Statement of Basis

Permit to Construct No. P-2017.0050
Project ID 61835

Nu-West Industries, Inc.
dba Agrium Conda Phosphate Operations
Soda Springs, Idaho

Facility ID 029-00003

Final

November 17, 2017
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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.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
CPO	Nu-West Conda Phosphate Operations
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
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
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
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
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SCL	significant contribution limits
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per consecutive 12-calendar-month period
TAP	toxic air pollutants
U.S.C.	United States Code
VMT	vehicle miles traveled
VOC	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Project Description

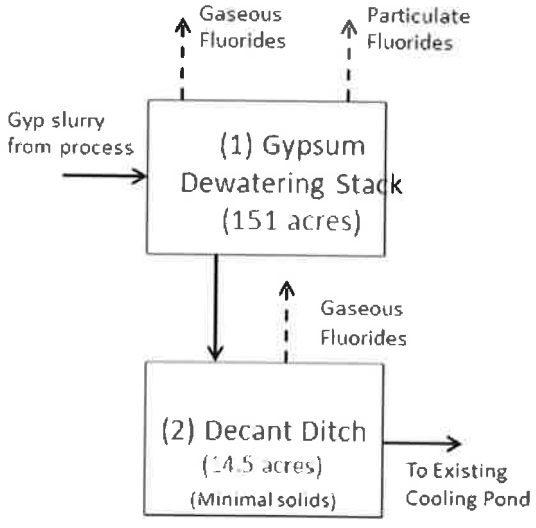
Nu-West Industries, Inc. dba Agrium Conda Phosphate Operations is planning to add a new phosphogypsum stack (Gyp Stack 3) and associated decant ditch (Decant Ditch 3) for the purpose of dewatering and storage of phosphogypsum at its Conda Phosphate Operations (CPO) facility located 7 miles north of Soda Springs and 1.2 miles east of Highway 34 in Soda Springs. The facility currently has three permitted gyp stacks (Gyp-0, Gyp-1, and Gyp-2) with a total footprint area of approximately 490 acres, and decant ditches with a total footprint area of approximately 17.4 acres. The proposed footprint area of Gyp Stack 3 is 151 acres and of Decant Ditch 3 is 14.5 acres.

Nu-West plans to close Gyp-0 in the near future and additional storage space for the phosphogypsum produced by the existing Phosphoric Acid Plant will be needed as the storage capacity of Gyp-1 and Gyp-2 decreases.

At the Phosphoric Acid Plant, phosphate rock slurry is mixed with sulfuric acid and weak phosphoric acid in the multi-compartment Digester. The resulting chemical reaction produces a slurry of phosphoric acid (approximately 30% P_2O_5) and crystals of calcium sulfate (i.e., phosphogypsum). The slurry is fed through filters, where the phosphoric acid (liquid) is separated from the phosphogypsum (solid). The resulting phosphogypsum filter cake is washed, producing weak phosphoric acid that is returned to the Digester. The washed phosphogypsum cake is slurried with process water and transported by pipeline to an impoundment, commonly referred to as a "gyp stack." The process water used to slurry the phosphogypsum to the gyp stack is either evaporated or recirculated through the decant ditch and existing cooling ponds for use in the process. While additional decant ditch acreage will be needed for the new gyp stack, the project does not require an increase in size or throughput of the existing cooling ponds.

The proposed expansion of the CPO gypsum dewatering stack system will include moving phosphogypsum internally within the expanded gyp stack system. The phosphogypsum will be moved from the existing gyp stacks to be used as building material for starter dikes and HDPE liner cover for the new Gyp-3 gypsum dewatering stack project. The phosphogypsum from the existing stacks also will be used for ongoing operation of Gyp-3 as necessary. Because the new gypsum dewatering stack will be part of an expanded but existing integrated gypsum dewatering stack system, the contemplated use of the phosphogypsum moved from the existing gyp stacks to the new stack will continue to be managed identically to current practice in accordance with the applicable requirements set forth in 40 CFR Part 61 Subpart R. A process flow diagram showing the scope of the project is provided in Figure 1 below.

Figure 1 Process Flow Diagram



Facility Description

General Process Description

Phosphate fertilizers provide phosphorus, one of the three primary plant nutrients required by plant life. The other two primary nutrients are nitrogen and potassium. Phosphate fertilizer products, which are often made with ammonia, also provide nitrogen. The principal applications of phosphate fertilizers are in the production of corn, wheat, soybeans, barley, cotton, and other small grain crops, fruits, and vegetables. Phosphate rock, sulfur, and anhydrous ammonia are the primary raw materials used to produce ammonium phosphate fertilizers. Phosphate rock is combined with sulfuric acid to produce phosphoric acid, which is then either:

- Combined with anhydrous ammonia to produce various dry granular fertilizers that are differentiated by their NPK content (% nitrogen -% phosphorus -% potassium), including MAP (11-52-0) and APS (16-20-0), or
- Concentrated to produce liquid fertilizer products containing no nitrogen and 52%-72% P_2O_5. CPO produces multiple products and alters its product mix to meet the changing requirements of its customers. The following is a brief description of the products manufactured at CPO.

Super Phosphoric Acid (SPA)

The manufacture of liquid SPA accounts for approximately 50% of the facility's total production volume. It is produced by concentrating phosphoric acid to a level of 68-72% P_2O_5. The use of liquid fertilizer as a percentage of total phosphate fertilizers applied in the domestic U.S. market has grown steadily over the past few years, due to its agronomic, economic, and ecological advantages. SPA is not an end-use fertilizer; rather, it is upgraded, mixed, or blended with other liquid nutrients, pesticides, and/or herbicides before it is applied. As a liquid, it allows for easy and precise application to crops, which makes more nutrients available to the plant. It can be injected below the soil in minimum-till or no-till programs to prevent leaching into waterways.

Merchant Grade Acid (MGA)

Merchant grade acid (MGA), is produced by concentrating phosphoric acid to a level of 50-58% P_2O_5. Like SPA, MGA contains no nitrogen and is generally diluted and mixed with other nutrients before application.

Dilute Phosphoric Acid (DPA)

Dilute phosphoric acid (DPA) is the filter-grade acid product of the "wet-acid" phosphoric acid process. This product is the feedstock for MGA. It has a P_2O_5 content of approximately 28-30%.

Dry Granular Products (MAP and APS)

The dry granular fertilizer products manufactured by the company are:

- Mono-ammonium Phosphate ("MAP" or 11-52-0)
- Ammonium Phosphate Sulfate ("APS" or 16-20-0)

Manufacturing Process and Raw Materials

The facility benefits from its close proximity to sources of phosphate rock, sulfuric acid, and sulfur-the principal raw materials used in its manufacturing process. At the Phosphoric Acid Plant, phosphate rock ore is mixed with water, sulfuric acid, and recycle acid in a series of reactors and digesters. A chemical reaction takes place, forming a slurry of phosphoric acid (approximately 30% P_2O_5) and crystals of calcium sulfate (known as phosphogypsum). The slurry is fed to a combination of two belt filters and a circular pan filter, where the 30% acid is separated from the phosphogypsum. The acid is pumped to additional processing steps and the phosphogypsum is slurried by pipeline to an impoundment, commonly referred to as a "gyp stack." The slurry contains approximately 20% solids. The phosphoric acid is concentrated in steam evaporators and used as feedstock in the fertilizer production process. The phosphoric acid is then either:

- Combined with anhydrous ammonia to produce various dry granular fertilizers, or
- Further concentrated to produce liquid fertilizer products containing no ammonia. Sulfuric acid used in the process is either manufactured by the facility from elemental sulfur or purchased from third party sources. Currently, approximately 50% of the sulfuric acid utilized at CPO is purchased from a third party source.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

Table 1 Permitting History

Issue Date	Project Number	Project	Status	History Explanation
November 17, 2017	P-2017.0050 PROJ 61835	Initial PSD PTC to add Gyp-3.	A	Initial permit.
May 20, 2013	P-2013.0001 PROJ 61142	Initial PTC to add SPA concentrator to No. 3 SPA train.	A	Initial permit.
January 12, 2012	T1-060308 PROJ 60957	Amended T1 to incorporate NESHAP Subpart ZZZZ requirements for ICE.	A	Amended T1-060308.
March 4, 2011	T1-060308	Renewal Tier I.	S	Amended T1-040321. Amended by T1-060308 PROJ 60957.
October 14, 2010	P-2009.0068	Revised PTC to reduce SPA production limit and revise SPA Oxidation monitoring.	A	Revised P-060310.
March 25, 2010	P-2010.0002	Modified PTC for the East Sulfuric Acid Plant to replace the No. 2 absorbing tower, add cesium catalyst to 4th bed of the converter, replace the final absorbing tower heat exchanger, upgrade the cold interpass heat exchanger, replace the product cooler, and upgrade the acid pumps.	A	Revised P-040307.
February 20, 2009	P-2009.0002	Revised PTC for the West Gyp-2 project to decrease pond size and emission limits.	A	Revised P-2007.0170.
December 19, 2007	P-2007.0170	Initial PTC West Gyp-2 project.	S	Revised P-050312. Revised by P-2009.0002.
August 22, 2007	P-060310	Revised PTC to revise SPA Oxidation Process and incorporate granulation plant revisions from P-060324.	S	Revised P-040320 and P-060324. Revised by P-2009.0068.
December 21, 2006	P-060324	Revised PTC for drum replacement at the Granulation Plant.	S	Revised Section 4 of P-040320. Revised by P-060310.
April 28, 2006	T1-040321	Amended T1 to incorporate changes in PTC No. P-040320.	S	Amended T1-040308. Amended by T1-060308.
April 28, 2006	P-040320	Revised PTC to increase production at SPA and revise monitoring for the SPA Oxidation Process.	S	Revised P-029-00003 (7/12/00). Revised by PTC P-060310.
July 22, 2005	P-050312	Initial PTC West Gyp-1 project.	S	Initial permit. Revised by P-2007.0170.

Table 1 (continued)

Issue Date	Project Number	Project	Status	History Explanation
April 8, 2005	T1-040308	Modified PTC to incorporate changes in P-040307.	S	Initial permit. Amended by T1-040321.
December 10, 2004	P-040307	Revised PTC for East Sulfuric Acid Plant SO_2 to revise monitoring.	S	Revised P-029-00003 (P-000309). Revised by P-2010.0002.
September 23, 2003	T1-029-00003 (9/23/03)	Amended T1 to remove the Experimental Silica Plant.	S	Amended T1-029-00003 (10/28/02). Amended by T1-040321.
October 28, 2002	T1-029-00003 (10/28/02)	Initial Tier 1.	S	Initial permit. Amended by T1-029-00003 (9/23/03).
July 12, 2000	P-029-00003 (7/12/00)	Initial PTC for Sustaining and Expansion Projects to convert "dry" to "wet" process and add Purified P. Acid Plant (PPA).	S	Initial permit. Revised by P-040320.
April 27, 2000	P-029-00003 (P-000309)	Revised PTC for the East Sulfuric Acid Plant.	S	Revised P-029-00003 (P-000300). Revised by P-040307.
February 29, 2000	P-029-00003 (P-000300)	Revised PTC for the East Sulfuric Acid Plant.	S	Revised P-029-00003 (4/26/96). Revised by P-029-00003 (P-000309).
August 14, 1996	P-029-00003 (8/14/96)	Revised PTC to incorporate NSPS Subpart Db NO_x limit for the B-5 Boiler.	A	Revised P-029-00003 (7/26/95).
April 26, 1996	P-029-00003 (4/26/96)	Revised PTC for the East Sulfuric Acid Plant PTC to clarify daily production limit.	S	Revised P-029-00003 (1/5/96). Revised by P-029-00003 (P-000300).
January 5, 1996	P-029-00003 (1/5/96)	Modified PTC for East Sulfuric Acid Plant efficiency improvement.	S	Revised 0420-0003 (9/10/85). Revised by P-029-00003 (4/26/96).
July 26, 1995	P-029-00003 (7/26/95)	Revised PTC to correct rated heat input for the B-5 Boiler.	S	Revised P-029-00003 (7/7/95). Revised by P-029-00003 (8/14/96).
July 7, 1995	P-029-00003 (7/7/95)	Modified PTC for the Nebraska Boiler (B-5).	S	Revised P-029-00003 (3/31/95). Revised by P-029-00003 (7/26/95).
March 31, 1995	P-029-00003 (3/31/95)	Revised PTC for the Nebraska Boiler (B-5), which replaced the B&W Boiler (B3).	S	Revised P-029-00003 (11/7/94). Revised by P-029-00003 (7/7/95).
November 7, 1994	P-029-00003 (11/7/94)	Revised PTC for B&W B3 Boiler.	S	Initial permit. Revised by P-029-00003 (3/31/95).
August 7, 1992	P-029-00003 (8/7/92)	Initial PTC for the Experimental Silica Plant.	T	Initial permit. Terminated on August 20, 2003.
September 10, 1985 (Beker Industries)	0420-0003 (9/10/85)	Revised PTC to correct combined SO_2 emissions rate from the East and West sulfuric acid plants.	S	Revised 0420-0003 (8/30/85). Revised by P-029-00003 (8/14/96).
August 30, 1985 (Beker Industries)	0420-0003 (8/30/85)	Revised PTC for the East and West Sulfuric Acid Plants.	S	Revised 13-0420-0003-01. Revised by 0420-0003 (9/10/85).
August 23, 1985 (Beker Industries)	0420-0003 (8/23/85)	Initial PTC the C.F. White Plant, for the new "Cogen I H_2SO_4 Plant (2800 TPD) Reference #85-003B".	E	Initial permit. This sulfuric acid plant was never constructed.
July 18, 1979 (Beker Industries)	13-0420-0003-01	Initial PTC.	S	Initial permit. Revised by 0420-0003 (8/30/85).

Application Scope

This PTC is for a modification at an existing Tier I facility.

The applicant has proposed to:

- Install and operate a new phosphogypsum dewatering stack (Gyp Stack 3) and associated decant ditch (Decant Ditch 3), collectively identified as Gyp-3.

Application Chronology

January 3, 2017	DEQ received an application fee.
January 10, 2017	DEQ received an application.
January 27, 2017	DEQ determined that the application was incomplete.
March 29, 2017	DEQ received supplemental information from the applicant, including updated fugitive emission estimates and modeling analyses.
April 28, 2017	DEQ determined that the application was incomplete.
May 18, 2017	DEQ received supplemental information from the applicant, including information supporting engineering assumptions used in estimating emissions.
June 9, 2017	DEQ determined that the application was complete.
August 1, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
August 4, 2017	DEQ made available the draft permit and statement of basis for applicant review.
August 29 and September 14, 2017	DEQ received comments from the applicant on the draft permit and updated application materials, including a revised emission inventory with an increase in decant ditch gaseous fluoride emissions, and a request for issuance as a standalone PSD PTC.
September 14, 2017	DEQ provided application materials to EPA.
September 22, 2017	DEQ made available a revised draft permit and statement of basis for applicant review.
September 28 – October 30, 2017	DEQ provided a public comment period on the proposed action.
September 12, 2017	DEQ received the permit processing fee.
November 17, 2017	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emission Units and Control Equipment

Table 1 Emission Units and Control Equipment

Emission Unit	Emission Unit Description	Control Equipment
Gyp-3	151-acre Gyp Stack 3 and 14.5 acre Decant Ditch 3 The gyp stack is a defined area where phosphogypsum is disposed of or stored including a phosphogypsum settling pond with the associated decant ditch.	Reasonable control of fugitive emissions

Emission Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit, an emission inventory was developed for the proposed gyp stack project (Gyp-3). The addition of Gyp-3 does not modify the processing capacity of the upstream Phosphoric Acid Plant, which is subject to a production limit of 560,000 tons per any consecutive 12-month period, and does not result in changes to any other equipment at the facility. Fluorides are present in all phosphate rocks. During phosphoric acid production, the fluorides are liberated as gaseous fluorides, primarily silicon tetrafluoride (SiF_4) and hydrogen fluoride (HF), or from particulate fluoride compounds in the gypsum. Some of the gaseous fluorides are found in the process water used to slurry the phosphogypsum to the gyp stack. The proposed gyp stack operation results in both gaseous and particulate fluoride emissions, and will result in additional particulate dust from gyp stack operations, wind erosion and vehicle traffic.

Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated criteria pollutants and hazardous air pollutants (HAP) as submitted by the applicant and verified by DEQ staff. See Appendix D for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit.

Table 2 Uncontrolled Potential to Emit for Modification

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides	Particulate Fluorides
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3 volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3 wind erosion	8.78	58.54	117.08	0.00	1.18
Gyp-3 backhoe operations	2.03E-03	1.34E-02	2.83E-02	0.00	2.86E-04
Gyp-3 haul gyp from Gyp-2 to Gyp-3	29.91	299.05	788.19	0.00	7.94
Gyp-3 ½ ton pickup around Gyp-3	0.20	1.96	7.69	0.00	0.08
Gyp-3 ½ ton pickup on Gyp-3	1.05	10.46	27.58	0.00	0.28
Other support vehicles (on Gyp-1/Gyp-2)	6.00	60.00	158.14	0.00	1.59
Other support vehicles (on Gyp-3)	0.72	7.15	18.85	0.00	0.19
Decant Ditch 3	0.00	0.00	0.00	2.91	0.00
Totals	**46.7**	**437.2**	**1117.5**	**47.0**	**11.3**

Potential to Emit, Net Emissions Increases, and TAP Emission Increase

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project. This is a new emission source. Therefore, pre-project emissions are set to zero for all criteria pollutants.

Post-project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post-project Potential to Emit includes all permit limits resulting from this project. As provided in the application and emission inventories (Appendix D), the following assumptions were relied upon in the emission estimate calculations:

- Annual operating schedules in terms of maximum days of operation, maximum routes traveled, and maximum vehicle miles traveled (VMT) per year; and
- Engineering assumptions concerning material silt, moisture, and fluoride contents by weight; minimum number of operating days exceeding ¼-mm of precipitation and the presence of snow cover during winter months; fraction of $PM_{2.5}$ and PM_{10} by weight of PM; maximum distances for pile height, road length, and pond and stack surface areas; number of vehicles in operation and maximum weights; mean wind speeds; and control efficiencies attributed to wet suppression.

The following table presents the post-project Potential to Emit for criteria pollutant, HAP, and toxic air pollutant (TAP) emissions for the Gyp-3 modification, and represents the change in facility-wide potential to emit as submitted by the applicant and verified by DEQ staff. See Appendix D for a detailed presentation of the calculations of these emissions.

Table 3 Potential to Emit, Net Emission Increases, and TAP Emission Increase for Modification

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides (b)	Particulate Fluorides (b)
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3 volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3 wind erosion	0.29	1.96	3.91	0.00	0.04
Gyp-3 backhoe operations	2.03E-03	1.34E-02	2.83E-02	0.00	2.86E-04
Gyp-3 haul gyp from Gyp-2 to Gyp-3	0.61	6.11	16.11	0.00	0.16
Gyp-3 ½ ton pickup around Gyp-3	0.096	0.96	3.76	0.00	0.04
Gyp-3 ½ ton pickup on Gyp-3	0.021	0.21	0.56	0.00	0.01
Other support vehicles (on Gyp-1/Gyp-2)	0.0005	0.0051	0.0136	0.00	0.0001
Other support vehicles (on Gyp-3)	0.01	0.15	0.39	0.00	0.0039
Decant Ditch 3	0.00	0.00	0.00	2.91	0.00
Total	**1.0**	**9.4**	**24.8**	**47.0**	**0.3**
PSD Significant Threshold (c)	***10***	***15***	***25***	***3***	
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

b) For comparison to applicable thresholds, fluoride emissions include the sum of both gaseous and particulate emissions.

c) "Significant" as defined in 40 CFR 52.21(b)(23); significance levels which were not determined to be applicable are not listed.

As presented in the Tier I renewal permit application, the facility-wide potential to emit exceeds 100 T/yr for PM, PM_{10}, SO_2, NO_x, and CO. Therefore, a PSD applicability analysis was required for this project. A comparison of the net emissions increase from the proposed modification to the PSD significance thresholds is provided in the preceding table, demonstrating that the proposed modification is a major modification subject to PSD review. Refer to the PSD Classification section and Appendix B (BACT Analysis) for additional information.

Although fluorides (as fluorine) are considered TAP emissions in accordance with IDAPA 58.01.01.585, because 40 CFR 63 Subpart AA addresses emissions of fluorides and particulate HAP from gyp stack systems, demonstration of compliance with TAP increments was not applicable to the proposed project in accordance with IDAPA 58.01.01.210.20.a.

Ambient Air Quality Impact Analyses

As presented in the modeling memo in Appendix E, estimated emission rates were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline.[1] Refer to the Emission Inventories section for additional information concerning the emission inventories. In addition, estimated emissions of fluorides from this project were demonstrated to not cause nor contribute to air pollution in violation of ambient air quality standards.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix E.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix E).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Caribou County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, CO, NO_2, SO_x, and ozone. There are no Class I areas within 10 km of the facility. Refer to 40 CFR 81.313 for additional information.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 ..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the proposed gyp stack project (Gyp-3). Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 ..... Tier II Operating Permit

An application was submitted for a permit to construct the proposed project (refer to the Permit to Construct section), and an optional Tier II operating permit was not requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

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

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post-project facility-wide emissions from CPO have the potential to emit greater than 100 tons per year for PM, PM_{10}, SO_2, NO_x, and CO as provided in the Tier I renewal permit application and including potential emissions from the proposed project. Therefore, CPO is classified as a major facility as defined in IDAPA 58.01.01.008.10.

Because CPO is a phosphate rock processing plant, it is a designated facility defined in IDAPA 58.01.01.006, and fugitive emissions were included when determining the major facility classification in accordance with IDAPA 58.01.01.008.10.c.i. This PTC will be processed according to IDAPA 58.01.01.209.05.a, and the applicable requirements contained in this PTC will be incorporated into the Tier I operating permit during renewal.

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[1] Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

Post-project facility-wide emissions from CPO have a potential to emit greater than 100 tons per year for PM, PM_{10}, SO_2, NO_x, and CO as provided in the Tier I renewal permit application and including potential emissions from the proposed project. Therefore, CPO is classified as a PSD major stationary source as defined in 40 CFR 52.21(b)(1)(i)(a) and in accordance with IDAPA 58.01.01.205.01.

Because CPO includes a sulfuric acid plant and a phosphate rock processing plant, fugitive emissions were included when determining the major stationary source classification in accordance with 40 CFR 52.21(b)(1)(iii).

IDAPA 58.01.01.205 ..... *PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN ATTAINMENT OR UNCLASSIFIABLE AREAS.*

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

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

In accordance with 40 CFR 52.21(a)(2)(i), because the proposed project is at an existing major stationary source in an area designated as attainment or unclassifiable for regulated New Source Review (NSR) pollutants (refer to the Attainment Designation (40 CFR 81.313) section), the requirements of this section apply.

In accordance with 40 CFR 52.21(a)(2)(iii), no new 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.

40 CFR 52.21(j) ..... *Control technology review.*

In accordance with 40 CFR 52.21(j)(1), a major modification shall meet each applicable emissions limitation under the State Implementation Plan (SIP) and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.

In accordance with 40 CFR 52.21(j)(3), a major modification shall apply best available control technology (BACT) for each regulated NSR pollutant which would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit.

Because the net emissions increase for the proposed modification has potential to emit fluoride in significant amounts, BACT was required for each emission source (Table 3). A summary of BACT reviews and determinations has been provided in Appendix B.

In accordance with 40 CFR 52.21(j)(4), for phased construction projects, the determination of BACT shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of BACT for the source. This project has not been identified as a phased construction project.

40 CFR 52.21(k) ..... *Source impact analysis.*

40 CFR 52.21(m) ..... *Air quality analysis.*

In accordance with 40 CFR 52.21(k), the owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of: (1) Any national ambient air quality standard in any air quality control region; or (2) Any applicable maximum allowable increase over the baseline concentration in any area.

As provided in 40 CFR 52.21(m)(1)(*b*)(*ii*), with respect to any pollutant for which no NAAQS exists, the analysis shall contain such air quality monitoring data as DEQ determines is necessary to assess ambient air quality for that pollutant in any area that the emissions of that pollutant would affect.

DEQ made the determination that New Source Review (NSR) ambient air impact modeling analyses and preconstruction air quality monitoring of fluorides were not required for this application. A Significant Monitoring Concentration (SMC) modeling demonstration was foregone because there is no NAAQS established for fluorides. While preconstruction monitoring may be required to show preconstruction compliance for pollutants with no NAAQS, DEQ did not require monitoring due to the weight of evidence supplied in the recent updates to 40 CFR 63 Subpart AA in which a residual risk analysis was assessed for fluoride emissions from the wet and dry areas associated with the gyp stacks and cooling ponds regulated by this NESHAP. This was also consistent with the approach provided under IDAPA 58.01.01.210.20(b) which specifies that no TAP analysis for fluorides regulated by 40 CFR 63 Subpart AA is required.

As provided in the Ambient Air Quality Impact Analyses section and in Appendix E, the applicant has demonstrated preconstruction compliance that emissions from this modification will not cause or significantly contribute to a violation of any NAAQS or any applicable maximum allowable increase over the baseline concentration as defined in IDAPA 58.01.01.581. Refer to the Ambient Air Quality Impact Analyses in Appendix E for additional information.

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

In accordance with 40 CFR 52.21(r)(1), any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action.

In accordance with 40 CFR 52.21(r)(2), approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. DEQ may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between constructions of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

In accordance with 40 CFR 52.21(r)(3), approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP) and any other requirements under local, State, or Federal law.

These requirements were addressed in the permit authority and general provision sections of the permit (Permit Conditions 3.3 and 3.5), including the 18-month commencement of construction deadline.

NSPS Applicability (40 CFR 60)

The gyp stacks regulated by this permit are not subject to any NSPS requirements in 40 CFR 60.

CPO is also subject to 40 CFR 60, Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, and Subpart H – Standards of Performance for Sulfuric Acid Plants, which are addressed in other permitting actions. DEQ is delegated Subparts Db and H.

NESHAP Applicability (40 CFR 61)

For Gyp-3, the requirements of 40 CFR 61, Subpart R – National Emission Standards for Radon Emissions from Phosphogypsum Stacks are applicable. This includes requirements for distribution and use of the gypsum, for eventual closure of the gypsum stacks, and for the Part 61 Subpart A General Provisions. Applicable requirements have been included in this PTC, and have also been incorporated in the Tier I permit. DEQ is not delegated Subpart R. A detailed regulatory applicability analysis of Subpart R is provided in Appendix C.

MACT Applicability (40 CFR 63)

For Nu-West Industries, Inc. dba Agrium Conda Phosphate Operations, the requirements of 40 CFR 63 Subpart AA – National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants, Subpart BB – National Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizers Production Plants, and Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters are applicable. This includes requirements for a gypsum dewatering stack and cooling pond management plan. Applicable requirements to the proposed gyp stack project (Gyp-3) have been included in this PTC, and other applicable requirements have been incorporated in the Tier I permit. DEQ is delegated Subparts AA, BB, and DDDDD. A detailed regulatory applicability analysis of Subpart AA is provided in Appendix C.

Because 40 CFR 63 Subpart AA addresses emissions of fluorides and particulate HAP from gyp stack systems, demonstration of compliance with TAP increments was not applicable to the proposed project in accordance with IDAPA 58.01.01.210.20.a. For the purposes of 40 CFR 63 Subpart AA, the proposed gyp stack is a new source in accordance with 40 CFR 63.601 because it will be constructed after August 19, 2015 and a PTC is required.

Permit Conditions Review

This section describes permit conditions established and incorporated in this permitting action. The applicant has requested issuance of this PSD permit as a standalone permit rather than as a revision to Permit to Construct (PTC) No. P-2009.0002, which regulates existing (non-PSD) gyp stacks. Substantive comments from the applicant not pertaining to this request have been addressed under each pertinent permit condition below (i.e., Permit Conditions 2.4, 2.11, and 2.14 and 2.10 and 2.12). Refer to Appendix F for a copy of comments received.

Permit Conditions 1.2 and 2.2

These conditions include descriptions for the proposed gyp stack (Gyp Stack 3) and associated decant ditch (Decant Ditch 3), collectively identified as Gyp-3.

Permit Conditions 2.3 and 2.13

These conditions incorporate fugitive dust control requirements from IDAPA 58.01.01.650-651. Compliance is assured by monitoring and recordkeeping of inspections and methods used to control emissions, and compliance with fugitive dust plan requirements.

Permit Conditions 2.4, 2.11, and 2.14

These conditions incorporate phosphogypsum distribution requirements and radon monitoring requirements from NESHAP 40 CFR 61, Subpart R.

As provided in the NESHAP Applicability section, DEQ does not have delegation of 40 CFR 61, Subpart R. Consistent with prior permitting actions (P-2009.0002), high-level citation of applicable requirements was incorporated into this permit. As specified, the permittee is required to comply with all applicable requirements.

Permit Condition 2.5

This condition establishes BACT work practice requirements for Gyp Stack 3 and Decant Ditch 3. Refer to Appendix A for additional information concerning BACT determinations. Compliance is assured by operating in accordance with the specified NESHAP 40 CFR 63, Subpart AA work practice requirements and the required management plan.

Permit Condition 2.6

This condition incorporates work practice requirements from NESHAP 40 CFR 63, Subpart AA to limit fugitive hydrogen fluoride emissions. This includes control measures contained in the Gypsum Dewatering Stack and Cooling Pond Management Plan for Gyp-3.

Permit Conditions 2.7 through 2.9

These conditions incorporate gyp stack management plan requirements; notification, recordkeeping, and reporting requirements; and general provisions from NESHAP 40 CFR 63, Subpart AA.

Permit Conditions 2.10 and 2.12

These conditions establish maximum area limits for Gyp Stack 3 and Decant Ditch 3. Compliance is assured by monitoring and recording maximum footprint areas for the stack and decant ditch, and annually certifying compliance that these footprints have not been exceeded.

The operational limits contained in Permit Condition 2.10 and monitoring and recordkeeping requirements in Permit Condition 2.12, in combination with facility-wide limits such as the phosphoric acid plant equivalent P_2O_5 feed rate limits contained in the Tier I Permit, limit criteria pollutant emissions (PM, PM_{10}, and $PM_{2.5}$) to below PSD applicability thresholds.

Although an explicit fluoride emission limit was not established, maximum area limits are considered emission limits that effectively limit emissions from the proposed gyp stack and decant ditch (Gyp-3). Refer to Appendix F for additional information. Defined consistently with prior permitting actions (P-2009.0002), initial measurement and DEQ notification is required following stack completion of construction.

Permit Condition 2.15

This condition incorporates general provisions from NESHAP 40 CFR 61 Subpart A.

PUBLIC REVIEW

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

A response to public comments document has been crafted by DEQ based on comments submitted during the comment period. That document is part of the final permit package for this permitting action.

APPENDIX A – BACT DETERMINATIONS

Regulatory Analysis

In accordance with 40 CFR 52.21(j)(2), a new major stationary source shall apply best available control technology (BACT) for each regulated NSR pollutant that it would have the potential to emit in significant amounts.

As defined in 40 CFR 52.21(b)(12), BACT means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act (CAA) which would be emitted from any proposed major stationary source or major modification which DEQ, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard in 40 CFR parts 60 and 61. If DEQ determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

EPA recommends that BACT review follow a five step process:[2]

1) Identify all control technologies

2) Eliminate technically infeasible options

3) Rank remaining control technologies by control effectiveness

4) Evaluate most effective controls and document results

5) Select BACT

The recommended "top down" approach provides that all available control technologies be ranked in descending order of control effectiveness. The applicant first examines the most stringent, or "top" alternative. That alternative is established as BACT unless the applicant demonstrates, and DEQ determines, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not "achievable" in that case. If the most stringent technology is eliminated in this fashion, then the next most stringent alternative is considered, and so on. Although EPA and DEQ regulations do not specifically require application of this process to meet PSD regulatory requirements, this top-down analysis ensures that a defensible BACT determination, including consideration of all requisite statutory and regulatory criteria, is reached.

The BACT reviews submitted in the application adhered to the recommended five step process (refer to the application for the BACT reviews in full detail).

Potential to emit from the facility has been estimated to be above the significance level threshold for the emissions of fluorides, as summarized in Table 4 (refer to the Emission Inventories section for information concerning estimates of potential to emit). As a result, the BACT review included the emissions units and pollutants identified in Table 4 which exceeded significant levels.

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[2] "New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting," EPA Office of Air Quality Planning and Standards, Draft, October 1990.

Table 4 Modification Potential to Emit, Net Emission Increases, and TAP Emission Increase

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides (b)	Particulate Fluorides (b)
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3 volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3 wind erosion	0.29	1.96	3.91	0.00	0.04
Gyp-3 backhoe operations	2.03E-03	1.34E-02	2.83E-02	0.00	2.86E-04
Gyp-3 haul gyp from Gyp-2 to Gyp-3	0.61	6.11	16.11	0.00	0.16
Gyp-3 ½ ton pickup around Gyp-3	0.096	0.96	3.76	0.00	0.04
Gyp-3 ½ ton pickup on Gyp-3	0.021	0.21	0.56	0.00	0.01
Other support vehicles (on Gyp-1/Gyp-2)	0.0005	0.0051	0.0136	0.00	0.0001
Other support vehicles (on Gyp-3)	0.01	0.15	0.39	0.00	0.0039
Decant Ditch 3	0.00	0.00	0.00	2.91	0.00
Total	**1.0**	**9.4**	**24.8**	**47.0**	**0.3**
PSD Significant Threshold (c)	***10***	***15***	***25***	***3***	
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

b) "Significant" as defined in 40 CFR 52.21(b)(23); significance levels which were not determined to be applicable are not listed. For comparison to the significance threshold, fluoride emissions include the sum of both gaseous and particulate emissions.

Considerations

Discussion relating to references and work practices has been provided in this section.

References reviewed during the BACT reviews and determinations included but were not limited to:

- PSD PTC application materials received from the applicant
- EPA RBLC, NSR policy and guidance, and technical bulletins
- NSR permits (federal, state, and local) and consent decrees addressing gyp stacks
- Technical journals and publications, control technology manufacturers, and/or environmental consultants
- Rule and implementation information for NESHAP Subpart AA

With additional regard to BACT work practices, the requirement to minimize emissions is referenced in the excess emission general provision and in the control equipment maintenance and operation general provision (Permit Conditions 3.2 and 3.11). A summary of BACT determinations follows for Gyp-3.

BACT Determinations Summary

The BACT determinations have been summarized in Appendix A. A description of each BACT review and determination follows.

Table 5 BACT Determinations Summary

NSR Pollutant	Type	BACT Emission Limit	Selected Technology
Fluorides	Gaseous	Work practice	Work practices: • Rim ditching consistent with Subpart AA • Timely closure consistent with Subpart AA
	Particulate	Work practice	Work practices: • Water wetting on road surfaces used by truck and excavator traffic as necessary for dust control • Timely closure consistent with Subpart AA

Gaseous Fluoride BACT – Identify all control technologies

Based upon review of the references listed, the top control technologies were identified. A list of the technologies identified and a summary of the BACT determination is provided in Table 6 for Gyp-3. Detailed descriptions of each technology can be found within the references listed.

Table 6 Summaries of BACT Reviews and Determinations

NSR Pollutant	Technology	Technically Feasible?	Control Effectiveness Ranking	Most effective based on impacts?
Gaseous Fluorides	Submerged discharge to gypsum pond [a]	No		
	Minimization of gypsum dewatering surface area by using rim ditch (cell) building techniques [a]	Yes	Baseline [a]	Yes
	Raw water to slurry gyp to the gyp stack	No		
	Wetting of the active gyp stack area [a]	No		
	Addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides [a]	Yes	Up to 90%	No [b]
	Application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack [a]	Yes	Up to 90%	No [b]
	Timely closure of all deactivated gyp stacks [a]	Yes	Baseline [a]	Yes
	Production of hydrofluorosilicic acid [a]	No		
	Dry conveyance and stacking of gypsum [a]	Yes	Up to 50%	No [b]
	Pretreatment of ore by calcining [a]	No		
	Limitation of dike building, material hauling, and water surface area of settling ponds during critical periods	No		

a) Reference NESHAP 40 CFR 63 Subpart AA.
b) Control technology was eliminated on the basis of cost.

Gaseous Fluoride BACT – Eliminate technically infeasible options

Based upon review of the references listed, technically infeasible control technologies which were not determined to be available and applicable to this project were eliminated from review.

The applicant documented that use of submerged discharge to gypsum pond, raw water to slurry gyp to the gyp stack, wetting of the active gyp stack area, production of hydrofluorosilicic acid, and pretreatment of ore by calcining were not feasible control options. Detailed discussion of each of these technologies and analysis of feasibility is provided in Appendix B.

Gaseous Fluoride BACT – Rank remaining control technologies by control effectiveness

Based upon review of the references listed, use of minimization of gypsum dewatering surface area by using rim ditch (cell) building techniques, addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides, application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, timely closure of all deactivated gyp stacks, and dry conveyance and stacking of gypsum control technologies were ranked based upon emission reduction performances provided.

Detailed discussion of the ranking of each of these technologies is provided in Appendix B.

Gaseous Fluoride BACT – Evaluate most effective controls and document results

Based upon review of the references listed, use of addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides, application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, and dry conveyance and stacking of gypsum control options were eliminated based on energy, environmental, and/or economic impacts.

The applicant has proposed to utilize the most effective control technologies available – minimization of gypsum dewatering surface area by using rim ditch (cell) building techniques, and timely closure of all deactivated gyp stacks.

These BACT work practice requirements were established as Permit Condition 2.5.

Particulate Fluoride BACT – Identify all control technologies

Based upon review of the references listed, the top control technologies were identified. A list of the technologies identified and a summary of the BACT determination is provided in Table 7 for Gyp-3. Detailed descriptions of each technology can be found within the references listed.

Table 7 Summaries of BACT Reviews and Determinations

NSR Pollutant	Technology	Technically Feasible?	Control Effectiveness Ranking	Most effective based on impacts?
Particulate Fluorides	Wetting of erodible areas of the gypsum dewatering stack	Yes	Baseline [a]	Yes
	Applying soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack	No		
	Limiting dike build and material hauling during critical periods	No		
	Timely closure of all deactivated gypsum dewatering stacks	Yes	Baseline [a]	Yes

a) Reference NESHAP 40 CFR 63 Subpart AA.
b) Control technology was eliminated on the basis of cost.

Particulate Fluoride BACT – Eliminate technically infeasible options

Based upon review of the references listed, technically infeasible control technologies which were not determined to be available and applicable to this project were eliminated from review.

The applicant documented that applying soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, and limiting dike build and material hauling during critical periods were not feasible control options. Detailed discussion of each of these technologies and analysis of feasibility is provided in Appendix B.

Particulate Fluoride BACT – Rank remaining control technologies by control effectiveness

Based upon review of the references listed, wetting of erodible areas of the gypsum dewatering stack, and timely closure of all deactivated gypsum dewatering stacks control technologies were ranked based upon emission reduction performances provided.

Detailed discussion of the ranking of each of these technologies is provided in Appendix B.

Particulate Fluoride BACT – Evaluate most effective controls and document results

The applicant has proposed to utilize the most effective control technologies available – wetting of erodible areas of the gypsum dewatering stack, and timely closure of all deactivated gypsum dewatering stacks.

These BACT work practice requirements were established as Permit Condition 2.5.

APPENDIX B – BACT ANALYSES

4.0 BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

The following subsections present the case-by-case fluoride BACT evaluation for the proposed gyp stack and associated decant ditch. Phosphoric acid is produced by digesting phosphate rock with sulfuric acid, to convert phosphate to a water soluble form. Phosphogypsum is produced by the process and, per 40 CFR 61 Subpart R, must be disposed of in a gyp stack.

4.1 FRAMEWORK FOR BACT ANALYSIS

This BACT review is for control of emissions from the proposed gyp stack (Gyp 3) and associated decant ditch. Construction and operation of a new gyp stack does not require any modifications elsewhere in the facility and will not result in increased phosphoric acid production. Any potential changes to the phosphoric acid production process to reduce fluoride emissions from the proposed project would fundamentally change the existing process and were deemed to be not available or technically infeasible control techniques.

4.2 BACT APPLICABILITY

The requirement to conduct a PSD BACT analysis and determination is set forth in Section 165(a)(4) of the Clean Air Act and in the federal PSD regulations in 40 CFR 52.21(j), which is incorporated by reference in the Idaho rules at IDAPA 58.01.01.205.01. A planned source of air contaminants is subject to the BACT requirements if a single pollutant exceeds the PSD major source threshold level or if a proposed modification exceeds the PSD pollutant specific "significance thresholds" at an existing major source. Conda is an existing major source under the PSD rules and the project will result in a potential to emit (PTE) of fluorides (F) above the U.S. Environmental Protection Agency (EPA)-defined significant emission rate of 3 tons per year; therefore, fluoride emissions from the proposed project are subject to PSD, including the BACT requirements. The specific information on the fluoride emission estimates is presented in Section 2 of the application. The remaining PSD regulated pollutants from the project – PM, PM_{10} and $PM_{2.5}$ – are not subject to PSD because their PTE is less than their respective significant emission rates of 25, 15 and 10 tons per year.

4.3 TOP-DOWN BACT PROCESS

BACT requirements are intended to ensure that a proposed project will incorporate control systems that reflect the latest demonstrated practical techniques for that particular facility. The BACT evaluation process requires documentation of control technology performance levels achievable on a case-by-case and pollutant-by-pollutant basis. BACT is defined in the federal PSD Regulations (40 CFR Part 52) and incorporated by reference in IDAPA 58.01.01 Section 205.01 as:

An emissions limitation based on the maximum degree of reduction for each air pollutant subject to regulation, taking into account energy, environmental and economic impacts, and other costs. The Regional Director will verify the BACT on a case-by-case basis, and it may include reductions achieved through the application of processes, systems, and techniques for the control of each air pollutant.

EPA recommends that a "top-down" approach be taken when evaluating available air pollution control technologies. Any existing requirements contained in a New Source Performance Standard (NSPS) in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants (NESHAPs) in 40 CFR Parts 61 and 63 would be considered as a "BACT floor" and would have to be complied with. The five steps of a top-down BACT evaluation as described in the EPA 1990 Draft New Source Review Workshop Manual are:

1. Identify all available control options with practical potential for application to the specific emission unit for the regulated pollutant under evaluation;

2. Eliminate technically infeasible or unavailable technology options;

3. Rank remaining control technologies by control effectiveness;

4. Evaluate most effective controls and document results; if top option is not selected as BACT an assessment of the environmental, economic or energy impacts of the rejected option is provided to support its rejection. The methodology for performing the cost estimates is provided in Appendix E. Similarly if the next most effective option(s) are also rejected a similar assessment and rational is provided; and

5. Select BACT, which will be the most effective technically feasible option not rejected based on energy, environmental, and economic impacts. A BACT limit may be a numeric limit or a work practice, if monitoring to demonstrate compliance with a numeric limit is not feasible.

The "top-down" approach is used in this analysis to evaluate available control techniques to reduce gaseous and particulate fluoride emissions from the proposed gyp stack and associated decant ditch and to determine achievable BACT limits.

Applicable NSPS and NESHAP Requirements

The New Source Performance Standards (NSPS), *40 CFR Part 60, Subpart T- Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants* and *Subpart U - Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants* do not include any limits or requirements for gyp stacks. These NSPS affect only the processing plant; therefore, no consideration is necessary in this BACT review.

F-Gyp-3 is subject to the general provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) under Part 61 Subpart A, and a specific NESHAP for radon emissions under *40 CFR 61, Subpart R – National Emission Standard for Radon Emissions from Phosphogypsum Stacks*. Subpart R includes requirements for the distribution and use of gypsum, and for the eventual closure of the gyp stack. Subpart R specifically requires phosphogypsum to be place in a gyp stack. The control measures considered in this BACT analysis must not be contrary to the provisions included in Subpart R.

In addition, F-Gyp-3 is subject to the Maximum Achievable Control Technology (MACT) Standard contained in *40 CFR 63, Subpart AA – National Emission Standard for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants*. This MACT standard includes requirements for the gyp stack system including development of a gypsum dewatering stack and cooling pond management plan and compliance options to address fugitive HF emissions, a listed federal hazardous air pollutant (HAP), from gyp stacks and cooling ponds. The MACT requirements serve as the baseline for the BACT analysis.

Previous BACT Determinations for Fluorides from Gyp Stacks

EPA's RACT/BACT/LAER Clearinghouse (RBLC) is a listing of RACT, BACT, and LAER determinations by governmental agencies for many types of air emission sources. ERM consulted this database for other recently permitted gyp stacks as the first step in developing a list of the most recent BACT decisions for similar sources. Search of the RACT/BACT/LAER Clearinghouse returned no results; an indication that there have been no BACT limits set for gyp stack emissions. Information from recent gyp stack permits are summarized on a pollutant specific basis in the following sections to identify and help to rank alternative technologies and achievable levels of control. The information gathered on permits that include limitations or work practices for gyp stack construction and operation are presented in Appendix A.

Previous Non-BACT Permit Requirements for Fluorides from Gyp Stacks

DEQ has previously permitted the construction of gyp stacks at the Facility, F-Gyp-1 and F-Gyp-2. Nu-West, however, was able to net out of PSD review for those gyp stacks because of the addition of a wet scrubber on the wet-phosphoric acid production process. The amended construction permit issued by DEQ for F-Gyp-1 and F-Gyp-2 in 2009 restricted the visible liquid layer surface area of the ponds within F-Gyp-0, F-Gyp-1 and F-Gyp-2 to 50 acres on a 12-month rolling average. The permit also restricted total fluoride emissions to 200 pounds per day and 14.6 tons per year. Compliance with the total fluoride emission limits is based on the visible liquid layer surface area times an emission factor of 1.6 pounds per acre per day.

5.0 *FLUORIDE BACT ANALYSIS*

The following subsections present the top-down BACT review for gaseous and particulate fluoride emissions. The BACT determination for each of these pollutants is summarized at the conclusion of this section.

5.1 *GASEOUS FLUORIDE BACT ANALYSIS*

Gaseous Fluoride BACT Baseline

The proposed Gyp 3 is subject to work practice requirements under 40 CFR Part 63, Subpart AA to minimize gaseous fluoride emissions, particularly HF. Consistent with Clean Air Act §169(3), BACT cannot result in emissions of any pollutant which will exceed the emissions allowed under Part 63. That is, BACT for gaseous fluorides cannot result in an emission increase in a regulated HAP such as HF. In the event a possible gaseous fluoride control technology would result in an increase of the HF component, it would be inconsistent with Subpart AA.

To comply with Subpart AA, Nu-West must submit a gypsum dewatering stack and cooling pond management plan that identifies at least two of the work practice control measures identified in 40 CFR 63.602(e)(3) to be used for Gyp 3. For the Gyp 3, Nu-West has decided to use the control measures described in 40 CFR 63.602(e)(3)(iv) and (vii). Control measure "iv" requires Nu-West "to minimize the surface area of the gypsum pond associated with the active gypsum dewatering stack by using a rim ditch (cell) building technique or other building technique." Control measure "vii" requires:

> For all gypsum dewatering stacks that are considered part of your gypsum dewatering stack system, you may choose to establish closure requirements that at a minimum, contain requirements for the specified items in paragraphs (e)(3)(vii)(A) and (B) of this section.
>
> (A) A specific trigger mechanism for when you must begin the closure process on the gypsum dewatering stack; and
>
> (B) A requirement to install a final cover. For purpose of this paragraph, final cover means the materials used to cover the top and sides of a gypsum dewatering stack upon closure.

Control measure vii closure requirements will apply to all the gypsum dewatering stacks including the existing F-Gyp-0, F-Gyp-1 and F-Gyp-2. The gypsum dewatering stack and cooling pond management plan to implement these two work practices is provided in Appendix F.

Because these work practices are required for Gyp 3 to comply with 40 CFR Part 63, Subpart AA, they are considered baseline requirements for the gaseous fluoride BACT analysis.

Step 1 – Gaseous Fluoride Review – Identify Candidate Control Technologies

The first step in the top-down BACT process is to identify potential gaseous fluoride controls that could be applied to the gyp stack system. This information is available from the EPA RACT/BACT/LAER Clearinghouse (RBLC) database, state agencies, recently permitted facilities, literature or rules.

Potential gaseous fluoride control technology alternatives considered include:

- Submerged discharge to gypsum pond;
- Minimize the gypsum dewatering surface area by using rim ditch (cell) building techniques (baseline);
- Use raw water to slurry gyp to gyp stack;
- Wetting active gyp stack area;
- Adding slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides;
- Apply soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack;
- Timely closure of all deactivated gyp stacks (baseline);
- Production of hydrofluorosilicic acid;
- Dry conveyance and stacking of gypsum;
- Pretreatment of ore by calcining; and
- Limit dike build, material hauling and water surface area of settling ponds during critical periods.

All of these control options, with the exception of two ("use raw water to slurry gyp to gyp stack," and "limit dike build, material hauling and water surface area during critical periods"), are among the options addressed in the National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid

Manufacturing Plants (40 CFR Part 63 Subpart AA).[iv] EPA considered this list of options to be exhaustive.[v] A description of the gaseous fluoride control technology alternatives is included in the discussion on technical feasibility in Step 2 of this BACT review.

Step 2 – Gaseous Fluoride Review – Eliminate Technically Infeasible Options

Using a **submerged discharge pipe** for transferring the slurry to the settling ponds can result in less volatilization of fluorides at the point of discharge; however, EPA determined that a submerged discharge is infeasible for this application because of the high solids content of the slurry (20-30%).[vi] Without a free discharge of the pipe, settling of material in the invert of the pipe affects the flow regime leading to clogging of the pipe. Although there are many examples of high solids slurry pumping of various materials in the mining industry, a free pipe discharge is critical to avoiding clogging the system.[vii] For this reason, use of a submerged discharge pipe is eliminated from further consideration as a technically infeasible alternative.

Use of the **rim ditching technique** is technically feasible as a means to reduce gaseous fluoride emissions, particularly HF, by minimizing the gypsum pond.[viii] As discussed above, rim ditching has been selected as one of the work practices to comply with Subpart AA and is thus considered baseline for the BACT analysis. EPA defines rim ditching to mean "a gypsum dewatering stack construction technique that utilizes inner and outer dikes to direct gypsum slurry flow around

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[iv] EPA also considered but ultimately rejected as infeasible a control option to minimize the maximum gyp stack footprint area based on the tons of phosphoric acid produced as a means of reducing emissions. EPA does "believe that reducing the gypsum dewatering stack area is directly related to reducing HF emissions." EPA concluded, however, that "the gypsum dewatering stack acreage does not relate to production capacity and, importantly, gypsum dewatering stack development must be considered in light of the operations of the entire facility." Among other things, EPA determined that "limiting the gypsum dewatering stack acreage or changing the way facilities build gypsum dewatering stacks could have a detrimental impact on a facilities operation." 80 Fed. Reg. 50,386, 50,402 (Aug. 19, 2015).

[v] 80 Fed. Reg. at 50,406.

[vi] 80 Fed. Reg. at 50,404.

[vii] A.J.C. Paterson, The pipeline transport of high density slurries – a historical review of past mistakes, lessons learned and current technologies, 2011, Australian Centre for Geomechanics, Perth, ISBN 978-0-9806154-3-2.

[viii] According to EPA, rim ditching decreases the area of the gypsum pond, thereby decreasing the area of the pond exposed to the atmosphere and reducing fugitive HF emissions. 80 Fed. Reg. at 50,404. Based on the proposed emission factors, however, decreasing the gypsum pond will not result in a decrease in the estimate of the potential total gaseous fluoride emissions as the 1.6 lb F/acre/day gypsum dewatering stack emission factor is being applied to the entire gypsum dewatering stack acreage irrespective of the gypsum pond acreage.

the perimeter of the stack before directing the flow and allowing settling of finer materials into the settling compartment."[ix]

Use of **raw water to slurry the gypsum** to the gyp stack in place of process water would reduce both HF and SiF_4 emissions from the gypsum stack system. The gaseous fluorides are found in the process water used to slurry the gypsum. To completely replace the process water with raw water, however, is not a feasible alternative. Conda is a zero discharge facility and even assuming there was sufficient raw water available for this application, its use would negatively impact the plant's water balance, resulting in a detrimental impact on facility operations. For this reason, the use of raw water to slurry the gypsum to the gyp stack is eliminated from further consideration as a technically infeasible alternative.

Wetting the active gyp stack cell area is a technique identified in one permit to reduce the temperature of areas of the gyp stack more susceptible to drying out in the summer. EPA considered and rejected wetting active surfaces of the gyp stack as an HF control measure. EPA concluded that the technique may actually increase fugitive emissions of HF as it may increase the surface area of the gypsum pond water conflicting with EPA's understanding that minimizing surface area of the gypsum pond will minimize HF emissions. [x] Based on experience of a facility in Wyoming, an increase in SiF_4 emissions may also occur with wetting active dry areas as it may increase the wicking effect and capillary action, drawing the gaseous fluoride containing pore water to the surface of the gyp stack. For these reasons, wetting the active gyp stack is eliminated from further consideration as a control measure for gaseous fluorides as a technically infeasible alternative.

Adding **slaked lime or limestone** to gypsum dewatering stack system for pH control and precipitation of fluorides is a means of controlling gaseous fluoride emissions, including SiF_4 emissions, by decomposing the gas and reacting the fluoride with other constituents in the process water to form a fluoride precipitate. There are limitations to its availability, however, as it would not be an available control method during the winter months because of the weather. The addition of slaked lime or limestone is retained for further evaluation.

The application of **soil cap and vegetation or a synthetic cover** to inactive areas of the side slopes of the active gypsum dewatering stack is thought to be a means of reducing gaseous fluoride emissions by creating a barrier. This is a technique used in Florida and approved in Wyoming. It is only feasible, however, for a gypsum dewatering stack area where no further gyp will be added, where no seepage is occurring, and where there are no other activities (such as rim ditching) that would require the capped area to be disturbed. The time period that would need

[ix] 40 CFR 63.601.

[x] 80 Fed. Reg. at 50405.

to elapse before the gypsum dewatering stack reached a sufficient height for these conditions to exist over a sufficient area would vary depending on the manner in which the gypsum dewatering stack was operated. Based on discussions with design engineers, CPO estimates that the use of soil cap and vegetation to control fluoride emissions from Gyp 3 could not begin to be implemented until eight years after CPO began using Gyp 3. A similar operating period would be necessary prior to the use of a synthetic cover. With the understanding that such controls could not be installed until several years after the gypsum dewatering stack was placed into operation, soil cap and vegetation or a synthetic cover during the active life of Gyp 3 is retained for further consideration in this BACT analysis as a measure that could be implemented during the life of the gypsum dewatering stack to potentially reduce gaseous fluoride emissions.

Timely closure of a deactivated gypsum dewatering stack will not reduce emissions during the active life of a gypsum dewatering stack, but will permanently reduce gaseous (and particulate) fluoride emissions from the gypsum dewatering stack system upon closure. Nu-West has selected timely closure as one of the work practices to comply with Subpart AA. Therefore, timely closure is considered baseline for the BACT analysis and is addressed in the gypsum dewatering stack and cooling pond management plan. Because closure requirements for all the Facility gypsum dewatering stacks will be addressed in a Gyp Stack Closure Plan[xi] currently being negotiated with and will be approved by EPA and DEQ and closure does not affect emissions during the active life of the gypsum dewatering stack, it will not be addressed further in this BACT analysis. This will preclude the possibility of inconsistent requirements between PSD, MACT, and the EPA and DEQ RCRA closure requirements for the Facility's entire gypsum dewatering stack system.

Production of hydrofluorosilicic acid (FSA) involves an additional evaporation process where the vapor stream from the phosphoric acid reaction is scrubbed with water to form FSA. Nu-West investigated installation of FSA at the Facility in the mid-2000s and found the process addition to be technically feasible but uneconomical. Nu-West did not move forward with the project because there was no market for the FSA. Although production of FSA was found to be technically feasible at the Facility, it is not retained for further consideration in this BACT review for control of gaseous fluoride emissions from Gyp 3 as it would fundamentally alter the phosphoric acid production process. Such an alteration is beyond the scope of this BACT analysis which is for the addition of a new gypsum dewatering stack designed to service the existing phosphoric acid process. Additionally, EPA concluded that production of FSA is not a reasonable control technique for fugitive fluoride emissions from the gypsum dewatering stack

[xi] The current draft of the Gyp Stack Closure Plan includes the necessary elements to comply with Subpart AA–(1) a trigger mechanism for closure; and (2) requirement to install a cover.

because absent a market for the FSA it would be another waste stream needing disposal.[xii]

Dry conveyance and stacking of gypsum is practiced at some phosphoric acid production facilities, but at none in the United States. Worldwide, 80 to 90% of the facilities use wet conveyance and stacking similar to Nu-West's current operations.[xiii] Using dry conveyance and stacking may reduce gaseous fluoride emissions, including SiF_4, as there would be less process water in the gypsum dewatering stack and no settling pond, thus potentially reducing evaporation emissions. Even with dry conveyance and stacking, the gypsum would contain approximately 40% moisture so there would still be gaseous fluoride emissions. If the Facility were to be reconfigured to include dry conveyance to Gyp 3, for the purpose of gaseous fluoride control, there would be significant process changes necessary. This is why EPA did not consider dry conveyance as a viable control technique for reducing gypsum dewatering stack emissions even for new gypsum dewatering stacks.[xiv] Although dry conveyance of phosphogypsum to Gyp Stack 3 is technically feasible in concept and could possibly result in a decrease in emissions, it is a fundamentally different process than what Nu-West currently uses to convey gypsum to the existing gypsum dewatering stacks and would require significant process changes. This option, nevertheless, will be carried forward in the BACT review process for further evaluation as it would not fundamentally alter the phosphoric acid production process.

Pretreatment of ore by calcining is an effective way to defluorinate the ore. Granulated ore is calcined at a temperature above 2,460 °F in a kiln or fluidized bed[xv]. Fluorine gas is evolved above that temperature and is removed from the air discharge of the calcining unit through wet scrubbing. In the process, the phosphate ore is prepared in a fundamentally different way than it is currently at the Facility and would require significant process changes, which are beyond the scope of the proposed project. Although calcining was previously used at the Facility, it is not retained for further consideration in this BACT review for control of gaseous fluoride emissions from Gyp 3 as it would fundamentally alter the current phosphoric acid production process. Such an alteration is beyond the scope of this BACT analysis which is for the addition of a new gypsum dewatering

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[xii] 80 Fed. Reg. at 50,407.

[xiii] Phosphogypsum Disposal – The Pros & Cons of Wet Versus Dry Stacking, N.F. Fuleihan, 1st International Symposium on Innovation and Technology in the Phosphate Industry, 2011.

[xiv] 80 Fed. Reg. at 50,407.

[xv] Petr Ptáček (2016). Mining and Beneficiation of Phosphate Ore, Apatites and their Synthetic Analogues - Synthesis, Structure, Properties and Applications, Associate Prof. Petr Ptáček (Ed.), InTech, DOI: 10.5772/62215. Available from: http://www.intechopen.com/books/apatites-and-their-synthetic-analogues-synthesis-structure-properties-and-applications/mining-and-beneficiation-of-phosphate-ore

stack designed to service the existing phosphoric acid process. Moreover, EPA determined that calcining would not reduce the volatile fluoride emissions from the cooling pond.[xvi]

Limiting the dike build, material hauling and water surface area during critical periods may be an effective means of reducing HF emissions but would not result in a decrease of total gaseous fluoride emissions from Gyp 3. A study conducted at the Simplot Rock Springs facility in Wyoming found that the majority of the gaseous fluoride emissions over dry and drying gypsum surfaces are SiF_4, while over ponded areas they are HF. Actual speciation is likely dependent on the F/Si mole ratio of the process water. Moreover, because of the short building season in southeast Idaho, it is neither practical nor feasible to restrict gypsum dewatering stack operations during the warm weather months. For these reasons, limiting the dike build, material hauling, and water surface area during critical periods is considered technically infeasible and is not carried forward in this BACT review for control of gaseous fluoride emissions from Gyp Stack 3.

Step 3 – Gaseous Fluoride Review – Rank Remaining Control Technologies

The technologies that are technically feasible include the following:

- Minimize the gypsum dewatering water surface area by using rim ditch (cell) building techniques (BACT consistent with implementation of this technique to meet Subpart AA standards);
- Timely closure (BACT consistent with implementation of this technique to meet Subpart AA standards);
- Dry conveyance and stacking of gypsum;
- Adding slaked lime or limestone to gypsum dewatering stacks and decant ditches for pH control and precipitation of fluorides; and
- Apply soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack.

Table 5-1 presents a ranking of these control technologies based on Nu-West's engineering judgment as to their effectiveness compared to each other. Rim ditching and timely closure are considered baseline as rim ditching is the preferred method of gyp stack operation consistent with the existing gyp stack operations and both are required for compliance with Subpart AA. The remaining three options are discussed in more detail in Step 4 of this BACT review.

[xvi] 80 Fed. Reg. at 50,407.

Table 5-1 Remaining Gaseous Fluoride Control Technologies

Control Technology	% Reduction
Slaked Lime/Limestone Addition	up to 90%[xvii]
Dry Conveyance and Stacking	up to 50%[xviii]
Soil Cap and Vegetation/Synthetic Cover	up to 90% (limited area)[xix]
Rim Ditching	Subpart AA Control Measure
Timely Closure	Subpart AA Control Measure

Step 4 – Evaluate and Document Most Effective Controls

Slaked Lime or Limestone Addition

Lime treatment of slurry flow is a means of raising the pH to reduce the amount of soluble fluorides and reduce the vapor pressure of fluorine gas in the mixture. Slaked lime is a term used for the mixture of lime, Calcium Oxide – $Ca(OH)_2$, and water. Slaking equipment normally includes a lime storage bin with a screw conveyor to a slaker where the lime is mixed with water at an elevated temperature then pumped to a contactor to mix with the effluent. A kiln for calcining limestone may also be part of the design if it is economically advantageous or sufficient lime is not available.

For the purpose of adjusting the pH of gyp stack slurry and pond water to control fluoride emissions, literature suggests that a pH target of 3.9 is sufficient to reduce fluoride emissions by up to 90%.[xx] The economics of full treatment of the effluent stream is predicated on operating a "two pond" system where the sluicing water is segregated from other process water. This is not the case at the Facility, where all waters are comingled. If this segregation was achieved, then the slaked lime system could be employed by single stage liming. Single stage liming involves a one-time liming of the entire contents of the settling pond to achieve a pH of 3.9 and then adding lime to the influent to maintain that pH to neutralize the fluorides entering the Gyp 3 system.

[xvii] Evaluation of Emissions and Control Techniques for Reducing Fluoride Emissions from Gypsum Ponds in the Phosphoric Acid Industry, A.A. Linero and R.A. Baker, EPA-600/2-78-124, 1978.

[xviii] Ibid.

[xix] CPO has no data on the fluoride control efficiency that would be achieved by a soil cap and vegetation system. For the purpose of this evaluation, CPO has assumed that such a system could reduce fluoride emissions by 90% from the limited side-slope acres upon which it is used, which is believed to represent the upper bound that such a system could achieve.

[xx] Evaluation of Emissions and Control Techniques for Reducing Fluoride Emissions from Gypsum Ponds in the Phosphoric Acid Industry, A.A. Linero and R.A. Baker, EPA-600/2-78-124, 1978..

The pH of a settling pond is typically 1.4, so enough lime must be added to raise the pH to the target of 3.9. A cost estimate of such a system is presented in Appendix E of the application. The estimated cost of gaseous fluoride emissions removed is approximately $144,000 per ton. This cost is excessive and, therefore, lime slaking is eliminated from further consideration as representing BACT for the project.

In addition to cost, there are adverse energy and environmental impacts associated with slaked lime addition that make the option less attractive than other options. A qualitative presentation of the other energy and environmental impacts of each option is included in Table 5-2.

Dry Conveyance and Stacking

Generally, the distance from the phosphoric acid production process to the gyp stack is what dictates whether it is more economical to use a slurry system or dry conveyance of the material. Dry conveyance can mean transport by a mechanical belt conveyor system, truck, or railroad cars. At the Facility, the distance is over a mile. For the purpose of this BACT review, mechanical conveying is evaluated.

In addition, dry deposition of material on the Gyp Stack has several disadvantages when compared to wet deposition and dewatering at the stack. The main disadvantages are the formation of settlement cracks, and the need for a temporary pile.[xxi] Settlement cracks are formed in dry stacked gypsum because there is insufficient consolidation of material and limited skin formation on the surface. Rain events fill these cracks with water and undermine the stability of the pile causing an unsafe condition on the stack and can lead to isolated or catastrophic pile failure. A temporary pile is necessary for dry conveyance to avoid the cost of redundant conveyors. A pile capable of storing at least 15 days of material is necessary for planned and unplanned conveyor outages. Finally, the literature suggests that some facilities may sluice the gypsum and mechanically dewater the material prior to placement of the stack, thus providing a point for scrubbing the fluorides from the dewatering operation. Wet transport with dry stacking, however, presents the same challenges in creating a safe and stable pile as does dry conveying.

The cost of an enclosed, 36" belt conveyor with 16 transfer houses, and a steam line to prevent freezing of material during the winter months is included in Appendix E of this BACT review. The capital cost of additional steam capacity is not included in the evaluation and would also add to overall capital cost. In

[xxi] Phosphogypsum disposal – The Pros & Cons of Wet Versus Dry Stacking, N.F. Fuleihan, 1st International Symposium on Innovation and Technology in the Phosphate Industry, 2011.

addition, the cost of scrubbing the off gases at the dewatering operation (vacuum filter belt filter) is not included in this estimate.

The installed cost of the conveyor is estimated to be $8,800,000. This results in an annualized cost per ton of fluoride removal assuming 50% control of over $83,000/ton. This level of cost, even without additional dewatering, steam capacity, or scrubbing, is considered excessive and dry conveyance is eliminated from further evaluation.

In addition to cost, there are adverse energy and environmental impacts associated with dry conveyance that make the option less attractive than other options. Additionally, dry conveyance and stacking would negatively impact phosphorous pentoxide (P_2O_5) recovery as compared to wet conveyance and stacking. A qualitative presentation of the other energy and environmental impacts of each option is included in Table 5-2.

Soil Cap and Vegetation or a Synthetic Cover

A soil cap and vegetation system involves the addition of limestone, soil, and vegetation to the inactive lower portion of a gypsum dewatering stack while the gypsum dewatering stack is still in active use in upper areas. An alternative approach involves the use of a synthetic liner to cover the inactive lower portion of a gypsum dewatering stack. Such systems would theoretically control fluoride emissions from the area of the gypsum dewatering stack that was covered by the limestone, soil, and vegetation or synthetic cover, although CPO is not aware of any test data that quantifies the emission reduction that would be achieved by such systems. CPO has conservatively assumed for the purpose of this analysis that such systems would reduce fluoride emissions from any area where such a cover and vegetation was put in place, and that the use of limestone/soil/ vegetation is equally effective to the use of a synthetic liner in controlling gaseous fluoride emissions.

The use of a soil cap and vegetation or synthetic cover system to reduce fluoride emissions from inactive areas of a gypsum dewatering stack is only possible after the stack has reached a sufficient height. Over the life of a gypsum dewatering stack, a soil cap and vegetation system or synthetic cover system would be installed in stages as sufficient inactive areas along the side of the gypsum dewatering stack were created.

CPO evaluated the cost effectiveness of using a soil cap and vegetation system by determining the installation cost of such systems on a dollars per acre of gypsum dewatering stack, amortizing the installation cost of such systems over the life of the soil cap and vegetation system on a dollars per acre basis, and dividing these costs by the tons of gaseous fluoride emissions that would be controlled per acre. The cost figures utilized in this analysis are cost estimates for costs associated with

the installation of side soil cap and vegetation on closed gypsum dewatering stacks, which may underestimate costs that would be experienced for the use of such systems on active stacks. Given the difficulty in predicting the timing under which each stage of a soil cap and vegetation system would be installed, CPO has performed this analysis by evaluating only the cost per ton that would be experienced for the first level of such controls on the gypsum dewatering stack. Subsequent stages of a soil cap and vegetation system would be less economical on a dollar per ton basis since the installation cost would be amortized over a shorter period of time. Although the construction costs associated with the construction of soil cap and vegetation covers on the sides of Gyp 3 would not occur until approximately ten years from now, CPO has made no adjustment for inflation in computing the cost figures provided.

Based on the size and configuration of Gyp 3, CPO believes that it would not be possible to begin the installation of a soil cap and vegetation system until eight years after CPO began placing phosphogypsum in Gyp 3. Once construction commences on the soil cap and vegetation system, CPO believes that it would take two years until the system was fully effective. To account for the uncertainty in the effectiveness of the soil cap and vegetation system during the two-year construction period, CPO has evaluated the cost effectiveness both under the assumption that the system is fully effective in controlling gaseous fluoride emissions in year 8 (when construction begins) and under the assumption that the system is not effective until the system is installed and fully implemented in year 10. Although CPO has identified the use of a synthetic cover as an alternate, equally effective means to limit gaseous fluoride emissions from inactive portions of a gypsum dewatering stack, CPO did not perform a cost analysis for a synthetic cover, as such systems are more expensive on a dollars per acre basis, but provide no additional control based on the control efficiency assumptions made for soil cap and vegetation systems.

Cost effectiveness figures for the two soil cap and vegetation scenarios are provided in Appendix E. The capital cost of installing a soil cap and vegetation system includes the cost of installing limestone, soil, and grass on the inactive sides of the gypsum dewatering stack, the cost of installing infrastructure (irrigation system and piping), the cost of design, construction management costs, and contractor mobilization expenses. The amortized capital and operating/maintenance costs for this system are divided by the quantity of fluoride emissions that will be controlled (conservatively estimated to be 90% of the uncontrolled fluoride emission rate of 0.29 tons per acre per year). This cost is estimated as $25,700 per ton of fluoride emissions controlled if amortized over a seven year life or $33,700 per ton of fluoride emissions if amortized over a five year life.

CPO concludes that the use of a soil cap and vegetation system is not economically reasonable for the purpose of BACT for the control of fluoride emissions.

Other Energy & Environmental Impacts

Other energy and environmental impacts can be taken into account when determining BACT for a given emission units. In some cases, these impacts create a compelling case when comparing control options. An option may result in excessive air emissions or impacts to land or water resources that can tilt the scale in favor of another option that may provide less pollutant control efficiency. A list of the control technologies that were found to be technically feasible in this BACT review are shown in Table 5-2, as well as a brief qualitative discussion of the energy and other environmental impacts of each option for comparative purposes.

Table 5-2 Other Energy & Environmental Impacts

Control Technology/Methodology	Energy Impacts	Environmental Impacts
Slaked Lime Addition	• Increased combustion of natural gas from calciner, slaker and steam production; and • Increased power consumption from conveyor motors and ventilation fan motors.	• Combustion related air emissions; • Increase in truck traffic from receiving limestone; and • Increase in the gyp stack volume.
Dry Conveyance	• Increased combustion of natural gas; and • Increased power consumption from conveyor motors and ventilation fan motors.	• A number of new particulate point sources at transfer houses along the conveyor route (controlled with fabric filters); and • 15-day pile would need to be constructed to accommodate planned and unplanned maintenance of the conveyor. The 15-day pile would result in additional air fluoride emissions and land impacts.
Soil Cap and Vegetation	• Increased power consumption for irrigation pumping.	• Increased water consumption for irrigation of vegetation

Recent Permit Limits

There are no BACT limits for gyp stacks identified in other similar permits. Appendix A presents a summary of the limits included for gypsum dewatering stacks at phosphogypsum operations around the country, including Nu-West. None of the permit limits included in Appendix A is the result of a BACT determination.

There are two other permits, besides the Conda permit, that include numeric limits for fluoride emissions: the gyp stack at the Simplot Don plant in Pocatello, Idaho, and the PCS Phosphate plant in Aurora, North Carolina. In both of these cases, the limits are based on emission factor-based emission estimates. The Simplot facility total fluoride emission limits from the gypsum dewatering stack are 17.5 lb/hr and 76.65 tpy. The Simplot permit requires recordkeeping and calculation of emissions as the compliance demonstration method. The PCS facility permit limits

non-HF fluoride emission from the gypsum ponds to 3.06 lb/hr with compliance demonstrated by maintaining records of process information.

Two of the facilities include work practice type fluoride emission limits: the decant pond at the Simplot Don plant in Pocatello, Idaho, and the "phosphogypsum storage area" at the Simplot plant in Rock Springs, Wyoming. The Don plant limits the decant pond to 10-acres of pond surface area, with recordkeeping required to demonstrate compliance. The Rock Springs permit authorizes a suite of control options from which to choose to ensure ambient HF concentrations, as measured at a downwind monitor, are in compliance. Simplot is required to maintain records of when a particular option is employed to reduce emissions.

Step 5 – Gaseous Fluoride Review – Select BACT

Based on the preceding discussion, BACT for F-Gyp-3 is compliance with the MACT requirements, including the use of rim ditching to minimize the gyp pond area.

5.2 *PARTICULATE FLUORIDE EMISSIONS*

Step 1 - Particulate Fluorides Review - Identify Candidate Control Technologies

The first step in the top-down BACT process is to identify potential particulate fluoride controls that could be applied to the gypsum dewatering stack. This information is available from the EPA RBLC database, state agencies, recently permitted facilities and literature.

Potential particulate fluoride control technology alternatives considered include:

- Wet erodible areas of the gypsum dewatering stack;
- Apply soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack;
- Limit dike build and material hauling during critical periods; and
- Timely closure of all deactivated gypsum dewatering stacks (baseline for gaseous fluorides).

A description of these particulate fluoride control technology alternatives (other than timely closure which is discussed above) is included in the discussion on technical feasibility in Step 2 for particulate fluorides of this BACT review.

Step 2 - Particulate Fluorides Review - Eliminate Technically Infeasible Options

Wetting erodible areas of a gypsum dewatering stack is a technique identified in the literature that is effective on controlling particulate emissions, including particulate fluorides, from erodible areas of gypsum dewatering stacks (i.e., areas used as travel surfaces for scrapers and other vehicles). It is used currently on the existing gypsum dewatering stacks at the Facility to reduce particulate emissions.

The application of **soil caps and vegetation, or a synthetic cover** to a portion of the active gypsum dewatering stack is a potential means of controlling particulate emissions, including particulate fluorides, resulting from wind erosion. It is only feasible, however, for a gypsum dewatering stack area where no further gyp will be added, where no seepage is occurring, and where there are no other activities (such as rim ditching) that would require the capped area to be disturbed. Because particulate fluoride emissions occur only from portions of the gypsum dewatering stack that are actively being used, no control of particulate fluoride emissions would result from the use of soil caps and vegetation or a synthetic cover on inactive portions of Gyp 3. Based on this, soil cap and vegetation or a synthetic cover is eliminated from further consideration in this BACT analysis for control of particulate fluoride emissions.

Limiting the dike build and material hauling during critical periods may be an effective means of controlling particulate emissions, including particulate fluorides. Typically, work practices such as limiting activity on a process are based on identified meteorological conditions that result in an increase in emissions (i.e., high winds). The Gyp 3 particulate fluoride emission estimates with a wind speed component are for the active areas with truck traffic creating erodible gyp, the excavator drop, and the haul roads. The truck traffic on erodible surfaces and haul road emissions are best controlled with a water truck applying water. In high wind conditions (over 20 mph) there may be some mitigation of emissions from the excavator material drop; however, the magnitude of these emissions is very small (PM emissions at 20 mph of 2.17 E-4 lb/ton, of which fluorides are a very small fraction) because the material contains 40% moisture. Thus, there is no appreciable benefit from further controlling emissions from excavator material drops. For this reason, limiting the dike build and material hauling during critical periods is not carried forward in this BACT review for control of particulate fluoride emissions form Gyp Stack 3.

Step 3 - Particulate Fluorides Review - Rank Remaining Control Technologies

The particulate fluoride control option that is considered technically feasible is water wetting on road surfaces including roads made from gyp during the active life of the gypsum dewatering stack and timely closure to control particulate fluoride emissions after the stack is no longer active.

Step 4 - Particulate Fluorides Review - Evaluate and Document Most Effective Controls

The particulate fluoride control technology identified and carried forward is water wetting of erodible gypsum dewatering stack surfaces where the crust has been broken by truck and equipment traffic. There are no economic, energy or environmental considerations that would preclude the use of this control option.

Recent Permit Limits

There are no BACT limits for particulate fluoride emissions from gypsum dewatering stacks. Appendix A presents a summary of limits included for gypsum dewatering stacks at phosphogypsum operations around the country. None of the permit limits included in Appendix A is the result of a BACT determination.

Step 5 - Particulate Fluorides Review - Select BACT

BACT for particulate fluoride emissions from Gypsum Dewatering Stack 3 is water wetting on erodible surfaces caused by truck and excavator traffic on Gypsum Dewatering Stack 3. Nu-West proposes the following language, consistent with the current Tier 1 Permit, to enforce this requirement:

- All reasonable precautions shall be taken to prevent particulate matter from becoming airborne in accordance with IDAPA 58.01.01.650-651.
- The permittee shall monitor and maintain records of the frequency and the method(s) used (ie., water, chemical dust suppressants, etc.) to reasonably control fugitive dust emissions.
- The permittee shall conduct a monthly facility-wide inspection of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions, to ensure that the methods used to reasonably control fugitive dust emissions are effective. If fugitive dust emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive dust emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive dust emissions, and the date the corrective action was taken.

5.3 *SUMMARY*

Table 5-3 presents a summary of the BACT determination for the fluoride emissions from Gypsum Dewatering Stack 3 at the Nu-West Industries Conda Phosphate Operations.

Table 5-3 Summary of BACT for Gyp Stack 3

Pollutant	Work Practice
Gaseous Fluorides	• Rim ditching (consistent with Subpart AA compliance measure) • Timely closure (consistent with Subpart AA compliance measure)
Particulate Fluoride	• Water wetting on road surfaces used by truck and excavator traffic as necessary for dust control • Timely closure (consistent with Subpart AA compliance measure)

E.1.0 COST ESTIMATION PROCEDURE

Cost analyses of certain technically feasible control alternatives were prepared and are presented to compare capital and annual costs in terms of cost effectiveness (i.e., dollars per ton of pollutant removed). Capital costs include the initial cost of components intrinsic to the complete control system. Annual operating costs consist of the financial requirements to operate the control system on an annual basis and include impacts to equipment, overhead, maintenance, outages, labor, raw materials, and utilities.

E.1.1 CAPITAL COSTS

The capital cost estimating technique used in this analysis is based on a factored method of determining direct and indirect installation costs. This technique is a modified version of the "Lang Method," whereby installation costs are expressed as a function of known equipment costs. This method is consistent with the latest EPA guidance manual (OAQPS Control Cost Manual) on estimating control technology costs (EPA, February 1996). The estimation factors used to calculate total capital costs are shown in Table E-1.

Purchased equipment costs represent the delivered cost of the control equipment, auxiliary equipment, and instrumentation. Auxiliary equipment consists of all structural, mechanical, and electrical components required for efficient operation of the device or control methodology. These include such items as reagent storage and supply piping and distributed controls. Auxiliary equipment costs are taken as a straight percentage of the basic equipment cost, the percentage being based on the average requirements of typical systems and their auxiliary equipment (EPA, February 1996). In this control alternatives evaluation, basic control methodology costs were estimated by ERM based on information provided by Agrium or published data. Where appropriate, instrumentation, usually not included in the basic equipment cost, is estimated at 15 percent of the basic equipment cost.

Direct installation costs consist of the direct expenditures for materials and labor for site preparation, foundations, structural steel, erection, piping, electrical, painting, and facilities. Indirect installation costs include engineering and supervision of contractors, construction and field expenses, construction fees, and contingencies. Direct installation costs are expressed as a function of the purchased equipment cost based on average installation requirements of typical systems and may tend to underestimate

actual costs in a northern climate installation. Indirect installation costs are designated as a percentage of the total direct cost (purchased equipment cost plus the direct installation cost) of the system. Other indirect costs include equipment startup and performance testing, working capital, and interest during construction.

Table E-1 Capital Cost Estimation Factors

Item	Basis
Direct Costs	
Purchased Equipment Cost	
Equipment cost + auxiliaries	A
Instrumentation	0.10 x A
Freight	0.05 x A
Total Purchased equipment cost, (PEC)	B = 1.15 x A
Direct installation costs	
Foundations and supports	0.08 x B
Handling and erection	0.14 x B
Electrical	0.04 x B
Piping	0.02 x B
Insulation for ductwork	0.01 x B
Painting	0.01 x B
Total direct installation cost	0.30 x B
Site Preparation	As Required
Buildings	As Required
Total Direct Cost, DC	1.30B + SP + Bldg.
Indirect Costs (installation)	
Engineering	0.10 x B
Construction and field expenses	0.05 x B
Contractor fees	0.10 x B
Start-up and Performance test	0.03 x B
Contingencies (for Routine Application of Technology)	0.03 x B
Working Capital (30 days O&M cost)	
Total Indirect Cost, IC	0.31B + WC
Total Capital Investment (TCI) = DC + IC	**1.61B+ SP + Bldg. + WC**

E.1.2 *ANNUALIZED COSTS*

Annualized costs are comprised of direct and indirect operating costs. Direct costs include labor, maintenance, replacement parts, raw materials, utilities, and waste disposal. Indirect operating costs include plant overhead, taxes, insurance, general administration, and capital charges. Annualized cost factors used to estimate total annualized cost are listed in Table E-2. Annualized cost factors were obtained from the latest EPA guidance manual on estimating control technology costs (EPA, February 1996).

Direct operating labor costs vary according to the system operating mode and operating time. Labor supervision is estimated as 15 percent of operating labor. Maintenance costs are calculated as 3 percent of total direct cost (TDC). Raw material and utility costs are based upon estimated annual consumption and the unit costs are summarized in Table 1-2.

With the exception of overhead, indirect operating costs are calculated as a percentage of the total capital cost. The indirect capital costs are based on the capital recovery factor (CRF), defined as:

$$CRF = \frac{i(1+i)^n}{(1+i)^n - 1}$$

Where i is the annual interest rate and n is the equipment economic life (years). A control system's economic life is typically 10 to 20 years (USEPA, February 1996). In this analysis, a 10 year equipment economic life (typical length of financing) was used. The average interest rate is assumed to be 7 percent. CRF is therefore calculated to be 0.14.

Table E-2 Annualized Cost Factors

Item	Cost Factor	Unit Cost
Direct Annual Costs, DC		
Operating labor		
Operator	variable hr/shift	$45.00/hr
Supervisor	15% Operating Labor	NA
Maintenance		
Labor Req.	variable hr/shift	$52.50/hr
Material	100% Maintenance Labor	NA
Supervisor	15% Labor	NA
Utilities		
Electricity	NA	**$0.065/kWh**
Fuel Oil	NA	**$2.5/gallon**
Indirect Annual Costs, IC		
Overhead	44% of DL + 12% ML	
Administrative Charges	2% TCI	
Insurance	1% TCI	
Capital Recovery	CRF x TCI	
Total Indirect ($/yr)		
Total Annual Cost (TAC) ($)		Sum of Annual Costs
Total Pollutant Controlled (ton/yr) Based on Max. PTE	As Calculated	
Cost Effectiveness ($/ton) Based on Max. PTE		**TAC/TPY controlled**

E.1.3 COST EFFECTIVENESS

The cost-effectiveness of an available control technology is based on the annualized cost of the available control technology and its potential annual pollutant emission reduction. Cost effectiveness for a given control technology is calculated by dividing the annualized cost of the control technology by the theoretical tons of pollutant removed by the control technology each year. The basis for determining the percent reduction of a given technology was based on information contained in USEPA literature, from recent permits, and Agrium.

Nu-West Industries Conda Phosphate Operations - Soda Springs, Idaho

Appendix E - BACT Analysis

Slaked Lime Addition

Facility Input Data

Item	Value
Operating capacity factor	100%
Total hours per year (potential)	8760
Economic Life, years	10
Interest Rate (%)	7
Source(s) Controlled	Gyp Stack 3
Assumed Control Efficiency	90%
Design Parameters	
Lime Kiln	$8,365,990
Kiln Scrubber	$463,932
Limestone Bins & Conveyors	$912,653
Feed System	$2,152,341
Miscellaneous Equipment Costs	$725,560
Initial Liming Costs	$3,406,555
Site Specific Electricity Cost ($/kWh)	0.06
Steam Cost ($/klb)	5.50
Site Specific Operating Labor Cost ($/hr)	$45.00
Site Specific Maint. Labor Cost ($/hr)	$45.00

Capital Costs

	Value	Basis
Direct Costs (DC)		
1.) Total Direct Cost (including installation)	16,027,000	A, Estimate [1]
Indirect Installation Cost		
2.) General Facilities ($)	$801,350	0.05*A
3.) Engineering Fees	$1,602,700	0.10*A
4.) Process Contingency ($)	$801,350	0.05*A
Total Indirect Cost (IC)	$3,205,400	B = A * (0.05+0.10+0.05)
5.) Project Contingency ($)	$961,620	C = (A+B)*0.05
Total Estimated Cost ($)	$20,194,020	D = A+B+C
Total Capital Investment (TCI)	**$20,194,000**	**TCI = D Rounded**

Annual Costs

Item	Value	Basis	Source
1) Utilities (steam and electric)			
Electrical Cost (0.06 $/kWh, 75 hp)	$29,434		
Natural Gas (3.1 MMBtu/ton $CaCO_3$ or $6.2/ton)	$230,826	estimates	
Limestone Costs ($30/ton)	$1,971,000		Estimate
Total Operating Costs	**$1,971,000**		
2) Labor			
Operator	$93,600		
Supervisor	$14,040	estimates	
Maintenance	$23,400		Estimate
5) Maintenance Materials			
Total Cost ($/yr)	$320,540	2% of equipment cost	Estimate
7) Indirect Annual Costs			
Overhead	$0		Estimate
Administration	$403,880	2% of Total Capital Investment	OAQPS
Property Tax	$201,940	1% of Total Capital Investment	OAQPS
Insurance	$201,940	1% of Total Capital Investment	OAQPS
Capital Recovery	$2,875,170	10 yr life; 7% interest	OAQPS
Total Indirect ($/yr)	$3,682,930		
Total Annualized Cost ($/yr)	**$6,105,500**		
Cost per ton of fluoride removed	**$144,338**		

[1] Evaluation of Emissions and Control Techniques for Reducing Fluoride Emissions from Gypsum Ponds in the Phosphoric Acid Industry, A.A. Linero and R.A. Baker, EPA-600/2-78-124, 1978

All cost estimates adjusted based on the Engineering News Record Construction Cost Index.

Nu-West Industries Conda Phosphate Operations - Soda Springs, Idaho

Appendix E - BACT Analysis

Dry Conveyance of Gypsum

Facility Input Data

Item	Value
Operating capacity factor	100%
Total hours per year (potential)	8760
Economic Life, years	10
Interest Rate (%)	7
Source(s) Controlled	Gyp Stack 3
Assumed Control Efficiency	50%
Design Parameters	
Length of 36" widie conveyor (ft)	5,385
Number of transfer houses (add 30%)	16
Enclosed (add 10%)	Yes
Direct installation factor	1.5
Heat (steam line, add 10%)	Yes
Miscellaneous Costs	
Site Specific Electricity Cost ($/kWh)	0.06
Steam Cost ($/klb)	5.50
Site Specific Operating Labor Cost ($/hr)	$45.00
Site Specific Maint. Labor Cost ($/hr)	$45.00

Capital Costs

	Value	Basis
Direct Costs (DC)		
1.) Total Direct Cost (including installation)	$6,982,400	A, Estimate [1]
Indirect Installation Cost		
2.) General Facilities ($)	$349,120	0.05*A
3.) Engineering Fees	$698,240	0.10*A
4.) Process Contingency ($)	$349,120	0.05*A
Total Indirect Cost (IC)	$1,396,480	B = A * (0.05+0.10+0.05)
5.) Project Contingency ($)	$418,944	C = (A+B)*0.05
Total Estimated Cost ($)	$8,797,824	D = A+B+C
Total Capital Investment (TCI)	**$8,797,800**	**TCI = D Rounded**

Annual Costs

Item	Value	Basis	Source
1) Utilities (steam and electric)			
Electrical Cost (0.06 $/kWh, 100 hp/transfer house)	$630,720	estimates	
Steam Cost ($5.5/klb, 5klb/hr, 4 months)	$80,300		Estimate
Total Operating Costs	**$80,300**		
2) Labor			
Operator	$93,600		
Supervisor	$14,040	estimates	
Maintenance	$23,400		Estimate
5) Maintenance Materials			
Total Cost ($/yr)	$139,648	2% of equipment cost	Estimate
7) Indirect Annual Costs			
Overhead	$0		Estimate
Administration	$175,960	2% of Total Capital Investment	OAQPS
Property Tax	$87,980	1% of Total Capital Investment	OAQPS
Insurance	$87,980	1% of Total Capital Investment	OAQPS
Capital Recovery	$1,252,610	10 yr life; 7% interest	OAQPS
Total Indirect ($/yr)	$1,604,530		
Total Annualized Cost ($/yr)	**$1,955,500**		
Cost per ton fluoride removed	**$83,213**		

[1] Chemical Engineering Economics, D.E. Garrett, University of California, Santa Barbara, 1989.
All cost estimates adjusted based on the Engineering News Record Construction Cost Index.

Nu-West Industries Conda Phosphate Operations - Soda Springs, Idaho

Appendix E - BACT Analysis

Side Slope Stabilization

Facility Input Data

Item	Value
Operating capacity factor	100%
Total hours per year (potential)	8760
Economic Life, years	7
Interest Rate (%)	7
Source(s) Controlled	Gyp Stack 3
Assumed Control Efficiency	90%

Capital Costs

	Value	Basis
Direct Costs (DC)		
1.) Total Direct Cost (Side Slope Stabilization)	$14,000	A, engineering estimate ($/acre)
Indirect Installation Cost		
2.) Design & Regulatory Review	$1,000	$/acre
3.) Gypsum Amendment Study	$833	$/acre
4.) Contractor Mobilization & Facilities	$2,000	$/acre
5.) Site Infrastructure	$1,150	$/acre
6.) Cost to Establish Vegetation	$400	$/acre (over 2 years)
7.) Construction Management	$15,000	(25% of CM annual cost x 2yrs)
Total Indirect Cost (IC)	$20,383	B, estimate ($/acre)
8.) Project Contingency ($)	$1,719	C = (A+B)*0.05
Total Estimated Cost ($)	$36,102	D = A+B+C
Total Capital Investment (TCI)	**$36,100**	**TCI ($/acre)**

Annual Costs

Item	Value	Basis	Source
1) Utilities (steam and electric)			
Electrical Cost	$0		
Total Operating Costs	**$0**		
2) Labor			
Operator	$0		
Supervisor	$0		
Maintenance	$0		
3) Maintenance Materials			
Total Cost ($/yr)	$0		
4) Indirect Annual Costs			
Overhead	$0		
Administration	$0		
Property Tax	$0		
Insurance	$0		
Capital Recovery	$6,700	7 yr life; 7% interest	
Total Indirect ($/yr)	$6,700		
Total Annualized Cost ($/acre/yr)	**$6,700**		
Fluoride Emission Rate (t/acre/yr)	**0.29**		
Cost per ton fluoride removed	**$25,670**		

Nu-West Industries Conda Phosphate Operations - Soda Springs, Idaho

Appendix E - BACT Analysis

Side Slope Stabilization

Facility Input Data

Item	Value
Operating capacity factor	100%
Total hours per year (potential)	8760
Economic Life, years	5
Interest Rate (%)	7
Source(s) Controlled	Gyp Stack 3
Assumed Control Efficiency	90%

Capital Costs

	Value	Basis
Direct Costs (DC)		
1.) Total Direct Cost (Side Slope Stabilization)	$14,000	A, engineering estimate ($/acre)
Indirect Installation Cost		
2.) Design & Regulatory Review	$1,000	$/acre
3.) Gypsum Amendment Study	$833	$/acre
4.) Contractor Mobilization & Facilities	$2,000	$/acre
5.) Site Infrastructure	$1,150	$/acre
6.) Cost to Establish Vegetation	$400	$/acre (over 2 years)
7.) Construction Management	$15,000	(25% of CM annual cost x 2yrs)
Total Indirect Cost (IC)	$20,383	B, estimate ($/acre)
8.) Project Contingency ($)	$1,719	C = (A+B)*0.05
Total Estimated Cost ($)	$36,102	D = A+B+C
Total Capital Investment (TCI)	**$36,100**	**TCI ($/acre)**

Annual Costs

Item	Value	Basis	Source
1) Utilities (steam and electric)			
Electrical Cost	$0		
Total Operating Costs	**$0**		
2) Labor			
Operator	$0		
Supervisor	$0		
Maintenance	$0		
3) Maintenance Materials			
Total Cost ($/yr)	$0		
4) Indirect Annual Costs			
Overhead	$0		
Administration	$0		
Property Tax	$0		
Insurance	$0		
Capital Recovery	$8,800	5 yr life; 7% interest	
Total Indirect ($/yr)	$8,800		
Total Annualized Cost ($/acre/yr)	**$8,800**		
Fluoride Emission Rate (t/acre/yr)	**0.29**		
Cost per ton fluoride removed	**$33,716**		

APPENDIX C – FEDERAL REGULATORY APPLICABILITY

<<Below is 40 CFR Part 63, Subpart AA followed by Subpart A for the regulatory review>>

40 CFR Part 63--National Emission Standards For Hazardous Air Pollutants For Affected Source Categories

Subpart AA--National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants

40 CFR §63.600 Applicability

(a) Except as provided in paragraphs (c) and (d) of this section, you are subject to the requirements of this subpart if you own or operate a phosphoric acid manufacturing plant that is a major source as defined in §63.2. You must comply with the emission limitations, work practice standards, and operating parameter requirements specified in this subpart at all times.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAP) emitted from the following affected sources at a phosphoric acid manufacturing plant:

(b)(1) Each wet-process phosphoric acid process line.

(b)(2) Each evaporative cooling tower.

(b)(3) Each phosphate rock dryer.

(b)(4) Each phosphate rock calciner.

(b)(5) Each superphosphoric acid process line.

(b)(6) Each purified phosphoric acid process line.

(b)(7) Each gypsum dewatering stack.

(b)(8) Each cooling pond.

(c) The requirements of this subpart do not apply to a phosphoric acid manufacturing plant that is an area source as defined in §63.2.

(d) The provisions of this subpart do not apply to research and development facilities as defined in §63.601.

Nu-West Industries is proposing to construct a gypsum dewatering stack that is affected by this subpart.

40 CFR §63.601 Definitions.

Terms used in this subpart are defined in §63.2 of the Clean Air Act and in this section as follows:

Active gypsum dewatering stack means a gypsum dewatering stack that is currently receiving gypsum, received gypsum within the last year, or is part of the facility's water management system. A gypsum dewatering stack that is considered closed by a state authority is not considered an active gypsum dewatering stack.

Breakthrough means the point in time when the level of mercury detected at the outlet of an adsorber system is 90 percent of the highest concentration allowed to be discharged consistent with the applicable emission limit.

Cooling pond means a natural or artificial open reservoir that is primarily used to collect and cool water that comes into direct contact with raw materials, intermediate products, by-products, waste products, or finished products from a phosphoric acid manufacturing plant. The water in the cooling pond is often used at phosphoric acid manufacturing plants as filter wash water, absorber water for air pollution control absorbers, and/or to transport phosphogypsum as slurry to a gypsum dewatering stack(s).

Equivalent P_2O_5 feed means the quantity of phosphorus, expressed as phosphorus pentoxide (P_2O_5), fed to the process.

Evaporative cooling tower means an open-water, re-circulating device that uses fans or natural draft to draw or force ambient air through the device to remove heat from process water by direct contact.

Exceedance means a departure from an indicator range established for monitoring under this subpart, consistent with any averaging period specified for averaging the results of the monitoring.

Existing source depends on the date that construction or reconstruction of an affected source commenced. A wet-process phosphoric acid process line, superphosphoric acid process line, phosphate rock dryer, phosphate rock calciner, evaporative cooling tower, or purified acid process line is an existing source if construction or reconstruction of the affected source commenced on or before December 27, 1996. A gypsum dewatering stack or cooling pond is an existing source if it meets one of two criteria:

(1) It was constructed or reconstructed on or before August 19, 2015; or

(2) It was constructed or reconstructed after August 19, 2015 and it was not required to obtain a permit by a state authority for the construction or reconstruction.

Gypsum dewatering stack means any defined geographic area associated with a phosphoric acid manufacturing plant in which gypsum is disposed of or stored, other than within a fully enclosed building, container, or tank.

Gypsum dewatering stack system means the gypsum dewatering stack, together with all pumps, piping, ditches, drainage conveyances, water control structures, collection pools, cooling ponds, surge ponds, auxiliary holding ponds, regional holding ponds and any other collection or conveyance system associated with the transport of gypsum from the plant to the gypsum dewatering stack, its management at the gypsum dewatering stack, and the process wastewater return to the phosphoric acid production or other process.

HAP metals mean those metals and their compounds (in particulate or volatile form) that are included on the list of hazardous air pollutants in section 112 of the Clean Air Act. HAP metals include, but are not limited to: Antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium expressed as particulate matter as measured by the methods and procedures in this subpart or an approved alternative method. For the purposes of this subpart, HAP metals (except mercury) are expressed as particulate matter as measured by Method 5 at 40 CFR part 60, appendix A-3.

New source depends on the date that construction or reconstruction of an affected source commences. A wet-process phosphoric acid process line, superphosphoric acid process line, phosphate rock dryer, phosphate rock calciner, evaporative cooling tower, or purified acid process line is a new source if construction or reconstruction of the affected source commenced after December 27, 1996. A gypsum dewatering stack or cooling pond is a new source if it meets two criteria:

(1) It was constructed or reconstructed after August 19, 2015; and

(2) It was required to obtain a permit by a state authority for the construction or reconstruction.

Oxidation reactor means any equipment or step that uses an oxidizing agent (*e.g.,* nitric acid, ammonium nitrate, or potassium permanganate) to treat superphosphoric acid.

Phosphate rock calciner means the equipment used to remove moisture and organic matter from phosphate rock through direct or indirect heating.

Phosphate rock dryer means the equipment used to reduce the moisture content of phosphate rock through direct or indirect heating.

Phosphate rock feed means all material entering any phosphate rock dryer or phosphate rock calciner including moisture and extraneous material as well as the following ore materials: Fluorapatite, hydroxylapatite, chlorapatite, and carbonateapatite.

Purified phosphoric acid process line means any process line that uses a HAP as a solvent in the separation of impurities from the product acid for the purposes of rendering

that product suitable for industrial, manufacturing, or food grade uses. A purified phosphoric acid process line includes: solvent extraction process equipment, solvent stripping and recovery equipment, seal tanks, carbon treatment equipment, cooling towers, storage tanks, pumps, and process piping.

Raffinate stream means the aqueous stream containing the impurities that are removed during the purification of wet-process phosphoric acid using solvent extraction.

Research and development facility means research or laboratory operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and where the facility is not engaged in the manufacture of products for commercial sale in commerce or other off-site distribution, except in a de minimis manner.

Rim ditch (cell) building technique means a gypsum dewatering stack construction technique that utilizes inner and outer dikes to direct gypsum slurry flow around the perimeter of the stack before directing the flow and allowing settling of finer materials into the settling compartment. For the purpose of this definition, the rim ditch (cell) building technique includes the compartment startup phase when gypsum is deposited directly into the settling compartment in preparation for ditch construction as well as the step-in or terminal phases when most solids must be directed to the settling compartment prior to stack closure. Decant return ditches are not rim ditches.

Shutdown commences when feed materials cease to be added to an affected source and ends when the affected source is deactivated, regardless of whether feed material is present in the affected source.

Startup commences when any feed material is first introduced into an affected source and ends when feed material is fully loaded into the affected source.

Superphosphoric acid process line means any process line that concentrates wet-process phosphoric acid to 66 percent or greater P_2O_5 content by weight. A superphosphoric acid process line includes: evaporators, hot wells, acid sumps, oxidation reactors, and cooling tanks.

Total fluorides means elemental fluorine and all fluoride compounds, including the HAP HF, as measured by reference methods specified in 40 CFR part 60, appendix A, Method 13 A or B, or by equivalent or alternative methods approved by the Administrator pursuant to §63.7(f).

Wet-process phosphoric acid process line means any process line manufacturing phosphoric acid by reacting phosphate rock and acid. A wet-process phosphoric acid process line includes: reactors, filters, evaporators, and hot wells.

Nu-West Industries has read and understands these definitions and used them in providing this regulatory analysis.

40 CFR §63.602 Standards and Compliance Dates.

(a) On and after the dates specified in paragraphs (a)(1) through (6) of this section, for each wet-process phosphoric acid process line, superphosphoric acid process line, phosphate rock dryer, and phosphate rock calciner, you must comply with the emission limits as specified in paragraphs (a)(1) through (6) of this section. If a process line contains more than one emission point, you must sum the emissions from all emission points in a process line to determine compliance with the specified emission limits.

(a)(1) For each existing wet-process phosphoric acid process line, superphosphoric acid process line, and phosphate rock dryer that commenced construction or reconstruction on or before December 27, 1996, you must comply with the emission limits specified in Table 1 to this subpart beginning on June 10, 2002.

(a)(2) For each existing phosphate rock calciner that commenced construction or reconstruction on or before December 27, 1996, you must comply with the emission limits as specified in paragraphs (a)(2)(i) through (iii) of this section.

(a)(2)(i) You must comply with the total particulate emission limit specified in Table 1 to this subpart beginning on June 10, 2002.

(a)(2)(ii) You must comply with the mercury emission limit specified in Table 1 to this subpart beginning on August 19, 2015.

(a)(2)(iii) You must comply with the total fluorides emission limit specified in Table 1 to this subpart beginning on August 19, 2015.

(a)(3) For each new wet-process phosphoric acid process line, superphosphoric acid process line, and phosphate rock dryer that commences construction or reconstruction after December 27, 1996 and on or before August 19, 2015, you must comply with the emission limits specified in Table 2 to this subpart beginning on June 10, 1999 or at startup, whichever is later.

(a)(4) For each new wet-process phosphoric acid process line, superphosphoric acid process line, and phosphate rock dryer that commences construction or reconstruction after August 19, 2015, you must comply with the emission limits specified in Table 2 to this subpart immediately upon startup.

(a)(5) For each new phosphate rock calciner that commences construction or reconstruction after December 27, 1996 and on or before August 19, 2015, you must comply with the emission limits as specified in paragraphs (a)(5)(i) through (iii) of this section.

(a)(5)(i) You must comply with the total particulate emission limit specified in Table 2 to this subpart beginning on June 10, 1999 or at startup, whichever is later.

(a)(5)(ii) You must comply with the mercury emission limit specified in Table 2 to this subpart beginning on August 19, 2015, or upon startup, whichever is later.

(a)(5)(iii) You must comply with the total fluorides emission limit specified in Table 2 to this subpart beginning on August 19, 2015, or upon startup, whichever is later.

(a)(6) For each new phosphate rock calciner that commences construction or reconstruction after August 19, 2015, you must comply with the emission limits specified in Table 2 to this subpart immediately upon startup.

(b) For each existing purified phosphoric acid process line that commenced construction or reconstruction on or before December 27, 1996, you must comply with the provisions of subpart H of this part and paragraphs (b)(1) through (3) of this section beginning on June 10, 2002. For each new purified phosphoric acid process line that commences construction or reconstruction after December 27, 1996, you must comply with the provisions of subpart H of this part and paragraphs (b)(1) through (3) of this section beginning on June 10, 1999 or at startup, whichever is later.

(b)(1) Maintain a 30-day rolling average of daily concentration measurements of methyl isobutyl ketone equal to or below 20 parts per million by weight (ppmw) for each product acid stream.

(b)(2) Maintain a 30-day rolling average of daily concentration measurements of methyl isobutyl ketone equal to or below 30 ppmw for each raffinate stream.

(b)(3) Maintain the daily average temperature of the exit gas stream from the chiller stack below 50 degrees Fahrenheit.

(c) Beginning on June 10, 2002, you must not introduce into an existing evaporative cooling tower that commenced construction or reconstruction on or before December 27, 1996, any liquid effluent from any absorber installed to control emissions from process equipment. Beginning on June 10, 1999 or at startup, whichever is later, you must not introduce into a new evaporative cooling tower that commences construction or reconstruction after December 27, 1996, any liquid effluent from any absorber installed to control emissions from process equipment.

(d) For each gypsum dewatering stack system, you must prepare, and operate in accordance with, a gypsum dewatering stack and cooling pond management plan that contains the information specified in paragraph (e) of this section beginning on August 19, 2016.

(e) The gypsum dewatering stack and cooling pond management plan must include the information specified in paragraphs (e)(1) through (3) of this section. You must submit the gypsum dewatering stack and cooling pond management plan for approval to the Administrator as specified in paragraph (e)(4) of this section.

(e)(1) Location (including latitude and longitude of centroid in decimal degrees to four decimal places) of each gypsum dewatering stack and each cooling pond in the gypsum dewatering stack system.

(e)(2) Permitted maximum footprint acreage of each gypsum dewatering stack and each cooling pond in the gypsum dewatering stack system.

(e)(3) Control measures that you use to minimize fugitive hydrogen fluoride emissions from the gypsum dewatering stack system. If you operate one or more active gypsum dewatering stacks or cooling ponds that are considered new sources as defined in §63.601, then you must use, and include in the management plan, at least two of the control measures listed in paragraphs (e)(3)(i) through (vii) of this section for your gypsum dewatering stack system. If you only operate active gypsum dewatering stacks and cooling ponds that are considered existing sources as defined in §63.601, then you must use, and include in the management plan, at least one of the control measures listed in paragraphs (e)(3)(i) through (vii) of this section for your gypsum dewatering stack system.

(e)(3)(i) For at least one cooling pond that is considered part of your gypsum dewatering stack system, you may choose to submerge the discharge pipe to a level below the surface of the cooling pond.

(e)(3)(ii) For at least one cooling pond that is considered part of your gypsum dewatering stack system, you may choose to use lime (or any other caustic substance) to raise the pH of the liquid (*e.g.,* the condensed vapors from the flash cooler and evaporators, and scrubbing liquid) discharged into the cooling pond. If you choose this control measure, then you must include in the plan the method used to raise the pH of the liquid discharged into the cooling pond, the target pH value (of the liquid discharged into the cooling pond) expected to be achieved by using the method, and the analyses used to determine and support the raise in pH.

(e)(3)(iii) For all cooling ponds that are considered part of your gypsum dewatering stack system, you may choose to reduce the total cooling pond surface area based on a facility specific evaluation plan. If you choose this control measure, then you must include in the facility specific evaluation plan certified by an independent licensed professional engineer or similarly qualified individual. You must also include in the plan the method used to reduce total cooling pond footprint, the analyses used to determine and support the reduction in the total cooling pond surface area, and the amount of total cooling pond surface area that was reduced due to the facility specific evaluation plan.

(e)(3)(iv) For at least one gypsum dewatering stack that is considered part of your gypsum dewatering stack system, you may choose to minimize the surface area of the gypsum pond associated with the active gypsum dewatering stack by using a rim ditch (cell) building technique or other building technique.

(e)(3)(v) For at least one gypsum dewatering stack that is considered part of your gypsum dewatering stack system, you may choose to apply slaked lime to the active gypsum dewatering stack surfaces. If you choose this control measure, then you must include in the plan the method

used to determine the specific locations slaked lime is applied. The plan must also include the methods used to determine the quantity of, and when to apply, slaked lime (*e.g.,* slaked lime may be applied to achieve a state ambient air standard for fluorides, measured as hydrogen fluoride).

(e)(3)(vi) For at least one gypsum dewatering stack that is considered part of your gypsum dewatering stack system, you may choose to apply soil caps and vegetation, or a synthetic cover, to a portion of side slopes of the active gypsum dewatering stack. If you choose this control measure, then you must include in the plan the method used to determine the specific locations of soil caps and vegetation, or synthetic cover; and specify the acreage and locations where soil caps and vegetation, or synthetic cover, is applied. The plan must also include a schedule describing when soil caps and vegetation, or synthetic cover, is to be applied.

(e)(3)(vii) For all gypsum dewatering stacks that are considered part of your gypsum dewatering stack system, you may choose to establish closure requirements that at a minimum, contain requirements for the specified items in paragraphs (e)(3)(vii)(A) and (B) of this section.

(e)(3)(vii)(A) A specific trigger mechanism for when you must begin the closure process on the gypsum dewatering stack; and

(e)(3)(vii)(B) A requirement to install a final cover. For purposes of this paragraph, final cover means the materials used to cover the top and sides of a gypsum dewatering stack upon closure.

(e)(4) You must submit your plan for approval to the Administrator at least 6 months prior to the compliance date specified in §63.602(d), or with the permit application for modification, construction, or reconstruction. The plan must include details on how you will implement and show compliance with the control technique(s) that you have selected to use. The Administrator will approve or disapprove your plan within 90 days after receipt of the plan. To change any of the information submitted in the plan, you must submit a revised plan 60 days before the planned change is to be implemented in order to allow time for review and approval by the Administrator before the change is implemented.

(f) Beginning on August 19, 2015, during periods of startup and shutdown (as defined in §63.601), you must comply with the work practice specified in this paragraph in lieu of the emission limits specified in paragraph (a) of this section. During periods of startup and shutdown, you must operate any control device(s) being used at the affected source, monitor the operating parameters specified in Table 3 of this subpart, and comply with the operating limits specified in Table 4 of this subpart.

The provisions included in paragraphs a)(1) though (4), c) and f) of 40 CFR §63.602 - Standards and Compliance Dates, apply to operations at the Nu-West Industries facility other than the gypstack project proposed in this permit application . Provisions included in paragraphs (a)(5 and (6)) and b) do not apply to operations at the Nu-West facility because the facility does not have a calciner and does not produce purified phosphoric acid. Provisions included in paragraphs d) through e) of this section apply to the proposed gypstack project.

40 CFR §63.605 Operating And Monitoring Requirements.

(a) For each wet-process phosphoric acid process line or superphosphoric acid process line subject to the provisions of this subpart, you must comply with the monitoring requirements specified in paragraphs (a)(1) and (2) of this section.

(a)(1) Install, calibrate, maintain, and operate a continuous monitoring system (CMS) according to your site-specific monitoring plan specified in §63.608(c). The CMS must have an accuracy of ±5 percent over its operating range and must determine and permanently record the mass flow of phosphorus-bearing material fed to the process.

(a)(2) Maintain a daily record of equivalent P_2O_5 feed. Calculate the equivalent P_2O_5 feed by determining the total mass rate, in metric ton/hour of phosphorus bearing feed, using the monitoring system specified in paragraph (a)(1) of this section and the procedures specified in §63.606(f)(3).

(b) For each phosphate rock dryer or phosphate rock calciner subject to the provisions of this subpart, you must comply with the monitoring requirements specified in paragraphs (b)(1) and (2) of this section.

(b)(1) Install, calibrate, maintain, and operate a CMS according to your site-specific monitoring plan specified in §63.608(c). The CMS must have an accuracy of ±5 percent over its operating range and must determine and permanently record either:

(b)(1)(i) The mass flow of phosphorus-bearing feed material to the phosphate rock dryer or calciner, or

(b)(1)(ii) The mass flow of product from the phosphate rock dryer or calciner.

(b)(2) Maintain the records specified in paragraphs (b)(2)(i) and (ii) of this section.

(b)(2)(i) If you monitor the mass flow of phosphorus-bearing feed material to the phosphate rock dryer or calciner as specified in paragraph (b)(1)(i) of this section, maintain a daily record of phosphate rock feed by determining the total mass rate in metric tons/hour of phosphorus-bearing feed.

(b)(2)(ii) If you monitor the mass flow of product from the phosphate rock dryer or calciner as specified in paragraph (b)(1)(ii) of this section, maintain a daily record of product by determining the total mass rate in metric ton/hour of product.

(c) For each purified phosphoric acid process line, you must comply with the monitoring requirements specified in paragraphs (c)(1) and (2) of this section.

(c)(1) Install, calibrate, maintain, and operate a CMS according to your site-specific monitoring plan specified in §63.608(c). The CMS must continuously measure and permanently record the stack gas exit temperature for each chiller stack.

(c)(2) Measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once each day.

(d) If you use a control device(s) to comply with the emission limits specified in Table 1 or 2 of this subpart, you must install a continuous parameter monitoring system (CPMS) and comply with the requirements specified in paragraphs (d)(1) through (5) of this section.

(d)(1) You must monitor the operating parameter(s) applicable to the control device that you use as specified in Table 3 to this subpart and establish the applicable limit or range for the operating parameter limit as specified in paragraphs (d)(1)(i) and (ii) of this section, as applicable.

(d)(1)(i) Except as specified in paragraph (d)(1)(ii) of this section, determine the value(s) as the arithmetic average of operating parameter measurements recorded during the three test runs conducted for the most recent performance test.

(d)(1)(ii) If you use an absorber or a wet electrostatic precipitator to comply with the emission limits in Table 1 or 2 to this subpart and you monitor pressure drop across the absorber or secondary voltage for a wet electrostatic precipitator, you must establish allowable ranges using the methodology specified in paragraphs (d)(1)(ii)(A) and (B) of this section.

(d)(1)(ii)(A) The allowable range for the daily averages of the pressure drop across an absorber, or secondary voltage for a wet electrostatic precipitator, is ±20 percent of the baseline average value determined in paragraph (d)(1)(i) of this section. The Administrator retains the right to reduce the ±20 percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than ±10 percent under any instance.

(d)(1)(ii)(B) As an alternative to paragraph (d)(1)(ii)(A) of this section, you may establish allowable ranges for the daily averages of the pressure drop across an absorber, or secondary voltage for an electrostatic precipitator, for the purpose of assuring compliance with this subpart using the procedures described in this paragraph. You must establish the allowable ranges based on the baseline average values recorded during previous performance tests, or the results of performance tests conducted specifically for the purposes of this paragraph. You must conduct all performance tests using the methods specified in §63.606. You must certify that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges. When a source using the methodology of this paragraph is retested, you must determine new allowable ranges of baseline average values unless the retest indicates no change in the operating parameters outside the previously established ranges.

(d)(2) You must monitor, record, and demonstrate continuous compliance using the minimum frequencies specified in Table 4 to this subpart.

(d)(3) You must comply with the calibration and quality control requirements that are applicable to the operating parameter(s) you monitor as specified in Table 5 to this subpart.

(d)(4) If you use a non-regenerative adsorption system to achieve the mercury emission limits specified in Table 1 or 2 to this subpart, you must comply with the requirements specified in paragraph (e) of this section.

(d)(5) If you use a sorbent injection system to achieve the mercury emission limits specified in Table 1 or 2 to this subpart and you use a fabric filter to collect the associated particulate matter, the system must meet the requirements for fabric filters specified in paragraph (f) of this section.

(e) If you use a non-regenerative adsorption system to achieve the mercury emission limits specified in Table 1 or 2 to this subpart, you must comply with the requirements specified in paragraphs (e)(1) through (3) of this section.

(e)(1) Determine the adsorber bed life (*i.e.,* the expected life of the sorbent in the adsorption system) using the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.

(e)(1)(i) If the adsorber bed is expected (designed) to have a life of less than 2 years, determine the outlet concentration of mercury on a quarterly basis until breakthrough occurs for the first three adsorber bed change-outs. The adsorber bed life shall equal the average length of time between each of the three change-outs.

(e)(1)(ii) If the adsorber bed is expected (designed) to have a life of 2 years or greater, determine the outlet concentration of mercury on a semi-annual basis until breakthrough occurs for the first two adsorber bed change-outs. The adsorber bed life must equal the average length of time between each of the two change-outs.

(e)(1)(iii) If more than one adsorber is operated in parallel, or there are several identical operating lines controlled by adsorbers, you may determine the adsorber bed life by measuring the outlet concentration of mercury from one of the adsorbers or adsorber systems rather than determining the bed life for each adsorber.

(e)(1)(iv) The adsorber or adsorber system you select for the adsorber bed life test must have the highest expected inlet gas mercury concentration and the highest operating rate of any adsorber in operation at the affected source. During the test to determine adsorber bed life, you must use the fuel that contains the highest level of mercury in any fuel-burning unit associated with the adsorption system being tested.

(e)(2) You must replace the sorbent in each adsorber on or before the end of the adsorbent bed life, calculated in paragraph (e)(1) of this section.

(e)(3) You must re-establish the adsorber bed life if the sorbent is replaced with a different brand or type, or if any process changes are made that would lead to a shorter bed lifetime.

(f) Beginning August 19, 2016, if you use a fabric filter system to comply with the emission limits specified in Table 1 or 2 to this subpart, then the fabric filter must be equipped with a bag leak detection system that is installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (f)(1) through (10) of this section.

(f)(1) Install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (*e.g.,* for a positive-pressure fabric filter) of the fabric filter.

(f)(2) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic feet) or less.

(f)(3) Use a bag leak detection system equipped with a device to continuously record the output signal from the system sensor.

(f)(4) Use a bag leak detection system equipped with a system that will trigger an alarm when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located such that the alert is observed readily by plant operating personnel.

(f)(5) Install a bag leak detection system in each compartment or cell for positive-pressure fabric filter systems that do not duct all compartments or cells to a common stack. Install a bag leak detector downstream of the fabric filter if a negative-pressure or induced-air filter system is used. If multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f)(6) Calibration of the bag leak detection system must, at a minimum, consist of establishing the baseline output level by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(f)(7) After initial adjustment, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as established in your site-specific monitoring plan required in §63.608(c). In no event may the sensitivity be increased more than 100 percent or decreased by more than 50 percent over a 365-day period unless such adjustment follows a complete inspection of the fabric filter system that demonstrates that the system is in good operating condition.

(f)(8) Operate and maintain each fabric filter and bag leak detection system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. If the alarm sounds more than 5 percent of the operating time during a 6-month period, it is considered an operating parameter exceedance. Calculate the alarm time (*i.e.,* time that the alarm sounds) as specified in paragraphs (f)(8)(i) through (iii) of this section.

(f)(8)(i) If inspection of the fabric filter demonstrates that corrective action is not required, the alarm duration is not counted in the alarm time calculation.

(f)(8)(ii) If corrective action is required, each alarm time is counted as a minimum of 1 hour.

(f)(8)(iii) If it takes longer than 1 hour to initiate corrective action, each alarm time is counted as the actual amount of time taken to initiate corrective action.

(f)(9) If the alarm on a bag leak detection system is triggered, you must initiate procedures within 1 hour of an alarm to identify the cause of the alarm and then initiate corrective action, as specified in §63.608(d)(2), no later than 48 hours after an alarm. Failure to take these actions within the prescribed time periods is considered a violation.

(f)(10) Retain records of any bag leak detection system alarm, including the date, time, duration, and the percent of the total operating time during each 6-month period that the alarm sounds, with a brief explanation of the cause of the alarm, the corrective action taken, and the schedule and duration of the corrective action.

(g) If you choose to directly monitor mercury emissions instead of using CPMS as specified in paragraph (d) of this section, then you must install and operate a mercury CEMS in accordance with Performance Specification 12A of appendix B to part 60 of this chapter, or a sorbent trap-based integrated monitoring system in accordance with Performance Specification 12B of appendix B to part 60 of this chapter. You must continuously monitor mercury emissions as specified in paragraphs (g)(1) through (4) of this section.

(g)(1) The span value for any mercury CEMS must include the intended upper limit of the mercury concentration measurement range during normal operation, which may be exceeded during other short-term conditions lasting less than 24 consecutive operating hours. However, the span should be at least equivalent to approximately two times the emissions standard. You may round the span value to the nearest multiple of 10 micrograms per cubic meter of total mercury.

(g)(2) You must operate and maintain each mercury CEMS or sorbent trap-based integrated monitoring system according to the quality assurance requirements specified in Procedure 5 of appendix F to part 60 of this chapter.

(g)(3) You must conduct relative accuracy testing of mercury monitoring systems, as specified in Performance Specification 12A, Performance Specification 12B, or Procedure 5 of appendix B to part 60 of this chapter, at normal operating conditions.

(g)(4) If you use a mercury CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the exhaust gas flow rate to the atmosphere according to your site-specific monitoring plan specified in §63.608(c).

None of the provisions in this section apply to the proposed gypstack.

40 CFR §63.606 Performance Tests and Compliance Provisions.

(a) You must conduct an initial performance test to demonstrate compliance with the applicable emission limits specified in Tables 1 and 2 to this subpart, within 180 days of the applicable compliance date specified in §63.602.

(b) After you conduct the initial performance test specified in paragraph (a) of this section, you must conduct a performance test once per calendar year.

(c) For affected sources (as defined in §63.600) that have not operated since the previous annual performance test was conducted and more than 1 year has passed since the previous performance test, you must conduct a performance test no later than 180 days after the re-start of the affected source according to the applicable provisions in §63.7(a)(2).

(d)(1) You must conduct the performance tests specified in this section at representative (normal) conditions for the process. Representative (normal) conditions means those conditions that:

(d)(1)(i) Represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and

(d)(1)(ii) Are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition. Operations during startup, shutdown, and malfunction do not constitute representative (normal) operating conditions for purposes of conducting a performance test.

(d)(2) You must record the process information that is necessary to document the operating conditions during the test and include in such record an explanation to support that such conditions represent representative (normal) conditions. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(e) In conducting all performance tests, you must use as reference methods and procedures the test methods in 40 CFR part 60, appendix A, or other methods and procedures as specified in this section, except as provided in §63.7(f).

(f) You must determine compliance with the applicable total fluorides standards specified in Tables 1 and 2 to this subpart as specified in paragraphs (f)(1) through (3) of this section.

(f)(1) Compute the emission rate (E) of total fluorides for each run using Equation AA-1:

Where:

E = Emission rate of total fluorides, gram/metric ton (pound/ton) of equivalent P_2O_5 feed.

C_i = Concentration of total fluorides from emission point "i," milligram/dry standard cubic meter (milligram/dry standard cubic feet).

Q_i = Volumetric flow rate of effluent gas from emission point "i," dry standard cubic meter/hour (dry standard cubic feet/hour).

N = Number of emission points associated with the affected facility.

P = Equivalent P_2O_5 feed rate, metric ton/hour (ton/hour).

K = Conversion factor, 1000 milligram/gram (453,600 milligram/pound).

(f)(2) You must use Method 13A or 13B (40 CFR part 60, appendix A) to determine the total fluorides concentration (C_i) and the volumetric flow rate (Q_i) of the effluent gas at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. The sampling volume for each run at each emission point must be at least 0.85 dscm (30 dscf). If Method 13B is used, the fusion of the filtered material described in Section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in section 7.3.3 and 7.3.4 in Method 13A, may be omitted.

(f)(3) Compute the equivalent P_2O_5 feed rate (P) using Equation AA-2:

Where:

P = P_2O_5 feed rate, metric ton/hr (ton/hour).

M_p = Total mass flow rate of phosphorus-bearing feed, metric ton/hour (ton/hour).

R_p = P_2O_5 content, decimal fraction.

(f)(3)(i) Determine the mass flow rate (M_p) of the phosphorus-bearing feed using the measurement system described in §63.605(a).

(f)(3)(ii) Determine the P_2O_5 content (R_p) of the feed using, as appropriate, the following methods specified in Methods Used and Adopted By The Association of Florida Phosphate Chemists (incorporated by reference, see §63.14) where applicable:

(f)(3)(ii)(A) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample.

(f)(3)(ii)(B) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P_2O_5 or $Ca_3(PO_4)_2$, Method A-Volumetric Method.

(f)(3)(ii)(C) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P_2O_5 or $Ca_3(PO_4)_2$, Method B-Gravimetric Quimociac Method.

(f)(3)(ii)(D) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus-P_2O_5 or $Ca_3(PO_4)_2$, Method C-Spectrophotometric Method.

(f)(3)(ii)(E) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P_2O_5, Method A-Volumetric Method.

(f)(3)(ii)(F) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P_2O_5, Method B-Gravimetric Quimociac Method.

(f)(3)(ii)(G) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus-P_2O_5, Method C-Spectrophotometric Method.

(g) You must demonstrate compliance with the applicable particulate matter standards specified in Tables 1 and 2 to this subpart as specified in paragraphs (g)(1) through (3) of this section.

(g)(1) Compute the emission rate (E) of particulate matter for each run using Equation AA-3:

Where:

E = Emission rate of particulate matter, kilogram/megagram (pound/ton) of phosphate rock feed.

C = Concentration of particulate matter, gram/dry standard cubic meter (gram/dry standard cubic feet).

Q = Volumetric flow rate of effluent gas, dry standard cubic meter/hour (dry standard cubic feet/hour).

P = Phosphate rock feed rate, megagram/hour (ton/hour).

K = Conversion factor, 1000 grams/kilogram (453.6 grams/pound).

(g)(2) Use Method 5 at 40 CFR part 60, appendix A-3 to determine the particulate matter concentration (C) and volumetric flow rate (Q) of the effluent gas. Except as specified in paragraph (h) of this section, the sampling time and sample volume for each run must be at least 60 minutes and 0.85 dry standard cubic meter (30 dry standard cubic feet).

(g)(3) Use the CMS described in §63.605(b) to determine the phosphate rock feed rate (P) for each run.

(h) To demonstrate compliance with the particulate matter standards for phosphate rock calciners specified in Tables 1 and 2 to this subpart, you must use Method 5 at 40 CFR part 60, appendix A-3 to determine the particulate matter concentration. The sampling volume for each test run must be at least 1.70 dry standard cubic meter.

(i) To demonstrate compliance with the mercury emission standards for phosphate rock calciners specified in Tables 1 and 2 to this subpart, you must use Method 30B at 40 CFR part 60,

appendix A-8 to determine the mercury concentration, unless you use a CEMS to demonstrate compliance. If you use a non-regenerative adsorber to control mercury emissions, you must use this test method to determine the expected bed life as specified in §63.605(e)(1).

(j) If you choose to monitor the mass flow of product from the phosphate rock dryer or calciner as specified in §63.605(b)(1)(ii), you must either:

(j)(1) Simultaneously monitor the feed rate and output rate of the phosphate rock dryer or calciner during the performance test, or

(j)(2) Monitor the output rate and the input and output moisture contents of the phosphate rock dryer or calciner during the performance test and calculate the corresponding phosphate rock dryer or calciner input rate.

(k) For sorbent injection systems, you must conduct the performance test at the outlet of the fabric filter used for sorbent collection. You must monitor and record operating parameter values for the fabric filter during the performance test. If the sorbent is replaced with a different brand or type of sorbent than was used during the performance test, you must conduct a new performance test.

(l) If you use a mercury CEMS as specified in §63.605(g), or paragraph (i) of this section, you must demonstrate initial compliance based on the first 30 operating days during which you operate the affected source using a CEMS. You must obtain hourly mercury concentration and stack gas volumetric flow rate data.

(m) If you use a CMS, you must conduct a performance evaluation, as specified in §63.8(e), in accordance with your site-specific monitoring plan in §63.608(c). For fabric filters, you must conduct a performance evaluation of the bag leak detection system consistent with the guidance provided in Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance (incorporated by reference, see §63.14). You must record the sensitivity of the bag leak detection system to detecting changes in particulate matter emissions, range, averaging period, and alarm set points during the performance test.

None of the provisions in this section apply to the proposed gypstack.

40 CFR §63.607 Notification, Recordkeeping, and Reporting Requirements.

(a) You must comply with the notification requirements specified in §63.9. During the most recent performance test, if you demonstrate compliance with the emission limit while operating your control device outside the previously established operating limit, you must establish a new operating limit based on that most recent performance test and notify the Administrator that the operating limit changed based on data collected during the most recent performance test. When a source is retested and the performance test results are submitted to the Administrator pursuant to paragraph (b)(1) of this section, §63.7(g)(1), or §63.10(d)(2), you must indicate whether the operating limit is based on the new performance test or the previously established limit. Upon establishment of a new operating limit, you must thereafter operate under the new operating

limit. If the Administrator determines that you did not conduct the compliance test in accordance with the applicable requirements or that the operating limit established during the performance test does not correspond to representative (normal) conditions, you must conduct a new performance test and establish a new operating limit.

(b) You must comply with the reporting and recordkeeping requirements in §63.10 as specified in paragraphs (b)(1) through (5) of this section.

(b)(1) You must comply with the general recordkeeping requirements in §63.10(b)(1).

(b)(2) As required by §63.10(d), you must report the results of the initial and subsequent performance tests as part of the notification of compliance status required in §63.9(h). You must verify in the performance test reports that the operating limits for each process have not changed or provide documentation of revised operating limits established according to §63.605, as applicable. In the notification of compliance status, you must also:

(b)(2)(i) Certify to the Administrator annually that you have complied with the evaporative cooling tower requirements specified in §63.602(c).

(b)(2)(ii) Submit analyses and supporting documentation demonstrating conformance with the Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance (incorporated by reference, see §63.14) and specifications for bag leak detection systems as part of the notification of compliance status report.

(b)(2)(iii) Submit the gypsum dewatering stack and cooling pond management plan specified in §63.602(e).

(b)(2)(iv) If you elect to demonstrate compliance by following the procedures in §63.605(d)(1)(ii)(B), certify to the Administrator annually that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges.

(b)(2)(v) Each time a gypsum dewatering stack is closed, certify to the Administrator within 90 days of closure, that the final cover of the closed gypsum dewatering stack is a drought resistant vegetative cover that includes a barrier soil layer that will sustain vegetation.

(b)(3) As required by §63.10(e)(3), you must submit an excess emissions report for any exceedance of an emission limit, work practice standard, or operating parameter limit if the total duration of the exceedances for the reporting period is 1 percent of the total operating time for the reporting period or greater. The report must contain the information specified in §63.10 and paragraph (b)(4) of this section. When exceedances of an emission limit or operating parameter have not occurred, you must include such information in the report. You must submit the report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half. If you report exceedances, you must submit the excess emissions report quarterly until a request to reduce reporting frequency is approved as described in §63.10(e)(3)(ii).

(b)(4) In the event that an affected unit fails to meet an applicable standard, record and report the following information for each failure:

(b)(4)(i) The date, time and duration of the failure.

(b)(4)(ii) A list of the affected sources or equipment for which a failure occurred.

(b)(4)(iii) An estimate of the volume of each regulated pollutant emitted over any emission limit.

(b)(4)(iv) A description of the method used to estimate the emissions.

(b)(4)(v) A record of actions taken to minimize emissions in accordance with §63.608(b), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(b)(5) You must submit a summary report containing the information specified in §63.10(e)(3)(vi). You must submit the summary report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half.

(c) Your records must be in a form suitable and readily available for expeditious review. You must keep each record for 5 years following the date of each recorded action. You must keep each record on site, or accessible from a central location by computer or other means that instantly provides access at the site, for at least 2 years after the date of each recorded action. You may keep the records off site for the remaining 3 years.

(d) In computing averages to determine compliance with this subpart, you must exclude the monitoring data specified in paragraphs (d)(1) and (2) of this section.

(d)(1) Periods of non-operation of the process unit;

(d)(2) Periods of no flow to a control device; and any monitoring data recorded during CEMS or continuous parameter monitoring system (CPMS) breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable), and high-level adjustments.

(e) Within 60 days after the date of completing each performance test (as defined in §63.2) required by this subpart, you must submit the results of the performance tests, including any associated fuel analyses, following the procedure specified in either paragraph (e)(1) or (2) of this section.

(e)(1) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (*http://www.epa.gov/ttn/chief/ert/index.html*), you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (*http://cdx.epa.gov/epa_home.asp*). Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit performance test data in an electronic file format consistent with the extensible markup language

(XML) schema listed on the EPA's ERT Web site once the XML schema is available. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(e)(2) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, you must submit the results of the performance test to the Administrator at the appropriate address listed in §63.13.

(f) Within 60 days after the date of completing each continuous emissions monitoring system performance evaluation (as defined in §63.2), you must submit the results of the performance evaluation following the procedure specified in either paragraph (f)(1) or (2) of this section.

(f)(1) For performance evaluations of continuous monitoring systems measuring relative accuracy test audit (RATA) pollutants that are supported by the EPA's ERT as listed on the EPA's ERT Web site, you must submit the results of the performance evaluation to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) Performance evaluation data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit performance evaluation data in an electronic file format consistent with the XML schema listed on the EPA's ERT Web site once the XML schema is available. If you claim that some of the performance evaluation information being transmitted is CBI, you must submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic storage media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(f)(2) For any performance evaluations of continuous monitoring systems measuring RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, you must submit the results of the performance evaluation to the Administrator at the appropriate address listed in §63.13.

Nu-West Industries understands that the provisions in paragraphs b(2)(iii) and b(2(v) of this section apply to the proposed gypstack.

40 CFR §63.608 General Requirements and Applicability of General Provisions of this Part.

(a) You must comply with the general provisions in Subpart A of this part as specified in Appendix A to this subpart.

(b) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination by the Administrator of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(c) For each CMS (including CEMS or CPMS) used to demonstrate compliance with any applicable emission limit or work practice, you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan according to the requirements specified in paragraphs (c)(1) through (3) of this section. You must submit the site-specific monitoring plan, if requested by the Administrator, at least 60 days before the initial performance evaluation of the CMS. The requirements of this paragraph also apply if a petition is made to the Administrator for alternative monitoring parameters under §63.8(f).

(c)(1) You must include the information specified in paragraphs (c)(1)(i) through (vi) of this section in the site-specific monitoring plan.

(c)(1)(i) Location of the CMS sampling probe or other interface. You must include a justification demonstrating that the sampling probe or other interface is at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(c)(1)(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.

(c)(1)(iii) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(c)(1)(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of §63.8(c)(1)(ii), (c)(3), (c)(4)(ii), and Table 4 to this subpart.

(c)(1)(v) Ongoing data quality assurance procedures in accordance with the general requirements of §63.8(d)(1) and (2) and Table 5 to this subpart.

(c)(1)(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c), (e)(1), and (e)(2)(i).

(c)(2) You must include a schedule for conducting initial and subsequent performance evaluations in the site-specific monitoring plan.

(c)(3) You must keep the site-specific monitoring plan on site for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If you revise the site-specific monitoring plan, you must keep previous (*i.e.,* superseded) versions of the plan on site to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. You must include the program of corrective action required under §63.8(d)(2) in the plan.

(d) For each bag leak detection system installed to comply with the requirements specified in §63.605(f), you must include the information specified in paragraphs (d)(1) and (2) of this section in the site-specific monitoring plan specified in paragraph (c) of this section.

(d)(1) Performance evaluation procedures and acceptance criteria (*e.g.,* calibrations), including how the alarm set point will be established.

(d)(2) A corrective action plan describing corrective actions to be taken and the timing of those actions when the bag leak detection alarm sounds. Corrective actions may include, but are not limited to, the actions specified in paragraphs (d)(2)(i) through (vi) of this section.

(d)(2)(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in regulated material emissions.

(d)(2)(ii) Sealing off defective bags or filter media.

(d)(2)(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(d)(2)(iv) Sealing off a defective fabric filter compartment.

(d)(2)(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(d)(2)(vi) Shutting down the process controlled by the fabric filter.

Nu-West Industries understands that the proposed gypstack is subject to the general provisions contained in Subpart A of this part as specified in Appendix A to this subpart, as applicable to the gypstack affected source. Paragraphs c) and d) are not applicable to gypstacks.

40 CFR §63.610 Exemption from New Source Performance Standards.

Any affected source subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in 40 CFR part 60, subpart T, subpart U, or subpart NN. To be exempt, a source must have a current operating permit pursuant to title V of the Clean Air Act and the source must be in compliance with all requirements of this subpart.

For each affected source, this exemption is effective upon the date that you demonstrate to the Administrator that the requirements of §§63.605 and 63.606 have been met.

Nu-West is exempted from the requirements of 40 CFR Part 60 subparts T, U, and NN because it has a current Tier I operating permit and demonstrated compliance with the requirements of this subpart - 40 CFR Part 63 subpart AA.

40 CFR §63.611 Implementation and Enforcement.

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable state, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a state, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a state, local, or Tribal agency.

(b) The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.

(**b**)(1) Approval of alternatives to the requirements in §§63.600, 63.602, 63.605, and 63.610.

(**b**)(2) Approval of requests under §§63.7(e)(2)(ii) and 63.7(f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in §63.90.

(**b**)(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.

(**b**)(4) Waiver or approval of requests under §63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in §63.90.

(**b**)(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

Nu-West understands the delegation of authority to implement and enforce this subpart.

40 CFR Table 1 To Subpart AA Of Part 63--Existing Source Emission Limits

40 CFR Table 2 To Subpart AA Of Part 63--New Source Emission Limits

40 CFR Table 3 To Subpart AA Of Part 63--Monitoring Equipment Operating Parameters

40 CFR Table 4 To Subpart AA Of Part 63--Operating Parameters, Operating Limits And Data Monitoring, Recordkeeping And Compliance Frequencies

40 CFR Table 5 To Subpart AA Of Part 63--Calibration And Quality Control Requirements For Continuous Parameter Monitoring System (CPMS)

The limits in Tables 1 through 5 do not apply to operations at the proposed gypstack.

40 CFR Appendix A to Subpart AA of Part 63--Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart AA

40 CFR citation	Requirement	Applies to subpart AA	Comment
§63.1(a)(1) through (4)	General Applicability	Yes	None.
§63.1(a)(5)		No	[Reserved].
§63.1(a)(6)	Contact information	Yes	None.
§63.1(a)(7)-(9)		No	[Reserved].
§63.1(a)(10) through (12)	Time periods	Yes	None.
§63.1(b)	Initial Applicability Determination.	Yes	None.
§63.1(c)(1)	Applicability After Standard Established.	Yes	None.
§63.1(c)(2)	Permits	Yes	Some plants may be area sources.
§63.1(c)(3)-(4)		No	[Reserved].
§63.1(c)(5)	Area to Major source change	Yes	None.
§63.1(d)		No	[Reserved].
§63.1(e)	Applicability of Permit Program	Yes	None.
§63.2	Definitions	Yes	Additional definitions in §63.601.
§63.3	Units and Abbreviations	Yes	None.
§63.4(a)(1) and (2)	Prohibited Activities	Yes	None.
§63.4(a)(3) through (5)		No	[Reserved].
§63.4(b) and (c)	Circumvention/Fragmentation	Yes	None.
§63.5(a)	Construction/Reconstruction Applicability.	Yes	None.
§63.5(b)(1)	Existing, New, Reconstructed Sources Requirements.	Yes	None.
§63.5(b)(2)		No	[Reserved].
§63.5(b)(3), (4), and (6)	Construction/Reconstruction approval and notification.	Yes	None.
§63.5(b)(5)		No	[Reserved].
§63.5(c)		No	[Reserved].
§63.5(d)	Application for Approval of Construction/Reconstruction.	Yes	None.
§63.5(e)	Approval of Construction/ Reconstruction.	Yes	None.
§63.5(f)	Approval of Construction/ Reconstruction Based on State Review.	Yes	None.
§63.6(a)	Compliance with Standards and Maintenance Applicability.	Yes	None.
§63.6(b)(1) through (5)	New and Reconstructed Sources Dates.	Yes	See also §63.602.
§63.6(b)(6)		No	[Reserved].
§63.6(b)(7)	Area to major source change	Yes	None.
§63.6(c)(1)and (2)	Existing Sources Dates	Yes	§63.602 specifies dates.
§63.6(c)(3) and (4)		No	[Reserved].
§63.6(c)(5)	Area to major source change	Yes	None.
§63.6(d)		No	[Reserved].
§63.6(e)(1)(i) and (ii)	Operation & Maintenance Requirements.	No	See §63.608(b) for general duty requirement.
§63.6(e)(iii)		Yes	None.
§63.6(e)(2)		No	[Reserved].
§63.6(e)(3)	Startup, Shutdown, and Malfunction Plan.	No	None.
§63.6(f)	Compliance with Emission Standards.	No	See general duty at §63.608(b).
§63.6(g)	Alternative Standard	Yes	None.
§63.6(h)	Compliance with Opacity/VE	No	Subpart AA does not include VE/

	Standards.		opacity standards.
§63.6(i)(1) through (14)	Extension of Compliance	Yes	None.
§63.6(i)(15)		No	[Reserved].
§63.6(i)(16)		Yes	None.
§63.6(j)	Exemption from Compliance	Yes	None.
§63.7(a)	Performance Test Requirements Applicability.	Yes	None.
§63.7(b)	Notification	Yes	None.
§63.7(c)	Quality Assurance/Test Plan	Yes	None.
§63.7(d)	Testing Facilities	Yes	None.
§63.7(e)(1) additional	Conduct of Tests; startup, shutdown, and malfunction provisions.	No	§63.606 specifies requirements.
§63.7(e)(2) through (4) additional	Conduct of Tests	Yes	§63.606 specifies requirements.
§63.7(f)	Alternative Test Method	Yes	None.
§63.7(g)	Data Analysis	Yes	None.
§63.7(h)	Waiver of Tests	Yes	None.
§63.8(a)	Monitoring Requirements Applicability.	Yes	None.
§63.8(b)	Conduct of Monitoring	Yes	None.
§63.8(c)(1)(i) general duty	General duty to minimize emissions and CMS operation.	No	See 63.608(b) for requirement.
§63.8(c)(1)(ii)		Yes	None.
§63.8(c)(1)(iii)	Requirement to develop SSM Plan for CMS.	No	None.
§63.8(c)(2) through (4)	CMS Operation/Maintenance	Yes	None.
§63.8(c)(5) require	COMS Operation	No	Subpart AA does not COMS.
§63.8(c)(6) through (8)	CMS requirements	Yes	None.
§63.8(d)(1) and (2)	Quality Control	Yes	None.
§63.8(d)(3) requirement.	Written procedure for CMS	No	See §63.608 for
§63.8(e)	CMS Performance Evaluation	Yes	None.
§63.8(f)(1) through (5)	Alternative Monitoring Method	Yes	None.
§63.8(f)(6)	Alternative to RATA Test	Yes	None.
§63.8(g)(1)	Data Reduction	Yes	None.
§63.8(g)(2)		Yes	None.
§63.8(g)(3) through (5)		Yes	None.
§63.9(a)	Notification Requirements Applicability.	Yes	None.
§63.9(b)	Initial Notifications	Yes	None.
§63.9(c)	Request for Compliance Extension.	Yes	None.
§63.9(d)	New Source Notification for Special Compliance Requirements.	Yes	None.
§63.9(e)	Notification of Performance Test.	Yes	None.
§63.9(f) include VE/	Notification of VE/Opacity Test	No	Subpart AA does not opacity standards.
§63.9(g) require evaluation,	Additional CMS Notifications	Yes	Subpart AA does not CMS performance COMS, or CEMS.
§63.9(h)(1) through (3)	Notification of Compliance Status.	Yes	None.
§63.9(h)(4)		No	[Reserved].
§63.9(h)(5) and (6)		Yes	None.
§63.9(i)	Adjustment of Deadlines	Yes	None.
§63.9(j)	Change in Previous Information.	Yes	None.
§63.10(a)	Recordkeeping/Reporting-Applicability.	Yes	None.
§63.10(b)(1)	General Recordkeeping Requirements.	Yes	None.
§63.10(b)(2)(i)	Startup or shutdown duration	No	None.
§63.10(b)(2)(ii) recordkeeping requirement.	Malfunction	No	See §63.607 for and reporting
§63.10(b)(2)(iii)	Maintenance records	Yes	None.
§63.10(b)(2)(iv) and (v)	Startup, shutdown, malfunction actions.	No	None.
§63.10(b)(2)(vi) through (xiv)	General Recordkeeping Requirements.	Yes	None.

§63.10(b)(3).....	General Recordkeeping Requirements.	Yes.....	None.
§63.10(c)(1).....	Additional CMS Recordkeeping...	Yes.....	None.
§63.10(c)(2) through (4).....	.....	No.....	[Reserved].
§63.10(c)(5).....	.....	Yes.....	None.
§63.10(c)(6).....	.....	Yes.....	None.
§63.10(c)(7) and (8).....	.....	Yes.....	None.
§63.10(c)(9).....	.....	No.....	[Reserved].
§63.10(c)(10) through (13)....	.....	Yes.....	None.
§63.10(c)(14).....	.....	Yes.....	None.
§63.10(c)(15).....	Startup Shutdown Malfunction Plan Provisions.	No.....	None.
§63.10(d)(1).....	General Reporting Requirements.	Yes.....	None.
§63.10(d)(2).....	Performance Test Results.....	Yes.....	None.
§63.10(d)(3).....	Opacity or VE Observations.....	No.....	Subpart AA does not include VE/ opacity standards.
§63.10(d)(4).....	Progress Reports.....	Yes.....	None.
§63.10(d)(5).....	Startup, Shutdown, and Malfunction Reports.	No.....	See §63.607 for reporting of excess emissions.
§63.10(e)(1) and (2).....	Additional CMS Reports.....	Yes.....	None.
§63.10(e)(3).....	Excess Emissions/CMS Performance Reports.	Yes.....	None.
§63.10(e)(4).....	COMS Data Reports.....	No.....	Subpart AA does not require COMS.
§63.10(f).....	Recordkeeping/Reporting Waiver.	Yes.....	None.
§63.11.....	Control Device and Work Practice Requirements.	Yes.....	None.
§63.12.....	State Authority and Delegations	Yes.....	None.
§63.13.....	Addresses.....	Yes.....	None.
§63.14.....	Incorporation by Reference.....	Yes.....	None.
§63.15.....	Information Availability/ Confidentiality.	Yes.....	None.
§63.16.....	Performance Track Provisions...	No.....	Terminated.

The non-applicable sections of the General Provision of the MACT standards are identified in Appendix A to Subpart AA shown above. The General Provision of the MACT applicable to Subpart AA are discussed below.

40 CFR §63.1 Applicability.

(a) *General.* (1) Terms used throughout this part are defined in §63.2 or in the Clean Air Act (Act) as amended in 1990, except that individual subparts of this part may include specific definitions in addition to or that supersede definitions in §63.2.

(a)(2) This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This section explains the applicability of such standards to sources affected by them. The standards in this part are independent of NESHAP contained in 40 CFR part 61. The NESHAP in part 61 promulgated by signature of the Administrator before November 15, 1990 (i.e., the date of enactment of the Clean Air Act Amendments of 1990) remain in effect until they are amended, if appropriate, and added to this part.

(a)(3) No emission standard or other requirement established under this part shall be interpreted, construed, or applied to diminish or replace the requirements of a more stringent emission limitation or other applicable requirement established by the Administrator pursuant to other

<<Below is 40 CFR Part 61, Subpart R followed by Subpart A for the regulatory review>>

Subpart R--National Emission Standards For Radon Emissions From Phosphogypsum Stacks.

40 CFR §61.200 Designation Of Facilities.

The provisions of this subpart apply to each owner or operator of a phosphogypsum stack, and to each person who owns, sells, distributes, or otherwise uses any quantity of phosphogypsum which is produced as a result of wet acid phosphorous production or is removed from any existing phosphogypsum stack.

The proposed new gypstack falls within the scope of this rule.

40 CFR §61.201 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or subpart A of part 61. The following terms shall have the following specific meanings:

(a) *Inactive stack* means a stack to which no further routine additions of phosphogypsum will be made and which is no longer used for water management associated with the production of phosphogypsum. If a stack has not been used for either purpose for two years, it is presumed to be inactive.

(b) *Phosphogypsum* is the solid waste byproduct which results from the process of wet acid phosphorus production.

(c) *Phosphogypsum stacks* or *stacks* are piles of waste resulting from wet acid phosphorus production, including phosphate mines or other sites that are used for the disposal of phosphogypsum.

The definitions contained in §61.201 are applicable to the new gypstack in the context of Subpart R.

40 CFR §61.202 Standard.

Each person who generates phosphogypsum shall place all phosphogypsum in stacks. Phosphogypsum may be removed from a phosphogypsum stack only as expressly provided by this subpart. After a phosphogypsum stack has become an inactive stack, the owner or operator shall assure that the stack does not emit more than 20 pCi/(m^2-sec) (1.9 pCi/(ft^2-sec)) of radon-222 into the air.

§61.202 is applicable to the new gypstack at Nu-West.

40 CFR §61.203 Radon Monitoring And Compliance Procedures.

(a) Within sixty days following the date on which a stack becomes an inactive stack, or within ninety days after the date on which this subpart first took effect if a stack was already inactive on that date, each owner or operator of an inactive phosphogypsum stack shall test the stack for radon-222 flux in accordance with the procedures described in 40 CFR part 61, appendix B, Method 115. EPA shall be notified at least 30 days prior to each such emissions test so that EPA may, at its option, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the owner or operator shall notify EPA and test as soon as conditions permit.

(b)(1) Within ninety days after the testing is required, the owner or operator shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each report shall also include the following information:

(b)(1)(i) The name and location of the facility;

(b)(1)(ii) A list of the stacks at the facility including the size and dimensions of each stack;

(b)(1)(iii) The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different);

(b)(1)(iv) A description of the control measures taken to decrease the radon flux from the source and any actions taken to insure the long term effectiveness of the control measures, and

(b)(1)(v) The results of the testing conducted, including the results of each measurement.

(b)(2) Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on may inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

(c) If the owner or operator of an inactive stack chooses to conduct measurements over a one year period as permitted by Method 115 in appendix B to part 61, within ninety days after the testing commences the owner or operator shall provide EPA with an initial report, including the results of the first measurement period and a schedule for all subsequent measurements. An additional report containing all the information in §61.203(b) shall be submitted within ninety days after completion of the final measurements.

(d) If at any point an owner or operator of a stack once again uses an inactive stack for the disposal of phosphogypsum or for water management, the stack ceases to be in inactive status and the owner or operator must notify EPA in writing within 45 days. When the owner or operator ceases to use the stack for disposal of phosphogypsum or water management, the stack

will once again become inactive and the owner or operator must satisfy again all testing and reporting requirements for inactive stacks.

(e) If an owner or operator removes phosphogypsum from an inactive stack, the owner shall test the stack in accordance with the procedures described in 40 CFR part 61, appendix B, Method 115. The stack shall be tested within ninety days of the date that the owner or operator first removes phosphogypsum from the stack, and the test shall be repeated at least once during each calendar year that the owner or operator removes additional phosphogypsum from the stack. EPA shall be notified at least 30 days prior to an emissions test so that EPA may, at its option, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the owner shall notify EPA and test as soon as conditions permit. Within ninety days after completion of a test, the owner or operator shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each such report shall include all of the information specified by §61.203(b).

§61.203 is applicable to the proposed new gypstack.

40 CFR §61.204 Distribution And Use Of Phosphogypsum For Outdoor Agricultural Purposes.

Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in outdoor agricultural research and development and agricultural field use if each of the following requirements is satisfied:

(a) The owner or operator of the stack from which the phosphogypsum is removed shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by §61.207.

(b) The average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as determined pursuant to §61.207, shall not exceed 10 pCi/g (4500 pCi/lb).

(c) All phosphogypsum distributed in commerce for use pursuant to this section by the owner or operator of a phosphogypsum stack shall be accompanied by a certification document which conforms to the requirements of §61.208(a).

(d) Each distributor, retailer, or reseller who distributes phosphogypsum for use pursuant to this section shall prepare certification documents which conform to the requirements of §61.208(b).

(e) Use of phosphogypsum for indoor research and development in a laboratory must comply with §61.205.

§61.204 is applicable to the proposed new gypstack.

40 CFR §61.205 Distribution And Use Of Phosphogypsum For Indoor Research And Development.

(a) Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in indoor research and development activities, provided that it is accompanied at all times by certification documents which conform to the requirements of §61.208. In addition, before distributing phosphogypsum to any person for use in indoor research and development activities, the owner or operator of a phosphogypsum stack shall obtain from that person written confirmation that the research facility will comply with all of the limitations set forth in paragraph (b) of this section.

(b) Any person who purchases and uses phosphogypsum for indoor research and development purposes shall comply with all of the following limitations. Any use of phosphogypsum for indoor research and development purposes not consistent with the limitations set forth in this section shall be construed as unauthorized distribution of phosphogypsum.

(b)(1) Each quantity of phosphogypsum purchased by a facility for a particular research and development activity shall be accompanied by certification documents which conform to the requirements of §61.208.

(b)(2) No facility shall purchase or possess more than 3182 kg (7,000 lb) of phosphogypsum for a particular indoor research and development activity. The total quantity of all phosphogypsum at a facility, as determined by summing the individual quantities purchased or possessed for each individual research and development activity conducted by that facility, may exceed 3182 kg (7,000 lb), provided that no single room in which research and development activities are conducted shall contain more than 3182 kg (7,000 lb).

(b)(3) Containers of phosphogypsum used in indoor research and development activities shall be labeled with the following warning: Caution: Phosphogypsum Contains Elevated Levels of Naturally Occurring Radioactivity.

(b)(4) For each indoor research and development activity in which phosphogypsum is used, the facility shall maintain records which conform to the requirements of §61.209(c).

(b)(5) Indoor research and development activities must be performed in a controlled laboratory setting which the general public cannot enter except on an infrequent basis for tours of the facility. Uses of phosphogypsum for outdoor agricultural research and development and agricultural field use must comply with §61.204.

(c) Phosphogypsum not intended for distribution in commerce may be lawfully removed from la stack by an owner or operator to perform laboratory analyses required by this subpart or any other quality control or quality assurance analyses associated with wet acid phosphorus production.

§61.205 is applicable to the proposed new gypstack.

40 CFR §61.206 Distribution And Use Of Phosphogypsum For Other Purposes.

(a) Phosphogypsum may not be lawfully removed from a stack and distributed or used for any purpose not expressly specified in §61.204 or §61.205 without prior EPA approval.

(b) A request that EPA approve distribution and/or use of phosphogypsum for any other purpose must be submitted in writing and must contain the following information:

(b)(1) The name and address of the person(s) making the request.

(b)(2) A description of the proposed use, including any handling and processing that the phosphogypsum will undergo.

(b)(3) The location of each facility, including suite and/or building number, street, city, county, state, and zip code, where any use, handling, or processing of the phosphogypsum will take place.

(b)(4) The mailing address of each facility where any use, handling, or processing of the phosphogypsum will take place, if different from paragraph (b)(3) of this section.

(b)(5) The quantity of phosphogypsum to be used by each facility.

(b)(6) The average concentration of radium-226 in the phosphogypsum to be used.

(b)(7) A description of any measures which will be taken to prevent the uncontrolled release of phosphogypsum into the environment.

(b)(8) An estimate of the maximum individual risk, risk distribution, and incidence associated with the proposed use, including the ultimate disposition of the phosphogypsum or any product in which the phosphogypsum is incorporated.

(b)(9) A description of the intended disposition of any unused phosphogypsum.

(b)(10) Each request shall be signed and dated by a corporate officer or public official in charge of the facility.

(c) The Assistant Administrator for Air and Radiation may decide to grant a request that EPA approve distribution and/or use of phosphogypsum if he determines that the proposed distribution and/or use is at lease as protective of public health, in both the short term and the long term, as disposal of phosphogypsum in a stack or a mine.

(d) If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, each of the following requirements shall be satisfied:

(d)(1) The owner or operator of the stack from which the phosphogypsum is removed shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by §61.207.

(d)(2) All phosphogypsum distributed in commerce by the owner or operator of a phosphogypsum stack, or by a distributor, retailer, or reseller, or purchased by the end-user, shall be accompanied at all times by certification documents which conform to the requirements §61.208.

(d)(3) The end-user of the phosphogypsum shall maintain records which conform to the requirements of §61.209(c).

(e) If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, the Assistant Administrator may decide to impose additional terms or conditions governing such distribution or use. In appropriate circumstances, the Assistant Administrator may also decide to waive or modify the recordkeeping requirements established by §61.209(c).

§61.206 is applicable to the proposed new gypstack.

40 CFR §61.207 Radium-226 Sampling And Measurement Procedures.

(a) Before removing phosphogypsum from a stack for distribution in commerce pursuant to §61.204, or §61.206, the owner or operator of a phosphogypsum stack shall measure the average radium-226 concentration at the location in the stack from which phosphogypsum will be removed. Measurements shall be performed for each such location prior to the initial distribution in commerce of phosphogypsum removed from that location and at least once during each calendar year while distribution of phosphogypsum removed from the location continues.

(a)(1) A minimum of 30 phosphogypsum samples shall be taken at regularly spaced intervals across the surface of the location on the stack from which the phosphogypsum will be removed. Let n_1 represent the number of samples taken.

(a)(2) Measure the radium-226 concentration of each of the n_1 samples in accordance with the analytical procedures described in 40 CFR part 61, appendix B, Method 114.

(a)(3) Calculate the mean, $\bar{x}_1$, and the standard deviation, s_1, of the n_1 radium-226 concentrations:

$$\bar{x}_1 = \frac{\sum_{i=1}^{n_1} x_i}{n_1},$$

$$s_1 = \sqrt{\frac{\sum_{i=1}^{n_1} (x_i - \bar{x}_1)^2}{n_1 - 1}},$$

Where $\bar{x}_1$ and s_1 are expressed in pCi/g.

(a)(4) Calculate the 95th percentile for the distribution, $\bar{x}^*$, using the following equation:

$$\bar{x}^* = \bar{x}_1 + 1.64\left(\frac{s_1}{\sqrt{n_1}}\right),$$

Where $\bar{x}^*$ is expressed in pCi/g.

(a)(5) If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to §61.206, the owner or operator of a phosphogypsum stack shall report the mean, standard deviation, 95th percentile and sample size. If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to §61.204, the additional sampling procedures set forth in paragraphs (b) and (c) of this section shall apply.

(b) Based on the values for $\bar{x}_1$ and $\bar{x}^*$ calculated in paragraphs paragraphs (a)(3) and (4) of this section, determine which of the following conditions will be met:

(b)(1) If $\bar{x}_1 < 10$ pCi/g and $\bar{x}^* \leq 10$ pCi/g; phosphogypsum may be removed from this area of the stack for distribution in commerce pursuant to §61.204.

(b)(2) If $\bar{x}_1$, < 10 pCi/g and $\bar{x}^* > 10$ pCi/g, the owner or operator may elect to follow the procedures for further sampling set forth in paragraph (c) of this section:

(b)(3) If $\bar{x}_1 \geq 10$ pCi/g; phosphogypsum shall not be removed from this area of the stack for distribution in commerce pursuant to §61.204.

(c) If the owner or operator elects to conduct further sampling to determine if phosphogypsum can be removed from this area of the stack, the following procedure shall apply. The objective of the following procedure is to demonstrate, with a 95% probability, that the phosphogypsum from this area of the stack has a radium-226 concentration no greater than 10 pCi/g. The procedure is iterative, the sample size may have to be increased more than one time; otherwise the phosphogypsum cannot be removed from this area of the stack for distribution to commerce pursuant to §61.204.

(c)(1)(i) Solve the following equation for the total number of samples required:

$$n_2 = \left(\frac{1.64 s_1}{10 - \bar{x}_1} \right)^2 .$$

(c)(1)(ii) The sample size n_2 shall be rounded upwards to the next whole number. The number of additional samples needed is

$n_A = n_2 - n_1$.

(c)(2) Obtain the necessary number of additional samples, n_A, which shall also be taken at regularly spaced intervals across the surface of the location on the stack from which phosphogypsum will be removed.

(c)(3) Measure the radium-226 concentration of each of the n_A additional samples in accordance with the analytical procedures described in 40 CFR part 61, appendix B, Method 114.

(c)(4) Recalculate the mean and standard deviation of the entire set of n_2 radium-226 concentrations by joining this set of n_A concentrations with the n_1 concentrations previously measured. Use the formulas in paragraph (a)(3) of this section, substituting the entire set of n_2 samples in place of the n_1 samples called for in paragraph (a)(3) of this section, thereby determining the mean, $\bar{x}_2$, and standard deviation, s_2, for the entire set of n_2 concentrations.

(c)(5) Repeat the procedure described in paragraph (a)(4) of this section, substituting the recalculated mean, $\bar{x}_2$, for $\bar{x}_1$, the recalculated standard deviation, s_2, for s_1, and total sample size, n_2, for n_1.

(c)(6) Repeat the procedure described in paragraph (b) of this section, substituting the recalculated mean, $\bar{x}_2$ for $\bar{x}_1$.

§61.207 is applicable to the proposed new gypstack.

40 CFR §61.208 Certification Requirements.

(a)(1) The owner or operator of a stack from which phosphogypsum will be removed and distributed in commerce pursuant to §61.204, §61.205, or §61.206 shall prepare a certification document for each quantity of phosphogypsum which is distributed in commerce which includes:

(a)(1)(i) The name and address of the owner or operator;

(a)(1)(ii) The name and address of the purchaser or recipient of the phosphogypsum;

(a)(1)(iii) The quantity of phosphogypsum, in kilograms or pounds sold or transferred;

(a)(1)(iv) The date of sale or transfer;

(a)(1)(v) A description of the intended end-use for the phosphogypsum;

(a)(1)(vi) The average radium-226 concentration, in pCi/g (pCi/lb), of the phosphogypsum, as determined pursuant to §61.207; and

(a)(1)(vii) The signature of the person who prepared the certification.

(a)(2) The owner or operator shall retain the certification document for five years from the date of sale or transfer, and shall produce the document for inspection upon request by the Administrator, or his authorized representative. The owner or operator shall also provide a copy of the certification document to the purchaser or recipient.

(b)(1) Each distributor, retailer, or reseller who purchases or receives phosphogypsum for subsequent resale or transfer shall prepare a certification document for each quantity of phosphogypsum which is resold or transferred which includes:

(b)(1)(i) The name and address of the distributor, retailer, or reseller;

(b)(1)(ii) The name and address of the purchaser or recipient of the phosphogypsum;

(b)(1)(iii) The quantity (in pounds) of phosphogypsum resold or transferred;

(b)(1)(iv) The date of resale or transfer;

(b)(1)(v) A description of the intended end-use for the phosphogypsum;

(b)(1)(vi) A copy of each certification document which accompanied the phosphogypsum at the time it was purchased or received by the distributor, retailer, or reseller; and

(b)(1)(vii) The signature of the person who prepared the certification.

(b)(2) The distributor, retailer, or reseller shall retain the certification document for five years from the date of resale or transfer, and shall produce the document for inspection upon request by the Administrator, or his authorized representative. For every resale or transfer of phosphogypsum to a person other than an agricultural end-user, the distributor, retailer, or reseller shall also provide a copy of the certification document to the purchaser or transferee.

§61.208 is applicable to the proposed new gypstack.

40 CFR §61.209 Required Records.

(a) Each owner or operator of a phosphogypsum stack must maintain records for each stack documenting the procedure used to verify compliance with the flux standard in §61.202, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the correctness of the determination made concerning compliance of the stack with flux standard.

(b) Each owner or operator of a phosphogypsum stack must maintain records documenting the procedure used to determine average radium-226 concentration pursuant to §61.207, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the accuracy of the radium-226 concentration.

(c) Each facility which uses phosphogypsum pursuant to §61.205 or §61.206 shall prepare records which include the following information:

(c)(1) The name and address of the person in charge of the activity involving use of phosphogypsum.

(c)(2) A description of each use of phosphogypsum, including the handling and processing that the phosphogypsum underwent.

(c)(3) The location of each site where each use of phosphogypsum occurred, including the suite and/or building number, street, city, county, state, and zip code.

(c)(4) The mailing address of each facility using phosphogypsum, if different from paragraph (c)(3) of this section.

(c)(5) The date of each use of phosphogypsum.

(c)(6) The quantity of phosphogypsum used.

(c)(7) The certified average concentration of radium-226 for the phosphogypsum which was used.

(c)(8) A description of all measures taken to prevent the uncontrolled release of phosphogypsum into the environment.

(c)(9) A description of the disposition of any unused phosphogypsum.

(d) These records shall be retained by the facility for at least five years from the date of use of the phosphogypsum and shall be produced for inspection upon request by the Administrator, or his authorized representative.

§61.209 is applicable to the proposed new gypstack.

40 CFR §61.210 Exemption From The Reporting And Testing Requirements Of 40 CFR 61.10.

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10.

§61.210 is applicable to the proposed new gypstack.

40 CFR Part 61, Subpart A – General Requirements

40 CFR §61.01 Lists Of Pollutants And Applicability Of Part 61.

(a) The following list presents the substances that, pursuant to section 112 of the Act, have been designated as hazardous air pollutants. The FEDERAL REGISTER citations and dates refer to the publication in which the listing decision was originally published.

Asbestos (36 FR 5931; Mar. 31, 1971)
Benzene (42 FR 29332; June 8, 1977)
Beryllium (36 FR 5931; Mar. 31, 1971)
Coke Oven Emissions (49 FR 36560; Sept. 18, 1984)
Inorganic Arsenic (45 FR 37886; June 5, 1980)
Mercury (36 FR 5931; Mar. 31, 1971)
Radionuclides (44 FR 76738; Dec. 27, 1979)
Vinyl Chloride (40 FR 59532; Dec. 24, 1975)

(b) The following list presents other substances for which a FEDERAL REGISTER notice has been published that included consideration of the serious health effects, including cancer, from ambient air exposure to the substance.

Acrylonitrile (50 FR 24319; June 10, 1985)
1,3-Butadiene (50 FR 41466; Oct. 10, 1985)
Cadmium (50 FR 42000; Oct. 16, 1985)
Carbon Tetrachloride (50 FR 32621; Aug. 13, 1985)
Chlorinated Benzenes (50 FR 32628; Aug. 13, 1985)
Chlorofluorocarbon--113 (50 FR 24313; June 10, 1985)
Chloroform (50 FR 39626; Sept. 27, 1985)
Chloroprene (50 FR 39632; Sept. 27, 1985)
Chromium (50 FR 24317; June 10, 1985)
Copper (52 FR 5496; Feb. 23, 1987)
Epichlorohydrin (50 FR 24575; June 11, 1985)

APPENDIX D – EMISSION INVENTORIES

Table 1: Controlled emissions from Gyp Stack 3 in TPY

Processes	Gaseous Fluorides	Particulate Fluorides	PM	PM10	PM2.5
Gyp Stack 3					
-Volatile Emissions	44.09				
-Wind Errosion		0.04	3.91	1.96	0.29
-Backhoe Operations		2.86E-04	2.83E-02	1.34E-02	2.03E-03
-Hauling Gyp from Gyp 2 to Gyp 3*		0.16	16.11	6.11	0.611
-1/2 ton pickups around Gyp-3		0.04	3.76	0.96	0.096
-1/2 ton pickups on Gyp-3		0.01	0.56	0.21	0.021
-Other Support Vehicles (on Gyp-1/Gyp-2)**		0.0001	0.0136	0.0051	0.0005
-Other Support Vehicles (on Gyp-3)***		0.0039	0.39	0.15	0.01
Decant Ditches	2.91				
Total	47.0	0.2	24.8	9.4	1.0

* includes: haul trucks, water trucks, grader

** excavators at Gyp1/Gyp2

*** includes: compactor, dozer, long-reach excavators

Table 2: Uncontrolled emissions from Gyp Stack 3 in TPY

Processes	Gaseous Fluorides	Particulate Fluorides	PM	PM10	PM2.5
Gyp Stack 3					
-Volatile Emissions	44.09				
-Wind Errosion		1.18	117.08	58.54	8.78
-Backhoe Operations		2.86E-04	2.83E-02	1.34E-02	2.03E-03
-Hauling Gyp from Gyp 2 to Gyp 3 *		7.94	788.19	299.05	29.91
-1/2 ton pickups around Gyp-3		0.08	7.69	1.96	0.20
-1/2 ton pickups on Gyp-3		0.28	27.58	10.46	1.05
-Other Support Vehicles (on Gyp-1/Gyp-2)**		1.59	158.14	60.00	6.00
-Other Support Vehicles (on Gyp-3)***		0.19	18.85	7.15	0.72
Decant Ditches	2.91				
Total	47.0	11.3	1117.5	437.2	46.6

* includes: haul trucks, water trucks, grader

** excavators at Gyp1/Gyp2

*** includes: compactor, dozer, long-reach excavators

APPENDIX E – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: July 20, 2017

TO: Morrie Lewis, Permit Writer, Air Program

FROM: Thomas Swain, Air Quality Modeler, Analyst 3, Air Program

PROJECT: Nu-West Industries, Inc. – Nu-West Conda Phosphate Operations, in Soda Springs, Idaho Permit to Construct (PTC) P-2009.0002, Project 61835, Facility ID No. 029-00003

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

Contents

1.0 Summary

Nu-West Industries, Inc. – Nu-West Conda Phosphate Operations (CPO), submitted an application for a Permit to Construct (PTC) on January 10, 2017, for a modification to an existing facility located near Soda Springs, Idaho, denoted as PTC P-2009.0002.

CPO operates a phosphate processing facility. The operations for this project include constructing a new gypsum stack for dewatering and disposal of phosphogypsum. Phosphoric acid is produced at the site by digesting phosphate rock with sulfuric acid to convert the ore laden phosphate to a water-soluble form.

Details of the entire process are discussed in the main body of the DEQ Statement of Basis supporting the issued proposed PTC. This modeling review memorandum provides a summary and approval of the ambient air impact analyses submitted with the permit application. It also describes DEQ's review of those analyses, DEQ's verification analyses, additional clarifications, and conclusions.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard as required by IDAPA 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03).

ERM Consultants (ERM) performed the ambient air impact analyses for this project on behalf of CPO. The analyses were performed to demonstrate compliance with applicable air quality standards. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that the estimated emissions increases at the facility associated with the proposed project will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. Evaluation of emissions estimates is the responsibility of the permit writer and is addressed in the main body of the Statement of Basis. The accuracy of emissions estimates was not evaluated as part of DEQ's review of the air impact analyses submitted and described in this modeling review memorandum.

The proposed project will result in a significant increase in fluoride emissions as defined the Federal PSD rules in 40 CFR 52.21. PSD rules require Best Available Control Technology (BACT) be demonstrated for control of fluoride emissions. ERM has included the BACT demonstration for fluoride controls in the document. DEQ made the determination that New Source Review (NSR) ambient air impact modeling analyses and preconstruction air quality monitoring of fluorides were not required for this application. A SMC(Significant Monitoring Concentration) modeling demonstration was foregone because there is no NAAQS for flourides, and an assumption was made that the proposed fluoride emissions already did exceed the SMC. While preconstruction monitoring may be required to show preconstruction compliance for pollutants with no NAAQS, DEQ is not requiring monitoring due to the weight of evidence supplied in EPA's residual risk analysis of gyp stack fluoride emissions. [4] Minor source air impact modeling analyses were performed for $PM_{2.5}$ and PM_{10}. Emissions increases of $PM_{2.5}$ and PM_{10} were below significance levels, so PSD review did not apply to these analyses.

A modeling protocol was submitted for this project on November 18, 2016. This protocol was conditionally approved on December 5, 2016. ERM submitted an application on January 10, 2017. This application was deemed incomplete on January 27, 2017, largely because of the lack of a modeling analysis. An application was resubmitted again on March 29, 2017, with modeling files available on April 3, 2017. This application was deemed incomplete on April 28, 2017. The reasons for the incompleteness determination included lack of documentation for derivation of emission rates for PM haul roads, question about emissions from backhoe

operations, and uncertainty regarding modeled source characteristics. CPO responded to these issues on May 18, 2017. After review and further correspondence with the applicant, the application was deemed complete on June 9, 2017.

The final submitted air quality impact analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments.

Table 1 presents key assumptions and results to be considered in the development of the permit.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (*Guideline on Air Quality Models*). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department that operation of the proposed facility will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
General Emissions Rates. Emissions rates used in the modeling analyses, as listed in this memorandum, represent maximum potential emissions as given by design capacity or as limited by the issued permit for the specific pollutant and averaging period. Because of the evolving shape of the gyp stack, four separate configurations of the project with respect to the GYP3 stack height were modeled: ¼ height, ½ height, ¾ height, and full height.	Compliance has not been demonstrated for emissions rates greater than those used in the modeling analyses. Emissions for height scenarios for GYP3 emission other than ¼, ½, ¾, and full height have not been modeled to demonstrate compliance with NAAQS. Compliance has not been demonstrated when operating the GYP transfer roads for periods other than March-October, 6 AM to 6 PM.
Modeling Thresholds for Criteria Pollutant Emissions. Maximum short-term and long-term emissions of the criteria pollutants PM_{10} and $PM_{2.5}$ associated with the proposed project are above the Level 1Modeling Applicability Thresholds for each pollutant. Therefore, a demonstration of compliance with NAAQS was done for those criteria pollutants and applicable averaging times.	Project-specific air impact analyses demonstrating compliance with NAAQS, as required by Idaho Air Rules Section 203.02, are required for pollutants having an emissions increase that is greater than Level I Modeling Applicability Thresholds. Compliance with NAAQS has not been demonstrated for emissions that exceed the emission estimates presented in the application.
TAPS Modeling. All TAPs emissions for this project are subject to 40 CFR 63 Subpart AA. Therefore, no modeling was required for any TAPS per requirements of Idaho Air Rules Section 585 and 586.	Air impact analyses demonstrating compliance with TAPS, as required by Idaho Air Rules Section 203.03, is required for pollutants having an emissions rate greater than ELs. No demonstration of compliance with TAPs AAC and AACC was required.

2.0 Background Information

This section provides background information applicable to the project and the site where the facility is located. It also provides a brief description of the applicable air impact analyses requirements for the project.

2.1 Project Description

CPO is an existing facility located near Soda Springs, Idaho. The facility plans to construct a new gypsum stack (GYP3) for the purpose of dewatering and disposal of phosphogypsum. In this process, phosphoric acid is produced by digesting phosphate rock with sulfuric acid to create phosphate into a water soluble form. The new GYP3 stack evolves over time, and is assessed at four different stages of stack heights (and haul roads) in the modeling analyses: ¼ height (44 feet), ½ height (88 feet), ¾ height (132 feet) and full height (175 feet).

The air impact analyses performed by ERM, as part of the permit application, were submitted to show that facility-wide emissions do not cause or contribute to an exceedance of any NAAQS or TAPS AACs or AACCs. A detailed description of the facility is listed in Section 1 of the application.

2.2 Proposed Location and Area Classification

The CPO facility is located near Soda Springs, Idaho, in Caribou County, with approximate center UTM coordinates (in meters) of 454141 E, and 4733633 N, NAD83, UTM Zone 12. This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$). The area is not classified as non-attainment for any criteria pollutants.

2.3 Air Impact Analyses Required for All Permits to Construct

Criteria Pollutant and TAP Impact Analyses for a PTC are addressed in Idaho Air Rules Sections 203.02 and 203.03:

> *No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*
>
> ***02. NAAQS.*** *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*
>
> ***03. Toxic Air Pollutants.*** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in*

Sections 585 and 586.

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

> ***Estimates of Ambient Concentrations.*** *All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).*

2.4 Significant Impact Level and Cumulative NAAQS Impact Analyses

The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted using methods and data as outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

If modeled maximum pollutant impacts to ambient air from the emissions sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

DEQ has developed modeling applicability thresholds that effectively assure that project-related emissions increases below stated values will result in ambient air impacts below the applicable SILs. The threshold levels and dispersion modeling analyses supporting those levels are presented in the *State of Idaho Guideline for Performing Air Quality Impact Analyses*[1] (*Idaho Air Modeling Guideline*). Use of a modeling threshold represents the use of conservative modeling, performed in support of the threshold, as a project SIL analysis. Project-specific modeling applicability for this project is addressed in Section 3.1.1 of this memorandum.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from facility-wide emissions, and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. If the SIL analysis indicates the facility/modification has an impact exceeding the SIL, the facility might not have a significant contribution to a violation if impacts are below the SIL at the specific receptor showing the violation during the time periods when a modeled violation occurred.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.3	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
	24-hour	5	365[m]	Maximum 2nd highest[n]
	Annual	1.0	80[r]	Maximum 1st highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or b) modeled design values of the cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or

other identified level of consequence; or c) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Idaho Air Rules Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP.

3.0 Analytical Methods and Data

This section describes the methods and data used in analyses to demonstrate compliance with applicable air quality impact requirements.

3.1 Emission Source Data

Emissions rates of criteria pollutants and TAPs for the project were provided by the applicant for various applicable averaging periods. Review and approval of estimated emissions was the responsibility of the DEQ permit writer, and is not addressed in this modeling memorandum. DEQ modeling review included verification that the application's potential emissions rates were properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emissions rates used in the dispersion modeling analyses submitted by ERM, as listed in this memorandum, should be reviewed by the DEQ permit writer against those in the emissions inventory of the permit application. All modeled criteria air pollutant and TAP emissions rates should be equal to or greater than the facility's emissions calculated in other sections of the PTC application or requested permit allowable emission rates.

3.1.1 Criteria Pollutant Emissions Rates and Modeling Applicability

If the modification-related or facility-wide potential to emit (PTE) values for a specific criteria pollutant would qualify for a below regulatory concern (BRC) permit exemption as per Idaho Air Rules Section 221 if it were not for some pollutants exceeding BRC thresholds, then an air impact analysis for that pollutant may not be required for permit issuance. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules (Policy on NAAQS Compliance Demonstration Requirements, DEQ policy memorandum, July 11, 2014) is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant." The interpretation policy also states that the exemption criteria of uncontrolled PTE not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year.

DEQ has generated non-site-specific project modeling thresholds for those projects that cannot use the BRC exemption from an impact analysis (if there are specific permitted emissions limits that require changing, etc.). Modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*. These thresholds were based on assuring an ambient impact of less than established SIL for that specific pollutant and averaging period.

If project-specific total emissions rates are below Level I Modeling Thresholds, project-specific air impact analyses are not necessary for permitting. Use of level II modeling thresholds are conditional, requiring DEQ approval. Table 3 provides the emissions-based modeling applicability summary. The submitted application did not evaluate estimated emissions increases against BRC thresholds, and it was assumed that the project would not *qualify* for the BRC exclusion from NAAQS compliance demonstration. The submitted modeling report evaluated modeling applicability based on comparison of emissions to Level 1 Modeling Applicability Thresholds. Emissions of all particulate criteria pollutants ($PM_{2.5}$ and PM_{10}) resulting from the proposed project are greater than the Level 1 modeling thresholds, and therefore project-specific air impact analyses are required for these criteria pollutants. Emissions (short term) as modeled for each scenario and criteria pollutant are listed in Table 4. The source groups for the hauls roads, the perimeter roads, and the GYP3 haul roads, each contain several separate sources. A total of over 1100 volume sources were used to simulate the emissions from road conditions. The road emissions are identically for all the scenarios except for the GYP3 road sources, which differ slightly, depending on the stage of the GYP3 development.

Table 3. MODELING APPLICABILITY ANALYSIS RESULTS						
Pollutant	**Averaging Period**	**Emissions**	**BRC Threshold[a] (ton/yr)**	**Level I Modeling Thresholds (lb/hr or ton/yr)[b]**	**Level II Modeling Thresholds[b] (lb/hour or ton/year)**	**Modeling Required**
$PM_{2.5}$	Annual	1.00 ton/yr	1.0	0.350	4.1	Yes
	24-hour	0.54 lb/hr		0.054	0.63	Yes
PM_{10}	24-hour	5.13 lb/hr	1.5	0.22	2.6	Yes
NOx	Annual	0.0 ton/yr	4.0	1.2	14	No
	1-hour	0.0 lb/hr		0.2	2.4	No
SO_2	Annual	0.0 ton/yr	4.0	1.2	14	No
	1-hour	0.00 lb/hr		0.21	2.5	No
CO	1,8 hour	0.0 lb/hr	10.0	15	175	No
Lead	Annual	0.0 lb/yr	0.06	14 pounds/month		No

a. Below Regulatory Concern (BRC) Thresholds in ton/year. DEQ determined the BRC modeling exemption cannot be used for this project.
b. Pounds/hour or ton/year, consistent with the emissions.
c. DEQ determined Level II Modeling Applicability Thresholds cannot be used for the project because of the poor dispersion characteristics of the sources.

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NOx, and sunlight. Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.3.3) cannot be used to estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not typically a reasonable or necessary requirement for air quality permitting.

Addressing secondary formation of O_3 has been somewhat addressed in EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

> *. . . footnote 1 to sections 51.166(I)(5)(I) of the EPA's regulations says the following: "No de minimis air quality level is provided for ozone. However, any net emission increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD would be required to perform an ambient impact analysis, including the gathering of air quality data."*
>
> *The EPA believes it unlikely a source emitting below these levels would contribute to such a violation of the 8-hour ozone NAAQS, but consultation with an EPA Regional Office should still be conducted in accordance with section 5.2.1.c. of Appendix W when reviewing an application for sources with emissions of these ozone precursors below 100 TPY."*

Allowable emissions estimates of VOCs and NOx are below the 100 tons/year threshold, and DEQ

determined it not appropriate or necessary to require a quantitative source specific O_3 impact analysis.

Secondary Particulate Formation

The impact from secondary particulate formation resulting from emissions of NOx, SO_2, and/or VOCs was assumed by DEQ to be negligible based on the magnitude of emissions and the short distance from emissions sources to modeled receptors where maximum PM_{10} and $PM_{2.5}$ impacts would be anticipated.

Table 4. MODELED CRITERIA POLLUTANTS FOR GYP STACK HEIGHT SCENARIOS (short term rates))

		Emissions for Specified Percentage of Final Gyp Stack Height							
	Height	100%		75%		50%		25%	
Source Group	Source ID[a]	Emissions Rates in Pounds/Hour							
		$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Haul Roads	HR1	0.0433	0.4331	0.0433	0.4331	0.0433	0.4331	0.0433	0.4331
	HR2	0.0255	0.2548	0.0255	0.2548	0.0255	0.2548	0.0255	0.2548
	HR3	0.0446	0.4459	0.0446	0.4459	0.0446	0.4459	0.0446	0.4459
	HR4	0.1045	1.0446	0.1045	1.0446	0.1045	1.0446	0.1045	1.0446
	HR5	0.0191	0.1911	0.0191	0.1911	0.0191	0.1911	0.0191	0.1911
	HR6	0.1592	1.5924	0.1592	1.5924	0.1592	1.5924	0.1592	1.5924
	HR7	0.0433	0.4331	0.0433	0.4331	0.0433	0.4331	0.0433	0.4331
	Total	0.4395	4.3695	0.4395	4.3950	0.4395	4.3950	0.4395	4.3950
	Ton/Year Total	0.6461	6.4232	0.6461	6.4606	0.6461	6.4606	0.6461	6.4606
Perim Roads	PRA	0.0002	0.0020	0.0002	0.0020	0.0002	0.0020	0.0002	0.0020
	PRB	0.0002	0.0016	0.0002	0.0016	0.0002	0.0016	0.0002	0.0016
	PRC	0.0027	0.0266	0.0027	0.0266	0.0027	0.0266	0.0027	0.0266
	PRD	0.0104	0.1039	0.0104	0.1039	0.0104	0.1039	0.0104	0.1039
	PRE	0.0025	0.0254	0.0025	0.0254	0.0025	0.0254	0.0025	0.0254
	PRF	0.0007	0.0065	0.0007	0.0065	0.0007	0.0065	0.0007	0.0065
	PRG	0.0053	0.0528	0.0053	0.0528	0.0053	0.0528	0.0053	0.0528
	Total	0.0219	0.2188	0.0219	0.2188	0.0219	0.2188	0.0219	0.2188
	Ton/Year Total	0.0958	0.9582	0.0958	0.9582	0.0958	0.9582	0.0958	0.9582
GYP3 Roads	N	0.0004	0.0038	0.0004	0.0038	0.0004	0.0037	0.0004	0.0038
	E	0.0013	0.0134	0.0013	0.0133	0.0013	0.0130	0.0013	0.0131
	S	0.0004	0.0038	0.0004	0.0038	0.0004	0.0037	0.0004	0.0038
	W	0.0013	0.0132	0.0013	0.0131	0.0013	0.0129	0.0013	0.0130
	Total	0.0034	0.0342	0.0039	0.0388	0.0033	0.0334	0.0049	0.0488
	Ton/Year Total	0.0150	0.1500	0.0170	0.1700	0.0146	0.1463	0.0214	0.2139
All Roads	**Total**	**0.4648**	**4.6225**	**0.4653**	**4.6526**	**0.4647**	**4.6472**	**0.4663**	**4.6626**
	Ton/Year Total	**0.7569**	**7.5314**	**0.7589**	**7.5889**	**0.7565**	**7.5652**	**0.7633**	**7.6327**
GYP1_2	**Total**	0.0001	0.0012	0.0001	0.0012	0.0001	0.0012	0.0001	0.0012
	Ton/Year Total	0.0005	0.0051	0.0005	0.0051	0.0005	0.0051	0.0005	0.0051
GYP_3	**Total**	**0.0704**	**0.4816**	**0.0704**	**0.4816**	**0.0704**	**0.4816**	**0.0704**	**0.4816**
	Ton/Year Total	**0.3083**	**2.1094**	**0.3083**	**2.1094**	**0.3083**	**2.1094**	**0.3083**	**2.1094**
Total All Sources	**Total**	**0.535**	**5.105**	**0.536**	**5.135**	**0.535**	**5.130**	**0.537**	**5.145**
	Ton/Year Total	**1.066**	**9.646**	**1.068**	**9.703**	**1.065**	**9.680**	**1.072**	**9.747**

[a] Road IDs are segments; each segment contains numerous individual sources; emissions are sums of road segments

3.1.2 Toxic Air Pollutant Emissions Rates

TAP emissions regulations under Idaho Air Rules Section 220 are only applicable for new or modified sources constructed after July 1, 1995. The submitted emissions inventory in the application did not identify any TAPs having potential emission increases that could exceed screening emissions levels (ELs) of Idaho Air Rules Section 585 or 586, as the project emissions are subject to 40 CFR 63 Subpart AA.

3.2 Emission Release Parameters

Table 5 provides emissions release parameters for facility sources as used in the final modeling assessment. Stack parameters used in the modeling analyses were adequately documented/justified in the application. The applicant used EPA's Haul Road Workbook[3] to determine source characteristics for the volume haul road sources.

Table 5. MODELING PARAMETERS

Area Sources

Source ID	Source Description	Easting[a] (X) (m)[c]	Northing[b] (Y) (m)	Base Elevation (m)	Release Height (ft)[d]	Initial Vert. Dimension (ft)	Total Area (m^2)
GYP1_2	Existing GYP	454080	4734341	1876	40	35	92902
DRYGYP3	Full Height	454141	4733633	1876	87.5	81.39	611692
DRYGYP3	75% height	454141	4733633	1876	66	61.39	611692
DRYGYP3	50% height	454141	4733633	1876	44	40.93	611692
DRYGYP3	25% height	454141	4733633	1876	22	20.47	611692

Volume Sources

Source ID	Description	Number of Sources	Easting (X) (m)	Northing (Y) (m)	Release Height (ft)	Init. Horizontal Dimension (ft)	Initial Vert. Dimension (ft)
HR1-HR7	Haul Roads	345	454163	4735452	12.76	15.68	11.88
PRA-PRG	Perimeter Rds	534	454100	4733613	5.71	12.27	5.28
N,W,S,E	GYP3 Roads	286-415[e]	454169	4733583	5.71	12.27	5.28

a. Universal Transverse Mercator coordinates in meters in the east/west direction.
b. Universal Transverse Mercator coordinates in meters in the north/south direction.
c. Meter.
d. Feet
e. Range for the four height scenarios

3.2 Background Concentrations

Because the analyses were limited demonstrating impacts less than the Significant Impact Level (SIL) of each criteria pollutant, background concentrations were not required for this assessment.

3.3 Impact Modeling Methodology

This section describes the modeling methods used by the applicant to demonstrate preconstruction compliance with applicable air quality standards.

3.3.1 General Overview of Analyses

ERM performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the proposed facility as described in the application. Results of the submitted analyses demonstrate compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 6 provides a brief description of parameters used in the modeling analyses.

Table 6. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Soda Springs, Idaho	The facility is located in an area that is attainment or unclassified for all criteria air pollutants
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 16216r
Meteorological Data	2004-2008	See Section 3.3.4 for a detailed discussion on the meteorological data. Site specific data obtained from Soda Springs, with surface data from Pocatello, and upper air data from Boise, ID
Terrain	Considered	See Section 5.3 below.
Building Downwash Receptor Grid	Not Considered	Because there were no point sources modeled for this project BPIP-PRIME was not used to evaluate building dimensions for consideration of downwash effects in AERMOD.
	Grid 1	25-meter spacing along the areas of ambient boundary out to 150 meters
	Grid 2	100-meter spacing out to approximately 1000 meters
	Grid 3	250- meter spacing out to 2500 meters
	Grid 4	500-meter spacing out to 5000 meters

3.3.2 Modeling protocol and Methodology

A modeling protocol was submitted for this project on November 18, 2016. This protocol was conditionally approved on December 5, 2016. ERM submitted an initial application on January 10, 2017. This application was deemed incomplete on January 27, 2017, primarily because of the lack of a modeling analysis, and no accompanying modeling files. A revised application was resubmitted on March 29, 2017 and modeling files were available on April 3, 2017. This application was deemed incomplete on April 28, 2017, because of the lack of documentation for derivation of PM emission rates for haul roads, questions about emissions from backhoe operations, and uncertainty regarding modeled source characteristics. CPO responded to these issues on May 18, 2017. After review and further correspondence with the applicant, the application was deemed complete on June 9, 2017. A revised modeling report and revised modeling files were not submitted with this response, as changes to the actual files were minimal. DEQ performed sensitivity modeling runs to confirm that the modeling results listed in the modeling report of March 29, 2017, were not different than those incorporating the minor changes discussed in the correspondence sent on May 18, 2017.

Project-specific modeling and other required impact analyses were generally conducted using data and methods discussed in pre-application correspondence and in the *Idaho Air Quality Modeling Guideline*[1].

Compliance with NAAQS was demonstrated by CPO using four possible operational configuration scenarios. As mentioned previously, these correspond to stages of the GYP3 stack being ¼ height, ½ height, ¾ height, and full height. The haul roads used to transport gyp from GYP1_GYP2 to GYP3 were modeled as operating from March to October from 0600 to 1800 hours. There are no restrictions on the other haul roads. The perimeter haul road sources were modeled with annual emissions spread out over 8760 hours. Emission calculations for the perimeter road sources were limited by snow during the winter months. Therefore, DEQ performed sensitivity modeling analyses using maximum daily short-term emissions for the non-winter months for the perimeter road source groups to assure compliance with NAAQS. Maximum design impacts were not changed from the modeling results listed in the submitted application.

3.3.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple source Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight-line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD version 16216r was used by the applicant for the air impact modeling analyses to evaluate impacts of the facility. This version is the current version at the time the application was received by DEQ.

3.3.4 Meteorological Data

ERM used meteorological data collected at Soda Springs meteorological tower from 2004-2008. This was supplemented with NWS surface data collected at Pocatello Idaho Airport, (station ID 24156) for the same time period. Upper air data were taken from the Boise, Idaho, airport. DEQ processed these data with the latest AERMET version 16216r utilizing the USTAR* option for dealing with low speeds. DEQ supplied the data to ERM and determined the meteorological data used in the submitted analyses were representative for modeling for this permit in the locale of CPO.

3.3.5 Effects of Terrain on Modeled Impacts

Terrain data were extracted from United States Geological Survey (USGS) National Elevation Dataset (NED) files in the WGS84 datum (approximately equal to the NAD83 datum). ERM used 1/3 Arc Second resolution data, which is adequate for this analysis.

The terrain preprocessor AERMAP Version 11103 was used to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain.

DEQ reviewed the area surrounding the facility by using the web-based mapping program Google Earth, which uses the WGS84 datum. DEQ also overlaid modeling files with a digital photograph background

images acquired from the 2013 ARCGIS NAIP (National Agriculture Imagery Program) data base. The immediate area is effectively flat with regard to dispersion modeling affects. There is significant elevated terrain elevated terrain within 1000 meters of the project. Because most of the emissions are from ground level sources, maximum impacts are located at nearby receptors on the ambient boundary. Elevations in the modeling domain matched those indicated by the background images.

3.3.6 Facility Layout

DEQ compared the facility layout used in the model to that indicated in aerial photographs on Google Earth. The modeled layout was consistent with aerial photographs in Google Earth as well as from those in the ARCGIS 2013 NAIP database.

3.3.7 Effects of Building Downwash on Modeled Impacts

Potential downwash effects on emissions plumes are usually accounted for in the model by using building dimensions and locations (locations of building corners, base elevation, and building heights). Dimensions and orientation of proposed buildings were not needed as input to the Building Profile Input Program for the Plume Rise Model Enhancements downwash algorithm (BPIP-PRIME) because there are no existing structures affecting the emissions plumes at the facility, as no point sources are modeled in this project.

3.3.8 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho Air Rules as "that portion of the atmosphere, external to buildings, to which the general public has access." Public access to the CPO facility is restricted by fence-line and facility personnel on the edge of the facility property. This approach is adequate to preclude public access to areas excluded from the air impact assessment.

3.3.9 Receptor Network

Table 6 describes the receptor grid used in the submitted analyses. The receptor grid met the minimum recommendations specified in the *Idaho Air Quality Modeling Guideline*[1]. DEQ determined this grid assured maximum impacts were reasonably resolved by the model considering: 1) types of sources modeled; 2) modeled impacts and the modeled concentration gradient; 3) conservatism of the methods and data used as inputs to the analyses; 4) potential for continual exposures or exposure to sensitive receptors. Additionally, DEQ performed sensitivity analyses using a finer grid-spaced receptor network to assure that maximum concentrations were below all applicable standards.

3.3.10 Good Engineering Practice Stack Height

No point sources were modeled. Therefore, consideration of downwash caused by nearby buildings was not required.

4.0 Impact Modeling Results

4.1 Results for NAAQS Significant Impact Level Analyses

Because estimated $PM_{2.5}$ and PM_{10} emissions for the project were above Level I Modeling Applicability

Thresholds, air quality dispersion modeling was necessary for those criteria pollutants. The ambient air impact analyses submitted with the PTC application demonstrated to DEQ's satisfaction that emissions as modeled did not exceed the significant impact levels for all modeled criteria pollutants. These results, performed for all four modeled scenarios, are listed in Table 7.

Table 7. RESULTS FOR CUMULATIVE NAAQS IMPACT ANALYSES

GYP3 Height Scenario	Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	SIL ($\mu g/m^3$)	% SIL
¼ Height	$PM_{2.5}$[b]	24-hour	0.402[d]	1.2	33.50%
		Annual	0.075[d]	0.3	25.00%
	PM_{10}[c]	24-hour	4.781[e]	5	95.62%
½ Height	$PM_{2.5}$	24-hour	0.402[d]	1.2	33.50%
		Annual	0.065[d]	0.3	21.67%
	PM_{10}	24-hour	4.762[e]	5	95.24%
¾ Height	$PM_{2.5}$	24-hour	0.399[d]	1.2	33.25%
		Annual	0.065[d]	0.3	21.67%
	PM_{10}	24-hour	4.73[e]	5	94.60%
Full Height	$PM_{2.5}$	24-hour	0.397[d]	1.2	33.08%
		Annual	0.065[d]	0.3	21.67%
	PM_{10}	24-hour	0.67[e]	5	13.40%

a. Micrograms/cubic meter
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
d. Maximum of 5-year means (or a lesser averaging period if less than 5 years of meteorological data were used in the analyses) of highest modeled concentrations for each year modeled.
e. Maximum of highest modeled concentrations for each year modeled.

4.2 Results for TAPs Impact Analyses

Dispersion modeling is required to demonstrate compliance with TAP increments specified by Idaho Air Rules Section 585 and 586 for those TAPs with project-specific emission increases exceeding emissions screening levels (ELs). Because the project is subject to 40 CFR 63 Subpart AA, there are no TAPs emissions that exceeds the ELs, and therefore no modeling analyses were needed to demonstrate compliance with those AACs and AAACs.

5.0 Conclusions

The ambient air impact analyses and other air quality analyses submitted with the PTC application demonstrated to DEQ's satisfaction that emissions from the CPO project will not cause or significantly contribute to a violation of any ambient air quality standard.

References:

1. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

2. Air Quality Environmental Science and Technology Consortium (NW AIRQUEST). *Lookup 2009-2011 Design Values of Criteria Pollutants.* Available at: http://lar.wsu.edu/nw-airquest/lookup.html.

3. U.S. EPA, Haul Road Workgroup Final Report , March 2, 2012

4. Email from DEQ, Craig Woodruff, to CPO, dated November 9, 2016.

APPENDIX F – FACILITY DRAFT COMMENTS

Morrie Lewis

From: Clint Humpherys <Clint.Humpherys@agrium.com>
Sent: Thursday, September 14, 2017 3:09 PM
To: Morrie Lewis
Cc: Clint Humpherys
Subject: RE: Nu-West Conda Phosphate Operations, Project No. P-2009.0002 PROJ 61835, facility draft permit
Attachments: 1.1 Permit Application.pdf; 2.0 FINAL Air Impact Modeling Analysis Report_Nu-West_Conda.docx; EN-17-070 Updated Application Cover letter Gyp Stack III 9-14-17.pdf

Hi Morrie,

Here are our updated application documents.

You asked us to provide additional justification for why we felt it was not necessary to incorporate emission limits in the permit. Below is our comments on this.

As a consequence of updated emission factors, fluoride emissions are no longer a function of the wetted acres of a gyp stack, as was the case in the past. Fluoride emission factors used for the Gyp-3 permit application use a single factor of 1.6 pounds of fluoride emissions per acre to quantify emissions from a gyp stack regardless of whether or not the surface is wetted or not. As a result, the only factor important with respect to emission computations (since emissions cannot be measured) is the physical footprint of the gyp stack. CPO believes that the proposed gyp stack and decant ditch area limits effectively limit emissions without the need to incorporate actual emission rates that have no relevance to any applicable requirements.

Thanks,

Clint

Morrie Lewis

From: Clint Humpherys <Clint.Humpherys@agrium.com>
Sent: Tuesday, August 29, 2017 8:57 AM
To: Morrie Lewis
Cc: Clint Humpherys; Brandon Green; Ted Hartman; Dave Jordan; Timothy Vedder
Subject: RE: Nu-West Conda Phosphate Operations, Project No. P-2009.0002 PROJ 61835, facility draft permit
Attachments: NU-WEST (AGRIUM) TV FACILITY PMT - Gyp3 Alone V4.docx; NU-WEST (AGRIUM) TV FACILITY SOB - Gyp 3 Alone V4.docx

Mr. Lewis,

Please find attached our markups of the documents as a stand-alone PTC.

Our thoughts as to why we would like a separate PTC for Gyp Stack III:

F-Gyp-1 and F-Gyp-2 were permitted as minor sources, netting out of PSD for fluoride emissions based on the reductions achieved by complying with MACT. Given the timing of the issuance of the F-Gyp-1 permit (2005) and the application for F-Gyp-2 (2007), it was appropriate to consider them together and to revise the F-Gyp-1 permit to include F-Gyp-2.
F-Gyp-3 is a separate permitting action and it being permitted as a major source of fluorides requiring a PSD permit. Combining a previously issued minor source permit with a new PSD permit for a new source creates confusion as to the basis and type of both permitting actions, and the requirements applicable to each in the PTC.

Looking forward to meeting with you tomorrow morning.

Kind regards,
Clint

Air Quality

PERMIT TO CONSTRUCT

Permittee	Nu-West Industries, Inc. – Nu-West Conda Phosphate Operations
Permit Number	~~P-2009.0002~~
Project ID	~~61835~~
Facility ID	029-00003
Facility Location	3010 Conda Road Soda Springs, ID 83276

Permit Authority

This permit (a) is issued according to the "Rules for the Control of Air Pollution in Idaho" (Rules), IDAPA 58.01.01.200–228; (b) pertains only to emissions of air contaminants regulated by the State of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with the application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; and (g) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment, or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200–228.

Date Issued DRAFT XX, 2017

Morrie Lewis, Permit Writer

Mike Simon, Stationary Source Manager

Contents

1 Permit Scope

Purpose

1.1 This is a ~~revised~~ permit to construct (PTC) a gypsum dewatering stack (gyp stack) identified as Gyp-3 ~~and~~ which includes an associated decant ditch, identified as Decant Ditch 3.

~~**1.2** Those permit conditions that have been modified or revised by this permitting action are identified by the permit issue date citation located directly under the permit condition and on the right-hand margin.~~

~~**1.3** This PTC replaces Permit to Construct No. P-2009.0002 issued on July 22, 2005 and revised on February 20, 2009.~~

Regulated Sources

~~1.4~~1.2 Table 1.1 lists all sources of regulated emissions in this permit.

Table 1.1 Regulated Sources

Emission Unit	Emission Unit Description	Control Equipment
~~Gyp-0~~	~~125-acre Gyp Stack~~ ~~The gyp stack is a phosphogypsum settling pond that was built prior to 1967~~	~~Reasonable control of fugitive emissions~~
~~Gyp-1~~	~~125-acre West Gyp Stack 1~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
~~Gyp-2~~	~~125-acre West Gyp Stack 2~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
Gyp-3	151-acre Gyp Stack 3 and 14.5 acre Decant Ditch 3 The gyp stack is a defined area where phosphogypsum is disposed of or stored including a phosphogypsum settling pond with the associated ~~13.5-acre~~ decant ditch	Reasonable control of fugitive emissions

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2 Gyp Stacks

2.1 Process Description

Phosphogypsum, a by-product of the phosphoric acid production process, is slurried to a pile referred to as a "gyp stack." The slurry is approximately 20% solids. At the gyp stack, solids in the slurry are allowed to settle and the water is decanted to an evaporative cooling pond. The process water is recycled to the processing plant.

The settled phosphogypsum is allowed to dry to a moisture content of about 40% by directing the slurry to a rotation of cells on the stack. When a cell has dried appropriately, the cell is excavated using a backhoe to build up the exterior dikes of the stack. When the interior of the cell is excavated and dikes are elevated to the necessary height, the cell is flooded with slurry again.

2.2 Control Device Descriptions

Table 2.1 ~~Gyp Stacks~~Emission Units and Control Equipment

Emission Unit	Emission Unit Description	Control Equipment
~~Gyp-0~~	~~125-acre Gyp Stack~~ ~~The gyp stack is a phosphogypsum settling pond that was built prior to 1967~~	~~Reasonable control of fugitive emissions~~
~~Gyp-1~~	~~125-acre West Gyp Stack 1~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
~~Gyp-2~~	~~125-acre West Gyp Stack 2~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
Gyp-3	151-acre Gyp Stack 3 and 14.5 acre Decant Ditch 3 The gyp stack is a defined area where phosphogypsum is disposed of or stored including a phosphogypsum settling pond with the associated ~~13.5-acre~~ decant ditch	Reasonable control of fugitive emissions

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Emission Limits

~~2.3 Gyp Stack Emission Limits~~

- ~~Emissions of fluoride (F) from Gyp-3 shall not exceed 242 pounds per day and 44.1 tons per any consecutive rolling 12-month period.~~
- ~~The combined emissions of fluoride (F) from the three 125-acre gypsum stacks (Gyp-0, Gyp-1, and Gyp-2) shall not exceed 200 pounds per day and 14.6 tons per any consecutive rolling 12-month period.~~

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~~2.4 Phosphoric Acid Plant Emissions Limit~~

~~The fluoride emissions from the phosphoric acid plant shall not exceed 3.8 tons per any consecutive 12-month period.~~

~~2.5~~2.3 Reasonable Control of Fugitive Dust

All reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne in accordance with IDAPA 58.01.01.650-651.

~~2.6~~2.4 Radon Emissions from Phosphogypsum Stacks

Each person who generates phosphogypsum shall place all phosphogypsum in stacks. Phosphogypsum may be removed from a phosphogypsum stack only as expressly provided by 40 CFR 61, Subpart R, National Emission Standards for Radon Emissions from Phosphogypsum Stacks. If ~~the gypsum stack~~Gyp-3 becomes classified as inactive, the stack is then subject to the radon-222 emissions limits (1.9 pCi/(ft^2-sec)) and related requirements in 40 CFR 61 Subpart R. *Inactive stack* means a stack to which no further routine additions of phosphogypsum will be made and which is no longer used for water management associated with the production of phosphogypsum. If ~~a stack~~Gyp-3 has not been used for either purpose for two years, it is presumed to be inactive.

Operating Requirements

~~2.7 PSD 40 CFR 52.21 & NESHAP 40 CFR 63, Subpart AA – BACT Work Practices Requirements for Gyp-3~~

~~The permittee shall prepare and operate in accordance with a Gypsum Dewatering Stack and Cooling Pond Management Plan that contains the information specified in 40 CFR 63.602(e). The Gypsum Dewatering Stack and Cooling Pond Management Plan shall include the control measures used to minimize fugitive hydrogen fluoride and gaseous fluoride emissions from the gypsum dewatering stack system. For Gyp-3, the permittee shall use, and include in the Management Plan, at a minimum the following two control measures listed in 40 CFR 63.602(e)(3)(i) through (vii) for the gypsum dewatering stack system:~~

- ~~The permittee shall minimize the surface area of the gypsum pond associated with the active gypsum dewatering stack~~Gyp-3 ~~by using a rim ditch (cell) building technique or other building technique.~~
  - ~~The permittee shall limit the visible liquid surface area of Gyp-3 to no more than 100 wetted acres on a twelve-month rolling average basis.~~
- ~~The permittee shall use water wetting on erodible areas of the gypsum dewatering stack for dust control, including road surfaces used by truck and excavator traffic.~~
- ~~The permittee shall establish timely closure requirements that at a minimum, contain requirements for the items specified in 40 CFR 63.602(e)(3)(vii)(A) and (B).~~
  - ~~A specific trigger mechanism for when you must begin the closure process on the gypsum dewatering stack; and~~
  - ~~A requirement to install a final cover. For purposes of this requirement, final cover means the materials used to cover the top and sides of a gypsum dewatering stack upon closure.~~

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2.5 PSD 40 CFR 52.21 Best Available Control Technology for Gyp-3~~Gyp-3~~

The permittee shall control fluoride emissions (both gaseous and particulate) as specified in 40 CFR 52.21 using Best Available Control Technology (BACT). BACT for the control of fluoride emissions shall be met by:

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2.5.1 The permittee shall implement the work practice requirements of 40 CFR 63.602(e)(3) as described in Permit Condition 2.6.

2.5.2. The permittee shall use water wetting on erodible areas of the gypsum dewatering stack for dust control, including road surfaces used by truck and excavator traffic.

~~[DRAFT XX, 2017DRAFT XX, 2017]~~

2.6 NESHAP 40 CFR 63, Subpart AA Work Practice Requirements for Gyp-3~~Gyp-3~~

The permittee shall prepare and operate in accordance with a Gypsum Dewatering Stack and Cooling Pond Management Plan that contains the information specified in 40 CFR 63.602(e). The Gypsum Dewatering Stack and Cooling Pond Management Plan shall include the control measures used to minimize fugitive hydrogen fluoride emissions from the gypsum dewatering stack system. For Gyp-3~~Gyp-3~~, the permittee shall use, and include in the Management Plan, at a minimum two of the control measures listed in 40 CFR 63.602(e)(3)(i) through (vii) for the gypsum dewatering stack system. Specific to Gyp-3, the Permittee shall implement the following two work practices:

2.6.1. The permittee shall minimize the surface area of the gypsum pond associated with Gyp Stack 3 by using a rim ditch (cell) building technique or other building technique and shall limit the visible liquid surface area to no more than 100 wetted acres- on a twelve-month rolling average basis.

2.6.2. The permittee shall establish timely closure requirements that at a minimum, contain requirements for the items specified in 40 CFR 63.602(e)(3)(vii)(A) and (B).

i. A specific trigger mechanism for when you must begin the closure process on the gypsum dewatering stack; and

ii. A requirement to install a final cover. For purposes of this requirement, final cover means the materials used to cover the top and sides of a gypsum dewatering stack upon closure.

~~2.8~~2.7 NESHAP 40 CFR 63, Subpart AA – Gypsum Dewatering Stack and Cooling Pond Management Plan Information

The Gypsum Dewatering Stack and Cooling Pond Management Plan must include the information specified in 40 CFR 63.602(e)(1) through (3). The permittee shall submit the Gypsum Dewatering Stack and Cooling Pond Management Plan for approval ~~to DEQ~~ as specified in 40 CFR 63.602(e)(4).

- 2.7.1 Location (including latitude and longitude of centroid in decimal degrees to four decimal places) of each gypsum dewatering stack and each cooling pond in the gypsum dewatering stack system.
- 2.7.2 Permitted maximum footprint acreage of each gypsum dewatering stack and each cooling pond in the gypsum dewatering stack system.
- 2.7.3 Control measures that you use to minimize fugitive hydrogen fluoride emissions from the gypsum dewatering stack system~~.~~. As a new gypsum dewatering stack, ~~If you operate one or more active gypsum dewatering stacks or cooling ponds that are considered new sources as defined in 40 CFR 63.601,~~ then you must use, and include in the Management Plan, at least two of the control measures listed in 40 CFR 63.602(e)(3)(i) through (vii) for your gypsum dewatering stack system. ~~If you only operate active gypsum dewatering stacks and cooling ponds that are considered existing sources as defined in 40 CFR 63.601, then you must use, and include in the Management~~

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~~Plan, at least one of the control measures listed in 40 CFR 63.602(e)(3)(i) through (vii) for your gypsum dewatering stack system.~~

- 2.7.4 You must submit your plan for approval ~~to DEQ at least 6 months prior to the compliance date specified in 40 CFR 63.602(d), or~~ with the permit application for modification, construction, or reconstruction. The plan must include details on how you will implement and show compliance with the control technique(s) that you have selected to use. To change any of the information submitted in the plan, you must submit a revised plan 60 days before the planned change is to be implemented in order to allow time for review and approval by DEQ before the change is implemented.

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~~2.9~~2.8 NESHAP 40 CFR 63, Subpart AA –Notification, Recordkeeping, and Reporting

The permittee shall comply with the reporting and recordkeeping requirements in 40 CFR 63.10 as specified in 40 CFR 63.607(b)(1) through (5). The permittee shall comply with the general recordkeeping requirements in 40 CFR 63.10(b)(1).

- 2.8.1 ~~As required by 40 CFR 63.10(d), the permittee shall must report the results of the initial and subsequent performance tests as part of the notification of compliance status required in 40 CFR 63.9(h). The permittee shall verify in the performance test reports that the operating limits for each process have not changed or provide documentation of revised operating limits established according to 40 CFR 63.605, as applicable.~~ In the notification of compliance status required in 40 CFR 63.9(h), the permittee shall ~~also~~:
  - i. Submit the Gypsum Dewatering Stack and Cooling Pond Management Plan ~~specified in 40 CFR 63.602(e)~~.
  - ii. Each time a gypsum dewatering stack is closed, certify to DEQ within 90 days of closure, that the final cover of the closed gypsum dewatering stack is a drought resistant vegetative cover that includes a barrier soil layer that will sustain vegetation.

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~~2.10~~2.9 NESHAP 40 CFR 63, Subpart AA – General Provisions

The permittee shall comply with the general provisions in Subpart A of 40 CFR 63 as specified in Appendix A to 40 CFR 63, Subpart AA. At all times, the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination by the Administrator of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to DEQ that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

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~~2.11~~2.10 Gyp Stack Area Limits

- 2.10.1 The area footprint of Gyp Stack 3 ~~(Gyp-3)~~ shall not exceed 151 acres.

  2.10.2 The visible liquid layer surface area of ~~the d~~Decant ~~d~~Ditch 3 ~~for Gyp-3~~ shall not exceed 1~~3~~4.5 acres on a 12-month rolling average basis.

- 2.10.3 Once construction of Gyp-3 is complete, the permittee shall limit the visible liquid surface area of Gyp Stack 3 to 100 wetted acres on a twelve-month rolling average

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basis. Construction of Gyp-3 shall be considered complete when process water introduced during the construction process has been displaced by gyp slurry.

- ~~Upon completion of construction of Gyp-2, the combined visible liquid layer surface area of the ponds within the three 125-acre gyp stacks (Gyp-0, Gyp-1, and Gyp-2) shall not exceed 50 acres on a 12-month rolling average basis.~~
- ~~Prior to completion of construction of Gyp-2, the combined visible liquid layer surface area of the ponds within the two 125-acre gyp stacks (Gyp-0 and Gyp-1) shall not exceed 125 acres. After construction of Gyp-2 is completed, this limit shall no longer be applicable.~~

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~~2.12~~2.11 Distribution and Use of Phosphogypsum

Phosphogypsum may be lawfully removed from a stack and distributed for use in outdoor agricultural research and development, agricultural field use, indoor research and development activities, or for other purposes, only in accordance with the requirements of 40 CFR 61 Subpart R.

~~2.13 Phosphoric Acid Plant P_2O_5 Throughput Limit~~

~~The equivalent P_2O_5 feed to the phosphoric acid plant shall not exceed 560,000 tons per any consecutive 12-month period.~~

~~2.14 NESHAP 40 CFR 61, Subpart R – Distribution and Use for Outdoor Agricultural Purposes~~

~~Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in outdoor agricultural research and development and agricultural field use if each of the following requirements is satisfied:~~

- ~~The permittee shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by 40 CFR 61.207.~~
- ~~The average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as determined pursuant to 40 CFR 61.207, shall not exceed 10 pCi/g (4500 pCi/lb).~~
- ~~All phosphogypsum distributed in commerce for use pursuant to this condition by the permittee shall be accompanied by a certification document which conforms to the requirements of 40 CFR 61.208(a).~~
- ~~Each distributor, retailer, or reseller who distributes phosphogypsum for use pursuant to this condition shall prepare certification documents which conform to the requirements of 40 CFR 61.208(b).~~
- ~~Use of phosphogypsum for indoor research and development in a laboratory must comply with 40 CFR 61.205.~~

~~2.15 NESHAP 40 CFR 61, Subpart R – Distribution and Use for Indoor Research and Development~~

- ~~Phosphogypsum may be lawfully removed from a stack and distributed in commerce for use in indoor research and development activities, provided that it is accompanied at all times by certification documents which conform to the requirements of 40 CFR 61.208. In addition, before distributing phosphogypsum to any person for use in indoor research and development~~

activities, the permittee shall obtain from that person written confirmation that the research facility will comply with all of the limitations set forth in 40 CFR 61.205(b).

- Any person who purchases and uses phosphogypsum for indoor research and development purposes shall comply with all of the following limitations. Any use of phosphogypsum for indoor research and development purposes not consistent with the limitations set forth in this condition shall be construed as unauthorized distribution of phosphogypsum.
  - Each quantity of phosphogypsum purchased by a facility for a particular research and development activity shall be accompanied by certification documents which conform to the requirements of 40 CFR 61.208.
  - No facility shall purchase or possess more than 3182 kg (7,000 lb) of phosphogypsum for a particular indoor research and development activity. The total quantity of all phosphogypsum at a facility, as determined by summing the individual quantities purchased or possessed for each individual research and development activity conducted by that facility, may exceed 3182 kg (7,000 lb), provided that no single room in which research and development activities are conducted shall contain more than 3182 kg (7,000 lb).
  - Containers of phosphogypsum used in indoor research and development activities shall be labeled with the following warning: Caution: Phosphogypsum Contains Elevated Levels of Naturally Occurring Radioactivity.
  - For each indoor research and development activity in which phosphogypsum is used, the facility shall maintain records which conform to the requirements of 40 CFR 61.209(e).
  - Indoor research and development activities must be performed in a controlled laboratory setting which the general public cannot enter except on an infrequent basis for tours of the facility. Uses of phosphogypsum for outdoor agricultural research and development and agricultural field use must comply with 40 CFR 61.204.
- Phosphogypsum not intended for distribution in commerce may be lawfully removed from a stack by an owner or operator to perform laboratory analyses required by this subpart or any other quality control or quality assurance analyses associated with wet acid phosphorus production.

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2.16 NESHAP 40 CFR 61, Subpart R – Distribution and Use for Other Purposes

- Phosphogypsum may not be lawfully removed from a stack and distributed or used for any purpose not expressly specified in 40 CFR 61.204 or 40 CFR 61.205 without prior EPA approval.
- A request that EPA approve distribution and/or use of phosphogypsum for any other purpose must be submitted in writing and must contain the following information:
  - The name and address of the person(s) making the request.
  - A description of the proposed use, including any handling and processing that the phosphogypsum will undergo.
  - The location of each facility, including suite and/or building number, street, city, county, state, and zip code, where any use, handling, or processing of the phosphogypsum will take place.

- ~~The mailing address of each facility where any use, handling, or processing of the phosphogypsum will take place, when different from the location of the facility.~~
- ~~The quantity of phosphogypsum to be used by each facility.~~
- ~~The average concentration of radium-226 in the phosphogypsum to be used.~~
- ~~A description of any measures which will be taken to prevent the uncontrolled release of phosphogypsum into the environment.~~
- ~~An estimate of the maximum individual risk, risk distribution, and incidence associated with the proposed use, including the ultimate disposition of the phosphogypsum or any product in which the phosphogypsum is incorporated.~~
- ~~A description of the intended disposition of any unused phosphogypsum.~~
- ~~Each request shall be signed and dated by a corporate officer or public official in charge of the facility.~~

- ~~The Assistant Administrator for Air and Radiation may decide to grant a request that EPA approve distribution and/or use of phosphogypsum if he determines that the proposed distribution and/or use is at least as protective of public health, in both the short term and the long term, as disposal of phosphogypsum in a stack or a mine.~~
- ~~If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, each of the following requirements shall be satisfied:~~
  - ~~The permittee shall determine annually the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as provided by 40 CFR 61.207.~~
  - ~~All phosphogypsum distributed in commerce by the owner or operator of a phosphogypsum stack, or by a distributor, retailer, or reseller, or purchased by the end-user, shall be accompanied at all times by certification documents which conform to the requirements 40 CFR 61.208.~~
  - ~~The end-user of the phosphogypsum shall maintain records which conform to the requirements of 40 CFR 61.209(c).~~
- ~~If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, the Assistant Administrator may decide to impose additional terms or conditions governing such distribution or use. In appropriate circumstances, the Assistant Administrator may also decide to waive or modify the recordkeeping requirements established by 40 CFR 61.209(c).~~

~~[DRAFT XX, 2017]~~

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Monitoring and Recordkeeping Requirements

~~2.17~~2.12 Gyp Stack Area Monitoring

- 2.12.1 At the completion of construction, ~~On a monthly basis,~~ the permittee shall measure and record, in acres, the maximum area footprint for ~~each of the gyp stacks~~Gyp Stack 3 and Decant Ditch 3 to demonstrate initial compliance with the area limits contained in Condition 2.10.1 and 2.10.2. The permittee shall submit on an annual basis a statement certifying that the maximum area footprint of Gyp Stack 3 and Decant Ditch 3 has not changed from its original design.

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- 2.12.2 On a twice-monthly basis (the first and third full calendar week of each month), the permittee shall measure and record, in acres, the visible liquid layer surface area of Gyp Stack 3~~each of the gyp stack system ponds~~. Monitoring and recordkeeping procedures for performing this measurement shall be included in a Water Management and Monitoring Plan. For purposes of demonstrating compliance using the approved Water Management and Monitoring Plan, the term "visible liquid layer area," as used in ~~Gyp Stack Area Limits~~Gyp ~~Stack Area Limits~~, shall mean that observable surface area that is covered with a visible layer of liquid (standing or flowing) within the gyp stack system ponds. The Water Management and Monitoring Plan is incorporated by reference into this permit and shall be maintained on-site and made available to DEQ representatives upon request.

- 2.12.3 Compliance with Gyp Stack Area Limits~~Gyp Stack Area Limits~~ shall be based on a rolling 12-month average of the twice-monthly observations.

- ~~2.12.4 Compliance with daily Gyp Stack Emission Limits shall be demonstrated based on each of the individual observations. Monitoring records that are generated to demonstrate compliance with daily limits shall also be maintained in accordance with the monitoring and recordkeeping general provision.~~

- Within 60 days of issuance of the permit, the permittee shall submit a copy of the Water Management and Monitoring Plan (Plan) to DEQ at the address listed in Table 2.2~~Table 2.2~~ of this permit. If the Plan is changed, a copy of the revised Plan shall be sent to DEQ.

[DRAFT XX, 2017~~DRAFT XX, 2017~~]

~~**2.18 NSR Projected Emissions Recordkeeping for the Gyp 2 Project**~~

~~The permittee shall maintain records and provide reports as follows for the project to construct the Gyp 2 stack in accordance with IDAPA 58.01.01.205.01 and 40 CFR 52.21(r)(6) and (7):~~

- ~~In accordance with 40 CFR 52.21(r)(6)(i), before beginning actual construction of the Gyp 2 project, the permittee shall document and maintain a record of the following information:~~
  - ~~A description of each project;~~
  - ~~Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the Gyp 2 project (i.e., gypsum stacks); and~~
  - ~~A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under 40 CFR 52.21(b)(41)(ii)(c) and an explanation for why such amount was excluded, and any netting calculations, if applicable.~~
- ~~In accordance with 40 CFR 52.21(r)(6)(iii), the permittee shall monitor the emissions of fluoride from the Gyp 2 project; and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 10 years following resumption of regular operations after each change.~~
- ~~In accordance with 40 CFR 52.21(r)(6)(v), the permittee shall submit a report to DEQ and the EPA Administrator if the annual emissions, in tons per year, from the Gyp 2 project exceed the baseline actual emissions by a significant amount as defined in 40 CFR 52.21(b)(23) for that regulated NSR pollutant, and if such emissions differ from the preconstruction projection as documented and maintained pursuant to this permit condition. Such report shall be submitted to DEQ and the EPA Administrator within 60 days after the end of such year. The report shall contain the following:~~

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- ~~The name, address and telephone number of the major stationary source;~~
- ~~The annual emissions as calculated pursuant to 40 CFR 52.21(r)(6)(iii); and~~
- ~~Any other information that the permittee wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).~~

- ~~In accordance with 40 CFR 52.21(r)(7), the permittee shall make the information required to be documented and maintained pursuant to 40 CFR 52.21(r)(6) available for review upon a request for inspection by the Administrator or the general public pursuant to the requirements contained in 40 CFR 70.4(b)(3)(viii).~~
- ~~Written procedures to demonstrate compliance with these requirements shall be included in the Water Management and Monitoring Plan, including the required records maintenance activities.~~

~~2.19 Phosphoric Acid Plant Feed~~

~~Each month, the permittee shall monitor and record the equivalent P_2O_5 feed to the phosphoric acid plant for the previous month and for the previous consecutive 12-month period. Monitoring of P_2O_5 feed shall be conducted in accordance with 40 CFR 63.605.~~

2.13 Fugitive Emission Control Records

2.13.1 The permittee shall monitor and maintain records of the frequency and the method(s) used (ie., water, chemical dust suppressants, etc.) to reasonably control fugitive emissions.

2.13.2 The permittee shall conduct a monthly facility-wide inspection of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions, to ensure that the methods used to reasonably control fugitive dust emissions are effective. If fugitive dust emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive dust emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: The permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive dust emissions, and the date the corrective action was taken.

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~~2.20~~2.14 NESHAP 40 CFR 61, Subpart R – Radon Monitoring and Compliance

Within 60 days following the date on which a stack becomes an inactive stack, each owner or operator of an inactive phosphogypsum stack shall test the stack for radon-222 flux in accordance with the procedures described in 40 CFR 61, Appendix B, Method 115. DEQ and EPA shall be notified at least 30 days prior to each such emissions test so that DEQ or the EPA may, at its option, observe the test. The test report shall be submitted according to the requirements in 40 CFR 61.203.

~~2.21 NESHAP 40 CFR 61, Subpart R – Radon Monitoring Test Report~~

- ~~Within ninety days after the testing is required, the permittee shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each report shall also include the following information:~~
  - ~~The name and location of the facility;~~

- A list of the stacks at the facility including the size and dimensions of each stack;
- The name of the person responsible for the operation of the facility and the name of the person preparing the report (if different);
- A description of the control measures taken to decrease the radon flux from the source and any actions taken to insure the long-term effectiveness of the control measures, and
- The results of the testing conducted, including the results of each measurement.

- Each report shall be signed and dated by a corporate officer in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on may inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001."

- If the permittee chooses to conduct measurements over a one-year period as permitted by Method 115 in appendix B to part 61, within ninety days after the testing commences the owner or operator shall provide EPA with an initial report, including the results of the first measurement period and a schedule for all subsequent measurements. An additional report containing all the information in 40 CFR 61.203(b) shall be submitted within ninety days after completion of the final measurements.

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2.22 NESHAP 40 CFR 61, Subpart R – Stack Status Change

- If at any point the permittee once again uses an inactive stack for the disposal of phosphogypsum or for water management, the stack ceases to be in inactive status and the permittee shall notify EPA in writing within 45 days. When the permittee ceases to use the stack for disposal of phosphogypsum or water management, the stack will once again become inactive and the permittee shall satisfy again all testing and reporting requirements for inactive stacks.

- If the permittee removes phosphogypsum from an inactive stack, the permittee shall test the stack in accordance with the procedures described in 40 CFR 61, Appendix B, Method 115. The stack shall be tested within ninety days of the date that the permittee first removes phosphogypsum from the stack, and the test shall be repeated at least once during each calendar year that the permittee removes additional phosphogypsum from the stack. EPA shall be notified at least 30 days prior to an emissions test so that EPA may, at its option, observe the test. If meteorological conditions are such that a test cannot be properly conducted, then the permittee shall notify EPA and test as soon as conditions permit. Within ninety days after completion of a test, the permittee shall provide EPA with a report detailing the actions taken and the results of the radon-222 flux testing. Each such report shall include all of the information specified by 40 CFR 61.203(b).

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2.23 NESHAP 40 CFR 61, Subpart R – Radium-226 Sampling and Measurement Procedures

- Before removing phosphogypsum from a stack for distribution in commerce pursuant to 40 CFR 61.204, or 40 CFR 61.206, the permittee shall measure the average radium-226 concentration at the location in the stack from which phosphogypsum will be removed. Measurements shall be performed for each such location prior to the initial distribution in

commerce of phosphogypsum removed from that location and at least once during each calendar year while distribution of phosphogypsum removed from the location continues.

- A minimum of 30 phosphogypsum samples shall be taken at regularly spaced intervals across the surface of the location on the stack from which the phosphogypsum will be removed.
- Measure the radium-226 concentration of each of the n1 samples in accordance with the analytical procedures described in 40 CFR 61, Appendix B, Method 114.
- Calculate the mean, $\bar{x}_1$, and the standard deviation, s_1, of the n_1 radium-226 concentrations:

$$\bar{x}_1 = \frac{\sum_{i=1}^{n_1} x_1}{n_1}$$

$$s_1 = \sqrt{\frac{\sum_{i=1}^{n_1} (x_i - \bar{x}_1)^2}{n_1 - 1}}$$

Where $\bar{x}_1$ and s_1 are expressed in pCi/g.

- Calculate the 95th percentile for the distribution, $\bar{x}^*$, using the following equation:

$$\bar{x}^* = \bar{x}_1 + 1.64\left(\frac{s_1}{\sqrt{n_1}}\right)$$

Where $\bar{x}^*$ is expressed in pCi/g.

- If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to 40 CFR 61.206, the permittee shall report the mean, standard deviation, 95th percentile and sample size. If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to 40 CFR 61.204, the additional sampling procedures set forth in 40 CFR 61.207(b) and (c) shall apply.

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2.24 NESHAP 40 CFR 61, Subpart R – Certification Requirements

- The permittee shall prepare a certification document for each quantity of phosphogypsum which is distributed in commerce pursuant to 40 CFR 61.204, 40 CFR 61.205, or 40 CFR 61.206 which includes:
  - The name and address of the owner or operator;
  - The name and address of the purchaser or recipient of the phosphogypsum;
  - The quantity of phosphogypsum, in kilograms or pounds sold or transferred;
  - The date of sale or transfer;
  - A description of the intended end use for the phosphogypsum;
  - The average radium-226 concentration, in pCi/g (pCi/lb), of the phosphogypsum, as determined pursuant to 40 CFR 61.207; and
  - The signature of the person who prepared the certification.
- The permittee shall retain the certification document for five years from the date of sale or transfer, and shall produce the document for inspection upon request by DEQ or his

authorized representative. The permittee shall also provide a copy of the certification document to the purchaser or recipient.

- Each distributor, retailer, or reseller who purchases or receives phosphogypsum for subsequent resale or transfer shall prepare a certification document for each quantity of phosphogypsum which is resold or transferred which includes:
  - The name and address of the distributor, retailer, or reseller;
  - The name and address of the purchaser or recipient of the phosphogypsum;
  - The quantity (in pounds) of phosphogypsum resold or transferred;
  - The date of resale or transfer;
  - A description of the intended end-use for the phosphogypsum;
  - A copy of each certification document which accompanied the phosphogypsum at the time it was purchased or received by the distributor, retailer, or reseller; and
  - The signature of the person who prepared the certification.
- The distributor, retailer, or reseller shall retain the certification document for five years from the date of resale or transfer, and shall produce the document for inspection upon request by DEQ or his authorized representative. For every resale or transfer of phosphogypsum to a person other than an agricultural end-user, the distributor, retailer, or reseller shall also provide a copy of the certification document to the purchaser or transferee.

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2.25 NESHAP 40 CFR 61, Subpart R—Required Records

- The permittee must maintain records for each stack documenting the procedure used to verify compliance with the flux standard in 40 CFR 61.202, including all measurements, calculations, and analytical methods on which input parameters were based. The required documentation shall be sufficient to allow an independent auditor to verify the correctness of the determination made concerning compliance of the stack with flux standard.
- The permittee must maintain records documenting the procedure used to determine average radium-226 concentration pursuant to 40 CFR 61.207, including all measurements, calculations, and analytical methods on which input parameters were based.
- The required documentation shall be sufficient to allow an independent auditor to verify the accuracy of the radium-226 concentration.
- Each facility which uses phosphogypsum pursuant to 40 CFR 61.205 or 40 CFR 61.206 shall prepare records which include the following information:
  - The name and address of the person in charge of the activity involving use of phosphogypsum.
  - A description of each use of phosphogypsum, including the handling and processing that the phosphogypsum underwent.
  - The location of each site where each use of phosphogypsum occurred, including the suite and/or building number, street, city, county, state, and zip code.
  - The mailing address of each facility using phosphogypsum, if different from 40 CFR 61.209(e)(3).
  - The date of each use of phosphogypsum.

- ~~The quantity of phosphogypsum used.~~
- ~~The certified average concentration of radium-226 for the phosphogypsum which was used.~~
- ~~A description of all measures taken to prevent the uncontrolled release of phosphogypsum into the environment.~~
- ~~A description of the disposition of any unused phosphogypsum.~~

- ~~These records shall be retained by the facility for at least five years from the date of use of the phosphogypsum and shall be produced for inspection upon request by DEQ or his authorized representative.~~

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~~2.26~~2.15 NESHAP 40 CFR 61 Subpart A – General Provisions

Generally applicable reporting, record keeping, and notification requirements of Subpart A of the National Emission Standards for Hazardous Air Pollutants (NESHAP, 40 CFR 61) are included in Table 2.2~~Table 2.2~~. These summaries are provided to highlight the notification and recordkeeping requirements of 40 CFR 61 for affected facilities, and are not intended to be a comprehensive listing of all general provision requirements that may apply nor do the summaries relieve the permittee from the responsibility to comply with all applicable requirements of the CFR. Should there be a conflict between these summaries and the NESHAP, the NESHAP shall govern.

Table 2.2 NESHAP Subpart A (40 CFR 61) Summary of General Provisions for Affected Facilities

Section	Section Title	Summary of Section
61.04	Address	All requests, reports, applications, and other communications shall be submitted to: Director Air and Waste Office — Air Quality Permit Compliance EPA Region 10 Operating Permits, OAQ-107 — Department of Environmental Quality Air Pocatello Regional Office 1200 Sixth Avenue — 444 Hospital Way, #300 Seattle, WA 98101 — Pocatello, ID 83201
61.05	Prohibited Activities	No owner or operator shall construct or modify any stationary source subject to a standard without first obtaining written approval in accordance with 40 CFR 61.08
61.07	Application for approval of construction/ modification	Submit application for approval of construction of any new source or modification of an existing source before the construction or modification is planned to commence.
61.09	Notification of startup	Notification of anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date; and notification of the actual date of initial startup of the source within 15 days after that date.
61.10	Source reporting	All facilities designated under Subpart R are exempt from the reporting requirements of 40 CFR 61.10 in accordance with 40 CFR 61.210.
61.12(c) and (e)	Compliance with standards and maintenance requirements	The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.
61.13	Emission tests	When emission testing is required under Subpart R, the requirements under 40 CFR 61.13 shall be complied with also.
61.14	Monitoring Requirements	For any monitoring required under Subpart R, the requirements under 40 CFR 61.14 shall be complied with also.
61.19	Circumvention	No owner or operator shall build, erect, install or use any article or method, including dilution, to conceal an emission which would otherwise constitute a violation.

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Statement of Basis

Permit to Construct No. ~~P-2009.0002~~
Project ID ~~61835~~

Nu-West Industries, Inc.
Nu-West Conda Phosphate Operations
Soda Springs, Idaho

Facility ID 029-00003

Draft for Facility Review

DRAFT XX, 2017
Morrie Lewis
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

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
CPO	Nu-West Conda Phosphate Operations
DEQ	Department of Environmental Quality
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
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
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
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
PTE	potential to emit
Rules	*Rules for the Control of Air Pollution in Idaho*
SCL	significant contribution limits
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/yr	tons per consecutive 12-calendar-month period
TAP	toxic air pollutants
U.S.C.	United States Code
VMT	Vehicle miles traveled
VOC	volatile organic compounds
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Project Description

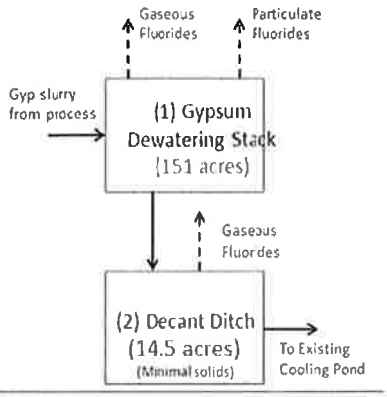
Nu-West Industries, Inc. is planning to add a new phosphogypsum stack (~~Gyp-3~~Gyp Stack 3) and associated decant ditch (Decant Ditch 3), collectively identified as Gyp-3 for the purpose of dewatering and storage of phosphogypsum at its Nu-West Conda Phosphate Operations (CPO) facility located 7 miles north of Soda Springs and 1.2 miles east of Highway 34 in Soda Springs. The facility currently has three permitted gyp stacks, Gyp-0, Gyp-1, and Gyp-2, with a total footprint area of approximately 490 acres and decant ditches with a total footprint area of approximately 17.4 acres. The proposed footprint area of ~~Gyp-3~~Gyp Stack 3 is 151 acres and ~~the~~of ~~d~~Decant ~~d~~Ditch 3 is 1~~3~~4.5 acres.

Nu-West plans to close Gyp-0 in the near future and additional storage space for the phosphogypsum produced by the existing Phosphoric Acid Plant will be needed as the storage capacity of Gyp-1 and Gyp-2 decreases.

At the Phosphoric Acid Plant, phosphate rock slurry is mixed with sulfuric acid and weak phosphoric acid in the multi-compartment Digester. The resulting chemical reaction produces a slurry of phosphoric acid (approximately 30% P_2O_5) and crystals of calcium sulfate (i.e., phosphogypsum). The slurry is fed through filters, where the phosphoric acid (liquid) is separated from the phosphogypsum (solid). The resulting phosphogypsum filter cake is washed, producing weak phosphoric acid that is returned to the Digester. The washed phosphogypsum cake is slurried with process water and transported by pipeline to an impoundment, commonly referred to as a "gyp stack." The process water used to slurry the phosphogypsum to the gyp stack is either evaporated or recirculated through the decant ditch and existing cooling ponds for use in the process. While additional decant ditch acreage will be needed for the new gyp stack, the project does not require an increase in size or throughput of the existing cooling ponds.

The proposed expansion of the CPO gypsum dewatering stack system will include moving phosphogypsum internally within the expanded gyp stack system. The phosphogypsum will be moved from the existing gyp stacks to be used as building material for starter dikes and HDPE liner cover for the new ~~Gyp-3~~Gyp-3 gypsum dewatering stack project. The phosphogypsum from the existing stacks also will be used for ongoing operation of ~~Gyp-3~~Gyp-3 as necessary. Because the new gypsum dewatering stack will be part of an expanded but existing integrated gypsum dewatering stack system, the contemplated use of the phosphogypsum moved from the existing gyp stacks to the new stack will continue to be managed identically to current practice in accordance with the applicable requirements set forth in 40 CFR Part 61 Subpart R. A process flow diagram showing the scope of the project is provided in Figure 1 below.

Figure 1 Process Flow Diagram



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Facility Description

General Process Description

Phosphate fertilizers provide phosphorus, one of the three primary plant nutrients required by plant life. The other two primary nutrients are nitrogen and potassium. Phosphate fertilizer products, which are often made with ammonia, also provide nitrogen. The principal applications of phosphate fertilizers are in the production of corn, wheat, soybeans, barley, cotton, and other small grain crops, fruits, and vegetables. Phosphate rock, sulfur, and anhydrous ammonia are the primary raw materials used to produce ammonium phosphate fertilizers. Phosphate rock is combined with sulfuric acid to produce phosphoric acid, which is then either:

- Combined with anhydrous ammonia to produce various dry granular fertilizers that are differentiated by their NPK content (% nitrogen -% phosphorus -% potassium), including MAP (11-52-0) and APS (16-20-0); or
- Concentrated to produce liquid fertilizer products containing no nitrogen and 52%-72% P_2O_5. CPO produces multiple products and alters its product mix to meet the changing requirements of its customers. The following is a brief description of the products manufactured at CPO.

Super Phosphoric Acid (SPA)

The manufacture of liquid SPA accounts for approximately 50% of the facility's total production volume. It is produced by concentrating phosphoric acid to a level of 68-72% P_2O_5. The use of liquid fertilizer as a percentage of total phosphate fertilizers applied in the domestic U.S. market has grown steadily over the past few years, due to its agronomic, economic, and ecological advantages. SPA is not an end-use fertilizer; rather, it is upgraded, mixed, or blended with other liquid nutrients, pesticides, and/or herbicides before it is applied. As a liquid, it allows for easy and precise application to crops, which makes more nutrients available to the plant. It can be injected below the soil in minimum-till or no-till programs to prevent leaching into waterways.

Merchant Grade Acid (MGA)

Merchant grade acid (MGA), is produced by concentrating phosphoric acid to a level of 50-58% P_2O_5. Like SPA, MGA contains no nitrogen and is generally diluted and mixed with other nutrients before application.

Dilute Phosphoric Acid (DPA)

Dilute phosphoric acid (DPA) is the filter-grade acid product of the "wet-acid" phosphoric acid process. This product is the feedstock for MGA. It has a P_2O_5 content of approximately 28-30%.

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Dry Granular Products (MAP and APS)

The dry granular fertilizer products manufactured by the company are:

- Mono-ammonium Phosphate ("MAP" or 11-52-0)
- Ammonium Phosphate Sulfate ("APS" or 16-20-0)

Manufacturing Process and Raw Materials

The facility benefits from its close proximity to sources of phosphate rock, sulfuric acid, and sulfur-the principal raw materials used in its manufacturing process. At the Phosphoric Acid Plant, phosphate rock ore is mixed with water, sulfuric acid, and recycle acid in a series of reactors and digesters. A chemical reaction takes place, forming a slurry of phosphoric acid (approximately 30% P_2O_5) and crystals of calcium sulfate (known as phosphogypsum). The slurry is fed to a combination of two belt filters and a circular pan filter, where the 30% acid is separated from the phosphogypsum. The acid is pumped to additional processing steps and the phosphogypsum is slurried by pipeline to an impoundment, commonly referred to as a "gyp stack." The slurry contains approximately 20% solids. The phosphoric acid is concentrated in steam evaporators and used as feedstock in the fertilizer production process. The phosphoric acid is then either:

- Combined with anhydrous ammonia to produce various dry granular fertilizers, or

- Further concentrated to produce liquid fertilizer products containing no ammonia. Sulfuric acid used in the process is either manufactured by the facility from elemental sulfur or purchased from third party sources. Currently, approximately 50% of the sulfuric acid utilized at CPO is purchased from a third party source.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A), terminated (T), expired (E), or superseded (S).

Table 1 Permitting History

Issue Date	Project Number	Project	Status	History Explanation
~~DRAFT XX, DRAFT XX,~~	~~P-2009.0002 PROJ 61835~~	~~Revised PTC to add Gyp-3.~~	~~A~~	~~Revised P-2009.0002.~~
May 20, 2013	P-2013.0001 PROJ 61142	Initial PTC to add SPA concentrator to No. 3 SPA train.	A	Initial permit.
January 12, 2012	T1-060308 PROJ 60957	Amended T1 to incorporate NESHAP Subpart ZZZZ requirements for ICE.	A	Amended T1-060308.
March 4, 2011	T1-060308	Renewal Tier I.	S	Amended T1-040321. Amended by T1-060308 PROJ 60957~~T1-060308 PROJ 60957~~.
October 14, 2010	P-2009.0068	Revised PTC to reduce SPA production limit and revise SPA Oxidation monitoring.	A	Revised P-060310.
March 25, 2010	P-2010.0002	Modified PTC for the East Sulfuric Acid Plant to replace the No. 2 absorbing tower, add cesium catalyst to 4th bed of the converter, replace the final absorbing tower heat exchanger, upgrade the cold interpass heat exchanger, replace the product cooler, and upgrade the acid pumps.	A	Revised P-040307.
February 20, 2009	P-2009.0002	Revised PTC for the West Gyp-2 project to decrease pond size and emission limits.	S	Revised P-2007.0170. Revised by P-2009.0002 PROJ 61835.
December 19, 2007	P-2007.0170	Initial PTC West project.	S	Revised P-050312. Revised by P-2009.0002.
August 22, 2007	P-060310	Revised PTC to revise SPA Oxidation Process and incorporate granulation plant revisions from P-060324.	S	Revised P-040320~~P-040320~~ and P-060324. Revised by P-2009.0068.
December 21, 2006	P-060324	Revised PTC for drum replacement at the Granulation Plant.	S	Revised Section 4 of P-040320~~P-040320~~. Revised by P-060310.
April 28, 2006	T1-040321	Amended T1 to incorporate changes in PTC No. P-040320.	S	Amended T1-040308. Amended by T1-060308.
April 28, 2006	P-040320	Revised PTC to increase production at SPA and revise monitoring for the SPA Oxidation Process.	S	Revised P-029-00003 (7/12/00)~~P-029-00003 (7/12/00)~~. Revised by PTC P-060310.
July 22, 2005	P-050312	Initial PTC West Gyp-1 project.	S	Initial permit. Revised by P-2007.0170.

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Table 1~~Table 1~~ (continued)

Issue Date	Project Number	Project	Status	History Explanation
April 8, 2005	T1-040308	Modified PTC to incorporate changes in P-040307.	S	Initial permit. Amended by T1-040321.
December 10, 2004	P-040307	Revised PTC for East Sulfuric Acid Plant SO_2 to revise monitoring.	S	Revised P-029-00003 (P-000309)~~P-029-00003 (P-000309)~~. Revised by P-2010.0002.
September 23, 2003	T1-029-00003 (9/23/03)	Amended T1 to remove the Experimental Silica Plant.	S	Amended T1-029-00003 (10/28/02)~~T1-029-00003 (10/28/02)~~. Amended by T1-040321.
October 28, 2002	T1-029-00003 (10/28/02)	Initial Tier 1.	S	Initial permit. Amended by T1-029-00003 (9/23/03)~~T1-029-00003 (9/23/03)~~.
July 12, 2000	P-029-00003 (7/12/00)	Initial PTC for Sustaining and Expansion Projects to convert "dry" to "wet" process and add Purified P. Acid Plant (PPA).	S	Initial permit. Revised by P-040320~~P-040320~~.

April 27, 2000	P-029-00003 (P-000309)	Revised PTC for the East Sulfuric Acid Plant.	S	Revised P-029-00003 (P-000300)~~P-029-00003 (P-000300)~~. Revised by P-040307.
February 29, 2000	P-029-00003 (P-000300)	Revised PTC for the East Sulfuric Acid Plant.	S	Revised P-029-00003 (4/26/96)~~P-029-00003 (4/26/96)~~. Revised by P-029-00003 (P-000309)~~P-029-00003 (P-000309)~~.
August 14, 1996	P-029-00003 (8/14/96)	Revised PTC to incorporate NSPS Subpart Db NO_x limit for the B-5 Boiler.	A	Revised P-029-00003 (7/26/95)~~P-029-00003 (7/26/95)~~.
April 26, 1996	P-029-00003 (4/26/96)	Revised PTC for the East Sulfuric Acid Plant PTC to clarify daily production limit.	S	Revised P-029-00003 (1/5/96)~~P-029-00003 (1/5/96)~~. Revised by P-029-00003 (P-000300)~~P-029-00003 (P-000300)~~.
January 5, 1996	P-029-00003 (1/5/96)	Modified PTC for East Sulfuric Acid Plant efficiency improvement.	S	Revised 0420-0003 (9/10/85)~~0420-0003 (9/10/85)~~. Revised by P-029-00003 (4/26/96)~~P-029-00003 (4/26/96)~~.
July 26, 1995	P-029-00003 (7/26/95)	Revised PTC to correct rated heat input for the B-5 Boiler.	S	Revised P-029-00003 (7/7/95)~~P-029-00003 (7/7/95)~~. Revised by P-029-00003 (8/14/96)~~P-029-00003 (8/14/96)~~.
July 7, 1995	P-029-00003 (7/7/95)	Modified PTC for the Nebraska Boiler (B-5).	S	Revised P-029-00003 (3/31/95)~~P-029-00003 (3/31/95)~~. Revised by P-029-00003 (7/26/95)~~P-029-00003 (7/26/95)~~.
March 31, 1995	P-029-00003 (3/31/95)	Revised PTC for the Nebraska Boiler (B-5), which replaced the B&W Boiler (B3).	S	Revised P-029-00003 (11/7/94)~~P-029-00003 (11/7/94)~~. Revised by P-029-00003 (7/7/95)~~P-029-00003 (7/7/95)~~.
November 7, 1994	P-029-00003 (11/7/94)	Revised PTC for B&W B3 Boiler.	S	Initial permit. Revised by P-029-00003 (3/31/95)~~P-029-00003 (3/31/95)~~.
August 7, 1992	P-029-00003 (8/7/92)	Initial PTC for the Experimental Silica Plant.	T	Initial permit. Terminated on August 20, 2003.
September 10, 1985 (Beker Industries)	0420-0003 (9/10/85)	Revised PTC to correct combined SO_2 emissions rate from the East and West sulfuric acid plants.	S	Revised 0420-0003 (8/30/85)~~0420-0003 (8/30/85)~~. Revised by P-029-00003 (8/14/96)~~P-029-00003 (8/14/96)~~.
August 30, 1985 (Beker Industries)	0420-0003 (8/30/85)	Revised PTC for the East and West Sulfuric Acid Plants.	S	Revised 13-0420-0003-01. Revised by 0420-0003 (9/10/85)~~0420-0003 (9/10/85)~~.
August 23, 1985 (Beker Industries)	0420-0003 (8/23/85)	Initial PTC the C.F. White Plant, for the new "Cogen I H_2SO_4 Plant (2800 TPD) Reference #85-003B".	E	Initial permit. This sulfuric acid plant was never constructed.
July 18, 1979 (Beker Industries)	13-0420-0003-01	Initial PTC.	S	Initial permit. Revised by 0420-0003 (8/30/85)~~0420-0003 (8/30/85)~~.

Application Scope

This PTC is for a modification at an existing Tier I facility.

The applicant has proposed to:

- Install and operate a new phosphogypsum dewatering stack (~~Gyp-3~~Gyp Stack 3) and associated decant ditch (Decant Ditch 3), collectively identified as Gyp-3.

Application Chronology

January 3, 2017	DEQ received an application fee.
January 10, 2017	DEQ received an application.
January 27, 2017	DEQ determined that the application was incomplete.
March 29, 2017	DEQ received supplemental information from the applicant.
April 28, 2017	DEQ determined that the application was incomplete.
May 18, 2017	DEQ received supplemental information from the applicant.
June 9, 2017	DEQ determined that the application was complete.
August 1, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
August 4, 2017	DEQ made available the draft permit and statement of basis for applicant review.
Month Day – Month Day, Year	DEQ provided a public comment period on the proposed action.
Month Day, Year	DEQ received the permit processing fee.
Month Day, Year	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emission Units and Control Equipment

Table 1 Emission Units and Control Equipment

Emission Unit	Emission Unit Description	Control Equipment
~~Gyp-0~~	~~125-acre Gyp Stack~~ ~~The gyp stack is a phosphogypsum settling pond that was built prior to 1967~~	~~Reasonable control of fugitive emissions~~
~~Gyp-1~~	~~125-acre West Gyp Stack 1~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
~~Gyp-2~~	~~125-acre West Gyp Stack 2~~ ~~The gyp stack is a phosphogypsum settling pond~~	~~Reasonable control of fugitive emissions~~
Gyp-3	151-acre Gyp Stack 3 and 14.5 acre Decant Ditch 3 The gyp stack is a defined area where phosphogypsum is disposed of or stored including a phosphogypsum settling pond with the associated ~~13.5-acre~~ decant ditch	Reasonable control of fugitive emissions

Emission Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit, an emission inventory was developed for the proposed gyp stack (Gyp-3~~Gyp-3~~). The addition of Gyp-3~~Gyp-3~~ does not modify the processing capacity of the upstream Phosphoric Acid Plant, which is subject to a production limit of 560,000 tons per any consecutive 12-month period, and does not result in changes to any other equipment at the facility. Fluorides are present in all phosphate rocks. During phosphoric acid production, the fluorides are liberated as gaseous fluorides, primarily silicon tetrafluoride (SiF_4) and hydrogen fluoride (HF), or from particulate fluoride compounds in the gypsum. Some of the gaseous fluorides are found in the process water used to slurry the phosphogypsum to the gyp stack. The proposed gyp stack operation results in both gaseous and particulate fluoride emissions, and will result in additional particulate dust from gyp stack operations, wind erosion and vehicle traffic.

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Uncontrolled Potential to Emit

Using the definition of Potential to Emit, uncontrolled Potential to Emit is then defined as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall **not** be treated as part of its design **since** the limitation or the effect it would have on emissions **is not** state or federally enforceable.

The uncontrolled Potential to Emit is used to determine if a facility is a "Synthetic Minor" source of emissions. Synthetic Minor sources are facilities that have an uncontrolled Potential to Emit for regulated air pollutants or HAP above the applicable Major Source threshold without permit limits.

The following table presents the uncontrolled Potential to Emit for regulated criteria pollutants and hazardous air pollutants (HAP) as submitted by the applicant and verified by DEQ staff. See Appendix D~~Appendix D~~ for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit.

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Table 2 Uncontrolled Potential to Emit for Modification

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides	Particulate Fluorides
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3~~Gyp-3~~ volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3~~Gyp-3~~ wind erosion	8.78	58.54	117.08	0.00	1.18
Gyp-3~~Gyp-3~~ backhoe operations	7.83E-04	5.17E-03	1.09E-02	0.00	1.10E-04
Gyp-3~~Gyp-3~~ haul gyp from Gyp-2 to Gyp-3~~Gyp-3~~	~~3.15~~29.91	~~31.55~~299.05	~~123.79~~788.19	0.00	~~1.25~~7.94
Gyp-3~~Gyp-3~~ ½ ton pickup around Gyp-3~~Gyp-3~~	~~0.29~~0.20	~~2.87~~1.96	~~11.25~~7.69	0.00	~~0.11~~0.08
Gyp-3 ½ ton pickup on Gyp-3	1.05	10.46	27.58	0.00	0.28
Other support vehicles ~~(on Gyp-1/Gyp-2)~~	~~1.38~~6.00	~~13.81~~60.00	~~54.31~~158.14	0.00	~~0.55~~1.59
Other support vehicles (on Gyp-3)	0.72	7.15	18.85	0.00	0.19
Decant ~~d~~Ditch~~es~~ 3	0.00	0.00	0.00	2.~~79~~1	0.00
Totals	**~~13.6~~46.6**	**~~106.8~~437.2**	**~~306.4~~1117.5**	**~~46~~7.80**	**~~3.1~~11.3**
PSD Significant Threshold	***10***	***15***	***25***	***3***	

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Potential to Emit, Net Emissions Increases, and TAP Emission Increase

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project. This is a new emission source. Therefore, pre-project emissions are set to zero for all criteria pollutants.

Post-project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post-project Potential to Emit includes all permit limits resulting from this project. As provided in the application and emission inventories ~~(Appendix DAppendix D)~~, the following assumptions were relied upon in the emission estimate calculations:

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- Annual operating schedules in terms of maximum days of operation, maximum routes traveled, and maximum VMT traveled per year~~;~~: and
- Engineering assumptions concerning material silt, moisture, and fluoride contents by weight; minimum number of operating days exceeding ¼-mm of precipitation and the presence of snow cover during winter months; fraction of $PM_{2.5}$ and PM_{10} by weight of PM; maximum distances for pile height, road length, and pond and stack surface areas; number of vehicles in operation and maximum weights; mean wind speeds; and control efficiencies attributed to wet suppression were relied upon in estimating emissions.

The following table presents the post-project Potential to Emit for criteria pollutant, HAP, and toxic air pollutant (TAP) emissions for the Gyp-3~~Gyp-3~~ modification, and represents the change in facility-wide potential to emit as submitted by the applicant and verified by DEQ staff. See Appendix D~~Appendix D~~ for a detailed presentation of the calculations of these emissions.

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Table 3 Potential to Emit, Net Emission Increases, and TAP Emission Increase for Modification

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides (b)	Particulate Fluorides (b)
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3~~Gyp-3~~ volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3~~Gyp-3~~ wind erosion	0.29	1.96	3.91	0.00	0.04
Gyp-3~~Gyp-3~~ backhoe operations	7.83E-04	5.17E-03	1.09E-02	0.00	1.10E-04
Gyp-3~~Gyp-3~~ haul gyp from Gyp-2 to Gyp-3~~Gyp-3~~	~~0.090~~.61	~~0.876~~.11	~~3.42~~16.11	0.00	~~0.030~~.16
Gyp-3~~Gyp-3~~ ½ ton pickup around Gyp-3~~Gyp-3~~	~~0.140~~.096	~~1.400~~.96	~~5.503~~.76	0.00	~~0.060~~.04
Gyp-3 ½ ton pickup on Gyp-3	0.021	0.21	0.56	0.00	0.01
Other support vehicles ~~(on Gyp-1/Gyp-2)~~	~~0.030~~.0005	~~0.280~~.0051	~~1.110~~.0136	0.00	0.0001
Other support vehicles (on Gyp-3)	0.01	0.15	0.39	0.00	0.0039
Decant ~~d~~Ditches 3	0.00	0.00	0.00	2.~~79~~1	0.00
Total	**~~0.6~~1.0**	**~~4.5~~9.4**	**~~14.0~~24.8**	**~~467~~.80**	**~~0.1~~0.2**
PSD Significant Threshold (c)	***10***	***15***	***25***	***3***	
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

b) For comparison to applicable thresholds, fluoride emissions include the sum of both gaseous and particulate emissions.

c) "Significant" as defined in 40 CFR 52.21(b)(23); significance levels which were not determined to be applicable are not listed.

As presented in the Tier I renewal permit application, the facility-wide potential to emit exceeds 100 T/yr for PM, PM_{10}, SO_2, NO_x, and CO~~PM, PM_{10}, SO_2, NO_x, and CO~~. Therefore, a PSD applicability analysis was required for this project. A comparison of the net emissions increase from the proposed modification to the PSD significance thresholds is provided in the preceding table, demonstrating that the proposed modification is a major modification subject to PSD review. Refer to the PSD Classification (40 CFR 52.21) section and Appendix B~~Appendix B~~ (BACT Analysis) for additional information.

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Although fluorides (as fluorine) are considered TAP emissions in accordance with IDAPA 58.01.01.585, because 40 CFR 63 Subpart AA addresses emissions of fluorides and particulate HAP from gyp stack systems, demonstration of compliance with TAP increments was not applicable to the proposed project in accordance with IDAPA 58.01.01.210.20.a~~40 CFR 63 Subpart AA addresses emissions of fluorides and particulate HAP from gyp stack systems, demonstration of compliance with TAP increments was not applicable to the proposed project in accordance with IDAPA 58.01.01.210.20.a~~.

Ambient Air Quality Impact Analyses

As presented in the modeling memo in Appendix E~~Appendix E~~, estimated emission rates were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline.[1] Refer to the Emission Inventories~~Emission Inventories~~ section for additional information concerning the emission inventories. In addition, estimated emissions of fluorides from this project were demonstrated to not cause nor contribute to air pollution in violation of ambient air quality standards.

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[1] Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix ~~D~~E.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix E~~Appendix E~~).

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REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Caribou County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, CO, NO_2, SO_x, and ozone. There are no Class I areas within 10 km of the facility. Refer to 40 CFR 81.313 for additional information.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 ..... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the proposed gyp stack (Gyp-3~~Gyp-3~~). Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

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Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 ..... Tier II Operating Permit

An application was submitted for a permit to construct the proposed project (refer to the Permit to Construct section), and an optional Tier II operating permit was not requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

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

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post-project facility-wide emissions from CPO have the potential to emit greater than 100 tons per year for PM, PM_{10}, SO_2, NO_x, and CO as provided in the Tier I renewal permit application and including potential emissions from the proposed project. Therefore, CPO is classified as a major facility as defined in IDAPA 58.01.01.008.10.

Because CPO is a phosphate rock processing plant, it is a designated facility defined in IDAPA 58.01.01.006, and fugitive emissions were included when determining the major facility classification in accordance with IDAPA 58.01.01.008.10.c.i. This PTC will be processed according to IDAPA 58.01.01.209.05.a, and the applicable requirements contained in this PTC will be incorporated into the Tier I operating permit during renewal.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

Post-project facility-wide emissions from CPO have a potential to emit greater than 100 tons per year for PM, PM_{10}, SO_2, NO_x, and CO~~PM, PM_{10}, SO_2, NO_x, and CO~~ as provided in the Tier I renewal permit application and including potential emissions from the proposed project. Therefore, CPO is classified as a PSD major stationary source as defined in 40 CFR 52.21(b)(1)(i)(a) and in accordance with IDAPA 58.01.01.205.01.

Because CPO includes a sulfuric acid plant and a phosphate rock processing plant, fugitive emissions were included when determining the major stationary source classification in accordance with 40 CFR 52.21(b)(1)(iii).

IDAPA 58.01.01.205 ..... *PERMIT REQUIREMENTS FOR NEW MAJOR FACILITIES OR MAJOR MODIFICATIONS IN ATTAINMENT OR UNCLASSIFIABLE AREAS.*

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

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

In accordance with 40 CFR 52.21(a)(2)(i), because the proposed project is at an existing major stationary source in an area designated as attainment or unclassifiable for regulated New Source Review (NSR) pollutants (refer to the Attainment Designation (40 CFR 81.313) section), the requirements of this section apply.

In accordance with 40 CFR 52.21(a)(2)(iii), no new 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.

40 CFR 52.21(j) ..... *Control technology review.*

In accordance with 40 CFR 52.21(j)(1), a major modification shall meet each applicable emissions limitation under the State Implementation Plan (SIP) and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.

In accordance with 40 CFR 52.21(j)(3), a major modification shall apply best available control technology (BACT) for each regulated NSR pollutant which would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit.

Because the net emissions increase for the proposed modification has potential to emit fluoride in significant amounts, BACT was required for each emission source (Table 3~~Table 3~~). A summary of BACT reviews and determinations has been provided in Appendix B~~Appendix B~~.

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In accordance with 40 CFR 52.21(j)(4), for phased construction projects, the determination of BACT shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of BACT for the source. This project has not been identified as a phased construction project.

40 CFR 52.21(k) ..... *Source impact analysis.*

In accordance with 40 CFR 52.21(k), the owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), would not cause or contribute to air pollution in violation of: (1) Any national ambient air quality standard in any air quality control region; or (2) Any applicable maximum allowable increase over the baseline concentration in any area.

As provided in the Ambient Air Quality Impact Analyses section and in Appendix E~~Appendix E~~, the applicant has demonstrated preconstruction compliance that emissions from this modification will not cause or significantly contribute to a violation of any NAAQS or any applicable maximum allowable increase over the baseline concentration as defined in IDAPA 58.01.01.581. Refer to the Ambient Air Quality Impact Analyses in Appendix E~~Appendix E~~ for additional information.

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

In accordance with 40 CFR 52.21(r)(1), any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action.

In accordance with 40 CFR 52.21(r)(2), approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. DEQ may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between constructions of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

In accordance with 40 CFR 52.21(r)(3), approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP) and any other requirements under local, State, or Federal law.

These requirements were addressed in the permit authority and general provision sections of the permit (Permit Conditions 3.3 and 3.5), including the 18-month commencement of construction deadline.

NSPS Applicability (40 CFR 60)

The gyp stacks regulated by this permit are not subject to any NSPS requirements in 40 CFR 60.

CPO is also subject to 40 CFR 60, Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, and Subpart H – Standards of Performance for Sulfuric Acid Plants, which are addressed in other permitting actions. DEQ is delegated Subparts Db and H.

NESHAP Applicability (40 CFR 61)

For ~~the gyp stacks regulated by this permit~~Gyp-3, the requirements of 40 CFR 61, Subpart R – National Emission Standards for Radon Emissions from Phosphogypsum Stacks are applicable. This includes requirements for distribution and use of the gypsum, for eventual closure of the gypsum stacks, and for the Part 61 Subpart A General Provisions. Applicable requirements have been included in this PTC, and have also been incorporated in the Tier I permit. DEQ is not delegated Subpart R. A detailed regulatory applicability analysis of Subpart R is provided in Appendix C~~Appendix C~~.

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MACT Applicability (40 CFR 63)

For Nu-West Industries, Inc. – Nu-West Conda Phosphate Operations, the requirements of 40 CFR 63 Subpart AA – National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants, Subpart BB – National Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizers Production Plants, and Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters are applicable. This includes requirements for a gypsum dewatering stack and cooling pond management plan. Applicable requirements have been included in this PTC, and have also been incorporated in the Tier I permit. DEQ is delegated Subparts AA, BB, and DDDDD. A detailed regulatory applicability analysis of Subpart AA is provided in Appendix C~~Appendix C~~.

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Because 40 CFR 63 Subpart AA~~40 CFR 63 Subpart AA~~ addresses emissions of fluorides and particulate HAP from gyp stack systems, demonstration of compliance with TAP increments was not applicable to the proposed project in accordance with IDAPA 58.01.01.210.20.a. For the purposes of 40 CFR 63 Subpart AA~~40 CFR 63 Subpart AA~~, the proposed gyp stack Gyp-3~~Gyp-3~~ is a new source in accordance with 40 CFR 63.601 because it will be constructed after August 19, 2015 and a PTC is required.

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Permit Conditions Review

This section describes ~~only those~~ permit conditions ~~that have been added, revised, modified or deleted as a result of~~included in this permitting action.

Description of Emission Units

~~Revised~~ Permit Conditions 1.42 and 2.2 contain descriptions of emission units covered in this PTC. ~~(Permit Conditions 1.4 and 2.2 of P-2009.0002 issued 2/20/09)~~

Table 1.1 lists all sources of regulated emissions in this PTC.

Table 1.1 SUMMARY OF REGULATED SOURCES

Permit Section	*Source Description*	*Emissions Control*
~~2~~	~~*125-acre Gyp Stack, F-GYP-0, built prior to 1967*~~ ~~*The gyp stack is a phosphogypsum settling pond*~~	~~*Reasonable control of fugitive emissions*~~
~~2~~	~~*125-acre West Gyp Stack I, F-GYP-1*~~ ~~*The gyp stack is a phosphogypsum settling pond*~~	~~*Reasonable control of fugitive emissions*~~
2	~~*125*~~*151-acre West Gyp Stack III, ~~F-GYP-2~~Gyp Stack 3* and 14.5-acre Decant Ditch 3 *The gyp stack is a defined area where phosphogypsum is disposed of or stored including a phosphogypsum settling pond with the associated ~~13.5-acre~~ decant ditch*	*Reasonable control of fugitive emissions*

Emissions Control Description

Table 2.1 DESCRIPTION FOR WEST GYP STACKS

Emissions Units / Processes	*Emissions Control Device*	*Emissions Point*
~~*125-acre Gyp Stack, F-GYP-0*~~	~~*Reasonable control of fugitive emissions*~~	~~*Fugitive from gyp stack*~~
~~*125-acre West Gyp Stack I, F-GYP-1*~~	~~*Reasonable control of fugitive emissions*~~	~~*Fugitive from gyp stack*~~
~~*125*~~*151-acre West Gyp Stack ~~III~~, ~~F-GYP-2~~Gyp-3*	*Reasonable control of fugitive emissions*	*Fugitive from gyp stack*

These permit conditions ~~have been revised to~~ include descriptions for the proposed gyp stack (~~Gyp-3~~Gyp Stack 3) and associated decant ditch (Decant Ditch 3), collectively identified as Gyp-3.

~~Revised~~ Permit Conditions 2.3, 2.5, 2.6, 2.10~~11~~, 2.12, and 2.13~~17~~ ~~(Permit Condition 2.3, 2.7, and 2.10 of P-2009.0002 issued 2/20/09)~~ contain operational limits and monitoring and record keeping requirements.

Field Code Changed

Field Code Changed

~~*Gyp Stack Emissions Limits*~~

~~*Upon completion of construction of F-GYP-2, the combined emissions of fluoride (F) from the three 125-acre gypsum stacks (F-GYP-0, F-GYP-1, and F-GYP-2) shall not exceed 200 pounds per day and 14.6 tons per any consecutive rolling 12-month period.*~~

~~*Prior to completion of construction of F-GYP-2, the combined emissions of fluoride (F) from the two 125-acre gypsum stacks (F-GYP-0 and F-GYP-1) shall not exceed 200 pounds per day and 36.5 tons per any consecutive rolling 12-month period. After construction of F-GYP-2 is completed, Permit Condition 2.3.2 no longer applies.*~~

~~*For purposes of compliance with Permit Conditions 2.3, 2.7, and 2.10, construction of the new gypsum stack (F-GYP-2) shall include placement of at least two feet of compacted phosphogypsum atop the 60 mil HDPE composite liner membrane and compacted clay to ensure adequate liner integrity. At that point, process water will be introduced and when fully displaced by gypsum slurry in both cells, the construction process shall be deemed complete.*~~

~~*Gyp Stack Area*~~ *Operational Limits*

~~*Upon completion of construction of F-GYP-2, the combined visible liquid layer surface area of the ponds within the three 125-acre gyp stacks (F-GYP-0, F-GYP-1, and F-GYP-2) shall not exceed 50 acres on a 12-month rolling average basis.*~~

~~*Prior to completion of construction of F-GYP-2, the combined visible liquid layer surface area of the ponds within the two 125-acre gyp stacks (F-GYP-0 and F-GYP-1) shall not exceed 125 acres. After construction of F-GYP-2 is completed, Permit Condition 2.7.2 no longer applies.*~~

Permit Condition 2.3

This condition incorporates fugitive dust control requirements from IDAPA 58.01.01.650-651.

Permit Condition 2.5

This permit condition establishes BACT work practice requirements for Gyp Stack 3 and Decant Ditch 3. Refer to Appendix A~~Appendix A~~ for additional information concerning BACT determinations. Compliance is assured by operating in accordance with the required management plan.

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Permit Condition 2.6

This condition incorporates work practice requirements from 40 CFR 63, Subpart AA to limit fugitive hydrogen fluoride emissions. This includes control measures contained in the Gypsum Dewatering Stack and Cooling Pond Management Plan for Gyp 3.

Permit Condition 2.10

This permit condition establishes area limits for Gyp Stack 3 and Decant Ditch 3.

2.10.1 The area footprint of Gyp Stack 3 shall not exceed 151 acres.

2.10.2 The visible liquid layer surface area of Decant Ditch 3 shall not exceed 14.5 acres on a 12-month rolling average basis.

2.10.3 The wetted surface area of Gyp Stack 3 shall be limited to 100 wetted acres on a twelve-month rolling average basis.

~~*Gyp Stack Area*~~ *Monitoring and Recordkeeping Requirements*

~~Upon completion of construction of F-GYP-2, on a twice-monthly basis (the first and third full calendar week of each month), Nu-West shall measure and record, in acres, the combined visible liquid layer surface area of each of the ponds within the three 125-acre gyp stacks. Monitoring and recordkeeping procedures for performing this measurement shall be included in a Water Management and Monitoring Plan. For purposes of demonstrating compliance using the approved Water Management and Monitoring Plan, the term "visible liquid layer area," as used in Permit Condition 2.7, shall mean that observable surface area that is covered with a visible layer of liquid (standing or flowing) within the Gyp Stack system ponds. The Water Management and Monitoring Plan is incorporated by reference into this permit and shall be maintained on site and made available to DEQ representatives upon request.~~

~~Compliance with the 50-acre limit in Permit Condition 2.7 shall be based on a rolling 12-month average of the twice-monthly observations.~~

Permit Condition 2.12

Compliance with the ~~daily emission~~area limits contained in Permit Condition 2.~~3~~10.1 and 2.10.2 shall be demonstrated based on a certification at the completion of construction that the maximum footprint for Gyp Stack 3 and Decant Ditch 3 meet the specified limits. The permittee shall submit an annual statement certifying that the maximum footprint area of Gyp Stack 3 and Decant Ditch 3 have not changed from its original design. ~~each of the individual observations. Monitoring records that are generated to demonstrate compliance with the daily limit shall also be maintained in accordance with General Provision 7.~~

~~Prior to completion of construction of F-GYP-2, once per year the permittee shall measure and record, in acres, the combined visible liquid layer surface area of each of the ponds within the two 125-acre gyp stacks (F-GYP-0 and F-GYP-1). After construction of F-GYP-2 is completed, Permit Condition 2.10.2 no longer applies.~~

This condition also establishes monitoring and record keeping requirements to demonstrate compliance with the wetted surface area limits contained in Permit Condition 2.10.3. On a twice-monthly basis (the first and third full calendar week of each month), the permittee shall measure and record, in acres, the visible liquid layer surface area of Gyp Stack 3. Monitoring and recordkeeping procedures for performing this measurement shall be included in a Water Management and Monitoring Plan. For purposes of demonstrating compliance using the approved Water Management and Monitoring Plan, the term "visible liquid layer area," as used in the Gyp Stack 3 wetted surface limit, shall mean that observable surface area that is covered with a visible layer of liquid (standing or flowing) within the gyp stack system ponds. The Water Management and Monitoring Plan is incorporated by reference into this permit and shall be maintained on-site and made available to DEQ representatives upon request.

Compliance with the Gyp Stack 3 wetted surface limit shall be based on a rolling 12-month average of the twice-monthly observations.

Within 60 days of issuance of the permit, the permittee shall submit a copy of the Water Management and Monitoring Plan (Plan) to DEQ at the address listed in Table 2.2 of this permit. If the Plan is changed, a copy of the revised Plan shall be sent to DEQ.

~~These permit conditions have been revised to establish an additional fluoride emission limits for the proposed gyp stack (Gyp-3). Because emissions are dependent upon the exposed surface area of the gyp stack and decant pond, area limits and associated monitoring and recordkeeping were required to ensure compliance with emission limits. Requirements that were no longer applicable following completion of Gyp-2 construction were removed, as requested by the applicant.~~

Permit Condition 2.13

This condition establishes monitoring and record keeping requirements to demonstrate compliance with the fugitive dust control requirements contained in Permit Condition 2.3.

2.13.1 The permittee shall monitor and maintain records of the frequency and the method(s) used (ie., water, chemical dust suppressants, etc.) to reasonably control fugitive emissions.

2.13.2 The permittee shall conduct a monthly facility-wide inspection of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions, to ensure that the methods used to reasonably control fugitive dust emissions are effective. If fugitive dust emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive dust emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: The permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive dust emissions, and the date the corrective action was taken.

The operational limits contained in Permit Condition 2.3 and monitoring and record keeping requirements in Permit Condition 2.13, in combination with the phosphoric acid plant equivalent P_2O_5 feed rate limit contained in the Tier I Permit, are intended to create an enforceable limit on PM, PM_{10}, and $PM_{2.5}$ emissions to keep emissions of these pollutants below applicability thresholds under PSD rules.

~~Added Permit Condition 2.7~~

~~This permit condition establishes BACT work practice requirements for GYP-3 and the associated decant pond. Refer to Appendix A for additional information concerning BACT determinations. Compliance is assured by operating in accordance with the required management plan.~~

~~Added~~ Permit Conditions 2.7 through 2.~~10~~9

These permit conditions incorporate gyp stack management plan requirements; notification, recordkeeping, and reporting requirements; and general provision requirements from NESHAP 40 CFR 63, Subpart AA.

~~Added~~ Permit Conditions 2.~~14~~, 2.11, ~~through~~ 2.164, and 2.~~2015 through 2.25~~

These permit conditions incorporate phosphogypsum distribution requirements and radon monitoring requirements from NESHAP 40 CFR 61, Subpart R.

~~Revised Permit Condition 2.18 (Permit Condition 2.11 of P-2009.0002 issued 2/20/09)~~

~~*NSR Projected Emissions Records for the Gypsum Stack Project; 52.21(r)(6)*~~

~~*The permittee shall maintain records and provide reports as follows for the project to construct a new gypsum stack in accordance with IDAPA 58.01.01.205.01 [40 CFR 52.21(r)(6) and (7)]:*~~

~~*In accordance with 40 CFR 52.21(r)(6)(i), before beginning actual construction of the project, the owner or operator shall document and maintain a record of the following information:*~~

~~*(a) A description of the project;*~~

~~*(b) Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project (i.e., gypsum stacks); and*~~

~~*(c) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under 40 CFR 52.21(b)(41)(ii)(c) and an explanation for why such amount was excluded, and any netting calculations, if applicable.*~~

~~*In accordance with 40 CFR 52.21(r)(6)(iii), the owner or operator shall monitor the emissions of fluoride from the emissions units listed in Permit Condition 2.11.1; and calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 10 years following resumption of regular operations after the change.*~~

~~*In accordance with 40 CFR 52.21(r)(6)(v), the owner or operator shall submit a report to DEQ and the EPA Administrator if the annual emissions, in tons per year, from the project identified under Permit Condition 2.11.1, exceed the baseline actual emissions (as documented and maintained pursuant to Permit Condition 2.11.1(c)), by a significant amount (as defined in 40 CFR 52.21(b)(23)) for that regulated NSR pollutant, and if such emissions differ from the preconstruction projection as documented and maintained pursuant to Permit Condition 2.11.1(c). Such report shall be submitted to DEQ and the EPA Administrator within 60 days after the end of such year. The report shall contain the following:*~~

~~*(a) The name, address and telephone number of the major stationary source;*~~

~~*(b) The annual emissions as calculated pursuant to 40 CFR 52.21(r)(6)(iii); and*~~

~~*(c) Any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).*~~

~~*In accordance with 40 CFR 52.21(r)(7), the owner or operator of the source shall make the information required to be documented and maintained pursuant to 40 CFR 52.21(r)(6) available for review upon a request for inspection by the Administrator or the general public pursuant to the requirements contained in 40 CFR 70.4(b)(3)(viii).*~~

~~*Written procedures to demonstrate compliance with Permit Condition 2.11 shall be included in the Water Management and Monitoring Plan, including the required records maintenance activities.*~~

~~This permit condition has been updated to clarify requirements as relating to the Gyp-2 project.~~

PUBLIC REVIEW

Public Comment Period

A public comment period was made available to the public in accordance with IDAPA 58.01.01.209.01.c. During this time, comments were/were not submitted in response to DEQ's proposed action. Refer to the chronology for public comment period dates.

Regulatory Analysis

In accordance with 40 CFR 52.21(j)(2), a new major stationary source shall apply best available control technology (BACT) for each regulated NSR pollutant that it would have the potential to emit in significant amounts.

As defined in 40 CFR 52.21(b)(12), BACT means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act (CAA) which would be emitted from any proposed major stationary source or major modification which DEQ, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard in 40 CFR parts 60 and 61. If DEQ determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

EPA recommends that BACT review follow a five step process:[2]

1) Identify all control technologies
2) Eliminate technically infeasible options
3) Rank remaining control technologies by control effectiveness
4) Evaluate most effective controls and document results
5) Select BACT

The recommended "top down" approach provides that all available control technologies be ranked in descending order of control effectiveness. The applicant first examines the most stringent, or "top" alternative. That alternative is established as BACT unless the applicant demonstrates, and DEQ determines, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not "achievable" in that case. If the most stringent technology is eliminated in this fashion, then the next most stringent alternative is considered, and so on. Although EPA and DEQ regulations do not specifically require application of this process to meet PSD regulatory requirements, this top-down analysis ensures that a defensible BACT determination, including consideration of all requisite statutory and regulatory criteria, is reached.

The BACT reviews submitted in the application adhered to the recommended five step process (refer to the application for the BACT reviews in full detail).

Potential to emit from the facility has been estimated to be above the significance level threshold for the emissions of fluorides, as summarized in Table 4~~Table 4~~ (refer to the Emission Inventories~~Emission Inventories~~ section for information concerning estimates of potential to emit). As a result, the BACT review included the emissions units and pollutants identified in Table 4~~Table 4~~ which exceeded significant levels.

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[2] "New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting," EPA Office of Air Quality Planning and Standards, Draft, October 1990.

Table 4 Modification Potential to Emit, Net Emission Increases, and TAP Emission Increase

Source	$PM_{2.5}$	PM_{10}	PM	Gaseous Fluorides (b)	Particulate Fluorides (b)
	T/yr	T/yr	T/yr	T/yr	T/yr
Gyp-3 volatile emissions	0.00	0.00	0.00	44.09	0.00
Gyp-3 wind erosion	0.29	1.96	3.91	0.00	0.04
Gyp-3 backhoe operations	7.83E-04	5.17E-03	1.09E-02	0.00	1.10E-04
Gyp-3 haul gyp from Gyp-2 to Gyp-3	0.61	6.11	16.11	0.00	0.16
Gyp-3 ½ ton pickup around Gyp-3	0.096	0.96	3.76	0.00	0.04
Gyp-3 ½ ton pickup on Gyp-3	0.021	0.21	0.56	0.00	0.01
Other support vehicles (on Gyp-1/Gyp-2)	0.0005	0.0051	0.0136	0.00	0.0001
Other support vehicles (on Gyp-3)	0.01	0.15	0.39	0.00	0.0039
Decant Ditch 3	0.00	0.00	0.00	2.91	0.00
Total	**1.0**	**9.4**	**24.8**	**47.0**	**0.2**
PSD Significant Threshold (c)	***10***	***15***	***25***	***3***	
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	

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~~Table 4 Modification Potential to Emit, Net Emission Increases, and TAP Emission Increase~~

~~Source~~	~~$PM_{2.5}$~~	~~PM_{10}~~	~~PM~~	~~Gaseous Fluorides (b)~~	~~Particulate Fluorides (b)~~
	~~T/yr~~	~~T/yr~~	~~T/yr~~	~~T/yr~~	~~T/yr~~
~~Gyp-3 volatile emissions~~	~~0.00~~	~~0.00~~	~~0.00~~	~~44.09~~	~~0.00~~
~~Gyp-3 wind erosion~~	~~0.29~~	~~1.96~~	~~3.91~~	~~0.00~~	~~0.04~~
~~Gyp-3 backhoe operations~~	~~7.83E-04~~	~~5.17E-03~~	~~1.09E-02~~	~~0.00~~	~~1.10E-04~~
~~Gyp-3 haul gyp from Gyp-2 to Gyp-3~~	~~0.61~~	~~6.11~~	~~16.11~~	~~0.00~~	~~0.16~~
~~Gyp-3 ½ ton pickup around Gyp-3~~	~~0.096~~	~~0.96~~	~~3.76~~	~~0.00~~	~~0.04~~
~~Gyp-3 ½ ton pickup on Gyp-3~~	~~0.021~~	~~0.21~~	~~0.56~~	~~0.00~~	~~0.01~~
~~Other support vehicles (on Gyp-1/Gyp-2)~~	~~0.0005~~	~~0.0051~~	~~0.0136~~	~~0.00~~	~~0.0001~~
~~Other support vehicles (on Gyp-3)~~	~~0.01~~	~~0.15~~	~~0.39~~	~~0.00~~	~~0.0039~~
~~Decant Ditch 3~~	~~0.00~~	~~0.00~~	~~0.00~~	~~2.791~~	~~0.00~~
~~**Total**~~	~~**1.0**~~	~~**9.4**~~	~~**24.8**~~	~~**467.80**~~	~~**0.2**~~
~~***PSD Significant Threshold*** (c)~~	~~***10***~~	~~***15***~~	~~***25***~~	~~***3***~~	
~~***Exceeds Threshold?***~~	~~***No***~~	~~***No***~~	~~***No***~~	~~***Yes***~~	

a) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

b) "Significant" as defined in 40 CFR 52.21(b)(23); significance levels which were not determined to be applicable are not listed. For comparison to the significance threshold, fluoride emissions include the sum of both gaseous and particulate emissions.

Considerations

Discussion relating to references and work practices has been provided in this section.

References reviewed during the BACT reviews and determinations included but were not limited to:

- PSD PTC application materials received from the applicant
- EPA RBLC, NSR policy and guidance, and technical bulletins
- NSR permits (federal, state, and local) and consent decrees addressing gyp stacks
- Technical journals and publications, control technology manufacturers, and/or environmental consultants
- Rule and implementation information for NESHAP Subpart AA

With additional regard to BACT work practices, the requirement to minimize emissions is referenced in the excess emission general provision and in the control equipment maintenance and operation general provision (Permit Conditions 3.2 and 3.11). A summary of BACT determinations follows for ~~Gyp-3~~Gyp-3.

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BACT Determinations Summary

The BACT determinations have been summarized in Appendix A~~Appendix A~~. A description of each BACT review and determination follows.

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Table 5 BACT Determinations Summary

NSR Pollutant	Type	BACT Emission Limit	Selected Technology
Fluorides	Gaseous	Work practice	Work practices: • Rim ditching consistent with Subpart AA • Timely closure consistent with Subpart AA
	Particulate	Work practice	Work practices: • Water wetting on road surfaces used by truck and excavator traffic as necessary for dust control • Timely closure consistent with Subpart AA

GaseousGaseous Fluoride BACT – Identify all control technologies

Based upon review of the references listed, the top control technologies were identified. A list of the technologies identified and a summary of the BACT determination is provided in Table 6Table 6 for Gyp-3Gyp-3. Detailed descriptions of each technology can be found within the references listed.

Table 6 Summaries of BACT Reviews and Determinations

NSR Pollutant	Technology	Technically Feasible?	Control Effectiveness Ranking	Most effective based on impacts?
Gaseous Fluorides	Submerged discharge to gypsum pond [a]	No		
	Minimization of gypsum dewatering surface area by using rim ditch (cell) building techniques [a]	Yes	Baseline [a]	Yes
	Raw water to slurry gyp to the gyp stack	No		
	Wetting of the active gyp stack area [a]	No		
	Addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides [a]	Yes	Up to 90%	No [b]
	Application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack [a]	Yes	Up to 90%	No [b]
	Timely closure of all deactivated gyp stacks [a]	Yes	Baseline [a]	Yes
	Production of hydrofluorosilicic acid [a]	No		
	Dry conveyance and stacking of gypsum [a]	Yes	Up to 50%	No [b]
	Pretreatment of ore by calcining [a]	No		
	Limitation of dike building, material hauling, and water surface area of settling ponds during critical periods	No		

a) Reference NESHAP 40 CFR 63 Subpart AA.
b) Control technology was eliminated on the basis of cost.

GaseousGaseous Fluoride BACT – Eliminate technically infeasible options

Based upon review of the references listed, technically infeasible control technologies which were not determined to be available and applicable to this project were eliminated from review.

The applicant documented that use of submerged discharge to gypsum pondsubmerged discharge to gypsum pond, raw water to slurry gyp to the gyp stackraw water to slurry gyp to the gyp stack, wetting of the active gyp stack areawetting of the active gyp stack area, production of hydrofluorosilicic acidproduction of hydrofluorosilicic acid, and pretreatment of ore by calciningpretreatment of ore by calcining were not feasible control options. Detailed discussion of each of these technologies and analysis of feasibility is provided in Appendix BAppendix B.

GaseousGaseous Fluoride BACT – Rank remaining control technologies by control effectiveness

Based upon review of the references listed, use of minimization of gypsum dewatering surface area by using rim ditch (cell) building techniquesminimization of gypsum dewatering surface area by using rim ditch (cell) building techniques, addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluoridesddition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides, application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stackpplication of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, timely closure of all deactivated gyp stackstimely closure of all deactivated gyp staeks, and dry conveyance and stacking of gypsumdry conveyance and stacking of gypsum control technologies were ranked based upon emission reduction performances provided.

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Detailed discussion of the ranking of each of these technologies is provided in Appendix BAppendix B.

GaseousGaseous Fluoride BACT – Evaluate most effective controls and document results

Based upon review of the references listed, use of addition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluoridesddition of slaked lime to gypsum dewatering stack settling ponds for pH control and precipitation of fluorides, application of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stackpplication of soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, and dry conveyance and stacking of gypsumdry conveyance and stacking of gypsum control options were eliminated based on energy, environmental, and/or economic impacts.

The applicant has proposed to utilize the most effective control technologies available – minimization of gypsum dewatering surface area by using rim ditch (cell) building techniquesminimization of gypsum dewatering surface area by using rim ditch (cell) building techniques, and timely closure of all deactivated gyp stackstimely closure of all deactivated gyp stacks.

These BACT work practice requirements were established as Permit Condition 2.75.

ParticulateParticulate Fluoride BACT – Identify all control technologies

Based upon review of the references listed, the top control technologies were identified. A list of the technologies identified and a summary of the BACT determination is provided in Table 7Table 7 for Gyp-3Gyp-3. Detailed descriptions of each technology can be found within the references listed.

Table 7 Summaries of BACT Reviews and Determinations

NSR Pollutant	Technology	Technically Feasible?	Control Effectiveness Ranking	Most effective based on impacts?
Particulate Fluorides	Wetting of erodible areas of the gypsum dewatering stack	Yes	Baseline [a]	Yes
	Applying soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack	No		
	Limiting dike build and material hauling during critical periods	No		
	Timely closure of all deactivated gypsum dewatering stacks	Yes	Baseline [a]	Yes

a) Reference NESHAP 40 CFR 63 Subpart AA.
b) Control technology was eliminated on the basis of cost.

ParticulateParticulate Fluoride BACT – Eliminate technically infeasible options

Based upon review of the references listed, technically infeasible control technologies which were not determined to be available and applicable to this project were eliminated from review.

The applicant documented that applying soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stackapplying soil caps and vegetation, or a synthetic cover to a portion of the active gypsum dewatering stack, and limiting dike build and material hauling during critical periodslimiting dike build and material hauling during critical periods were not feasible control options. Detailed discussion of each of these technologies and analysis of feasibility is provided in Appendix BAppendix B.

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ParticulateParticulate Fluoride BACT – Rank remaining control technologies by control effectiveness

Based upon review of the references listed, wetting of erodible areas of the gypsum dewatering stackwetting of erodible areas of the gypsum dewatering stack, and timely closure of all deactivated gypsum dewatering stackstimely closure of all deactivated gypsum dewatering stacks control technologies were ranked based upon emission reduction performances provided.

Detailed discussion of the ranking of each of these technologies is provided in Appendix BAppendix B.

ParticulateParticulate Fluoride BACT – Evaluate most effective controls and document results

The applicant has proposed to utilize the most effective control technologies available – wetting of erodible areas of the gypsum dewatering stackwetting of erodible areas of the gypsum dewatering stack, and timely closure of all deactivated gypsum dewatering stackstimely closure of all deactivated gypsum dewatering stacks.

These BACT work practice requirements were established as Permit Condition 2.75.

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APPENDIX G – DEWATERING STACK & COOLING POND MANAGEMENT PLAN

Nu-West Industries, Inc., Conda Phosphate Operations
Gypsum Dewatering Stack and Cooling Pond Management Plan

Introduction

Nu-West Industries, Inc. (Nu-West) owns and operates Conda Phosphate Operations (CPO), a phosphoric acid manufacturing plant located in Soda Springs, Idaho. CPO is subject to 40 CFR §63, Subpart AA—National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants. Pursuant to 40 CFR §63.602(d), Nu-West is required to develop a Gypsum Dewatering Stack and Cooling Pond Management Plan (Plan) containing the information required by 40 CFR §63.602(e).

CPO currently has three gypsum dewatering stacks—F-Gyp-0, F-Gyp-1 and F-Gyp-2—and two cooling ponds—East Cooling Pond and West Cooling Pond—in its gypsum dewatering stack system. CPO has submitted a permit application to IDEQ to construct a new gypsum dewatering stack—F-Gyp-3—and associated decant ditch.

Nu-West submitted its initial Plan for its existing gypsum dewatering stack system to EPA Region 10 and to the Idaho Department of Environmental Quality (IDEQ) on February 16, 2016 as required by 40 CFR §63.602(e)(4). This updated Plan to address the addition of F-Gyp-3 is being submitted concurrently with the construction permit application also as required by 40 CFR §63.602(e)(4).

1. Location (§63.602(e)(1))

The location of the gypsum dewatering stacks and cooling ponds are shown in Attachment 1 and the latitude and longitude of the centroid is provide in Table 1.

Table 1 – Gypsum Dewatering Stacks and Cooling Pond Locations and Acreage

	Status	Location	Size (acres)
F-Gyp-0	Existing	N 42.7436 W 111.5494	240.9
F-Gyp-1	Existing	N 42.7578 W 111.5589	120
F-Gyp-2	Existing	N 42.7650 W 111.5597	130
F-Gyp-3	New	N 42.7489 W 111.5575	151
East Cooling Pond	Existing	N 42.7344 W 111.5522	25.42**
West Cooling Pond	Existing	N 42.7344 W 111.5556	23.07**

** Includes berm around the cooling ponds, maximum water surface area is 18 acres for the East Cooling Pond and 17.5 acres for the West Cooling Pond

2. Permitted Maximum Footprint Acreage (§63.602(e)(2))

Pursuant to 40 CFR 63.602(e)(2), the "permitted" maximum footprint acreage is to be included in the Plan. The existing gypsum dewatering stacks (F-Gyp-0, F-Gyp-1 and F-Gyp-2), however, were permitted based on size of the gypsum ponds, not on the footprint acreage. *See* Statement of Basis for Permit to Construct No. P-2009-0002 (February 12, 2009). The three existing gypsum dewatering stacks are each permitted for a gypsum pond of 125 acres. The maximum footprint for each stack is provided in Table 1.

The existing cooling ponds were previously considered an insignificant activity under Idaho's Title V program. IDAPA 58.01.01.317.01.a.i.(109). As they are now subject to NESHAP requirements, they are no longer eligible to be considered as insignificant activities. Nu-West has identified the cooling ponds as emission sources in its Title V (Tier I) permit renewal application.

Nu-West will submit an application to the Idaho Department of Environmental Quality for a permit that incorporates the maximum footprint area of the gypsum dewatering stacks and cooling ponds as well as any other newly applicable NESHAP requirements.

The new gypsum dewatering stack (F-Gyp-3) will be permitted at its maximum footprint acreage of 151 acres as requested in the construction permit application submitted to IDEQ.

3. Control Measures (40 CFR 63.602(e)(3))

The CPO gypsum dewatering stacks F-Gyp-0, F-Gyp-1, F-Gyp-2 and cooling ponds are considered existing sources as they were constructed before August 19, 2015. F-Gyp-3 is considered a new source as it will be constructed after August 19, 2015. Pursuant to 40 CFR 63.602(e)(3), Nu-West must use and include in the Plan at least one of the control measures identified in 40 CFR 63.602(e)(3)(i) through (vii) for the existing gypsum dewatering stack system and at least two of those control measures for the new gypsum dewatering stack F-Gyp-3.

For the existing gypsum dewatering stacks and cooling ponds, Nu-West has decided to use the control measure described in 40 CFR 63.602(e)(3)(iv)—"For at least one gypsum dewatering stack that is considered part of your gypsum dewatering stack system, you may choose to minimize the surface area of the gypsum pond associated with the active gypsum dewatering stack by using a rim ditch (cell) building technique or other building technique."

For the new gypsum dewatering stack (F-Gyp-3), Nu-West has decided to use the control measures described in 40 CFR 63.602(e)(3)(iv) and (vii). Control measure "iv" is as described above. Control measure "vii" is:

> For all gypsum dewatering stacks that are considered part of your gypsum dewatering stack system, you may choose to establish closure requirements that at a minimum, contain requirements for the specified items in paragraphs (e)(3)(vii)(A) and (B) of this section.
>
> (A) A specific trigger mechanism for when you must begin the closure process on the gypsum dewatering stack; and

(B) A requirement to install a final cover. For purpose of this paragraph, final cover means the materials used to cover the top and sides of a gypsum dewatering stack upon closure.

Control measure vii closure requirements will apply to all the gypsum dewatering stacks including the existing F-Gyp-0, F-Gyp-1 and F-Gyp-2.

4. Implementation (40 CFR 63.602(e)(4))

4.1 Implementation of Control Measure (e)(3)(iv): minimizing gypsum pond surface area

4.1.1 Existing Gypsum Dewatering Stacks and Cooling Ponds

As set forth in its Tier I (Title V) Operating Permit (T1-060308), Nu-West is currently required to minimize the surface area of the gypsum ponds associated with the existing gypsum dewatering stacks to 50 wetted acres on a twelve-month rolling average basis. Tier I Condition 7.3.1. This requirement to minimize the gypsum pond surface area applies to all three stacks, not just to one as required by §63.602(e)(3)(iv). For F-Gyp-1 and F-Gyp-2, gypsum pond surface area is minimized through the use of rim ditching among other operating and building techniques. Rim ditching is not used on F-Gyp-0, but it is subject to the 50 wetted acres limitation. Nu-West has been operating the three gypsum dewatering stacks to meet this limitation since construction of F-Gyp-2 was completed in June 2011.

Nu-West is not proposing any additional requirements be imposed on the existing gypsum dewatering stack system to implement §63.602(e)(3)(iv). The existing permit operating limitation is consistent with that control measure as it directly minimizes the gypsum pond surface area without limiting Nu-West's building and operating flexibility.

4.1.2 New Gypsum Dewatering Stack F-Gyp-3

As set forth in the construction application, Nu-West has selected control measure iv—minimize the gypsum pond by the use of rim ditching in building the gypsum dewatering stack—as one of the required control measures for F-Gyp-3. Consistent with the manner in which the existing gypsum dewatering stacks are operated to implement §63.602(e)(3)(iv), Nu-West proposes to minimize the surface area of the F-Gyp-3 gypsum pond to 100 wetted acres on a twelve-month rolling average basis.

4.2 Implementation of Control Measure (e)(3)(vii): closure requirements

Closure of each gypsum dewatering stack will be governed by the requirements of the final Consent Decree to resolve pending EPA Resource Conservation and Recovery Act (RCRA) allegations. The Consent Decree will address the specific trigger mechanism for commencing the closure process for a gypsum dewatering stack and require the installation of a final cover over the top and sides of the gypsum dewatering stack.

5. Compliance (40 CFR 63.602(e)(4))

5.1 Compliance with Control Measure (e)(3)(iv): minimizing gypsum pond surface area

5.1.1 Existing Gypsum Dewatering Stacks and Cooling Ponds

Nu-West demonstrates compliance with the 50 wetted acres limitation pursuant to the monitoring and recordkeeping requirements set forth in Condition 7.5 of the Tier I Permit, as repeated below. Continued compliance with these requirements is sufficient to demonstrate compliance with §63.602(e)(3)(iv). In addition, Nu-West will include the Plan in the notification of compliance status as required by §63.607(b)(2)(iii).

7.5 Gyp Stack System Area Monitoring

7.5.1 Upon completion of construction of F-GYP-2, on a twice-monthly basis (the first and third full calendar week of each month), Nu-West shall measure and record, in acres, the combined visible liquid layer surface area of each of the ponds within the three 125-acre gyp stacks. Monitoring and recordkeeping procedures for performing this measurement shall be included in a Water Management and Monitoring Plan. For purposes of demonstrating compliance using the Water Management and Monitoring Plan, the term "visible liquid layer surface area" as used in Permit Condition 7.3 shall mean that observable surface area that is covered with a visible layer of liquid (standing or flowing) within the Gyp Stack system ponds. The Water Management and Monitoring Plan is incorporated by reference into this permit and shall be maintained on-site and made available to DEQ representatives upon request.

Compliance with the 50-acre limit in Permit Condition 7.3 shall be based on a rolling 12-month average of the twice-monthly observations.

Compliance with the daily emission limit in Permit Condition 7.1 shall be demonstrated based on each of the individual observations.

7.5.2 Prior to completion of construction of F-GYP-2, once per year the permittee shall measure and record, in acres, the combined visible liquid layer surface area of each of the ponds within the two 125-acre gyp stacks (F-GYP-0 and F-GYP-1). After construction of F-GYP-2 is completed, Permit Condition 7.5.2 no longer applies.

7.5.3 If the Water Management and Monitoring Plan (Plan) is changed, a copy of the revised Plan shall be sent to DEQ at the address listed in Section 1 of this permit.

[PTC No. P-2009.0002, 2/20/09]

5.1.2 New Gypsum Dewatering Stack F-Gyp-3

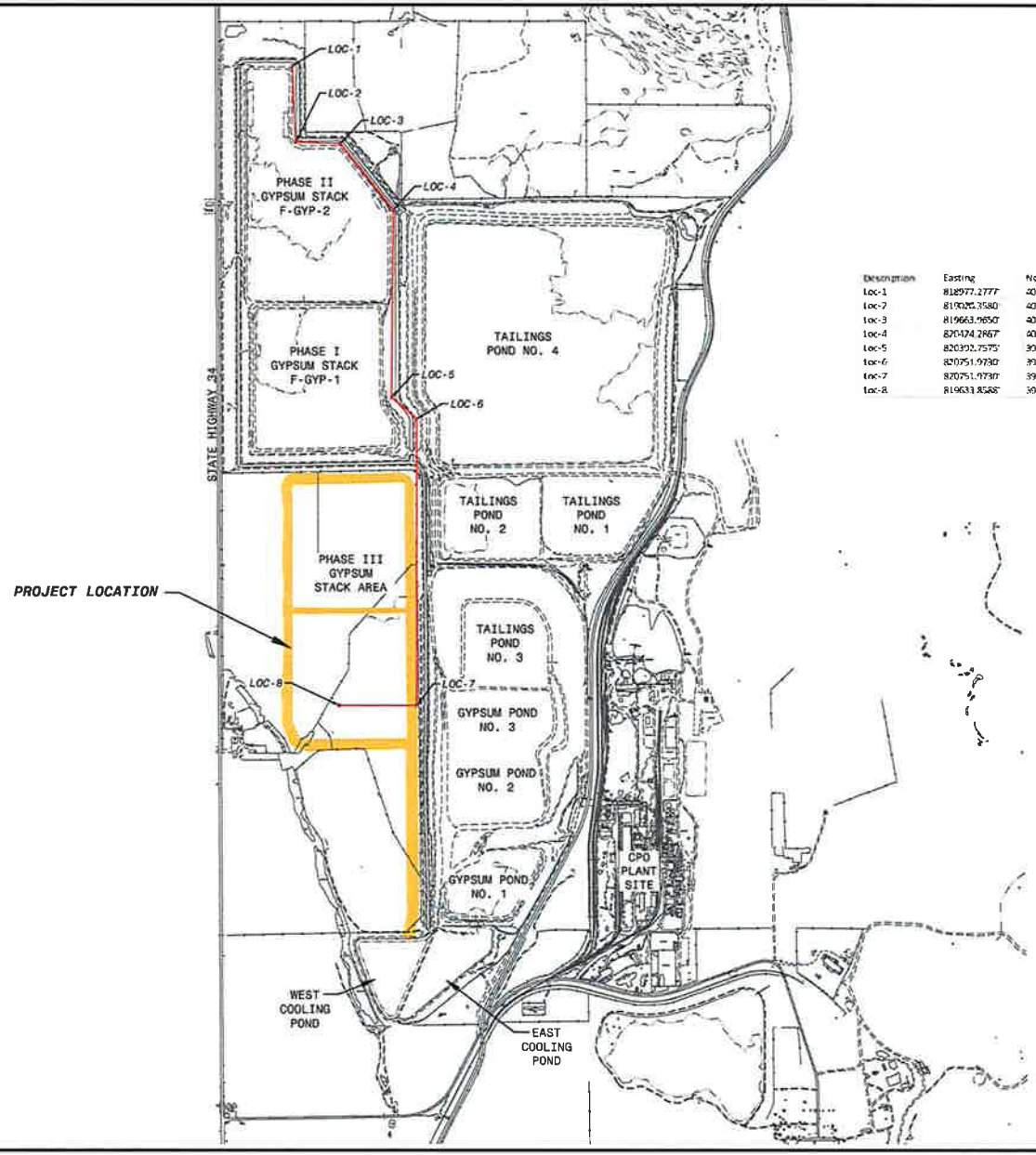
Compliance with the 100 wetted acre 12-month rolling average limitation for F-Gyp-3 will be demonstrated consistent with the current requirement for the existing gypsum dewatering stack 50

wetted acre limit. The WMMP will be revised to address F-Gyp-3 and submitted to IDEQ at least 60 days before construction of F-Gyp-3 is deemed complete. Construction of F-Gyp-3 will be deemed complete after process water has been introduced and fully displaced by gypsum slurry consistent with Tier I Condition 7.1.3 for F-Gyp-2.

5.2 Compliance with Control Measure (e)(3)(vii): closure requirements

Compliance with the closure requirements will be demonstrated by compliance with the final Consent Decree. Applicable requirements will be incorporated into the Tier 1 operating permit as necessary.

Attachment 1



Description	Easting	Northing	Longitude	Latitude
Loc-1	818977.2777'	402761.2853'	W111° 33' 37"	N42° 46' 13"
Loc-2	819026.3580'	401699.3370'	W111° 33' 37"	N42° 46' 02"
Loc-3	819663.9650'	401638.3660'	W111° 33' 28"	N42° 46' 02"
Loc-4	820424.2867'	400684.7062'	W111° 33' 18"	N42° 45' 53"
Loc-5	820392.7575'	397977.1340'	W111° 33' 19"	N42° 45' 26"
Loc-6	820251.9780'	397666.2523'	W111° 33' 14"	N42° 45' 23"
Loc-7	820251.9780'	393523.1166'	W111° 33' 14"	N42° 44' 42"
Loc-8	819633.8588'	393523.1166'	W111° 33' 29"	N42° 44' 42"

GRAPHIC SCALE (FT)

NO. | DATE

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure, Inc.
11101 Channelside Drive, Suite 200, Tampa FL 33602
Phone: 1 813 289 0720 Fax: 1 813 289 0474
www.amecfw.com CA-0002

NU-WEST INDUSTRIES, INC.
PHASE III GYPSUM STACK EXTENSION

SITE LOCATION PLAN
SODA SPRING, IDAHO

DATE: 10/4/2016
DRAWN BY: B.VIVES
CHECKED BY: B.BETTS
PROJECT NO.: 300907

ENGINEER NAME
FLA. REG. NO. PE_NO

DATE:

1

PROJECT NUMBER: 300907 CITY: TAMPA
Z:\PROJECTS-C\D\300907x1 Phase 3\Drawings\Oct_2016\300907_Phase 3_FIG-1_Site Loc.dwg LAYOUT: 1 SAVED: 10/4/2016 2:13 PM PLOTSTYLETABLE: CIVIL-MASTER.CTB PLOTTED: 12/2/2016 1:02 PM BY: VIVES, MARTIN

APPENDIX H – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: Nu-West CPO
Address: 3010 Conda Road
City: Soda Springs
State: ID
Zip Code: 83276
Facility Contact: Clint Humpherys
Title: Environmental Specialist
AIRS No.: 029-00003

N	Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
Y	Did this permit require engineering analysis? Y/N
Y	Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM10	4.5	0	4.5
VOC	0.0	0	0.0
TAPS/HAPS	47.0	0	47.0
Total:	0.0	0	**51.5**
Fee Due	**$ 10,000.00**		

Comments: PSD permit for major modification