Statement of Basis

Final

Handy Truck Line, Inc.
Meridian Terminal
Meridian, Idaho
Facility ID No. 001-00224
Permit to Construct P-2010.0046

April 12, 2010
Eric Clark
Permit Writer

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

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentration
AACC	acceptable ambient concentration for carcinogens
acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic foot
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
Handy	Handy Truck Line, Inc.
HAP	Hazardous Air Pollutant
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
K	degrees Kelvin
lb/hr	pounds per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
$\mu g/m^3$	micrograms per cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
Nm^3	normal cubic meter, i.e., a cubic meter of gas at normal temperature (68°F) and pressure (14.7 pounds per square inch atmospheric).
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PAH	polyaromatic hydrocarbons
PC	permit condition
PM	particulate matter
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
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor

SO_2	sulfur dioxide
SO_x	sulfur oxides
TAP	Toxic Air Pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

FACILITY INFORMATION

Description

The Handy Truck Line, Inc. (Handy) Meridian Terminal conducts two separate processes: flyash and cement transloading, and batch and custom cement and concrete dry mixing and bagging for commercial sales.

In the flyash and cement transloading process, flyash and cement are first delivered to the facility by railcar. A maximum of 335,000 tons per year of flyash and 600,000 T/yr of cement may be delivered to the facility. The raw material is transferred using an underground, covered screw conveyor to one of seven storage silos in the load-out area, which is adjacent to the railroad spur on the northern end of the property. Particulate emissions from railcar transloading and silo filling are controlled by four baghouses. Most of the material stored in the silos is loaded from the silos into delivery trucks, which transport the material offsite to ready-mix concrete companies. Bulk trailers pull onto the scale in the transloading area and an extendable boot is pulled down over a filling spout that is connected to a dust collector. An access port is located on top of each trailer. The filling spout is lowered into this access port and the load of bulk material is dropped into the trailer. The typical load is 35 tons, and the loading rate is 15 minutes per load. Particulate emissions from the truck loadout process are captured in the fugitive flyash baghouse. Approximately 324,500 tons per year of flyash and 494,880 tons per year of cement are shipped off-site. The remainder of the flyash and cement is used in the cement and dry-mix concrete production process.

The dry-mix concrete blending and packaging process takes place both inside and outside the facility's buildings. Raw materials for this process consist of sand, gravel, flyash, cement, and lime. A maximum of 262,800 tons per year of sand and 131,400 tons per year of gravel are delivered by truck to the storage yard on the southeastern portion of the property, where the raw material is off-loaded into one of four uncovered stockpiles. The stockpiles, typically three sand piles and one gravel pile, are usually moist in the winter and dry in the summer. The stockpiles are watered when necessary to reduce fugitive dust emissions, mainly during the summer months.

Sand and gravel are transferred using a front-end loader from the storage piles to the wet product sand hopper or the wet product gravel hopper. The hoppers are located outside of the buildings. From the hoppers, the sand and gravel are transferred to one of two feeder belts. From the feeder belts, sand and gravel are transferred to a feed conveyor, which feeds a 10-million Btu per hour (MMBtu/hr) natural gas-fired dryer which is also located outside the main building. This fluid bed dryer has a maximum feed rate of 45 tons per hour combined sand and gravel. The dryer controls the facility's production rate. The dryer could potentially operate 24 hours per day, 365 days per year, resulting in a maximum feed rate of 394,200 tons per year combined sand and gravel. In the dryer, material is heated to 400°F and then cooled to ambient temperature. Efficient consumption of energy is attained through heat recovery from the flue gases. The fluid bed is divided into two compartments: Material is dried in the front compartment and cooled in the back compartment. Air from the cooling cycle is used as intake air for the burner. Approximately 90% of the burner intake air is recycled air and 10% is fresh air from outside. Emissions of particulate matter from the dryer are controlled by a dust collector. Two baghouses control emissions from the drying process.

Once the material is dried and cooled, it is transferred by conveyor to a classifier. The material is sorted in the classifier (7-mesh sand and ½-inch rock) and rejected or accepted based on size. The larger pieces are rejected and moved to the reject conveyor. The small amount of rejected material typically stays onsite and is used as parking area material. Accepted material is loaded into the bucket elevator.

The process moves inside the dry mix plant when the bucket elevator transfers sorted material to the dry mix storage silos. Three aggregate silos are used for storage of processed gravel and sand. The facility uses six powder silos for storage of cement, flyash, and lime, all of which are located inside the building. Cement and flyash from the transloading facility (105,120 tons per year of cement and 10,500 tons per

year of flyash) are pneumatically loaded into the silos. The lime (approximately 15,800 tons per year) is delivered by truck and pneumatically loaded into the silos.

From the silos, sand, gravel, flyash, lime, and cement are metered out and transferred to the covered weigh belt feeder and then to the baffle mixer. The final mixture is then moved to the valve bagger for bagging. A baghouse controls dust emissions from the dry mix process.

Finished bags of cement and concrete are moved to the palletizer. Pallets of bags are moved using a forklift to the warehouse for storage until the pallets are shipped offsite by truck. The maximum annual production capacity is 525,600 tons per year of cement and dry-mix concrete.

During the winter months (November through March), the facility operates from 8:00 a.m. to 5:00 p.m. four days per week. During the summer months (April through October), the facility operates from 5:00 a.m. to 5:00 p.m., typically for six days per week.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or Replaced (R).

August 14, 2009	P-2008.0138, Initial PTC, Permit status (A, but will become R upon issuance of this permit)
January 24, 2008	Effective date of Consent Order E-070018, which required submittal of a PTC application for the Meridian Terminal by April 23, 2008.

Application Scope

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

The applicant has proposed to:

- Increase the current hourly PM_{10} emission limit from 0.07 lb/hr to 2.07 lb/hr. Note that the 2.07 lb/hr is based on a November 10, 2009 performance test. The 2.07 lb/hr was the average of three tested runs. Because two of the three runs exceeded 2.07 lb/hr, this permit increases the emission rate limit to 2.37 lb/hr to allow for a bit of flexibility.

Application Chronology

March 18, 2010	DEQ received an application and an application fee.
April 15 – April 29, 2010	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
April 12, 2010	DEQ determined that the application was complete.
April 30, 2010	DEQ made available the draft permit and statement of basis for peer and regional office review.
May 4, 2010	DEQ made available the draft permit and statement of basis for applicant review.
May 24, 2010	DEQ received the permit processing fee.
May 28, 2010	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Meridian Terminal and Control Devices

Table 1 MERIDIAN TERMINAL AND CONTROL DEVICE INFORMATION

ID No.	Source Description	Control Equipment Description	Emissions Point ID No. and Description
Fluidized Bed Dryer	Manufacturer: Ventilex Model: 150-3500-192 Construction Date: June 1, 2007 Heat Input Rating: 10 MMBtu/hr Fuel: Natural Gas Capacity: 45 T/hr	**Baghouse BH1** Manufacturer: Ventilex Model: 150-3500-192 Efficiency: PM/PM_{10}: 0.04 gr/dscf (10 mg/Nm^3) Number of bags: 288 Air to Cloth ratio: 4.3 to 1	**BH1/DRYER Stack:** Stack Height: 30 ft (9.1 m) Exit Diameter: 2.66ft (0.81 m) Exit Temperature: 400°F (477.6 K) Exit Flow Rate: 11,000 cfm Exit Velocity: 32.8 ft/s (10 m/s)
Dryer feed transfer points	**Feeder Belt (sand and gravel)** Manufacturer: Custom built Construction Date: June 1, 2007 Rated capacity: 1 meter **Feed Conveyor (sand and gravel)** Manufacturer: Custom built Construction Date: June 1, 2007 Rated capacity: 1 meter	**Baghouse BH2** Manufacturer: Carbo Tech Model: 12-12-12-27-14-RTH Construction Date: March 1996 Modified: June 1, 2007 Efficiency: PM/PM_{10}: 0.005 gr/dscf Number of bags: 144 Air to Cloth ratio: 5.53 to 1	**BH2 Stack:** Stack Height: 38 ft (11.6 m) Exit Diameter: 2.26 ft (0.69 m) Exit Temperature: 77°F (298 K) Exit Flow Rate: 15,000 cfm Exit Velocity: 62.6 ft/s (19.1 m/s)
Building #2 Dry Mix Plant	Dry Mix process dust emissions Inside Building #2.	**Baghouse BH3** Manufacturer: IAC Systems Model: 120TB-BHT-196 Style 3 Construction Date: March 2000 Efficiency: PM/PM_{10}: 0.02 gr/dscf Number of bags: 196 Air to Cloth ratio: 5.7 to 1	**BH3 Stack:** Stack Height: 30 ft (9.1 m) Exit Diameter: 2.67 ft (0.81 m) Exit Temperature: 77°F (298 K) Exit Flow Rate: 18,000 cfm Exit Velocity: 53.8 ft/s (16.4 m/s)
White Silo – Outside Sand Silo	Silo Vent	**Baghouse BH4** Manufacturer: Mikropul Model: B.V.-30 Construction Date: July 2007 Efficiency: PM/PM_{10}: 0.02 gr/dscf Number of bags: 9 Air to Cloth ratio: 6 to 1	**BH4 Stack:** Stack Height: 66 ft (20.1 m) Exit Size: 0.4 ft x 1.0 ft Equiv. Dia: 0.71 ft (0.22 m) Exit Temperature: 77°F (298 K) Exit Flow Rate: 508 cfm Exit Velocity: 53.1 ft/s (16.2 m/s)
(Rail) Track Loadout System Storage Silos	Flyash Bin Vents No. 1, 2, and 3	**Bin Vent Flyash Baghouses BH5, BH6, and BH7** Manufacturer: IAC Systems Model: 84TB-BVI-16 Style 2 Construction Date: July 2007 Efficiency: PM/PM_{10}: 0.02 gr/dscf Number of bags: 56 (each) Air to Cloth ratio: 6.6 to 1 (each)	**BH5, BH6, and BH7 Stacks:** Stack Height: 86 ft (26.2 m) Exit Size: 0.5 ft x 0.5 ft Equiv. Dia: 0.56 ft (0.17 m) Exit Temperature: 77°F (298 K) Exit Flow Rate: 1,200 cfm Exit Velocity: 80.0 ft/s (24.4 m/s)
(Rail) Track Loadout System Truck Loadout	Fugitive flyash and truck loadout	**Fugitive Flyash Baghouse BH8** Manufacturer: Micropul Model: 64S-10-20-C Construction Date: March 1998 Efficiency: PM/PM_{10}: 0.02 gr/dscf Number of bags: 64 Air to Cloth ratio: 6 to 1 (each)	**BH8 Stack:** Stack Height: 24.9 ft (7.6 m) Exit Diameter: 0.95 ft (0.29 m) Exit Temperature: 77°F (298 K) Exit Flow Rate: 4,523 cfm Exit Velocity:108.6 ft/s (33.1 m/s)
Truck Unloading Front-Loader Transfers Feed Conveyor Transfers	Sand and gravel delivery to piles. Transfer from piles to hoppers. Sand and gravel transfers from hoppers to feed belt and feed conveyor.	None	Fugitive Emissions

Emissions Inventories

An emission inventory was developed for the Ventilex Dryer/Baghouse at the facility associated with this proposed project. Emissions estimates of criteria pollutant PTE were based on emission factors from AP-42 operation of 4,020 hours per year, and process information specific to the facility for this proposed project. The 4,020 hours per year are based on 12 hour work days from April through October and nine (9) hour work days the remainder of the year with approximately an additional 2% included. Summaries of the estimated controlled emissions of criteria pollutants are provided in the following tables. For a facility-wide emissions inventory and analysis refer to permit No. P-2008.0138.

Pre-Project Potential to Emit

The following table presents the pre-project potential to emit for only the Ventilex Fluid Bed Dryer/Baghouse criteria pollutants 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 2 PRE-PROJECT POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS

Emissions Unit	PM_{10}	
	lb/hr[a]	T/yr[b]
Fluidized Bed Dryer (Baghouse & Combustion)	**0.48**	**0.96**
Pre-Project Totals	**0.48**	**0.96**

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

Post Project Potential to Emit

The following table presents the post project potential to emit for criteria pollutants from for the one unit being modified 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 3 POST PROJECT POTENTIAL TO EMIT FOR CRITERIA POLLUTANTS

Emissions Unit	PM_{10}	
	lb/hr[a]	T/yr[b]
Fluidized Bed Dryer (Baghouse & Combustion)	**2.37**	**4.76**
Post-Project Totals	**2.37**	**4.76**

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

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required or if emissions modeling 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 CRITERIA POLLUTANTS

	PM_{10}	
	lb/hr	T/yr
Pre-Project Potential to Emit	**0.48**	**0.96**
Post Project Potential to Emit	**2.37**	**4.76**
Changes in Potential to Emit	**1.89**	**3.80**

Non-Carcinogenic / Carcinogenic TAP Emissions

There was no change in TAP emissions from this permitting action. The throughput and material amount remain unchanged from the previous permit, P-2008.0138, issued August 14, 2009. There was only a request to increase the PM_{10} hourly emission rate. For a detailed discussion of the TAPs associated with the facility see permit No. P-2008.0138, issued August 14, 2009.

Ambient Air Quality Impact Analyses

Handy requested an increase to 2.07 lb/hr PM_{10} emission limit. They also used updated meteorological data than was used in the previous permitting action. DEQ determined that the National Weather Service surface and upper air meteorological data collected from 2001 through 2005 at the Boise airport were the best representative data available at this time. These meteorological data previously processed through AERSURFACE (version 08009) and AERMET (version 06341) were provided to Handy by DEQ.

These data differed from the 1988-1992 met data set used for the initial permit analyses (P-2008.0138) in two ways: 1) a different five-year data collection period, and 2) preprocessing of surface characteristics for the 1988-1992 data was done manually using National Land Cover Dataset (NLCD) information within a 3-kilometer radius of the met station. Surface characteristics for the 2001-2005 dataset were determined using AERSURFACE, which was released in 2009, and NLCD information for the area within a 1-kilometer radius of the met station. All other modeling parameters were not changed from the previous compliance demonstration.

The change in meteorological data allowed Handy to increase the hourly PM_{10} limit up to the requested 2.07 lb/hr from 0.48 lb/hr. However, the requested limit was identical to the average of the previous performance test. Because two of the three hourly test runs (a Test is defined as the average of three runs) exceeded 2.07 lb/hr, DEQ decided to increase the rate to 2.37 lb/hr. This was done to allow Handy a little flexibility.

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 Ada 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.

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 modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 Tier II Operating Permit

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

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM_{10} emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Condition 16.

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 all criteria pollutants or 10 tons per year for any one HAP or 25 tons per year for all HAPs 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 58.01.01.006.113 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/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)

40 CFR 60 Subpart OOO ..... Standards of Performance for Nonmetallic Mineral Processing Plants

60.670 Applicability and designation of affected facility

60.670(a)(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.

The Handy Meridian Terminal - Operations include stand-alone screening operations for sand and gravel (i.e., the classifier), but do not include a crusher or grinding mill. Therefore, this NSPS does not apply.

40 CFR 60 Subpart UUU.....Standards of Performance for Calciners and Dryers in Mineral Industries

60.730 Applicability and designation of affected facility

(a) The affected facility to which the provisions of this subpart apply is each calciner and **dryer at a mineral processing plant.** Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.

(b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in §60.731, "Mineral processing plant").

(c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

60.731 Definitions

Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum,

industrial sand, kaolin, **lightweight aggregate**, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

Handy does not process industrial sand (recycled sand), lightweight aggregate (for the production of lightweight concrete products), or any of the other minerals listed in the 60.731 definition of *mineral processing plant*. According to AP-42 section 11.20, Lightweight aggregate is a type of coarse aggregate that is used in the production of lightweight concrete products such as concrete block, structural concrete, and pavement. The Standard Industrial Classification (SIC) code for lightweight aggregate manufacturing is 3295; there currently is no Source Classification Code (SCC) for the industry. Most lightweight aggregate is produced from materials such as clay, shale, or slate. Blast furnace slag, natural pumice, vermiculite, and perlite can be used as substitutes, however. To produce lightweight aggregate, the raw material (excluding pumice) is expanded to about twice the original volume of the raw material. The expanded material has properties similar to natural aggregate, but is less dense and therefore yields a lighter concrete product.

The production of lightweight aggregate begins with mining or quarrying the raw material. The material is crushed with cone crushers, jaw crushers, hammer mills, or pug mills and is screened for size. Oversized material is returned to the crushers, and the material that passes through the screens is transferred to hoppers. From the hoppers, the material is fed to a rotary kiln, which is fired with coal, coke, natural gas, or fuel oil, to temperatures of about 1200°C (2200°F). As the material is heated, it liquefies and carbonaceous compounds in the material form gas bubbles, which expand the material; in the process, volatile organic compounds (VOC) are released. From the kiln, the expanded product

(Clinker) is transferred by conveyor into the clinker cooler where it is cooled by air, forming a porous material. After cooling, the lightweight aggregate is screened for size, crushed if necessary, stockpiled, and shipped. Figure 11.20-1 illustrates the lightweight aggregate manufacturing process.

Although the majority (approximately 90 percent) of plants uses rotary kilns, traveling grates are also used to heat the raw material. In addition, a few plants process naturally occurring lightweight aggregate such as pumice. The terminal is therefore not a mineral processing plant, and is therefore not subject to the requirements of this NSPS.

NESHAP Applicability (40 CFR 61)

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

MACT Applicability (40 CFR 63)

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

Permit Conditions Review

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

Existing Permit Condition 2.3

> *The PM, PM_{10}, SO_2, NO_X, CO, VOC and Pb emissions from the Fluidized Bed Dryer, track, silo and Plant #2 stacks shall not exceed any corresponding emissions rate limits listed in Table 2.2.*

Table 2.2 MERIDIAN TERMINAL EMISSIONS LIMITS

Source Description	*PM/PM_{10}*		*SO_2*		*NO_X*		*VOC*		*CO*		*Lead*	
	lb/hr	*T/yr*	*lb/hr*	*T/yr*	*lb/hr*	*T/yr*	*lb/hr*	*T/yr*	*lb/hr*	*T/yr*	*lb/hr*	*T/yr*
Fluidized Bed Dryer	*0.07*	*0.15*	*0.01*	*0.01*	*1.1*	*2.1*	*0.05*	*0.11*	*2.0*	*4.0*	*4.9E-06*	*9.85E-06*
(Rail) Track, Silos, Dryer Feeds, and Plant #2 [with Baghouses]	*5.62*	*11.30*	--	--	--	--	--	--	--	--	--	--

Revised Permit Condition 7

> *The PM_{10}, SO_2, NO_X, CO, VOC and Pb emissions from the Fluidized Bed Dryer, track, silo and Plant No. 2 stacks shall not exceed any corresponding emissions rate limits listed in the following table.*

Table 3 CEMENT TRANSLOADING & DRY MIX EMISSION LIMITS[a]

Source Description	PM_{10}[b]	
	lb/hr[c]	T/yr[d]
Fluidized Bed Dryer (combustion/BH1)	2.37	4.65
All other Point Sources (BH2-BH8)	5.23	10.28

a) In absence of any other credible evidence, compliance is assured by complying with permit operating, monitoring, and record keeping requirements.
b) Particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers, including condensable particulate as defined in IDAPA 58.01.01.006.81.
c) Pounds per hour, as determined by a test method prescribed by IDAPA 58.01.01.157, EPA reference method, or DEQ-approved alternative.
d) Tons per any consecutive 12-calendar month period, 4,020 hours per year.

This permit condition has been revised to include the new PM_{10} hourly and annual emission limit as requested by Handy. Also, to avoid any confusion the fluidized bed dryer baghouse and combustion emissions have been include together. This ensures that the proper limits are used for testing. The other criteria pollutant limits were removed from the bed dryer because they inherently limited by production limits and are not a NAAQS concern. Finally, all other sources are included for clarity. The limits stated in the above table include the summation of all PM_{10} emissions from baghouse #2 through #8. Note that each of these emissions is based on throughput limits and delivery size.

Existing Permit Condition 2.8

> *Within 60 days of the date of this permit, the permittee shall have developed a Baghouse/Filter System Procedures document for the operation and monitoring of the baghouses/filter system which control emissions from the sources listed in Permit Condition 2.2. The Baghouse/Filter System Procedures document shall be a permittee developed document independent of the manufacturer supplied operating manual but may include summaries of procedures included in the manufacturer supplied operating manual.*
>
> *The Baghouse/Filter System Procedures document shall describe the procedures that will be followed to comply with General Provision 2 and shall contain requirements for weekly see-no-see visible emissions inspections of the baghouse. The inspection shall occur during daylight hours and under normal operating conditions.*

The Baghouse/Filter System Procedures document shall also include a schedule and procedures for corrective action that will be taken if visible emissions are present from the baghouse at anytime. At a minimum the document shall include:

- *Procedures to determine if bags or cartridges are ruptured; and*
- *Procedures to determine if bags or cartridges are not appropriately secured in place.*

The Permittee shall maintain records of the results of each baghouse/filter system inspections in accordance with General Provision 7. The records shall include a description of whether visible emissions were present and if visible emissions were present a description of the corrective action that was taken.

The Baghouse/Filter System Procedures document shall be submitted to DEQ within 60 days of permit issuance for review and comment and shall contain a certification by a responsible official. Any changes to the Baghouse/Filter System Procedures document shall be submitted within 15 days of the change.

Air Quality Permit Compliance
Boise Regional Office
Department of Environmental Quality
1445 N Orchard St.
Boise, ID 83706

Phone: (208) 373-0550
Fax: (208) 373-0287

The Baghouse/Filter System Procedures document shall also remain on site at all times and shall be made available to DEQ representatives upon request.

The operating and monitoring requirements specified in the Baghouse/Filter System Procedures document are incorporated by reference to this permit and are enforceable permit conditions.

Revised Permit Condition 12

If any changes are made to the Baghouse/Filter System Procedures document, a copy should be sent to the DEQ for approval. The Baghouse/Filter System Procedures document shall be a permittee developed document independent of the manufacturer supplied operating manual but may include summaries of procedures included in the manufacturer supplied operating manual.

The Baghouse/Filter System Procedures document shall describe the procedures that will be followed to comply with the maintenance of control equipment General Provision and shall contain requirements for weekly see-no-see visible emissions inspections of the baghouse. The inspection shall occur during daylight hours and under normal operating conditions.

The Baghouse/Filter System Procedures document shall also include a schedule and procedures for corrective action that will be taken if visible emissions are present from the baghouse at anytime. At a minimum the document shall include:

- *Procedures to determine if bags or cartridges are ruptured; and*
- *Procedures to determine if bags or cartridges are not appropriately secured in place.*

The Permittee shall maintain records of the results of each baghouse/filter system inspections in accordance with Recordkeeping General Provision. The records shall include a description of whether visible emissions were present and if visible emissions were present a description of the corrective action that was taken.

The Baghouse/Filter System Procedures document shall be submitted to DEQ within 60 days of permit issuance for review and comment and shall contain a certification by a responsible official. Any changes to the Baghouse/Filter System Procedures document shall be submitted within 15 days of the change.

Air Quality Permit Compliance
Boise Regional Office
Department of Environmental Quality
1445 N Orchard St.
Boise, ID 83706

Phone: (208) 373-0550
Fax: (208) 373-0287

The Baghouse/Filter System Procedures document shall also remain on site at all times and shall be made available to DEQ representatives upon request.

The operating and monitoring requirements specified in the Baghouse/Filter System Procedures document are incorporated by reference to this permit and are enforceable permit conditions.

The first section of this condition was updated. Rather than requiring a new Procedures document within 60 days of permit issuance (as was the case in the previous permit), the condition states that should there ever be changes or updates to the document a copy shall be sent to the Boise Regional Office for approval. Also, rather than referring to specific general provision condition numbers, the verbiage was updated to include a description rather than a number. This was done because the numbering convention has changed for State of Idaho PTCs.

Existing Permit Condition 2.14

Within 180 days of issuance, the permittee shall conduct a performance test on the fluidized bed dryer to demonstrate compliance with the PM_{10} emissions limit. The emission rate limit should be in units of lb/hr and the averaging period determined by source test methods prescribed by IDAPA 58.01.01.157.

The performance test shall be conducted under worst-case normal operating conditions and in accordance with IDAPA 58.01.01.157; Permit Conditions 2.4, 2.14, 2.15, and 2.16; and General Provision 6 of this permit. The permittee is encouraged to submit a performance testing protocol for approval 30 days prior to conducting the performance tests.

The permittee shall monitor and record the following during the performance test:

- *The Fluidized bed dryer production, in tons per hour, once every 15 minutes;*
- *Feed Rate for truck unloading, front end loading and conveyor transfer in tons per hour, once every 15 minutes;*
- *The visible emissions observed during the performance test.*

Revised Permit Condition 18

The permittee conducted a performance test on the fluidized bed dryer to demonstrate compliance with the PM_{10} emissions limit on November 10, 2009. A follow-up performance test shall be conducted no later than November 10, 2015. All subsequent performance tests shall be conducted every five years thereafter. Each future test shall include the emission rate limit in units of lb/hr and the averaging period determined by source test methods prescribed by IDAPA 58.01.01.157.

The performance test shall be conducted under worst-case normal operating conditions and in accordance with IDAPA 58.01.01.157; Permit Conditions 8, 19, 20, and 21; and the performance testing General Provision of this permit. The permittee is encouraged to submit a performance testing protocol for approval 30 days prior to conducting the performance tests.

The permittee shall monitor and record the following during the performance test:

- *The Fluidized bed dryer production, in tons per hour, once every 15 minutes;*
- *Feed Rate for truck unloading, front end loading and conveyor transfer in tons per hour, once every 15 minutes;*
- *The visible emissions observed during the performance test.*

The updated condition was restructured to incorporate future performance tests rather an initial test. The results from the November 10, 2009 performance test were used to develop this permitting action. Therefore, there is no need to retest soon after issuance of this permit. The new condition states that the next performance test must be conducted with 5 years from November 10, 2009. Following the next test, the recurring testing cycle becomes every five years.

PUBLIC REVIEW

Public Comment Opportunity

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

APPENDIX A – EMISSIONS INVENTORIES

DEQ Emissions Increase Calculation

Pre-Project Fluidized Bed Dryer

Baghouse Emissions (lbs/hr) = E (mg/m^3) * Q (ft^3/min) * (60 min/hr) * ($m^3/3.28\ ft^3$) * (g/1000 mg) * (lb/453.6 g)

Where Q = flow rate, E = emission factor (Manufacturer guarantee) See statement of Basis from permit No. P-2008.0138 for details.

Baghouse Emissions rate = 10 mg/m^3 * 11,000 ft^3/min * 60 min/hr * $m^3/3.28\ ft^3$ * g/1,000 mg * lb/453.6 g = 0.41 lb/hr

Baghouse Emissions Rate = 0.41 lb/hr

Combustion Emissions = E (lb/MMscf) * HI (MMBtu/hr) /1,020 (MMBtu/MMscf)

Where HI = heat input, E = emission factor (AP-42 Table 1.4-2) See statement of Basis from permit No. P-2008.0138 for details.

Combustion Emissions rate = 7.6 lb/MMscf * 10 MMBtu/hr / 1,020 MMBtu/MMscf = 0.07 lb/hr

Combustion Emissions Rate = 0.07 lb/hr

Total Emission Rate = 0.07 + 0.41 = 0.48 lb/hr

Assuming 4,020 hr/yr = 0.48 lb/hr * 4,020 hr/yr / 2000 lb/T = **0.96 T/yr**

Post-Project Fluidized Bed Dryer

Test Run #1 = 1.45 lb/hr

Test Run #2 = 2.17 lb/hr

Test Run #3 = 2.59 lb/hr

Average of the runs = (1.45 + 2.17 + 2.59)/3 = 2.07 lb/hr (combined combustion & baghouse)

0.3 lb/hr added by DEQ

Total Emission Rate = 2.07 + 0.3 = 2.37 lb/hr

Assuming 4,020 hr/yr = 2.37 lb/hr * 4,020 hr/yr / 2000 lb/T = **4.76 T/yr**

Overall PM_{10} Annual Increase

4.76 – 0.96 = **3.80 T/yr PM_{10}**

Shown below are the performance test results and emissions inventory submitted by Handy.

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the **Air Permit Hotline - 1-877-5PERMIT**	**PERMIT TO CONSTRUCT APPLICATION** Revision 3 4/5/2007

Please see Instructions on page 2 before filling out the form.

Company Name:	**Handy Truck Line**
Facility Name:	Meridian Terminal, ID
Facility ID No.:	001-00224
Brief Project Description:	The Meridian Terminal produces batch and custom mixtures of cement and concrete, and also transloads fly ash and cement.

SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - POINT SOURCES

1.	2.	3.											
		PM_{10}		SO_2		NO_x		CO		VOC		Lead	
Emissions units	**Stack ID**	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
Dryer dust collector baghouse	BH1	2.07	4.16										
Dryer fugitive dust baghouse	BH2	on file											
Plant & fugitive dust baghouse	BH3	on file											
Outside sand white silo bin vent	BH4	on file											
Track loadout-fly ash bin vent	BH5	on file											
Track loadout-fly ash bin vent	BH6	on file											
Track loadout-fly ash bin vent	BH7	on file											
Fugitives fly ash & truck loadout	BH8	on file											
Total		2.07	4.16										

Table 1

EMISSION SUMMARY

Handy Truck Lines

November 10, 2009

Ventilex Bag House

Test	Exhaust Gas acfm	Exhaust Gas dscf/m	Exhaust Gas Temp F	Exhaust Gas H2O %	Particulate Front gr/dscf	Particulate Back gr/dscf	Particulate Total gr/dscf	lb/hr*	Opacity %	Dryer Feed Rate Ton / Hour	Bag House Pressure Drop In H20
Run 1	14,864	11,711	104.3	7.8	0.0017	0.0127	0.0144	1.45	0	35.0	2.5
Run 2	14,416	11,765	99.3	5.3	0.0062	0.0153	0.0215	2.17	0	28.8	2.5
Run 3	17,549	13,364	125.8	7.5	0.0060	0.0167	0.0226	2.59	0	24.0	2.5
Average	**16,207**	**12,537**	**115.0**	**7.7**	**0.0039**	**0.0147**	**0.0185**	**2.07**	**0**	**29.3**	**2.5**

Average lb/hr Emission Rate Corrected May 18, 2010 from 1.81 lb/hr to 2.07 lb/hr

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: April 9, 2010

TO: Eric Clark, Permit Engineer, Air Quality Division

FROM: Cheryl Robinson, P.E., Air Quality Engineer/Modeling Analyst, Air Quality Division

PROJECT NUMBER: P-2010.0046

SUBJECT: **Modeling Review for Handy Truck Line, Meridian, Facility ID 001-00224**
Project: PTC Modification, Increase BH1 Process Emissions from 0.41 lb/hr to 2.0 lb/hr

1.0 Summary

Handy Truck Line, Inc., (Handy) submitted an application to modify the Permit to Construct (PTC) for this cement and transloading facility located in Meridian, Idaho. Based on results from a 2010 source test, process emissions of PM_{10} from the dryer and cooler (BH1) were increased from 0.4 lb/hr to 2.0 lb/hr. Air quality analyses involving atmospheric dispersion modeling of emissions associated with the facility were performed to demonstrate the facility would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 [Idaho Air Rules Section 203.02]) or Toxic Air Pollutant (TAP) increment (Idaho Air Rules Section 203.03).

Spidell and Associates of Boise, Idaho, Handy's consultant, reran the DEQ verification analyses from the initial PTC (P-2008.0138) using emission rates and stack parameters developed by Tetra Tech EM of Boise. Changes to the modeling input were limited to increasing the process emissions of PM_{10} from the Ventilex dryer and cooler (emission point BH1) from 0.41 lb/hr to 2.0 lb/hr, and using updated meteorological data files provided by DEQ.

No physical changes were made to the facility. Compliance with PM_{10} NAAQS was demonstrated using a DEQ-recommended updated meteorological data set collected from 2001 through 2005 at the Boise airport, preprocessed using AERSURFACE, with surface parameters based on conditions within a 1-kilometer radius of the met station. DEQ's verification analyses for near-field 24-hour and annual PM_{10} impacts confirmed that ambient impacts are predicted using this data set were lower compared to the 1988-1992 data with manually-processed surface characteristics from a 3-kilometer radius (used for the initial PTC analyses in 2008, P-2008.0134). Data processed using surface characteristics from a 1-kilometer radius is presumed to better represent terrain effects on wind speed and direction data collected at the met station.

A technical review of the submitted analyses was conducted by DEQ. The submitted analyses, combined with DEQ's verification analyses: 1) utilized appropriate methods and models; 2) were conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility were below significant contribution levels (SCLs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all locations outside of the facility's property boundary. Key assumptions and results that should be considered in the development of the permit are shown in Table 1. Compliance has been demonstrated only if the facility is operated in accordance with these assumptions.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
Hours of Operation April 1 through October 31: 5 a.m. to 5 p.m., 7 days/wk November 1 through March 31: 8 a.m. to 5 p.m., 7 days/wk	Modeling input for 24-hr PM_{10} NAAQS used an hourly emissions input file with zero emissions for hours 1-5 and hours 18-24 from April 1 through October 31 and zero emissions for hours 1-8 and hours 18-24 from November 1 through March 31. DEQ verification modeling conducted for the initial PTC (P-2008.0138) showed that the 24-hour PM_{10} NAAQS is exceeded if the facility operates outside these hours.
Production or Throughput and Fugitive Controls April 1 through October 31: Gravel/Aggregate Delivery: Max. 392.2 tons per day Sand Delivery: Max. 784.5 tons per day November 1 through March 31: Gravel/Aggregate Delivery: Max. 294.2 tons per day Sand Delivery: Max. 588.4 tons per day Water sprays or equivalent are required to minimize fugitive dust emissions from sand/aggregate (75% control presumed for modeled emissions)	Short-term PM_{10} impacts are at 99.0% of the 24-hr PM_{10} NAAQS. DEQ verification modeling conducted for the initial PTC (P-2008.0138) showed that the 24-hour PM_{10} NAAQS will likely be exceeded if the facility operates outside these hours, or at higher throughput rates.
Ventilex Dryer and Cooler Emissions Maximum combined process PM_{10} and natural gas combustion PM_{10} emissions from the Ventilex Dryer Baghouse are 2.37 lb/hr.	DEQ verification analyses: Process Emissions (BH1) = 2.3 lb/hr PM_{10} Combustion Emissions (DRYER) = 0.07 lb/hr PM_{10}

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance for this facility located at 630 East King Street in Meridian, Idaho. Approximate UTM coordinates at the center of this parcel are 549.7 km Easting and 4,828.5 km Northing, in UTM Zone 11 (Datum WGS84).

2.1.1 Area Classification

The Handy Meridian facility at 630 East King Street in Meridian, Idaho is within northern Ada County which is designated as an attainment or unclassifiable area for lead (Pb), nitrogen dioxide (NO_2), ozone, particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), and sulfur oxides (SO_x). The area is in attainment but is being managed under a maintenance plan for carbon monoxide (CO) and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}). There are no Class I areas within 10 kilometers of this location.

2.1.2 Significant and Cumulative NAAQS Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the existing unpermitted facility exceed the significant contribution levels (SCLs) of Section 006.102 of IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho (Idaho Air Rules), then a cumulative impact analysis is necessary to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions, and emissions from any nearby co-contributing sources, to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. The SCLs and the modeled value that must be used for comparison to the NAAQS are also listed in Table 2.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Contribution Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Value Used[d]**
PM_{10}[e]	Annual[f]	1.0	50[g]	Maximum 1st highest[h]
	24-hour	5.0	150[l]	Maximum 6th highest[j]
$PM_{2.5}$[k]	Annual	Not established	15	Use PM_{10} as surrogate
	24-hour	Not established	35	Use PM_{10} as surrogate
Carbon monoxide (CO)	8-hour	500	10,000[l]	Maximum 2nd highest[h]
	1-hour	2,000	40,000[l]	Maximum 2nd highest[h]
Sulfur Dioxides (SO_x)	Annual	1.0	80[g]	Maximum 1st highest[h]
	24-hour	5	365[l]	Maximum 2nd highest[h]
	3-hour	25	1,300[l]	Maximum 2nd highest[h]
Nitrogen Dioxide (NO_2)	Annual	1.0	100[g]	Maximum 1st highest[h]
Lead (Pb)	Quarterly	NA	1.5[i]	Maximum 1st highest[h]
	Rolling 3-month average	NA	0.15[i]	Maximum 1st highest[h]

[a] Idaho Air Rules Section 006.102
[b] Micrograms per cubic meter
[c] Idaho Air Rules Section 577 for criteria pollutants
[d] The maximum 1st highest modeled value is always used for significant impact analysis
[e] Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers
[f] The annual PM_{10} standard was revoked in 2006. The standard is still listed because compliance with the annual $PM_{2.5}$ standard is demonstrated by a PM_{10} analysis that demonstrates compliance with the revoked PM_{10} standard.
[g] Never expected to be exceeded in any calendar year
[h] Concentration at any modeled receptor
[i] Never expected to be exceeded more than once in any calendar year. Demonstration of compliance with the 0.15 $\mu g/m^3$ rolling 3-month average standard promulgated by EPA in late 2008 became effective in the Idaho NSR program when this standard was incorporated by reference into the Idaho Air Rules, i.e., when the Idaho Legislature adjourned *sine die* on March 29, 2010.
[j] Concentration at any modeled receptor when using five years of meteorological data
[k] Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
[l] Not to be exceeded more than once per year

New source review requirements for assuring compliance with $PM_{2.5}$ standards have not yet been completed and promulgated into regulation. EPA has asserted through a policy memorandum that compliance with $PM_{2.5}$ standards will be assured through an air quality analysis for the corresponding PM_{10} standard. Although the PM_{10} annual standard was revoked in 2006, compliance with the revoked PM_{10} annual standard must be demonstrated as a surrogate to the annual $PM_{2.5}$ standard.

2.1.3 Toxic Air Pollutant Analyses

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

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

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

2.2 Background Concentrations

Background concentrations are used in the cumulative NAAQS impact analyses to account for impacts from sources not explicitly modeled.

Background concentrations were revised for all areas of Idaho by DEQ in March 2003[1]. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Criteria pollutant modeling for this project was limited to PM_{10}. The location-specific background values listed in the March 2003 report for PM_{10} (measured in Meridian) were used for this project. These values are shown in Table 3.

Table 3. BACKGROUND CONCENTRATIONS

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]
PM_{10}[b]	24-hour	90
	Annual	25.1
Carbon monoxide (CO)	1-hour	---
	8-hour	---
Sulfur dioxide (SO_2)	3-hour	---
	24-hour	---
	Annual	---
Nitrogen dioxide (NO_2)	Annual	---
Lead (Pb)	Quarterly	---
	Rolling 3-month	---

a. Micrograms per cubic meter.

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

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

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

[1] Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling*. Memorandum to Mary Anderson, March 14, 2003.

3.1.1 Overview of Analyses

Tetra Tech performed the air quality analyses in support of the initial permit (P-2008.0138). DEQ set up and ran a verification modeling analysis for 24-hour and annual PM_{10} ambient impacts. DEQ Verification Run #1, which was used as the starting point for Spidell's analyses:

- Used a more refined near-field receptor spacing,
- Accounted for downwash from nearby buildings offsite, and
- Corrected the 24-hour PM_{10} emission rate for the fugitive sources (the submitted modeling used the annual emissions rate for these sources, and omitted emissions from one transfer point).

The PM_{10} analyses conducted in 2010 by Spidell demonstrated compliance with the annual and 24-hour PM_{10} NAAQS. Hourly PM_{10} emissions were based on running the dry-mix and bagging operation at the maximum 45 ton-per-hour capacity of the dryer for all operating hours. As noted in Table 1 of this memo, compliance was demonstrated only for the daily hours of operation and delivery amounts of sand and aggregate described in the application.

A brief description of parameters used in the modeling analyses is provided in Table 4.

Table 4. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description[a]
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 07026
Meteorological data	Boise: 2001-2005	National Weather Service surface data and upper air data from the Boise airport. Data processed through AERSURFACE (version 08009) and AERMET (version 06341) were provided to Spidell by DEQ.
Terrain	Considered	Terrain elevations were assigned to buildings, emission sources, and receptors using U.S. Geological Survey 7.5-minute series digital elevation model (DEM) data using AERMAP *(version 09040).* in NAD27 coordinates. *Conversion of the NAD27 DEM coordinate system to match receptor locations in NAD83 was done within AERMAP.* Default rural dispersion was used.
Building downwash	Considered	Building and stack heights on the property were provided by the applicant. *Buildings on adjacent properties were included, with building corners estimated using the base facility map. Heights of adjacent buildings were estimated by DEQ based on a comparison of shadow lengths in the base facility map.* Building downwash parameters were calculated using the BPIP PRIME algorithm (version 04274).
Receptor Grid	Receptors	Receptor locations were defined in UTM coordinates (NAD83).
	Fenceline Grid	10-meter spacing along the property boundary.
	Grid 1	*20-meter spacing out to 250 meters from the approximate center of the property (the "center' determination did not include the additional area controlled along the railroad track).*
	Grid 2	*50-meter spacing between 250 meters and 500 meters from the "center."*
	Grid 3	*100-meter spacing between 500 meters and 1,000 meters from the "center."*

3.1.2 Modeling Protocol and Methodology

A modeling protocol submitted by Spidell was received and approved with comment by DEQ on March 8, 2010. Modeling was generally conducted using data described in the protocol and methods described in the *State of Idaho Air Quality Modeling Guideline.*

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple source, Gaussian dispersion model AERMOD was promulgated as the replacement model

for ISCST3 in December 2005. EPA provided a one-year transition period during which either ISCST3 or AERMOD could be used at the discretion of the permitting agency. AERMOD must be used for all air impact analyses, performed in support of air quality permitting, conducted after November 2006.

AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD offers the following improvements over ISCST3:

- Improved dispersion in the convective boundary layer and the stable boundary layer.
- Improved plume rise and buoyancy calculations.
- Improved treatment of terrain affects on dispersion.
- New vertical profiles of wind, turbulence, and temperature.

AERMOD was used for the submitted analyses and the DEQ verification analyses for this project.

3.1.4 Meteorological Data

The Handy Meridian facility is located about 9 miles to the west-northwest from the National Weather Service station at the Boise airport. DEQ determined that the National Weather Service surface and upper air meteorological data collected from 2001 through 2005 at the Boise airport were the best representative data available at this time. These meteorological data previously processed through AERSURFACE (version 08009) and AERMET (version 06341) were provided to Spidell by DEQ.

These data differed from the 1988-1992 met data set used for the initial permit analyses (P-2008.0134) in two ways: 1) a different five-year data collection period, and 2) preprocessing of surface characteristics for the 1988-1992 data was done manually using National Land Cover Dataset (NLCD) information within a 3-kilometer radius of the met station. Surface characteristics for the 2001-2005 data set were determined using AERSURFACE, which was released in 2009, and NLCD information for the area within a 1-kilometer radius of the met station.

3.1.5 Terrain Effects

Terrain effects on dispersion were considered in these site-specific analyses. DEQ's verification analyses for P-2008.0134 used AERMAP (version 09040) to determine the actual elevation of each receptor and the controlling hill height elevation from United States Geological Survey (USGS) digital elevation map (DEM) files for the area surrounding the facility. Elevations of emission sources, buildings, and receptors were developed based on surrounding terrain elevations as extracted from the DEM files. The domain used for this modeling project included nine DEM7 maps: Cloverdale, Eagle, Kuna, Melba, Meridian, Middleton, Mora, Nampa, and Star.

3.1.6 Facility Layout

The facility layout submitted with the initial PTC application is shown in Figure 3-1. The source locations, facility boundary, and facility building outlines shown in this figure were the same for the initial analyses, DEQ verification analyses, and 2010 revised analyses by Spidell. The offsite buildings included in the DEQ and Spidell analyses are outlined in the figure.

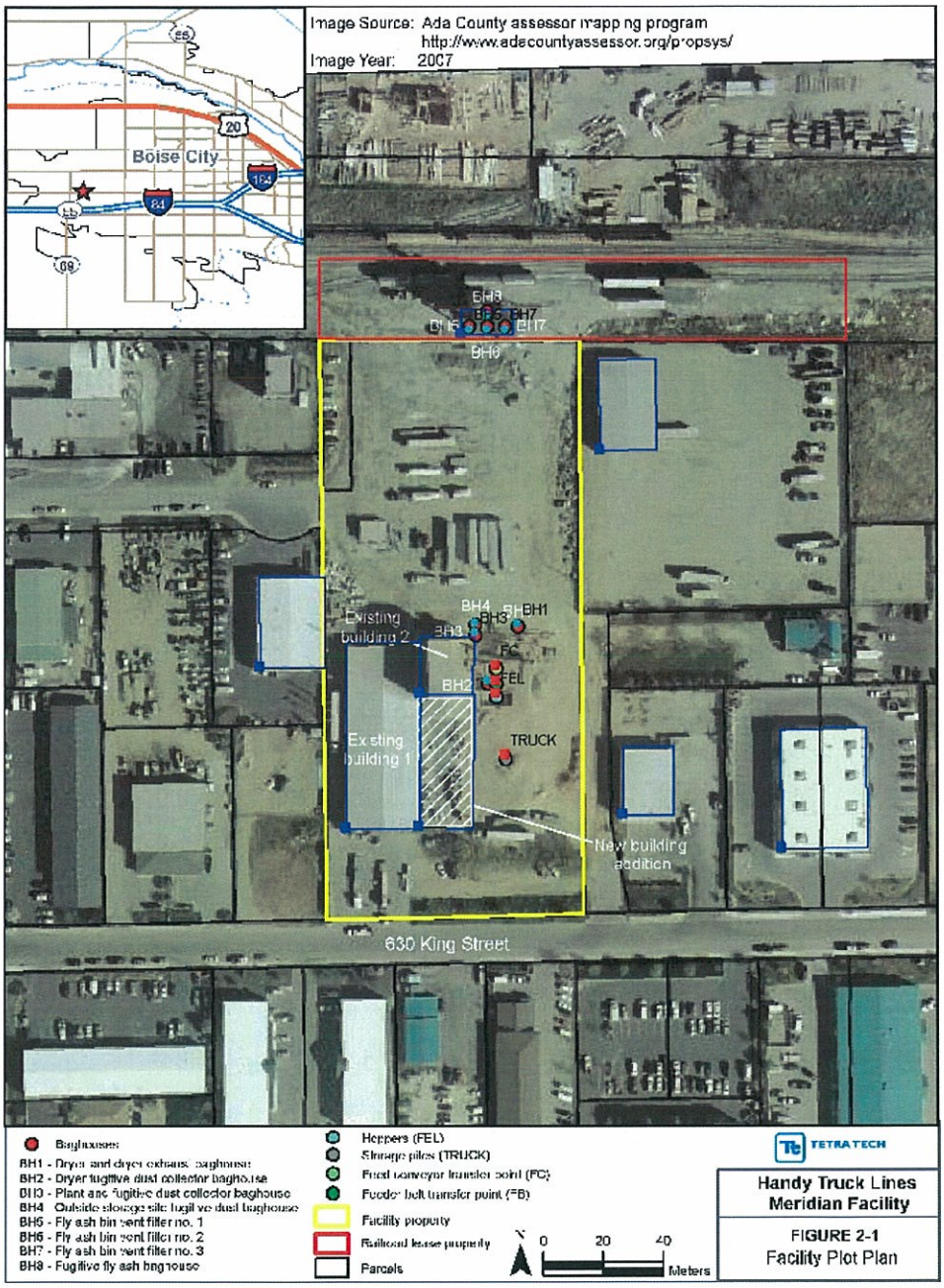

Figure 3-1. HANDY TRUCK LINES MERIDIAN FACILITY LAYOUT AND EMISSION POINTS

3.1.7 Building Downwash

Plume downwash effects caused by structures present at the facility were accounted for in the submitted modeling analyses. Nearby buildings located on adjacent properties were also included. The Building Profile Input Program with Plume RIse Model Enhancements (BPIP-PRIME) was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information

from building dimensions/configurations and emission release parameters for input to AERMOD. A review of modeling results showed that the buildings located on the facility were the dominant structures for downwash effects. Modeled downwash from buildings located on adjacent properties did not significantly affect the plume from any emissions source.

3.1.8 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." For area sources, the ambient air boundary is typically defined as the property boundary. The property boundary was described in the initial PTC application as being fenced (with the exception of the leased property along the railroad track) with warning signs. Railcar unloading to the storage silos takes place in a relatively small area where it is reasonable to presume that facility personnel could prevent public access during facility operations. Based on this rationale, the facility property boundary and the boundary of the leased property along the rail tracks were used as the ambient air boundary for the dispersion modeling.

3.1.9 Receptor Network

The receptor grid used for these analyses are summarized in Table 4. Except for the dryer exhaust, all of the emissions from this facility are at ambient temperature. The lack of thermal buoyancy for these sources increases the likelihood that the maximum ambient impacts will occur relatively close to the facility, which was confirmed in the analyses submitted for the initial PTC. The receptor grid for those analyses extended to a distance of 5,000 meters. The more refined near-field grid used in the 2010 analyses conducted by Spidell is shown in Figure 3-2.

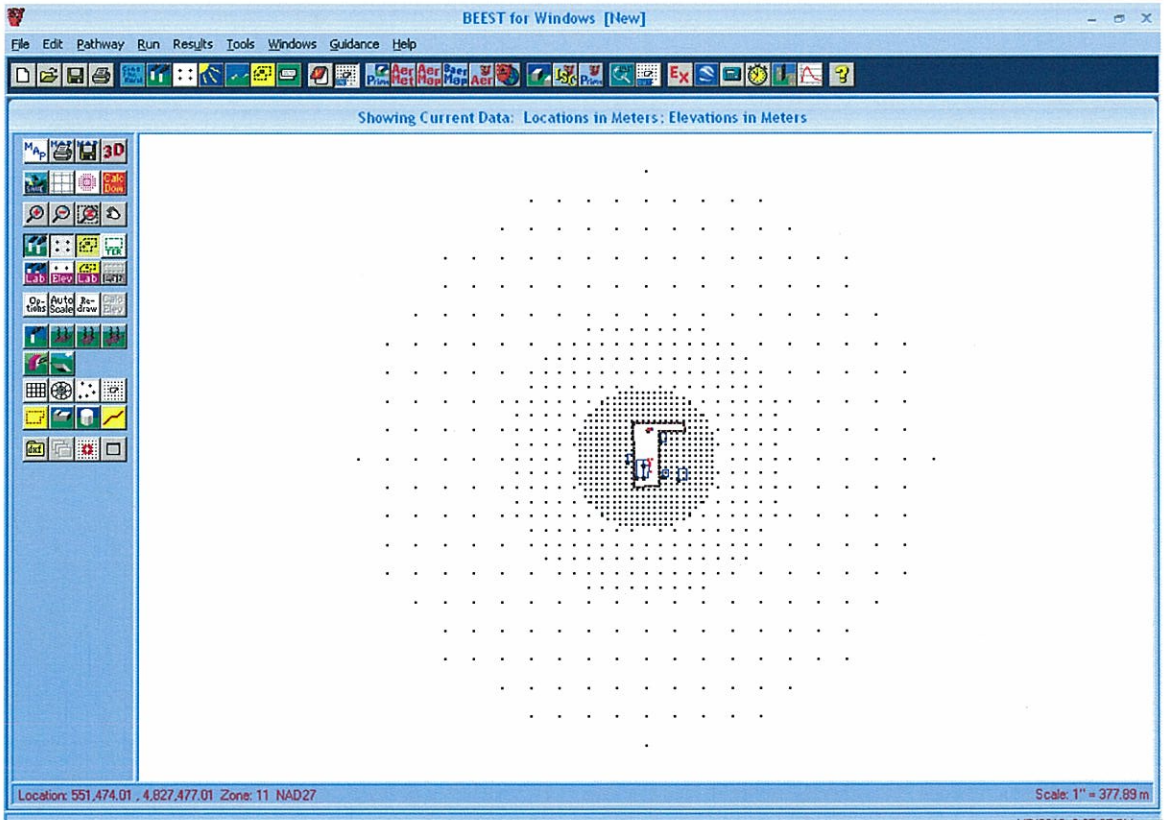

Figure 3-2. HANDY TRUCK LINES MERIDIAN RECEPTOR GRID

3.2 Emission Release Parameters and Emission Rates

Emissions estimates submitted in the application were based on maximum annual delivery to the facility of 600,000 tons of cement, 335,000 tons of flyash, 15,768 tons of lime, 262,800 tons of sand and 131,400 tons of gravel. Based on the 45 ton-per-hour maximum feed capacity for sand and gravel to the dryer, and 8,760 hour-per-year operation, the facility proposes to use the sand, gravel, lime, and a maximum of 105,120 tons of the cement and 10,512 tons of flyash to produce and bag 525,600 tons of dry-mix concrete. The remaining 494,880 tons of cement and 324,488 tons of flyash will be shipped offsite to other vendors.

Seasonal operations were incorporated for criteria pollutant modeling using an hourly emission input file, with emissions set to zero for hours 1 through 8 (midnight to 8:00 a.m.) and hours 18 through 24 (5:00 p.m. to midnight) for each day from April 1 through October 31, and set to zero for hours 1 through 5 (midnight to 5:00 a.m.) and hours 18 through 24 (5:00 p.m. to midnight) for each day from November 1 through March 31.

Emission release parameters used in the modeling analyses are shown in Table 5. The physical stack parameters were confirmed by Tetra Tech during a site visit while preparing the initial PTC application, and the temperatures and flow rates appear to be within reasonably expected values for these types of sources. These values remain unchanged for the 2010 analyses conducted by Spidell.

Table 5. EMISSION RELEASE PARAMETERS

Source ID	Description	UTM Zone 11 (NAD83) Easting (m)[a]	UTM Zone 11 (NAD83) Northing (m)[a]	Elevation (m)[a]	Stack Height (m)[a]	Stack Temp. (K)[b]	Stack Velocity (m/sec)[c]	Stack Diameter (m)[a]
Point Sources								
BH1	Dryer & Cooler	549735.6	4828466.0	796.41	9.1	477.6	10.01	0.81
BH2	Dryer Fug	549725.5	4828447.0	796.44	11.6	298	19.06	0.69
BH3	Plant Fug	549721.4	4828466.6	796.42	9.1	298	16.38	0.81
BH4	Outside Silo	549721.4	4828463.2	796.44	20.1	298	6.2	0.22
BH5	Bin Vent 1	549719.4	4828565.6	795.9	26.2	298	24.4	0.17
BH6	Bin Vent 2	549725.4	4828565.6	795.87	26.2	298	24.4	0.17
BH7	Bin Vent 3	549731.4	4828565.6	795.83	26.2	298	24.4	0.17
BH8	Fugitive Flyash (Track Unload)	549725.4	4828570.6	795.86	7.6	298	33.1	0.29
DRYER	Ventilex Dryer (combustion)	549735.6	4828466	796.41	9.1	477.6	10.01	0.81
Volume Sources								
Source ID	**Description**	**Easting (m)**	**Northing (m)**	**Elevation (m)**	**Release Height (m)**		**Initial Horiz. σ_{yo} (m)[d]**	**Initial Vertical σ_{zo} (m)[e]**
TRUCK	Truck Delivery	549731.5	4828422.2	796.55	4.6		0.57	2.13
FEL	Front End Loader	549728.2	4828442.8	796.44	5		0.43	2.33
FB	Feed Belt Conveyor	549728.2	4828447.0	796.44	3		1.77	1.42
FC	Feed Conveyor Tx	549728.2	4828452.3	796.44	6.1		1.77	1.42

[a] m = meters
[b] K = Kelvin
[c] m/sec = meters per second.
[d] Initial source length divided by 4.3: TRUCK = 8 ft, FEL = 6 ft, FB and FC = 25 ft.
[e] Initial vertical height (estimated as the release height) divided by 2.15.

3.2.1 Criteria Pollutant Emissions Rates

The modeled PM_{10} emission rates are shown in Table 6. The maximum 1-hour average emission rates for the point sources were estimated in the initial PTC application (P-2008.0134) based on an emission factor for the baghouses multiplied by the stack flow rate, as shown in Table 6. Emissions from natural gas combustion in the dryer were based on AP-42 emission factors for a 10 MMBtu/hr burner. The 2.07 lb/hr emission rate for BH1/DRYER modeled by Spidell is based on the results of a source test conducted on November 10, 2009. Because of the variability in source test results, DEQ conducted a model run using an emission rate of 2.3 lb/hr process emissions from BH1 and 0.07 lb/hr combustion emissions from the DRYER, for these two sources that exhaust through a single stack. These values are shown in parentheses in the table.

The short-term emission rates for the feed conveyor and the belt conveyor (FB and FC) were based on AP-42 Section 11.12 uncontrolled emission factors for aggregate and sand transfers. The application describes the aggregate and sand as being moist during the winter months and controlled as needed using water sprays during the summer months. DEQ applied a control efficiency of 75% to account for the moisture content of these materials.

Short-term emission rates from fugitive sources (volume sources) modeled were calculated by Tetra Tech (P-2008.0134) by dividing the annual emissions in pounds per year (based on operating at the 45 ton-per-hour maximum dryer sand and gravel feed rate for 8,760 hours per year) by 4,020 hours. This approach presumed delivery and processing of a maximum of 588 tons per day of sand (65.37 T/hr x 9 hr/day) and 294 tons per day of gravel (32.69 T/hr x 9 hr/day) during the winter season, and a maximum of 784 tons per day of sand and 392 tons per day of gravel during the 12-hour day summer season.

Table 6. CRITERIA POLLUTANT EMISSIONS RATE CALCULATIONS

Point Sources

Source ID	Description	Emission Factor	Exhaust Flow Rate (acfm)	PM_{10} Emission Rate	
				(lb/hr)	(g/sec)
BH1	Dryer & Cooler	10 mg/m^3	11,000 cfm	~~0.41~~ 2.0 (2.3)	~~0.052~~ 0.252 (0.290)
BH2	Dryer Fug	0.005 gr/dscf	15,000 scf/min	0.64	0.081
BH3	Plant Fug	0.020 gr/dscf	18,000 scf/min	3.09	0.389
BH4	Outside Silo		508 scf/min	0.09	0.011
BH5	Bin Vent 1		1,200 scf/min	0.21	0.0259
BH6	Bin Vent 2		1,200 scf/min	0.21	0.0259
BH7	Bin Vent 3		1,200 scf/min	0.21	0.0259
BH8	Fug Flyash (Track Unload)		4,553 scf/min	0.78	0.0977
DRYER	Ventilex Dryer (combustion)	7.6 lb PM_{10}/mmscf nat gas	10 MMBtu/hr	0.07	0.0094

Volume Sources

Source ID	Description	Emission Assumptions	PM_{10} Emission Rate	
			(lb/hr)	(g/sec)
TRUCK	Truck Delivery	8.70 mph mean wind speed 4,020 hr/yr unloading 262,800 T/yr sand, 4.17% moist 131,400 T/yr gravel, 1.77% moist	0.14	0.018
FEL	Front End Loader	"	0.14	0.018

Table 6. CRITERIA POLLUTANT EMISSIONS RATE CALCULATIONS					
FB	Feed Belt Conveyor	4,020 hr/yr operations 262,800 T/yr sand E_{sand} = 0.00099 lb/ton 131,400 T/yr gravel E_{gravel} = 0.00330 lb/ton		0.065	0.0082
FC	Feed Conveyor Tx	4,020 hr/yr operations 262,800 T/yr sand E_{sand} = 0.00099 lb/ton 131,400 T/yr gravel E_{gravel} = 0.00330 lb/ton		0.065	0.0082

3.3 Results for Significant and Full NAAQS Impact Analyses

Facility-wide modeling was required to demonstrate compliance only with 24-hr and annual PM_{10} standards. Results of the cumulative NAAQS impact analyses are provided in Table 7. For comparison only, DEQ reran the PM_{10} analyses using the emission rates from P-2008.0134 and the 2001-2005 Boise met data. This provides an indication of the affect associated with using the updated 2001-2005 Boise met data set compared to results produced using the 1988-1992 data set.

Table 7. RESULTS FOR FULL IMPACT ANALYSES							
Pollutant	**Averaging Period**	**Parameters**	**Modeled Ambient Impact ($\mu g/m^3$)**	**Background Concentration ($\mu g/m^3$)**	**Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[a] ($\mu g/m^3$)**	**Percent of NAAQS**
PM_{10}	24-hour	P-2008.0134	59.2	90	149.2	150	99.5%
		P-2008.0134 w/2001-2005 met data	57.8		147.8		98.5%
		P-2010.0046 Spidell E = 2.07 lb/hr	58.6		148.6		99.0%
		P-2010.0046 DEQ E = 2.37 lb/hr	**58.8**		**148.8**		**99.2%**
	Annual	P-2008.0134	17.9	25.1	43.0	50	86.0%
		P-2008.0134 w/2001-2005 met data	17.3		42.4		84.8%
		P-2010.0046 Spidell E = 2.07 lb/hr	17.9		43.0		86.0%
		2001	17.93				
		2002	19.36				
		2003	17.13				
		2004	17.94				
		2005	17.22				
		P-2010.0046 DEQ E = 2.37 lb/hr	**17.9**		43.0		**86.0%**

[a] Federal NAAQS are incorporated by reference in Idaho Air Rules Section 107.

A review of the season/hour output files from the DEQ verification model run for the initial PTC (P-2008.0134) showed that the highest short-term PM_{10} concentrations occur during the winter season (December, January, and February) morning hours from 8 a.m. to 10 a.m. When there is a winter season air quality alert for particulate matter, voluntarily delaying material deliveries and processing until later in the day should help reduce the impacts from Handy's Meridian operations.

4.0 Conclusions

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

APPENDIX C – FACILITY DRAFT COMMENTS

No comments were made by Handy Truck Line, Inc. when they reviewed the facility draft of the permit.

APPENDIX D – PROCESSING FEE

PTC Fee Calculation

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:	**Handy truck Line, Inc. - Meridian**
Address:	**630 East King Street**
City:	**Meridian**
State:	**Idaho**
Zip Code:	**83642**
Facility Contact:	**Brett McMichael**
Title:	**Production Manager**
AIRS No.:	**001-00224**

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	3.8	0	3.8
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0	**3.8**
Fee Due	**$ 2,500.00**		

Comments: The processing fee of $2500 is in accordance with IDAPA 58.01.01.225 as the increase in between 1-10 T/yr.