Statement of Basis

Tier I Operating Permit No. T1-2016.0015
Project ID 62777

ITAFOS Conda LLC
Soda Springs, Idaho

Facility ID 029-00003

Final

March 2, 2022

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The purpose of this Statement of Basis is to set forth the legal and factual basis for the Tier I operating permit terms and conditions, including references to the applicable statutory or regulatory provisions for the terms and conditions, as required by IDAPA 58.01.01.362

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1. ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

APS	ammonium phosphate sulfate
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
COMS	continuous opacity monitoring systems
CV	conditioning vent
DEQ	Department of Environmental Quality
DPA	Dilute phosphoric acid
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HF	hydrogen fluoride
HHV	higher heating value
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
1.2	MAP monoammonium phosphate
MGA	merchant grade phosphoric acid
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
MRRR	Monitoring, Recordkeeping and Reporting Requirements
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance

O_2	oxygen
PC	permit condition
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
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPA	Superphosphoric Acid
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T1	Tier I operating permit
T2	Tier II operating permit
TAP	toxic air pollutants
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compound

2. INTRODUCTION AND APPLICABILITY

ITAFOS Conda LLC (ITAFOS) is a manufacturer of phosphate fertilizers, and is located at 3010 Conda Road, Soda Springs, Idaho. The facility is classified as a major facility, as defined by IDAPA 58.01.01.008.10.c, because it emits or has the potential to emit PM_{10}, SO_2, NO_x and CO above the major source threshold of 100 tons-per-year. The facility is also classified as a major facility, as defined by Subsection 008.10.a, because it emits or has the potential to emit hydrogen fluoride above the major source thresholds of 10 tons-per-year for any single HAP and 25 tons-per-year for any combination of HAP.

IDAPA 58.01.01.362 requires that as part of its review of the Tier I application, DEQ shall prepare a technical memorandum (i.e. statement of basis) that sets forth the legal and factual basis for the draft Tier I operating permit terms and conditions including reference to the applicable statutory provisions or the draft denial. This document provides the basis for the draft Tier I operating permit for ITAFOS.

The format of this Statement of Basis follows that of the permit. ITAFOS Tier I operating permit is organized into sections. They are as follows:

Section 1 – Acronyms, Units, and Chemical Nomenclature

The acronyms, units, and chemical nomenclature used in the permit are defined in this section.

Section 2 - Tier I Operating Permit Scope

The scope describes this permitting action.

Section 3 - Facility-wide Conditions

The Facility-wide Conditions section contains the applicable requirements (permit conditions) that apply facility-wide. Where required, monitoring, recordkeeping and reporting requirements (MRRR) sufficient to assure compliance with a permit condition follows the permit condition.

Sections 4 through 13 – Emission Unit Specific Requirements

The emissions unit-specific sections of the permit contain the applicable requirements that specifically apply to each regulated emissions unit. Some requirements that apply to an emissions unit (e.g. opacity limits) may be contained in the Facility-wide Conditions Section. As with the facility-wide conditions, monitoring, recordkeeping and reporting requirements (MRRR) sufficient to assure compliance with an applicable requirement follows the applicable requirement.

Section 14 - Non-applicable Requirements

This section lists those requirements that the applicant has requested as non-applicable, and DEQ proposes to grant a permit shield in accordance with IDAPA 58.01.01.325.

Section 15 - Insignificant Activities

This section contains a list of units or activities that are insignificant on the basis of size or production rate. Units and activities listed in this section must be listed in the permit application. The regulatory citation for units and activities that are insignificant on the basis of size or production rate is IDAPA 58.01.01.317.01.b.

Section 16 - General Provisions

The final section of the permit contains standard terms and conditions that apply to all major facilities subject to IDAPA 58.01.01.300. This section is the same for all Tier I facilities. The General Provisions have been reviewed by EPA and contain all terms and conditions required by IDAPA 58.01.01 et al as well as requirements from other air quality laws, rules and regulations. Each general provision has been paraphrased so it is more easily understood by the general public; however, there is no intent to alter the effect of the requirement. Should there be a discrepancy between a paraphrased general provision in this statement of basis and a rule or permit, the rule or permit shall govern.

3. FACILITY INFORMATION

Facility Description

The ITAFOS Conda LLC facility produces multiple phosphate fertilizer products and alters its product mix to meet the changing requirements of its customers. ITAFOS Conda LLC also recovers fluosilicic acid (FSA) to load FSA for shipment into railcars or tanker trucks The following is a brief description of the products manufactured at the ITAFOS Conda LLC facility.

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 the Conda Plant is purchased from a third party source.

Facility Permitting History

Tier I Operating Permit History - Previous 5-year permit term March 4, 2011 to present

The following information is the permitting history of this Tier I facility during the previous permit term which was from March 4, 2011 to the present. This 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).

January 12, 2012 T1-060308, Incorporating NESHAP Subpart ZZZZ (S)

March 4, 2011 T1-060308, Permit Renewal, Permit status (S)

Underlying Permit History - Includes every underlying permit issued to this facility

The following information is the comprehensive permitting history of all underlying applicable permits issued to this Tier I facility. This 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).

January 12, 2022	P-2021.0036, Initial permit to construct to recover fluosilicic acid (FSA) and load FSA for shipment into railcars or tanker trucks, Permit status (A)
October 15, 2018	PTC No. P-2018.0001, B5 Boiler, to correct a NOx emission limitation (A)
January 12, 2018	PTC No. P-2010.0002, Gyp Stacks 0, 1, 2, Ownership Change to ITAFOS (A)
January 12, 2018	PTC No. P-2018.0001, B5 Boiler, Ownership Change to ITAFOS (S)
January 12, 2018	PTC No. P-2017.0050, Gyp Stack 3, Ownership Change to ITAFOS (A)
January 12, 2018	PTC No. P-2013.0001, Super Phos. Acid 3, Ownership Change to ITAFOS (A)
January 12, 2018	PTC No. P-2009.0068, Phos. Acid, Granulation, Cleaver- Brooks Boiler, Ownership Change to ITAFOS (A)
January 12, 2018	PTC No. P-2009.0002, East Sulfuric Acid, Ownership Change to ITAFOS (A)
November 17, 2017	PTC No. P-2017.0050, Initial PTC for Gyp Stack 3 (S)
May 20, 2013	PTC No. 2013.0001, Initial PTC for Super Phos. Acid 3 (S)
January 12, 2012	T1-060308, Incorporating NESHAP Subpart ZZZZ (S)
March 4, 2011	T1-060308 for Tier I renewal. This permit supersedes Tier I No. T1-040321 (S)
October 14, 2010	PTC No. P-2009.0068 to reduce SPA production limit since changes under P-040320 were not completed, and revise SPA Oxidation monitoring, and revise existing PTC conditions to be consistent with the Tier I OP (S)
March 25, 2010	PTC No. P-2010.0002; modified PTC for the East Sulfuric Acid Plant. The No. 2 absorbing tower is replaced, cesium catalyst is added to the fourth bed of the converter, the final absorbing tower heat exchanger is replaced, the cold interpass heat exchanger is upgraded, the product cooler is replaced, and acid pumps are upgraded. (S)
February 20, 2009	PTC No. P-2009.0002 issued as a PTC revision for the West Gyp Stack II project; includes improved monitoring, lower pond size and emission limits (S)
December 19, 2007	PTC No. P-2007.0170 for the initial West Gyp Stack II project (S)
August 22, 2007	PTC No. P-060310, revised PTC SPA Oxidation Process changes and to incorporate granulation plant changes from PTC No. P-060324. This PTC is superseded by PTC No. P-2009.0068 (S).
December 21, 2006	PTC No. P-060324, revised PTC issued for drum replacement at the Granulation Plant. This PTC was superseded by PTC No. P-060310 (S).
April 28, 2006	Tier I No. T1-040321,amended permit to incorporate changes in PTC No. P-040320. This permit was superseded by Tier I No. T1-060308 (S).
April 28, 2006	PTC No. P-040320, production increase at SPA and improved monitoring for the SPA Oxidation Process. This PTC was superseded by PTC P-060310 (S).
July 22, 2005	PTC No. P-050312 for the initial West Gyp Stack I project; public notice was per Section 209.05.a, so this PTC will be incorporated into the Tier I during renewal; this PTC was superseded by PTC No. P-2007.0170 (S).
April 8, 2005	Tier I No. T1-040308, modified permit to incorporate changes in PTC No. P-040307. This Tier I permit was superseded by permit No. T1-040321 (S).
December 10, 2004	PTC No. P-040307, for East Sulfuric Acid Plant SO2 monitoring changes. This PTC was superseded by PTC No. P-1010.0002 (S).
September 23, 2003	Tier I No. 029-00003, amendment to remove the Experimental Silica Plant (S)

4. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

4.1 Application Scope

This permit is an administrative amendment of the facility's currently effective Tier I operating permit.

The facility has requested to:

- Incorporate PTC No. P-2021.0036, issued January 12, 2022, for the fluosilicic acid (FSA) recovery process in accordance with IDAPA 58.01.01.209.05.c;
- Correct a typographical error changing the manufacturer from Caterpillar to Generac for the #11 Well Generator listed in Table 11.1.

4.2 Application Chronology

July 15, 2021	DEQ received an application.
February 17, 2022	DEQ made available the draft permit and statement of basis for applicant review.
March 2, 2022	DEQ issued the final permit and statement of basis.

5. EMISSIONS UNITS, PROCESS DESCRIPTION(S), AND EMISSIONS INVENTORY

Emissions units, process descriptions and the emission inventory do not change from previous Tier I permit actions and are not repeated in this statement of basis. For information regarding these topics see statement of basis which support Tier I permit No. T1-2016.0015, issued January 30, 2019.

6. EMISSIONS LIMITS AND MRRR

Details regarding the emission limits and monitoring, recordkeeping, recording and reporting requirements included in the permit to construct that is being administratively included in the Tier I permit can be seen in the statement of basis for the permit to constuct (PTC No. P-2021.0036, issued January 12, 2022).

7. REGULATORY REVIEW

The regulatory basis for the Tier I permit issuance is IDAPA 58.01.01.209.05.c. This paragraph of the *Rules* includes that permits to constuct issued in accordance with the specied requirements can be added to the Tier I permit as an administrative amendment. This is the regulatory basis for the addition of PTC No. P-2021.0036, issued January 12, 2022 (Tier I Permit Section 13) to the Tier I permit. All the requirements from this permit have been added to the Tier I permit.

All other permit conditions are unchanged.

8. PUBLIC COMMENT

As required by IDAPA 58.01.01.209.05.c, the permit to construct that is being administratively included into the Tier I permit has been through public comment. See the statement of basis that supports the PTC.

9. EPA REVIEW OF PROPOSED PERMIT

As required by IDAPA 58.01.01.209.05.c, the permit to construct that is being administratively included into the Tier I permit has been to EPA for review. See the statement of basis that supports the PTC.

Appendix A - Facility Comments on Draft Permit

The following comments were received from the facility on the DRAFT permit on February 22, 2022 prior to the Public Comment period:

Facility Comment: Please correct the typographical error changing the manufacturer from Caterpillar to Generac for the #11 Well Generator listed in Table 11.1.

DEQ Response: This typographical error has been corrected.