-acre decant pond shall not exceed 10 acres in surface area.

The pond surface area was used in the development of the emissions inventory and in the ambient air quality impact analysis provided in the application. The purpose of this requirement is to ensure compliance with the TAP increment for fluorides (refer to Section 3.3) and to ensure compliance with the significant level for fluorides (refer to Section 4.5).

Compliance with this requirement is demonstrated by complying with Permit Condition 2.3 (recordkeeping of surface area).

Initial Permit Condition 2.3

The permittee shall maintain documentation of the surface area of the 10-acre decant pond to demonstrate compliance with Permit Condition 2.2.

The purpose of this requirement is to demonstrate compliance with Permit Condition 2.2.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The permittee is subject to a processing fee of $2,500 in accordance with IDAPA 58.01.01.225 because the source-specific potential emissions increase in permitted emissions is between 1 to less than 10 tons per year (offsetting or netting of emissions has not been requested by or credited to the permittee). Refer to the chronology for fee receipt dates.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	0.00	0	0.00
SO_2	0.00	0	0.00
CO	0.00	0	0.00
PM_{10}	0.00	0	0.00
VOC	0.00	0	0.00
HAP/TAP	2.92	0	2.92
Total:	**2.92**	**0**	**2.92**
Fee Due			**$2,500.00**

Registration and registration fees are also required in accordance with IDAPA 58.01.01.387-397 because this facility is a major facility (refer to Section 4.4).

6. PUBLIC COMMENTS AND RESPONSES

An opportunity for public comment period on the PTC application was provided in accordance with IDAPA 58.01.01.209.01.c. During this time, there were comments on the application and there was a request for a public comment period on DEQ's proposed action.

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c.iv. During this time, comments were submitted in response to DEQ's proposed action. A response to public comments document has been prepared by DEQ based on comments submitted during the public comment period. That document is part of the final permit package for this permitting action.

Refer to the chronology in Section 2.2 for comment period opportunity and public comment period dates.