Statement of Basis

Permit to Construct No. P-2012.0063
Project ID 61120

IdaPro, LLC - Rupert
Rupert, Idaho

Facility ID 067-00043

Draft for Facility Review

January 31, 2013
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Permit Writer

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

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
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 units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CAS No.	Chemical Abstracts Service registry number
CBP	concrete batch plant
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
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
FEC	Facility Emissions Cap
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
HMA	hot mix asphalt
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
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards

O&M	operation and maintenance
O_2	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
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
POM	polycyclic organic matter
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
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TEQ	toxicity equivalent
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd^3	cubic yards
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

IdaPro, LLC - Rupert (IdaPro) is a potato processing company that processes peels and other potato waste products via dehydration. The proposed new Rupert facility will produce dehydrated potato flakes and other dehydrated potato products. The potato products are dried to 8% moisture and are broken up, packaged or stored, and then sold. Wet solids enter at the largest diameter of the drum dryer, away from hot gases combustion gases. Hot air enters the feed zone at the centerline of the drum dryer while the wet solids enter away from the center, landing directly on the flighting. As the drum dryer rotates, the flights lift the wet feed upward. With further rotation, the particles are gradually released to fall downward through the hot gases in a thin curtain.

Raw peels and potato waste products are trucked to the facility. The potato material is then shredded and routed to the drum dryer. The dried potato products from the drum dryer are sent through a cyclone prior to being exhausted out the stack. The cyclone (considered process equipment) is used to minimize the moisture from the dried potato products, recover the dried potato products, and to recover starch from the waste water. The exhaust from the cyclone is then sent to a stack which will be located at the northern end of the facility. The finished product is then stored or trucked offsite. An 8.0 MMBtu/hr natural-gas fired air makeup unit (AMU) is also used onsite for comfort air circulation and heating within the facility. Natural gas combustion emissions from the AMU are routed through the same exhaust stack as the drum dryer.

Permitting History

This is the initial PTC for a new facility thus there is no permitting history.

Application Scope

This permit is the initial PTC for this facility.

The applicant has proposed to:

- Install and operate a new natural gas-fired Drum Dryer and an Air Makeup Unit.

Application Chronology

October 11, 2012	DEQ received an application and an application fee.
October 17 – Nov. 1, 2012	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
October 24, 2012	DEQ denied pre-permit construction.
November 6, 2012	DEQ determined that the application was incomplete.
November 9, 2012	DEQ received supplemental information from the applicant.
December 5, 2012	DEQ determined that the application was complete.
December 13, 2012	DEQ made available the draft permit and statement of basis for peer and regional office review.
January 7, 2013	DEQ made available the draft permit and statement of basis for applicant review.
January 25, 2013	DEQ received the permit processing fee.
January 31, 2013	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID No.	Sources	Control Equipment	Emission Point ID No.
1	Drum dryer: Manufacturer: Dupps Model: QuadPass Four Zone Rotary Drum Dryer Burner Manufacturer: Maxon Burner Model: Kindizer LE 14" low NO_X Manufacture Date: 2012 Heat input rating: 55.0 MMBtu/hr Max. potato production: 12,174 lb/hr Fuel: Natural gas only	N/A	Exhaust stack: Exit height: 79 ft (23.47 m) Exit diameter: 4.0 ft (1.22 m) Exit flow rate: 80,800 acfm Exit temperature: 185 °F (358.2 K)
2	Air makeup unit: Manufacturer: The King Co. Model: 2180-7F-F-HRS Manufacture Date: 1995 Heat input rating: 7.975 MMBtu/hr Fuel: Natural gas only		

Emissions Inventories

Potential to Emit

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

Using this definition of Potential to Emit an emission inventory was developed for the Potato Processing operation, the Drum Dryer, and the Air Makeup Unit operations at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutant, GHG, HAP PTE were based on emission factors from AP-42, operation of 8,760 hours per year, and process information specific to the facility for this proposed project.

Uncontrolled Potential to Emit

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

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

The following table presents the uncontrolled Potential to Emit for regulated air pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this potato processing operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility and is the same as the Potential to Emit.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC	CO_2e
	T/yr	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources						
Drum dryer	18.56	0.14	11.81	19.84	1.30	29,630
Air makeup unit	0.26	0.02	3.44	2.89	0.19	
Total, Point Sources	**18.82**	**0.16**	**15.25**	**22.73**	**1.49**	**29,630**

The following table presents the uncontrolled Potential to Emit for HAP pollutants as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations and the assumptions used to determine emissions for each emissions unit. For this potato processing operation uncontrolled Potential to Emit is based upon a worst-case for operation of the facility and is the same as the Potential to Emit.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Hazardous Air Pollutants		PTE (T/yr)
585 HAPs	Chromium	3.79E-04
	Cobalt	2.27E-05
	Hexane	4.86E-01
	Manganese	1.03E-04
	Naphthalene	1.65E-04
	Selenium	6.48E-06
	Toluene	9.20E-04
586 HAPs	Arsenic	5.43E-05
	Benzene	5.69E-04
	Beryllium	5.26E-05
	Cadmium	2.97E-04
	Formaldehyde	2.03E-02
	Nickel	5.69E-04
	POM	4.99E-05
Total	**Total**	**0.51**

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

This is a new facility. Therefore, pre-project emissions are set to zero for all criteria pollutants.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 4 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	T/yr[b]
Drum dryer	4.24	18.56	0.03	0.14	2.70	11.81	4.53	19.84	0.30	1.30	29,630
Air makeup unit	0.06	0.26	0.01	0.02	0.78	3.44	0.66	2.89	0.04	0.19	
Post Project Totals	**4.30**	**18.82**	**0.04**	**0.16**	**3.48**	**15.25**	**5.19**	**22.73**	**0.34**	**1.49**	**29,630**

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

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 5 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post Project Potential to Emit	4.30	18.82	0.04	0.16	3.48	15.25	5.19	22.73	0.34	1.49	29,630
Changes in Potential to Emit	**4.30**	**18.82**	**0.04**	**0.16**	**3.48**	**15.25**	**5.19**	**22.73**	**0.34**	**1.49**	**29,630**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Barium, soluble compounds, as Ba	0.0	2.72E-04	0.0003	0.033	No
Chromium	0.0	8.65E-05	0.00009	0.033	No
Cobalt metal, dust, and fume	0.0	5.19E-06	0.000005	0.0033	No
Copper dusts & mists, as Cu	0.0	5.25E-05	0.00005	0.067	No
Hexane	0.0	1.11E-01	0.1110	12	No
Manganese dust & compounds	0.0	2.35E-05	0.000024	0.333	No
Molybdenum soluble compounds	0.0	6.79E-05	0.000068	0.333	No
Naphthalene	0.0	3.77E-05	0.000038	3.33	No
Pentane	0.0	1.61E-01	0.1610	118	No
Selenium	0.0	1.48E-06	0.0000015	0.013	No
Toluene	0.0	2.10E-04	0.00014	25	No
Vanadium	0.0	1.42E-04	0.00021	0.003	No
Zinc metal	0.0	1.79E-03	0.0018	0.667	No

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

Table 7 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Arsenic	**0.0**	**1.24E-05**	**0.000012**	**1.5E-06**	**Yes**
Benzene	0.0	1.30E-04	0.00013	8.0E-04	No
Beryllium	0.0	1.20E-05	0.000012	2.8E-05	No
Cadmium	**0.0**	**6.79E-05**	**0.00007**	**3.7E-06**	**Yes**
Formaldehyde	**0.0**	**4.63E-03**	**0.0046**	**5.1E-04**	**Yes**
3-Methylcholanthrene	0.0	1.11E-07	0.00000011	2.5E-06	No
Nickel	**0.0**	**1.30E-04**	**0.000038**	**2.7E-05**	**Yes**
POM (7-PAH)	**0.0**	**1.14E-05**	**0.00013**	**2.0E-06**	**Yes**

a) Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

Some of the PTEs for carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is required for arsenic, cadmium, formaldehyde, nickel, and POM (7-PAH) because the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 8 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants		PTE (T/yr)
585 HAPs	Chromium	3.79E-04
	Cobalt	2.27E-05
	Hexane	4.86E-01
	Manganese	1.03E-04
	Naphthalene	1.65E-04
	Selenium	6.48E-06
	Toluene	9.20E-04
586 HAPs	Arsenic	5.43E-05
	Benzene	5.69E-04
	Beryllium	5.26E-05
	Cadmium	2.97E-04
	Formaldehyde	2.03E-02
	Nickel	5.69E-04
	POM	4.99E-05
Total	**Total**	**0.51**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, and Pb from this project were below applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

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

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

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Minidoka County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

[1] Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

Facility Classification

"Synthetic Minor" classification for criteria pollutants is defined as the uncontrolled Potential to Emit for criteria pollutants are above the applicable major source thresholds and the Potential to Emit for criteria pollutants fall below the applicable major source thresholds. Therefore, the following table compares the uncontrolled Potential to Emit and the Potential to Emit for criteria pollutants to the Major Source thresholds to determine if the facility will be "Synthetic Minor."

Table 9 UNCONTROLLED PTE AND PTE FOR REGULATED AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Pollutant	Uncontrolled PTE (T/yr)	PTE (T/yr)	Major Source Thresholds (T/yr)	Uncontrolled PTE Exceeds the Major Source Threshold and PTE Exceeds the Major Source Threshold?
$PM_{10}/M_{2.5}$	18.82	18.82	100	No
SO_2	0.16	0.16	100	No
NO_X	15.25	15.25	100	No
CO	22.73	22.73	100	No
VOC	1.49	1.49	100	No
CO_2e	29,630	29,630	100,000	No

"Synthetic Minor" classification for HAP pollutants is defined as the uncontrolled Potential to Emit for HAP pollutants are above the applicable major source thresholds and the Potential to Emit for HAP pollutants fall below the applicable major source thresholds. Therefore, the following table compares the uncontrolled Potential to Emit and the Potential to Emit for HAP pollutants to the Major Source thresholds to determine if the facility will be "Synthetic Minor."

Table 10 UNCONTROLLED PTE AND PTE FOR HAZARDOUS AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

HAP Pollutant	Uncontrolled PTE (T/yr)	PTE (T/yr)	Major Source Thresholds (T/yr)	Uncontrolled PTE Exceeds the Major Source Threshold and PTE Exceeds the Major Source Threshold?
Chromium	3.79E-04	3.79E-04	10	No
Cobalt	2.27E-05	2.27E-05	10	No
Hexane	4.86E-01	4.86E-01	10	No
Manganese	1.03E-04	1.03E-04	10	No
Naphthalene	1.65E-04	1.65E-04	10	No
Selenium	6.48E-06	6.48E-06	10	No
Toluene	9.20E-04	9.20E-04	10	No
Arsenic	5.43E-05	5.43E-05	10	No
Benzene	5.69E-04	5.69E-04	10	No
Beryllium	5.26E-05	5.26E-05	10	No
Cadmium	2.97E-04	2.97E-04	10	No
Formaldehyde	2.03E-02	2.03E-02	10	No
Nickel	5.69E-04	5.69E-04	10	No
POM	4.99E-05	4.99E-05	10	No
Total	**0.51**	**0.51**	**25**	No

As demonstrated in Table 9, the facility has an uncontrolled PTE and a PTE for $PM_{10}/PM_{2.5}$, SO_2, NO_X, CO, and VOC emissions less than the Major Source thresholds of 100 T/yr for each pollutant and less than 100,000 T/yr for CO_2e. In addition, as demonstrated in Table 10 the facility has an uncontrolled PTE and PTE for HAP emissions less than the Major Source threshold of 10 T/yr for each HAP and for all HAPs combined less than the Major Source threshold of 25 T/yr. Therefore, this facility does not require a Title V permit is not designated as a Synthetic Minor facility.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The Applicant has requested that a PTC be issued to the facility for the proposed new emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 Tier II Operating Permit

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

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM_{10} emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.4 and 3.4.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 Standards for New Sources

The fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. As both the drum dryer and the air makeup unit produce heat for direct heat transfer (the products of combustion come into contact with the potato waste being dried) the requirements of this Rule are not applicable and no further discussions is required.

Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)

IDAPA 58.01.01.701 Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment's process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979 and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following four equations:

IDAPA 58.01.01.701.01.a: If PW is $< 9{,}250$ lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.701.01.b: If PW is $\geq 9{,}250$ lb/hr; $E = 1.10\ (PW)^{0.25}$

For equipment that commenced prior to October 1, 1979, the PM allowable emission rate is based on one of the following equations:

IDAPA 58.01.01.702.01.a: If PW is $< 17{,}000$ lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.702.01.b: If PW is $\geq 17{,}000$ lb/hr; $E = 1.12\ (PW)^{0.27}$

For the new potato processing (the drum dryer and the air makeup unit both vent to same exhaust stack) emissions unit proposed to be installed as a result of this project with a proposed throughput of 12,174 lbs/hr (292,176 lbs/day ÷ 24 hrs/day), E is calculated as follows:

Therefore, E is calculated as:

$E = 1.10 \times PW^{0.25} = 1.10 \times (12{,}174)^{0.25} = 11.55$ lb-PM/hr

As presented previously in the Emissions Inventories Section of this evaluation the post project PTE for this emissions unit is 4.30 lb-PM_{10}/hr. Assuming PM is 50% PM_{10} means that PM emissions will be 8.60 lb-PM/hr (4.30 lb-PM_{10}/hr ÷ 0.5 lb-PM_{10}/lb-PM). Therefore, compliance with this requirement has been demonstrated.

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

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

IDAPA 58.01.01.006 defines a Tier I source as "Any source located at a major facility as defined in Section 008." IDAPA 58.01.01.008.10 defines a Major Facility as either:

- For HAP a facility with the potential to emit ten (10) tons per year (T/yr) or more of any hazardous air pollutant, other than radionuclides, or
- The facility emits or has the potential to emit twenty-five (25) T/yr or more of any combination of any hazardous air pollutants, other than radionuclides.

or, for non-attainment areas (Note: The State of Idaho currently has no serious non-attainment areas therefore the Major Source threshold is defined as follows):

- The facility emits or has the potential to emit one hundred (100) tons per year or more of any regulated air pollutant. The fugitive emissions shall not be considered in determining whether the facility is major unless the facility is a "Designated Facility":

Therefore, it needs to be determined if this facility is a HAP Major Source. The following table compares this facility's post-project facility-wide annual PTE for all HAP emitted by the source to the HAP Major Source thresholds in order to determine if this facility is a HAP Major Source.

Table 11 PTE FOR THE HAZARDOUS AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Hazardous Air Pollutants	PTE (T/yr)	Major Source Threshold (T/yr)	Exceeds the Major Source Threshold?
Chromium	3.79E-04	10	No
Cobalt	2.27E-05	10	No
Hexane	4.86E-01	10	No
Manganese	1.03E-04	10	No
Naphthalene	1.65E-04	10	No
Selenium	6.48E-06	10	No
Toluene	9.20E-04	10	No
Arsenic	5.43E-05	10	No
Benzene	5.69E-04	10	No
Beryllium	5.26E-05	10	No
Cadmium	2.97E-04	10	No
Formaldehyde	2.03E-02	10	No
Nickel	5.69E-04	10	No
POM	4.99E-05	10	No
Total	**0.51**	**25**	**No**

As presented in the preceding table the PTE for each HAP is less than 10 T/yr and the PTE for all HAPs combined is less than 25 T/yr. Therefore, this facility is not a HAP Major Source subject to Tier I requirements.

Therefore, it needs to be determined if this facility is a criteria pollutant Major Source. As discussed previously the IdaPro facility is located in Minidoka County, which is designated as unclassifiable/attainment for $PM_{2.5}$, PM_{10}, SO_2, NO_X, CO, and Ozone for federal and state criteria air pollutants. Therefore, the following table compares the post-project facility-wide annual PTE for all criteria pollutants emitted by the source to the applicable criteria pollutant Major Source thresholds in order to determine if the facility is a criteria pollutant Major Source.

Table 12 PTE FOR REGULATED AIR POLLUTANTS COMPARED TO THE MAJOR SOURCE THRESHOLDS

Regulated Air Pollutants	PTE (T/yr)	Major Source Threshold (T/yr)	Exceeds the Major Source Threshold?
PM_{10}	18.82	100	No
SO_2	0.16	100	No
NO_X	15.25	100	No
CO	22.73	100	No
VOC	1.49	100	No
CO_2e	29,630	100,000	No

As presented in the preceding table the PTE for each criteria pollutant is less than 100 T/yr and less than 100,000 T/yr for CO_2e. Therefore, this facility is not a criteria pollutant Major Source subject to Tier I requirements.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

The facility is not subject to any NSPS requirements 40 CFR Part 60.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility is not subject to any MACT standards in 40 CFR Part 63.

Permit Conditions Review

This section describes the permit conditions for this initial permit or only those permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

DRUM DRYER

Initial Permit Condition 2.1 describes the process being permitted.

Initial Permit Condition 2.2 describes the equipment being permitted and the emissions control equipment (if applicable) being employed to control emissions from each emissions unit.

Initial Permit Condition 2.3 was included to list the criteria pollutant emissions limits for the drum dryer as proposed by the Applicant and verified and modeled by DEQ staff.

Initial Permit Condition 2.4 establishes a 20% opacity limit for the drum dryer stack, vents, or functionally equivalent openings associated with the drum dryer.

Initial Permit Condition 2.5 establishes that the permittee shall not allow, suffer, cause, or permit the emission of odorous gasses, liquids, or solids to the atmosphere in such quantities as to cause air pollution.

Initial Permit Condition 2.6 establishes that only natural gas shall be combusted in the drum dryer as proposed by the Applicant.

Initial Permit Condition 2.7 establishes a daily throughput limit for potato waste processing as proposed by the Applicant. This permit condition limits the PTE for $PM_{10}/PM_{2.5}$ emissions from the potato processing operation.

Initial Permit Condition 2.8 establishes that a Maxon model Kindizer LE 14" low NO_X burner shall be installed in the drum dryer as proposed by the Applicant. This permit condition limits the PTE for NO_X emissions from the drum dryer.

Initial Permit Condition 2.9 establishes that the Permittee shall implement an Odor Management Plan for the potato waste processing operation. This requirement was included because DEQ experience with potato waste processing operations is that they can generate a number of odor complaints.

Initial Permit Condition 2.10 specifies that the Permittee shall monitor and record daily the total potato waste processed in the drum dryer. This requirement was included to demonstrate compliance with the Throughput Limit permit condition.

Initial Permit Condition 2.11 specifies that the Permittee shall maintain records of all odor complaints received by the facility. This requirement was included to demonstrate compliance with the Odors permit condition.

Initial Permit Condition 2.12 requires that the Permittee perform a source test for $PM_{10}/PM_{2.5}$ emissions from the drum dryer exhaust stack within 180 days of startup. This requirement was included because there is very little information on $PM_{10}/PM_{2.5}$ emissions from potato waste processing operations.

Initial Permit Condition 2.13 specifies the source test methods that are to be used during the initial source test for $PM_{10}/PM_{2.5}$ emissions.

Initial Permit Condition 2.14 requires that the Permittee monitor and record the potato waste processed during the initial $PM_{10}/PM_{2.5}$ performance test. This requirement was included to ensure that the drum dryer is operating at worst-case normal operating conditions during the source test.

Initial Permit Condition 2.15 requires that the Permittee submit the source test report to DEQ for review.

AIR MAKEUP UNIT

Initial Permit Condition 3.1 describes the process being permitted.

Initial Permit Condition 3.2 describes the equipment being permitted and the emissions control equipment (if applicable) being employed to control emissions from each emissions unit.

Initial Permit Condition 3.3 was included to list the criteria pollutant emissions limits for the air makeup unit as proposed by the Applicant and verified and modeled by DEQ staff.

Initial Permit Condition 3.4 establishes a 20% opacity limit for the air makeup unit stack, vents, or functionally equivalent openings associated with the air makeup unit.

Initial Permit Condition 3.5 establishes that only natural gas shall be combusted in the air makeup unit as proposed by the Applicant.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

IDEQ PTC Forms

Facility Wide Potential to Emit Emission Inventory

Table 1. PRE PROJECT POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

*** Assumed to be Zero because this is the initial PTC for the facility.**

Table 2. POST PROJECT MAXIMUM POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

	Critieria Pollutant Emission Summary												
	NO_2 Emissions		CO Emissions		$PM_{2.5/10}$ Emissions		SO_2 Emissions		VOC Emissions		Lead Emissions		GHG Emissions
Description	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
QuadPass Drum Dryer	2.696	11.809	4.529	19.839	0.410	1.795	0.032	0.142	0.297	1.299	2.70E-05	1.18E-04	29,629.95
Air Makeup Unit	0.784	3.435	0.659	2.886	0.060	0.261	0.005	0.021	0.043	0.189	3.92E-06	1.72E-05	
Process Emissions	N/A	N/A	N/A	N/A	3.83	16.80	N/A	N/A	N/A	N/A	N/A	N/A	
Total	3.480	15.244	5.188	22.724	4.304	18.852	0.037	0.162	0.340	1.488	3.09E-05	1.35E-04	29,629.95

NSR Regulated air Pollutants are defined[1] as: Particulate Matter (PM-10, PM-2.5), Carbon Monoxide, Lead, Nitrogen Dioxide, Ozone (VOC), Sulfur Dioxide, all pollutants regulated by NSPS (40 CFR 60)(i.e. TRS, fluoride, sulfuric acid mist) & Class I & Class II Ozone Depleting Substances (40 CFR 82)(i.e. CFC, HCFC, Halon, etc.) The IdaPro facility is not a source of any pollutants regualted by NSPS other than NSR regulated air pollutants, nor is the facility a source of Class I or Class II Ozone Depleting Substances

** See spreadsheets prepared by JBR (included in Appendix F of the permit application for further information regarding emission factors and calculation assumptions.

IDEQ PTC Forms

Facility Wide Potential to Emit Emission Inventory

Table 3. UNCONTROLLED POTENTIAL TO EMIT FOR NSR REGULATED POLLUTANTS

	Critieria Pollutant Emission Summary												
	NOx Emissions		CO Emissions		PM-10 Emissions		SOx Emissions		VOC Emissions		Lead Emissions		GHG Emissions
Description	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	T/yr
QuadPass Drum Dryer	2.696	11.809	4.529	19.839	0.410	1.795	0.032	0.142	0.297	1.299	2.70E-05	1.18E-04	29,629.95
Air Makeup Unit	0.784	3.435	0.659	2.886	0.060	0.261	0.005	0.021	0.043	0.189	3.92E-06	1.72E-05	
Process Emissions	N/A	N/A	N/A	N/A	3.835	16.796	N/A	N/A	N/A	N/A	N/A	N/A	
Total	3.480	15.244	5.188	22.724	4.304	18.852	0.037	0.162	0.340	1.488	3.09E-05	1.35E-04	29,629.95

**** See spreadsheets prepared by JBR (included in Appendix E of the permit application for further information regarding emission factors and calculation assumptions.**

Uncontrolled and PTE are assumed identical because all units are operating 8,760 hr/yr.

IDEQ PTC Forms

Toxic Air Pollutant Emissions Inventory

Part 1. PRE- AND POST PROJECT NON-CARCINOGENIC TAP EMISSIONS SUMMARY POTENTIAL TO EMIT

NON-CARCINOGENS

Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling? (Y/N)	TAP Emissions (tpy)
Hexane	110-54-3	1.11E-01	0.00E+00	1.11E-01	12.00	No	4.87E-01
Naphthalene	91-20-3	3.77E-05	0.00E+00	3.77E-05	3.33	No	1.65E-04
Pentane	109-66-0	1.61E-01	0.00E+00	1.61E-01	118.00	No	7.03E-01
Toluene	108-88-3	2.10E-04	0.00E+00	2.10E-04	25.00	No	9.20E-04
Barium	7440-39-3	2.72E-04	0.00E+00	2.72E-04	0.03	No	1.19E-03
Chromium	7440-47-3	8.65E-05	0.00E+00	8.65E-05	0.03	No	3.79E-04
Cobalt	7440-48-4	5.19E-06	0.00E+00	5.19E-06	3.30E-03	No	2.27E-05
Copper	7440-50-8	5.25E-05	0.00E+00	5.25E-05	0.07	No	2.30E-04
Manganese	7439-96-5	2.35E-05	0.00E+00	2.35E-05	0.33	No	1.03E-04
Molybdenum	7439-98-7	6.79E-05	0.00E+00	6.79E-05	0.33	No	2.98E-04
Selenium	7782-49-2	1.48E-06	0.00E+00	1.48E-06	1.30E-02	No	6.49E-06
Vanadium	7440-62-2	1.42E-04	0.00E+00	1.42E-04	3.00E-03	No	6.22E-04
Zinc	7440-66-6	1.79E-03	0.00E+00	1.79E-03	0.67	No	7.85E-03

Part 2. PRE- AND POST PROJECT CARCINOGENIC TAP EMISSIONS SUMMARY POTENTIAL TO EMIT

CARCINOGENS

Pollutant	CAS #	TAP Emissions (lb/hr)	Pre-Project TAP Emissions (lb/hr)	Difference (lb/hr)	Screening Level (lb/hr)	Modeling? (Y/N)	TAP Emissions (tpy)
3-Methylcholanthrene	56-49-5	1.11E-07	0.00E+00	1.11E-07	2.50E-06	No	4.87E-07
Benzene	71-43-2	1.30E-04	0.00E+00	1.30E-04	8.00E-04	No	5.68E-04
Formaldehyde	50-00-0	4.63E-03	0.00E+00	4.63E-03	5.10E-04	Yes	2.03E-02
Naphthalene	91-20-3	3.77E-05	0.00E+00	3.77E-05	9.10E-05	No	1.65E-04
Arsenic	7440-38-2	1.24E-05	0.00E+00	1.24E-05	1.50E-06	Yes	5.41E-05
Beryllium	7440-41-7	7.41E-07	0.00E+00	7.41E-07	2.80E-05	No	3.25E-06
Cadmium	7440-43-9	6.79E-05	0.00E+00	6.79E-05	3.70E-06	Yes	2.98E-04
Nickel	7440-02-0	1.30E-04	0.00E+00	1.30E-04	2.70E-05	Yes	5.68E-04
POM (7-PAH)		1.14E-05	0.00E+00	1.14E-05	2.00E-06	Yes	4.99E-05

** See spreadsheets prepared by JBR (included in Appendix F of the permit application for further information regarding emission factors and calculation assumptions.

IDEQ PTC Forms
Facility Wide Hazardous Air Pollutant Potential to Emit

HAP MAXIMUM POTENTIAL TO EMIT EMISSIONS SUMMARY

HAP Pollutants	PTE (T/yr)
Benzene	5.68E-04
Formaldehyde	2.03E-02
Hexane*	4.87E-01
Naphthalene	1.65E-04
Toluene	9.20E-04
Cobalt	2.27E-05
Manganese	1.03E-04
Mercury	7.03E-05
Nickel	5.68E-04
Selenium	6.49E-06
Arsenic	5.41E-05
Beryllium	3.25E-06
Cadmium	2.98E-04
Chromium	3.79E-04
Total PAH	3.21E-05
Total	0.51

* Maximum Individual HAP

** See spreadsheets prepared by JBR (included in Appendix E of the permit application for

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Combustion Criteria Pollutant Emissions

Source	MMBtu/hr	Operational Hours/day[1]	Operational Hours/yr[1]	Emission Factors (lb/MMscf)					
				$PM_{2.5}/PM_{10}$[2]	NOx[3]	SO_2[2]	CO[3]	VOC[2]	Pb[2]
Drum Dryer	55	24	8760	7.6	50	0.6	84	5.5	0.0005
Air Makeup Unit	8	24	8760	7.6	100	0.6	84	5.5	0.0005

1. The hours are based on continual operations.
2. Emission factor Reference for $PM_{2.5}/PM_{10}$, SO_2, VOC & Pb: AP-42 Section 1.4, Natural Gas Combustion - Table 2: Total Particulate includes both filterable & condensible, SO_2 assume 100% conversion
3. Emission factor Reference for NO_x and CO: AP-42 Section 1.4, Natural Gas Combustion - Table 1: Small Boiler < 100 MMBtu (uncontrolled) for AMU, low-Nox burner for dryer

Combustion Source	Throughput (MMscf/hr)[1]	Emission Rates											
		$PM_{10}/PM_{2.5}$		NOx		SO_2		CO		VOC		Pb	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Drum Dryer	5.39E-02	0.410	1.79	2.696	11.81	0.032	1.42E-01	4.529	19.84	0.297	1.30	2.70E-05	1.18E-04
Air Makeup Unit	7.84E-03	0.060	0.26	0.784	3.44	0.005	2.06E-02	0.659	2.89	0.043	0.19	3.92E-06	1.72E-05
	Total	***0.47***	***2.06***	***3.48***	***15.24***	***0.04***	***0.16***	***5.19***	***22.72***	***0.34***	***1.49***	***3.09E-05***	***1.35E-04***

1. The throughput of each unit was determined by converting the heat rating from MMBtu/hr to MMscf/hr by dividing by a heating value of 1,020 btu/scf.

Greenhouse Emissions

Source	MMscf/yr[1]	Emission Factors (lb/MMscf)[2]			GW Potentials[3]			CO2e Totals (metric tpy)[4]		
		CO_2	N_2O	CH_4	CO_2	N_2O	CH_4	CO_2	N_2O	CH_4
Drum Dryer	472	120,000	2.2	2.3	1	310	21	25,710.95	146.12	10.35
Air Makeup Unit	69	120,000	2.2	2.3	1	310	21	3,739.77	21.25	1.51
								29,450.72	167.38	11.85
									Total	**29,629.95**

1. Fuel usage rate is based on the hourly rate and the operating hours of each unit.
2. Emission factor reference all pollutants is AP-42 Section 1.4, Natural gas Combustion - Table 2.
3. The Global Warming Potentials are derived from 40 CFR Part 98, Subpart A, Table A-1
4. The carbon dioxide equivalent is provided in metric tons whereby 2,204.6 pounds equal a ton.

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Combustion HAPs

Combustion Source	Emission Factors (lb/MMscf)[1]							
	Benzene	Formaldehyde	Hexane	Naphthalene	Toluene	Arsenic	Beryllium	PAH[2]
Drum Dryer	2.10E-03	7.50E-02	1.8	6.10E-04	3.40E-03	2.00E-04	1.20E-05	N/A
Air Makeup Unit	2.10E-03	7.50E-02	1.8	6.10E-04	3.40E-03	2.00E-04	1.20E-05	N/A
	Cadmium	Chromium	Cobalt	Manganese	Mercury	Nickel	Selenium	
	1.10E-03	1.40E-03	8.40E-05	3.80E-04	2.60E-04	2.10E-03	2.40E-05	
	1.10E-03	1.40E-03	8.40E-05	3.80E-04	2.60E-04	2.10E-03	2.40E-05	

1. Emission Factor Reference AP-42, Section 1.4, Table 3. All HAPs are based on EPA Section 112(b) of CAA
2. PAH (polycyclic aromatic hyrdocarbons) is a subset of Polycyclic organic matter (POM) which is a HAP.
There is no specific emission factor for the total. See table below for associated emissions.

Combustion Source	Throughput (MMscf/hr)[1]	Emission Rates									
		Benzene		Formaldehyde		Hexane		Naphthalene		Toluene	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Drum Dryer	5.39E-02	1.13E-04	4.96E-04	4.04E-03	1.77E-02	9.71E-02	4.25E-01	3.29E-05	1.44E-04	1.83E-04	8.03E-04
Air Makeup Unit	7.84E-03	1.65E-05	7.21E-05	5.88E-04	2.58E-03	1.41E-02	6.18E-02	4.78E-06	2.10E-05	2.67E-05	1.17E-04
Total		***1.30E-04***	***5.68E-04***	***4.63E-03***	***2.03E-02***	***1.11E-01***	***4.87E-01***	***3.77E-05***	***1.65E-04***	***2.10E-04***	***9.20E-04***
		Cobalt		Manganese		Mercury		Nickel		Selenium	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
		4.53E-06	1.98E-05	2.05E-05	8.97E-05	1.40E-05	6.14E-05	1.13E-04	4.96E-04	1.29E-06	5.67E-06
		6.59E-07	2.89E-06	2.98E-06	1.31E-05	2.04E-06	8.93E-06	1.65E-05	7.21E-05	1.88E-07	8.24E-07
		5.19E-06	**2.27E-05**	**2.35E-05**	**1.03E-04**	**1.61E-05**	**7.03E-05**	**1.30E-04**	**5.68E-04**	**1.48E-06**	**6.49E-06**
		Arsenic		Beryllium		Cadmium		Chromium		PAH[1]	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
		1.08E-05	4.72E-05	6.47E-07	2.83E-06	5.93E-05	2.60E-04	7.55E-05	3.31E-04	3.67E-06	1.61E-05
		1.57E-06	6.87E-06	9.41E-08	4.12E-07	8.63E-06	3.78E-05	1.10E-05	4.81E-05	3.67E-06	1.61E-05
		1.24E-05	***5.41E-05***	***7.41E-07***	***3.25E-06***	***6.79E-05***	***2.98E-04***	***8.65E-05***	***3.79E-04***	**7.34E-06**	**3.21E-05**
										Total HAP (tpy)	**0.51**

1. PAH is includes all of the following pollutants: 2-Methylnaphthalene, 3-Methylchloranthrene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluorathene, Chrysene, Dibenzo(a,h)anthracene, Benzo(g,h,i) perylene, fluoranthene, fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene and Pyrene, Note that naphthalene was not included as it accounted for on its own.

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Combustion TAPS

CAS No.	Pollutant[2]	585/586	EF (lb/MMscf)	24-hr or Annual Avg (lb/hr)[3]	EL (lb/hr)	Exceeds (Y/N)
56-49-5	3-Methylcholanthrene	586	1.80E-06	1.11E-07	2.50E-06	No
71-43-2	Benzene	586	2.10E-03	1.30E-04	8.00E-04	No
50-00-0	Formaldehyde	586	7.50E-02	4.63E-03	5.10E-04	Yes
110-54-3	Hexane	585	1.80E+00	1.11E-01	1.20E+01	No
91-20-3	Naphthalene	585	6.10E-04	3.77E-05	3.33E+00	No
91-20-3	Naphthalene	586	6.10E-04	3.77E-05	9.10E-05	No
109-66-0	Pentane	585	2.60E+00	1.61E-01	1.18E+02	No
108-88-3	Toluene	585	3.40E-03	2.10E-04	2.50E+01	No
	POM (7-PAH)[1]	586	N/A	1.14E-05	2.00E-06	Yes
7440-38-2	Arsenic	586	2.00E-04	1.24E-05	1.50E-06	Yes
7440-39-3	Barium	585	4.40E-03	2.72E-04	3.30E-02	No
7440-41-7	Beryllium	586	1.20E-05	7.41E-07	2.80E-05	No
7440-43-9	Cadmium	586	1.10E-03	6.79E-05	3.70E-06	Yes
7440-47-3	Chromium	585	1.40E-03	8.65E-05	3.30E-02	No
7440-48-4	Cobalt	585	8.40E-05	5.19E-06	3.30E-03	No
7440-50-8	Copper	585	8.50E-04	5.25E-05	6.70E-02	No
7439-96-5	Manganese	585	3.80E-04	2.35E-05	3.33E-01	No
7439-98-7	Molybdenum	585	1.10E-03	6.79E-05	3.33E-01	No
7440-02-0	Nickel	586	2.10E-03	1.30E-04	2.70E-05	Yes
7782-49-2	Selenium	585	2.40E-05	1.48E-06	1.30E-02	No
7440-62-2	Vanadium	585	2.30E-03	1.42E-04	3.00E-03	No
7440-66-6	Zinc	585	2.90E-02	1.79E-03	6.67E-01	No

POM(7-PAH)	EF (lb/MMscf)	Annual Avg (lb/hr)
Benzo(a)	1.80E-06	1.11E-07
Benzo(b)	1.80E-06	1.11E-07
Benzo(k)	1.80E-06	1.11E-07
Dibenzo(a,h)	1.20E-06	7.41E-08
Chrysene	1.80E-06	1.11E-07
Indeno	1.80E-06	1.11E-07
Benzo(a)pyrene	1.20E-06	7.41E-08
	Total	**1.14E-05**

1. **Polycyclic Organic matter (POM) is considered an aggregated total of the following pollutants: benzo(a)anthracene, benzo(b)fluoranthene,** benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3-cd)pyrene and benzo(a)pyrene
2. Note that mercury is no longer a TAP and is now regulated under specfic rules
3. These rates are equivalent to the appropriate averaging periods (24-hr for 585 and annual for 586) as we are assuming continuous operation.

IdaPro
Initial Permit to Construct - August 2012
Emissions Inventory

Potato Processing Pollutant Emissions

Source	Throughput lb/hr	Throughput T/hr	Emission Factor (lb/T)[1]	Particulate[2] lb/hr
Drum Dryer	12,174	6.087	0.63	3.83

1. The emission factor of 0.63 lb/T is based on a Performance test conducted on 6/21/11 by Gem State Processing
2. $PM_{2.5}$ and PM_{10} are assumed to be the same emission rate

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM DRAFT

DATE: January 4, 2013

TO: Darrin Pampaian, Permit Writer, Air Program

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT: P-2012.0063 PROJ61120 PTC Application for the Idaho Dehydration and Processing, LLC (IdaPro), Initial Permit to Construct for their Potato Processing Facility in Rupert, Idaho.

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

1.0 Summary

Idaho Dehydration and Processing, LLC (IdaPro) submitted a Permit to Construct (PTC) application for a potato processing facility, located in Rupert, Idaho. Site-specific air quality impact analyses involving atmospheric dispersion modeling of estimated potential emissions associated with the proposed facility were submitted to DEQ to demonstrate that the facility would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 and 203.03 [Idaho Air Rules Section 203.02 and 203.03]). JBR Environmental Consultants, Inc. (JBR), IdaPro's permitting consultant, submitted the analyses and applicable information and data enabling DEQ to evaluate potential impacts to ambient air.

JBR performed site-specific air quality impact analyses to demonstrate compliance with air quality standards for the operations at the facility. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the proposed facility or modification will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates is the responsibility of the permit writer.

The submitted modeling information and air quality impact analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was not within the scope of this DEQ modeling review); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from emissions associated with the facility as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the facility has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the facility do not result in increased ambient air impacts exceeding allowable TAP increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

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

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
The drum dryer stack must be built to a height of 79 feet from ground-level and with a 4.0 foot diameter. The typical flow at the point of release to the atmosphere must be at least 117 feet/second.	Compliance with NAAQS could not be demonstrated with a shorter stack and larger diameter, or with a lower stack gas exit velocity.
Emissions rates used in the modeling analyses, as listed in this memorandum, represent maximum potential emissions as given by design capacity or as limited by the issued permit for the specific pollutant and averaging period.	Compliance has not been demonstrated for emissions rates greater than those used in the modeling analyses.
NAAQS compliance is assured provided stack parameters of exhaust temperature and flow rate are not less than about 80 percent of values listed in this memorandum.	Higher temperatures and flow rates increase plume rise, allowing the plume to disperse to a larger degree before impacting ground level.

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality standards and analyses used to demonstrate compliance with air quality standards.

2.1.1 Area Classification

The proposed IdaPro project is a new stationary facility. The facility is located in Rupert, Idaho, in Minidoka County. The area is designated as attainment or unclassifiable for all pollutants.

2.1.2 Significant and Cumulative NAAQS Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the facility exceed the significant impact levels (SILs) of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (design values consistent with the form of the standard) from facility-wide emissions, and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 1st highest[j]
	Annual	0.3	15[k]	Mean of maximum 1st highest[j]
Carbon monoxide (CO)	1-hour	2,000	40,000[l]	Maximum 2nd highest[m]
	8-hour	500	10,000[l]	Maximum 2nd highest[m]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[n] (7.8 $\mu g/m^3$)	75 ppb[o] (196 $\mu g/m^3$)	Mean of maximum 4th highest[p]
	3-hour	25	1,300[l]	Maximum 2nd highest[m]
	24-hour	5	365[l]	Maximum 2nd highest[m]
	Annual	1.0	80[q]	Maximum 1st highest[m]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb[n] (7.5 $\mu g/m^3$)	100 ppb[r] (188 $\mu g/m^3$)	Mean of maximum 8th highest[s]
	Annual	1.0	100[q]	Maximum 1st highest[m]
Lead (Pb)	3-month[t]	NA	0.15[q]	Maximum 1st highest[m]
	Quarterly	NA	1.5[q]	Maximum 1st highest[m]

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year average of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 1st highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. The monitoring design value is used for background concentrations for $PM_{2.5}$ analyses. This approach is also used for the significant impact analysis.
k. 3-year average of annual concentration. The NAAQS was revised to 12 $\mu g/m^3$ on December 14, 2012. However, this standard will not be applicable for permitting purposes in Idaho until it is incorporated by reference *sine die* into Idaho Air Rules (Spring 2014).
l. Not to be exceeded more than once per year.
m. Concentration at any modeled receptor.
n. Interim SIL established by EPA policy memorandum.
o. 3-year average of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
p. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year average of maximum modeled 1-hour impacts for each year is used.
q. Not to be exceeded in any calendar year.
r. 3-year average of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
s. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year average of maximum modeled 1-hour impacts for each year is used.
t. 3-month rolling average.

NO_2 and SO_2 short-term standards have recently been promulgated by EPA. The standards became applicable for permitting purposes in Idaho when they were incorporated by reference *sine die* into Idaho Air Rules (Spring 2011). The modeling analyses performed and submitted in the permit application accounted for the new standards. The $PM_{2.5}$ annual standard was changed from 15 $\mu g/m^3$ on December 14, 2012. The revised standard will not become applicable for permitting purposes until it is incorporated *sine die* into Idaho Air Rules (Spring 2014).

JBR performed a site-specific significant impact analysis to identify those locations where emissions from the proposed modification could have a criteria pollutant impact that exceeds the SIL, as part of the

compliance demonstration for Idaho Air Rules Section 203.02. A significant impact analysis was performed for all criteria pollutants and associated averaging periods except CO, SO_2, and Pb. Emissions increases of CO, SO_2, and Pb were below established DEQ modeling thresholds used to screen out sources that are too small to potentially cause a significant impact to air quality.

A cumulative NAAQS impact analysis was then performed for those pollutants where emissions from the proposed project had an impact above the SILs. Compliance with Idaho Air Rules Section 203.02 was demonstrated if : a) all modeled impacts of the significant impact analysis were below the applicable SIL; or b) modeled design values (all emissions from IdaPro, co-contributing sources, and a background concentration) of the cumulative NAAQS impact analysis are less than applicable NAAQS at receptors where impacts from the proposed modification exceeded the SIL; or c) if the cumulative NAAQS analysis showed NAAQS violations, the impact of IdaPro to any modeled violation was less than the SIL for that specific receptor and for the specific modeled time when the violation occurred.

2.1.3 Toxic Air Pollutant Analyses

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

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

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

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

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

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

2.2 Background Concentrations

Background concentrations are used in the cumulative NAAQS impact analyses to account for impacts from sources not explicitly modeled. Table 3 lists appropriate background concentrations for the site and surrounding area for all pollutants modeled in these analyses. Criteria pollutants not listed in Table 3 were

not modeled because emissions associated with operation of the proposed modification were below DEQ established modeling thresholds. DEQ provided JBR with appropriate background concentration values.

Background concentrations for 1-hour NO_2 were based on monitoring data collected at a site near the Coeur d'Alene airport by DEQ during October 2006 through September 2011. Data were collected mainly during the ozone season of May through September. A separate NO_2 background value was used for each hour of the day, using the 99th percentile value of monitoring data for each hour of the day. Hourly 1-hour NO_2 background concentrations are given in Table 4.

Table 3. BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]	Source
PM_{10}[b]	24-hour	76	Based on historical monitoring data from Rupert[d].
$PM_{2.5}$[c]	24-hour	21.3	Monitoring data from Twin Falls, Idaho, for 2000 - 2002. The 24-hour average is the 3-year average of 98th percentile of the annual distribution of 24-hour averaged concentrations.
	Annual	7.19	Monitoring data from Twin Falls, Idaho, for 2000 - 2002. The annual average is the 3-year average of annual averaged concentrations.
Nitrogen dioxide (NO_2)	1-hour	Variable	Monitoring data from Coeur d'Alene, Idaho, for 2006 and 2011. See description above.
	Annual	32	Default value for small town/suburban areas in Idaho[d].

a. Micrograms per cubic meter.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
d. Obtained from: Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling*. Idaho Department of Environmental Quality. Memorandum to Mary Anderson, March 14, 2003.

Table 4. BACKGROUND 1-HOUR NO_2 CONCENTRATIONS

Hour Ending	Concentration ($\mu g/m^3$)[a]	Hour Ending	Concentration ($\mu g/m^3$)[a]	Hour Ending	Concentration ($\mu g/m^3$)[a]
1	44.12	9	42.61	17	53.17
2	41.39	10	45.50	18	51.99
3	39.67	11	47.96	19	48.76
4	40.15	12	51.05	20	46.17
5	39.44	13	52.65	21	45.38
6	38.18	14	54.51	22	45.10
7	39.20	15	54.31	23	44.82
8	41.08	16	53.00	24	43.76

a. micrograms per cubic meter.

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant's consultant, JBR, to demonstrate preconstruction compliance with applicable air quality standards.

3.1.1 *Overview of Analyses*

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

Table 5 provides a brief description of parameters used in the modeling analyses.

Table 5. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Rupert	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 12060.
Meteorological Data	Burley	2006-2010. See Section 3.1.6 of this memorandum.
Terrain	Considered	Receptor, building, and emissions source elevations were determined using USGS 1/3 arc second National Elevation Dataset (NED) files.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility.
Receptor Grid	Grid 1	10-meter spacing along the boundary out to 100 meters.
	Grid 2	25-meter spacing out to at least 250 meters.
	Grid 3	50-meter spacing out to at least 500 meters.
	Grid 4	100-meter spacing out to at least 1,000 meters.
	Grid 5	500-meter spacing out to at least 5,000 meters.

3.1.2 *Modeling protocol and Methodology*

A modeling protocol was submitted to DEQ prior to the application. The protocol was submitted by JBR and DEQ provided an electronic protocol approval letter. Site-specific modeling was generally conducted using data and methods described in the protocol and in the *Idaho Air Quality Modeling Guideline* (State of Idaho Guideline for Performing Air Quality Impact Analyses. Doc. ID AQ-011 {rev. 2, July 2011}. http://www.deq.idaho.gov/media/355037-modeling-guideline.pdf).

3.1.3 *Evaluation of Ozone Impacts*

Ozone (O_3) differs from other criteria pollutants in that it is not typically emitted directly into the atmosphere. O_3 is formed in the atmosphere through reactions of VOCs, NOx, and sunlight. Emissions of VOCs and NOx from the proposed facility were evaluated for their potential to cause a violation of the 8-hour O_3 NAAQS.

Atmospheric dispersion models used in stationary source air permitting analyses (see Section 3.1.4) cannot be used to accurately estimate O_3 impacts resulting from VOC and NOx emissions from an industrial facility. O_3 concentrations resulting from area-wide emissions are predicted by using more complex airshed models such as the Community Multi-Scale Air Quality (CMAQ) modeling system. DEQ has used CMAQ to estimate O_3 concentrations for the Treasure Valley and evaluate potential O_3 control strategies. Use of the CMAQ model is very resource intensive and DEQ asserts that performing a CMAQ analysis for a particular permit application is not a reasonable requirement for air quality permitting, especially for minor source permitting.

DEQ has not required minor sources to evaluate potential O_3 impacts as a part of the stationary source air permitting process. This is consistent with EPA regulation and policy. As stated in a letter from Gina McCarthy of EPA to Robert Ukeiley, acting on behalf of the Sierra Club (letter from Gina McCarthy, Assistant Administrator, United States Environmental Protection Agency, to Robert Ukeiley, January 4, 2012):

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

The following is a simplified summary of the atmospheric chemistry in a VOC rich atmosphere:

$NO_2 + h\upsilon \rightarrow NO + O$
$O + O_2 \rightarrow O_3$
$O_3 + NO \rightarrow NO_2 + O_2$
$HO_2 + NO \rightarrow NO_2 + OH$

To evaluate the need to perform a more refined O_3 impact analysis, DEQ first calculated an equivalent ton per year (TPY) emissions rate based on maximum hourly emissions (maximum pound per hour rate multiplied by 8,760 hour per year). This was done because the primary driver in O_3 production is short-term emissions rather than annual emissions. Using maximum short-term emissions rates of 0.34 lb/hr VOC and 3.5 lb/hr NOx, an adjusted rate of 1.49 TPY VOC and 15.3 TPY NOx was calculated. This rate is well below the 100 TPY threshold suggested by EPA for triggering a more extensive assessment of potential O_3 impacts.

3.1.4 Model Selection

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

AERMOD was used for the modeling analyses to evaluate impacts of the facility.

NO_2 1-hour impacts are assessed using a tiered approach to account for $NO/NO_2/O_3$ chemistry. Tier 1 assumes full conversion of NO to NO_2. Tier 2 assumes a 0.80 default ambient ratio of NO_2/NOx. Tier 3 accounts for more refined assessment of the NO to NO_2 conversion, and a supplemental modeling program can be used with AERMOD to better account for $NO/NO_2/O_3$ atmospheric chemistry. Either the Plume Volume Molar Ratio Method (PVMRM) or the Ozone Limiting Method (OLM) can be specified within the AERMOD input file. As stated in EPA guidance (Memorandum: from Tyler Fox, Leader, Air Quality Modeling Group, C439-01, Office of Air Quality Planning and Standards, USEPA; to Regional Air Division Directors. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard.* March 01, 2011), EPA has not

indicated a preference of one option over the other (PVMRM vs OLM). Therefore, JBR was allowed to use the option of their choice and elected to use PVMRM. Section 3.1.5 provides a description of parameters and data used for PVMRM.

3.1.5 Data and Parameters used for Modeling 1-Hour NO_2 with PVMRM

PVMRM was used with AERMOD to provide a more refined estimate of 1-hour NO_2 concentrations at specific receptors. Table 6 lists the data and parameters used for PVMRM. Hourly O_3 data were used in PVMRM to estimate the conversion of NO to NO_2. O_3 hourly monitoring data were collected from a site near Parma, Idaho, during a June 27, 2007 – October 12, 2007 O_3 study. The O_3 data were collected during periods when O_3 is expected to be at its highest levels during the year - generally starting in April or May.

The monitoring data were reduced to single hourly values for each of the 24 hourly periods within a day. Monitoring data were sorted by hour and then the mean and standard deviation were calculated for each hour of the day across all days. For each hour modeled, a background O_3 value equal to the mean plus one standard deviation was used as input to PVMRM. This method is reasonably conservative because it does not account for seasonal variation in O_3 concentrations and the data were collected during the time of year when maximum ozone concentrations are expected.

Table 7 lists hourly O_3 concentrations used in PVMRM for the 1-hour NO_2 impact analyses.

An NO_2/NOx ratio for NOx emissions is also used in PVMRM. A value of 0.2 was used for the IdaPro source as well as the co-contributing sources. Most boilers have NO_2/NOx ratios between 0.1 and 0.2, and DEQ concluded using 0.2 represents a reasonably conservative value for these type of sources.

Table 6. PARAMETERS AND DATA FOR PVMRM

Parameter	Value	Source/Comments
NO_2/NOx ratio for In-Stack Emissions	0.2 for all sources.	0.5 is an EPA suggested default when source-specific data are not available.
Ambient Equilibrium for NO_2/NOx	0.90	Default value.
O_3 Concentrations	Value specified for each hour modeled	Based on Parma, Idaho, values from 2007 ozone study.

Table 7. BACKGROUND OZONE CONCENTRATIONS

Hour	Concentration (ppb)[a]	Hour	Concentration (ppb)[a]	Hour	Concentration (ppb)[a]
1	27.9	9	30.5	17	57.1
2	28.5	10	37.8	18	55.1
3	26.8	11	43.8	19	49.0
4	24.1	12	48.8	20	39.0
5	22.1	13	53.0	21	30.9
6	21.4	14	55.0	22	28.5
7	19.7	15	57.1	23	29.4
8	22.8	16	57.6	24	29.6

a. parts per billion by volume.

3.1.6 Meteorological Data

DEQ provided JBR with model-ready meteorological data processed from Burley surface and Boise upper air meteorological data. These data were collected by the National Weather Service (NWS) at the Burley

Municipal Airport. The NWS data were supplemented with 1-minute ASOS wind data and were processed using the EPA preprocessing program AERMINUTE. DEQ determined these data were reasonably representative for the proposed site. More representative data of sufficient quality for use in dispersion models were not available for the area.

3.1.7 Terrain Effects

JBR used 1/3 arc second National Elevation Dataset (NED) files, in the NAD83 datum, to calculate elevations of receptors. The terrain preprocessor AERMAP was used to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. The model AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. Terrain effects are anticipated to be minimal for IdaPro because maximum impacts are on site or just offsite, and the area is effectively flat for dispersion modeling purposes. DEQ did not verify terrain elevations and hill heights beyond a general review of values in the modeling domain.

3.1.8 Building Downwash

Potential downwash effects on the emissions plume were accounted for in the model by using building parameters as described by JBR. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and release parameters for input to AERMOD. Accurate building locations and horizontal dimensions were verified by comparing the building layout used in the model to aerial images accessed through the Google Earth web-based mapping and geographical program.

3.1.9 Ambient Air Boundary

Ambient air is considered as any area to which the general public has access. The revised (November 2012) application indicated that the IdaPro property included a loading dock periodically used by the neighboring Les Schwab facility. The ambient air boundary was modified such that this area was included as ambient air. IdaPro will control access to other areas that are excluded from ambient air through the posting of signage and by instructing facility personnel to patrol for unauthorized access. DEQ is satisfied that all areas excluded from ambient air adequately preclude public access to a reasonable degree.

3.1.10 Receptor Network

Table 5 describes the receptor network used in the submitted modeling analyses. DEQ contends that the receptor network was adequate to reasonably assure compliance with applicable air quality standards at all ambient air locations.

3.2 Emission Rates

Emissions rates of criteria pollutants and TAPs for the proposed facility were provided by the applicant for various applicable averaging periods. DEQ modeling review, described in this memorandum, did not include review of emissions rates for accuracy. Review and approval of estimated emissions was the responsibility of the DEQ permit writer. DEQ modeling review included verification that the application's potential emissions rates were properly used in the model.

During review of the modeling protocol DEQ identified potential co-contributing emissions sources nearby the IdaPro facility. Idaho Fresh-Pak and a cogeneration facility operate about 300 meters to the southwest of the IdaPro site. Idaho Fresh-Pak operates two boilers, 10 flakers, and two baghouses. The Rupert Cogeneration Partners and Glenn's Ferry Cogeneration Partners facilities were also identified. After the application submittal, DEQ identified that the Glenn's Ferry Cogeneration Partners facility was incorrectly identified as a co-contributing source. The submitted cumulative NAAQS impact analyses included Glenn's Ferry Cogeneration emissions as a co-contributing source and are therefore very conservative with regard to NAAQS compliance.

3.2.1 Criteria Pollutant Emissions Rate

Table 8 lists criteria pollutant emissions rates used in the site-specific modeling analyses for all applicable averaging periods. The rates listed represent the maximum allowable rate as averaged over the specified period.

A cumulative impact analysis is required for pollutants and averaging periods when the SIL analysis shows that the proposed project will have an impact to ambient air that exceeds the established SIL. The cumulative impact analysis must include other sources in the immediate area that may measurably contribute to modeled impacts, unless DEQ determines that the background concentration value adequately accounts for the source. Finally, a background concentration is added to the modeled results for numerous, more distant emissions sources not accounted for in the modeling.

3.2.2 TAP Emissions Rates

JBR modeled those TAPs where the TAP emissions associated with the proposed facility exceeded the emissions screening levels (ELs) of Idaho Air Rules Section 585 and 586. Table 9 provides modeled emissions rates for TAPs. The initially submitted modeling analyses incorrectly modeled formaldehyde at a rate of 4.63E-5 pounds/hour. A revised analysis was submitted to DEQ via email on December 31, 2012.

3.3 Emission Release Parameters and Plant Criteria

Table 10 lists emissions release parameters for sources modeled. NAAQS compliance could not be initially demonstrated for the IdaPro dryer stack as it was originally designed. JBR worked with IdaPro to raise the stack to reduce ground-level impacts.

The initial application included a necked-down stack diameter to increase stack velocity to 58 meters/second. DEQ questioned the feasibility of operating the process to achieve such a high in-stack velocity. DEQ also determined that necking-down the stack is a dispersion technique as defined in Idaho Air Rules Section 512.01.c. Idaho Air Rules Section 513 states, "The required degree of emission control of any regulated or toxic air pollutant shall not be affected by the amount of any stack height that exceeds good engineering practice (GEP) or by any other dispersion technique." Therefore, the NAAQS compliance demonstration in the application cannot account for any necking-down of the stack. Equipment manufacturer data and engineering calculations were submitted with the application to support the stack flow calculations and a revised stack exit velocity was calculated without accounting for any necking-down of the stack.

Table 8. SLMMC FACILITY CRITERIA POLLUTANT EMISSIONS USED IN ANALYSES			
Emissions Point in Model	**Pollutant**	**Averaging Period**	**Emissions Rate (lb/hr)[a]**
DRYER/AMU – Drum Dryer and Air Makeup Units	$PM_{2.5}$[b]	24-hour	4.30
		Annual	4.30
	PM_{10}[c]	24-hour	4.30
	NOx[d]	1-hour	3.48
		Annual	3.48
	SO_2[e]	1-hour	0.04[g]
		3-hour	0.04[g]
		24-hour	0.04[g]
		annual	0.04[g]
	CO[f]	1-hour	5.19[h]
		8-hour	5.19[h]
BOILE, BOILW[i]	$PM_{2.5}$	24-hour	0.182
		Annual	0.182
	PM_{10}	24-hour	0.182
	NOx	1-hour	1.96
		Annual	1.96
FLAKE1W, FLAKE1E, FLAKE2W, FLAKE2E[i]	$PM_{2.5}$	24-hour	0.119
		Annual	0.119
	PM_{10}	24-hour	0.297
FLAKE3C, FLAKE3E, FLAKE3W, FLAKE4C, FLAKE4E, FLAKE4W[i]	$PM_{2.5}$	24-hour	0.122
		Annual	0.122
	PM_{10}	24-hour	0.306
BHMAC1[i]	$PM_{2.5}$	24-hour	0.857
		Annual	0.857
	PM_{10}	24-hour	0.857
RUPCOGN[i]	$PM_{2.5}$	24-hour	0.973
		Annual	0.973
	PM_{10}	24-hour	0.973
	NOx	1-hour	12.8
		Annual	12.8
GFCOGN[i]	$PM_{2.5}$	24-hour	0.911
		Annual	0.911
	PM_{10}	24-hour	0.911
	NOx	1-hour	12.7
		Annual	12.7

a. Pounds per hour emissions rate used in modeling analyses for specified averaging periods.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
d. Nitrogen oxides.
e. Sulfur dioxide.
f. Carbon Monoxide.
g. Not modeled – below the 0.21 lb/hr Level 1 Modeling Threshold.
h. Not modeled – below the 15 lb/hr Level 1 Modeling Threshold.
i. Co-contributing source neighboring IdaPro.

Table 9. TAP EMISSIONS USED IN ANALYSES			
Emissions Point in Model	**Pollutant**	**Averaging Period**	**Emissions Rate (lb/hr)[a]**
DRYER/AMU	Arsenic	Annual	1.24E-5
	Cadmium	Annual	6.79E-5
	Formaldehyde	Annual	4.63E-3
	Nickel	Annual	1.30E-4
	PAH	Annual	1.14E-5

a. Pounds per hour emissions rate used in modeling analyses for specified averaging periods.

Table 10. EMISSIONS RELEASE PARAMETERS					
Release Point /Location	Source Type	Stack Height (m)[a]	Modeled Diameter (m)	Stack Gas Temp. (K)[b]	Stack Gas Flow Velocity (m/sec)[c]
DRYER/AMU	Point	23.5	1.17	358	35.6
BOILE, BOILW	Point	7.9	0.81	483	2.6
FLAKE1W, FLAKE1E	Point	10.7	1.15	328	17.0
FLAKE2W, FLAKE2E	Point	10.7	1.15	328	18.8
FLAKE3C, FLAKE3E, FLAKE3W, FLAKE4C, FLAKE4E, FLAKE4W	Point	10.7	1.24	328	4.2
BHMAC1	Point	3.7	0.58	294	17.9
RUPCOGN	Point	18.3	1.83	426	21.1
GFCOGN	Point	18.3	1.83	431	19.6

a. Meters.
b. Kelvin.
c. Meters per second.

3.4 Results for Significant Impact Level Analyses

JBR performed Significant Impact Level (SIL) analyses to evaluate whether operations of the IdaPro facility would significantly contribute to concentrations of criteria pollutants in ambient air. A cumulative impact analysis was then needed for receptor locations where modeled impacts from the IdaPro facility exceed the SILs for a given criteria pollutant and averaging period. Cumulative impact analyses involved modeling the IdaPro facility along with nearby co-contributing sources, then adding a background concentration value to the result.

Impacts to ambient air resulting from emissions associated with operations of the IdaPro facility were estimated through modeling to exceed the SILs for 24-hour and annual $PM_{2.5}$, 24-hour PM_{10}, and 1-hour and annual NO_2. DEQ did not thoroughly review the SIL analyses because cumulative NAAQS impact analyses were performed for all criteria pollutants modeled at all receptor locations. However, DEQ's review revealed that the NO_2 SIL analysis was not performed correctly because the modeled 8th high of maximum daily 1-hour impacts was used rather than the modeled 1st high. The 24-hour PM_{10} SIL analysis was also performed incorrectly, with the 6th high modeled values evaluated rather than the 1st high modeled values. This had no effect on the cumulative impact analyses since all receptor locations were used in those analyses. Also, corrected PM_{10} SIL modeling was submitted to DEQ on December 31, 2012. All receptors were included in the cumulative impact analyses and the MAXDCONT function was used for 1-hour NO_2 and 24-hour $PM_{2.5}$ to evaluate whether IdaPro emissions could have a significant contribution to any modeled violations. Table 11 provides modeling results for the SIL analyses.

3.5 Results for Cumulative Impact Analyses

Table 12 provides results for the cumulative NAAQS impact analyses performed for criteria pollutants.

Modeled cumulative impacts of 24-hour $PM_{2.5}$, annual $PM_{2.5}$, 24-hour PM_{10}, and 1-hour NO_2 exceeded applicable NAAQS. Receptors exceeding NAAQS were primarily located to the southwest of the IdaPro site, surrounding the Idaho Fresh-Pak and cogeneration facilities. DEQ cannot issue the IdaPro permit unless the applicant demonstrates that IdaPro emissions did not significantly contribute to any modeled violation. This was accomplished by reviewing all modeled violations, analyzed in space and time where necessary, to assure that impacts of IdaPro emissions were below the applicable SIL at receptors having modeled violations.

Table 11. RESULTS FOR SIGNIFICANT IMPACT ANALYSES				
Pollutant	**Averaging Period**	**Max Modeled Concentration[a] ($\mu g/m^3$)[b]**	**SIL[c] ($\mu g/m^3$)**	**Cumulative Impact Analysis Required**
$PM_{2.5}$[d]	24-hour	11.5	1.2	Yes
	Annual	1.29	0.3	Yes
PM_{10}[e]	24-hour	13.2	5.0	Yes
NO_2	1-hour	>15.7[f]	7.5	Yes
	Annual	1.2	1.0	Yes

a. Taken from the ambient air modeled receptor having the highest impact.
b. Micrograms per cubic meter.
c. Significant Impact Level.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Value is the maximum of 5-year averages of the 8th high of maximum daily 1-hour impacts.

Table 12. RESULTS FOR CUMULATIVE IMPACT ANALYSES							
Pollutant	**Averaging Period**	**Max Modeled Design Value Concentration[a] ($\mu g/m^3$)[b]**	**Background Concentration ($\mu g/m^3$)**	**Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[c] ($\mu g/m^3$)**	**Percent of NAAQS**	**Max IdaPro Contribution to Violations**
$PM_{2.5}$[d]	24-hour	55.4[f]	21.3	76.7	35	219	1.1
	Annual	13.6[f]	7.19	20.8	15	139	0.14
PM_{10}[e]	24-hour	92.0[g]	76	168.0	150	112	2.7
NO_2	1-hour	565[h,i]	Included	565	188	301	1.8
	Annual	8.51	32	40.5	100	40	

a. Taken from the ambient air modeled receptor having the highest design value impact.
b. Micrograms per cubic meter.
c. National ambient air quality standards.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Modeled design values are the 5-year average of the 1st highest modeled value for each year.
g. Modeled design values are the 6th highest modeled value from a 5-year meteorological data set.
h. Modeled design values are the 5-year average of the of 8th highest daily 1-hour maximum impact for each year. Background NO_2 concentrations are included with the modeled value.
i. Impact includes background concentration.

If the impact from emissions of IdaPro did not exceed the SIL at a receptor where and when the design value of the cumulative impact analysis shows a violation, then it was concluded that IdaPro did not significantly contribute (an impact over the SIL) to the violation. If the next highest cumulative impact (design value + 1 highest) at the receptor still showed a violation, then the impact of IdaPro on that modeled violation was also determined. This process was continued until the next highest modeled cumulative impact no longer showed a NAAQS violation.

The 24-hour $PM_{2.5}$ NAAQS was initially exceeded for 290 receptors located on or nearby the co-contributing sources, and exceedances were modeled for 1st high modeled values through the 159th high modeled values, as determined by using the MAXDCONT function in AERMOD. IdaPro modeled emissions did not have an impact exceeding the SIL for any of these modeled violations at the time of the violation.

The annual $PM_{2.5}$ NAAQS was exceeded at 12 receptor locations on or immediately adjacent to the co-contributing sources. Annual impacts from IdaPro $PM_{2.5}$ emissions only exceeded the SIL in an area north and east of the facility. Therefore, IdaPro did not significantly contribute to any annual $PM_{2.5}$ modeled violations.

The 24-hour PM_{10} NAAQS was exceeded at eight receptors, also in the immediate vicinity of the co-contributing sources. JBR initially claimed that IdaPro did not have a significant impact based on the modeled impact of IdaPro at those receptors. During the review, DEQ found that this claim was based on IdaPro's modeled 6th high impact (the NAAQS design value) and not the modeled 1st high that is required for evaluating a significant impact. JBR then submitted revised PM_{10} modeling on December 31, 2012, that showed the maximum 1st high modeled impacts to those receptors were below the SIL.

Modeled cumulative impacts of 1-hour NO_2 showed NAAQS violations at 20 receptors southwest of the IdaPro facility, on or in the immediate vicinity of the co-contributing sources. Exceedances were modeled for 8th high modeled values (the design value) through the 190th high. Review of the MAXDCONT output file showed that IdaPro's maximum contribution to any of these modeled violations was 1.8 $\mu g/m^3$, well below the 7.8 $\mu g/m^3$ SIL.

3.6 Results for Toxic Air Pollutant Analyses

Table 13 presents results for TAP modeling. TAP impacts were well below all applicable AACCs.

Table 13. RESULTS FOR TOXIC AIR POLLUTANT ANALYSES

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	AACC TAP Increment[b] ($\mu g/m^3$)	Percent of Increment
Arsenic	5-year	<1.0E-5	2.3E-4	<4%
Cadmium	5-year	2.0E-5	5.6E-4	4%
Formaldehyde	5-year	1.0E-3	7.7E-2	1.3%
Nickel	5-year	4.0E-5	4.2E-3	1.0%
POM	5-year	<1.0E-5	3.0E-4	<3%

a. Micrograms per cubic meter.
b. Toxic Air Pollutant allowable increment impact listed in Idaho Air Rules Section 586.

4.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the facility will not cause or significantly contribute to a violation of any ambient air quality standard.

Table 14 lists the modeling files associated with the final compliance demonstration for each pollutant and averaging period.

Table 14. FINAL MODELING FILES USED TO DEMONSTRATE COMPLIANCE				
Pollutant and Averaging Period	**Analyses**	**Description**	**Files**	**Submittal Date**
NO_2 1-hr	SIL Cumulative	Modeled 1st high not included for SIL analysis, but MAXDCONT assessed IdaPro Contribution for any modeled violations.	1-hr_NO2.BST 1-hr_NO2_5yrs_NO2.DTA 1-hr_NO2_5yrs_NO2.LST 1-hr_NO2_5yrs_NO2.GRF 1-hr_NO2_1-hr_ALL_8_ThreshValue_MAXDCONT.OUT	November 12, 2012
	SIL Cumulative	DEQ verification to account for receptors along the facility property boundary.	DEQ1hrNO2Boundary.BST DEQ1hrNO2Boundary_5yrs_NO2.DTA DEQ1hrNO2Boundary_5yrs_NO2.LST DEQ1hrNO2Boundary_5yrs_NO2.GRF	Not Applicable – DEQ generated files
NO_2 annual	SIL Cumulative	"X" in file name is year specific 06 to 10.	ann_NO2.BST ann_NO2_20XX_NO2.DTA ann_NO2_20XX_NO2.LST ann_NO2_20XX_NO2.GRF	November 12, 2012
$PM_{2.5}$ 24-hr and annual	SIL Cumulative	24-hour and annual both modeled within the same modeling run.	PM2.5.BST PM2.5_5yrs_PM2.5.DTA PM2.5_5yrs_PM2.5.LST PM2.5_5yrs_PM2.5.GRF PM2.5_NO2_PM2.5_24-hr-ALL_1_ThreshValue_MAXDCONT.OUT	November 12, 2012
	SIL Cumulative	DEQ verification to account for receptors along the facility property boundary.	DEQ24hrPM25Boundary.BST DEQ24hrPM25Boundary_5yrs_PM2.5.DTA DEQ24hrPM25Boundary_5yrs_PM2.5.LST DEQ24hrPM25Boundary_5yrs_PM2.5.GRF	Not Applicable – DEQ generated files
PM_{10} 24-hour	SIL Cumulative	Revised to include modeled 1st high values	24-hr_PM1012-13-12.BST 24-hr_PM10_5yrs_PM10.DTA 24-hr_PM10_5yrs_PM10.LST 24-hr_PM10_5yrs_PM10.GRF	December 31, 2012
TAPs	IDAPA 586 TAPs	"XXXX" in file name is TAP specific: ARSENIC, CADMIUM, FORMALD, NICKEL, PAH	TAPs. BST TAPs_5yrs_XXXX.DTA TAPs_5yrs_XXXX.LST TAPs_5yrs_XXXX.GRF	December 31, 2012

APPENDIX C – FACILITY DRAFT COMMENTS

The following comments were received from the facility on January 22, 2013:

Facility Comment: The drum dryer and air makeup units contain emission limits for pollutants which appear to be unnecessary. Particulate and NO_X limits are warranted, due to required modeling demonstrations and the close proximity to NAAQS. However, limits to SO_2, CO, and VOC may not be necessary for a couple of reasons. First, all emissions are well below the significance thresholds, as defined in IDAPA 58.01.01.106. In fact, two of three are below 10% of the significance threshold, which supports a portion of the requirements of exemption. Secondly, both CO and SO_2 are below Level I modeling thresholds, which indicates that no modeling was required and thus, no ambient air quality issues associated with these pollutants occurs from the IdaPro project. Lastly, there is no associated monitoring or recordkeeping requirements for these three pollutants. Given these circumstances, JBR requests that the limits stated for the specific pollutants mentioned above be removed from the permit.

DEQ Response: The SO_2, CO, and VOC emissions limits will be removed from the permit as requested by the Applicant.

Facility Comment: In previous conversations with IDEQ, IdaPro and JBR were made aware that an odor management plan may be a requirement in the Rupert facility air permit because of past odor complaints made by the public regarding the Burley facility. We are of the opinion that the addition of a management plan for this new facility, solely based on perceived issues at another facility located in a nearby town, is far-reaching and could only address vague and general corporate administrative policies. IdaPro has contended that the Ethanol plant directly across Washington Ave. from their Burley plant may be the source of odors. With only subjective opinions and conclusions that have been drawn without test results to support them an Odor Management Plan as a part of this PTC Application seems unnecessary. Listed below are four reasons with which the two facilities differ:

- The Rupert facility, as described in the permit application, contains newer technologies with regards to the dryer. The natural gas burner, a MAXON KINEDIZER LE, is State-of-the-art for low NO_X firing and emissions. When designed to utilize flue gas recirculation as the Rupert facility is, it is considered Ultra Low emissions. This clean burning technology has a direct correlation to the potential of odor release. It is designed to produce fewer, cleaner emissions, which in turn should reduce odors. Also, the Rupert plant contains only one dryer unit, whereas the Burley facility contains an older dryer unit and a horizontal dehydration unit. There are more emission units at Burley that may be contributing to odors, more so than will occur in Rupert.
- One of the methods used by IdaPro to help alleviate some of the potential odor issues at Burley was to raise the stack heights at the suggestion of IDEQ. The one emission point at the new Rupert facility will have a stack height of 79 feet above ground, which is a satisfactory height to minimize emissions and subsequent odors.
- The location of the Rupert facility is in an industrial and commercial area, whereas the Burley plant is in closer proximity to residential areas. The lack of residential houses around the new Rupert facility would suggest that there would be fewer people in the surrounding area that may be adversely affected by potential odors.
- It has been IdaPro's contention for some time that the odors emanating from the Burley plant are not actually originating from their facility, but rather, a nearby ethanol plant is the suspected culprit. Similarly, it is likely that any odor associated with the industrial park in Rupert will be coming from the Brewster West cheese factory to the north, and Idaho Fresh Pak and a co-generation facility to the south.

In an effort to ensure similar odor outbreaks do not occur at the new Rupert facility, IdaPro intends to implement a series of corporate policies and procedures to minimize complaints and take corrective actions as expeditiously as possible. These policies include:

- An outreach program to the local community with acknowledgement of the issue and a comprehensive plan towards resolution.
- When appropriate, community awareness meeting will be held.

- When appropriate, door to door introductions by personnel to better understand the concerns of the surrounding businesses and public areas.
- In conjunction with the General Odor rules, there will be an establishment of incident reporting and proper documentation.

Given these considerations, it is IdaPro and JBR's suggestion to remove the Odor Management Plan requirement from the permit.

DEQ Response: In consideration of the comments received by the Applicant the Odor Management Plan has been modified to require only methods and procedures that will be implemented by the facility if and when odor complaints are received by the Permittee or DEQ staff. Therefore, if no odor complaints are received by the Permittee or DEQ staff then no actions will have to be taken by the facility.

APPENDIX D – PROCESSING FEE