



Air Quality Permitting Response to Public Comments

April 1, 2011

Permit to Construct No. P-2010.0183

**Gem State Processing
Heyburn, Idaho**

Facility ID No. 067-00038

Prepared by:
Kevin Schilling, Modeling Coordinator
Darrin Mehr, Air Quality Analyst
Dan Pitman, P.E., Permit Writer
AIR QUALITY DIVISION

Final

Table of Contents

TABLE OF CONTENTS.....	2
1. BACKGROUND.....	3
2. PUBLIC COMMENT AND RESPONSES	4
APPENDIX A PUBLIC COMMENTS	8
APPENDIX B SULFUR DIOXIDE EMISSION INVENTORY FROM USE OF SULFITES	9

1. BACKGROUND

As deemed appropriate by the Director, the Department of Environmental Quality (DEQ) provided for public comment the proposed installation of a new potato processing facility Permit to Construct P-2010.0183 for Gem State Processing, LLC located in Heyburn, Idaho.

An opportunity for public comment was provided from January 3, 2011, through January 18, 2011. During this time, a member of the public requested a public comment period. DEQ provided the comment period from February 18, 2011, through March 21, 2011. Comments were provided via a letter.

2. PUBLIC COMMENT AND RESPONSES

Public comments regarding the permit analysis and air quality aspects of the proposed permit are summarized below and are followed by DEQ's response to the comments.

Comment 1:

As noted in the DEQ analysis of ambient impacts for the project, the modeled impacts for the facility are very close to allowable NAAQS limits. Under these circumstances even small changes in stack parameters such as stack height and diameter can substantially influence the ability of the facility to meet ambient impact analysis requirements. BAF notes that in the Gem State application, there are a number of stacks that extend 25 or more feet above the roof line and that have stack velocities exceeding 45 fps. From our experience this is a rather high stack velocity for this height of stack and requires significant additional blower capacity to achieve.

Similarly we note that that many of the building exhaust stacks range from 30-inches to 36-inches in diameter and exhaust 7000 to 16,000 acfm each. The combined venting from both process and building exhausts appears to be unusually large.

In this regard BAF notes that the current draft permit specifies the heights of the process stacks, but not the diameters, flow rates, or temperatures. Because attainment of stack velocities and temperatures is a significant component of Gem State's demonstration of compliance with ambient impact requirements, we believe the permit should include all these parameters and should also specify minimum requirements for monitoring and recordkeeping of same.

Response 1:

The permit requires emissions testing on the drum dryer stacks and bubble sheet dryer stacks. The permit has been amended to require the source test report, required to be submitted to DEQ, to include the following information:

- Measured stack height
- Measured stack temperature
- Measured stack diameter
- Measured stack flow rate in actual cubic feet per minute

DEQ will evaluate the data submitted in the source test report and require additional modeling as appropriate.

In addition, GEM state has evaluated all stack parameters used in the air dispersion model and has provided an additional certification that information is true, accurate, and complete based upon a review of manufacturer supplied data.

Gem State submitted an additional listing of exhaust parameters from Idaho Steel Products, the equipment manufacturer for this project. Idaho Steel Products provided a certification that the exhaust parameters for the main flake lines, referred to as drum fan hoods (DFH#1 – DFH#6); the snifter fans (SFD#1 – SFD#6); and the bubble sheet dryers (PRE1 and PRE2) match the values contained in the modeling demonstration.

Comment 2:

The dimensions and geometry of the ambient impacts model appear inconsistent with the scaled plot plan included in the Application. The scale drawing is included in Appendix A of the Application, and is titled "Gem State Processing - Permit Plan", dated 12.14.10 and prepared by Idaho Steel Products. The

drawing includes a graphic scale, which when printed out at 11-in x 17-in. size as embedded in the PDF file of the Application, appears to be about 1.18-in to 100-ft, or 1.0-in to 84.7-ft. Thus on the scale plan presented in Appendix A, the width of the processing building on the northwest area parallel to the railroad tracks would be about 400 ft. However, in the air dispersion model used for ambient impact analysis, this same distance appears to be 483 feet. Similar discrepancies appear with almost all other comparisons between the scale drawing and the air dispersion model.

Response 2:

The comment was correct. The scale on the plot plan in the original application did not provide an accurate correlation between the plot plan and the modeling setup. Gem State has submitted a revised facility plot plan that depicts the setup in the modeling demonstration more accurately.

Comment 3:

The buildings and fences on the scale drawing also appear to be on a different scale than the graphic scale indicator depicted on the same drawing. Buildings and fences appear to be on a scale of about 1.0-in to 103~ft (compare to the above-stated 1.0-in to 84.7-ft.). Also, the scale drawing shows the two legs of the building as being at right angles to each other, whereas the buildings in the DEQ approved model show them to be somewhat non-square. Finally, the buildings on the scale drawing show each leg of the building to be of uniform width (ignoring the protrusions from the main structure), whereas, in the DEQ-approved model, the north leg of the building shows a taper to a narrower width at the far north end.

Response 3:

The removal of the National Dryer emissions unit from the Permit to Construct application resulted in a change to the design of the processing building. The updated building dimensions were used in Gem State's final modeling setup. DEQ accepted a copy of the preliminary plat plan that was generated by Desert West Land Surveys, LLC, as an accurate depiction of Gem State's property boundary and the processing building. DEQ review noted a few minor differences between the dimensions called out on this plot plan and the modeling input file, but DEQ determined the model setup was sufficiently accurate to reasonably assure NAAQS compliance.

An example of a discrepancy is the distance between easternmost corner of the building and the property boundary. The plot plan calls out a distance of 36.4 feet and the plan and its scale confirm the distance is 36 feet. The model input depicts this distance as 49 feet. This will have no effect on the compliance determination for this project. The distance between the building and the ambient air boundary along the railroad right of way was conservatively placed at a distance varying between 1.5 and 2 feet; whereas the plot plan calls out a distance of 5 feet.

Comment 4:

Gem State's application states that the nominal height of the building is 30 feet. The modeling they provided to DEQ shows the buildings to have been modeled as 28 feet tall. Modeling protocol requires that the building height reflect the highest obstruction to wind flow. Therefore, BAF believes the modeling should be conducted with the building height set to 30 feet tall.

Response 4:

Gem State submitted revised modeling using a building height of 29.83 feet based on the average of the low and high ends of what was described as a sloped roof. The stack heights of the exhaust vents on the roof were

maintained at 35 feet above grade as in the original modeling demonstration. This change adequately addresses concerns with the modeled building height.

Comment 5:

Details of the ambient impacts analysis of emissions from baghouses are not clear. Page 18 of the 14 Feb 2011 memo "Modeling Demonstration for a PTC Application for the Proposed Construction of a Greenfield Potato Dehydration Facility in Heyburn, Idaho" from Darrin Mehr to Dan Pitman states:

JBR did not provide documentation justifying why bin vent baghouses and the rail load-out baghouse were-modeled as volume sources rather than point sources. DEQ determined the source should be modeled as a point source rather than a volume source after review of the characteristics of the emissions point. [emphasis added]

Nonetheless, in the copies of the DEQ-accepted modeling files, all of the bin vent baghouses and the rail load-out baghouse were still represented as volume sources instead of point sources.

Response 5:

Gem State's revised modeling demonstration altered the rail load and silo bin vent baghouses from volume sources to point sources. The response to comments modeling run identifies these sources as RAILROAD and SILOBIN1. These baghouses were modeled as point sources exhausting horizontally. The regulatory guideline version of AERMOD, Version 09292, was used for the modeling runs. The exit velocity was set at 0.001 meters per second to negate any momentum buoyancy of the exhaust plume because of the horizontal orientation. The exit diameter was set to 0.001 meters to negate the effect of stack tip downwash. Each source was assumed an exit temperature of 70 degrees Fahrenheit.

Comment 6:

Across the railroad tracks from the Gem Building is a building that is occupied by another party. Visual estimates of the height of this building based on images from Google Earth's "Street View" photos indicate the top elevation of this building could be 45 feet (or more) above ground. If so, this building would be sufficiently tall and close to the Gem State sources to be included in the BPIP downwash analysis.

Response 6:

Gem State's response to comments included a revised modeling demonstration that included the former Simplot building located to the west of the Gem State's building. At an assumed height of 45 feet for the Simplot building such a structure would be considered for downwash effects if located within 225 feet of any point of emissions within Gem State's facility.

The results of the revised modeling indicate that inclusion of the Simplot building had negligible effects on the design concentrations for this project. The nearby stacks were of sufficient height to limit downwash effects from the nearby building.

Comment 7:

The applicant used AP 42 emissions factors for all combustion emissions except those of the boilers (Boiler combustion emissions were based on manufacturer-specific emissions factors.) It has been found that CO emissions from process burners often reach levels three to four times higher than those reported in AP 42. We believe it would be prudent to require the applicant to include emissions of CO when conducting stack tests on the Bubble Sheet Dryers.

Response 7:

In the case of Gem State Processing, carbon monoxide is regulated for two reasons: one is to assure that the major facility threshold of 100 tons per year is not exceeded and the other is to assure that the National Ambient Air Quality Standard is not exceeded.

Each Bubble Sheet Dryer is estimated to emit 2.11 tons per year and facility-wide carbon monoxide emissions are estimated to be 39.73 tons per year. If emissions from each bubble sheet dryer increased by a factor of 4, or increased to 8.44 tons per year each, the total facility-wide emissions of carbon monoxide would be 52.4 tons per year. Gem State may emit 15 times more carbon monoxide than what was estimated from each Bubble Sheet Dryer and still not exceed the 100 ton per year major facility threshold. DEQ does not believe a source test for carbon monoxide on the Bubble Sheet Dryers is warranted because there is an adequate margin between potential emissions and the threshold.

A four-fold increase in CO emissions from each of the two Bubble Sheet Dryers would increase facility-wide potential emissions to 13.5 pounds per hour. The presumptive minimum modeling threshold for CO is 14 pounds per hour. DEQ will not request that Gem State Processing model CO emissions to demonstrate compliance with the 1-hour and 8-hour CO National Ambient Air Quality Standards since estimated emissions are well below the modeling threshold. Additionally, DEQ does not believe a source test for carbon monoxide on the Bubble Sheet Dryers is warranted because even if emissions were to increase by a factor of 4, emissions would remain below the modeling threshold.

Comment 8:

The applicant did not account for emissions of S02 that result from the conversion of sulfites that are typically added to potatoes during dehydration. If the facility expects to utilize sulfites in its processes, we believe the permit should require stack testing for S02 from the drum dryers, sniffers, and the Bubble Sheet dryers. Further, since S02 emissions resulting from the conversion of sulfites were not included in the application materials submitted prior to January 1, 2011, we believe the impacts of any such S02 emissions should be compared to the new 1-hour NAAQS for S02.

Response 8:

Gem State has provided an emission inventory for sulfur dioxide from the use of sulfites; the emission inventory is included in Appendix B. This emission inventory combined with the emissions of sulfur dioxide that result from natural gas combustion at the facility results in facility-wide sulfur dioxide emissions of 0.16 pounds per hour which is below the 0.2 pound per hour sulfur dioxide modeling threshold. Even if all of the sulfite used was converted to sulfur dioxide the total facility wide sulfur dioxide emission inventory would be 0.92 pounds per hour. Sulfur dioxide emissions from this facility at that hypothetical emission rate are well below discretionary thresholds established by DEQ to assure NAAQS compliance.

The one hour sulfur dioxide emission standard will not be a law until the adjournment of the 2011 legislative session; this permit was issued prior to adjournment and the one hour standard does not apply.

Appendix A

Public Comments Submitted for

Permit to Construct No. P-2010.0183

March 21, 2011

Faye Weber
Air Quality Division
DEQ State Office
1410 N. Hilton
Boise, ID 83706

SUBJECT: Public Comment Opportunity Regarding Proposed Air Quality Permit to Construct for Gem State Processing Plant, Heyburn, Idaho

Dear Ms. Weber,

Basic American Foods (BAF) would like to thank the Department of Environmental Quality (DEQ) for providing the opportunity for public comment regarding the proposed permit to construct for the Gem State Processing, LLC facility in Heyburn.

We believe it is in the best interest of everyone that all environmental permits accurately reflect the conditions of the facilities in question. Only then can the Department ensure that the environment will be protected, that permits will be fair to everyone, and that a "level playing field" will be encouraged for all processors.

BAF would like to offer the following comments regarding the subject draft Gem State Processing permit to construct:

- As noted in the DEQ analysis of ambient impacts for the project, the modeled impacts for the facility are very close to allowable NAAQS limits. Under these circumstances even small changes in stack parameters such as stack height and diameter can substantially influence the ability of the facility to meet ambient impact analysis requirements. BAF notes that in the Gem State application, there are a number of stacks that extend 25 or more feet above the roof line and that have stack velocities exceeding 45 fps. From our experience this is a rather high stack velocity for this height of stack and requires significant additional blower capacity to achieve.

Similarly we note that that many of the building exhaust stacks range from 30-inches to 36-inches in diameter and exhaust 7000 to 16,000 acfm each. The combined venting from both process and building exhausts appears to be unusually large.

In this regard BAF notes that the current draft permit specifies the heights of the process stacks, but not the diameters, flow rates, or temperatures. Because attainment of stack velocities and temperatures is a significant component of Gem State's demonstration of compliance with ambient impact requirements, we believe the permit should include all these parameters and should also specify minimum requirements for monitoring and recordkeeping of same.

- The dimensions and geometry of the ambient impacts model appear inconsistent with the scaled plot plan included in the Application. The scale drawing is included in Appendix A of the Application, and is

titled "Gem State Processing – Permit Plan", dated 12.14.10 and prepared by Idaho Steel Products. The drawing includes a graphic scale, which when printed out at 11-in x 17-in. size as embedded in the PDF file of the Application, appears to be about 1.18-in to 100-ft, or 1.0-in to 84.7-ft. Thus on the scale plan presented in Appendix A, the width of the processing building on the northwest area parallel to the railroad tracks would be about 400 ft. However, in the air dispersion model used for ambient impact analysis, this same distance appears to be 483 feet. Similar discrepancies appear with almost all other comparisons between the scale drawing and the air dispersion model.

- The buildings and fences on the scale drawing also appear to be on a different scale than the graphic scale indicator depicted on the same drawing. Buildings and fences appear to be on a scale of about 1.0-in to 103-ft (compare to the the above-stated 1.0-in to 84.7-ft.). Also, the scale drawing shows the two legs of the building as being at right angles to each other, whereas the buildings in the DEQ-approved model show them to be somewhat non-square. Finally, the buildings on the scale drawing show each leg of the building to be of uniform width (ignoring the protrusions from the main structure), whereas, in the DEQ-approved model, the north leg of the building shows a taper to a narrower width at the far north end.
- Gem State's application states that the nominal height of the building is 30 feet. The modeling they provided to DEQ shows the buildings to have been modeled as 28 feet tall. Modeling protocol requires that the building height reflect the highest obstruction to wind flow. Therefore, BAF believes the modeling should be conducted with the building height set to 30 feet tall.
- Details of the ambient impacts analysis of emissions from baghouses are not clear. Page 18 of the 14 Feb 2011 memo "Modeling Demonstration for a PTC Application for the Proposed Construction of a Greenfield Potato Dehydration Facility in Heyburn, Idaho" from Darrin Mehr to Dan Pitman states:

JBR did not provide documentation justifying why bin vent baghouses and the rail load-out baghouse were-modeled as volume sources rather than point sources. DEQ determined the source should be modeled as a point source rather than a volume source after review of the characteristics of the emissions point. [emphasis added]

Nonetheless, in the copies of the DEQ-accepted modeling files, all of the bin vent baghouses and the rail load-out baghouse were still represented as volume sources instead of point sources.

- Across the railroad tracks from the Gem Building is a building that is occupied by another party. Visual estimates of the height of this building based on images from Google Earth's "Street View" photos indicate the top elevation of this building could be 45 feet (or more) above ground. If so, this building would be sufficiently tall and close to the Gem State sources to be included in the BPIP downwash analysis.
- The applicant used AP 42 emissions factors for all combustion emissions except those of the boilers (Boiler combustion emissions were based on manufacturer-specific emissions factors.) It has been

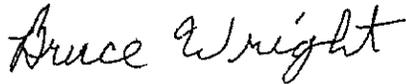
Letter to Faye Weber from Bruce Wright
March 21, 2011
Page 3

found that CO emissions from process burners often reach levels three to four times higher than those reported in AP 42. We believe it would be prudent to require the applicant to include emissions of CO when conducting stack tests on the Bubble Sheet Dryers.

- The applicant did not account for emissions of SO₂ that result from the conversion of sulfites that are typically added to potatoes during dehydration. If the facility expects to utilize sulfites in its processes, we believe the permit should require stack testing for SO₂ from the drum dryers, snifters, and the Bubble Sheet dryers. Further, since SO₂ emissions resulting from the conversion of sulfites were not included in the application materials submitted prior to January 1, 2011, we believe the impacts of any such SO₂ emissions should be compared to the new 1-hour NAAQS for SO₂.

Should DEQ address these concerns, BAF will be satisfied that a sound and well-founded permit has been issued. Again, we would like to thank DEQ for providing the opportunity to comment on this PTC application.

Respectfully,



Bruce Wright
Corporate Environmental Programs Manager
Basic American Foods

Cc: John Barnecut – BAF Legal

Appendix B

Sulfur Dioxide Emission Inventory From use of Sulfites Gem State Processing

SO₂ EMISSIONS FROM SULFITE IN DRYING PROCESS

Source	Fraction of Product Having Sulfite (lb Sulfite/lb Product)	Concentration (lb Sulfite/lb Sulfite Product) ^a	Fraction of Sulfite Converted to SO ₂ (lb SO ₂ /lb Sulfite) ^b	Throughput (lb/hr dry)	SO ₂ Emissions (lb/hr)	SO ₂ Emissions (t/yr)
Drum Dryer Drum Fan Hood #1 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum#1 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Drum Dryer Drum Fan Hood #2 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum #2 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Drum Dryer Drum Fan Hood #3 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum #3 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Drum Dryer Drum Fan Hood #4 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum #4 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Drum Dryer Drum Fan Hood #5 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum #5 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Drum Dryer Drum Fan Hood #6 ^c	0.05	0.0006	0.10	2250	0.01 lb/hr SO ₂	0.03 tpy SO ₂
Drum Dryer Snifter Fan Drum #6 ^c	0.05	0.0006	0.10	1.125	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Bubble Sheet Dryer #1 ^f	0.05	0.0006	0.10	202.5	0.00 lb/hr SO ₂	0.00 tpy SO ₂
Bubble Sheet Dryer #2 ^f	0.05	0.0006	0.10	202.5	0.00 lb/hr SO ₂	0.00 tpy SO ₂
TOTAL =					0.04 lb/hr SO₂	0.18 tpy SO₂

^aWorst-case scenario. Concentration varies between 0.0002 and 0.0006 lb Sulfite/lb Sulfite Product.

^bFrom BAF Tier II Operating Permit Application- Table C-6