Statement of Basis

Permit to Construct No. P-2020.0038
Project ID 62540

Liberty Basin, LLC
Burley, Idaho

Facility ID 031-00076

Final

March 8, 2021
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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.

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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
BRC	below regulatory concerns
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
Liberty Basin	Liberty Basin, LLC
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

Liberty Basin, LLC (Liberty Basin) is a service provider for milled commodities. Liberty Basin proposes to use this facility for a grain milling/transloading operation to serve the existing ethanol plant and other customers to meet market demand.

Liberty Basin would receive grain commodities from a purchasing customer. The purchaser would contract with Liberty Basin to mill the grain commodities to desired specification. Liberty Basin will receive whole grain commodities and store milled grain commodities in the existing storage. Liberty Basin will process the grain commodities into various products and transfer the milled grain commodities to storage until loadout for the purchasing customer.

Grain commodities will be brought to the facility by truck or rail. Grain commodities will be unloaded and mechanically conveyed to storage. The receiving process is controlled by baghouse SV01. Grain commodities will be processed through the milling system to achieve milled product to the desired consistency of customer demand. The milling processing is controlled by baghouses SV06a and SV06b. From milling, the milled grain will be mechanically conveyed to a storage building (initially, what is currently the Wet DGS Storage Barn). The handling and storage processes are controlled by baghouse SV02. From storage, milled grain will be loaded into trucks or rail for distribution to offsite customers; the emissions are controlled by baghouse SV02.

Only particulate emissions are generated through the onsite grain handling operations and processes. Grain processes are controlled by baghouses. Baghouses operate when grain commodities are handled or processed through the system controlled by a baghouse.

Liberty Basin's application for permit to construction includes all grain handling and milling related processes.

Permitting History

This is the initial PTC for a new facility (though the equipment is existing equipment, purchased from an existing ethanol plant, which was previously permitted by the prior owner and is at the same location), thus there is no permitting history for Liberty Basin.

Application Scope

This permit is the initial PTC for this facility.

The applicant has purchased all grain handling and milling related processes from the Pacific Ethanol Magic Valley (now Alto Magic Valley) ethanol plant (facility ID 031- 00032). The applicant has proposed to operate all these grain handling and milling related processes at Liberty Basin. The equipment was previously permitted by Pacific Ethanol Magic Valley, and this application reflects applicant's ownership and operation of this equipment. No new process will be installed or built through this permitting action.

Application Chronology

November 20, 2020	DEQ received an application.
November 23, 2020	DEQ received an application fee.
November 30 – December 15, 2020	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
December 18, 2020	DEQ determined that the application was incomplete.
January 15, 18, and February 5, 2021	DEQ received supplemental information from the applicant.
February 9, 2021	DEQ determined that the application was complete.

March 11, 2021	DEQ made available the draft permit and statement of basis for peer and regional office review.
March 18, 2021	DEQ made available the draft permit and statement of basis for applicant review.
March 23, 2021	DEQ received the permit processing fee.
April 8, 2021	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Sources	Size or Capacity	Control Equipment
Truck Dump Pit - Grain	25,000 Bushels/hr	Receiving Baghouse (SV01)
Rail Dump Pit - Grain	50,000 Bushel/hr	
Grain Bins	471,927 Bushel each	
Grain Loadout	7,500 Bushel/hr	Handling Baghouse (SV02)
Grain Conveyors	5,000 Bushel/hr	
Grain Elevators	5,000 Bushel/hr	
Scalper	5,000 Bushel/hr	
Grain Surge Bin	5,414 Bushel/hr	
Hammermill 1	1,124 Bushel/hr	Hammermill BH 1 (SV06a)
Hammermill 2	1,124 Bushel/hr	Hammermill BH 2 (SV06b)

Emissions Inventories

Potential to Emit

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

Using this definition of Potential to Emit an emission inventory was developed for the operations at the facility (see Appendix A). Emissions estimates of criteria pollutant were based on baghouse emission information from similar sources, operation of 8,760 hours per year, AP-42 section 9.9.1, 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's 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	PM_{10}	$PM_{2.5}$
	T/yr	T/yr	T/yr
Point Sources			
Grain Receiving Baghouse (SV01)	300.34	75.09	45.05
Grain Handling Baghouse (SV02)	150.17	37.54	22.53
Hammermilling Baghouse (SV06a)	75.09	18.77	11.26
Hammermilling Baghouse (SV06b)	75.09	18.77	11.26
Total, Point Sources	**600.69**	**150.17**	**90.10**

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.

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

Post Project Potential to Emit

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

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

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS [a]

Source	PM		PM_{10}		$PM_{2.5}$	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Grain Receiving Baghouse (SV01)	0.69	3.00	0.17	0.751	0.10	0.45
Grain Handling Baghouse (SV02)	0.34	1.50	0.09	0.375	0.05	0.23
Hammermilling Baghouse (SV06a)	0.17	0.751	0.04	0.188	0.03	0.113
Hammermilling Baghouse (SV06b)	0.17	0.751	0.04	0.188	0.03	0.113
Post Project Totals	**1.37**	**6.01**	**0.34**	**1.50**	**0.21**	**0.91**

a) The applicant assumed that the baghouses could achieve the same emissions concentration of 0.004 gr/dscf as that for other similar sources. Instead of using the manufacturer's guarantee concentration of 0.005 gr/dscf for these baghouses, the applicant used 0.004 gr/dscf from the similar sources and the flowrate of the baghouses to estimate PM emissions in lb/hr. Then the applicant applied the assumed fractions to estimated PM_{10} and $PM_{2.5}$ emissions (i.e., PM_{10} = 0.25 *PM, $PM_{2.5}$ = 0.6 * PM_{10}). These fractions were based on the information in AP-42 for emissions without control devices. AP-42 Table 9.9.1-2 footnote (y) recommends to assume PM=PM_{10} for emissions from a baghouse. Due to the uncertainty of these assumptions, source testing will be required to verify these assumptions. Applicant intends to keep the emissions below regulatory concerns (BRC) so that modeling would not be required. With these assumptions, the estimated emissions are BRC.

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 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM	PM_{10}	$PM_{2.5}$
	T/yr	T/yr	T/yr
Pre-Project Potential to Emit	0.00	0.00	0.00
Post Project Potential to Emit	6.01	1.50	0.91
Total, Point Sources	**6.01**	**1.50**	**0.91**

Ambient Air Quality Impact Analyses

According to the modeling guidance, ambient air quality impact analyses are not required as the facility's PTE are below regulatory concerns for PM_{10} and $PM_{2.5}$.

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 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 5 REGULATED AIR POLLLLUTANT FACILITY CLASSIFICATION

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

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. 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.

Fugitives Emissions (IDAPA 58.01.01.650-651)

IDAPA 58.01.01.650..... Rules for Control of Fugitive Dust

The sources of PM emissions at this facility are subject to rules for control of fugitive dust. This requirement is assured by Permit Conditions 2.5 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 Conditions 2.4, 2.6-2.9, and 2.11.

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 grain receiving emissions unit with a throughput of 2,269.8 T/hr, calculated as: (944,231 tons per year) / [(52 weeks/yr)* (7 days/week) * (24 hr/day)], E is calculated as follows:

- Proposed throughput = 108.1 T/hr x 2,000 lb/1 T = 216,170.1 lb/hr

Therefore, E is calculated as:

- $E = 1.10 \times PW^{0.25} = 1.10 \times (216{,}170.1)^{0.25} = 23.72$ lb-PM/hr

As presented previously in the Emissions Inventories Section of this evaluation, the post project PTE for the entire facility is 1.37 lb PM/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 PM_{10}, and the facility does not emit HAP, 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 40 CFR Part 60.

Non-applicability determination

40 CFR 60 Subpart DD, Standards of Performance for Grain Elevators. These standards apply for any grain storage elevator, or any grain terminal elevator (excepts where provided in 60.304(b)), under which commences construction, modification, or reconstruction after August 3, 1978, is potentially subject to the requirements of this part.

- Grain elevator means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded.
- Grain terminal elevator means any grain elevator which has a permanent storage capacity of more than 88,100 m^3 (ca. 2.5 million U.S. bushels), except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots.
- Grain storage elevator means any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 35,200 m^3 (ca. 1 million bushels).

The grain storage capacity at Liberty Basin will be less than 1,000,000 bushels (approximately 966,000 bushels.) As such Liberty Basin is not considered a grain storage elevator or grain terminal elevator which would trigger applicability to this rule. Liberty Basin is not applicable to the requirements of this Subpart.

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 proposed source is not an affected source subject to NESHAP requirements in 40 CFR Part 63.

Permit Conditions Review

This section describes the permit conditions for this initial permit.

Initial Permit Condition 1.1 states the purpose of this permitting action.

Table 1.1 lists the regulated emissions units with their respective capacity/size and emissions control.

Initial Permit Condition 2.1 describes the facility and the process.

Initial Permit Condition 2.2 and Table 2.1 specify the control devices and their control levels.

Initial Permit Condition 2.3

Initial Permit Condition 2.3 lists emissions limits for each point source (i.e., baghouses.)

The hourly PM emissions rate is calculated using each baghouse's design flowrate and the estimated baghouse emissions concentration of 0.004 gr/scf. For an example, for grain receiving baghouse, the hourly PM emissions rate is calculated as (20,000 acfm) * (0.004 gr/scf) * (60 min/hr) / (7000 gr/lb) = 0.69 lb/hr. The annual PM emissions rate is calculated by assuming the baghouse runs 8,760 hr/yr. The PM_{10} and $PM_{2.5}$ emissions rates are calculated by applying the estimated PM_{10}/PM ratio of 0.25 and $PM_{2.5}$/PM_{10} ratio of 0.6.

The total annual PM_{10} and $PM_{2.5}$ emissions rate is 1.50 T/yr and 0.91 T/yr, respectively. They are equal to or less than BRC levels for PM_{10} and $PM_{2.5}$. Therefore, according to the air dispersion modeling guidance, air dispersion modeling will not be required.

While the manufacturer has guaranteed the emissions concentration of 0.005 gr/scf for these baghouses as mentioned in the ethanol plant permit from where the equipment and baghouses were purchased, the applicant has decided to use the baghouse emissions concentration of 0.004 gr/scf in the emissions calculation because the applicant reviewed the emissions levels from similar sources and believes that these baghouse could achieve emissions concentration of 0.004 gr/scf. In addition, the applicant has applied the estimated PM_{10}/PM ratio of 0.25 and $PM_{2.5}$/PM_{10} ratio of 0.6 in the emissions calculation. The fractionation was based on the information in AP-42 for emissions without control devices. AP-42 Table 9.9.1-2 footnote (y) recommends to assume PM=PM_{10} for emissions from a baghouse. Due to the uncertainty of the assumptions used in the emissions inventory, source testing will be required to demonstrate compliance with the PM_{10} and $PM_{2.5}$ emissions limits.

The applicant has assumed that the baghouse runs 8,760 hr/yr to avoid operating limits, such as operating hours, throughput limits in the permit. The assumption is conservative. The applicant might be able to take operating limits (e.g., operating hours, throughput limits) in the permit to keep the annual emissions BRC if the source test data show higher emissions rates than what are estimated in the EI spreadsheet.

Initial Permit Conditions 2.4 and 2.5

The facility is subject to opacity limit and fugitive dust control requirements.

Initial Permit Condition 2.6

The permittee shall control particulate emissions from the emissions units as specified in Table 2.1 of the permit when operating the emissions unit(s).

Initial Permit Condition 2.7

Because the emissions calculation is based on the assumption of 0.004 gr/dscf emissions concentration for PM emissions, the applicant must continue to use bag filter material that meets the manufacturer guarantees to control emissions to that level, or use bag filter material that is verified by source test data be able to control emissions to that level.

Initial Permit Condition 2.8

Within 60 days of the permit issuance date, the permittee shall have developed a Baghouse/Filter System Procedures document for the inspection and operation of the baghouses/filter system which controls emissions from the grain receiving, milling, storage, and grain handling as specified in Table 2.1 of the permit. This permit condition is developed using DEQ's standard language for baghouses. Quarterly see-no-see frequency is taken from the ethanol plant permit (P-2009.0134 PROJ 62108) for these baghouses.

Initial Permit Conditions 2.9, 2.10, 2.11 are monitoring and recordkeeping requirements for baghouse inspections, reasonable control measures for fugitive emissions, and visible emissions monitoring. They are taken from the ethanol plant permit.

Initial Permit Condition 2.12

As discussed under Initial Permit Condition 2.3, source testing is required to verify the assumptions used in the EI calculations; they are baghouses with emissions concentration of 0.004 gr/scf or less and emissions from each baghouse with PM_{10}/PM emissions ratio of 0.25 and $PM_{2.5}/PM_{10}$ emissions ratio of 0.6.

Permit Condition 2.12 allows the applicant to develop PM_{10}/PM and $PM_{2.5}/PM_{10}$ emissions ratios. The information may be used to estimate $PM_{2.5}$ and PM_{10} emissions when the applicant replaces baghouse filter material that only provides PM emissions concentration guarantees (i.e., gr/dscf). This permit condition is developed using the DEQ's permit condition language for source testing.

DEQ recognizes that collecting a sample mass that is above test method practical quantitation limits to determine the actual emission rates of PM_{10} and $PM_{2.5}$ from each of the baghouse stacks may require lengthy sampling times, and that measurement of sample mass near method detection limits may be a sufficient indicator of compliance. When using three 2-hour test runs to demonstrate compliance, a sample mass of $\leq$3 mg of filterable PM for Method 5, or $\leq$2 mg of filterable $PM_{2.5}$ or PM_{10} for Method 201A, and $\leq$4 mg of condensable PM for Method 202 may be a sufficient indication of compliance. The permittee is encouraged to submit a performance test protocol (General Provision 3.8) to DEQ for approval of this or any alternative testing methodology.

The following is the General Permit conditions for all DEQ issued PTCs.

Initial Permit Condition 3.1

The duty to comply general compliance provision requires that the permittee comply with all of the permit terms and conditions pursuant to Idaho Code §39-101.

Initial Permit Condition 3.2

The maintenance and operation general compliance provision requires that the permittee maintain and operate all treatment and control facilities at the facility in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 3.3

The obligation to comply general compliance provision specifies that no permit condition is intended to relieve or exempt the permittee from compliance with applicable state and federal requirements, in accordance with IDAPA 58.01.01.212.01.

Initial Permit Condition 3.4

The inspection and entry provision requires that the permittee allow DEQ inspection and entry pursuant to Idaho Code §39-108.

Initial Permit Condition 3.5

The permit expiration construction and operation provision specifies that the permit expires if construction has not begun within two years of permit issuance or if construction has been suspended for a year in accordance with IDAPA 58.01.01.211.02.

Initial Permit Condition 3.6

The notification of construction and operation provision requires that the permittee notify DEQ of the dates of construction and operation, in accordance with IDAPA 58.01.01.211.01 and 211.03.

Initial Permit Condition 3.7

The performance testing notification of intent provision requires that the permittee notify DEQ at least 15 days prior to any performance test to provide DEQ the option to have an observer present, in accordance with IDAPA 58.01.01.157.03.

Initial Permit Condition 3.8

The performance test protocol provision requires that any performance testing be conducted in accordance with the procedures of IDAPA 58.01.01.157, and encourages the permittee to submit a protocol to DEQ for approval prior to testing.

Initial Permit Condition 3.9

The performance test report provision requires that the permittee report any performance test results to DEQ within 60 days of completion, in accordance with IDAPA 58.01.01.157.04-05.

Initial Permit Condition 3.10

The monitoring and recordkeeping provision requires that the permittee maintain sufficient records to ensure compliance with permit conditions, in accordance with IDAPA 58.01.01.211.

Initial Permit Condition 3.11

The excess emissions provision requires that the permittee follow the procedures required for excess emissions events, in accordance with IDAPA 58.01.01.130-136.

Initial Permit Condition 3.12

The certification provision requires that a responsible official certify all documents submitted to DEQ, in accordance with IDAPA 58.01.01.123.

Initial Permit Condition 3.13

The false statement provision requires that no person make false statements, representations, or certifications, in accordance with IDAPA 58.01.01.125.

Initial Permit Condition 3.14

The tampering provision requires that no person render inaccurate any required monitoring device or method, in accordance with IDAPA 58.01.01.126.

Initial Permit Condition 3.15

The transferability provision specifies that this permit to construct is transferable, in accordance with the procedures of IDAPA 58.01.01.209.06.

Initial Permit Condition 3.16

The severability provision specifies that permit conditions are severable, in accordance with IDAPA 58.01.01.211.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there 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

Liberty Basin, LLC
Potential to Emit
Nov-20

Grain Handling Emissions:

Basis: Grain Handling/Storage is closed system Baghouses assume 99% control
Emissions based on AP-42 Particulate Emission Factors for Grain Elevators
33,721,893 bushels/year
944,213 tons/year whole grain
944,213 tons/year milled grain

PM/PM10/PM2.5 Emissions:

ID	Emission Source	Baghouse Aiflow (acfm)	Emission Factor (gr/scf)	Hours of Operation (hrs/yr)	Controlled PM Emissions (lbs/hr)	Controlled PM Emissions (tons/yr)	Controlled PM10 Emissions (lbs/hr)	Controlled PM10 Emissions (tons/yr)	Controlled PM2.5 Emissions (lbs/hr)	Controlled PM2.5 Emissions (tons/yr)
SV01	Grain Receiving Baghouse	20,000	0.004	8,760	0.69	3.00	0.17	0.751	0.10	0.45
SV02	Grain Handling Baghouse	10,000	0.004	8,760	0.34	1.50	0.09	0.375	0.05	0.23
SV06a	Hammermilling Baghouse	5,000	0.004	8,760	0.17	0.751	0.04	0.188	0.03	0.113
SV06b	Hammermilling Baghouse	5,000	0.004	8,760	0.17	0.751	0.04	0.188	0.03	0.113
					Total:	**6.01**		**1.50**		**0.90**
					Uncontrolled	**Uncontrolled**	**Uncontrolled**	**Uncontrolled**	**Uncontrolled**	**Uncontrolled**
SV01	Grain Receiving Baghouse				**68.57**	**300.34**	**17.14**	**75.09**	**10.29**	**45.05**
SV02	Grain Handling Baghouse				**34.29**	**150.17**	**8.57**	**37.54**	**5.14**	**22.53**
SV06a	Hammermilling Baghouse				**17.14**	**75.09**	**4.29**	**18.77**	**2.57**	**11.26**
SV06b	Hammermilling Baghouse				**17.14**	**75.09**	**4.29**	**18.77**	**2.57**	**11.26**

total **600.69** **150.17** **90.10**

Grain Handling Fugitive Emissions:

PM Emissions:

ID	Emission Source	Throughput (tons/year)	Emission Factor (lb/ton)	Hours of Operation (hrs/yr)	Uncontrolled Potential to Emit (lb/hr)	Uncontrolled Potential to Emit (tpy)	Control Percent	Controlled Potential to Emit (lb/hr)	Controlled Potential PM Emissions (tons/yr)
FS02	Grain Receiving Fugitives	944,213	0.035	8,760	3.77	16.52	95%	0.19	0.83
FS06	Grain Loadout (shipping)	944,213	0.086	8,760	9.27	40.60	75%	2.32	10.15
FS07	Portable Conveyor	944,213	0.061	8,760	6.57	28.80	95%	0.33	1.44
FS08	Grain Storage (milled grain)	944,213	0.025	8,760	2.69	11.80	75%	0.67	2.95
				Total:	**22.31**	**97.73**		**3.508**	**15.37**

PM10 Emissions:

ID	Emission Source	Throughput (tons/hour)	Emission Factor (lb/ton)	Hours of Operation (hrs/yr)	Uncontrolled Potential to Emit (lb/hr)	Uncontrolled Potential to Emit (tpy)	Control Percent	Controlled Potential to Emit (lb/hr)	Controlled Potential PM10 Emissions (tons/yr)
FS02	Grain Fugitives Receiving	944,213	0.0078	8,760	0.84	3.68	95%	0.04	0.18
FS06	Grain Loadout (shipping)	944,213	0.029	8,760	3.13	13.69	75%	0.78	3.42
FS07	Portable Conveyor	944,213	0.034	8,760	3.66	16.05	95%	0.18	0.80
FS08	Grain Storage	944,213	0.0063	8,760	0.68	2.97	75%	0.17	0.74
				Total:	**8.31**	**36.40**		**1.176**	**5.15**

PM-2.5 Emissions:

ID	Emission Source	Throughput (tons/hour)	Emission Factor (lb/ton)	Hours of Operation (hrs/yr)	Uncontrolled Potential to Emit (lb/hr)	Uncontrolled Potential to Emit (tpy)	Control Percent	Controlled Potential to Emit (lb/hr)	Controlled Potential PM2.5 Emissions (tons/yr)
FS02	Fugitives Receiving	944,213	0.0013	8,760	0.14	0.61	95%	0.01	0.03
FS06	Grain Loadout (shipping)	944,213	0.0049	8,760	0.53	2.31	75%	0.13	0.58
FS07	Portable Conveyor	944,213	0.0058	8,760	0.63	2.74	95%	0.03	0.14
FS08	Grain Storage	944,213	0.0011	8,760	0.12	0.52	75%	0.03	0.13
				Total:	**1.41**	**6.18**		**0.200**	**0.88**

Notes:
1. Fugitives are a result of uncaptured PM/PM10/PM2.5
2. Assumes all grain for ethanol plant is received and transferred via enclosed conveyor to process
3. Assumes storage bin vents are not included with the headhouse/internal handling emissions
4. Assumes addition control of fugitives by choked flow system within the building (~95%)
5. Storage and Loading assume contol of 75% for enclosure, for conveying assume 95% control for full enclosure

AP-42 Methodology -

	Througput				AP-42 Factor			Uncontrolled (lb/yr)	Controlled (T/yr)	Controlled (lb/hr, 24-hr average)		Control %
Truck receivir	944213 tons/yr	13680	ton/hr	PM	0.18	lbs/ton	8760	169958.340	0.85	1.026	baghouse	99%
				PM10	0.059	lbs/ton		55708.567	0.28	0.336		
				PM2.5	0.01	lbs/ton		9442.130	0.05	0.057		
Handling	944213 tons/yr			PM	0.061	lbs/ton	8760	57596.993	0.29	0.348	baghouse	99%
				PM10	0.034	lbs/ton		32103.242	0.16	0.194		
				PM2.5	0.0058	lbs/ton		5476.435	0.03	0.033		
Hammermillir	472106.5 tons/yr			PM	0.012	lbs/ton	8760	5665.278	2.83	0.755	baghouse	0%
				PM10	0.012	lbs/ton		5665.278	2.83	0.755		
				PM2.5	0.012	lbs/ton		5665.278	2.83	0.755		
Hammermillir	472106.5 tons/yr			PM	0.012	lbs/ton	8760	5665.278	2.83	0.755	baghouse	0%
				PM10	0.012	lbs/ton		5665.278	2.83	0.755		EF from AP-42 Table 9.9.1-2 for animal feed hammermill that includes baghouse control eff.
				PM2.5	0.012	lbs/ton		5665.278	2.83	0.755		

This has been developed to demonstrate how the recommended EPA -AP-42 (section 9.9.1, 3/2003) factor methodology compares to the current methodology. This methodology demonstrates emission estimates to be conservative.

concentration (tons per year)					lb/ton factor (tons per year)		
PM	PM10	PM2.5			PM	PM10	PM2.5
6.01	1.50	0.90			2.883	2.039	1.599076
					70.74	78.42	

APPENDIX B – FACILITY DRAFT COMMENTS

The following comments were received from the facility on March 29, 2021:

Facility Comment: Applicant made a few minor edits to Description, Permitting History, and Application Scope sections of the SOB and Process Description of the permit.

DEQ Response: changes are made as requested.

Facility Comment: Applicant confirmed that loadout emissions were routed to baghouse SV02.

DEQ Response: L**oadout emissions control is changed from using baghouse SV01 to baghouse SV02.**

Facility Comment: the applicant requested to revise footnote a) and remove footnotes b) & c) of Table 3 in the SOB to avoid confusions.

DEQ Response: footnote a) is revised to provide details on how PTE was estimated and what assumptions were used. Footnotes b) and c) are removed.

Facility Comment: For Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701) section of the SOB, the applicant requested change 1 day/week and 8 hr/day to 7 day/week and 24 hr/day.

DEQ Response: the changes are made, including the related calculations.

Facility Comment: For discussions under Initial Permit Condition 2.3 in the SOB, the applicant requested to add "AP-42, Chapter 9 was used as a basis for fractionation." at the end of the first paragraph and remove "to verify or develop PM_{10}/PM ratio and $PM_{2.5}/PM_{10}$ ratio for these baghouse." at the end of the third paragraph. The applicant also requested to remove "and to verify or develop PM_{10}/PM ratio and $PM_{2.5}/PM_{10}$ ratio for these baghouses" and made some other edits to the paragraphs as well.

DEQ Response: The requested changes are made. The following sentence is added to the end of the third paragraph to address the two requests: "The fractionation was based on the information in AP-42 for emissions without control devices. AP-42 Table 9.9.1-2 footnote (y) recommends to assume PM=PM_{10} for emissions from a baghouse. Due to the uncertainty of the assumptions used in the emissions inventory, source testing will be required to demonstrate compliance with the PM_{10} and $PM_{2.5}$ emissions limits.

Facility Comment: For Permit Condition 2.11, the applicant requested to remove "to remedy the visible emissions" and replace it with "to determine the extent of observe the visible opacity." as a Method 9 can't remedy an opacity issue, only provide detail information on the extent of the opacity.

DEQ Response: The requested change is made.

Facility Comment: For Permit Condition 2.12, the applicant requested to remove "and 3) verify or develop the PM_{10} /PM ratio by dividing the PM_{10} emissions rate in lb/hr by the PM emissions rate in lb/hr and the $PM_{2.5}/PM_{10}$ ratio by dividing the $PM_{2.5}$ emissions rate in lb/hr by the PM_{10} emissions in lb/hr." because compliance is not based on fractionation of particle size. Compliance is only based on emission limit. The applicant further stated that this ratio requirement should be removed from the requirement as there was no precedence to verify particulate ratio and that demonstration of ratio and fractionation was an overreaching requirement. The applicant also requested to move "Grain loadout rate in Bushel/hr and pound/hr" from under baghouse (SV01) to under baghouse (SV02) as the emissions from grand loadout is controlled by baghouse SV02.

DEQ Response: The requested changes are made.

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:	**Liberty Basin, LLC**
Address:	**2600 Washington Ave.**
City:	**Burley**
State:	**ID**
Zip Code:	**83318**
Facility Contact:	**Reed Gibby**
Title:	**Manager and Member**
AIRS No.:	**031-00076**

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	1.5	0	1.5
VOC	0.0	0	0.0
Total:	1.5	0	**1.5**
Fee Due	**$ 2,500.00**		

Comments: