Statement of Basis

Permit to Construct No. P-2019.0030
Project ID 62435

LinkOne Potato Solutions - Burley
Burley, Idaho

Facility ID 031-00048

Final

August 3, 2020

Shawnee Chen, PE SYC
Senior Air Quality Engineer

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.

TABLE OF CONTENTS

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
GACT	Generally Available Control Technology
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

LinkOne Potato Solutions - Burley facility receives vegetable byproducts (potato) as raw material. The facility dehydrates the raw material through drum dryer and fluid bed dryer (also called fluidized bed dryer) to customer specifications. Final product is packaged and shipped to customers.

Major equipment associated with air emissions at the facility include one natural gas-fired drum dryer (8.7 MMBtu/hr), one natural gas-fired finishing dryer (fluidized bed dryer, 5.1 MMBtu/hr), and final product sizing and packaging with cyclone and fabric filter system. The plant operation is also supported by a natural gas-fired air makeup unit (3.5 MMBtu/hr).

While the dryer cyclones and the cyclone and bag filters for milling and packaging reduce particulate emissions, their main function is to recover products. Therefore, when calculating emissions, they are treated as process equipment. Emissions from the two dryer cyclones are controlled by a packed tower scrubber.

Permitting History

This PTC is for a minor modification at an existing minor facility.

Application Scope

This PTC is for a minor modification at an existing minor facility. The facility is proposing to increase the facility production limitation from 70,000 pounds per day finished product to 120,000 pounds per day finished product. Through operating experience, the facility is able to improve operating efficiencies without any need to make physical modifications to any equipment.

Application Chronology

April 23, 2020	DEQ received an application.
April 27, 20120	DEQ received an application fee.
April 28 – May 13, 2020	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
May 21, 2020	DEQ received additional information.
May 26, 2020	DEQ determined that the application was complete.
July 17, 2020	DEQ made available the draft permit and statement of basis for peer and regional office review.
July 22, 2020	DEQ made available the draft permit and statement of basis for applicant review.
July 27, 2020	DEQ received the permit processing fee.
August 3, 2020	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION[(a)]

<table>
<tr><th>Source ID No.</th><th colspan="2">Sources</th><th>Control Equipment</th></tr>
<tr><td>D101</td><td><u>Drum Dryer:</u>
Manufacturer: HEIL
Model: 105
Date of construction: 1/20/2013
Heat input rating: 8.7 MMBtu/hr
Max. production: 60 T/day 8% moisture content final finished product
Fuel: natural gas
Permitted throughput: 41.1 tons/hr</td><td><u>Product Recovery Cyclone[(b)]:</u>
Manufacturer: Fisher-Klosterman
Type: single cyclone
Date of installation: 1/20/2013</td><td rowspan="3"><u>Odor Scrubber (C001):</u>
Manufacturer: Anguil
Model: SPT-132-156
Type: packed tower scrubber
Date of installation: 11/15/2016
VOC control efficiency: 95%

Emissions from AMUs are vented into the primary processing area, and are ultimately vented through the odor scrubber stack; however, no emission control is assumed on the AMU combustion emissions.</td></tr>
<tr><td>D102</td><td><u>Fluidized Bed Dryer (also called fluid bed dryer):</u>
Manufacturer: Carrier
Model: QADII-3680S
Date of construction: 01/15/2011
Date of modification: 01/10/2018
Heat input rating: 5.1 MMBtu/hr
Max. production: 60 T/day 8% moisture content final finished product
Fuel: natural gas
Permitted throughput: 3.29 tons/hr</td><td><u>Product Recovery Cyclone[(b)]:</u>
Manufacturer: Mac-Schenck
Type: single cyclone
Date of installation: 01/15/2011</td></tr>
<tr><td>AMUS</td><td><u>Air Make-up Units (AMU):</u>
Manufacturer: Aerovent
Model: G44C35
Date of construction: 01/01/2012
Heat input rating: 3.5 MMBtu/hr
Fuel: natural gas</td><td></td></tr>
<tr><td>P200</td><td><u>Final Milling & Packaging:</u>
Manufacturer: Prater-Sterling
Model: G-8-HFS
Date of construction: 11/01/2016
Max. production: 60 T/day 8% moisture content final finished product</td><td><u>Product Recovery Cyclone[(b)]:</u>
Manufacturer: Murphy-Rogers
Model: MRC
Type: single cyclone
Date of installation: 11/01/2016

Followed by
<u>Two Bag Filters (C002)[(b)]:</u>
Manufacturer: Murphy-Rogers
Model: 6A2, modified for dual bags
Date of installation: 11/01/2016
PM_{10} control efficiency: 99.9% or 0.01 gr/scf</td><td>None (exhaust inside building and emissions vented through three passive (unpowered) ceiling exhaust vents)</td></tr>
</table>

a) Refer to modeling memo for stack parameters.
b) It is process equipment in accordance with EPA policy. Refer to applicant's submittal dated August 30, 2019 for more details (2019AAG1564).

Emissions Inventories

<u>Potential to Emit</u>

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 operations at the facility (see Appendix A). Emissions estimates of criteria pollutant, HAP PTE were based on emission factors from AP-42, source test data, vendor's data, 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 facility, uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr.

Table 2 UNCONTROLLED POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr
Point Sources					
Drum Drying Process (Drum Dryer)	5.59				82.9
Finish Drying Process (Fluidized Bed Dryer)	0.46				4.73
Dryer Burners	0.459	0.036	6.044	5.077	0.332
Finished Product Loading (Cyclone followed by/bag filters)	0.327				
AMU	0.117	0.009	1.533	1.288	0.084
Total Point Sources	6.96	0.05	7.58	6.37	88.04

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 facility, uncontrolled Potential to Emit is based upon a worst-case for operation of the facility of 8,760 hr/yr. Then, the worst-case maximum HAP Potential to Emit was determined for this facility.

Table 3 UNCONTROLLED POTENTIAL TO EMIT FOR HAZARDOUS AIR POLLUTANTS

Total Hazardous Air Pollutants	PTE (T/yr)
Total	**< 0.14**

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.

The following table presents the pre-project potential to emit for all criteria pollutants from all emissions units at the facility that is taken from the SOB for PTC No. P-2019.0030 issued January 14, 2020.

Table 4 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr[a]	T/yr[a]	T/yr[a]	T/yr[a]	T/yr[a]
Drum Drying Process	3.26	---	---	---	2.42
Finish Dryer Process	0.268	---	---	---	0.14
Dryer Burners (Drum Dryer 8.7 MMBtu/hr, Finish Dryer 5.1 MMBtu/hr)	0.459	0.036	6.044	5.08	0.33
Finished Product Loading (Cyclone followed by/bag filters)	0.327	0.023	---	---	---
AMU	0.117	0.0092	1.533	1.29	0.084
Pre-Project Totals	4.43	0.05	7.58	6.37	2.97

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

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 pollutants from all emissions units at the facility as submitted by the applicant and reviewed by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 5 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC
	T/yr[a]	T/yr[a]	T/yr[a]	T/yr[a]	T/yr[a]
Drum Drying Process	5.59	---	---	---	4.145
Finish Dryer Process	0.46	---	---	---	0.237
Dryer Burners (Drum Dryer 8.7 MMBtu/hr, Finish Dryer 5.1 MMBtu/hr)	0.459	0.036	6.044	5.08	0.33
Finished Product Loading (Cyclone followed by/bag filters)	0.327	0.023	---	---	---
AMU	0.117	0.0092	1.533	1.29	0.084
Post Project Totals	6.95	0.05	7.58	6.37	4.80

a) 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 6 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	$PM_{10}/PM_{2.5}$	SO_2	NOX	CO	VOC
	T/yr	T/yr	T/yr	T/yr	T/yr
Pre-Project Potential to Emit	4.43	0.05	7.58	6.37	2.97
Post Project Potential to Emit	6.95	0.05	7.58	6.37	4.80
Changes in Potential to Emit	**2.53**	**0**	**0**	**0**	**1.83**

TAP Emissions

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

Table 7 POTENTIAL TO EMIT FOR TOXIC AIR POLLUTANTS

TAP	Non-Carcinogen or Carcinogen	Emission Rate (lb/hr)	Screening Emission Level (EL)[(a)] (lb/hr)	<EL (Y/N)
Hydrogen Chloride	Non-carcinogen	0.00041	0.05	Y
Nitric Acid	Non-carcinogen	0.00505	0.333	Y
Sulfuric Acid	Non-carcinogen	0.00213	0.067	Y
Acetic acid	Non-carcinogen	2.029 (40.57[b])	1.67	N
Arsenic	Carcinogen	3.46E-06	1.50E-06	N
Barium	Non-carcinogen	7.61E-05	3.30E-02	Y
Benzene	Carcinogen	3.63E-05	8.00E-04	Y
Beryllium	Carcinogen	2.08E-07	2.80E-05	Y
Cadmium	Carcinogen	1.90E-05	3.70E-06	N
Chromium	Non-carcinogen	2.42E-05	3.30E-02	Y
Cobalt	Non-carcinogen	1.45E-06	3.30E-03	Y
Copper	Non-carcinogen	1.47E-05	1.30E-02	Y
Formaldehyde	Carcinogen	1.30E-03	5.10E-04	N
Hexane	Non-carcinogen	3.11E-02	1.20E+01	Y
Manganese	Non-carcinogen	5.88E-06	6.70E-02	Y
Molybdenum	Non-carcinogen	1.90E-05	3.33E-01	Y
Naphthalene	Non-carcinogen	1.06E-05	3.33E+00	Y
Nickel	Carcinogen	3.63E-05	2.70E-05	N
POM[a]	Carcinogen	1.53E-06	2.00E-06	Y
Selenium	Non-carcinogen	4.15E-07	1.30E-02	Y
Toluene	Non-carcinogen	5.88E-05	2.50E+01	Y

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.
b) uncontrolled

TAP PTE increments of acetic acid, arsenic, cadmium, formaldehyde, and nickel exceed the respective screening ELs identified in IDAPA 58.01.01.585 or 586. Therefore, modeling is required for their emissions increments. The uncontrolled emissions are modeled and are below their respective AAC or AACC.

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)
Totals	**< 0.14**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of PM_{10}, $PM_{2.5}$, NO_X, and some TAP from this project exceed the 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 TAP. A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix B.

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 Cassia 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.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For HAPs (Hazardous Air Pollutants) Only:

A = Use when any one HAP has permitted emissions > 10 T/yr or if the aggregate of all HAPS (Total HAPs) has permitted emissions > 25 T/yr.

SM80 = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits > 8 T/yr of a single HAP or ≥ 20 T/yr of Total HAPs.

SM = Use if a synthetic minor (uncontrolled HAPs emissions are > 10 T/yr or if the aggregate of all

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

uncontrolled HAPs (Total HAPs) emissions are > 25 T/yr and permitted emissions fall below applicable major source thresholds) and the permit sets limits < 8 T/yr of a single HAP and/or < 20 T/yr of Total HAPs.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 10 and 25 T/yr HAP major source thresholds.

UNK = Class is unknown.

For All Other Pollutants:

A = Use when permitted emissions of a pollutant are > 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are ≥ 80 T/yr.

SM = Use if a synthetic minor for the applicable pollutant (uncontrolled emissions are > 100 T/yr and permitted emissions fall below 100 T/yr) and permitted emissions of the pollutant are < 80 T/yr.

B = Use when the potential to emit (i.e. uncontrolled emissions and permitted emissions) are below the 100 T/yr major source threshold.

UNK = Class is unknown.

Table 9 Regulated Air Pollutant Facility Classification

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM	< 100	< 100	**100**	B
PM_{10}	< 100	< 100	**100**	B
$PM_{2.5}$	< 100	< 100	**100**	B
SO_2	< 100	< 100	**100**	B
NO_X	< 100	< 100	**100**	B
CO	< 100	< 100	**100**	B
VOC	< 100	< 100	**100**	B
HAP (single)	< 10	< 10	**10**	B
Total HAPs	< 25	< 25	**25**	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201... Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the facility. 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.

Rules for Control of Odors (IDAPA 58.01.01.775)

IDAPA 58.01.01.775-776.................................... Rules for Control of Odors

According to IDAPA 58.01.01.775–776, the permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution. This requirement is included in the permit because the facility received odor compliance in the past. This requirement is assured by Permit Conditions 2.5, 2.7, and 2.10.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625... Visible Emissions

The sources of PM emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Condition 2.4.

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 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 ≥ 9,250 lb/hr; $E = 1.10\ (PW)^{0.25}$

For the drum dryer with a proposed throughput of 24.15 T/hr, E is calculated as follows:

- Proposed throughput = 24.15 T/hr x 2,000 lb/1 T = 48,300 lb/hr

Therefore, E is calculated as:

- $E = 1.10 \times PW^{0.25} = 1.10 \times (48{,}300)^{0.25} = 1.10 \times 14.8$ lb-PM/hr = 16.3 lb-PM/hr

For the fluidized bed dryer with a proposed throughput of 1.92 T/hr, E is calculated as follows:

- Proposed throughput = 1.92 T/hr x 2,000 lb/1 T = 3,840 lb/hr

Therefore, E is calculated as:

- $E = 0.045 \times PW^{0.60} = 0.045 \times (3{,}840)^{0.60} = 6.37$ lb-PM/hr

As presented in the Emissions Inventories (Appendix A), the post project PTE for the drum dryer is less than 2.3 lb/hr and for the fluidized bed dryer is less than 0.28 lb/hr. 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

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for regulated air pollutants or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

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 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 in 40 CFR Part 60.

NESHAP Applicability (40 CFR 61)

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

MACT/GACT Applicability (40 CFR 63)

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

Permit Conditions Review

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

Permit Condition 1.1 states the purpose of this permitting action.

Permit Condition 1.3 states that this PTC replaces Permit to Construct No. P-2019.0030 issued on January 14, 2020.

Table 1.1 is revised to change the maximum daily production rate from 35 T/day to 60 T/day for both dryers and the final milling and packaging process and to change hourly throughput from 24.15 T/hr to 41.4 T/hr for the drum dryer and from 1.92 T/hr to 3.29 T/hr for the fluidized bed dryer.

Permit Condition 2.3 is revised to increase $PM_{2.5}/PM_{10}$ emissions limits as a result of increasing the production rate for the dryers. These limits are the emissions rates used in the modeling analysis; they are for ensuring compliance with the $PM_{2.5}/PM_{10}$ NAAQS.

The $PM_{2.5}/PM_{10}$ hourly emissions rate of the scrubber stack is calculated using the proposed throughput rates of 41.4 T/hr for the drum dryer and the proposed throughput of 3.29 T/hr for the fluidized bed dryer. Annual rates are calculated by multiplying hourly emissions rates by 8,760 hr/yr.

Permit Condition 2.6 is revised to reflect the throughput increases from 24.15 to 41.4 tons/hr for the drum dryer and from 1.92 to 3.29 tons/hr for the fluidized bed dryer.

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. During this time, 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

LinkOne Potato Solutions - Burley ID

includes 95% VOC controls

	Tons/Year							Tons/Year			
	NOX	CO	VOC	SO2	PM	PM10	PM2.5	CO2	CH4	N2O	CO2e
Drum Drying Process			4.14		9.48	5.59	5.59				
Finish Dryer Process			0.24		0.78	0.46	0.46				
Dryer Burners	6.04	5.08	0.33	0.04	0.46	0.46	0.46	7065.2	0.147	0.0147	7072.9
Drum Dryer (8.7 mmbtu/hr)	3.81	3.20	0.21	0.023	0.29	0.29	0.29	4454.17	0.09	0.01	4458.98
Finish Dryer (5.1 mmbtu/hr)	2.23	1.88	0.12	0.013	0.17	0.17	0.17	2611.07	0.05	0.01	2613.88
AMU	1.533	1.288	0.084	0.009	0.117	0.117	0.117	1791.9	0.037	0.004	1793.8
Finished Product Loading (Cyclone/BH)					0.33	0.33	0.33				
TOTAL (TPY)	7.58	6.37	4.80	0.05	11.16	6.96	6.95	8857.14	0.18	0.02	8866.70
SIGNIFICANT EMISSION RATE THRESHOLDS	40	100	40	40	25	15	10				
is TOTAL < SER?	OK	OK	OK	OK	OK	OK	OK				
10% of SIGNIFICANT EMISSION RATE THRESHOLDS	4.0	10.0	4.0	4.0	2.5	1.5	1.0				
is TOTAL < 10% of SER?	OVER	OK	OVER	OK	OVER	OVER	OVER				
TOTAL (TPY)	7.58	6.37	4.80	0.045	11.16	6.96	6.95				
Level I Modeling Threshold (tpy)	1.2	- -	- -	1.2	- -	- -	0.35				
Level II Modeling Threshold (tpy)	14	- -	- -	14	- -	- -	4.1				
TOTAL (g/s)	0.218	0.183	0.138	0.0013	0.321	0.213	0.213				
TOTAL (lb/hr)	1.73	1.45	1.10	0.0104	2.55	1.693	1.693				
Level I Modeling Threshold (lb/hr)	0.2	175	- -	0.21	- -	0.22	0.054				
Level II Modeling Threshold (lb/hr)	2.4	15	- -	2.5	- -	2.6	0.63				

	NOX	CO	VOC	SO2	PM	PM10	PM2.5
odor scrubber stack (lb/hr)	1.73	1.45	1.10	0.0104	2.45	1.4867	1.4866
odor scrubber stack (g/s)	0.22	0.18	0.138	0.0013	0.31	0.19	0.19
finishing system vent (lb/hr)					0.075	0.075	0.075
finishing system vent (g/s)					0.0094	0.0094	0.0094

Burner Annual Limitation (unrstricted)	120888 mmbtu/yr	13.8 mmbtu/hr		
	120.9 mmcf/yr	120888 mmbtu/yr		2.20462 lb/kg

	NOX	CO	VOC	SO2	PM	PM10	PM2.5	CO2	CH4	N2O	CO2e
	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf	kg/mmbtu	kg/mmbtu	kg/mmbtu	
E-Factor	100	84	5.5	0.6	7.6	7.6	7.6	53.02	1.10E-03	1.10E-04	

		H1H	H2H
		µg/m3 / g/s	µg/m3 / g/s
Modeling Chi/Q	1-hr	195.21	193.9
	3-hr	172.96	171.8
	8-hr	156.90	149.4
	24-hr	145.93	130.4
	Annual	6.96	

GWP	GWP	GWP
1	21	310

LinkOne Potato Solutions - Burley ID

PTE EMISSIONS

					2.473	1.513	1.513
			includes 95% VOC controls				
	lb/hr						
	NOX	CO	VOC	SO2	PM	PM10	PM2.5
Drum Drying Process			0.946		2.164	1.277	1.277
Finish Dryer Process			0.054		0.178	0.105	0.105
Dryer Burners	1.38	1.159	0.076	0.008	0.105	0.105	0.105
Drum Dryer (8.7 mmbtu/hr)							
Finish Dryer (5.1 mmbtu/hr)							
Finished Product Loading (Cyclone/BH)					0.075	0.075	0.075
AMU	0.35	0.294	0.0193	0.0021	0.02660	0.02660	0.02660
TOTAL (lb/hr)	1.73	1.453	1.095	0.01038	2.548	1.588	1.588
Level I Modeling Threshold (lb/hr)	0.2	175	- -	0.21	- -	0.22	0.054
over Level I threshold?	OVER	OK		OK		OVER	OVER
Level II Modeling Threshold (lb/hr)	2.4	15	- -	2.5	- -	2.6	0.63
over Level II threshold?	OK	OK		OK		OK	OVER

	Tons/Year						
	NOX	CO	VOC	SO2	PM	PM10	PM2.5
Drum Drying Process			4.145		9.477	5.592	5.592
Finish Dryer Process			0.237		0.780	0.460	0.460
Dryer Burners	6.044	5.077	0.332	0.036	0.459	0.459	0.459
Drum Dryer (8.7 mmbtu/hr)							
Finsih Dryer (5.1 mmbtu/hr)							
Finished Product Loading (Cyclone/BH)					0.327	0.327	0.327
AMU	1.533	1.288	0.084	0.0092	0.1165	0.1165	0.1165
TOTAL (tons/year)	7.58	6.37	4.80	0.05	11.16	6.96	6.95

Level I Modeling Threshold (tpy)	1.2	- -	- -	1.2	- -	- -	0.35
over Level I threshold?	OVER	OK		OK		OK	OVER
Level II Modeling Threshold (tpy)	14	- -	- -	14	- -	- -	4.1
over Level II threshold?	OK	OK		OK		OK	OVER

LinkOne Potato Solutions - Burley ID

UNCONTROLLED EMISSIONS

lb/hr	NOX	CO	VOC	SO2	PM	PM10	PM2.5
Drum Drying Process			18.926		2.164	1.277	1.277
Finish Dryer Process			1.081		0.178	0.105	0.105
Dryer Burners	1.380	1.159	0.076	0.008	0.105	0.105	0.105
Drum Dryer (8.7 mmbtu/hr)							
Finish Dryer (5.1 mmbtu/hr)							
Finished Product Loading (Cyclone/BH)					0.075	0.075	0.075
AMU	0.350	0.294	0.019	0.002	0.027	0.027	0.027
TOTAL (lb/hr)	1.73	1.453	20.101	0.0104	2.548	1.588	1.588

Tons/Year	NOX	CO	VOC	SO2	PM	PM10	PM2.5
Drum Drying Process			82.895		9.477	5.592	5.592
Finish Dryer Process			4.733		0.780	0.460	0.460
Dryer Burners	6.044	5.077	0.332	0.036	0.459	0.459	0.459
Drum Dryer (8.7 mmbtu/hr)							
Finish Dryer (5.1 mmbtu/hr)							
Finished Product Loading (Cyclone/BH)					0.327	0.327	0.327
AMU	1.533	1.288	0.084	0.009	0.117	0.117	0.117
TOTAL (tons/year)	7.58	6.37	88.04	0.05	11.16	6.96	6.95

LinkOne Potato Solutions - Burley ID

Annual use factor 1

DRUM DRYER

	Pollutant	Avg test rate lb/hr	Stack test infeed Production lb/hr	tph	CALCULATED Emission Factor lb/ton infeed	Max infeed Production lb/hr	ton/hr	uncontrolled Emission Rate lb/hr	tpy		PM Controls 40% / PM controlled Emission Rate lb/hr	tpy		VOC & acid gas Control level 95% / VOC & acid gass controlled Emission Rate lb/hr	tpy		
	NOX	0.52			- calculated emssions base from AP-42, Nat Gas Combustion												
	VOC	3.2	14000	7	0.457	82800	41.4	18.93	82.89					0.946285714	4.145		
	PM	0.15	14000	7	0.0214	82800	41.4	0.887	3.886	front	0.532286	2.331411	front				
									5.592	back	0.765972	3.354958	back				
								2.164	9.477	total	1.298258	5.686369	total				
	PM10				not addressed in 2016 Testing at Burley			1.4E-04	6.3E-04	front	0.766	3.356					
									5.6E+00	back							
								1.277	5.592	total							
	PM2.5				not addressed in 2016 Testing at Burley			6.9E-06	3.0E-05	front	0.766	3.355					
									5.6E+00	back							
								1.277	5.592	total							
Hydrogen chloride	HCL	0.0012	14000	7	0.000171	82800	41.4	0.0071	0.031					0.000354857	0.00155		
Fluorides (as HF)	HF	0	14000	7	0	82800	41.4	0	0.0								
Hydrogen Bromide	HBr	0	14000	7	0	82800	41.4	0	0.0								
Nitric Acid	HNO3	0.016	14000	7	0.0023	82800	41.4	0.095	0.414					0.004731429	0.021		
Phosphoric Acid	H3PO4	0	14000	7	0	82800	41.4	0	0.0								
Sulfuric Acid	H2SO4	0.0067	14000	7	0.000957	82800	41.4	0.040	0.174					0.001981286	0.009		
Acetic Acid	C2H4O2	6.7	14000	7	0.957	82800	41.4	39.626	173.561					1.981285714	8.678	0.01981286	0.08678031

						bone dry		
tons raw in	18400	lb/hr	75%	moisture	raw, blended with recycled product	4600	0%	moisture
tons recycled	64400	lb/hr	30%	moisture	product recycled, blended with raw material			
tons Drum in	82800	lb/hr	40%	moisture	blended infeed to Drum			
tons Drum out / Finsih in	6571	lb/hr	30%	moisture	out of drum dryer into finish dryer			
tons Finish out	5000	lb/hr	8%	moisture	out of finish dryer			

0.0163% PM10 fraction of PM — Based on particle analysis, 3258 lbs PM10 per 20,000,000 pounds material

0.00078% PM2.5 fraction of PM — Based on particle analysis, 155 lbs PM2.5 per 20,000,000 pounds material

BELT DRYER

	Pollutant	Avg test rate lb/hr	infeed Production lb/hr	tph	CALCULATED Emission Factor lb/ton infeed	lb/hr	ton/hr	uncontrolled Emission Rate lb/hr	tpy		PM Controls 40% / PM controlled Emission Rate lb/hr	tpy		VOC & acid gas Control level 95% / VOC & acid gass controlled Emission Rate lb/hr	tpy
	NOX	0.21			- base from AP-42, Nat Gas Combustion										
	VOC	1.48	9000	4.500	0.329	6571.4	3.29	1.08	4.73					0.054031746	0.237
	PM	0.1	9000	4.500	0.022222	6571.4	3.29	0.073	0.320	front	0.04381	0.191886	front		
									0.460	back	0.063043	0.276128	back		
									0.780	total	0.106852	0.468014	total		
	PM10				not addressed in 2016 Testing at Burley			1.2E-05	5.2E-05	front	0.0631	0.0631			
									0.460	back					
									0.460	total					
	PM2.5				not addressed in 2016 Testing at Burley			5.7E-07	2.5E-06	front	0.0630	0.0630			
									0.460	back					
									0.460	total					
Hydrogen chloride	HCL	0.0015	9000	4.500	0.000333	6571.4	3.29	0.0011	0.005					5.47619E-05	0.00024
Fluorides (as HF)	HF	0	9000	4.500	0	6571.4	3.29	0	0						
Hydrogen Bromide	HBr	0	9000	4.500	0	6571.4	3.29	0	0						
Nitric Acid	HNO3	0.0088	9000	4.500	0.0020	6571.4	3.29	0.0064	0.028					0.00032127	0.00141
Phosphoric Acid	H3PO4	0	9000	4.500	0	6571.4	3.29	0	0						
Sulfuric Acid	H2SO4	0.004	9000	4.500	0.000889	6571.4	3.29	0.0029	0.013					0.000146032	0.00064
Acetic Acid	C2H4O2	1.3	9000	4.500	0.288889	6571.429	3.29	0.949	4.158					0.047460317	0.208

0.0163% PM10 fraction of PM — Based on particle analysis, 3258 lbs PM10 per 20,000,000 pounds material

0.00078% PM2.5 fraction of PM — Based on particle analysis, 155 lbs PM2.5 per 20,000,000 pounds material

Rule 223 Exemption Evaluation

Chi/Q 24-hr 171.2676

	10% of EL lb/hr	EL lb/hr	BRC	Level I exemption EL	Level I exemption AAC	AAC mg/m3	AAC ug/m3	conc ug/m3
HCL	0.005	0.05	NO					
HNO3	0.0333	0.333	NO	YES	YES	0.25	250	0.138658
H2SO4	0.0067	0.067	NO	YES	YES	0.05	50	0.063026
C2H4O2	0.167	1.67	NO	NO	YES	1.25	1250	20.48361

Material Values are in POUNDS PER DAY

Raw Material IN

	product	110,400		dry
A	moisture	331,200	75%	water
B	total	441,600		total

18,400 lb/hr

Recycled Material from Drum Dryer output

	product	1,081,920	
X	moisture	463,680	30%
Y	total	1,545,600	

64,400 lb/hr

Product (after recycle fraction removed) sent to Fluidized Bed Dryer

product	110,400	
moisture	47,314	30%
total	157,714	

6,571 lb/hr

BED DRYER

FINISHED PRODUCT

110,400		dry
9,600	8%	wated
120,000		total

5,000 lb/hr

Blended INPUT to Drum Dryer

dry	product	1,192,320	
water	moisture	794,880	40%
total	total	1,987,200	

82,800 lb/hr

DRUM DRYER

Total OUTPUT from Drum Dryer

product	1,192,320		dry
moisture	510,994	30%	water
total	1,703,314		total

70,971 lb/hr

KNOWNS

75% moisture content of incoming raw material
40% moisture content of material fed INTO Drum Dryer
30% moisture content of material fed OUT of Drum Dryer
30% moisture content of material recycled back to input side of Drum Dryer
30% moisture content of material fed INTO Bed Dryer
8% moisture content of material fed OUT of Bed Dryer

INCOMING Pounds

B 441,600 Total Raw material (including water) @ 75% water content [lbs/day]
A 331,200 Water content [lbs/day]

RECYCLED Pounds

Y Total material (including water) @ 30% water content [lbs/day]
X Water content [lbs/day]

Equations / relationships

[1] Sum of water content of raw material and recycled material will be 40% to total material feed to Drum Dryer
or - - -> (A + X) = 0.40 * (B + Y)
(331,200 + X) = 0.40 * (441,600 + Y)

and

[2] moisture content of recycled material is 30% of total material
or - - -> X = 0.30 * Y

So

Solve for Y = total material to be recycled from outlet of Drum Dryer and blended with incoming Raw Material to achieve 40% M.C. as infeed to Drum Dryer
(331,200 + X) = 40% * (441,600 + Y)
(331,200 + (30% * Y) = 40% * (441,600 + Y)
Y = (((331,200 / 40%) - 441,600) / (1 - (30% / 40%)))

[Cell H6 above] Y = 1,545,600 pounds / day, material recycled from Drum Dryer outlet
[Cell H4 above] X = 1,081,920 pounds / day of material (bone dry) recycled from Drum Dryer
[Cell H5 above] M.C. = 463,680 pounds / day of water recycled from Drum Dryer

LinkOne Potato Solutions - Burley ID

Pollutant	**Avg**	**Rank**	**SIL conc**	**SIL**	**% of SIL**		Rank	AAQS conc	Bkgrnd	Total	AAQS	% of AAQS
NO2	1-hr	5-yr avg H1H		7.5			5-hr avg H8H		56.79		188	
	Annual	max		1			max		8.66		100	
PM10	24-hr	H1H	10.59	5	212%		5-yr avg H6H	23.51	76.55	100.06	150	67%
	Annual	Max	0.51	1	51%							
PM2.5	24-hr	5-yr avg H1H	8.31	1.2	692%		5-yr avg H8H	15.23	11.85	27.08	35	77%
	Annual	5-yr avg annual	0.37	0.2	187%		5-yr avg annual	4.82	5.35	10.17	12	85%
CO	1-hr	H1H		1200				AAQS modeling not requried				
	8-hr	H1H		500				AAQS modeling not requried				
SO2	1-hr	5-yr avg H1H		7.9				AAQS modeling not requried				
	3-hr	H1H		25				AAQS modeling not requried				
	24-hr	H1H		5				AAQS modeling not requried				
	Annual	max		1				AAQS modeling not requried				

LinkOne Potato Solutions - Burley ID

Source ID	Source Description	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (ft)	Temperature (°F)	Exit Velocity (fps)	Flow rate (acfm)	Stack Diameter (ft)	Orient. Of Release
S01	Scrubber Stack & AMU	268964.772	4711625.24	1276.69	44.9	130	24.75	29,161	5	V
V01	Milling and packaging process	268931.64	4711588.15	1276.69	21	70	50.1	5,309	1.5	R
V02	Milling and packaging process	268938.02	4711585.18	1276.69	21	70	50.1	2,360	1	R
V03	Milling and packaging process	268934.82	4711577.93	1276.69	21	70	50.1	2,360	1	R

3D Idapro Burley Potential Emissions

Source ID	Source Description	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	NO2 (lb/hr)	CO (lb/hr)	SO2 (lb/hr)	VOC (lb/hr)	Chi/Q (g/s)
S01	Scrubber Stack & AMU	2.473	1.513	1.513	1.73	1.4532	0.0104	1.095	1
V01	Milling and packaging process	0.03971	0.03971	0.03971					
V02	Milling and packaging process	0.01765	0.01765	0.01765					
V03	Milling and packaging process	0.01765	0.01765	0.01765					

LinkOne Potato Solutions - Burley ID

three passive building vents allow emissions to vent from interior

each vent

18 inches diameter
1 foot above roof

estimate of flow rate from process area

main building

204.67	feet - length
78.4	feet -width
16046.13	AREA - sq ft
0.25	fraction of process building where milling/finishing process occurs
4011.532	AREA - sq ft
20	**ft height**
80230.64	volume of room - cu ft
7.5	room change per hour
601729.8	cu ft per hour
60	minute/hr
10028.83	cu ft / minute - - flow rate - divided between three vents on a stack-area weighted basis (see below)
0.075	lb/hr PM total process emissions, divided between three vents on a stack-area weighted basis (see below)

FOR MODELING

	Diam (in)	area (in2)		Flow rate	Modeling Emissions (lb/hr) PM
Vent1	18	254.5	53%	5309	0.03971
Vent2	12	113.1	24%	2360	0.01765
Vent3	12	113.1	24%	2360	0.01765
		480.7			

LinkOne Potato Solutions - Burley ID

modeled concentration (uncontrolled emission) 24-hr Chi/Q = **145.93** [ug/m3 / g/s]

modeled concentration (uncontrolled emission) Annual Chi/Q = **6.96** [ug/m3 / g/s]

uncontrolled pounds/hour	Hydrogen Chloride	Nitric Acid	Sulfuric Acid	Acetic acid	Acetaldehyde	Acetone	Acrolein	Antimony	Arsenic	Barium
Drum Dryer Nat Gas	0.0	0	0	0	0	0	0	0	1.74E-06	3.83E-05
Finish Dryer Nat Gas	0.0	0	0	0	0	0	0	0	1.02E-06	2.24E-05
Drum Drying Process	0.0071	0.0946	0.0396	39.626						
Finish Dryer Process	0.0011	0.0064	0.0029	0.949						
AMU	0	0	0	0	0	0	0	0	7.00E-07	1.54E-05
TOTAL	0.008	0.101	0.043	40.575	0	0	0	0	3.46E-06	7.61E-05
Rule 585 EL (lb/hr)	0.05	0.333	0.067	1.67	#N/A	119	0.017	0.033	#N/A	0.033
Rule 586 EL (lb/hr)	#N/A	#N/A	#N/A	#N/A	0.003	#N/A	#N/A	#N/A	0.0000015	#N/A
10% of Rule 585 EL (lb/hr)	0.005	0.0333	0.0067	0.167	#N/A	11.9	0.0017	0.0033	#N/A	0.0033
10% of Rule 586 EL (lb/hr)	#N/A	#N/A	#N/A	#N/A	0.0003	#N/A	#N/A	#N/A	0.00000015	#N/A
"Total" is Below BRC (10% of 585 EL)?	NO	NO	NO	NO	#N/A	YES	YES	YES	#N/A	YES
"Total" is Below BRC (10% of 586 EL)?	#N/A	#N/A	#N/A	#N/A	YES	#N/A	#N/A	#N/A	NO	#N/A
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	NO	NO	NO	YES	YES	YES	YES	NO	YES
Rule 585 AAC (mg/m3)	#N/A	0.25	0.05	1.25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	250	50	1250	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	0.45	#N/A	#N/A	#N/A	2.30E-04	#N/A
modeled concentration (uncontrolled emission)	#N/A	1.858	0.782	746.1	#N/A	#N/A	#N/A	#N/A	3.04E-06	#N/A
		0.007	0.016	0.597					0.013	
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	#N/A	YES	YES	NO	YES	YES	YES	YES	NO	YES
Modeled concetration below AAC?	#N/A	YES	YES	YES	#N/A	#N/A	#N/A	#N/A	YES	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	#N/A	YES	YES	YES	YES	YES	YES	YES	YES	YES

uncontrolled pounds/hour	Benzene	Benzo(a)pyrene*	Benzo(b)fluoranthene*	Benzo(k)fluoranthene*	Beryllium	Bis(2-Ethylhexyl)phthalate	Cadmium	Carbon tetrachloride	Chlorine	Chlorobenzene
Drum Dryer Nat Gas	1.83E-05	0	0	0	1.04E-07	0	9.57E-06	0	0	0
Finish Dryer Nat Gas	1.07E-05	0	0	0	6.12E-08	0	5.61E-06	0	0	0
Drum Drying Process										
Finish Dryer Process										
AMU	7.35E-06	0	0	0	4.20E-08	0	3.85E-06	0	0	0
TOTAL	3.63E-05	0	0	0	2.08E-07	0	1.90E-05	0	0	0
Rule 585 EL (lb/hr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.2	23.3
Rule 586 EL (lb/hr)	0.0008	0.000002	#N/A	#N/A	0.000028	0.028	0.0000037	0.00044	#N/A	#N/A
10% of Rule 585 EL (lb/hr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.02	2.33
10% of Rule 586 EL (lb/hr)	0.00008	0.0000002	#N/A	#N/A	0.0000028	0.0028	0.00000037	0.000044	#N/A	#N/A
"Total" is Below BRC (10% of 585 EL)?	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	YES	YES
"Total" is Below BRC (10% of 586 EL)?	YES	YES	#N/A	#N/A	YES	YES	NO	YES	#N/A	#N/A
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	YES	#N/A	#N/A	YES	YES	NO	YES	YES	YES
Rule 585 AAC (mg/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	0.12	3.00E-04	#N/A	#N/A	4.20E-03	4.2	5.60E-04	0.067	#N/A	#N/A
modeled concentration (uncontrolled emission)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.67E-05	#N/A	#N/A	#N/A
							0.030			
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	YES	YES	#N/A	#N/A	YES	YES	NO	YES	YES	YES
Modeled concetration below AAC?	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	YES	#N/A	#N/A	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

uncontrolled pounds/hour	Chloroform	Chloromethane (Methylene Chloride)	Chromium	Chromium, hexavalent	Chrysene*	Cobalt	Copper	Crotonaldehyde	Dibenzo(a,h)anthracene*	1,2-Dichloroethane
Drum Dryer Nat Gas	0	0	1.22E-05	0	0	7.31E-07	7.40E-06	0	0	0
Finish Dryer Nat Gas	0	0	7.14E-06	0	0	4.28E-07	4.34E-06	0	0	0
Drum Drying Process										
Finish Dryer Process										
AMU	0	0	4.90E-06	0	0	2.94E-07	2.98E-06	0	0	0
TOTAL	0	0	2.42E-05	0	0	1.45E-06	1.47E-05	0	0	0
Rule 585 EL (lb/hr)	#N/A	#N/A	0.033	0.033	#N/A	0.0033	0.013	0.38	#N/A	27
Rule 586 EL (lb/hr)	0.00028	#N/A	#N/A	0.00000056	#N/A	#N/A	#N/A	#N/A	#N/A	0.00025
10% of Rule 585 EL (lb/hr)	#N/A	0.0016	0.0033	0.0033	#N/A	0.00033	0.0013	0.038	#N/A	2.7
10% of Rule 586 EL (lb/hr)	0.000028	#N/A	#N/A	0.000000056	#N/A	#N/A	#N/A	#N/A	#N/A	0.000025
"Total" is Below BRC (10% of 585 EL)?	#N/A	YES	YES	YES	#N/A	YES	YES	YES	#N/A	YES
"Total" is Below BRC (10% of 586 EL)?	YES	#N/A	#N/A	YES	#N/A	#N/A	#N/A	#N/A	#N/A	YES
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	#N/A	YES	YES	#N/A	YES	YES	YES	#N/A	YES
Rule 585 AAC (mg/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	0.043	0.24	#N/A	0.000083	#N/A	#N/A	#N/A	#N/A	#N/A	0.038
modeled concentration (uncontrolled emission)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	YES	#N/A	YES	YES	#N/A	YES	YES	YES	#N/A	YES
Modeled concetration below AAC?	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

uncontrolled pounds/hour	Dichloromethane	1,2-Dichloropropane	Ethylbenzene	Formaldehyde	Hexane	Indeno(1,2,3,c,d)pyrene*	Iron	Lead	Manganese	Mercury
Drum Dryer Nat Gas	0	0	0	6.53E-04	1.57E-02	0	0	0	2.96E-06	2.26E-06
Finish Dryer Nat Gas	0	0	0	3.83E-04	9.18E-03	0	0	0	1.73E-06	1.33E-06
Drum Drying Process										
Finish Dryer Process										
AMU	0	0	0	2.63E-04	6.30E-03	0	0	0	1.19E-06	9.10E-07
TOTAL	0	0	0	1.30E-03	3.11E-02	0	0	0	5.88E-06	4.50E-06
Rule 585 EL (lb/hr)	#N/A	23.133	29	#N/A	12	#N/A	0.067	#N/A	0.067	#N/A
Rule 586 EL (lb/hr)	0.0016	#N/A	#N/A	0.00051	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10% of Rule 585 EL (lb/hr)	#N/A	2.3133	2.9	#N/A	1.2	#N/A	0.0067	#N/A	0.0067	#N/A
10% of Rule 586 EL (lb/hr)	0.00016	#N/A	#N/A	0.000051	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
"Total" is Below BRC (10% of 585 EL)?	#N/A	YES	YES	#N/A	YES	#N/A	YES	#N/A	YES	#N/A
"Total" is Below BRC (10% of 586 EL)?	YES	#N/A	#N/A	NO	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	YES	YES	NO	YES	#N/A	YES	#N/A	YES	#N/A
Rule 585 AAC (mg/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	0.24	#N/A	#N/A	7.70E-02	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
modeled concentration (uncontrolled emission)	#N/A	#N/A	#N/A	1.14E-03	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
				0.015						
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	#N/A	YES	YES	NO	YES	#N/A	YES	#N/A	YES	#N/A
Modeled concetration below AAC?	#N/A	#N/A	#N/A	YES	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

uncontrolled pounds/hour	Molybdenum	Naphthalene	Nickel	POM*	Pentachlorophenol	Phenol	Phosphorus	Propionaldehyde	Selenium
Drum Dryer Nat Gas	9.57E-06	5.31E-06	1.83E-05	7.67E-07	0	0	0	0	2.09E-07
Finish Dryer Nat Gas	5.61E-06	3.11E-06	1.07E-05	4.50E-07	0	0	0	0	1.22E-07
Drum Drying Process									
Finish Dryer Process									
AMU	3.85E-06	2.14E-06	7.35E-06	3.09E-07	0	0	0	0	8.40E-08
TOTAL	1.90E-05	1.06E-05	3.63E-05	1.53E-06	0	0	0	0	4.15E-07
Rule 585 EL (lb/hr)	0.333	3.33	#N/A	#N/A	0.033	1.27	0.007	0.0287	0.013
Rule 586 EL (lb/hr)	#N/A	#N/A	0.000027	0.000002	#N/A	#N/A	#N/A	#N/A	#N/A
10% of Rule 585 EL (lb/hr)	0.0333	0.333	#N/A	#N/A	0.0033	0.127	0.0007	0.00287	0.0013
10% of Rule 586 EL (lb/hr)	#N/A	#N/A	0.0000027	0.0000002	#N/A	#N/A	#N/A	#N/A	#N/A
"Total" is Below BRC (10% of 585 EL)?	YES	YES	#N/A	#N/A	YES	YES	YES	YES	YES
"Total" is Below BRC (10% of 586 EL)?	#N/A	#N/A	NO	NO	#N/A	#N/A	#N/A	#N/A	#N/A
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	YES	NO	NO	YES	YES	YES	YES	YES
Rule 585 AAC (mg/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	#N/A	#N/A	4.20E-03	3.00E-04	#N/A	#N/A	#N/A	#N/A	#N/A
modeled concentration (uncontrolled emission)	#N/A	#N/A	3.19E-05	1.34E-06	#N/A	#N/A	#N/A	#N/A	#N/A
			0.008	0.004					
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	YES	YES	NO	YES	YES	YES	YES	YES	YES
Modeled concetration below AAC?	#N/A	#N/A	YES	YES	#N/A	#N/A	#N/A	#N/A	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	YES	YES	YES	YES	YES	YES	YES	YES	YES

uncontrolled pounds/hour	Styrene	2,3,7,8-Tetrachlorodibenzo-p-dioxins	Tin	Toluene	Trichloroethene (Trichloroethylene)	2,4,6-Trichlorophenol	p-Xylene	Vinyl Chloride	Yttrium
Drum Dryer Nat Gas	0	0	0	2.96E-05	0	0	0	0	0
Finish Dryer Nat Gas	0	0	0	1.73E-05	0	0	0	0	0
Drum Drying Process									
Finish Dryer Process									
AMU	0	0	0	1.19E-05	0	0	0	0	0
TOTAL	0	0	0	5.88E-05	0	0	0	0	0
Rule 585 EL (lb/hr)	6.67	#N/A	0.133	25	#N/A	#N/A	29	#N/A	0.067
Rule 586 EL (lb/hr)	#N/A	1.5E-10	#N/A	#N/A	#N/A	0.0012	#N/A	0.00094	#N/A
10% of Rule 585 EL (lb/hr)	0.667	#N/A	0.0133	2.5	#N/A	#N/A	2.9	#N/A	0.0067
10% of Rule 586 EL (lb/hr)	#N/A	1.5E-11	#N/A	#N/A	#N/A	0.00012	#N/A	0.000094	#N/A
"Total" is Below BRC (10% of 585 EL)?	YES	#N/A	YES	YES	#N/A	#N/A	YES	#N/A	YES
"Total" is Below BRC (10% of 586 EL)?	#N/A	YES	#N/A	#N/A	#N/A	YES	#N/A	YES	#N/A
BRC EXEMPTION — Meet Rule 223.01 EXEMPTION?	YES	YES	YES	YES	#N/A	YES	YES	YES	YES
Rule 585 AAC (mg/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 585 AAC (ug/m3)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rule 586 AAC (ug/m3)	#N/A	2.20E-08	#N/A	#N/A	#N/A	0.18	#N/A	0.14	#N/A
modeled concentration (uncontrolled emission)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Level I EXEMPTION — "TOTAL" is Below EL (uncontrolled emissions)?	YES	YES	YES	YES	#N/A	YES	YES	YES	YES
Modeled concetration below AAC?	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Meet Rule 223.02 EXEMPTION? (either emission below EL "OR" modeling below AAC)	YES	YES	YES	YES	YES	YES	YES	YES	YES

Estimated Emission - Potential to Emit
Ext Combustion - Natural Gas
Drum Dryer

	Emission Factor gas (lb/MMcf)	Emission Factor gas (lb/MMBtu)	Potential Emissions gas (lb/hr)	Potential Emissions gas (lb/yr)	Potential Emissions gas (tpy)
NO_x	100.0	1.00E-01	0.87	7621.20	3.8
SO_2	0.600	6.00E-04	0.005	45.73	0.02
VOC	5.50	5.50E-03	0.05	419.17	0.2
CO	84.0	8.40E-02	0.73	6401.81	3.2
Particulate	7.60	7.60E-03	0.066	579.21	0.290
PM10	7.60	7.60E-03	0.066	579.21	0.290
PM2.5	7.60	7.60E-03	0.066	579.21	0.290
GHG, per 40 CFR 98	GWP	kg/mmbtu	(lb/hr)	(lb/yr)	(tpy)
CO2	1	53.02	1016.93	8908340.84	4454.2
CH4	21	1.10E-03	0.02	184.82	0.092
N20	310	1.10E-04	0.00	18.48	0.009
CO2e					4459.0
TAPs					
Acetaldehyde					
Acetone					
Acetophenone					
Acrolein					
Antimony					
Arsenic	2.0E-04	2.0E-07	1.74E-06	0.02	7.62E-06
Barium	4.4E-03	4.4E-06	3.83E-05	0.34	1.68E-04
Benzene	2.1E-03	2.1E-06	1.83E-05	0.16	8.00E-05
Benzo(a)pyrene*					
Benzo(b)fluoranthene*					
Benzo(k)fluoranthene*					
Beryllium	1.2E-05	1.2E-08	1.04E-07	0.0009	4.57E-07
bis(2-Ethylhexyl)phthalate					
Bromomethane					
Cadmium	1.1E-03	1.1E-06	9.57E-06	0.08	4.19E-05
Carbon tetrachloride					
Chlorine					
Chlorobenzene					
Chloroform					
Chloromethane					
Chromium	1.4E-03	1.4E-06	1.22E-05	0.11	5.33E-05
Chromium, hexavalent					
Chrysene*					
Cobalt	8.4E-05	8.4E-08	7.31E-07	0.01	3.20E-06
Copper	8.5E-04	8.5E-07	7.40E-06	0.06	3.24E-05
Crotonaldehyde					
Dibenzo(a,h)anthracene*					
1,2-Dichloroethane					
Dichloromethane					
1,2-Dichloropropane					
2,4-Dinitrophenol					
Ethylbenzene					
Formaldehyde	7.5E-02	7.5E-05	6.53E-04	5.72	2.86E-03
Hexane	1.8E+00	1.8E-03	1.57E-02	137.18	6.86E-02
Hydrogen chloride					
Indeno(1,2,3,c,d)pyrene*					
Iron					
Lead					
Manganese	3.4E-04	3.4E-07	2.96E-06	0.026	1.30E-05
Mercury	2.6E-04	2.6E-07	2.26E-06	0.020	9.91E-06
Molybdenum	1.1E-03	1.1E-06	9.57E-06	0.084	4.19E-05
Naphthalene	6.1E-04	6.1E-07	5.31E-06	0.046	2.32E-05
Nickel	2.1E-03	2.1E-06	1.83E-05	0.160	8.00E-05
4-Nitrophenol					
POM*	8.8E-05	8.8E-08	7.67E-07	0.007	3.36E-06
Pentachlorophenol					
Perylene					
Phenol					
Phosphorus					
Propionaldehyde					
Selenium	2.4E-05	2.4E-08	2.09E-07	0.0018	9.15E-07
Styrene					
2,3,7,8-Tetrachlorodibenzo-p-dioxins					
Tin					
Toluene	3.4E-03	3.4E-06	2.96E-05	0.259	1.30E-04
Trichloroethene					
2,4,6-Trichlorophenol					
o-Xylene					
Vinyl Chloride					
Yttrium					

Heat content 1000 Btu/cf
Heat Rate 8.7 MMBtu/hr

Emission Factors from AP-42, Section 1.4, 1998 - for natural gas fired small boilers

Estimated Emission - Potential to Emit
Ext Combustion - Natural Gas
Fluidized Bed Dryer

	Emission Factor gas (lb/MMcf)	Emission Factor gas (lb/MMBtu)	Potential Emissions gas (lb/hr)	Potential Emissions gas (lb/yr)	Potential Emissions gas (tpy)
NO_X	100.0	1.00E-01	0.51		2.2
SO_2	0.600	6.00E-04	0.003		0.01
VOC	5.50	5.50E-03	0.03		0.1
CO	84.0	8.40E-02	0.43		1.9
Particulate	7.60	7.60E-03	0.039		0.170
PM10	7.60	7.60E-03	0.039		0.170
PM2.5	7.60	7.60E-03	0.039		0.170
GHG, per 40 CFR 98	GWP	kg/mmbtu	(lb/hr)	(lb/yr)	(tpy)
CO2	1	53.02	596.13		2611.1
CH4	21	1.10E-03	0.01		0.054
N20	310	1.10E-04	0.00		0.005
CO2e					2613.9
TAPs					
Acetaldehyde					
Acetone					
Acetophenone					
Acrolein					
Antimony					
Arsenic	2.0E-04	2.0E-07	1.02E-06	0.01	4.47E-06
Barium	4.4E-03	4.4E-06	2.24E-05	0.20	9.83E-05
Benzene	2.1E-03	2.1E-06	1.07E-05	0.09	4.69E-05
Benzo(a)pyrene*					
Benzo(b)fluoranthene*					
Benzo(k)fluoranthene*					
Beryllium	1.2E-05	1.2E-08	6.12E-08	0.0005	2.68E-07
bis(2-Ethylhexyl)phthalate					
Bromomethane					
Cadmium	1.1E-03	1.1E-06	5.61E-06	0.05	2.46E-05
Carbon tetrachloride					
Chlorine					
Chlorobenzene					
Chloroform					
Chloromethane					
Chromium	1.4E-03	1.4E-06	7.14E-06	0.06	3.13E-05
Chromium, hexavalent					
Chrysene*					
Cobalt	8.4E-05	8.4E-08	4.28E-07	0.00	1.88E-06
Copper	8.5E-04	8.5E-07	4.34E-06	0.04	1.90E-05
Crotonaldehyde					
Dibenzo(a,h)anthracene*					
1,2-Dichloroethane					
Dichloromethane					
1,2-Dichloropropane					
2,4-Dinitrophenol					
Ethylbenzene					
Formaldehyde	7.5E-02	7.5E-05	3.83E-04	3.35	1.68E-03
Hexane	1.8E+00	1.8E-03	9.18E-03	80.42	4.02E-02
Hydrogen chloride					
Indeno(1,2,3,c,d)pyrene*					
Iron					
Lead					
Manganese	3.4E-04	3.4E-07	1.73E-06	0.015	7.59E-06
Mercury	2.6E-04	2.6E-07	1.33E-06	0.012	5.81E-06
Molybdenum	1.1E-03	1.1E-06	5.61E-06	0.049	2.46E-05
Naphthalene	6.1E-04	6.1E-07	3.11E-06	0.027	1.36E-05
Nickel	2.1E-03	2.1E-06	1.07E-05	0.094	4.69E-05
4-Nitrophenol					
POM*	8.8E-05	8.8E-08	4.50E-07	0.004	1.97E-06
Pentachlorophenol					
Perylene					
Phenol					
Phosphorus					
Propionaldehyde					
Selenium	2.4E-05	2.4E-08	1.22E-07	0.0011	5.36E-07
Styrene					
2,3,7,8-Tetrachlorodibenzo-p-dioxins					
Tin					
Toluene	3.4E-03	3.4E-06	1.73E-05	0.152	7.59E-05
Trichloroethene					
2,4,6-Trichlorophenol					
o-Xylene					
Vinyl Chloride					
Yttrium					

Heat content 1000 Btu/cf
Heat Rate 5.1 MMBtu/hr

Emission Factors from AP-42, Section 1.4, 1998 - for natural gas fired small boilers

Estimated Emission - Potential to Emit
Ext Combustion - Natural Gas
Air Makeup Unit

		Emission Factor gas		Potential Emissions gas	Potential Emissions gas	Potential Emissions gas
		(lb/MMcf)	(lb/MMBtu)	(lb/hr)	(lb/yr)	(tpy)
NO_x		100.0	1.00E-01	0.350	3066.00	1.53
SO_2		0.600	6.00E-04	0.00210	18.40	0.0092
VOC		5.50	5.50E-03	0.01925	168.63	0.08
CO		84.0	8.40E-02	0.294	2575.44	1.29
Particulate		7.60	7.60E-03	0.02660	233.02	0.1165
PM10		7.60	7.60E-03	0.02660	233.02	0.1165
PM2.5		7.60	7.60E-03	0.02660	233.02	0.1165
GHG, per 40 CFR 98		GWP	kg/mmbtu	(lb/hr)	(lb/yr)	(tpy)
	CO2	1	53.02	409.11	3583815.28	1791.9
	CH4	21	1.10E-03	0.01	74.35	0.037
	N20	310	1.10E-04	0.00	7.44	0.004
	CO2e					1793.8
TAPs						
Acetaldehyde						
Acetone						
Acetophenone						
Acrolein						
Antimony						
Arsenic		2.0E-04	2.0E-07	7.00E-07	0.01	3.07E-06
Barium		4.4E-03	4.4E-06	1.54E-05	0.13	6.75E-05
Benzene		2.1E-03	2.1E-06	7.35E-06	0.06	3.22E-05
Benzo(a)pyrene*						
Benzo(b)fluoranthene*						
Benzo(k)fluoranthene*						
Beryllium		1.2E-05	1.2E-08	4.20E-08	0.0004	1.84E-07
bis(2-Ethylhexyl)phthalate						
Bromomethane						
Cadmium		1.1E-03	1.1E-06	3.85E-06	0.03	1.69E-05
Carbon tetrachloride						
Chlorine						
Chlorobenzene						
Chloroform						
Chloromethane						
Chromium		1.4E-03	1.4E-06	4.90E-06	0.04	2.15E-05
Chromium, hexavalent						
Chrysene*						
Cobalt		8.4E-05	8.4E-08	2.94E-07	0.00	1.29E-06
Copper		8.5E-04	8.5E-07	2.98E-06	0.03	1.30E-05
Crotonaldehyde						
Dibenzo(a,h)anthracene*						
1,2-Dichloroethane						
Dichloromethane						
1,2-Dichloropropane						
2,4-Dinitrophenol						
Ethylbenzene						
Formaldehyde		7.5E-02	7.5E-05	2.63E-04	2.30	1.15E-03
Hexane		1.8E+00	1.8E-03	6.30E-03	55.19	2.76E-02
Hydrogen chloride						
Indeno(1,2,3,c,d)pyrene*						
Iron						
Lead						
Manganese		3.4E-04	3.4E-07	1.19E-06	0.010	5.21E-06
Mercury		2.6E-04	2.6E-07	9.10E-07	0.008	3.99E-06
Molybdenum		1.1E-03	1.1E-06	3.85E-06	0.034	1.69E-05
Naphthalene		6.1E-04	6.1E-07	2.14E-06	0.019	9.35E-06
Nickel		2.1E-03	2.1E-06	7.35E-06	0.064	3.22E-05
4-Nitrophenol						
POM*		8.8E-05	8.8E-08	3.09E-07	0.003	1.35E-06
Pentachlorophenol						
Perylene						
Phenol						
Phosphorus						
Propionaldehyde						
Selenium		2.4E-05	2.4E-08	8.40E-08	0.0007	3.68E-07
Styrene						
2,3,7,8-Tetrachlorodibenzo-p-dioxins						
Tin						
Toluene		3.4E-03	3.4E-06	1.19E-05	0.104	5.21E-05
Trichloroethene						
2,4,6-Trichlorophenol						
o-Xylene						
Vinyl Chloride						
Yttrium						

Heat content 1000 Btu/cf
Heat Rate 3.5 MMBtu/hr

Emission Factors from AP-42, Section 1.4, 1998 - for natural gas fired small boilers

Milling & Final Packaging
Finished Product Super Sack load

Process: auger feed product after hammer mill into super sacks
any fines that escape the filling step are captured (100%) into Murphy-Rodgers Dust Collector (cyclone/filter system)

Outlet of Filter (manufacturer specification
0.01 gr/cf

Dust Collector system flow rate
1740 cfm

Process vents to the interior of building
50% reduction of emissions, due to building interior settling

conversion constants

60	minutes/hour
7000	grains/pound
2000	pounds/ton
8760	hours/year

Estimated PM Emissions

0.075	lb/hr PM	= 1740 cf/min * lb/7000 gr * 0.01 gr/cf * 60 min/hr * 50%
0.33	tons/year PM	= 0.075 lb/hr * 8760 hr/yr * ton/2000lb

TAP	Non-Carcinogen or Carcinogen	Emission Rate	Screening Emission Level (EL)[a]	<EL	HAP	HPA rate	HAP rate
		(lb/hr)	(lb/hr)	(Y/N)	(Y/N)	lb/hr	T/yr
Hydrogen Chloride	Non-carcinogen	0.00041	0.05	Y	N		
Nitric Acid	Non-carcinogen	0.00505	0.333	Y	N		
Sulfuric Acid	Non-carcinogen	0.00213	0.067	Y	N		
Acetic acid	Non-carcinogen	2.029	1.67	N	N		
Arsenic	Carcinogen	3.46E-06	1.50E-06	N	Y	3.46E-06	
Barium	Non-carcinogen	7.61E-05	3.30E-02	Y	N		
Benzene	Carcinogen	3.63E-05	8.00E-04	Y	Y	3.63E-05	
Beryllium	Carcinogen	2.08E-07	2.80E-05	Y	Y	2.08E-07	
Cadmium	Carcinogen	1.90E-05	3.70E-06	N	Y	1.90E-05	
Chromium	Non-carcinogen	2.42E-05	3.30E-02	Y	Y	2.42E-05	
Cobalt	Non-carcinogen	1.45E-06	3.30E-03	Y	Y	1.45E-06	
Copper	Non-carcinogen	1.47E-05	1.30E-02	Y	N		
Formaldehyde	Carcinogen	1.30E-03	5.10E-04	N	Y	1.30E-03	
Hexane	Non-carcinogen	3.11E-02	1.20E+01	Y	Y	3.11E-02	
Manganese	Non-carcinogen	5.88E-06	6.70E-02	Y	Y	5.88E-06	
Mercury		4.50E-06	NA	NA	Y	4.50E-06	
Molybdenum	Non-carcinogen	1.90E-05	3.33E-01	Y	N		
Naphthalene	Non-carcinogen	1.06E-05	3.33E+00	Y	Y	1.06E-05	
Nickel	Carcinogen	3.63E-05	2.70E-05	N	Y	3.63E-05	
POM*	Carcinogen	1.53E-06	2.00E-06	Y	Y	1.53E-06	
Selenium	Non-carcinogen	4.15E-07	1.30E-02	Y	Y	4.15E-07	
Toluene	Non-carcinogen	5.88E-05	2.50E+01	Y	Y	5.88E-05	
Total						3.26E-02	**0.14**

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

M E M O R A N D U M

DATE: July 17, 2020

TO: Shawnee Chen, Permit Writer, Air Program

FROM: Pao Baylon, Modeling Review Analyst, Air Program

PROJECT: P-2019.0030 PROJ 62435, Permit for an Existing Vegetable Dehydration Plant located in Burley, Idaho.

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

Contents

Acronyms, Units, and Chemical Nomenclature

3D Idapro	3D Idapro Solutions, LLC (permittee's former name)
AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
acfm	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AMU	Air Make-up Unit
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
ASOS	Automated Surface Observing System
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEM	Digital Elevation Map
DEQ	Idaho Department of Environmental Quality
DV	Design Values
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
ERM	Environmental Resources Management (permittee's permitting and modeling consultant)
GEP	Good Engineering Practice
hr	Hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
lb/hr	Pounds per hour
LinkOne	LinkOne Potato Solutions, LLC (permittee)
m	Meters
m/sec	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NW AIRQUEST	Northwest International Air Quality Environmental Science and Technology Consortium
NWS	National Weather Service
O_3	Ozone

OLM	Ozone Limiting Method
O&M	Operation and Maintenance
Pb	Lead
PCA	Packaging Corporation of America (co-contributing source to this project)
PEMV	Pacific Ethanol Magic Valley (co-contributing source to this project)
PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	parts per billion
PRIME	Plume Rise Model Enhancement
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
PVMRM	Plume Volume Molar Ratio Method
scfm	Standard cubic feet per minute
SIL	Significant Impact Level
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	Tons per year
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds
ºF	Degrees Fahrenheit
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

LinkOne Potato Solutions (LinkOne) submitted a Permit to Construct (PTC) application for its existing vegetable dehydration plant located in Burley, Idaho. The facility currently operates under an Idaho Department of Environmental Quality (DEQ) PTC P-2019.0030 issued on January 14, 2020. The project involves an increase in facility daily production limitation from 70,000 pounds per day to 120,000 pounds per day. There are no physical changes being made. Project-specific air quality analyses involving atmospheric dispersion modeling of estimated emissions associated with the facility were submitted to DEQ to demonstrate that applicable emissions do not result in violation of a National Ambient Air Quality Standard (NAAQS) or Toxic Air Pollutant (TAP) increment as required by the Idaho Administrative Procedures Act 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03). This memorandum provides a summary of the applicability assessment for analyses and air impact analyses used to demonstrate compliance with applicable NAAQS and TAP increments, as required by Idaho Air Rules Section 203.02 and 203.03.

Environmental Resources Management (ERM), on behalf of LinkOne, prepared the PTC application and performed ambient air impact analyses for this project. DEQ review of submitted data and DEQ analyses summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not address/evaluate compliance with other rules or analyses not pertaining to the air impact analyses. Evaluation of emission estimates was the responsibility of the DEQ permit writer and is addressed in the main body of the DEQ Statement of Basis, and emission calculation methods were not evaluated in this modeling review memorandum.

Table 1 presents key assumptions and results to be considered in the development of the permit. Idaho Air Rules require air impact analyses be conducted in accordance with methods outlined in 40 CFR 51, Appendix W *Guideline on Air Quality Models* (Appendix W). Appendix W requires that air quality impacts be assessed using atmospheric dispersion models with emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

The submitted information and analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emission estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project, when appropriately combined with co-contributing sources and background concentrations, were below applicable NAAQS at ambient air locations where and when the project has a significant impact; 5) showed that TAP emission increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments. This conclusion assumes that conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition. The DEQ permit writer should use Table 1 and other information presented in this memorandum to generate appropriate permit provisions/restrictions to assure emissions do not exceed applicable regulatory thresholds requiring further analyses and to assure the requirements of Appendix W are met regarding emissions representative of design capacity or permit allowable rates.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES.	
Criteria/Assumption/Result	**Explanation/Consideration**
General Emission Rates. Emission rates used in the air impact analyses, as listed in this memorandum, must represent maximum potential emissions as given by design capacity, inherently limited by the nature of the process or configuration of the facility, or as limited by the issued permit for the specific pollutant and averaging period.	Compliance has not been demonstrated for emission rates greater than those used in the air impact analyses.
Air Impact Analyses for Criteria Pollutant Emissions. Short-term and long-term facility-wide emissions of $PM_{2.5}$[a] and PM_{10}[b] are greater than DEQ Level I modeling thresholds. Therefore, these pollutants and all averaging times are subject to NAAQS Compliance Demonstration requirements.	Project-specific air impact analyses demonstrating compliance with NAAQS, as required by Idaho Air Rules Section 203.02, are required for pollutant increases above BRC thresholds, or for pollutants having an emissions increase that is greater than Level I modeling applicability thresholds (where the BRC exclusion cannot be used).
Air Impact Analyses for TAP Emissions. Allowable emissions of TAPs other than acetic acid, arsenic, cadmium, formaldehyde, and nickel are below ELs. Analyses demonstrating compliance with acetic acid, arsenic, cadmium, formaldehyde, and nickel TAP increments were performed.	A TAP increment compliance demonstration would be required for any TAPs with emissions above ELs.
Nearby Co-Contributing Sources in Cumulative NAAQS Impact Analysis. The Pacific Ethanol Magic Valley (PEMV) and Packaging Corporation of America (PCA) facilities are located directly to the west and southeast, respectively, of the LinkOne facility. PEMV and PCA were not modeled in the previous permitting action, but were modeled as co-contributing sources in DEQ's verification analysis for this permitting project. Receptors that are located within PEMV and PCA's ambient air boundaries were modeled but without the contribution from PEMV and PCA's emission sources for receptors on their own property.	A cumulative NAAQS impact analysis involves assessing ambient impacts from potential/allowable emissions resulting from the project and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result. The impacts of PEMV and PCA are not adequately accounted for by the background concentrations. Therefore, both facilities were modeled as a co-contributing source in the cumulative NAAQS impact analysis.
Culpability Analysis for 24-hour and Annual $PM_{2.5}$. Results from the cumulative NAAQS impact analysis for 24-hour and annual $PM_{2.5}$ suggest that NAAQS was exceeded at a handful of receptors. A culpability analysis was performed by DEQ to demonstrate that the LinkOne facility does not cause or contribute to the modeled exceedance. The maximum LinkOne contribution to a 24-hour $PM_{2.5}$ NAAQS exceedance is 0.50 $\mu g/m^3$, which is below the significance level of 1.2 $\mu g/m^3$. The maximum LinkOne contribution to an annual $PM_{2.5}$ NAAQS exceedance is 0.058 $\mu g/m^3$, which is below the significance level of 0.2 $\mu g/m^3$. Therefore, the LinkOne facility is not culpable for the 24-hour and annual $PM_{2.5}$ NAAQS violations.	If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations.

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

Summary of Submittals and Actions

April 28, 2020 Regulatory start date.

May 8, 2020 ERM, on behalf of LinkOne, submitted modeling files and an updated emission inventory to DEQ via e-mail.

May 26, 2020 Application determined complete by DEQ.

2.0 Background Information

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

2.1 Project Description

The LinkOne facility receives vegetable byproducts (potato) as raw material and dehydrates the raw material through drum dryer and bed dryer systems to customer specifications. The final product is packaged and shipped to customers. Pollutant-emitting processes conducted at the facility include drum drying, bed drying, and final milling/packaging. The project involves an increase in facility daily production limitation from 70,000 pounds per day to 120,000 pounds per day. There are no physical changes being made. The PTC addresses all air pollutant-emitting activities associated with the facility.

2.2 Facility Location and Area Classification

The facility is located in Burley, within Cassia County (Northing: 4,711,599 m; Easting: 268,935 m; UTM Zone 12). This area is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$). The area is not classified as non-attainment for any criteria pollutants. The plan site is rural with some nearby light industrial activity, as well as residential areas to the east and northeast.

2.3 Air Impact Analyses Required for All Permits to Construct

Idaho Air Rules Sections 203.02 and 203.03:

> *No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*
>
> ***02. NAAQS****. The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*
>
> ***03. Toxic Air Pollutants.*** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

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

> ***02. Estimates of Ambient Concentrations****. All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).*

2.4 Significant Impact Level and Cumulative NAAQS Impact Analyses

If specific criteria pollutant emission increases associated with the proposed permitting project cannot qualify for a BRC exemption as per Idaho Air Rules Section 221, then the permit cannot be issued unless the application demonstrates that applicable emission increases will not cause or significantly contribute to a violation of NAAQS, as required by Idaho Air Rules Section 203.02.

The first phase of a NAAQS compliance demonstration is to evaluate whether the proposed facility/project could have a significant impact to ambient air. Section 3.1.1 of this memorandum describes the applicability evaluation of Idaho Air Rules Section 203.02. The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted in accordance with methods outlined in Appendix W. Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

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

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

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

If the cumulative NAAQS impact analysis indicates an exceedance of NAAQS, a culpability analysis can determine if this exceedance is due to emissions from the proposed project. The permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) applicable specific criteria pollutant emission increases are at a level defined as BRC, using the criteria established by DEQ regulatory interpretation[1]; or b) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

Table 2. APPLICABLE REGULATORY LIMITS.

Pollutant	Averaging Period	Significant Impact Levels[a] (μg/m^3)[b]	Regulatory Limit[c] (μg/m^3)	Modeled Design Value Used[d]
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.2	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 μg/m^3)	75 ppb[p] (196 μg/m^3)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
	24-hour	5	365[m]	Maximum 2nd highest[n]
	Annual	1.0	80[r]	Maximum 1st highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 μg/m^3)	100 ppb[s] (188 μg/m^3)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

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

2.5 Toxic Air Pollutant Analyses

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

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

contaminants, injure or unreasonably affect human or animal life or vegetation.

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

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

Per Section 210, if the total project-wide emission 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 emission 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. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion.

3.0 Analytical Methods and Data

This section describes the methods and data used in the analyses to demonstrate compliance with applicable air quality impact requirements. The DEQ Statement of Basis provides a discussion of the methods and data used to estimate criteria and TAP emission rates.

3.1 Emission Source Data

Emissions of criteria pollutants and TAPs resulting from operation of the LinkOne facility were estimated by ERM for various applicable averaging periods. The calculation of potential emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emission estimates is not addressed in this modeling memorandum. DEQ air impact analysts are responsible for assuring that potential emission rates provided in the emission inventory are properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emission rates used in the impact modeling applicability analyses and any modeling analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emission inventory. All modeled criteria air pollutant and TAP emission rates must be equal to or greater than the facility's potential emissions calculated in the PTC emission inventory or proposed permit allowable emission rates.

3.1.1 Modeling Applicability and Modeled Criteria Pollutant Emission Rates

If project-specific emission increases for criteria pollutants would qualify for a BRC permit exemption as per Idaho Air Rules Section 221 if it were not for potential emissions of one or more pollutants exceeding the BRC threshold of 10 percent of emissions defined by Idaho Air Rules as significant, then a NAAQS compliance demonstration may not be required for those pollutants with emissions below BRC levels. DEQ's regulatory interpretation policy of exemption provisions of Idaho Air Rules is that: "A DEQ NAAQS compliance assertion will not be made by the DEQ modeling group for specific criteria pollutants having a project emissions increase below BRC levels, provided the proposed project would have qualified for a Category I Exemption for BRC emissions quantities except for the emissions of another criteria pollutant.[1]" The interpretation policy also states that the exemption criteria of uncontrolled potential to emit (PTE) not to exceed 100 ton/year (Idaho Air Rules Section 220.01.a.i) is not applicable when evaluating whether a NAAQS impact analyses is required. A permit will be issued limiting PTE below 100 ton/year, thereby negating the need to maintain calculated uncontrolled PTE under 100 ton/year. The BRC exemption cannot be used to exempt a project from a pollutant-specific NAAQS compliance demonstration in most cases where a PTC is required for the action regardless of emission quantities, such as the modification of an existing emission or throughput limit.

A NAAQS compliance demonstration must be performed for pollutant increases that would not qualify for the BRC exemption from the requirement to demonstrate compliance with NAAQS.

Site-specific air impact modeling analyses may not be necessary for some pollutants, even where such emissions do not qualify for the BRC exemption. DEQ has developed modeling applicability thresholds, below which a site-specific modeling analysis is not required. DEQ generic air impact modeling analyses that were used to develop the modeling thresholds provide a conservative SIL analysis for projects with emissions below identified threshold levels. Project-specific modeling applicability thresholds are provided in the *Idaho Air Modeling Guideline*[2]. These thresholds were based on assuring an ambient impact of less than the established SIL for specific pollutants and averaging periods.

If total project-specific emission rate increases of a pollutant are below Level I Modeling Applicability Thresholds, then project-specific air impact analyses are not necessary for permitting. Use of Level II Modeling Applicability Thresholds are conditional, requiring DEQ approval. DEQ approval is based on dispersion-affecting characteristics of the emission sources such as stack height, stack gas exit velocity, stack gas temperature, distance from sources to ambient air, presence of elevated terrain, and potential exposure to sensitive public receptors.

Because the project involves nothing more than a relaxation of the throughput limit, the modeling demonstration was effectively redoing the previous permitting action with the modified throughput. Table 3 provides a comparison between facility-wide emissions and modeling applicability thresholds. The short-term and long-term PTE emissions are equal to the sum of the drum dryer, bed dryer, dryer burner, final milling/packing, and air make-up unit (AMU) emissions. The permit modification does not affect the maximum burner rates in the dryer system and does not increase the potential emissions already associated with the final product packaging. Only particulate emissions from the drum drying and bed drying processes would increase as a result of the project. The carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen oxide (NOx) emissions indicated in Table 3 are identical to the emissions listed in the previous permitting action.

Table 3. SITE-SPECIFIC CRITERIA POLLUTANT MODELING APPLICABILITY.

Pollutant	Averaging Period	Emissions	Level I Modeling Thresholds	Level II Modeling Thresholds[a]	Site-Specific Modeling Required?
PM_{10}[b]	24-hour	1.59 lb/hr	0.22	2.6	Yes
$PM_{2.5}$[c]	24-hour	1.59 lb/hr	0.054	0.63	Yes
	Annual	6.95 ton/yr	0.35	4.1	Yes

Carbon Monoxide (CO)	1-hour, 8-hour	1.45 lb/hr	15	175	No
Sulfur Dioxide (SO_2)	1-hour, 3-hour	0.010 lb/hr	0.21	2.5	No
Nitrogen Oxides (NOx)	1-hour	1.73 lb/hr	0.20	2.4	Yes[d]
	Annual	7.58 ton/yr	1.2	14	Yes[d]

a. Level II Modeling Thresholds were not approved for use with this project.
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. NOx emissions are identical to the values listed in the previous permitting action. NOx modeling was already addressed in the previous permitting action and was therefore not performed for this project.

As indicated in Table 3, modeling is required for all pollutants except for CO and SO_2 based on the Level I modeling thresholds. NOx modeling was already addressed in the previous permitting action and was therefore not performed for this project. Therefore, only PM_{10} and $PM_{2.5}$ were modeled. The use of Level II modeling thresholds was not approved by DEQ for this project.

Tables 4 and 5 list criteria pollutant emission rates used in the SIL and Cumulative NAAQS Impact Analyses, respectively.

Table 4. MODELED EMISSION RATES FOR SIL ANALYSIS.

Source ID	Source Description	Pollutant	Averaging Period	Emission Total
S01	Scrubber Stack and AMU[a]	$PM_{2.5}$	24-hour	0.58 lb/hr[b]
			Annual	2.52 tpy[c]
		PM_{10}	24-hour	0.58 lb/hr
V01	Milling/Packaging	$PM_{2.5}$	24-hour	0 lb/hr
			Annual	0 tpy
		PM_{10}	24-hour	0 lb/hr
V02	Milling/Packaging	$PM_{2.5}$	24-hour	0 lb/hr
			Annual	0 tpy
		PM_{10}	24-hour	0 lb/hr
V03	Milling/Packaging	$PM_{2.5}$	24-hour	0 lb/hr
			Annual	0 tpy
		PM_{10}	24-hour	0 lb/hr

a. Air make-up unit.
b. Pounds per hour.
c. Tons per year.

Table 5. MODELED EMISSION RATES FOR CUMULATIVE NAAQS IMPACT ANALYSIS.

Source ID	Source Description	Pollutant	Averaging Period	Emission Total
S01	Scrubber Stack and AMU[a]	$PM_{2.5}$	24-hour	1.513 lb/hr[b]
			Annual	6.627 tpy[c]
		PM_{10}	24-hour	1.513 lb/hr
V01	Milling/Packaging	$PM_{2.5}$	24-hour	0.0397 lb/hr
			Annual	0.174 tpy
		PM_{10}	24-hour	0.0397 lb/hr
V02	Milling/Packaging	$PM_{2.5}$	24-hour	0.0176 lb/hr
			Annual	0.077 tpy
		PM_{10}	24-hour	0.0176 lb/hr
V03	Milling/Packaging	$PM_{2.5}$	24-hour	0.0176 lb/hr
			Annual	0.077 tpy
		PM_{10}	24-hour	0.0176 lb/hr

a. Air make-up unit.
b. Pounds per hour.
c. Tons per year.

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

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

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

DEQ determined it was not appropriate or necessary to require a quantitative source-specific O_3 impact analysis because allowable emission estimates of VOCs and NOx are below the 100 tons/year threshold.

3.1.2 TAPs Modeling Applicability

TAP emission regulations under Idaho Air Rules Section 210 are only applicable for new or modified sources constructed after July 1, 1995.

Facility-wide emissions of acetic acid, arsenic, cadmium, formaldehyde, and nickel exceed the applicable emission screening levels (ELs) of Idaho Air Rules Section 585 and 586. Air impact modeling analyses were then required to demonstrate that maximum impacts of acetic acid, arsenic, cadmium, formaldehyde, and nickel are below applicable ambient increment standards expressed in Idaho Air Rules Section 585 and 586 as AACs and AACCs.

Acetic acid is a non-carcinogenic TAP that is regulated on a short-term averaging basis. Therefore, the appropriate emission rates for impact analyses are maximum daily emissions, expressed as an average pound/hour value over a 24-hour period. Arsenic, cadmium, formaldehyde, and nickel are carcinogenic TAPs that are regulated on a long-term averaging basis. Therefore, the appropriate emission rates for impact analyses are maximum annual emissions, expressed as an average pound/hour value over an 8,760-hour period.

Table 6 provides a summary of TAP emission increases for the project for those TAPs that had an increase exceeding the ELs of Idaho Air Rules Section 585 or 586.

Table 6. TAP EMISSION INCREASES THAT TRIGGER MODELING.		
Toxic Air Pollutant	Emissions (lb/hr)[a]	Screening Emissions Level (lb/hr)
Acetic acid[b]	40.57	1.67
Arsenic[c]	3.46E-06	1.50E-06
Cadmium[c]	1.90E-05	3.70E-06
Formaldehyde[c]	1.30E-03	5.10E-04
Nickel[c]	3.60E-05	2.70E-05

a. Pounds per hour.
b. Non-carcinogenic TAP. ELs are daily maximum emissions expressed as pounds/hour. The emissions rate is the daily emissions divided by 24 hours/day.
c. Carcinogenic TAP. ELs are annual maximum emissions expressed as pounds/hour. The emissions rate is the annual emissions divided by 8,760 hours/year.

Table 7 lists the emission rates used in the TAPs Impact Analyses.

Table 7. MODELED EMISSION RATES FOR TAPS IMPACT ANALYSES.			
Source ID	Source Description	Toxic Air Pollutant	Emission Rate (lb/hr)[a]
S01	Scrubber Stack & AMU[b]	Acetic acid[c]	40.57
		Arsenic[d]	3.46E-06
		Cadmium[d]	1.90E-05
		Formaldehyde[d]	1.30E-03
		Nickel[d]	3.60E-05

a. Pounds per hour.
b. Air make-up unit.
c. Non-carcinogenic TAP. The emission rate is the daily emissions divided by 24 hours/day.
d. Carcinogenic TAP. The emission rate is the annual emissions divided by 8,760 hours/year.

3.1.3 Emission Release Parameters

Table 8 lists emission release parameters, including stack height, exhaust temperature, exhaust velocity, and stack diameter for emission sources modeled in the air impact analyses, in metric units (English units are enclosed in parentheses). Emission point release parameters were based on information provided in the application. Justification for emission release parameters is summarized in the next section.

Table 8. POINT SOURCE EMISSION RELEASE PARAMETERS IN METRIC UNITS (ENGLISH UNITS IN PARENTHESES).								
Release Point	Description	UTM[a] Coordinates		Stack Height in m (ft)[c]	Stack Exhaust Temp. in K (°F)[d]	Stack Exhaust Velocity in m/sec (fps)[e]	Stack Diameter in m (ft)	Orient. Of Release[f]
		Easting-X (m)[b]	Northing-Y (m)					
S01	Scrubber & AMU	268,964.77	4,711,625.24	13.70 (44.9)	327.6 (130)	7.5 (24.8)	1.52 (5.0)	D
V01	Milling/ Packaging	268,931.64	4,711,588.15	6.40 (21.0)	294.3 (70)	15.3 (50.1)	0.46 (1.5)	R
V02	Milling/ Packaging	268,938.02	4,711,585.18	6.40 (21.0)	294.3 (70)	15.3 (50.1)	0.31 (1.0)	R
V02	Milling/ Packaging	268,934.82	4,711,577.93	6.40 (21.0)	294.3 (70)	15.3 (50.1)	0.31 (1.0)	R

a. Universal Transverse Mercator.
b. m: meters.
c. ft: feet.
d. K: Kelvin; °F: degrees Fahrenheit.
e. m/sec: meters per second; fps: feet per second.

f. Default: vertical, uninterrupted release; R: raincap.

3.1.4 Emission Release Parameter Justification

Odor Scrubber & AMU

Model ID: S01

The emissions of most criteria pollutants and TAPs are exhausted to the atmosphere through the odor scrubber (S01), a single point of exhaust. The listed manufacturer for the scrubber is Anguil. Emissions from the AMU were modeled to exhaust from the scrubber stack.

Stack height was modeled at 44.9 feet (13.70 meters). The top of the scrubber body is at a height of 34.9 feet and the stack extends approximately 10 feet above that.

A stack temperature of 130ºF (327.6 K) was used in the modeling analysis. This value was based on information contained in the Anguil proposal.

The stack diameter listed in the manufacturer's sheet is 4.5 feet (1.37 meters). However, S01 was modeled with a stack diameter of 5.0 feet (1.52 meters) based on new information received by LinkOne confirming that the scrubber system was purchased and installed without the fan that was specified in the Anguil proposal.

The total flow rate was calculated from the sum of the drum dryer flow rate and the fluid belt dryer flow rate. The drum dryer flow rate was obtained from the 2016 stack test average flow rate which was 17,732 actual cubic feet per minute (acfm). The belt dryer in operation during the 2016 stack test was replaced by the current fluidized bed dryer. Therefore, the 2016 test data showing flow rate for the belt dryer is not accurate for the current fluidized bed dryer. To obtain flow rate information on the current bed dryer, the Operation and Maintenance (O&M) manual was used. The manual states a maximum of 10,300 and minimum of 8,000 standard cubic feet per minute (scfm). ERM used the average of these values (9,150 scfm) and converted it to acfm based on site conditions of temperature, pressure, and elevation. The flow rate for the fluid bed dryer is 11,429 acfm. Therefore, the total flow rate for S01 is 29,161 acfm.

The corresponding modeled exit velocity is 7.5 meter/second.

$$S01\ exit\ velocity = 29{,}161\,\frac{feet^3}{minute} \times \frac{4}{\pi(5\ feet)^2} \times \frac{1\ minute}{60\ seconds} \times \frac{1\ meter}{3.28\ feet} = 7.5\,\frac{meter}{second}$$

Odor scrubber release parameters were appropriately documented and justified.

Milling/Packaging

Model IDs: V01, V02, V03

Some $PM_{2.5}$/PM_{10} emissions are also released into the manufacturing building and were simulated to emit to the ambient air through three passive vents in the milling/packaging room.

Building height is 20 feet, and each passive stack was modeled with a stack height that is one foot above the roof (21.0 feet or 6.40 meters). A stack temperature of 70ºF (294.3 K, room temperature) was used in the modeling analysis.

V01 was modeled with a stack diameter of 1.5 feet (0.46 meters). Both V02 and V03 were modeled with a stack diameter of 1.0 foot (0.31 meters). Using an area-weighted approach, the total flow rate was divided among the three passive stacks. Flow rates for V01, V02, and V03 were calculated as 5,309 acfm, 2,360 acfm, and 2,360 acfm, respectively. The corresponding modeled exit velocity is 15.3 meter/second for all three passive stacks.

$$V01\ exit\ velocity = 5{,}309\frac{feet^3}{minute}\times\frac{4}{\pi(1.5\ feet)^2}\times\frac{1\ minute}{60\ seconds}\times\frac{1\ meter}{3.28\ feet} = 15.3\frac{meter}{second}$$

$$V02, V03\ exit\ velocity = 2{,}360\frac{feet^3}{minute}\times\frac{4}{\pi(1\ foot)^2}\times\frac{1\ minute}{60\ seconds}\times\frac{1\ meter}{3.28\ feet} = 15.3\frac{meter}{second}$$

Release parameters for the passive stacks in the milling/packaging room were appropriately documented and justified.

3.2 Background Concentrations

Background concentrations are used if a cumulative NAAQS impact analysis is needed to demonstrate compliance with applicable NAAQS. Background design values (DV) for 24-hour and annual $PM_{2.5}$, 24-hour PM_{10}, and 1-hour and annual NO_2 were obtained from the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST; https://arcg.is/1jXmHH) using the project site coordinates. These background air pollutant levels are based on regional-scale air pollution modeling of pollutants in Washington, Oregon, and Idaho, with modeling results adjusted according to available monitoring data. ERM selected four grid points surrounding the LinkOne facility and calculated the average of these four points as the ambient background for each applicable pollutant and averaging time. These four values are very similar; therefore, taking the average is appropriate. The average values obtained from NW AIRQUEST are listed in Table 9.

Table 9. AMBIENT BACKGROUND CONCENTRATIONS AT THE LINKONE FACILITY.

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a,b]
$PM_{2.5}$[c]	24-hr	11.85
	Annual	5.35
PM_{10}[d]	24-hr	76.55

a. Micrograms per cubic meter, except where noted otherwise.
b. NW AIRQUEST ambient background lookup tool, mid 2014-2017.
c. Particulate matter with an aerodynamic diameter of 2.5 microns or less.
d. Particulate matter with an aerodynamic diameter of 10 microns or less.

3.3 Impact Modeling Methodology

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

3.3.1 General Overview of Impact Analyses

ERM performed the project-specific air pollutant emission inventory and air impact analyses that were submitted with the application. The submitted information/analyses, in combination with results from DEQ's air impact analyses, demonstrate compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 10 provides a brief description of parameters used in the modeling analyses.

<table>
<tr><th colspan="3">Table 10. MODELING PARAMETERS.</th></tr>
<tr><th>Parameter</th><th>Description/Values</th><th>Documentation/Addition Description</th></tr>
<tr><td>General Facility Location</td><td>Burley, Idaho</td><td>The area is an attainment or unclassified area for all criteria pollutants.</td></tr>
<tr><td>Model</td><td>AERMOD</td><td>AERMOD with the PRIME downwash algorithm, version 18081.</td></tr>
<tr><td>Meteorological Data</td><td>Burley surface data;
Boise upper air data</td><td>See Section 3.3.4 of this memorandum for additional details of the meteorological data.</td></tr>
<tr><td>Terrain</td><td>Considered</td><td>1/3 arc second National Elevation Dataset (NED) was acquired from the USGS for the surrounding area. AERMAP version 18081 was used to process terrain elevation data for all buildings and receptors. See Section 3.3.5 for more details.</td></tr>
<tr><td>Building Downwash</td><td>Considered</td><td>Plume downwash was considered for the structures associated with the facility. BPIP-PRIME was used to evaluate building dimensions for consideration of downwash effects in AERMOD. See Section 3.3.6.</td></tr>
<tr><td rowspan="6">Receptor Grid</td><td colspan="2">SIL Analysis
The selection of receptors for use in the SIL Analyses is as follows (see Section 3.3.9):</td></tr>
<tr><td>Grid 1</td><td>10-meter spacing along the ambient air boundary and from the property boundary out to 100 meters from the property boundary.</td></tr>
<tr><td>Grid 2</td><td>50-meter spacing from 100 meters beyond the property boundary out to 500 meters from the property boundary.</td></tr>
<tr><td>Grid 3</td><td>100-meter spacing from 500 meters beyond the property boundary out to 2,000 meters from the property boundary.</td></tr>
<tr><td colspan="2">Cumulative NAAQS Impact Analyses
The same receptor grid was used for the NAAQS Analyses as for the Significant Impact Level Analyses.</td></tr>
<tr><td colspan="2">TAPs Analyses
The same receptor grid was used for the TAPs Analyses as for the Significant Impact Level Analyses.</td></tr>
</table>

3.3.2 Modeling Protocol

No modeling protocol was submitted for this project.

3.3.3 Modeling Methodology

Project-specific modeling and other required impact analyses were generally conducted using data and methods described in the *Idaho Air Quality Modeling Guideline*[2].

3.3.4 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in Appendix W. 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 it includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

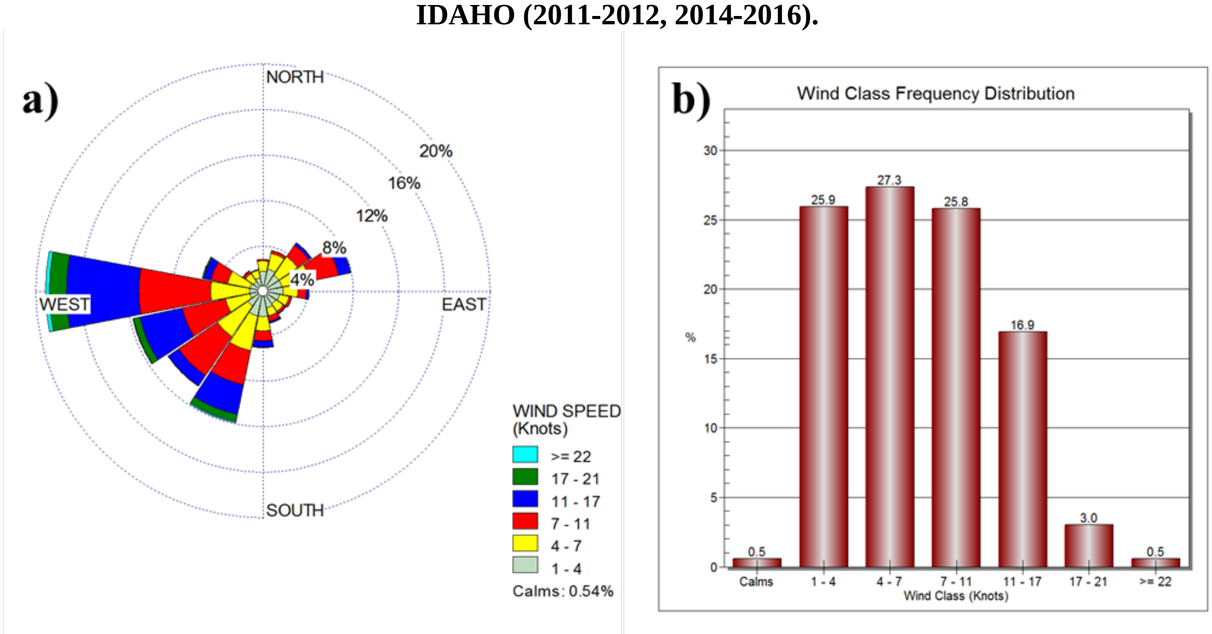
AERMOD version 18081 was used by ERM for the modeling analyses to evaluate impacts of the facility. This version was the current version at the time the application was received by DEQ.

3.3.5 Meteorological Data

DEQ processed a meteorological dataset from Burley, Idaho (KBYI; station ID 725867-24133) covering the years 2011-2016. The year 2013 was not utilized due to significant missing Automated Surface Observing Systems (ASOS) wind data in that time period. The upper air soundings required by AERMET were obtained from the Boise airport station (site ID 24131). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. DEQ modeling staff evaluated annual moisture conditions for the AERSURFACE runs based on thirty years of Burley airport precipitation data. Conditions were determined to be "wet" for 2014 and 2016 and "average" for 2011, 2012, and 2015. Average moisture content is defined as within a 30 percentile of the 30-year mean of 9.83 inches. Calms were relatively low, and less than 1 percent of the data were missing from the 5-year record.

Figure 1 shows a wind rose and wind speed histogram at Burley Airport. AERMINUTE version 15272 was used to process ASOS wind data for use in AERMET. AERMET version 18081 was used to process surface and upper air data and to generate a model-ready meteorological data input file. The "adjust u star" (ADJ_U*) option was applied in AERMET to enhance model performance during low wind speeds under stable conditions. DEQ provided meteorological data to ERM, with and without the ADJ_U* option enabled. In the submitted modeling files, ERM used the meteorological data with the ADJ_U* option enabled. DEQ determined that these data are adequately representative of the meteorology at the LinkOne site for minor source permitting.

Figure 1. (a) WIND ROSE AND (b) WIND SPEED HISTOGRAM AT BURLEY AIRPORT IN IDAHO (2011-2012, 2014-2016).

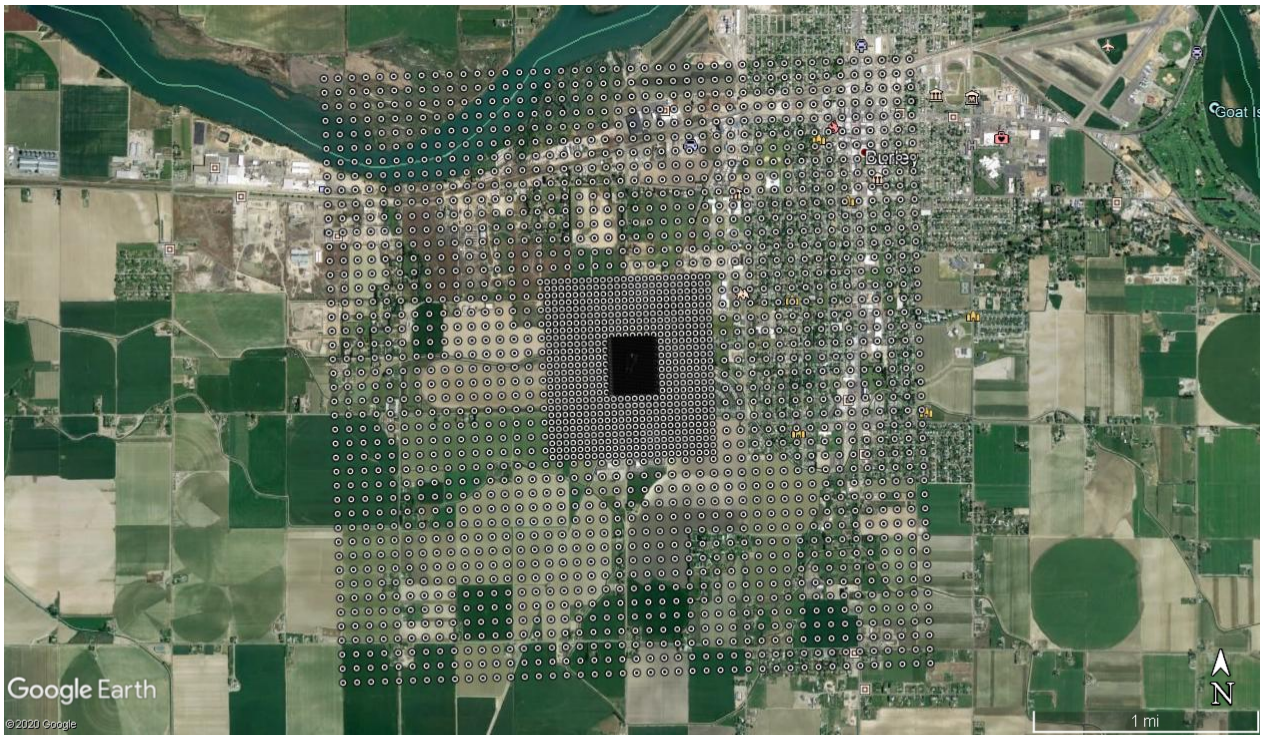


3.3.6 Effects of Terrain on Modeled Impacts

Submitted ambient air impact analyses used terrain data extracted from United States Geological Survey (USGS) National Elevation Dataset (NED) files.

The terrain preprocessor AERMAP version 18081 was used by ERM to extract the elevations from the NED files and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emission plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. Figure 2 depicts the full receptor grid used in the analyses, overlaid on a terrain image from Google Earth.

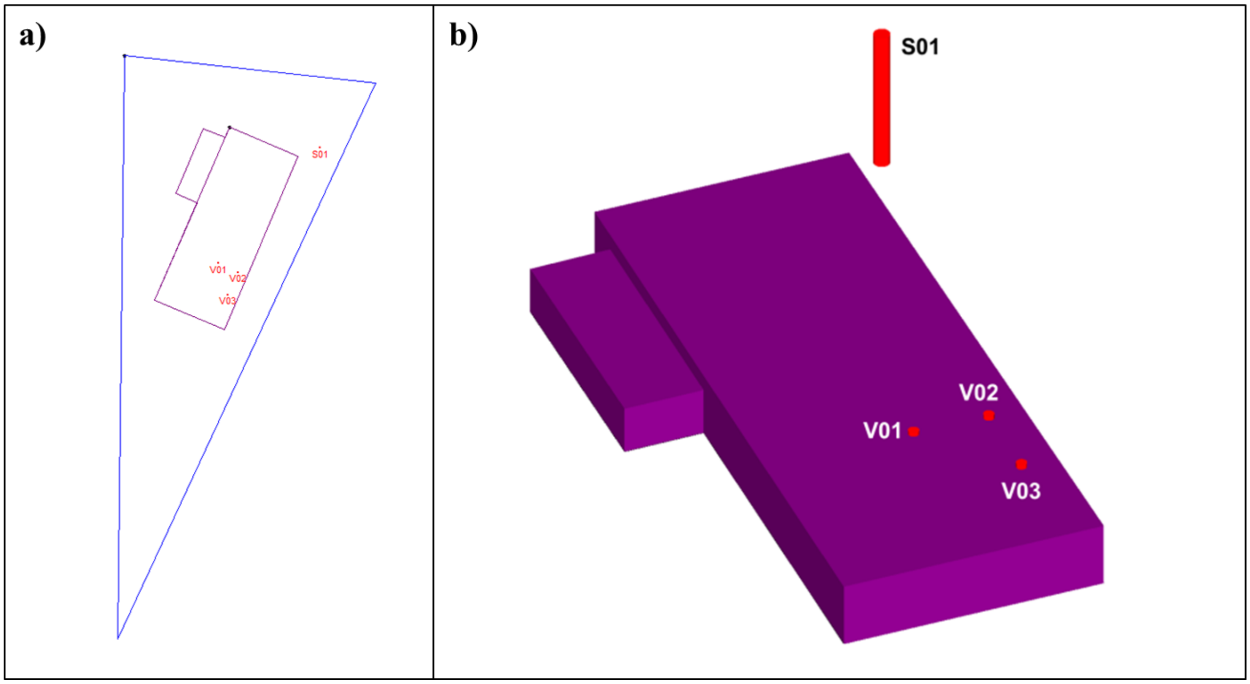
Figure 2. THE FULL RECEPTOR GRID CENTERED AT THE LINKONE FACILITY IN BURLEY, IDAHO.



3.3.7 Facility Layout and Downwash

Figure 3 shows the facility's structures and emission sources in the modeling analyses. Red dots in Figure 3a represent point sources. Figure 3b depicts a three-dimensional view of the modeled building and point sources, as viewed from the southwest.

Figure 3. LINKONE MODEL SETUP WITH POINT SOURCES LABELED.



DEQ verified proper identification of the site location, equipment locations, and the ambient air boundary by comparing a graphical representation of the modeling input file to plot plans submitted in the application. Aerial photographs on Google Earth (available at https://www.google.com/earth) were also used to assure that horizontal coordinates were accurate as described in the application. However, DEQ notes that the aerial imagery from Google Earth is outdated (June 6, 2016) and does not show the actual location of the odor scrubber (model ID: S01). ERM confirmed that the modeled location of the odor scrubber is the actual location.

Potential downwash effects on emission plumes were accounted for in the model by using building dimensions and locations (locations of building corners, base elevation, and building heights). Dimensions and orientation of proposed buildings were used as input to the Building Profile Input Program for the Plume Rise Model Enhancements downwash algorithm (BPIP-PRIME version 04274) to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information for input to AERMOD.

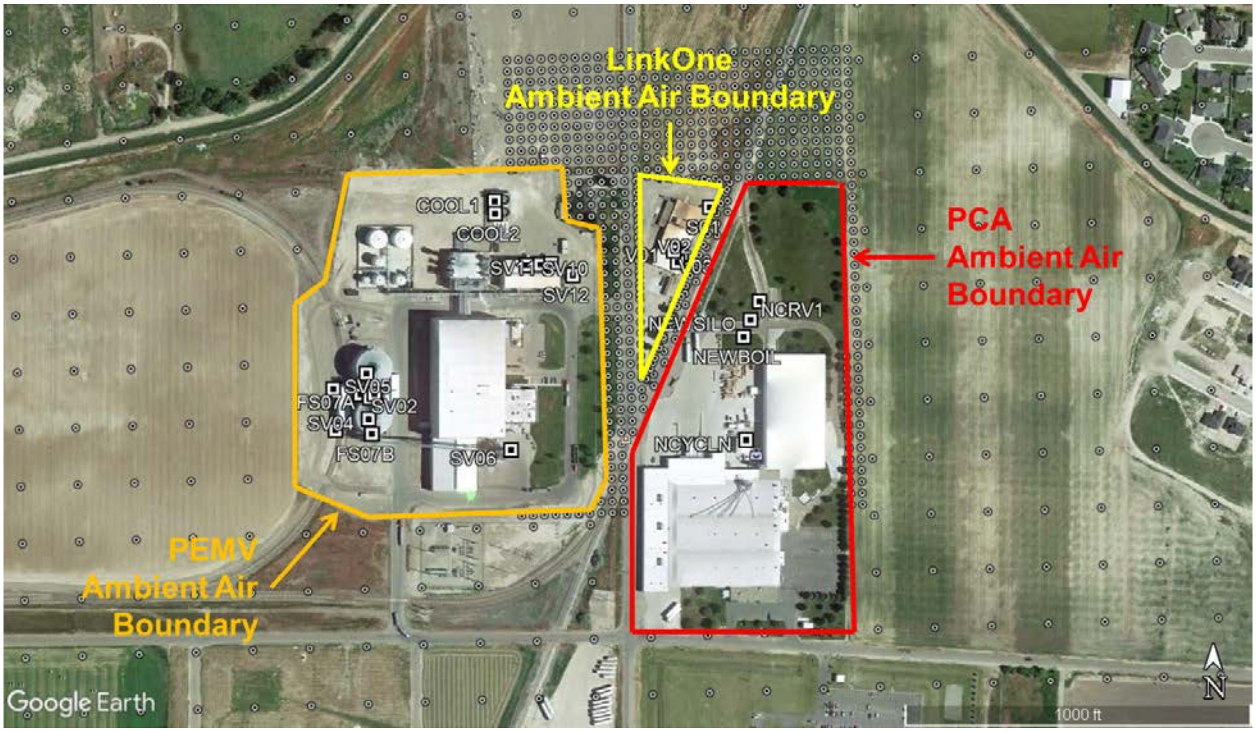
3.3.8 NOx Chemistry

NOx modeling has already been addressed in the previous permitting action. Therefore, NOx was not modeled for this project.

3.3.9 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho Air Rules as “that portion of the atmosphere, external to buildings, to which the general public has access.” The ambient air boundary for the LinkOne facility is based on the property boundary, as shown below in Figure 4. Public access to the facility is discouraged by explicit “No Trespassing” signs and by routine and regular monitoring by site security personnel.

Figure 4. LINKONE AMBIENT AIR BOUNDARY AND NEARBY CO-CONTRIBUTING SOURCES.



3.3.10 Nearby Co-Contributing Sources

If impacts of neighboring emission sources on receptors showing a significant impact from the sources subject to the permitting action are not adequately accounted for by the background concentration used, then emissions from those sources must be modeled. Upon further review, DEQ determined that the Pacific Ethanol Magic Valley (PEMV) and Packaging Corporation of America (PCA) must be modeled as co-contributing sources in LinkOne's cumulative NAAQS impact analysis because impacts of PEMV and PCA are not adequately accounted for by the background concentrations described in Section 3.2 of this modeling memo. The PEMV and PCA facilities are located to the west and southeast, respectively, of the LinkOne facility (Figure 4).

Emission sources from PEMV and PCA were not modeled by ERM in the previous permitting action, and the applicant did not identify the neighboring facilities in the permit application analyses. Hence, for this project, DEQ performed its own cumulative NAAQS impact analysis where the impact of PEMV and PCA on LinkOne's receptors showing a significant impact from the sources subject to the permitting action, was modeled. Note that receptors that are located within the PEMV and PCA ambient air boundaries were modeled but without the contribution from PEMV and PCA's emission sources for receptors on their own property. Results, which indicate NAAQS exceedances, are summarized in Sections 4.1.2 and 4.1.3.

Particulate emission rates from PEMV and PCA were obtained from the latest modeling files archived in DEQ's Content Manager (Record Numbers 2012AAG518 and 2020AAG438 for PEMV and PCA, respectively). Although PEMV's modeling files for Record Number 2012AAG518 contain $PM_{2.5}$ and PM_{10} emission rates, only NO_2 was modeled by PEMV in its PTC application in 2012. Therefore, these $PM_{2.5}$ and PM_{10} emission rates may not have been comprehensively reviewed back in 2012. However, a modeling demonstration from 2009, where PEMV modeled 24-hour and annual PM_{10} and demonstrated NAAQS compliance, suggests that the modeled PM_{10} emission rates from 2009 and the PM_{10} emission rates listed in the modeling files from Record Number 2012AAG518 are the same. Therefore, the latter would be appropriate for use by LinkOne in a cumulative NAAQS impact analysis for PM_{10} (should the 24-hour PM_{10} SIL be exceeded). $PM_{2.5}$ emission rates were conservatively assumed to be equal to the PM_{10} emission rates; this was based on the 2014 Statement of Basis where $PM_{2.5}$ emission rates for PEMV are equal to the PM_{10} emission rates.

DEQ notes that LinkOne's cumulative NAAQS impact analysis from hereon must include PEMV and PCA as co-contributing sources. Should NAAQS compliance become complicated, the applicant may consult DEQ to refine PEMV and PCA's emission estimates (i.e., use actual emission rates instead of permit-allowable rates).

3.3.11 Receptor Network

DEQ determined that the receptor grid used in the submitted modeling analyses was adequate to resolve maximum modeled impacts.

Table 10 describes the receptor network used in the submitted modeling analyses. The full grid, along with the fenceline receptors, includes a total of 3,556 receptors (Figure 2). The receptor grids used in the model provided good resolution of the maximum design concentrations for the project and provided extensive coverage.

The receptor grid used in the submitted modeling analyses met the minimum recommendations specified in the *Idaho Air Quality Modeling Guideline*[2], and DEQ determined that the receptor network was effective in reasonably assuring compliance with applicable air quality standards at all ambient air locations.

3.3.12 Good Engineering Practice Stack Height

An allowable good engineering practice (GEP) stack height may be established using the following equation in accordance with Idaho Air Rules Section 512.03.b:

$H = S + 1.5L$, where:

H = good engineering practice stack height measured from the ground-level elevation at the base of the stack.

S = height of the nearby structure(s) measured from the ground-level elevation at the base of the stack.

L = lesser dimension, height or projected width, of the nearby structure.

Sources from the LinkOne facility are below GEP stack height. Therefore, consideration of downwash caused by nearby buildings was required.

4.0 NAAQS and TAPs Impact Modeling Results

4.1 Results for NAAQS Analyses

4.1.1 Significant Impact Level Analyses

Table 11 provides results for the significant impact level (SIL) analysis. It shows that the maximum predicted impacts from the LinkOne facility are above the SIL for 24-hour and annual $PM_{2.5}$ and 24-hour PM_{10}. Therefore, a cumulative NAAQS impact analysis was performed for these pollutants.

Table 11. RESULTS FOR SIGNIFICANT IMPACT LEVEL ANALYSIS.

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)[a]	Significant Impact Level ($\mu g/m^3$)	Impact Percentage of Significant Impact Level	Cumulative NAAQS Analysis Required?	UTM[b,c] Easting (m)	UTM[c] Northing (m)
$PM_{2.5}$[d]	24-hour	8.67	1.2	722.5%	Yes	268,890.00	4,711,590.00
	Annual	0.40	0.2	200.0%	Yes	268,890.00	4,711,590.00
PM_{10}[e]	24-hour	10.59	5.0	211.8%	Yes	268,890.00	4,711,590.00

a. Micrograms per cubic meter.
b. Universal Transverse Mercator, NAD83, Zone 12.
c. Location of maximum modeled impacts.
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.

4.1.2 Cumulative NAAQS Impact Analyses

Table 12 provides results for the cumulative NAAQS impact analysis, without co-contributing emission sources from PCA and PEMV. For each modeled pollutant, the total impact was calculated by adding the design value (DV) of the impact to the ambient background value. The sum was then compared to the NAAQS. Ambient impacts for the LinkOne facility, when combined with approved ambient backgrounds, were below the NAAQS at all receptors for 24-hour and annual $PM_{2.5}$ and 24-hour PM_{10}.

Table 12. RESULTS FOR CUMULATIVE NAAQS IMPACT ANALYSIS.

Pollutant	Averaging Period	Modeled Design Value Concentration ($\mu g/m^3$)[a]	Background Concentration ($\mu g/m^3$)	Total Ambient Impact ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
$PM_{2.5}$[b]	24-hour	15.23	11.85	27.08	35	77.4%
	Annual	4.82	5.35	10.17	12	84.8%
PM_{10}[c]	24-hour	23.51	76.55	100.06	150	66.7%

a. Micrograms per cubic meter.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

4.1.3 DEQ's Verification and Culpability Analyses

To assess the impacts of PEMV and PCA on receptors showing a significant impact from the sources subject to the permitting action, DEQ performed a cumulative NAAQS impact analysis where PEMV and PCA were modeled as co-contributing sources. PEMV and PCA are located to the west and southeast, respectively, of the LinkOne facility and impacts from both facilities are not adequately accounted for by the background concentrations used.

Table 13 lists the modeled emission rates used in DEQ's verification analyses. Discussion for PEMV and PCA's modeled emission rates is provided in Section 3.3.10 of this memorandum.

Table 13. MODELED EMISSION RATES FOR CUMULATIVE NAAQS IMPACT ANALYSIS (PEMV AND PCA MODELED AS CO-CONTRIBUTING SOURCES).

Description	Source ID	24-hour $PM_{2.5}$ (lb/hr)	Annual $PM_{2.5}$ (tpy)	24-hour PM_{10} (lb/hr)
LinkOne's Emission Sources	S01	1.51E+00	6.63E+00	1.51E+00
	V01	3.97E-02	1.74E-01	3.97E-02
	V02	1.77E-02	7.73E-02	1.77E-02
	V03	1.77E-02	7.73E-02	1.77E-02
PCA's Emission Sources	NEWBOIL	3.12E-01	1.37E+00	3.12E-01
	NCYCLN	2.27E-01	9.96E-01	1.29E+00
	NEWSILO	7.54E-02	3.30E-01	7.54E-02
	NCRV1	1.42E-01	6.23E-01	1.42E-01
PEMV's Emission Sources	SV01	8.56E-01	3.75E+00	8.56E-01
	SV02	4.29E-01	1.88E+00	4.29E-01
	SV03	3.42E-02	1.50E-01	3.42E-02
	SV04	3.42E-02	1.50E-01	3.42E-02
	SV05	1.83E-02	8.00E-02	1.83E-02
	SV06	3.86E-01	1.69E+00	3.86E-01
	SV09	5.64E-01	2.47E+00	5.64E-01
	SV10	5.64E-01	2.47E+00	5.64E-01
	SV11	5.64E-01	2.47E+00	5.64E-01
	COOL1	3.76E-01	1.65E+00	3.76E-01
	COOL2	3.76E-01	1.65E+00	3.76E-01
	SV12	4.57E-02	2.00E-01	4.57E-02

Table 14 lists emission release parameters for PEMV and PCA's emission sources modeled in DEQ's verification analyses, in metric units (English units are enclosed in parentheses).

Table 14. POINT SOURCE EMISSION RELEASE PARAMETERS FOR PEMV AND PCA'S EMISSION SOURCES IN METRIC UNITS (ENGLISH UNITS IN PARENTHESES).

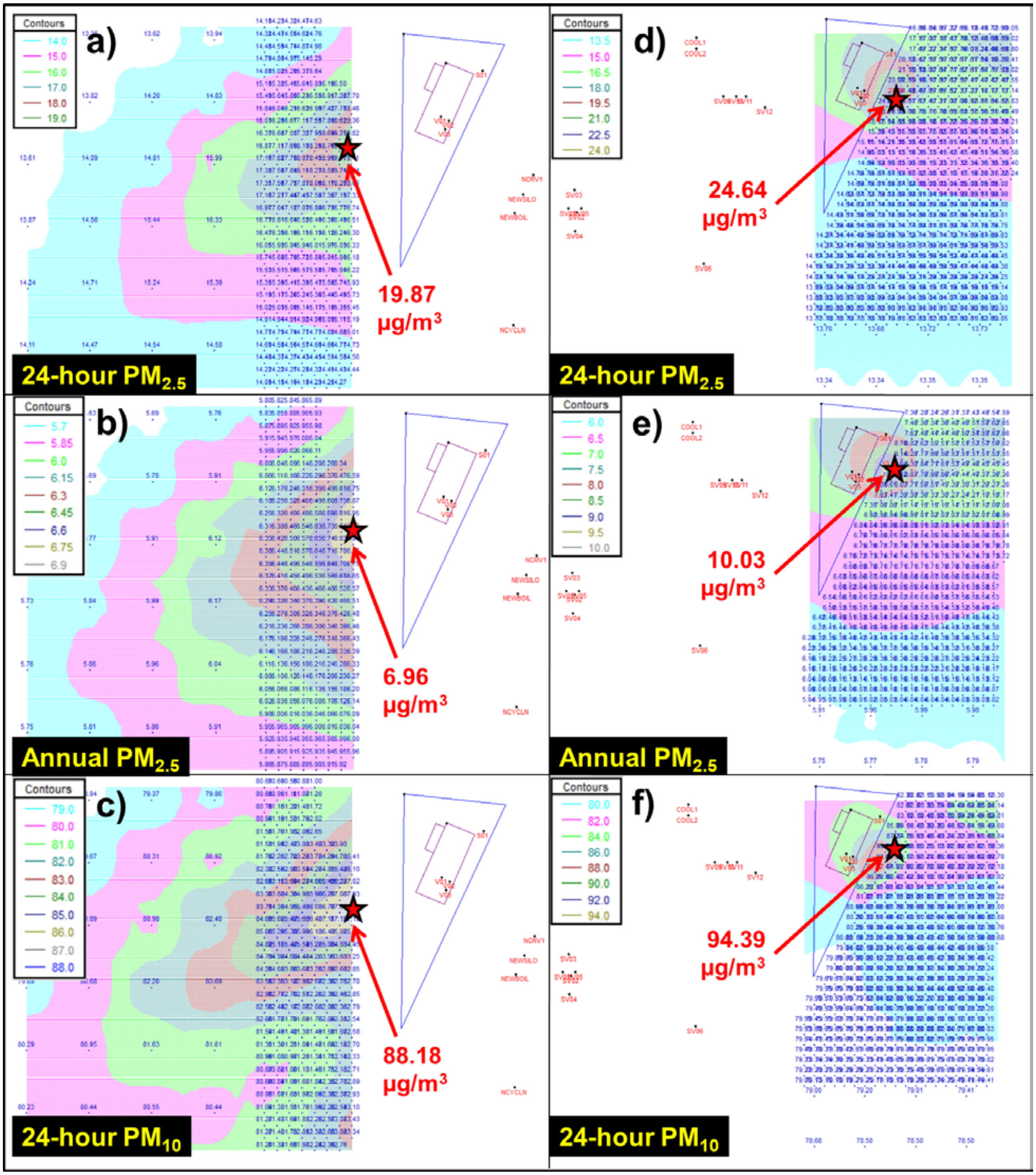
Description	Model ID	UTM[a] Coordinates		Stack Height in m (ft)[c]	Stack Exhaust Temp. in K (°F)[d]	Stack Exhaust Velocity in m/sec (fps)[e]	Stack Diameter in m (ft)	Orient. Of Release[f]
		Easting-X (m)[b]	Northing-Y (m)					
PCA's Emission Sources	NEWBOIL	268,990.60	4,711,510.60	7.62 (25.0)	479.3 (403.0)	8.99 (29.49)	0.81 (2.67)	D
	NCYCLN	268,989.70	4,711,420.30	22.60 (74.2)	293.0 (67.7)	4.07 (13.36)	3.02 (9.91)	R
	NEWSILO	268,997.30	4,711,525.40	1.83 (6.0)	0 (-459.7)	11.38 (37.35)	0.15 (0.50)	H
	NCRV1	269,005.70	4,711,541.20	7.62 (25.0)	293.0 (67.7)	1.37 (4.51)	3.13 (10.26)	H
PEMV's Emission Sources	SV01	268,652.23	4,711,471.69	19.81 (65.0)	0 (-459.7)	30.59 (100.37)	0.45 (1.47)	D
	SV02	268,660.47	4,711,468.15	19.81 (65.0)	0 (-459.7)	30.59 (100.37)	0.45 (1.47)	D
	SV03	268,658.11	4,711,489.43	20.42 (67.0)	0 (-459.7)	2.11 (6.92)	0.34 (1.12)	D
	SV04	268,658.78	4,711,449.52	20.42 (67.0)	0 (-459.7)	2.11 (6.92)	0.34 (1.12)	D

	SV05	268,664.59	4,711,471.39	9.14 (30.0)	0 (-459.7)	0.59 (1.92)	0.46 (1.50)	D
	SV06	268,782.96	4,711,418.39	18.29 (60.0)	0 (-459.7)	6.61 (21.69)	0.91 (3.00)	D
	SV09	268,801.80	4,711,579.82	13.72 (45.0)	427.6 (310.0)	11.51 (37.75)	0.91 (3.00)	D
	SV10	268,814.17	4,711,579.82	13.72 (45.0)	427.6 (310.0)	11.51 (37.75)	0.91 (3.00)	D
	SV11	268,823.59	4,711,580.12	13.72 (45.0)	427.6 (310.0)	11.51 (37.75)	0.91 (3.00)	D
	COOL1	268,775.68	4,711,636.69	10.36 (34.0)	294.3 (70.0)	5.00 (16.40)	6.00 (19.69)	D
	COOL2	268,775.68	4,711,625.75	10.36 (34.0)	294.3 (70.0)	5.00 (16.40)	6.00 (19.69)	D
	SV12	268,842.35	4,711,569.55	14.63 (48.0)	349.8 (170.0)	14.44 (47.38)	0.84 (2.75)	D

a. Universal Transverse Mercator.
b. m: meters.
c. ft: feet.
d. K: Kelvin; ºF: degrees Fahrenheit.
e. m/sec: meters per second; fps: feet per second.
f. Default: vertical, uninterrupted release; R: raincap.

Receptors that are located within the PEMV and PCA ambient air boundaries were modeled but without the contribution from that facility's emission sources. Figure 5 illustrates the total impacts (modeled design values + background) for 24-hour and annual $PM_{2.5}$ and 24-hour PM_{10}, for receptors within (5a-5c) PEMV and (5d-5f) PCA's properties. It shows that all receptors within the PEMV and PCA ambient air boundaries are below NAAQS.

Figure 5. TOTAL IMPACT (MODELED DESIGN VALUES + BACKGROUND) IN μg/m^3 FOR RECEPTORS WITHIN THE (a-c) PEMV AND (d-f) PCA AMBIENT AIR BOUNDARIES.



The model was then run for the remaining receptors, where PEMV and PCA's emission sources were also modeled as a co-contributing source in addition to LinkOne's emission sources. Table 15 provides results for this analysis.

Table 15. RESULTS FOR CUMULATIVE NAAQS IMPACT ANALYSIS (PEMV AND PCA AS CO-CONTRIBUTING SOURCES).						
Pollutant	**Averaging Period**	**Modeled Design Value Concentration (µg/m^3)[a]**	**Background Concentration (µg/m^3)**	**Total Ambient Impact (µg/m^3)**	**NAAQS (µg/m^3)**	**Percent of NAAQS**
$PM_{2.5}$[b]	24-hour	35.07	11.85	46.92	35	134.1% [c]
	Annual	8.77	5.35	14.12	12	117.7% [d]
PM_{10}[e]	24-hour	47.04	76.55	123.59	150	82.4%

a. Micrograms per cubic meter.
b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
c. The project's maximum contribution to a 24-hour $PM_{2.5}$ exceedance is 0.50 µg/m^3, which is less than the 24-hour $PM_{2.5}$ SIL (1.2 µg/m^3). Therefore, the LinkOne project is not culpable for any NAAQS violation.
d. The project's maximum contribution to an annual $PM_{2.5}$ exceedance is 0.058 µg/m^3, which is less than the annual $PM_{2.5}$ SIL (0.2 µg/m^3). Therefore, the LinkOne project is not culpable for any NAAQS violation.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

Table 15 shows that total ambient impacts exceed the 24-hour and annual $PM_{2.5}$ NAAQS. Therefore, a culpability analysis was performed by DEQ to determine if the LinkOne project is culpable for any of the 24-hour and annual $PM_{2.5}$ NAAQS violations. A permit may not be issued if a project has a significant contribution (exceeding the SIL) to the modeled violation. If project-specific impacts are below the SIL, then the project does not have a significant contribution to the specific violations and the permit may be issued.

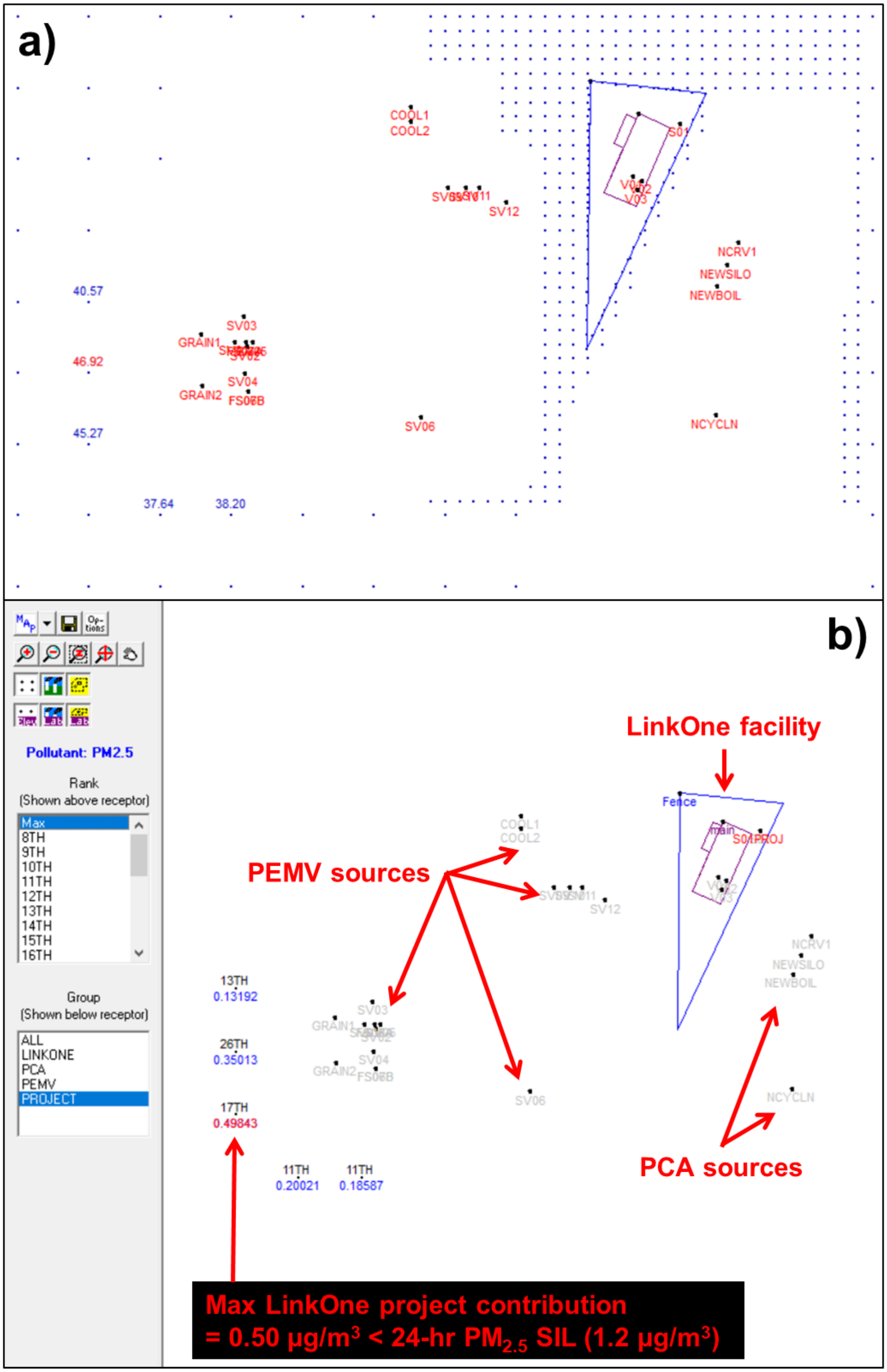
A culpability analysis for 24-hour $PM_{2.5}$ was set up in AERMOD by using the MAXDCONT option. The upper rank was set to the design value (H8H for 24-hour $PM_{2.5}$). Lower rank was entered as a rank or as a threshold concentration equal to the NAAQS minus background. Source groups included the LinkOne project, the PEMV and PCA facilities (the nearby co-contributing sources), and another source group for all emission sources (source group ALL). The output file from a MAXDCONT run displays impacts from each source group, matched temporally and spatially.

Figure 6a shows the location of the five receptors that exceed the 24-hour $PM_{2.5}$ NAAQS. These receptors were examined in the culpability analysis. Note that these receptors are located to the southwest of the PEMV facility.

When using the MAXDCONT option in a culpability analysis, it is important that ***all*** modeled violations be assessed to determine whether the proposed project has a significant contribution to the NAAQS violation. This can be done by going through the MAXDCONT table and by analyzing ranked impacts (for example, the 8th high impact, 9th high impact, 10th high impact, etc.) to the point where the ranked impact shows no violations. This can also be done by using MAXDCONT Viewer. It was created to display the maximum contribution to each receptor that has an exceedance, so that the user does not need to spend time combing through the MAXDCONT table.

Figure 6b shows the output from MAXDCONT Viewer. It shows the maximum concentrations and ranks of the concentrations of source group PROJECT (LinkOne project). The maximum PROJECT contribution to a NAAQS exceedance is 0.50 µg/m^3, which is below the significance level of 1.2 µg/m^3 for 24-hour $PM_{2.5}$. Because LinkOne's predicted impact is below the SIL for any receptor and averaging period showing a 24-hour $PM_{2.5}$ NAAQS violation in the source group ALL, the LinkOne project is not culpable for the NAAQS violation.

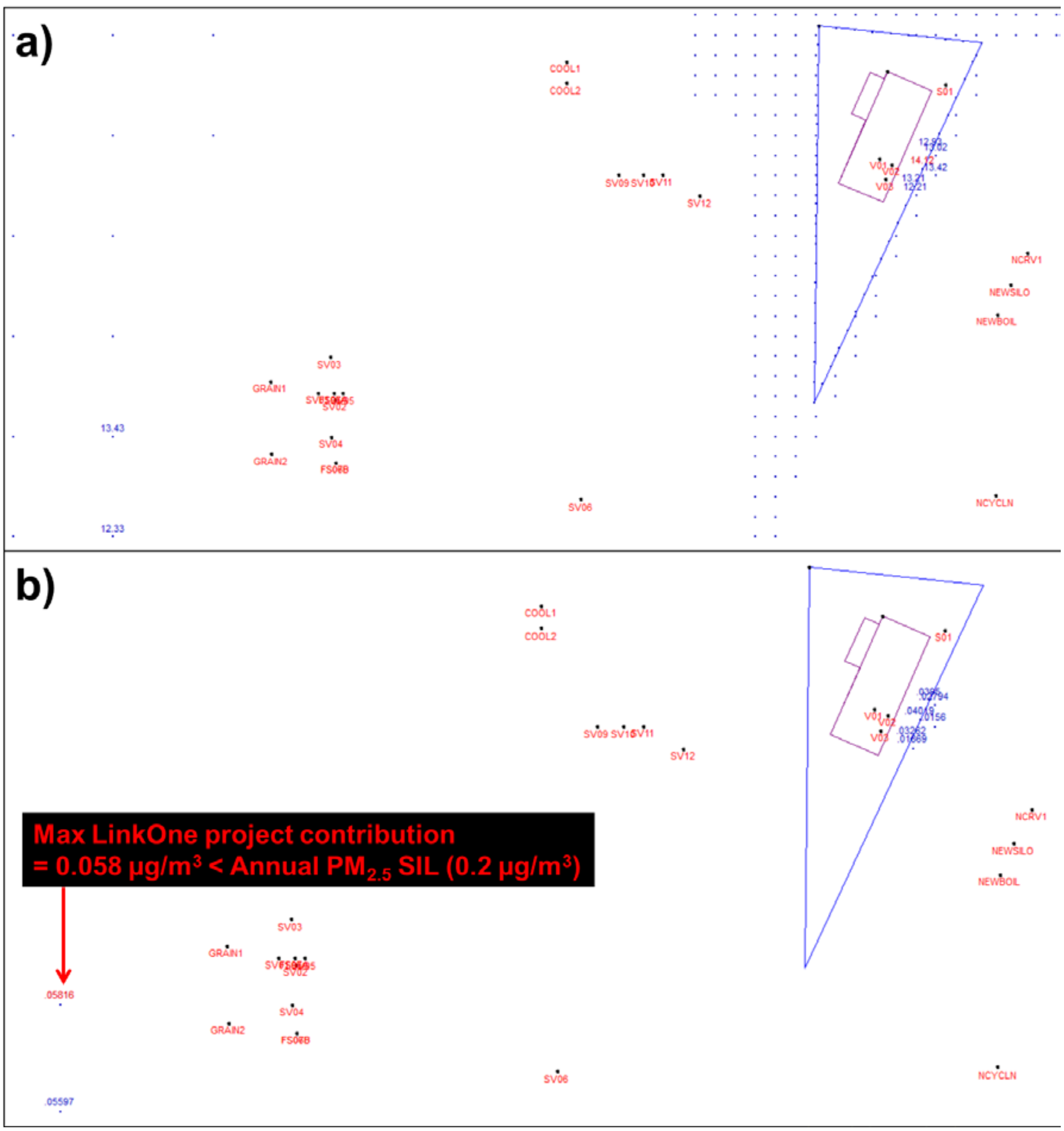
Figure 6. CULPABILITY ANALYSES FOR 24-HOUR $PM_{2.5}$.



MAXDCONT cannot be used for annual averaging periods. For annual $PM_{2.5}$, the culpability analysis was performed by first identifying the receptors that exceed the NAAQS. Eight receptors were identified. Figure 7a shows the location of these receptors. The model was run using only the PROJECT emissions. The maximum PROJECT contribution to a NAAQS exceedance is 0.058 $\mu g/m^3$, which is well below the significance level of 0.2 $\mu g/m^3$ for annual $PM_{2.5}$. Because LinkOne's predicted impact is below the SIL for any receptor and averaging period showing an annual $PM_{2.5}$ NAAQS violation, the LinkOne project is not culpable for the NAAQS violation.

Considering the culpability analyses, the LinkOne permit can be issued because the analysis demonstrates that the LinkOne project will not cause or significantly contribute to a 24-hour and annual $PM_{2.5}$ NAAQS violation. This is corroborated by Table 12 of this modeling memo.

Figure 7. CULPABILITY ANALYSES FOR ANNUAL $PM_{2.5}$.



The sole objective of the cumulative NAAQS impact analysis is to assure that the proposed facility or modification would not cause or significantly contribute to a violation of the NAAQS. Simplistic and conservative methods/data that overstate emissions and/or impacts from emissions are often preferentially used, to the extent that compliance is demonstrated with such data/methods, to minimize permit application preparation time and agency review time. More refined complex methods/data are used when initial conservative methods fail to demonstrate compliance. Once NAAQS compliance is demonstrated for the proposed project, further refinement of the cumulative impact analysis is not performed, even though the analysis may suggest that a co-contributing source could cause a NAAQS violation. Assuring that NAAQS are not violated because of emissions from other facilities not associated with the proposed project is outside of the scope of the analyses for project approval.

Therefore, DEQ did not further refine the modeled impacts resulting from operations at the co-contributing PEMV and PCA facilities. As discussed in Section 3.3.10 of this modeling memo, the $PM_{2.5}$ emission rates for PEMV that were used in the culpability analysis may not have been comprehensively reviewed back in 2012. Results of the cumulative impact analysis should not be considered as evidence that emissions from the PEMV and PCA facilities will cause a violation of NAAQS.

4.2 Results for TAPs Impact Analyses

Dispersion modeling was required to demonstrate compliance with TAP increments specified by Idaho Air Rules Section 585 and 586 for those TAPs with facility-wide emissions exceeding screening emission levels (ELs). Table 13 lists the maximum modeled impacts for specific TAPs. All modeled impacts are below applicable AACs and AACCs.

Table 13. TAPS AIR IMPACT ANALYSIS RESULTS.

TAP	Maximum Modeled Impact ($\mu g/m^3$)[a]	AAC or AACC ($\mu g/m^3$)	Percent of AAC/AACC
Acetic acid[b]	746.1	1,250	59.7%
Arsenic[c]	3.04E-06	2.30E-04	1.3%
Cadmium[c]	1.67E-05	5.60E-04	3.0%
Formaldehyde[c]	1.14E-03	7.70E-02	1.5%
Nickel[c]	3.19E-05	4.20E-03	0.8%

a. Micrograms per cubic meter.
b. Non-carcinogenic TAP. Modeled impact and AAC represent a 24-hour averaged concentration.
c. Carcinogenic TAP. Modeled impact and AACC represent annual or period-average concentration.

5.0 Conclusions

The information submitted with the PTC application, combined with DEQ air impact analyses, demonstrated to DEQ's satisfaction that emissions from the LinkOne facility in Burley, ID will not cause or significantly contribute to a violation of any applicable ambient air quality standard or TAP increment.

References

1. *Policy on NAAQS Compliance Demonstration Requirements.* Idaho Department of Environmental Quality Policy Memorandum. July 11, 2014.

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

APPENDIX C – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company:	**LinkOne**
Address:	
City:	
State:	
Zip Code:	
Facility Contact:	
Title:	
AIRS No.:	

N	Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N
Y	Did this permit require engineering analysis? Y/N
N	Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM10	2.5	0	2.5
VOC	1.8	0	1.8
Total:	0.0	0	**4.4**
Fee Due	**$ 2,500.00**		

Comments: