DEPARTMENT OF ECOLOGY State of Washington

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
P.O. Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only:
001-NSR-216-0299-000404

Check the box for the location of your proposal. For assistance, call the contact listed below:		
	Ecology Permitting Office	**Contact**
☐ **CRO**	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office – Air Quality Program	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☒ **ERO**	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla or Whitman County** Ecology Eastern Regional Office – Air Quality Program	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐ **NWRO**	**San Juan County** Ecology Northwest Regional Office – Air Quality Program	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐ **IND**	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters** Ecology Industrial Section – Waste 2 Resources Program Permit manager: ________________	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐ **NWP**	**For actions taken on the US Department of Energy Hanford Reservation** Ecology Nuclear Waste Program	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

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New project or equipment:

☒	**$1,500: Basic project** initial fee covers up to 16 hours of review.
☐	**$10,000: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

☐	**$200: Administrative or simple change** initial fee covers up to 3 hours of review Ecology may determine your change is complex during completeness review of your application. If your project is complex, you must pay the additional $675 before we will continue working on your application.
☐	**$875: Complex change** initial fee covers up to 10 hours of review
☐	**$350** flat fee: **Replace or alter control technology equipment under WAC 173-400-114** Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement, then check the box next to it to acknowledge that you agree.	
☒	The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $95 per hour for the extra time.
☒	You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
☒	Submittal of this application allows Ecology staff to visit and inspect your facility.

DEPARTMENT OF ECOLOGY State of Washington

Notice of Construction Application

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name Fertilizer Storage & Handling, Fertilizer Blending, and Ancillary Processes
2. Facility Name Helena Agri-Enterprises, LLC – Moses Lake, WA
3. Facility Street Address 11703 Rd. 1 SE.
4. Facility Legal Description Section 1, Township 18 North, Range 28 East, Willamette Principal Meridian
5. Company Legal Name (if different from Facility Name) Helena Agri-Enterprises, LLC
6. Company Mailing Address (street, city, state, zip) 11703 Rd. 1 SE., Moses Lake, WA 98837

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite) Deken Schoenberg	
2. Facility Contact Mailing Address (if different than Company Mailing Address)	
3. Facility Contact Phone Number (509) 765-1074	4. Facility Contact E-mail SchoenbergD@helenaagri.com
5. Billing Contact Name (who should receive billing information) Helena Agri-Enterprises, LLC	
6. Billing Contact Mailing Address (if different than Company Mailing Address) 11703 Rd. 1 SE, Moses Lake, WA 98837	
7. Billing Contact Phone Number (509) 765-1074	8. Billing Contact E-mail SchoenbergD@helenaagri.com
9. Consultant Name (optional – if 3rd party hired to complete application elements) David Weeks	
10. Consultant Organization/Company RME Safety and Environmental, LLC	
11. Consultant Mailing Address (street, city, state, zip) 3300 North Glade Rd., Pasco, WA 99301	
12. Consultant Phone Number 214-762-7076	13.Consultant E-mail daweeks@rmese.com
14. Responsible Official Name and Title (who is responsible for project policy or decision-making) Tim Dlabaj – Vice-President	
16. Responsible Official Phone (559) 261-9030	17. Responsible Official E-mail DlabajT@helenaagri.com
18. Responsible Official Certification and Signature I certify that the information on this application is accurate and complete. Signature [signature]	Date 4/25/23

To request ADA accommodation, call (360) 407-6800, 711 (relay service), or 877-833-6341(TTY).

Notice of Construction Application
Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

Please attach the following to your application.

☒ Written narrative describing your proposed project.
☒ Projected construction start and completion dates.
☒ Operating schedule and production rates.
☒ List of all major process equipment with manufacturer and maximum rated capacity.
☒ Process flow diagram with all emission points identified.
☒ Plan view site map.

☐ Manufacturer specification sheets for major process equipment components.
☐ Manufacturer specification sheets for pollution control equipment.
☐ Fuel specifications, including type, consumption (per hour & per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

☐ SEPA review is complete:
Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, EIS) with your application.

☒ SEPA review has not been conducted:

☒ If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit.
Agency Reviewing SEPA: GRANT COUNTY PLANNING DEPARTMENT

☐ If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? ☒ Yes ☐ No

If yes, please provide the following information regarding your criteria emissions in your application.

☒ The names of the criteria air pollutants emitted (i.e., NO_x, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)

☒ Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)

☒ If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? ☒ Yes ☐ No

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

☒ The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])

☒ Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)

☒ If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

☒ Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70.94 RCW.

Does your project comply with all applicable standards identified? ☒ Yes ☐ No

VIII. Best Available Control Technology

☒ Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

Notice of Construction Application

IX. Ambient Air Impacts Analyses

Please provide the following:

☐ Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)

☒ Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)

☒ Discharge point data for each point included in air impacts analyses (include only if modeling is required)

- ☒ Exhaust height
- ☒ Exhaust inside dimensions (ex. diameter or length and width)
- ☒ Exhaust gas velocity or volumetric flow rate
- ☒ Exhaust gas exit temperature
- ☒ The volumetric flow rate
- ☒ Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
- ☒ Identification of the emission unit(s) discharging from the point
- ☒ The distance from the stack to the nearest property line
- ☒ Emission unit building height, width, and length
- ☒ Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
- ☒ Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? ☐ Yes ☒ No

TECHNICAL ANALYSIS IN SUPPORT OF NEW SOURCE REVIEW FOR FERTILIZER STORAGE & HANDLING, FERTILIZER BLENDING, AND ANCILLARY PROCESSES

Prepared in Connection With:

New Source Permit Application
Helena Agri Enterprises, LLC
Moses Lake Facility
11703 Rd. 1 SE.
Moses Lake, WA 98837

Prepared for:

Mr. Deken Schoenberg
Helena Agri-Enterprises, LLC
11703 Rd. 1 SE.
Moses Lake, WA 98837
(509) 765-1074

Prepared by:

David A. Weeks, P.E.
RME Safety and Environmental, LLC
3300 North Glade Road
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April 2023

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1.0 INTRODUCTION

Helena Agri-Enterprises, LLC (HAE) – Moses Lake property was purchased April 2022 with plans to construct and operate an agricultural fertilizer storage, blending, and distribution facility. The processes that HAE desires to operate at the facility include the following:

1. Receive, store, blend, and distribute dry fertilizer products;
2. Receive, store, blend, and distribute liquid fertilizer products;
3. Receive, store, and distribute seed;
4. Receive, store, and distribute liquid and dry pesticide products.

The general location of the Facility and proposed processes and process areas are shown in Figure 1 (See Appendix B). When HAE purchased the property, the following structures and process areas were already in place:

1. The office;
2. Building A;
3. Building E;
4. Building C;
5. Seed Storage and Handling – Location 1
6. Seed Storage and Handling – Location 2

HAE plans to commence construction of the dry fertilizer storage and blending process that will be sited inside and outside of Building C in May 2023, with an anticipated completion scheduled for August 2023. HAE plans to commence construction of all other structures and process areas sometime in 2023 with an anticipated completion schedule for 2024.

This background document discusses the basis for emissions estimates and provides an analysis of emissions with respect to the Department of Ecology regulations. It is HAE's intent to receive a permit to construct and operate the processes described in this technical support document.

The facility is physically located at 11703 Rd. 1 SE., Moses Lake, WA 98837 and the approximate geographic coordinates are as follows:

- Latitude: 47.074971° Longitude: -119.241293°
- Section 1, Township 18 North, Range 28 East, Willamette Principal Meridian

1.1 General Process Description

An equipment inventory of the proposed processes and an analysis of the potential for the equipment to emit regulated pollutants is provided in Appendix A, Table 1. The SDS for the various substances that will be stored and handled is provided in Appendix E. A description of the processes is presented as follows.

1.1.1 Dry Fertilizer Storage and Blending

The dry fertilizer storage and blending process (DF) will consist of a series of totally enclosed conveyance and blending equipment located inside and outside of Building C. Operations will consist of load-in, storage, and blending of dry fertilizers. The facility anticipates that the total dry fertilizer throughput for this process will not exceed: 20,000 ton/year for bulk fertilizers and 1,000 ton/year for micro-nutrient fertilizers handled in supersacks. An overall process flow diagram is provided as Figure 2 (See Appendix B).

LOAD-IN OPERATIONS

Dry bulk fertilizers will be received outdoors by rail and truck. The rail and truck unloading stations will be separate and only one station can be in operation at a time; however, each station will serve the paddle conveyor (DF-1). The facility estimates that 50% of the bulk dry fertilizer will be delivered by truck and 50% of the bulk dry fertilizer will be delivered by rail. Dry fertilizer will be choke fed from the truck or railcar hopper bottom onto the partially enclosed paddle conveyor. The paddle conveyor will transfer dry fertilizer into the enclosed receiving point of the totally enclosed bucket elevator (DF-2) at a maximum rate of 200 ton/hr. The bucket elevator will transfer dry fertilizer to the overbin drag conveyor (DF-3) at a maximum rate of 200 ton/hr. The overbin drag conveyor will deliver the dry fertilizer to one of seven storage bins (DF-4) inside of Building C. The facility will transfer supersacks of dry micro-nutrient fertilizers and containers (less than 260-gallons) of liquid micro-nutrient fertilizers into Building C and stage them for ease of access for blending purposes as described in the load-out operations.

LOAD-OUT OPERATIONS

Dry fertilizer load-out operations will be sequenced in batches to formulate customer specific blends of dry fertilizers. Batches will not exceed 15-tons each. Using a skid loader, dry bulk fertilizer will be transferred from the storage bins and dumped into a 16-Ton weigh hopper (DF-5) located inside the building. The facility will also use the skid loader to dump dry micro-nutrients in supersacks into the weigh hopper (DF-5). The facility estimates that no more than 20% of each batch will be consumed of dry micro-nutrients dumped from supersacks. From the weigh hopper the dry fertilizer will be transferred to the totally enclosed load-out belt conveyor 1 (DF-6) that is used to dump the dry fertilizer into the 16-Ton rotary blender (DF-7). While dry fertilizer is mixing in the rotary blender the facility may apply liquid micro-nutrients diluted with water via atomizing spray nozzles inside the rotary blender to complete the formulation. The maximum rate of liquid application will not exceed 1 quart liquid/ton of dry fertilizer. When the blend is complete, the dry fertilizer will be transferred to load-out belt conveyor 2 that will extend outside of Building C and dump the finished product into a load-out truck. The maximum load-out rate will be limited to 50 ton/hour due to operational limitations that include: 1) the time it takes to move the skid loader back and forth between piles; and 2) the batch capacity of the hopper and blending unit limited to 15-Tons.

The dry fertilizer products that the facility desires to store and handle as part of the dry fertilizer storage and blending process are summarized in Chart 1.

CHART 1: DF PROCESS - DRY FERTILIZERS

PRODUCT	BULK OR SUPERSACK
K-Mag	Supersack
Monoammonium phosphate	Bulk
Urea	Bulk
Potassium Chloride (all grades)	Bulk
Sulfate Plus	Bulk
Resurge	Supersack
Microna Prill – Gypsum*	Supersack
Microna Prill – Lime*	Supersack
Axilo Cu*	Supersack
Axilo Mg	Supersack
Axilo Mn*	Supersack
Axilo Fe	Supersack
Axilo Zn	Supersack
Solubor*	Supersack
Elemental Sulfur	Supersack

The SDS of each dry fertilizer in Chart 1 was evaluated for hazardous air pollutants (HAP) and toxic air pollutants (TAP). It was concluded that the dry fertilizers handled in bulk quantities do not contain constituents that are HAPs or TAPs. However, some of the dry micro-nutrient fertilizers handled in supersacks contain HAPs and/or TAPs. The products with HAPs and/or TAPs are denoted in Chart 1 with an asterisk (*). The dry fertilizer material evaluation is provided in Appendix A, Table 2.

The liquid micro-nutrient fertilizers that the facility desires to apply to the dry fertilizer as part of the dry fertilizer storage and blending process are summarized in Chart 2.

CHART 2: DF PROCESS - LIQUID FERTILIZERS

PRODUCT	STORAGE CONTAINER
N-Fixx	260-gallon or less containers
Ele-max Super Zinc FL, 1-0-0	260-gallon or less containers
Ele-max Boron LC, 4-0-0*	260-gallon or less containers
Ele-Max Copper FL, 4-0-0*	260-gallon or less containers
Ele-Max Magnesium Fl, 4-0-0	260-gallon or less containers
Ele-Max Manganese FL, 3-0-0*	260-gallon or less containers
N-Fixx XLR	260-gallon or less containers

The SDS of each liquid micro-nutrient fertilizer in Chart 2 was evaluated for organic components, HAPs, and TAPs. It was concluded that some of the liquid micro-nutrient fertilizers contain organic components, HAPs, and TAPs as part of the product constituents. However, these products are exempt from new source review pursuant to WAC 173-400-110(4)(b)(v) because they will be stored in containers that are less than 260-gallons that will be equipped with appropriate closures. The liquid micro-nutrient fertilizers that have TAPs as constituents are denoted in Chart 2 with an asterisk (*); these products are also exempt from new source review pursuant to WAC 173-460-040(1) [exemption from TAP review for sources exempt under WAC 173-400-100(4)]. Experience has shown that emissions from applying the liquid micro-nutrient fertilizers directly to the dry fertilizer through openings in the enclosed equipment are negligible, if any.

1.1.2 Liquid Fertilizer Formulation

The liquid fertilizer formulation (LFF) will consist of a series of dry storage bins, liquid storage tanks, hot water heaters, conveyance, and blending equipment. Operations will consist of load-in, storage, and blending of dry fertilizers with hot water in a solution tank to formulate liquid fertilizers for storage and distribution. The facility anticipates that the total dry fertilizer throughput for this process will not exceed: 2,000 ton/year for bulk fertilizers and 100 ton/year for micro-nutrient fertilizers handled in supersacks. An overall process flow diagram is provided as Figure 3 (See Appendix B).

LOAD-IN OPERATIONS

Dry bulk fertilizers will be received outdoors by rail and truck. The rail and truck unloading stations will be separate and only one station can be in operation at a time; however, each station will serve the paddle conveyor (LFF-1). The facility estimates that 50% of the bulk dry fertilizer will be delivered by truck and 50% of the bulk dry fertilizer will be delivered by rail. Dry fertilizer will be choke fed from the truck or railcar hopper bottom onto the partially enclosed paddle conveyor. The paddle conveyor will transfer dry fertilizer into the enclosed receiving point of the totally enclosed bucket elevator (LFF-2) at a maximum rate of 110 ton/hr. The bucket elevator will transfer dry fertilizer to the one of three storage bins each with 150 ton capacities (LFF-3) at a maximum rate of 110 ton/hr. The facility will transfer supersacks of dry micro-nutrient fertilizers and stage them for ease of access for blending purposes as described in the load-out operations.

LOAD-OUT OPERATIONS

Dry fertilizer load-out operations will be sequenced in batches to formulate customer specific blends of liquid fertilizers. Batches will not exceed 7,500-gallons and will be consumed of dry fertilizer additions and water. Water will always be the first ingredient added to the 8,000-gallon solution tank (LFF-6) and it will be heated using a hot water heater to solutionize the dry fertilizer additions that follow. The facility will not add acids (such as phosphoric acid) or aqua-ammonia to the liquid fertilizer formulations.

Dry bulk fertilizer will be transferred from a storage bin and dumped onto a totally enclosed paddle conveyor (LFF-5) that transfers the material into the 8,000-gallon solution tank (LFF-6). The facility estimates that no more than 44% of each batch will be consumed of bulk dry fertilizers. The facility will choke feed dry micro-nutrients in supersacks or bags into an eductor (LFF-4) that pulls the material into the formulation when the liquid product is recirculating. The facility estimates that no more than 2% of each batch will be consumed of dry micro-nutrients added to the educator. Additionally, the facility estimates that each batch will require 40-minutes of agitation and recirculation to achieve product quality. The maximum bulk dry fertilizer load-out rate to the 8,000-gallon solution tank (LFF-6) will be limited to

25 ton/hour due to operational limitations that include: 1) the max percent of bulk dry fertilizer added to the liquid formulation; and 2) the time that is required to complete a liquid formulation.

The final liquid formulation will be transferred to one of two 7,500-gallon storage tanks (LFF-8 and LFF-9) that will be used for temporary storage. The facility will have the ability to load-out from the two 7,500-gallon storage tanks directly to a load-out truck or to another storage tank located in Tank Farm 1.

The dry fertilizer products that the facility desires to store and handle as part of the liquid fertilizer formulation process are summarized in Chart 3.

CHART 3: LFF PROCESS - DRY FERTILIZERS

PRODUCT	BULK OR SUPERSACK
Urea	Bulk
Potassium Chloride (all grades)	Bulk
Axilo Cu*	Supersack
Axilo Mg	Supersack
Axilo Mn*	Supersack
Axilo Fe	Supersack
Axilo Zn	Supersack

The SDS of each dry fertilizer in Chart 3 was evaluated for organic components, HAPs, and TAPs. It was concluded that the bulk Urea product is an organic compound by definition; however, when handling as a dry material, or when forming an aqueous solution, emissions of volatile organic compounds (VOC) are not expected. Rather, any emissions that would occur would be ammonia. The potential for ammonia to evolve from the exothermic reaction that occurs when dry urea fertilizer is mixed with hot water to dissolve the urea will be limited because the facility will control the heat of the reaction somewhere in the range of 70 – 90°F. At these controlled temperatures ammonia emissions are expected to be negligible considering that the temperatures required to decompose urea when in an aqueous solution to yield ammonia begin at approximately 271°F (the melting point of urea is 275°F). In support of this fact, experience has shown that there is little, if any, ammonia odors when Urea is added to the solution tank as an ingredient and blended because it is complexed and consumed by the reaction; even so, ammonia emissions were quantified. Nevertheless, the sources with the potential to emit ammonia emissions were evaluated against the screening criteria for ammonia as defined by WAC 173-46-150, regardless of exemption status.

The review of the SDS also concluded that none of the dry fertilizers handled in bulk quantities contain constituents that are HAPs. However, some of the dry micro-nutrient fertilizers handled in supersacks contain HAPs and/or TAPs. The products with HAPs and/or TAPs are denoted in Chart 3 with an asterisk (*). The dry fertilizer material evaluation is provided in Appendix A, Table 2.

The liquid fertilizer products that the facility desires to formulate using the dry fertilizers listed in Chart 3 as part of the liquid fertilizer formulation process are included in Chart 5 that summarizes all the liquid fertilizers the facility desires to store and handle.

1.1.3 Ammonium Polyphosphate Manufacturing

The ammonium polyphosphate manufacturing process will require the facility to contract with an Independent Fertilizer Reacting Contractor (IFRC) to temporarily operate a mobile pipe reactor (MPR) that will react anhydrous ammonia, phosphoric acid, and water to manufacture ammonium polyphosphate liquid fertilizer as shown in Figure 6 (See Appendix B). To support MPR operations, there may be up to 3 anhydrous railcars and 9 phosphoric acid railcars parked on the facility rail spur during peak operating times. The ammonium polyphosphate product will be stored in Tank Farm 1 storage tanks and/or a Tank Farm 2 storage tank.

The facility plans to contract with the IFRC, Pacific Northwest Solutions (PNS). However, the facility desires to maintain operational flexibility over time such that they have the option to contract with other IFRCs that may provide the same service. The facility proposes that the ammonium polyphosphate process adopts the same limits that are in other Eastern Washington Approval Orders. The limits are summarized in Section 2.3.2 and are the same limits described in the recently approved and current Nutrien Ag Solutions - Moses Lake Approval Order.

The liquid fertilizer products that the facility desires to store and handle as part of the ammonium polyphosphate manufacturing process are summarized in Chart 4.

CHART 4: MPR PROCESS - LIQUID FERTILIZERS

PRODUCT	STORAGE CONTAINER
Anhydrous Ammonia*	Railcar
Phosphoric Acid*	Railcar
Ammonium Polyphosphate	Tank Farm 1 and/or Tank Farm 2

The SDS of each liquid fertilizer in Chart 4 was evaluated for organic components, HAPs, and TAPs. Except for the storage and handling of anhydrous ammonia in railcars, it was concluded that the other two liquid fertilizers are aqueous solutions of inorganic salts, bases, or acids. Additionally, it was determined that two of the three products contain constituents that are TAPs. The products with TAPs are denoted in Chart 4 with an asterisk (*). The liquid fertilizer material evaluation is provided in Appendix A, Table 3.

The inorganic liquid bulk fertilizer storage tanks and pumping equipment are exempt from new source review pursuant to WAC 173-400-110(4)(b)(viii) because the fertilizers are aqueous solutions of inorganic salts, bases, or acids and are stored in tanks with appropriate closures. The inorganic liquid bulk fertilizers that contain constituents that are TAPs are also exempt from new source air toxics review pursuant to WAC 173-460-040(1) [exemption from TAP review for sources exempt under WAC 173-400-110(4)]. The sources with the potential to emit ammonia emissions were evaluated against the screening criteria for ammonia as defined by WAC 173-46-150, regardless of exemption status.

1.1.4 Liquid Fertilizer Storage and Handling

The liquid fertilizer storage and handling process (LF) consists of a series of storage tanks and conveyance equipment. Operations consist of load-in, storage, and load-out of liquid fertilizers. Liquid fertilizers that are not formulated in the liquid fertilizer formulation process (LFF) will be received by rail and truck and stored in one of two liquid fertilizer tank farms that will have secondary containment. Tank Farm 1, as provided in Figure 4 (See Appendix B), will feature a total of 18 fertilizer storage tanks that range in storage capacity from 30,000-gallon to 63,900-gallon. The facility desires to operate the storage tanks in Tank Farm 1 as swing tanks (i.e., any tank can be used to store any liquid fertilizer product) to provide operational flexibility. Tank Farm 2, as provided in Figure 5 (See Appendix B), will feature a total of 2 fertilizer storage tanks, each with a storage capacity equal to 500,000-gallons.

The liquid fertilizer products that facility desires to store and handle as part of the liquid fertilizer storage and handling process are summarized in Chart 5.

CHART 5: LF PROCESS - LIQUID FERTILIZERS[1]

PRODUCT	STORAGE CONTAINER
ThioSul (12-0-0-26)	Tank Farm 1 and/or Tank Farm 2
Coron Metra 25	Tank Farm 1
Coron Metra 28	Tank Farm 1
Nucleus 0-0-15	Tank Farm 1
Nucleus O-Phos (8-24-0)	Tank Farm 1
Ammonium sulfate (21-0-0 +24S)	Tank Farm 1
Ammonium sulfate (8-0-0-9)	Tank Farm 1
Urea Solution	Tank Farm 1
UAN Solution (32-0-0)	Tank Farm 1
KTS (0-0-25-17S)	Tank Farm 1
Hydra-Hume	Tank Farm 1

NOTE:

1. Refer to Chart 2 and Chart 4 for a complete inventory of liquid fertilizer products the facility desires to store and handle.

The SDS of each liquid fertilizer in Chart 5 was evaluated for organic components, HAPs, and TAPs. It was concluded that none of the liquid fertilizers handled in bulk quantities contain HAPs; and other than Coron Metra 25, Coron Metra 28, Urea Solution, and UAN Solution, the bulk liquid fertilizers are aqueous solutions of inorganic salts, bases, or acids. The inorganic liquid fertilizer storage tanks and pumping equipment are exempt from new source review pursuant to WAC 173-400-110(4)(b)(viii) because the fertilizers are aqueous solutions of inorganic salts, bases, or acids and are stored in tanks with appropriate closures.

The liquid fertilizers, Coron Metra 25, Coron Metra 28, Urea Solution, and UAN Solution, contain the compound urea in solution. These products are not expected to emit VOCs from the storage and handling operations; rather any emissions that would occur would be ammonia. According to the SDS for these products, the release of ammonia is not a concern unless under fire or applied heat conditions (as previously stated in Section 1.1.2, the temperatures required to decompose urea when in an aqueous solution to yield ammonia begin at approximately 271°F (the melting point of urea is 275°F)). The facility will not apply heat to the storage tanks. Thus, emissions are ammonia are not to be expected when handling these products; even so, ammonia emissions were quantified. The sources with the potential to emit ammonia emissions were evaluated against the screening criteria for ammonia as defined by WAC 173-46-150, regardless of exemption status.

The liquid fertilizer material evaluation is provided in Appendix A, Table 3.

1.1.5 Seed Storage and Handling

The seed storage and handling process (SS) will consist of a series of storage silos and conveyance equipment that will be used to store and distribute seed varieties, including: wheat, oats, and beans. There will be two locations that seed storage and handling will occur: location 1 is sited outside of Building C; and location 2 is sited South of Building C along the rail spur. The facility anticipates that the total seed throughput for location 1 will not exceed 500 ton/year. The overall process flow diagram for seed storage and handling process at location 1 is provided as Figure 7 (See Appendix B). The facility anticipates that the total seed throughput for location 2 will not exceed 125 ton/year. The overall process flow diagram for seed storage and handling process at location 2 is provided as Figure 8 (See Appendix B).

LOCATION 1 OPERATIONS

Seed will be delivered by a truck that will choke feed the seed onto the partially enclosed paddle conveyor (SS-1). The paddle conveyor will transfer the seed into the enclosed receiving point of the totally enclosed bucket elevator (SS-2) at a maximum rate of 30 ton/hr. The bucket elevator will transfer the seed to one of two storage silos (SS-3), each with a storage capacity equal to 150 tons. From the storage silos, the facility will load-out the seed to a totally enclosed load-out paddle conveyor (SS-4) at a maximum rate of 30 ton/hr. The load-out paddle conveyor will transfer the seed into the enclosed receiving point of the totally enclosed bucket (SS-2). Rather than transferring the seed to the storage silos, the facility will use the telescoping tube that will transfer the seed to a truck for load-out. The load-in and load-out operations of the seed storage and handling process sited at location 1 cannot occur simultaneously because the same equipment is used for both operations.

LOCATION 2 OPERATIONS

Seed will be delivered by truck that will choke feed the seed onto the partially enclosed paddle conveyor (SS-6). The paddle conveyor will transfer the seed into the enclosed receiving point of the totally enclosed bucket elevator (SS-7) at a maximum rate of 30 ton/hr. The bucket elevator will transfer the seed to one of four storage silos (SS-8), each with a storage capacity equal to 150 tons. From the storage silos, the facility will load-out the seed to either load-out paddle conveyor 1 (SS-9) or load-out paddle conveyor 2 (SS-10) at a maximum rate of 30 ton/hr. The load-out paddle conveyor 1 serves storage silos 1 and 2, and load-out conveyor 2 serves storage silos 3 and 4. Both load-out paddle conveyor 1 and 2 transfer seed into the enclosed receiving point of the totally enclosed bucket elevator (SS-7). Rather than transferring the seed to the storage silos, the facility will use the telescoping tube that will transfer the seed to a 30-ton capacity storage bin (SS-11) that will temporarily hold seed before dropping to a truck for load-out. The load-in and load-out operations of the seed storage and handling process sited at location 2 cannot occur simultaneously because the same equipment is used for both operations.

1.1.6 Hot Water Heater

The facility will install (2) propane-fired hot water heaters that will be used for heating the water that will be used in the liquid fertilizer formulation process (LFF). The water heaters will operate only on demand with no stand-by fuel consumption. Each hot water heater will have a heat input rating equal to 2.5 MMBTU/hr. The facility anticipates that the maximum propane throughput to operate the hot water heaters will not exceed 35,000-gallons.

1.1.7 Pesticide Storage and Handling

The pesticide storage and handling process operations will consist of load-in, storage, and load-out of dry and liquid pesticides in Building E.

DRY PESTICIDES

The dry pesticides will be delivered in bags that will be no greater than 50 lbs. The facility will store the bags on pallets and all materials will remain in the original bag that it was received in. Ultimately the bags will be delivered to end-use customers.

LIQUID PESTICIDES

Most liquid pesticides will be delivered in prepackaged containers; these liquid pesticides will remain in the original container that it was received in before delivering the container to end-use customers. Some liquid pesticides will be delivered by truck and will be stored in a pesticide tank farm with secondary containment. The tank farm may feature up to 10 storage tanks that range in storage capacity from 500-gallons to 3,000-gallons. The facility will repackage these liquid pesticides into smaller containers for distribution to end-use customers.

The facility proposes that the pesticide storage and handling process is exempt from air quality regulations as it is in other Eastern Washington Approval Orders such as the recently approved and current Helena Agri-Enterprises, LLC – Pasco Approval Order because this activity is regulated by the Washington Department of Agriculture.

1.1.8 Propane Storage

The facility will store propane in a 3,000-gallon pressure vessel. The propane storage vessel is exempt from new source review pursuant to WAC 173-400-110(4)(b)(vii) because the vessel capacity is less than 40,000-gallons.

1.1.9 Summary of Potential Emissions

The proposed operation of the processes described herein have the potential to emit one or more pollutants regulated by the Washington Department of Ecology pursuant to WAC 173-400 and WAC 173-460; a summary is provided in Chart 6 below.

CHART 6: SUMMARY OF POTENTIAL EMISSIONS[1]

PROCESS NO.	PROCESS	FORM OF RELEASE	CRITERIA POLLUTANTS	HAZARDOUS AND/OR TOXIC POLLUTANTS
1	Dry Fertilizer Storage and Blending Process	Fugitive Emissions from receiving and transfer segments	• PM, PM10, PM2.5	• Respirable Silica • Copper Compounds • Manganese Compounds • Boron Compounds
2	Liquid Fertilizer Formulation Process	Fugitive Emissions from receiving and transfer segments	• PM, PM10, PM2.5	• Copper Compounds • Manganese Compounds
		Fugitive Emissions from formulation tank and storage containers containing Urea in solution	• None	• Ammonia
3	Ammonium Polyphosphate Manufacturing Process	Fugitive Emissions from valves, flanges, and pressure relief valves from Anhydrous Ammonia Railcars	• None	• Ammonia
		Ammonium Polyphosphate mobile pipe reactor emissions	• PM, PM10, PM2.5	• Ammonia • Fluoride
4	Liquid Fertilizer Storage and Handling Process	Fugitive Working and Breathing Loss Emissions from storage containers containing Urea in solution	• None	• Ammonia
5	Seed Storage and Handling Process	Fugitive Emissions from receiving and transfer segments	• PM, PM10, PM2.5	• None
6	Fuel-Burning Equipment	Point Source Emissions from water heater stacks	• CO • NOx • SO2 • PM, PM10, PM2.5 • VOC	• None

Note:
1. Emission units that are positioned for exemption are not included in this table, other than those with potential emissions of ammonia.

2.0 EMISSION CALCULATIONS

The actual annual emission rate estimates for all sources of emissions are based on a proposed maximum annual material throughput. The facility desires that permit limits are based on proposed annual material throughputs. The emission calculations are provided in Appendix C.

2.1 Dry Fertilizer Storage and Blending

Particulate emissions (PM, PM10, and PM2.5) from the dry fertilizer storage and blending process are expected to be generated as follows:

- Fugitive emissions from truck/rail (bottom) unloading of dry fertilizers; max process rate = 200 Ton/hr.
- Fugitive emissions from conveyor transfer drops (load-in); max process rate = 200 Ton/hr.
- Fugitive emissions from conveyor transfer drops (load-out); max process rate = 50 Ton/hr.

The proposed maximum annual dry fertilizer throughput for this process equals: 20,000 ton/year for bulk fertilizers and 1,000 ton/year for micro-nutrient fertilizers handled in supersacks.

2.1.1 Drops to Storage Piles, Conveyors, and Trucks – PM

The emission factors for fertilizer manufacturing are described in Chapter 8 of AP-42. EPA's discussion of the emission factors is primarily focused on base fertilizer manufacturing rather than downstream distribution and blending as performed by the Facility. However, AP-42 Chapter 8.3 – Ammonium Nitrate contains an emission factor that can be considered for downstream distribution: 0.02 lb PM/ton Product for "bulk loading" operation. Ammonium nitrate is a common fertilizer and the "bulk loading" operation most closely represents the processes being performed at the facility, the loading and unloading of bulk fertilizer (i.e., drops to storage piles, hoppers, transfer equipment, and trucks). Note that this emission factor is for total particulate matter only and does not differentiate the fraction of total emissions that is PM10 or PM2.5. Therefore, the emission particle size data reported in AP-42 Chapter 8.2 – Urea, Table 8.2-2 was used to represent the emission particle size distribution for the fertilizer materials handled at the facility.

Table 8.2-2 (Metric Units). UNCONTROLLED PARTICLE SIZE DATA FOR UREA PRODUCTION

Type Of Operation	Particle Size (cumulative weight %)		
	≤ 10 µm	≤ 5 µm	≤ 2.5 µm
Solid Formation			
Nonfluidized bed prilling			
Agricultural grade	90	84	79
Feed grade	85	74	50
Fluidized bed prilling			
Agricultural grade	60	52	43
Feed grade	24	18	14
Drum granulation	—[a]	—[a]	—[a]
Rotary drum cooler	0.70	0.15	0.04

[a] All particulate matter ≥ 5.7 µm was collected in the cyclone precollector sampling equipment.

The use of the emission particle size data for Urea is appropriate to represent the particle size distribution of other fertilizer materials because Urea has a lower or equivalent crushing strength than the other fertilizer materials handled at the facility. The crush strength is a measure of how well the fertilizer stands up to being degraded by material processing. Thus, it is an indirect indicator of how much dust a fertilizer can produce as it moves through the material handling process.

In accordance with AP-42 Chapter 8.2 – Urea, Figure 8.2-1, the rotary drum cooler is a process operation that occurs prior to bulk loading with only a screening operation between the cooling step and bulk loading step. Thus, the particle size distribution of the dust associated with the urea cooling process should be similar to the particle size distribution of the dust generated from bulk loading and loading.

The refined PM10 and PM2.5 emission factors can thus be derived as follows:

- PM10 Emission Factor = 0.02 lb PM/ton Product * 0.7% = 1.4E-4 lb PM10/ton Product.

- PM2.5 Emission Factor = 0.02 lb PM/ton Product * 0.04% = 8.0E-6 lb PM2.5/ton Product.

The emission calculations associated with the conveyance of dry fertilizer material for dry fertilizer storage and blending operations is provided in Appendix C3.

2.2 Liquid Fertilizer Formulation

Particulate emissions (PM, PM10, and PM2.5) and ammonia emissions from the liquid fertilizer formulation are expected to be generated as follows:

- Fugitive particulate emissions from truck/rail (bottom) unloading of dry fertilizers; max process rate = 110 Ton/hr.
- Fugitive particulate emissions from conveyor transfer drops (load-in); max process rate = 110 Ton/hr.
- Fugitive particulate emissions from conveyor transfer drops (load-out); max process rate = 25 Ton/hr.
- Fugitive working loss ammonia emissions from filling formulation tank and temporary storage containers containing Urea in solution; max pump rate = 125 gpm.
- Fugitive breathing loss ammonia emissions from formulation tank and temporary storage containers containing Urea in solution; max containers = 3.

The proposed maximum annual dry fertilizer throughput for this process equals: 2,000 ton/year for bulk fertilizers and 100 ton/year for micro-nutrient fertilizers handled in supersacks.

2.2.1 Drops to Storage Piles, Conveyors, and Trucks – PM

The methodology used to estimate particulate emissions from handling dry fertilizer is the same as the one described in Section 2.1.1. The emission calculations associated with the conveyance of dry fertilizer material for liquid fertilizer formulation process operations is provided in Appendix C4.

2.2.2 Formulation and Storage of Urea Solutions – Ammonia

Experience has shown that there is little, if any, ammonia odors when Urea is added to a solution tank as an ingredient and blended because the ammonia is complexed and consumed by the reaction. Therefore, it is assumed that the ammonia concentration above the surface of the solution in the blender is approximately 100 ppmv (ammonia has an odor threshold of 5 – 50 ppmv). Using the Ideal Gas Law formula to find the Volume of one lb-mol of ammonia, the ammonia concentration above the surface of the solution in the blender was converted from ppmv to pounds of ammonia per cubic foot of gas. Subsequently, working loss and breathing loss emissions were estimated.

The working loss emissions assume that the product is being pumped into an empty 7,500-gallon container at a maximum pump rate equal to 500-gal/min. The flow rate (ft^3/hr) of the escaping gas is assumed to be equal to the volume displaced in the empty container during a 1-hour filling period. The breathing loss emissions from assume that gas escapes through an opening a rate of 0.0001 meter/sec. The size of the opening in the solution tank is expected to be a diameter that is approximately equal to 1.5 ft., and the size of the opening in the two temporary storage containers is expected to be a diameter that is approximately equal to 6".

To be conservative, the emission calculations assume that working losses and breathing losses from the handling of a product that is composed primarily of a urea solution occur simultaneously in the solution tank and the two 7,500-gallon temporary storage tanks in the liquid fertilizer formulation area. The emission calculations are summarized in Appendix C5.

2.3 Ammonium Polyphosphate Manufacturing

The manufacturing of ammonium polyphosphate fertilizer may result in the emissions of Ammonia, Fluoride, and Particulate matter (PM, PM10, PM2.5). Emissions from the ammonium polyphosphate manufacturing process are expected to be generated as follows:

- Fugitive ammonia emissions from temporary storage of anhydrous ammonia in railcars; max railcars onsite at a time = 6;
- Particulate matter, ammonia, and Fluoride emissions from mobile pipe reactor while reacting; 40 Ton/hr production rate.

2.3.1 Anhydrous Ammonia Railcar – Ammonia

Ammonia may be released from anhydrous ammonia stationary railcars as fugitive emissions from valves, flanges, and pressure relief valves (PRVs). The fugitive emissions are based on emission factors promulgated for the Synthetic Organic Chemical Manufacturing Industry (SOCMI) due to lack of any information applicable to the agricultural chemical blending and distribution industry. The emissions from PRV's were refined for this application by identifying the maximum leakage rate that manufacturers of PRV's for anhydrous ammonia adhere to as an industry standard.

PRVs for anhydrous ammonia railcars are required to meet the leakage standards of API 527. That current standard requires that PRVs be manufactured with maximum leakage rate of 0.0085 cubic meters per 24-hour period, or 0.0035 m3/hr, for PRVs in service at pressures of 115 to 1,000 psig (Consolidated, Revision 4).

The vapor pressure of anhydrous ammonia (NH3) at 78° F (298.5° K, the maximum expected temperature of NH3 during railcar storage operations) is approximately 110 psia (758,420 Pa) based on *Handbook of Vapor Pressure Volume 4* (Yaws, 1995). It can be reasonably inferred from Department of Transportation regulations and professional experience that the quantity of anhydrous ammonia in a single railcar will not typically exceed 32,000-gallons; which provide a headspace of 2,000-gallons (7.57 m3) in a 34,000-gallon railcar. The moles of ammonia in such a system calculated from the ideal gas law are 2,339 moles. The resulting ammonia vapor concentration is the headspace is 5,262 g/m3.

The emission rate from a leaking PRV is thus given by the concentration time the flow rate as:

$5{,}262\ \frac{g}{m^3} \times 0.00035\ \frac{m^3}{hr} = 1.842\ \frac{g}{hr}$, or 0.00406 lb/hr.

This emission factor was used with the SOCMI factors for other valves and flanges to determine the total emissions resulting from three ammonia railcars. The approach assumes that one of each type of railcar equipment element that could leak is leaking for 24 hours before being discovered and fixed as part of the audio, visual, and olfactory inspection program. The emission calculations for this process are summarized in Appendix C6.

2.3.2 Mobile Pipe Reactor – PM, Ammonia, and Fluoride

A mobile pipe reactor (MPR) owned and operated by an Independent Fertilizer Reacting Contractor (IFRC) will be utilized to manufacture ammonium polyphosphate fertilizer for direct retail sale to the end user. The limits for the ammonium polyphosphate process are proposed to be the same as the limits that are in the most recently issued Nutrien Ag Solutions Moses Lake Approval Order. Those limits are summarized as follows:

1. Ammonium Polyphosphate fertilizer produced from the process shall not exceed 40 tons per hour or 16,000 tons in any 12 month period.
2. The mass of ammonia in the exhaust from the process shall not exceed 10.5 lb/hr.
3. The concentration of ammonia in the exhaust from the process shall not exceed 275 ppmv.
4. The mass of fluoride in the exhaust from the process shall not exceed 0.016 lb/hr.
5. The concentration of fluoride in the exhaust from the process shall not exceed 8 ppmv.
6. The mass of PM10 in the exhaust from the process shall not exceed 1.26 lb/hr.
7. The concentration of PM10 in the exhaust from the process shall not exceed 0.009 gr/dscf at 7% oxygen.

These emission rates and stack gas concentration limits are based on stack test data provided by the mobile pipe reactor (see Appendix G.)

2.4 Liquid Fertilizer Storage and Handling

The storage and blending of liquid fertilizer products may result in the emission of ammonia. Emissions from the liquid fertilizer storage and handling process are expected to be generated as follows:

- Fugitive working loss ammonia emissions from filling 30,000-gallon storage containers in Tank Farm 1 containing Urea in solution; max pump rate = 500 gpm
- Fugitive breathing loss ammonia emissions from 30,000-gallon storage containers in Tank Farm 1 containing Urea in solution; max containers = 9

2.4.1 Storage of Urea Solutions – Ammonia

As explained in Section 2.2.2, experience has shown that there is little, if any, ammonia odors when storing and handling liquid fertilizers containing Urea in solution because the ammonia is complexed in the solution. Therefore, it is assumed that the ammonia concentration above the surface of the solution in the blender is approximately 100 ppmv (ammonia has an odor threshold of 5 – 50 ppmv). Using the Ideal Gas Law formula to find the Volume of one lb-mol of ammonia, the ammonia concentration above the surface of the solution in the blender was converted from ppmv to pounds of ammonia per cubic foot of gas.

To be conservative, the emission calculations assume that working losses and breathing losses from the handling of a product that is composed primarily of urea solution occur simultaneously in all 9 of the 30,000-gallon storage tanks in Tank Farm 1. The emission calculations are summarized in Appendix C8.

2.5 Seed Storage and Handling

Particulate emissions (PM, PM10, and PM2.5) from the seed storage and handling process are expected to be generated as follows:

- Fugitive emissions from truck (bottom) unloading of seed; max process rate = 30 Ton/hr.
- Fugitive emissions from conveyor transfer drops and drops to storage silos (load-in); max process rate = 30 Ton/hr.
- Fugitive emissions from conveyor transfer drops and truck load-out (load-out); max process rate = 30 Ton/hr.

The proposed maximum annual seed throughput for this process equals: 500 ton/year for location 1 and 125 ton/year for location 2.

2.5.1 Seed Receiving, Handling, Storage, and Shipping – PM

The emission factors for grain handling were used for the seed handling processes. The grain handling emission factors are described in Chapter 9.9 of AP-42, Table 9.9.1-1. For purposes of carrying out emission calculations the following emission sources from Table 9.9.1-1 were referenced: Grain receiving from hopper truck, Grain handling (conveyors), Storage bins, Grain shipping to a truck. The emission factor units are reported in lb/Ton for PM, PM10, and PM2.5. The emission calculations associated with the conveyance of seed is provided in Appendix C9.

2.6 Fuel-Burning Equipment

Emissions of particulates (PM, PM10, PM2.5), Carbon monoxide, Nitrogen dioxide, VOCs, and Sulfur dioxide from the hot water heaters are expected to be generated as follows:

- Point source emissions from burning propane as a fuel source; max process rate = 2.5 MMBtu/hr.

The proposed maximum annual throughput of propane to be used by the hot water heaters equals: 35,000-gallon/year.

2.6.1 Propane-Fired Hot Water Heater – PM

The emission factors for propane combustion are described in Chapter 1.5 of AP-42, Table 1.5-1. The emission calculations associated with the propane-fire hot water heater are provided in Appendix C10.

3.0 SUMMARY AND ANALYSIS OF EMISSION RATES

The emissions of the proposed sources are described in detail in Appendix C.

A summary of criteria pollutant emissions is summarized in Appendix C1, and TAP emissions are summarized in Appendix C2.

The ammonia emissions from sources other than the MPR are less than the WAC De Minimis Emission Rate for ammonia (see Appendix C2).

MPR ammonia emissions (including all other potential emissions of ammonia) are demonstrated to comply with the WAC 173-460 air toxics requirements via a modeling analysis against the ASIL for ammonia (See Appendix D).

MPR fluoride emissions are demonstrated to comply with the WAC 173-460 air toxics requirements by comparing the fluoride emission rate against the SQER.

The site-wide actual particulate emissions (PM, PM10, and PM2.5) are less than the levels listed in the WAC 173-400-110(5) Exemption Levels Table. Thus, the source will comply with the National Ambient Air Quality Standard (NAAQS).

The site-wide uncontrolled emissions for the federally regulated HAPs are well below the major source threshold: 10 ton/year for any HAP or 25 ton/year or more of any combination of HAPs.

4.0 REGULATORY REVIEW

The only process or equipment which may potentially have specific regulatory standards are the water heaters.

4.1 Water Heater

4.1.1 40 CFR Part 60 Subpart Dc

This regulation is applicable to boilers that have a maximum design heat input capacity less than 30 MMBTU/hr but greater than 10 MMBTU/hr. Each hot water heater at this facility will have a maximum firing rate of 2.5MMBTU/hr. Thus, this regulation does not apply to these water heaters.

4.1.2 40 CFR Part 63 Subpart JJJJJJ

This regulation is not applicable because gas fired boilers are exempt pursuant to 40 CFR Part 63.11195(e). The regulation includes propane fired boilers in its definition of gas fired boilers, which are exempt from the regulation.

5.0 BACT ANALYSIS

5.1 Dry Fertilizer Process Conveyance Drops

BACT for dry fertilizer conveyance is choke feeding the material drop from the transportation container, the enclosure of conveyance devices, or operating the devices inside enclosed buildings. These are the technologies commonly used by these types of facilities across the US. This facility uses one or more of these techniques to minimize the emissions of particulate matter from the processes that transfer dry fertilizers.

5.2 Mobile Pipe Reactor

The BACT analysis for mobile pipe reactors is described in historical documentation submitted for the PNS mobile pipe reactor (see RME's TECHNICAL ANALYSIS IN SUPPORT OF NEW SOURCE REVIEW FOR A MOBILE PIPE REACTOR Revision No. 1 dated February 1, 2013). BACT for these systems is the use of a packed bed evaporative cooler and demister pads.

5.3 Liquid Fertilizer Storage, Handling, and Blending

BACT for liquid fertilizers that contain urea in solution is not required because the potential ammonia emissions that may evolve when formulating, or storing and handling, the aqueous solutions containing urea are less than the WAC De Minimis Emission Rate for ammonia.

5.4 Seed Process Conveyance Drops

BACT for seed conveyance is choke feeding the material drop from the transportation container, the enclosure of conveyance devices, or operating the devices inside enclosed buildings. These are the technologies commonly used by these types of facilities across the US. This facility uses one or more of these techniques to minimize the emissions of particulate matter from the processes that transfer seed.

5.5 Hot Water Heater

The potential emissions for the following pollutants are less than the levels listed in the WAC 173-400-110(5) Exemption Levels Table: PM, PM10, PM2.5, carbon monoxide, volatile organic compounds, and sulfur dioxide. Further, the potential emissions of sulfur dioxide are less than the WAC De Minimis Emission Rate. Lastly, the actual emissions of nitrogen oxides are less than the levels listed in the WAC 173-400-110(5) Exemption Levels Table. Therefore, BACT for the hot water heaters is not required.

6.0 SEPA REVIEW

Helena Agri-Enterprises, LLC plans to prepare and submit the required SEPA records to the Grant County Planning Department. Helena Agri-Enterprises, LLC will provide a copy of the final SEPA checklist and SEPA determination to WDOE after such documentation has been provided by the Grant County Planning Department.

APPENDICES