Appendix B

Air Quality Technical Report

Diamond Pet Foods Inc.

942 South Stockton Avenue, Ripon, CA 95366

April 2019

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Line 4 Air Quality Technical Report

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AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
ADMRT	Air Dispersion Modeling and Risk Tool
AP-42	USEPA Compilation of Air Pollutant Emission Factors
ATC	Authority to Construct
BPIPPRM	Building Profile Input Program for PRIME
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	Chemical Abstracts Service
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
e.g.	For Example
EIR	Environmental Impact Report
EPA	[United States] Environmental Protection Agency
FAH	Fraction of Time at Home
g/s	Gram per second
GHG	Greenhouse Gas
GLC	Ground-Level Concentration
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HARP2	Hotspots Analysis and Reporting Program, Version 2
HHDT	Heavy-Heavy-Duty Truck
HIA	Acute Hazard Index
HIC	Chronic Hazard Index
hr	Hour
HRA	Health Risk Assessment
i.e.	That Is
lb	Pound
LCFS	Low Carbon Fuel Standard
m	Meter
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
MMBtu/hr	Million British Thermal Units per Hour
MT/yr	Metric Ton per Year

NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
NED	National Elevation Dataset
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
OEHHA	Office of Environmental Health Hazard Assessment
OLM	Ozone Limiting Method
PAH	Polycyclic Aromatic Hydrocarbon
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
PMI	Point of Maximum Impact
POC	Precursor Organic Compound
PTO	Permit to Operate
ppm	Parts per Million
PVMRM	Plume Volume Molar Ratio Method
ROG	Reactive Organic Gas
RTO	Regenerative Thermal Oxidizer
SIL	Significant Impact Level
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur Dioxide
SO_x	Total Oxides of Sulfur
TAC	Toxic Air Contaminant
TPY	Tons per year
$\mu g/m^3$	Microgram per Cubic Meter
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound
WAF	Worker Adjustment Factor
Yr	Year
X/Q	Average Pollutant Concentration Normalized by Source Strength

Line 4 Air Quality Technical Report

1.0 INTRODUCTION

Diamond Pet Foods Inc. (Diamond) is proposing to install a fourth pet food production line at its existing pet food production facility located at 942 South Stockton Street in Ripon, CA.

The Diamond facility was designed for, and has space allocated for, a maximum of four pet food production lines, although only three lines were initially permitted by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in 2010 and installed in 2010 and 2011, beginning production in 2012. Diamond produces pet food by measuring and loading the meat, grain, water, and other ingredients into steam conditioner units (one per line) where mixing and pasteurization occurs, followed by forming (extruding) the pet food into kibbles, which are then conveyed from the extrusion process to the dryers and other systems for further processing. At each stage of the production line, the kibble is collected and transported through vacuum tubes to the next part of the process using a blower/cyclone system. Each production line requires four blowers (12 blowers total) to provide the necessary vacuum to move the kibble through the plant. In order to abate any pet food production odors from the process, a series of three (3) Regenerative Thermal Oxidizers (RTOs) were designed and installed in the fall of 2018. The RTO Units, designed with sufficient capacity to handle odor abatement on a maximum of 4 pet food production lines came on line on December 14, 2018.

This air quality technical report has been prepared by Yorke Engineering, LLC (Yorke) to be used in support of the Draft Environmental Impact Report (EIR) currently being prepared by Ascent Environmental for the City of Ripon, who has been identified as the Lead Agency for this project. The California Environmental Quality Act (CEQA) requires environmental impacts of a proposed project be identified, assessed, and avoided or mitigated, as feasible, if these impacts are determined to be significant or potentially significant. This technical study is based on the SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI*) for projects subject to CEQA (SJVAPCD 2015a).

This report examines the criteria air pollutant, toxic air contaminant (TAC), and greenhouse gas (GHG) emissions associated with the construction and operation of the fourth pet food production line (Project). Based on the estimated emissions increase, an Ambient Air Quality Analysis (AAQA) and health risk assessment (HRA) were conducted for the Project. In addition, a cumulative HRA examined the potential risks from the existing facility plus the Project at the request of the City of Ripon staff.

1.1 Project Description

The Project involves the construction and operation of a fourth pet food production line. The only new source of emissions will be the dryer associated with the fourth pet food production line (Permit Unit N-8234-15) and any incremental emissions created by the increase in pet food production capacity in association with Line 4.

Diamond has submitted a permit application to the SJVAPCD for an Authority to Construct (ATC) to install a fourth and final pet food production line to provide the needed capacity at the Ripon facility. Included in the permit application is a proposal to add or modify the permit conditions for the following sources:

- Add a new 10 million British thermal units per hour (MMBtu/hr) dryer associated with the fourth pet food production line (Permit Unit N-8234-15). These emissions are exhausted through the three RTOs.
- Additional pet food production capacity for Line 4 of 260 ton/day (N-8234-15) (total facility-wide production capacity increases from 780 to 1,040 ton/day). These emissions are exhausted through the three RTOs.
- Existing Pet Food Material Dispensing, Pre-Grinding, Conveying, and Storage Operations (N-8234-3) – installation of a fourth hammermill and overall increase in raw material processed through the hammermill by 300 tons per day (total facility hammermill capacity increases from 800 to 1,100 ton/day).
- Existing Pet Food Material Dispensing, Pre-Grinding, Conveying, and Storage Operations (N-8432-2) – decrease in raw material processed through the pre-grinder by 37,000 ton/year (from 47,000 to 10,000 ton/year). The permitted throughput will dramatically decrease due to the reduction in the need for feedstock handling at this source in recent years.

Although some sources will change due to the addition of the fourth production line, there will be no need to change the permit conditions for many of the sources. There will be no change to permit conditions for the dryers for the existing Lines 1-3 (N-8234-4, 5, and 6). The three RTOs were permitted with sufficient capacity for all four production lines. The existing receiving and storage operation's (N-8432-1) annual capacity is sufficient to handle all four production lines. Thus, no changes to the current permit conditions are required. There are currently four packaging lines used at the facility (N-8234-7, 8, 9, and 14). These packaging lines have sufficient capacity for all four production lines. Thus, there is no change to the permitted capacity for these sources. The existing boilers are permitted for and currently have adequate capacity to handle the incremental steam requirements of the fourth steam conditioning unit and any other steam demand. No change to the fire pump operation will be required for the addition of Line 4. This air quality technical study presents the actual pre-Project baseline emissions and Project-related incremental emissions from the sources associated with the new fourth production line and ¼ of the emissions associated with sources that service all four production lines. More details regarding the emission calculations are provided in Section 2.2.

1.2 Project Location

The Project is proposed to be located at the existing Diamond production facility located at 942 South Stockton Street in Ripon, CA. Figure 1-1 shows the existing facility and its immediate surroundings. The site is surrounded by open or agricultural space and industrial land uses. A railroad track and State Route 99 run along the eastern boundary of the site. The Ripon Energy Facility, an electric cogeneration facility owned by AltaGas, is located within the facility property immediately adjacent to the fire water storage tank.

The nearest residents are located on the east side of State Route 99, approximately 500 feet from the eastern boundary of the Project site. The nearest school is Ripon Elementary, approximately 3,000 feet northwest of the Project site.

The Diamond facility is within the jurisdiction of SJVAPCD. Therefore, calculations and analyses were performed consistent with SJVAPCD requirements.

Figure 1-1: Map of Facility and Immediate Surroundings

2.0 EMISSION ESTIMATES

Criteria pollutant[1], TAC, and GHG emissions were estimated for Project-related construction and operational sources. Operational emissions are presented for the baseline, or pre-Project facility, and Project incremental emissions. Only the Project incremental emissions are used in the CEQA significance threshold comparison and subsequent modeling analyses.

The SJVAPCD has established CEQA significance thresholds for criteria pollutants as outlined in the GAMAQI (SJVAPCD 2015a) and shown in Table 2-1.

Table 2-1: SJVAPCD Criteria Pollutant Emission Significance Threshold

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Tons per Year (TPY)	TPY	TPY
CO	100	100	100
NO_x	10	10	10
Reactive Organic Gas (ROG)	10	10	10
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), page 80

SJVAPCD guidelines also set a daily construction or operational emission threshold of 100 pounds per day of any criteria pollutant, above which the applicant is required to determine potentially significant impacts from either construction or operational emissions (SJVAPCD 2013 and 2018).

If either the daily or annual Project incremental emissions exceed any of these thresholds, then an AAQA would be required to show that the Project would not cause or contribute to a violation of any California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS). If either the daily or annual threshold is exceeded for any pollutant, then the AAQA must encompass all criteria pollutants (SJVAPCD 2013).

2.1 Construction Emissions

Activities associated with the construction of Line 4 will occur primarily inside the existing building and last for approximately 10 months. There will be no ground disturbance or new building construction. The only exterior construction will be associated with the installation of some minor ducting or delivery of equipment.

The construction emission analysis was performed using the California Emissions Estimation Model (CalEEMod™, version 2016.3.2), the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with both construction and operations of land use projects under CEQA. The model

[1] Criteria pollutants are air contaminants for which there are national and/or state ambient air quality standards. These pollutants consist of ozone, nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), lead, hydrogen sulfide (H_2S), and sulfates. VOCs [also known as precursor organic compounds (POCs)] and NO_x are regulated as precursors to ozone.

quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model, which are published by the California Air Resources Board (CARB), include the Pavley standards and Low Carbon Fuel Standards (LCFS). The model also identifies project design features, regulatory measures, and mitigation measures to reduce criteria pollutant and GHG emissions, along with calculating the benefits achieved from the selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the SJVAPCD, and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon herein for the construction emissions quantification, which forms the basis for the impact analysis.

Based on information received from the applicant, land use data used for CalEEMod input is presented in Table 2-2. It is anticipated that 44 trucks will deliver the materials needed to construct Line 4, travelling a maximum of 510 miles round-trip, representing travel to the Lebec/Gorman area. Approximately 15 workers per day traveling 22 miles round-trip (the distance to Modesto) will construct Line 4.

Table 2-2: Land Use Data for CalEEMod Input

Project Element	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage (Footprint)	Square Feet (Est.)	Est. Pop.
Line 4	Industrial	General Light Industry	10.000	1,000 sf	0.230	10,000	0
Aggregated Project					**0.230**	**10,000**	**0**

Source: Applicant 2018, CalEEMod version 2016.3.2

Notes:

Utility: PG&E

Climate Zone 3; San Joaquin County

1 acre = 43,560 sf

2.1.1 Criteria Pollutants

A project's construction phase may produce different air emissions, but respirable particular matter less than 10 microns in diameter (PM_{10}) [including fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)] in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Fugitive dust emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM_{10} and affect PM_{10} compliance with Ambient Air Quality Standards (AAQS) on a regional basis. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and the soiling of exposed surfaces. The use of diesel-powered construction equipment emits ozone precursors oxides of nitrogen (NO_x), ROGs, and diesel

particulate matter (DPM), the latter being a composite of TACs containing a variety of hazardous substances. Use of architectural coatings and other materials associated with finishing buildings may also emit ROGs and TACs. CEQA significance thresholds address the impacts of construction activity emissions on local and regional air quality. SJVAPCD has significance thresholds based on both daily maximum and annual emissions.

Annual and daily criteria pollutant emissions from all Project sources for the construction of Line 4 are shown in Tables 2-3 and 2-4, respectively, and are below the SJVAPCD significance thresholds. Therefore, a construction AAQA is not needed. Appendix A contains the CalEEMod output presenting the estimated construction emissions.

Table 2-3: Annual Construction Emissions

Criteria Pollutants	Construction Emissions CalEEMod	SJVAPCD Threshold
	ton/yr	ton/yr
ROG [Volatile Organic Compound (VOC)]	0.02	10
NO_x	0.12	10
Carbon Monoxide (CO)	0.11	100
Oxides of Sulfur (SO_x)	0.00	27
PM_{10}	0.04	15
$PM_{2.5}$	0.01	15

Sources: SJVAPCD 2015a, CalEEMod version 2016.3.2

Notes:

Tons/yr are annual total for planned land use (working days)

Assumes 44 Heavy-Heavy-Duty Truck (HHDT) truck trips delivering materials during the Project

Table 2-4: Daily Construction Emissions

Criteria Pollutants	Construction Emissions CalEEMod	SJVAPCD Threshold
	lb/day	lb/day
ROG (VOC)	0.29	100
NO_x	5.25	100
CO	1.87	100
SO_x	0.02	100
PM_{10}	0.73	100
$PM_{2.5}$	0.22	100

Sources: SJVAPCD 2018, CalEEMod version 2016.3.2

Notes:

Lb/day are winter or summer maxima for planned land use (working days)

Assumes 1 HHDT truck trip delivering materials on any given day

Daily thresholds based on SJVAPCD policy APR-2030 from June 2018

2.1.2 TACs

The primary source of TACs will be DPM from the construction equipment and trucks. As DPM has a high toxicity, DPM is the only TAC examined for construction. The exhaust portion of the PM_{10} from the CalEEMod output (see Appendix A) can conservatively be assumed to be all DPM. As shown in Appendix A, the annual DPM emissions from the construction activities associated with the Project are approximately 0.003 tons per year.

2.1.3 GHGs

Table 2-5 presents the GHG emissions from the construction of the Project as estimated in CalEEMod.

Table 2-5: Construction GHG Emissions

Greenhouse Gas	Construction Emissions [Metric Ton (MT)]
Carbon Dioxide (CO_2)	61
Methane (CH_4)	0.001
Nitrous Oxide (N_2O)	0.000
Total Carbon Dioxide Equivalent (CO_2e)	61

Source: CalEEMod version 2016.3.2

Notes:

Total emissions for planned construction (working days).

Assumes 44 HHDT truck trips delivering materials during the Project.

Currently (2018) there are no SJVAPCD CEQA mass emissions thresholds for GHGs.

SJVAPCD uses Best Performance Standards (2009) in lieu of mass emissions thresholds.

2.2 Operational Emissions

2.2.1 Emissions Methodology and Source Assumptions

Baseline emissions are developed from actual operations of the existing equipment (three production lines) with the currently operational RTOs operating at 75% of the nameplate capacity. The conservative estimate of emissions from each existing source is based on the peak annual operation as provided during calendar years 2015-2017, even if the respective parameter occurs in different years for the various sources. Table 2-6 outlines the operational parameters used for each source for the baseline.

Table 2-6: Baseline Emission Calculation Basis

Permit Number	Source Name	Emission Basis
N-8234-4, 5, 6	Dryers for Lines 1-3	2017 operation (57% nameplate capacity)
N-8234-4, 5, 6	Finished Pet Food Material Handling, Lines 1-3	2016 operation (72% of currently permitted pet food production capacity)
RTO Units 1-3 (Referenced in Conditions for Permit Units N-8234-4, 5, 6)	RTOs	RTO operation due to Lines 1-3 (75% of maximum combined RTO permitted capacity)
N-8234-1	Receiving, Storage, Loadout, Lines 1-3	2017 operation (61% of currently permitted throughput capacity)
N-8234-2	Pre-Grinding, Mill Tower Material Handling, Lines 1-3	Pre-grinding; 2015 operation (75% of currently permitted throughput capacity) Mill Tower; 2016 operation (12% of currently permitted throughput capacity)
N-8234-3	Grinding, Hammermill, Loadout, Lines 1-3	2017 operation (79% of currently permitted throughput capacity)
N-8234-7, 8, 9, 14	Packaging Operations	Packaging for Lines 1-3; 2016 operation for Packaging Units 1-3 and 2017 for Thiele Unit 4 (53% of currently permitted throughput capacity)
N-8234-10, 11	Boilers	2017 operation [55% of currently permitted capacity of one boiler (one boiler is a backup)]
N-8234-12	Fire Pump	2015 operation (18.5 hours of operation)
N/A	Trucks and Worker Vehicles	Current typical worker vehicle and delivery and hauling truck quantities servicing Lines 1-3
N/A	Trains	Current typical delivery locomotive quantities servicing Lines 1-3

The incremental Project emissions are based on the maximum incremental change in plant operations due to the addition of Line 4. This will ensure that Project emissions are not underestimated, but it may cause them to be overestimated as the Line 4 sources are not expected to operate at maximum capacity and instead more likely at a percent of nameplate or permit capacity, similar to the current operation of Lines 1-3. Table 2-7 outlines the basis for the incremental Project emissions calculations for each source.

Table 2-7: Project Incremental Emission Calculation Basis

Permit Number	Source Name	Emission Basis
N-8234-15	Line 4; Dryer Source	Maximum permitted capacity
N-8234-15	Finished Pet Food Material Handling Line 4	Maximum capacity (260 ton/day = ¼ of the total facility maximum daily pet food production capacity)
RTO Units 1-3	RTOs	Incremental RTO operation due to Line 4 (¼ of maximum combined RTO permitted capacity)
N-8234-1, 2, 3	1-Receiving, Storage, Loadout 2-Pre-Grinding, Mill Tower Material Handling 3- Grinding, Hammermill, Loadout	Feedstock handling for Line 4 (¼ of maximum new permitted capacity)
N-8234-7, 8, 9, 14	Packaging Operations	Packaging for Line 4 (¼ of maximum permitted capacity)
N-8234-10, 11	Boilers	¼ of maximum permitted capacity of one boiler (one boiler operational/one boiler is a backup)
N-8234-12	Fire Pump	No change in fire pump operations due to Line 4
N/A	Trucks and Worker Vehicles	Anticipated worker vehicle and delivery and hauling truck quantities servicing Line 4 at maximum capacity
N/A	Trains	No additional locomotives are required for Line 4 (incremental feedstock will be delivered by trucks)

The emission calculation techniques for each source are described below. Appendix B presents the detailed emission calculations, including the parameters and emission factors used.

2.2.1.1 Dryers/RTOs

The criteria pollutant emission factors for the dryers are from the Permit to Operate (PTO) for the respective production lines while the factors for the RTOs come from the March 2019 permit application. The NO_x, CO, and SO_x emissions are based on the amount of natural gas used in the dryers. The PM_{10} and VOC emissions are based on the production throughput. In the past 3 years, the existing dryers for Lines 1-3 have operated at a maximum of 57% of the nameplate capacity and the maximum pet food production has been 72% of the currently permitted capacity. The baseline emission calculations are based on these capacities. Project incremental emissions are based on the maximum permitted capacity of the Line 4 dryers and pet food production, as summarized in Table 2-7.

As the RTOs have recently been installed, there are no records to show the actual operational capacity. Therefore, it was conservatively assumed that each production line would use ¼ of the maximum permitted RTO capacity since there are three RTOs. Thus, the baseline RTO emissions for Lines 1-3 are based on ¾ of the maximum permitted RTO capacity and the Project incremental emissions for Line 4 are based on ¼ of the maximum permitted RTO capacity. RTO criteria pollutant emission factors are from the March 2019 permit application and are based on the source test data for NO_x and CO, SVJAPCD APR-1720 for SO_x, and AP-42 Section 1.4 for natural gas external combustion sources for PM_{10} and VOC emissions [Environmental Protection Agency (EPA) 1995].

Each RTO is expected to use up to 7.7 MMBtu/hr of natural gas for burner or NGI operations during short-term (hourly and daily) steady-state operations. On an annual (rolling 12-month) average basis, each RTO will use up to 6.7 MMBtu/hr of natural gas for burner or NGI operations. Annual maximum operating hours are based on the Ripon facility shutting down for 2 days per year (8,760 – 48 hr = 8,712 hr/yr). Therefore, the maximum daily heat input rate for each RTO is 185 MMBtu/day (= 24 * 7.7), while the maximum annual heat input rate for each RTO is 58,370 MMBtu/yr (= 8,712 * 6.7). The RTO emissions were calculated based on this operating profile.

TAC emissions for the dryers and RTOs were estimated using the SJVAPCD emission factors for "Natural Gas-Fired External Combustion Equipment" (SJVAPCD 2015d) for burners rated less than 10 MMBtu/hr. GHG emission factors are from Code of Federal Regulations (CFR) Title 40 Part 98, Subpart C, Tables C-1 and C-2, for natural gas (EPA 2016a).

2.2.1.2 Boilers

Although there are two boilers at the facility, only a single boiler is required for operation and the second boiler is a backup. The permit limits the annual emissions to the capacity of one boiler. In the past 3 years, the existing boilers have operated as much as 55% of the capacity of one boiler (2017 operation). The Project incremental emissions for Line 4 are based on ¼ of the maximum permitted capacity for one boiler.

The criteria pollutant emission factors for the boilers are from the PTO. TAC emissions were estimated using the SJVAPCD factors for natural gas-fired external combustion equipment. The ammonia emissions were estimated based on the emission factor presented in the SJVAPCD permit engineering evaluation. GHG emission factors are from 40 CFR Part 98 for natural gas.

2.2.1.3 Fire Pump

In the past 3 years, the fire pump engine has been tested a maximum of 18.5 hours per year. This information was used to estimate the baseline emissions. As the installation of production Line 4 will have no influence on the operation of the fire pump, no fire pump emissions are included in the Project incremental emissions.

The criteria pollutant emission factors are from the PTO. The DPM emissions were assumed to be the same as the PM_{10} emissions. GHG emissions are based on 40 CFR Part 98 for Distillate Fuel Oil No. 2.

2.2.1.4 Feedstock Handling

Permit Number N-8234-1 encompasses the receiving, storage, and loadout operations, N-8234-2 encompasses the pre-grinding, conveying, and storage operations (part of the Mill Tower material handling), and N-8234-3 encompasses the grinding, hammermill, and truck loadout operations. Baseline emissions are based on the maximum actual operational throughput that has occurred in the past 3 years. Project incremental emissions for Line 4 are based on ¼ of the maximum new permitted feedstock handling capacity.

The only criteria pollutant associated with the feedstock handling is PM_{10} and emission factors are from the PTO. There are no TAC or GHG emissions associated with the handling of food for the production of the pet food.

Although not accounted for in the baseline or Project emissions, the permitted PM_{10} emissions from Permit Unit N-8234-2 will dramatically decrease due to the reduction in the need for feedstock handling at this source in recent years. This reduction is addressed in the SJVAPCD permit modification.

2.2.1.5 Packaging

There are currently four packaging lines (units) used at the facility, specifically Permit Numbers N-8234-7, N-8234-8, N-8234-9, and N-8234-14. These packaging lines have sufficient capacity for all four production lines. Thus, there is no change to the permitted capacity for these sources. Baseline emissions are based on the maximum amount of actual pet food packaged in each of the packaging units in the past 3 years. Project incremental emissions for Line 4 are based on ¼ of the maximum permitted capacity for these units.

The only criteria pollutant associated with the packaging of the pet food is PM_{10} and emission factors are from the PTO. There are no TAC or GHG emissions associated with the packaging of the pet food.

2.2.1.6 Mobile Sources

The current worker, delivery truck, and train schedules were used to estimate the baseline emissions. Project incremental emissions from worker, delivery trucks, and trains were based on the estimated increase in vehicles due to the operation of Line 4 at maximum capacity. The current and projected worker, truck, and train schedules were provided by Diamond. With the addition of Line 4, the number of trains will remain the same as the baseline, because at that time, Diamond will start receiving more feedstock via trucks instead of train. Therefore, there will be no incremental train emissions.

Truck and worker vehicle emissions were calculated using emission factors for HHDTs and light-duty vehicles, respectively, from EMFAC2014 for 2018 assuming an aggregate fleet mix of varying ages. Emission factors for the locomotives are based on the EPA emission standards described in 40 CFR Part 1033. All of the train, truck, and worker engine exhaust PM_{10} was considered to be DPM. GHG emission factors are from the EPA's mobile combustion sources guidance (EPA 2016b).

The emissions presented in the next sections include both on-site and off-site vehicle travel associated with the facility, although per SJVAPCD guidance, the AAQA and HRA include emissions associated with travel up to a maximum of ¼ of a mile off-site.

2.2.1.7 Indirect GHG Sources

Indirect GHG emissions are emissions that are a consequence of the activities of the facility but occur at sources owned or controlled by another entity, such as GHG emissions from energy use, solid waste disposal, and water use.

The primary source of indirect GHG emissions is from the electricity used for the production lines, which includes a small contribution from the electricity needed to pump water from the on-site wells and pump the wastewater to the onsite lagoons

GHG emission factors are from the power generation factor in CalEEMod for Modesto Irrigation District and the wastewater energy intensity for Northern California from the California Energy Commission (CEC) (2006).

2.2.2 Criteria Pollutants

Table 2-8 presents the annual operational baseline criteria pollutant emissions. Tables 2-9 and 2-10 present the annual and daily operational Project incremental criteria emissions, respectively.

Table 2-9 shows that the annual Project-related criteria pollutant emissions are below the SJVAPCD significance thresholds. Table 2-10 shows that the daily Project-related CO emissions are greater than the SJVAPCD significance threshold of 100 lb/day. Thus, AAQA modeling is required for all criteria pollutants.

Table 2-8: Baseline Criteria Pollutant Annual Emissions

Unit	NO_x	SO_x	PM_{10}	CO	VOC
	Annual Emissions (lb/year)				
N-8234-1 Receiving, Storage, Loadout	0	0	345	0	0
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0	0	137	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	5,044	0	0
N-8234-4 Line 1	3,571	424	12,589	16,666	1,028
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	0	0	0	0	0
3-RTO Units	44,916	374	998	115,573	722
N-8234-7 Packaging Line 1	0	0	104	0	0
N-8234-8 Packaging Line 2	0	0	107	0	0
N-8234-9 Packaging Line 3	0	0	21	0	0
N-8234-14 Thiele Packaging Line 4	0	0	34	0	0
N-8234-10 Boiler 1	775	201	211	2,605	282
N-8234-11 Boiler 2					
N-8234-12 Emergency Diesel Fire Pump	66	0.02	3	20	8
Total Stationary Source Emissions	***49,328***	***999***	***19,592***	***134,864***	***2,041***
Trucks and Worker Vehicles	5,013	21	30	2,011	183
Trains	481	0.5	9	184	43
Total Mobile Source Emissions	***5,494***	***21***	***39***	***2,195***	***226***
Total Annual Baseline Emissions	**54,822**	**1,021**	**19,632**	**137,059**	**2,267**

Table 2-9: Project Incremental Criteria Pollutant Annual Emissions

Unit	NO_x	SO_x	PM_{10}	CO	VOC
	Annual Emissions (lb/year)				
N-8234-1 Receiving, Storage, Loadout	0	0	143	0	0
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0	0	60	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	2,175	0	0
N-8234-4 Line 1	0	0	0	0	0
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	2,091	248	5,776	9,757	472
3-RTO Units	14,972	125	333	38,524	241
N-8234-7 Packaging Line 1	0	0	30	0	0
N-8234-8 Packaging Line 2	0	0	30	0	0
N-8234-9 Packaging Line 3	0	0	41	0	0
N-8234-14 Thiele Packaging Line 4	0	0	34	0	0
N-8234-10 Boiler 1	353	91	96	1,187	128
N-8234-11 Boiler 2					
N-8234-12 Emergency Diesel Fire Pump	0	0	0	0	0
Total Stationary Source Emissions	***17,416***	***464***	***8,718***	***49,468***	***841***
Trucks and Worker Vehicles	2,346	9	13	533	77
Trains	0	0	0	0	0
Total Mobile Source Emissions	***2,346***	***9***	***13***	***533***	***77***
Total Annual Incremental Emissions	**19,762**	**472**	**8,731**	**50,002**	**918**

Table 2-10: Project Incremental Criteria Pollutant Daily Emissions

Unit	NO_x	SO_x	PM_{10}	CO	VOC
	Daily Emissions (lb/day)				
N-8234-1 Receiving, Storage, Loadout	0	0	0.45	0	0
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0	0	2.17	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	5.96	0	0
N-8234-4 Line 1	0	0	0	0	0
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	5.76	0.68	15.91	26.88	1.30
3-RTO Units	47.40	0.40	1.05	121.97	0.76
N-8234-7 Packaging Line 1	0	0	0.08	0	0
N-8234-8 Packaging Line 2	0	0	0.08	0	0
N-8234-9 Packaging Line 3	0	0	0.11	0	0
N-8234-14 Thiele Packaging Line 4	0	0	0.09	0	0
N-8234-10 Boiler 1	0.97	0.25	0.26	3.25	0.35
N-8234-11 Boiler 2					
N-8234-12 Emergency Diesel Fire Pump	0	0	0	0	0
Total Stationary Source Emissions	***54.13***	***1.33***	***26.18***	***152.10***	***2.41***
Trucks and Worker Vehicles	6.75	0.03	0.04	1.51	0.22
Trains	0	0	0	0	0
Total Mobile Source Emissions	***6.75***	***0.03***	***0.04***	***1.51***	***0.22***
Total Daily Incremental Emissions	**60.88**	**1.35**	**26.22**	**153.61**	**2.64**

2.2.3 TACs

The TAC emissions from the operational baseline and Project incremental sources are summarized in Tables 2-11 and 2-12, respectively. Detailed emission estimation calculations are provided in Appendix B.

Table 2-11: Baseline Annual TAC Emissions

Hazardous Air Pollutant (HAP)	CAS	RTOs	Boilers	Fire Pump	Mobile Sources	Total
	Annual Emissions (lb/yr)					
Ammonia	7664417	-	281.65	-	-	**281.65**
Acetaldehyde	75070	1.18	0.21	-	-	**1.39**
Acrolein	107028	0.74	0.19	-	-	**0.93**
Benzene	71432	2.20	0.40	-	-	**2.60**
Ethylbenzene	100414	2.61	0.48	-	-	**3.09**
Formaldehyde	50000	4.67	0.85	-	-	**5.52**
Hexane	110543	1.73	0.32	-	-	**2.05**
Naphthalene	91203	0.08	0.02	-	-	**0.10**
Polycyclic Aromatic Hydrocarbons (PAHs) (Excl. Naphthalene)	1151	0.03	0.01	-	-	**0.03**
Propylene	115071	200.77	36.59	-	-	**237.35**
Toluene	108883	10.05	1.83	-	-	**11.88**
Xylenes (Mixed)	1330207	7.47	1.36	-	-	**8.83**
DPM	9901	-	-	2.76	10.53	**13.29**

Notes:

CAS – Chemical Abstracts Service

Table 2-12: Project Incremental Annual TAC Emissions

HAP	CAS	RTOs	Boilers	Fire Pump	Mobile Sources	Total
	Annual Emissions (lb/yr)					
Ammonia	7664417	-	128.33	-	-	**128.33**
Acetaldehyde	75070	0.55	0.10	-	-	**0.65**
Acrolein	107028	0.35	0.08	-	-	**0.43**
Benzene	71432	1.03	0.18	-	-	**1.21**
Ethylbenzene	100414	1.22	0.22	-	-	**1.44**
Formaldehyde	50000	2.18	0.39	-	-	**2.57**
Hexane	110543	0.81	0.14	-	-	**0.95**
Naphthalene	91203	0.04	0.01	-	-	**0.05**
PAHs (Excl. Naphthalene)	1151	0.01	0.00	-	-	**0.02**
Propylene	115071	93.81	16.67	-	-	**110.48**
Toluene	108883	4.70	0.83	-	-	**5.53**
Xylenes (Mixed)	1330207	3.49	0.62	-	-	**4.11**
DPM	9901	-	-	0.00	0.41	**0.41**

2.2.4 GHGs

The GHG emissions from the operational baseline and Project incremental sources are summarized in Tables 2-13 and 2-14, respectively. Detailed emission estimation calculations are provided in Appendix B.

Table 2-13: Baseline Annual GHG Emissions

Unit	CO_2	CH_4	N_2O	CO_2e
	Annual Emissions (MT/yr)			
Direct Emissions				
N-8234-4 Line 1	9,952	0.149	0.015	9,960
N-8234-5 Line 2				
N-8234-6 Line 3				
N-8234-15 Line 4	0	0	0	0
3-RTO Units	8,784	0.131	0.013	8,791
N-8234-10 Boiler 1	4,709	0.070	0.007	4,713
N-8234-11 Boiler 2				
N-8234-12 Emergency Diesel Fire Pump	0.9	3.82E-05	7.64E-06	0.9
Total Stationary Source Emissions	***23,446***	***0.35***	***0.04***	***23,465***
Trucks and Worker Vehicles	1,002	0.012	0.004	1,003
Trains	25	0.002	0.001	25
Total Mobile Source Emissions	***1,027***	***0.01***	***0.00***	***1,028***
Annual Baseline Direct Emissions	**24,472**	**0.36**	**0.04**	**24,493**
Indirect Emissions				
Wastewater Usage Indirect Power Consumption	1	4.41E-05	9.37E-06	1
Electricity Usage Indirect Power Consumption	9,072	3.16E-01	6.72E-02	9,100
Annual Baseline Indirect Emissions	**9,073**	**0.32**	**0.07**	**9,101**
Total Annual Baseline Direct and Indirect Emissions	**33,546**	**0.68**	**0.11**	**33,594**

Table 2-14: Project Incremental Annual GHG Emissions

Unit	CO_2	CH_4	N_2O	CO_2e
	Annual Emissions (MT/yr)			
Direct Emissions				
N-8234-4 Line 1	0	0	0	0
N-8234-5 Line 2				
N-8234-6 Line 3				
N-8234-15 Line 4	5,827	0.087	0.009	5,831
3-RTO Units	2,928	0.044	0.004	2,930
N-8234-10 Boiler 1	2,146	0.032	0.003	2,148
N-8234-11 Boiler 2				
N-8234-12 Emergency Diesel Fire Pump	0	0	0	0
Total Stationary Source Emissions	***10,900***	***0.16***	***0.02***	***10,909***
Trucks and Worker Vehicles	417	0.003	0.001	418
Trains	0	0	0	0
Total Mobile Source Emissions	***417***	***0.003***	***0.001***	***418***
Annual Project Incremental Direct Emissions	**11,317**	**0.17**	**0.02**	**11,327**
Indirect Emissions				
Wastewater Usage Indirect Power Consumption	0.4	1.47E-05	3.12E-06	0.4
Electricity Usage Indirect Power Consumption	1,814	6.32E-02	1.34E-02	1,820
Annual Project Incremental Indirect Emissions	**1,815**	**0.06**	**0.01**	**1,820**
Total Annual Project Incremental Direct and Indirect Emissions	**13,132**	**0.23**	**0.03**	**13,147**

3.0 MODELING AND RISK ASSESSMENT METHODOLOGIES

The methodology used to develop the AAQA and HRA is described below and based on SJVAPCD guidance documents and policies. The AERMOD dispersion model is used as the basis for both the AAQA and HRA. The air dispersion modeling methodology is based extensively on the SJVAPCD's "Guidance for Air Dispersion Modeling" (SJVAPCD 2006).

3.1 Air Dispersion Modeling

Air dispersion models calculate the atmospheric transport and fate of pollutants from the emission source. The models calculate the concentration of selected pollutants at specific downwind ground-level points, such as residential or off-site workplace receptors. The transformation (fate) of an airborne pollutant, its movement with the prevailing winds (transport), its crosswind and vertical movement due to atmospheric turbulence (dispersion), and its removal due to dry and wet deposition are influenced by the pollutant's physical and chemical properties and meteorological and environmental conditions. Factors such as distance from the source to the receptor, meteorological conditions, intervening land use and terrain, pollutant release characteristics, and background pollutant concentrations affect the predicted air concentration of an air pollutant. Air dispersion models take all of these factors into consideration when calculating downwind ground-level pollutant concentrations.

AERMOD air dispersion modeling input files used to create the dispersion characteristics used in the AAQA and HRA are provided electronically.

3.1.1 Model Selection

The air dispersion model used was AERMOD Version 18081, with the Lakes Environmental Software implementation/user interface, AERMOD View™ Version 9.6.5. For the HRA, AERMOD was run with all sources emitting unit emissions [1 gram/second (g/s)] to obtain the X/Q (Chi/Q) values that are necessary for input into the Hotspots Analysis and Reporting Program, version 2 (HARP2). For the AAQA, actual emissions for each criteria pollutant and source are used in AERMOD.

3.1.2 Modeling Options

Regulatory defaults, the "Rural" modeling option, and "Elevated" terrain were used for the analyses. Rural was selected because approximately 50% of the area around the facility is rural. Rural dispersion parameters are conservative because the atmosphere is less turbulent in rural areas, which results in less mixing and, hence, generally higher ambient concentrations downwind from a source.

3.1.3 Meteorological Data

AERMOD-ready pre-processed meteorological data files were downloaded directly from the SJVAPCD website for the Modesto station. This was the nearest meteorological station and most representative of conditions at the facility. The meteorological data files contain data for the years 2013-2017.

3.1.4 Elevation Data

Digital elevation data were imported into AERMOD and elevations were assigned to receptors, buildings, and emission sources, as necessary. Digital elevation data were

obtained through the AERMOD View™ WebGIS import feature in the United States Geological Survey's (USGS') National Elevation Dataset (NED) TIF format, with a resolution of 1 second or approximately 30 meters. All geographical coordinates referenced in this section and appendices are in the Universal Transverse Mercator (UTM) coordinate system with the North American Datum (NAD83), Zone 10.

3.1.5 Receptors

Modeling results were obtained at various locations around the facility. These receptor locations were identified as the facility boundary, a grid network of receptors to establish the potential impact area and discrete receptors that were positioned at specific locations of concern.

The facility boundary encompasses the existing facility and proposed Project. Per SJVAPCD guidance, a cascading grid of receptors was used to ensure that impacts were below the appropriate CEQA thresholds at all locations off-site. These gridded receptors were located as follows:

- Fenceline receptors were placed every 25 meters apart;
- 25 meters spacing from the fenceline out to 100 meters;
- 50 meters spacing from 100 to 250 meters;
- 100 meters spacing from 250 to 500 meters;
- 250 meters spacing from 500 to 1,000 meters; and
- 500 meters spacing from 1,000 to 2,000 meters.

For the HRA, additional discrete Cartesian receptors were used to evaluate the locations of the maximally exposed residential, sensitive receptor, and off-site workplace. A series of receptors were placed at the nearest residences and nearest sensitive receptor, the Ripon Elementary School. To capture the peak off-site worker exposure, receptors were located at the nearest businesses on each side of the Project site and at the cogeneration plant located within Diamond's property. Figure 3-1 shows the locations of the discrete receptors in yellow and the property line identified in red. Any gridded receptor located within the exclusion zone for the line volume mobile sources were removed.

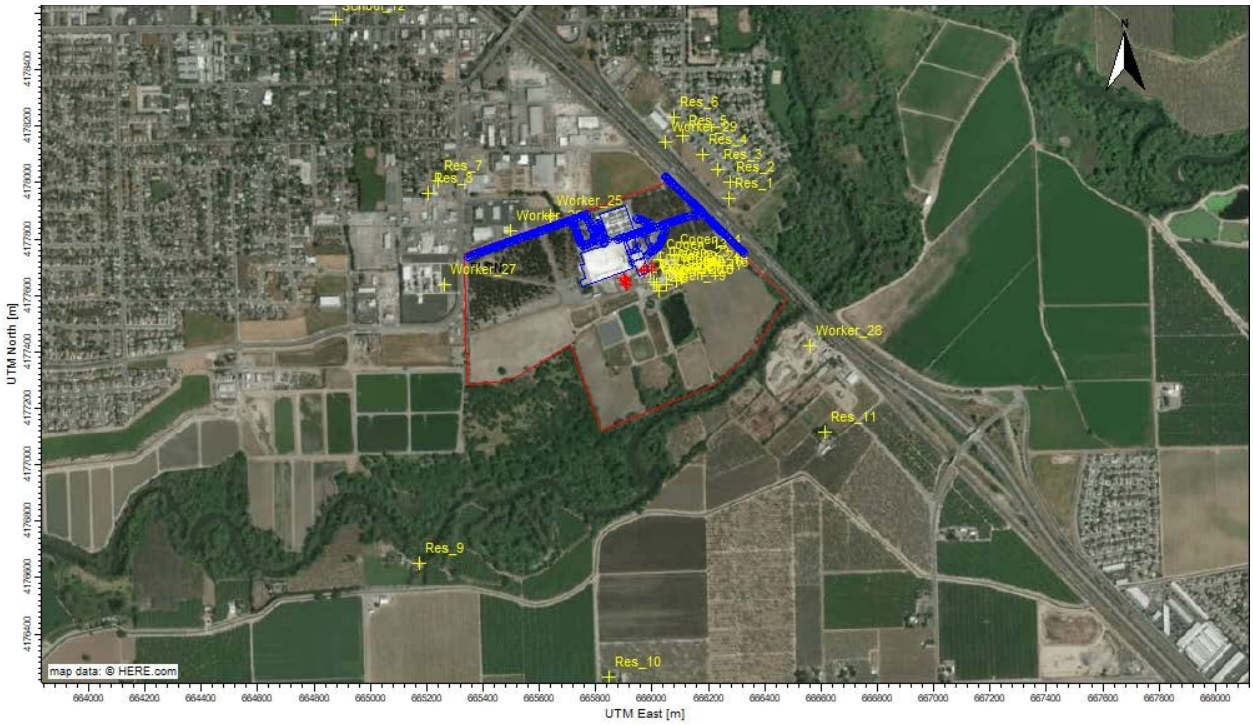
3.1.6 On-Site Buildings

The on-site buildings close to the emission sources were included in the modeling using best available outside dimensional data. Building downwash effects were assessed using the Building Profile Input Program for PRIME (BPIPPRM). The buildings included in the modeling are shown in blue in Figure 3-1.

3.1.7 Emission Sources and Release Parameters

The exhaust stacks from each stationary source were modeled as individual point sources, as shown in red in Figure 3-1. The on-site delivery trucks and trains were modeled as line volume sources and are shown in blue on Figure 3-1. Figure 3-1 shows all the existing (baseline) and proposed Project sources. The release parameters for each source are shown in Appendix C and were obtained from similar equipment or calculated using applicable EPA methods (EPA 2017).

Figure 3-1: Sources, Buildings, Residential, Sensitive, and Worker Receptor Locations



3.2 AAQA

The purpose of the AAQA is to evaluate whether or not criteria pollutant emissions resulting from the Project will cause or contribute significantly to a violation of a CAAQS or NAAQS. The dispersion model, AERMOD, was used to simulate the atmospheric transport and dispersion of airborne pollutants and to quantify the maximum expected ground-level concentrations from Project emissions. The air quality modeling methodology described in this section is based on the SJVAPCD APR-1925 (SJVAPCD 2014) and Guidance for Air Dispersion Modeling (SJVAPCD 2006).

The AERMOD modeling was performed as described in the previous section using 5 years of hourly meteorological input data.

The AAQA follows the APR-1925 Level 2 approach where each pollutant is modeled separately using maximum emission rates for the appropriate averaging time. Step 1 combines the modeled concentration with a conservative background concentration for comparison to the AAQS. If the Project plus background concentration is less than the AAQS, then Project emissions have a less than significant impact. This Step 1 technique was used for NO_2, CO, and SO_2.

Per SJVAPCD guidance, for pollutants where the background concentration is already greater than the AAQS, Step 2 compares the maximum modeled concentration to the corresponding Significant Impact Level (SIL). If the Project concentration is less than the SIL, then Project emissions do not contribute significantly to a violation of a CAAQS or NAAQS. SIL modeling was conducted for PM_{10} as the background concentrations were greater than the CAAQS as described in the subsequent section.

NO_2 modeling for the 1-hour and annual NAAQS followed the EPA Tier 1 technique outlined in the EPA NO_2 clarification memo (EPA 2014) and conservatively assumed that all NO_x converts to NO_2. Further modeling refinements, such as use of the Ambient Ratio Method 2 (ARM2), which assumes the conversion of between 20-90% of NO_x to NO_2 (Tier 2), Ozone Limiting Method (OLM), or Plume Volume Molar Ratio Method (PVMRM) (Tier 3), were not necessary to show that Project emissions did not cause a violation of the NAAQS.

The NO_2, CO and SO_2 modeling was conducted using the highest 1-hour emission rate. The PM_{10} modeling used the highest 24-hour emission rate. This is conservative for the longer averaging times, especially the annual average. This is very conservative for the 1-hour NO_2 NAAQS analysis as the maximum hourly emissions for the RTOs encompass a startup hour that will occur 7 days per year. Per EPA and SJVAPCD guidance on conducting NO_2 1-hour analyses, intermittent emissions that occur as infrequently as these can be excluded from the analysis as the NAAQS is based on the design value. The design value is the 98th percentile of the 3-year average of the daily maximum 1-hour concentrations, or stated another way, the 8th highest daily maximum 1-hour concentration averaged over 3 years.

3.2.1 Background Air Quality

Dispersion modeling to evaluate compliance with AAQS requires the use of measured air pollutant concentrations to account for the contributions of regional emissions, i.e., emission sources not explicitly included in the model simulations. This section describes the available monitoring data used to represent the "background" air quality in the Project area and explains the process by which data from specific monitoring stations were selected to represent background levels for each modeled pollutant and averaging time.

Air quality monitoring data representing the background air quality in the Project area were obtained from the CARB iADAM Air Quality Data Statistics website (CARB 2018) and EPA AirData (EPA 2018). For all pollutants and averaging times, the maximum concentrations over the most recent 3-year period were used as conservative representations of background air quality conditions at the Project Site, except for the NO_2 1-hour NAAQS analysis, where the design value was used. Use of this method effectively assumes that the highest recently recorded pollutant concentrations for each averaging period are occurring during every such period over the 5-year meteorological input record. This high-static background is then paired with modeled results.

The nearest air quality monitoring station to the Project site is the Tracy Airport, approximately 18 miles west of the site. This station is the most representative site to characterize background conditions for these pollutants as it is located in a similar rural/suburban setting. Background NO_2 and CO concentrations were obtained from this station.

The Stockton station is approximately 18 miles to the north of the Project site in an urban setting, but it is the only station in San Joaquin County that measures PM_{10} using both the national and state techniques. The only station in the San Joaquin Valley that monitors SO_2 is at First Street in Fresno, located approximately 100 miles south of Ripon.

Table 3-1 presents the ambient background data for each pollutant and averaging time and the representative monitoring station. The tabulated values were used to represent background levels for the indicated pollutants and averaging times in the AAQA to

evaluate compliance with CAAQS or NAAQS. The monitoring data indicate that the air quality in the Project area complies with all federal NAAQS and CAAQS for NO_2, CO, and SO_2. However, the CAAQS and NAAQS are periodically exceeded in the Project area for PM_{10}.

Table 3-1: Background Concentrations Used in AAQA

Pollutant	Averaging Time	Standard	Monitoring Station Location	Ambient Background Data				AAQS	Exceeds Standard?	Background Concentration Notes
				2015	2016	2017	Summary			
NO_2 [Parts per Million (ppm)]	1-Hour	Federal	Tracy Airport	0.029	0.025	0.031	0.028	0.100	No	The design value (= 3-year average of 98th percentile of 1-hr daily max).
		California	Tracy Airport	0.035	0.028	0.040	0.040	0.180	No	Highest of most recent 3 years.
	Annual	Federal	Tracy Airport	0.006	0.005	0.005	0.006	0.053	No	Highest of most recent 3 years.
		California	Tracy Airport	0.006	0.004	0.004	0.006	0.030	No	Highest of most recent 3 years.
CO (ppm)	1-Hour	Federal	Tracy Airport	2.375	1.788	2.38	2.38	35	No	Highest of most recent 3 years.
		California	Tracy Airport	2.375	1.788	2.38	2.38	20	No	Highest of most recent 3 years.
	8-Hour	Federal	Tracy Airport	1.5	1.3	1.9	1.90	9	No	Highest of most recent 3 years.
		California	Tracy Airport	1.5	1.3	1.9	1.90	9.0	No	Highest of most recent 3 years.
SO_2 (ppm)	1-Hour	Federal	Fresno	0.0108	0.0080	0.0077	0.0108	0.075	No	Highest of most recent 3 years.
		California	Fresno	0.0108	0.0080	0.0077	0.0108	0.25	No	Highest of most recent 3 years.
	3-Hour	Federal Secondary	Fresno	0.0063	0.0053	0.0045	0.0063	0.5	No	Highest of most recent 3 years.
		California	-	-	-	-	-	-	-	No standard exists.
	24-Hour	Federal	-	-	-	-	-	-	-	Rescinded.
		California	Fresno	0.0024	0.0020	0.0023	0.0024	0.04	No	Highest of most recent 3 years.
PM_{10} ($\mu g/m^3$)	24-Hour	Federal	Stockton – Hazelton St.	54.1	65.9	89.9	89.9	150.0	No	Highest of most recent 3 years.
		California	Stockton – Hazelton St.	55.3	66.5	92.6	92.6	50.0	Yes	Highest of most recent 3 years.
	Annual	Federal	-	-	-	-	-	-	-	No standard exists.
		California	Stockton – Hazelton St.	28.0	26.5	28.8	28.8	20.0	Yes	Highest of most recent 3 years.

Notes:

NO_2 and PM_{10} data from CARB iADAM Air Quality Data Statistics. CO and SO_2 data from EPA AirData.

3.3 HRA

The HRA followed the SJVAPCD Policy 1906 (SJVAPCD 2015b) Tier 2 refined project modeling techniques, which are based on the Office of Environmental Health Hazard Assessment (OEHHA 2015) Tier 1 technique, with the exceptions noted in the following sections.

The health risk calculations were performed using the HARP2 Air Dispersion Modeling and Risk Tool (ADMRT, version 19044). The X/Q values that were determined for each source using AERMOD were imported into HARP2 and used in conjunction with hourly and annual emissions to determine the Ground-Level Concentration (GLC) for each pollutant. The GLCs are then used to estimate the long-term cancer health risk to an individual and non-cancer chronic and acute health indices.

Two HRA scenarios were examined, specially the Project (the incremental Project emissions) and Cumulative (the Project plus the existing facility using the baseline plus Project incremental emissions) scenarios. A description of the parameters used in the HARP2 modeling is provided below. The HARP2 summary report and results are presented in Appendix D for the Project scenario and in Appendix E for the Cumulative scenario.

3.3.1 Cancer Risk

Cancer risk is the estimated probability of a maximally exposed individual potentially contracting cancer as a result of exposure to TACs over a period of time. Per SJVAPCD Policy 1906 and HRA guidance (SJVAPCD 2015b and 2015c), HRAs conducted for CEQA purposes should examine a cancer risk over a 70-year lifetime for residential and Point of Maximum Impact (PMI) grid receptor locations and 40 years for off-site worker receptor locations.

The exposure pathways used to estimate the cancer risk for grid, residential, sensitive, and off-site workplace receptors are listed in Table 3-2. Any exposure pathways not explicitly shown in Table 3-2, e.g., drinking water consumption, were not included in this HRA.

Table 3-2: Exposure Pathways

Exposure Pathway	Residential/Sensitive/Grid	Off-Site Workplace
Inhalation	Yes	Yes
Homegrown Produce	Yes	No
Dermal	Yes	Yes
Soil Ingestion	Yes	Yes
Mother's Milk	Yes	No

Based on SJVAPCD recommendations, the "OEHHA Derived" calculation method was used to estimate cancer risk at residential/sensitive/grid and off-site worker receptors. The "OEHHA Derived" method uses high-end exposure parameters for the top two exposure pathways and mean exposure parameters for the remaining pathways for cancer risk estimates. A deposition velocity of 0.02 meters per second was used. For residential receptors, the Fraction of Time at Home (FAH) was applied for all age bins since the nearby school receptor was identified to be outside the one in a million isopleth. The Project will operate continuously. Thus, no Worker Adjustment Factor (WAF) was applied in HARP2.

3.3.2 Chronic Hazard Index

Some TACs increase non-cancer health risk due to long-term (chronic) exposures. The Chronic Hazard Index (HIC) is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. The HIC estimates for all receptor types used the "OEHHA Derived" calculation method. The reported HIC is for the maximally affected target organ system.

3.3.3 Acute Hazard Index

Some TACs increase non-cancer health risk due to short-term (acute) exposures. The Acute Hazard Index (HIA) is the sum of the individual substance acute hazard indices for all TACs affecting the same target organ system. Acute risk is calculated from a 1-hour exposure. The reported HIA is for the maximally affected target organ system.

4.0 RESULTS

4.1 Criteria Pollutant AAQA

Air dispersion modeling was performed according to the methodology described in Sections 3.1 and 3.2. Table 4-1 presents the maximum model-predicted concentrations from the Project emissions, maximum background concentrations, and sum of these concentrations in comparison to the NAAQS and CAAQS. Table 4-1 shows that the Project will not cause an exceedance of an NAAQS or CAAQS. Since background PM_{10} concentrations are greater than the 24-hour and annual CAAQS, the modeled concentrations are compared to the SILs. Table 4-2 shows that the model-predicted PM_{10} concentrations are less than the 24-hour and annual SILs and, thus, the Project will not contribute to an exceedance of the CAAQS.

The AAQA modeling predicts that the Project-related emissions will not cause or contribute to an exceedance of a NAAQS or CAAQS.

Table 4-1: AAQA Modeling Results

Pollutant	Averaging Time	Standard	Modeled Concentration (µg/m³)	Background Concentration (µg/m³)	Modeled + Background Concentration (µg/m³)	AAQS (µg/m³)	Exceed Standard?
NO_2	1-Hour	Federal	37.1	54.3	91.4	188	No
		California	37.1	76.5	113.6	339	No
	Annual	Federal	1.1	11.5	12.6	100	No
		California	1.1	11.5	12.6	57	No
CO	1-Hour	Federal	108.7	2,772	2,881	40,000	No
		California	108.7	2,772	2,881	23,000	No
	8-Hour	Federal	43.2	2,213	2,256	10,000	No
		California	43.2	2,213	2,256	10,000	No
SO_2	1-Hour	Federal	0.9	28.8	29.6	196	No
		California	0.9	28.8	29.6	655	No
	3-Hour	Federal Secondary	0.6	16.8	17.4	1,300	No
		California	-	-	-	No Standard	N/A
	24-Hour	Federal	-	-	-	No Standard	N/A
		California	0.2	6.4	6.6	105	No
PM_{10}	24-Hour	Federal	4.1	89.9	94.0	150	No
		California	See SIL Analysis	92.6	-	50	Background Exceeds
	Annual	Federal	-	-	-	No Standard	N/A
		California	See SIL Analysis	28.8	-	20	Background Exceeds

Table 4-2: PM_{10} SIL Modeling Results

Pollutant	Averaging Time	Modeled Concentration ($\mu g/m^3$)	SIL ($\mu g/m^3$)	Exceed Standard?
PM_{10}	24-Hour	4.11	5.0	No
	Annual	0.70	1.0	No

4.2 HRA

The results of the HRA from the Project incremental emissions are summarized in Table 4-3. The results show that, for all receptor types and locations, the predicted health risks are less than the SJVAPCD cancer significance threshold and well below the non-cancer thresholds. The cancer risk PMI occurs immediately north of the truck unloading area in an undeveloped, unpopulated area. The DPM from the trucks contribute to the majority of the cancer risk.

Table 4-3: Project Incremental Health Risk Assessment Results

Health Risk	PMI	Maximally Exposed Individual Resident (MEIR)	Maximum Sensitive Receptor	Maximally Exposed Individual Worker (MEIW)	SJVAPCD CEQA Threshold
Cancer Risk (In a Million)	0.85	0.09	0.01	0.06	20
HIC	0.0004	0.0001	0.00001	0.0004	1
HIA	0.0007	0.0003	0.0001	0.0005	1

To examine the potential cumulative health risks due to the Project plus the existing facility, a cumulative HRA was conducted with the baseline plus Project incremental emissions. The results from the cumulative HRA presented in Table 4-4 show that for all receptor types and locations, the predicted health risks are less than the SJVAPCD cancer significance threshold and well below the non-cancer thresholds. The cancer risk PMI occurs immediately adjacent to the off-site train travel, in the middle of Highway 99, where no person could be for any length of time, let alone 70 years. The DPM from the trains contribute to the majority of the cancer risk.

Table 4-4: Cumulative HRA Results

Health Risk	PMI	MEIR	Maximum Sensitive Receptor	MEIW	SJVAPCD CEQA Threshold
Cancer Risk (In a Million)	12.40	2.54	0.34	1.21	20
HIC	0.0032	0.0007	0.00012	0.0027	1
HIA	0.0022	0.0010	0.0003	0.0016	1

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APPENDIX A – CALEEMOD OUTPUT

Table 2: Land Use Data for CalEEMod Input - Line 4 Construction

Project Element	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Acreage (footprint)	Square Feet (est.)	Est. Pop.
Line 4	Industrial	General Light Industry	10.000	1,000 sf	0.230	10,000	0
Aggregated Project					**0.230**	**10,000**	**0**

Source: Applicant 2018, CalEEMod version 2016.3.2

Notes:

Industrial land use for trucking trip rates

Climate Zone 3; San Joaquin County

1 acre = 43,560 square feet (sf)

Utility: PG&E

Trucking Requirements & Worker Commuting

Equipment Deliveries	Class	Trips	Miles RT	Total Miles
Structural Steel: 5 trucks (grinding to extrusion)	HHDT	5	510	2,550
Grinder/baghouse/blowers/bins: 5 trucks	HHDT	5	510	2,550
Extruder/conditioner: 2 trucks	HHDT	2	510	1,020
Air Handler Filter: 2 trucks	HHDT	2	510	1,020
Ductwork (extruder room): 1 truck	HHDT	1	510	510
Dryer: 8 trucks max	HHDT	8	510	4,080
Wet Cyclone/Blower/SS: 2 trucks	HHDT	2	510	1,020
Dryer SS: 2 trucks	HHDT	2	510	1,020
Ducting + Baghouse (in-out of dryer): 5 trucks	HHDT	5	510	2,550
Air Conveyance to Coating: 1 truck	HHDT	1	510	510
Shaker: 1 truck	HHDT	1	510	510
K-Tron System: 1 truck	HHDT	1	510	510
Apec System: 1 truck	HHDT	1	510	510
Digest Baghouse: 1 truck	HHDT	1	510	510
Vert Cooler: Conveyance: 1 trucks	HHDT	1	510	510
Vert Cooler System: 4 trucks	HHDT	4	510	2,040
Air Handling: 2 trucks	HHDT	2	510	1,020
Total	**HHDT**	**44**	**510**	**22,440**

Notes:

Ripon-Lebec/Gorman (southern District boundary) via SR-99/I-5: 255 miles 1-way (max trip as worst case)

Worker Commuting	Class	Trips/day	Miles RT	Miles/day
Workers (per day)	**LDA, LDT1, LDT2**	**15**	**22**	**330**

Notes:

CalEEMod default for San Joaquin County 11 miles 1-way

Estimated 12-15 worker personal vehicles per day

Months: ~10 months (JG) = 44 weeks = 220 working days

EMFAC 2014 Vehicle Classes - Typical	
Passenger Cars/Minivans/Small SUVs	LDA
1/2 & 3/4 ton Pickups/Vans/Large SUVs	LDT1
1+ ton Pickups/Work Trucks	LDT2
2 axles	LHDT1
2 axles	LHDT2
3 axles	MHDT
4+ axles	HHDT

On-Road Vehicle List for CalEEMod - Construction

Vehicle Travel - Workers	Vehicle Class Mix	Paved	RT/day	Miles/RT	Miles/day
Personal vehicles	LDA, LDT1, LDT2	100%	15	22	330

Vehicle Travel - Vendors	Vehicle Class Mix	Paved	RT/day	Miles/RT	Miles/day
All Trucks	HHDT	100%	1	510	510

Source: Applicant

Notes:

Worker trips assume 11 mile commute each way (CalEEMod for San Joaquin Co.); 15 workers; 1 occupancy

Truck trips assume 255 miles from District Boundary (Kern/LA County Line) and return via SR-99 and I-5.

For 1 truck trip/day, divide annual by 5 (days/week) to get actual project total for 44 trips over 44 weeks

Holidays are MLK/Presidents Day, Memorial Day, July 4, Labor Day

	Planned	CalEEMod
Start	1/7/2019	1/7/2019
End	11/15/2019	11/9/2019
Weekdays	224	220
Holidays	4	0
Working days	220	220
Days/week	5	5
Working weeks	44	44

On-Road Vehicle List for CalEEMod - Operation

Vehicle Travel - Trips	Vehicle Class	RT/day	Percent	Type	Miles/RT	Miles/day	Units, ksf	Trip Rate
Personal vehicles	LDA	15	50%	C-NW	22	165	10.000	1.500
	LDT1	15	25%	C-NW	22	83	10.000	1.500
	LDT2	15	25%	C-NW	22	83	10.000	1.500
All Trucks	HHDT	1	100%	C-W	510	510	10.000	0.100

Source: Applicant

Notes:

All large trucks assumed to be HHDT for emission calculations

EMFAC 2014 Vehicle Classes - Typical	
Passenger Cars/Minivans/Small SUVs	LDA
1/2 & 3/4 ton Pickups/Vans/Large SUVs	LDT1
1+ ton Pickups/Work Trucks	LDT2
2 axles	LHDT1
2 axles	LHDT2
3 axles	MHDT
4+ axles	HHDT

Diamond Pet Foods Line 4 Construction Trucking

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Diamond Pet Foods Line 4 Construction Trucking - San Joaquin County, Annual

Project Characteristics -

Land Use -

Construction Phase - Per Applicant: 10 months = 44 weeks = 220 working days

Off-road Equipment - Trucking & commuting only

Trips and VMT - 1 vendor trip per day average, 44 vendor trips total, divide annual results by 5 to obtain correct annual value

Vehicle Trips - Construction only

Consumer Products - No consumer products

Area Coating - No painting

Landscape Equipment - No landscaping

Energy Use - Construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Construction Off-road Equipment Mitigation - No earthmoving

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5000	0
tblAreaCoating	Area_Nonresidential_Interior	15000	0
tblConstructionPhase	NumDays	100.00	220.00
tblConstructionPhase	PhaseEndDate	6/12/2019	11/8/2019
tblConstructionPhase	PhaseStartDate	1/24/2019	1/7/2019
tblConsumerProducts	ROG_EF	2.14E-05	1E-07
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	1E-10
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	1E-11
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00

tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblSolidWaste	SolidWasteGenerationRate	12.40	0.00
tblTripsAndVMT	VendorTripLength	7.30	510.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripLength	10.80	22.00
tblTripsAndVMT	WorkerTripNumber	4.00	15.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,312,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0310	0.5666	0.1902	2.1900e-003	0.0745	3.2400e-003	0.0777	0.0202	3.0900e-003	0.0233	0.0000	207.7624	207.7624	2.9000e-003	0.0000	207.8348
Maximum	**0.0310**	**0.5666**	**0.1902**	**2.1900e-003**	**0.0745**	**3.2400e-003**	**0.0777**	**0.0202**	**3.0900e-003**	**0.0233**	**0.0000**	**207.7624**	**207.7624**	**2.9000e-003**	**0.0000**	**207.8348**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0310	0.5666	0.1902	2.1900e-003	0.0745	3.2400e-003	0.0777	0.0202	3.0900e-003	0.0233	0.0000	207.7624	207.7624	2.9000e-003	0.0000	207.8348
Maximum	**0.0310**	**0.5666**	**0.1902**	**2.1900e-003**	**0.0745**	**3.2400e-003**	**0.0777**	**0.0202**	**3.0900e-003**	**0.0233**	**0.0000**	**207.7624**	**207.7624**	**2.9000e-003**	**0.0000**	**207.8348**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-7-2019	4-6-2019	0.1774	0.1774
2	4-7-2019	7-6-2019	0.1690	0.1690
3	7-7-2019	9-30-2019	0.1597	0.1597
		Highest	0.1774	0.1774

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/7/2019	11/8/2019	5	220	Line 4 Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	15.00	1.00	0.00	22.00	510.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.5564	0.0944	1.9300e-003	0.0477	3.0600e-003	0.0508	0.0131	2.9300e-003	0.0161	0.0000	183.6326	183.6326	2.2000e-003	0.0000	183.6875
Worker	0.0125	0.0102	0.0958	2.7000e-004	0.0268	1.8000e-004	0.0269	7.1100e-003	1.6000e-004	7.2700e-003	0.0000	24.1298	24.1298	7.0000e-004	0.0000	24.1472
Total	**0.0310**	**0.5666**	**0.1902**	**2.2000e-003**	**0.0745**	**3.2400e-003**	**0.0777**	**0.0202**	**3.0900e-003**	**0.0233**	**0.0000**	**207.7624**	**207.7624**	**2.9000e-003**	**0.0000**	**207.8348**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.5564	0.0944	1.9300e-003	0.0477	3.0600e-003	0.0508	0.0131	2.9300e-003	0.0161	0.0000	183.6326	183.6326	2.2000e-003	0.0000	183.6875
Worker	0.0125	0.0102	0.0958	2.7000e-004	0.0268	1.8000e-004	0.0269	7.1100e-003	1.6000e-004	7.2700e-003	0.0000	24.1298	24.1298	7.0000e-004	0.0000	24.1472
Total	**0.0310**	**0.5666**	**0.1902**	**2.2000e-003**	**0.0745**	**3.2400e-003**	**0.0777**	**0.0202**	**3.0900e-003**	**0.0233**	**0.0000**	**207.7624**	**207.7624**	**2.9000e-003**	**0.0000**	**207.8348**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	1.8000e-004	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Diamond Pet Foods Line 4 Construction Trucking

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Diamond Pet Foods Line 4 Construction Trucking - San Joaquin County, Summer

Project Characteristics -

Land Use -

Construction Phase - Per Applicant: 10 months = 44 weeks = 220 working days

Off-road Equipment - Trucking & commuting only

Trips and VMT - 1 vendor trip per day average, 44 vendor trips total, divide annual results by 5 to obtain correct annual value

Vehicle Trips - Construction only

Consumer Products - No consumer products

Area Coating - No painting

Landscape Equipment - No landscaping

Energy Use - Construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Construction Off-road Equipment Mitigation - No earthmoving

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5000	0
tblAreaCoating	Area_Nonresidential_Interior	15000	0
tblConstructionPhase	NumDays	100.00	220.00
tblConstructionPhase	PhaseEndDate	6/12/2019	11/8/2019
tblConstructionPhase	PhaseStartDate	1/24/2019	1/7/2019
tblConsumerProducts	ROG_EF	2.14E-05	1E-07
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	1E-10
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	1E-11
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00

tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblSolidWaste	SolidWasteGenerationRate	12.40	0.00
tblTripsAndVMT	VendorTripLength	7.30	510.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripLength	10.80	22.00
tblTripsAndVMT	WorkerTripNumber	4.00	15.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,312,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.2877	4.9124	1.8695	0.0202	0.6967	0.0295	0.7261	0.1887	0.0281	0.2168	0.0000	2,104.1656	2,104.1656	0.0296	0.0000	2,104.9064
Maximum	**0.2877**	**4.9124**	**1.8695**	**0.0202**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2168**	**0.0000**	**2,104.1656**	**2,104.1656**	**0.0296**	**0.0000**	**2,104.9064**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.2877	4.9124	1.8695	0.0202	0.6967	0.0295	0.7261	0.1887	0.0281	0.2168	0.0000	2,104.1656	2,104.1656	0.0296	0.0000	2,104.9064
Maximum	**0.2877**	**4.9124**	**1.8695**	**0.0202**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2168**	**0.0000**	**2,104.1656**	**2,104.1656**	**0.0296**	**0.0000**	**2,104.9064**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3400e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3400e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/7/2019	11/8/2019	5	220	Line 4 Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	15.00	1.00	0.00	22.00	510.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1679	4.8288	0.8598	0.0175	0.4458	0.0278	0.4737	0.1222	0.0266	0.1488		1,840.9297	1,840.9297	0.0219		1,841.4767
Worker	0.1198	0.0836	1.0097	2.6400e-003	0.2509	1.6000e-003	0.2525	0.0665	1.4800e-003	0.0680		263.2359	263.2359	7.7500e-003		263.4297
Total	**0.2877**	**4.9124**	**1.8695**	**0.0202**	**0.6967**	**0.0294**	**0.7261**	**0.1887**	**0.0281**	**0.2168**		**2,104.1656**	**2,104.1656**	**0.0296**		**2,104.9064**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1679	4.8288	0.8598	0.0175	0.4458	0.0278	0.4737	0.1222	0.0266	0.1488		1,840.9297	1,840.9297	0.0219		1,841.4767
Worker	0.1198	0.0836	1.0097	2.6400e-003	0.2509	1.6000e-003	0.2525	0.0665	1.4800e-003	0.0680		263.2359	263.2359	7.7500e-003		263.4297
Total	**0.2877**	**4.9124**	**1.8695**	**0.0202**	**0.6967**	**0.0294**	**0.7261**	**0.1887**	**0.0281**	**0.2168**		**2,104.1656**	**2,104.1656**	**0.0296**		**2,104.9064**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Unmitigated	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Diamond Pet Foods Line 4 Construction Trucking

San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.00	1000sqft	0.23	10,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Diamond Pet Foods Line 4 Construction Trucking - San Joaquin County, Winter

Project Characteristics -

Land Use -

Construction Phase - Per Applicant: 10 months = 44 weeks = 220 working days

Off-road Equipment - Trucking & commuting only

Trips and VMT - 1 vendor trip per day average, 44 vendor trips total, divide annual results by 5 to obtain correct annual value

Vehicle Trips - Construction only

Consumer Products - No consumer products

Area Coating - No painting

Landscape Equipment - No landscaping

Energy Use - Construction only

Water And Wastewater - Construction only

Solid Waste - Construction only

Construction Off-road Equipment Mitigation - No earthmoving

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5000	0
tblAreaCoating	Area_Nonresidential_Interior	15000	0
tblConstructionPhase	NumDays	100.00	220.00
tblConstructionPhase	PhaseEndDate	6/12/2019	11/8/2019
tblConstructionPhase	PhaseStartDate	1/24/2019	1/7/2019
tblConsumerProducts	ROG_EF	2.14E-05	1E-07
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	1E-10
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	1E-11
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00

tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblSolidWaste	SolidWasteGenerationRate	12.40	0.00
tblTripsAndVMT	VendorTripLength	7.30	510.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	HHDT
tblTripsAndVMT	WorkerTripLength	10.80	22.00
tblTripsAndVMT	WorkerTripNumber	4.00	15.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,312,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.2943	5.2485	1.7127	0.0199	0.6967	0.0295	0.7261	0.1887	0.0281	0.2169	0.0000	2,074.2056	2,074.2056	0.0291	0.0000	2,074.9327
Maximum	**0.2943**	**5.2485**	**1.7127**	**0.0199**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2169**	**0.0000**	**2,074.2056**	**2,074.2056**	**0.0291**	**0.0000**	**2,074.9327**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.2943	5.2485	1.7127	0.0199	0.6967	0.0295	0.7261	0.1887	0.0281	0.2169	0.0000	2,074.2056	2,074.2056	0.0291	0.0000	2,074.9327
Maximum	**0.2943**	**5.2485**	**1.7127**	**0.0199**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2169**	**0.0000**	**2,074.2056**	**2,074.2056**	**0.0291**	**0.0000**	**2,074.9327**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3400e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3400e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/7/2019	11/8/2019	5	220	Line 4 Construction

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	15.00	1.00	0.00	22.00	510.00	20.00	LD_Mix	HHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1681	5.1467	0.8571	0.0175	0.4458	0.0279	0.4737	0.1222	0.0267	0.1489		1,839.1546	1,839.1546	0.0223		1,839.7108
Worker	0.1263	0.1017	0.8555	2.3600e-003	0.2509	1.6000e-003	0.2525	0.0665	1.4800e-003	0.0680		235.0510	235.0510	6.8400e-003		235.2219
Total	**0.2943**	**5.2485**	**1.7127**	**0.0199**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2169**		**2,074.2056**	**2,074.2056**	**0.0291**		**2,074.9327**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1681	5.1467	0.8571	0.0175	0.4458	0.0279	0.4737	0.1222	0.0267	0.1489		1,839.1546	1,839.1546	0.0223		1,839.7108
Worker	0.1263	0.1017	0.8555	2.3600e-003	0.2509	1.6000e-003	0.2525	0.0665	1.4800e-003	0.0680		235.0510	235.0510	6.8400e-003		235.2219
Total	**0.2943**	**5.2485**	**1.7127**	**0.0199**	**0.6967**	**0.0295**	**0.7261**	**0.1887**	**0.0281**	**0.2169**		**2,074.2056**	**2,074.2056**	**0.0291**		**2,074.9327**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546554	0.037008	0.181258	0.129446	0.020679	0.005026	0.016032	0.054515	0.001184	0.001555	0.005196	0.000618	0.000931

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Unmitigated	1.1000e-003	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0300e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.1900e-003	2.1900e-003	1.0000e-005		2.3400e-003
Total	**1.1000e-003**	**1.0000e-005**	**1.0300e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.1900e-003**	**2.1900e-003**	**1.0000e-005**		**2.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B – OPERATIONAL EMISSION CALCULATIONS

Baseline Annual Criteria Pollutant Emissions (lb/yr)

Unit	NO_X	SO_X	PM_{10}	CO	VOC
	Annual Emissions (lb/year)				
N-8234-1 Receiving, storage, load-out	0	0	345	0	0
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	0	0	137	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	5,044	0	0
N-8234-4 Line 1	3,571	424	12,589	16,666	1,028
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	0	0	0	0	0
3-RTO Units	44,916	374	998	115,573	722
N-8234-7 Packaging Line 1	0	0	104	0	0
N-8234-8 Packaging Line 2	0	0	107	0	0
N-8234-9 Packaging Line 3	0	0	21	0	0
N-8234-14 Thiele Packaging Line 4	0	0	34	0	0
N-8234-10 Boiler-1	775	201	211	2,605	282
N-8234-11 Boiler-2					
N-8234-12 Emergency Diesel Fire pump	66	0.02	3	20	8
Total Stationary Source Emissions	***49,328***	***999***	***19,592***	***134,864***	***2,041***
Trucks & Worker Vehicles	5,013	21	30	2,011	183
Trains	481	0.5	9	184	43
Total Mobile Source Emissions	***5,494***	***21***	***39***	***2,195***	***226***
Total Annual Baseline Emissions	**54,822**	**1,021**	**19,632**	**137,059**	**2,267**

Line 4 Project Incremental Criteria Pollutant Annual Emissions (lb/yr)

Unit	NO_X	SO_X	PM_{10}	CO	VOC
	Annual Emissions (lb/year)				
N-8234-1 Receiving, storage, load-out	0	0	143	0	0
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	0	0	60	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	2,175	0	0
N-8234-4 Line 1	0	0	0	0	0
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	2,091	248	5,776	9,757	472
3-RTO Units	14,972	125	333	38,524	241
N-8234-7 Packaging Line 1	0	0	30	0	0
N-8234-8 Packaging Line 2	0	0	30	0	0
N-8234-9 Packaging Line 3	0	0	41	0	0
N-8234-14 Thiele Packaging Line 4	0	0	34	0	0
N-8234-10 Boiler-1	353	91	96	1,187	128
N-8234-11 Boiler-2					
N-8234-12 Emergency Diesel Fire pump	0	0	0	0	0
Total Stationary Source Emissions	***17,416***	***464***	***8,718***	***49,468***	***841***
Trucks & Worker Vehicles	2,346	9	13	533	77
Trains	0	0	0	0	0
Total Mobile Source Emissions	***2,346***	***9***	***13***	***533***	***77***
Total Annual Incremental Emissions	**19,762**	**472**	**8,731**	**50,002**	**918**

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Line 4 Project Incremental Criteria Pollutant Daily Emissions (lb/day)

Unit	NO_X	SO_X	PM_{10}	CO	VOC
	Daily Emissions (lb/day)				
N-8234-1 Receiving, storage, load-out	0	0	0.45	0	0
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	0	0	2.17	0	0
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	5.96	0	0
N-8234-4 Line 1	0	0	0	0	0
N-8234-5 Line 2					
N-8234-6 Line 3					
N-8234-15 Line 4	5.76	0.68	15.91	26.88	1.30
3-RTO Units	47.40	0.40	1.05	121.97	0.76
N-8234-7 Packaging Line 1	0	0	0.08	0	0
N-8234-8 Packaging Line 2	0	0	0.08	0	0
N-8234-9 Packaging Line 3	0	0	0.11	0	0
N-8234-14 Thiele Packaging Line 4	0	0	0.09	0	0
N-8234-10 Boiler-1	0.97	0.25	0.26	3.25	0.35
N-8234-11 Boiler-2					
N-8234-12 Emergency Diesel Fire pump	0	0	0	0	0
Total Stationary Source Emissions	***54.13***	***1.33***	***26.18***	***152.10***	***2.41***
Trucks & Worker Vehicles	6.75	0.03	0.04	1.51	0.22
Trains	0	0	0	0	0
Total Mobile Source Emissions	***6.75***	***0.03***	***0.04***	***1.51***	***0.22***
Total Daily Incremental Emissions	**60.88**	**1.35**	**26.22**	**153.61**	**2.64**

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Diamond Pet Food Processors of Ripon
Pet Food Material Transfer and Storage Operations (N-8432-1)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Throughput	631 tons/day	300 tons/day	1200 tons/day
Max. Annual Throughput	230,141 tons/year	95,000 tons/year	380,000 tons/year
Capacity	61%	25%	100%
Operating Schedule			
365 days/year			
24 hours/day			

Criteria Pollutant	Emission Factor (lb/tons of material processed)
PM_{10}	0.0015

N-8432-1 Emissions			
Criteria Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
Daily PM_{10}	0.9 lbs/day	0.45 lbs/day	1.8 lbs/day
Annual PM_{10}	345.2 lbs/year	142.5 lbs/year	570.0 lbs/year

Notes:

Maximum annual material throughput during 2015-2017 occurred in 2017. Daily throughput based on the annual emissions / 365 days/

There are no proposed changes to the daily or annual throughput due to permitting for Line 4.

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Diamond Pet Food Processors of Ripon

Pet Food Material Dispensing, Pre-grinding, Conveying and Storage Operations (N-8432-2)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Pre-grind Throughput	16 tons/day	100 tons/day	400 tons/day
Max. Daily Mill Tower Throughput	185 tons/day	275 tons/day	1,100 tons/day
Max. Annual Pre-grind Throughput	5,711 tons/year	2,500 tons/year	10,000 tons/year
Max. Annual Mill Tower Throughput	67,650 tons/year	**30,000 tons/year**	**120,000 tons/year**
Pre-grind Capacity	12%	25%	100%
Mill Tower Capacity	75%	25%	100%
Operating Schedule			
365 days/year			
24 hours/day			

Criteria Pollutant	Emission Factor (lb/tons of material processed)
PM_{10} - pregrinding	0.021
PM_{10} - material handling	0.00025

N-8432-2 Emissions			
Criteria Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
Daily PM_{10}	0.4 lbs/day	2.2 lbs/day	8.7 lbs/day
Annual PM_{10}	136.8 lbs/year	60.0 lbs/year	240.0 lbs/year

Notes:

Maximum annual pre-grind material throughput during 2015-2017 occurred in 2015. Daily throughput based on the annual emissions / 365 days/yr

Maximum annual mill tower material throughput during 2015-2017 occurred in 2016. Daily throughput based on the annual emissions / 365 days/yr

The pre-grind daily permitted capacity will not change. The annual capacity will decrease from 47000 tpy to 10000 tpy.

The mill tower permitted capacity will increase from 800 tpd to 1100 tpd, and the annual capacity will increase from 90000 tpy to 120000 tpy.

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Diamond Pet Food Processors of Ripon

aterial Dispensing, Mixing, Grinding and Screening, Extrusion Surge Bins, and Associated Conveying Operations

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Hammermill Systems Throughput	631 tons/day	275 tons/day	1100 tons/day
Max. Daily Truck Loadout Throughput	631 tons/day	200 tons/day	800 tons/day
Max. Annual Hammermill System Throughput	230,141 tons/year	100,375 tons/year	401,500 tons/year
Max. Annual Tower Loading Throughput	230,141 tons/year	73,000 tons/year	292,000 tons/year
Capacity of permit max	79%	25%	100%
Operating Schedule			
365 days/year			
24 hours/day			

Criteria Pollutant	Emission Factor (lb/tons of material processed)
PM_{10} -Hammermill Systems	0.021
PM_{10} - Truck Loadout	0.000917

In Project N-1122403, the 0.000917 lb/ton for truck loadout operation includes Animal Feed Mills Feed Shipping EF from AP-42, Table 9.9.1-2 (3/03), which was stated as 0.0008 lb/tons. Upon review, the Animal Feed Mills Feed Shipping used was without control factor applied.

N-8432-3 Emissions

Criteria Pollutant	Baseline	Project Increment	Post-Project Permitted Emissions
Daily PM_{10}	13.8 lbs/day	6.0 lbs/day	23.8 lbs/day
Annual PM_{10}	5,044 lbs/year	2,175 lbs/year	8,699 lbs/year

Notes:

Maximum annual material throughput during 2015-2017 occurred in 2017. Daily throughput based on the annual emissions / 365 days/yr

The hammermill permitted capacity will increase from 800 tpd to 1100 tpd. There is no separate annual limit.

There is no proposed change to the daily throughput for the tower/truck-loadout due to permitting for Line 4. There is no separate annual limit.

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Diamond Pet Food Processors of Ripon
Pet Food Processing Line - Dryers and RTOs (N-8234-4,5,6,15)

Dryer Parameters			
Source Parameterization	**Baseline**	**Project Increment**	**Post-Project Permitted Capacity**
Max. Daily Production (ton/day)	780	260	1040
Annual Production all lines (ton/yr)	205,697	94,380	377,520
Annual Production capacity	73%	25%	100%
# of production line	3	1	4
Dryer Capacity	57%	100 % Line-4 Dryer	100%
Each Dryer Burner Rating (MMBtu/hr)	10	10	10
Hour - Total Dryer Burner Rating (MMBtu/hr)	17.1	10	40
Day - Total Dryer Burner Rating (MMBtu/day)	410	240	960
Annual - Total Dryer Burner Rating (MMBtu/yr)	148,805	87,120	348,480
Dryer Operating Schedule			
24	hour/day		
363	day/year		

Notes:

Maximum annual production capacity during 2015-2017 occurred in 2016

Maximum annual dryer operations capacity during 2015-2017 occurred in 2017

Dryer Emission Factors			
Criteria Pollutant	**Emission Factor**	**Units**	**Reference**
NO_X	0.024	lb/MMBtu	PTO
SO_X	0.00285	lb/MMBtu	PTO
PM_{10}	0.0612	lb/tons of finished	PTO
CO	0.112	lb/MMBtu	PTO
VOC	0.005	lb/tons of finished material	SJVAPCD RTO Engineering Evaluation 2/23/18

Total Dryer Annual Emissions (lb/yr)			
Criteria Pollutant	**Baseline Dryers (N-8234-4,5,6)**	**Project Increment Dryer (N-8234-15)**	**Post-Project Dryers Permitted Capacity (N-8234-4,5,6,15)**
NO_X	3,571	2,091	8,364
SO_X	424	248	993
PM_{10}	12,589	5,776	23,104
CO	16,666	9,757	39,030
VOC	1,028	472	1,888

Total Dryer Short-term Emissions		
Criteria Pollutant	**Project Increment Hourly Emissions (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
NO_X	0.24	5.8
SO_X	0.03	0.7
PM_{10}	0.66	15.9
CO	1.12	26.9
VOC	0.054	1.3

RTO Parameters			
Source Parameterization	**Baseline**	**Project Increment**	**Post-Project Permitted Capacity**
Number of RTOs	3	3	3
Total RTO Capacity	75%	25%	100%
Max RTO Fuel Consumption during Startup or Steady State Operation (MMBtu/hr)	7.7	7.7	7.7
Annual Average RTO Fuel Consumption during Normal Steady State Operation (MMBtu/hr)	6.7	6.7	6.7
Max Hour - Total RTO Rating (MMBtu/hr)	17.325	5.775	23.1
Max Daily - Total RTO Rating (MMBtu/day)	415.8	138.6	554.4
Annual - Total RTO Rating (MMBtu/yr)	131,333	43,778	175,111

RTO Operating Schedule		
Estimated Downtime	2	days/year
Estimated Downtime	48	hours/yr
Estimated Start-up Events	7	events/year
Estimated Start-up Period	5	hours/event
RTO High Fire Operating Schedule	35	hours/yr
RTO Normal Operating Schedule	8677	hours/yr
RTO Annual Operating Hours	8712	hours/yr

RTO Combustion Emission Factors			
Criteria Pollutant	**Emission Factor Steady State**	**Units**	**Reference**
NO_X	0.342	lb/MMBtu	Source test Jan 2019
SO_X	0.00285	lb/MMBtu	SJVAPCD APR-1720
PM_{10}	0.0076	lb/MMBtu	AP-42 1.4
CO	0.88	lb/MMBtu	Source test Jan 2019
VOC	0.0055	lb/MMBtu	AP-42 1.4

Total RTO Annual Emissions (lb/yr)			
Criteria Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
NO_X	44,916	14,972	59,888
SO_X	374	125	499
PM_{10}	998	333	1,331
CO	115,573	38,524	154,098
VOC	722	241	963

Total RTO Short-term Emissions		
Criteria Pollutant	**Project Increment Hourly Emissions Steady State (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
NO_X	1.975	47.40
SO_X	0.016	0.40
PM_{10}	0.044	1.05
CO	5.082	121.97
VOC	0.032	0.76

Greenhouse Gas Emissions

CARB Greenhouse Gas Default Factors		
Greenhouse Gas	**Emission Factors (kg/MMBtu)**	**Global Warming Potentials**
CO_2	66.88	1
CH_4	0.0010	25
N_2O	0.0001	298

Notes:

Emission Factors are from 40 CFR Part 98, Subpart C,Tables C-1 and C-2, Dec. 9, 2016.

Global Warming Potentials (GWP) are from 40 CFR Part 98, Subpart A, Table A-1, January 1, 2014.

Dryer GHG Annual Emissions (MT/yr)			
Greenhouse Gas	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
CO_2	9,952	5,827	23,306
CH_4	0.149	0.087	0.348
N_2O	0.015	0.009	0.035
CO_2e	**9,960**	**5,831**	**23,325**

RTO GHG Annual Emissions (MT/yr)			
Greenhouse Gas	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
CO_2	8,784	2,928	11,711
CH_4	0.131	0.044	0.175
N_2O	0.013	0.004	0.018
CO_2e	**8,791**	**2,930**	**11,721**

Diamond Pet Food Processors of Ripon
Pet Food Packaging Operations (N-8432-7,8,9,14)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Individual or Total Daily Throughput	637 tons/day	300 tons/day	1200 tons/day
Max. Total Annual Throughput	232,652 tons/year	109,500 tons/year	438,000 tons/year
Capacity	53%	25%	100%
N-8234-7 Packaging Line 1 Throughput	94,149 tons/year	27,375 tons/year	109,500 tons/year
N-8234-8 Packaging Line 2 Throughput	97,308 tons/year	27,375 tons/year	109,500 tons/year
N-8234-9 Packaging Line 3 Throughput	13,908 tons/year	27,375 tons/year	109,500 tons/year
N-8234-14 Thiele Packaging Line 4 Throughput	27,287 tons/year	27,375 tons/year	109,500 tons/year
Operating Schedule			
365 days/year			
24 hours/day			

Source	PM_{10} Emission Factor (lb/tons of material processed)	Emission Factor Source
N-8234-7 Packaging Line 1	0.0011	ATC 4/5/2016
N-8234-8 Packaging Line 2	0.0011	ATC 4/5/2016
N-8234-9 Packaging Line 3	0.0015	ATC 4/5/2016
N-8234-14 Thiele Packaging Line 4	0.00125	ATC 4/5/2016

N-8432-7,8,9,14 Annual Emissions

Source	Baseline	Project Increment	Post-Project Permitted Emissions
	PM_{10} Annual Emission (lb/yr)		
N-8234-7 Packaging Line 1	103.56	30.11	120.45
N-8234-8 Packaging Line 2	107.04	30.11	120.45
N-8234-9 Packaging Line 3	20.86	41.06	164.25
N-8234-14 Thiele Packaging Line 4	34.11	34.22	136.88

N-8432-7,8,9,14 Short-term Emissions

Source	Project Increment PM_{10} Hourly Emission (lb/hour)	Project Increment PM_{10} Daily Emission (lb/day)
N-8234-7 Packaging Line 1	0.0034	0.0825
N-8234-8 Packaging Line 2	0.0034	0.0825
N-8234-9 Packaging Line 3	0.0047	0.1125
N-8234-14 Thiele Packaging Line 4	0.0039	0.0938

Notes:

N-8234-7 Packaging Line-1

N-8234-8 Packaging Line-2

N-8234-9 Packaging Line-3

N-8234-14 Thiele Packaging Line 4

The naming of these sources does not link them with the production lines

Maximum annual production throughput during 2015-2017 occurred in 2016 for Lines 1-3 and in 2017 for the Thiele Line 4. Daily throughput based on the annual emissions / 365 days/yr

There are no proposed changes to the daily or annual throughput due to permitting for Line 4.

Diamond Pet Food Processors of Ripon
Boilers (N-8234-10,11)

Source Parameterization	Baseline	Project Increment	Post-Project Permitted Capacity
Boiler Rating (MMBtu/hr)	14.65	14.65	14.65
Capacity	55%	25%	100%
Annual rating (MMBtu/yr)	70,412	32,084	128,334
Annual fuel usage (mmscf/yr)	69.03	31.45	125.82
Operating Schedule			
365 days/year			
24 hours/day			

Notes:

Maximum annual boiler operations during 2015-2017 occurred in 2017

One boiler is a backup, thus only 1 is considered in emission calculations

The permit limits the annual emissions to the capacity of one boiler.

Criteria Pollutant Emissions

Boiler Emission Factors - Criteria Pollutants		
Criteria Pollutant	**Emission Factor**	**Units**
NO_X	0.011	lb/MMBtu
SO_X	0.00285	lb/MMBtu
PM_{10}	0.003	lb/MMBtu
CO	0.037	lb/MMBtu
VOC	0.004	lb/MMBtu
NH3	0.0045	lb/MMBtu

Emission factors are from the PTO or SJVAPCD APR-1110 for PM10.

Boiler Criteria Pollutant Annual Emissions (lb/yr)			
Criteria Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
NO_X	775	353	1,412
SO_X	201	91	366
PM_{10}	211	96	385
CO	2,605	1,187	4,748
VOC	282	128	513

Boiler Criteria Pollutant Short-term Emissions		
Criteria Pollutant	**Project Increment Hourly Emissions (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
NO_X	0.040	0.967
SO_X	0.010	0.251
PM_{10}	0.011	0.264
CO	0.136	3.252
VOC	0.015	0.352

Greenhouse Gas Emissions

CARB Greenhouse Gas Default Factors		
Greenhouse Gas	**Emission Factors (kg/MMBtu)**	**Global Warming Potentials**
CO_2	66.88	1
CH_4	0.0010	25
N_2O	0.0001	298

Notes:

Emission Factors are from 40 CFR Part 98, Subpart C,Tables C-1 and C-2, Dec. 9, 2016.

Global Warming Potentials (GWP) are from 40 CFR Part 98, Subpart A, Table A-1, January 1, 2014.

Boiler GHG Annual Emissions (MT/yr)			
Greenhouse Gas	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
CO_2	4,709	2,146	8,583
CH_4	0.0704	0.0321	0.1283
N_2O	0.0070	0.0032	0.0128
CO_2e	**4,713**	**2,148**	**8,590**

Diamond Pet Food Processors of Ripon
Fire Pump (N-8234-12)

Source Parameterization	*Baseline*	*Project Increment*	*Post-Project Permitted Capacity*
Engine Rating (hp)	270	270	270
Estimated Engine Rating (MMBtu/hr)	0.687	0.687	0.687
Estimated fuel usage (gal/hr)	4.98	4.98	4.98
Operating Schedule			
hour/day	1	0	1
hours/year	18.5	0	100.0

Notes:

Maximum annual fire pump operations during 2015-2017 occurred in 2015

Heating Value (MMBtu/gallon)	0.138
Conversion factor (Btu/hr /hp)	2543.5
Diesel sulfur content (%)	0.0015
Density of diesel (lb/gal)	7.05
Molecular weight SO2 (lb/lb-mol)	64
Molecular weight S (lb/lb-mol)	32

Criteria Pollutant Emissions

Fire Pump Emission Factors - Criteria Pollutants		
Criteria Pollutant	**Emission Factor**	**Units**
NO_X	6.03	g/hp-hr
SO_X	0.0002	lb/gal
PM_{10}	0.25	g/hp-hr
CO	1.79	g/hp-hr
VOC	0.76	g/hp-hr

Notes:

Emission factors from the permit

SO2 emission factor from the permit based on 0.0015% sulfur by weight

The fire pump emissions will not change operations due to the line 4 project.

Fire Pump Criteria Pollutant Annual Emissions (lb/yr)			
Criteria Pollutant	***Baseline***	***Project Increment***	***Post-Project Permitted Emissions***
NO_X	66.45	0.00	358.61
SO_X	0.02	0.00	0.11
PM_{10}	2.76	0.00	14.87
CO	19.73	0.00	106.45
VOC	8.38	0.00	45.20

Fire Pump Criteria Pollutant Short-term Emissions		
Criteria Pollutant	***Project Increment Hourly Emissions (lb/hr)***	***Project Increment Daily Emissions (lb/day)***
NO_X	0.000	0.000
SO_X	0.000	0.000
PM_{10}	0.000	0.000
CO	0.000	0.000
VOC	0.000	0.000

Greenhouse Gas Emissions

CARB Greenhouse Gas Default Factors		
Greenhouse Gas	**Emission Factors (kg/MMBtu)**	**Global Warming Potentials**
CO_2	73.96	1
CH_4	0.0030	25
N_2O	0.0006	298

Notes:

Emission Factors for Distillate Fuel Oil No. 2 from 40 CFR Part 98, Subpart C,Tables C-1 and C-2, Dec. 9, 2016.

Global Warming Potentials (GWP) are from 40 CFR Part 98, Subpart A, Table A-1, January 1, 2014.

Fire Pump GHG Annual Emissions (MT/yr)			
Greenhouse Gas	***Baseline***	***Project Increment***	***Post-Project Permitted Emissions***
CO_2	0.941	0	5.079
CH_4	3.82E-05	0	2.06E-04
N_2O	7.64E-06	0	4.12E-05
CO_2e	**0.94**	**0.00**	**5.10**

Train Emissions							
Purpose	**Locomotive Type**	**Railcars per day**	**Railcars per month**	**Railcars per year**	**Locomotive Engine Power Rating (hp)**	**Percentage of full power**	**Time Operating Onsite per Railcar (hr)**
Baseline							
Delivery Locomotive	Line-haul Locomotives	3	62	744	3000	5%	0.17
Switching Locomotive (on site Trakmobile)	Switch Locomotive	3	62	744	130	48%	0.50
Project Increment							
Delivery Locomotive	Line-haul Locomotives	0	0	0	3000	5%	0.17
Switching Locomotive (on site Trakmobile)	Switch Locomotive	0	0	0	130	48%	0.50

Trackmobile, Model: Viking, Engine Spec: TM-1084842, 130 HP, Tier 3, Manufactured March 2012

Baseline: 9 months of data from 2016 averaged 62 railcars per month. the railcar mover ran an average of 32.7 hours per month. Therefore 30 minutes of use per railcar.

Diamond's policy is to only move 2 or less cars at a time. The Trackmobile is under load (2 cars) ~40% of the time and ~60% without a load; and never under full load of 3 cars as designed.

Trackmobile average load conservatively estimated to be = 40% x 90% load + 60% x 20%

Project Increase: The average of 62 cars per month will remain even with the addition of a fourth line, as we will start receiving peas via truck loads, which accounts for ten cars per month we are currently receiving.

Project data identifies 1 railcar per delivery locomotive and 1 designated onsite switch engine.

Delivery locomotives spend approximately 10 minutes per railcar dropping and picking up in the 0.25 miles next to the site

7	days/week
52	weeks/year

Onsite Train Criteria Pollutant Emissions

Phase	Emissions	NOx	SO2	PM10	CO	VOC
Baseline						
Delivery Locomotives	Line-Haul Tier 2-3 Emission Factor (g/bhp-hr)	5.50	0.005	0.10	1.50	0.30
	Emission Rate per Locomotive (lb)	0.30	0.000	0.01	0.08	0.02
	Daily Emission Rate all Locomotives (lb/day)	0.91	0.001	0.02	0.25	0.05
	Annual Emission Rate all Locomotives (lb/yr)	225.3	0.186	4.1	61.5	12.3
	Annual Emission Rate all Locomotives (ton/yr)	0.113	0.0001	0.002	0.031	0.006
Switch Engines	Switch Engine Tier 3 Emission Factor (g/bhp-hr)	5.00	0.006	0.10	2.40	0.60
	Emission Rate per Locomotive (lb)	0.34	0.000	0.01	0.16	0.04
	Daily Emission Rate all Locomotives (lb/day)	1.03	0.001	0.02	0.49	0.12
	Annual Emission Rate all Locomotives (lb/yr)	255.6	0.32	5.11	122.7	30.68
	Annual Emission Rate all Locomotives (ton/yr)	0.128	0.000	0.003	0.061	0.015
Total	**Annual Emissions (lb/yr)**	**481.0**	**0.5**	**9.2**	**184.2**	**43.0**
Project Increment						
Delivery Locomotives	Line-Haul Tier 2-3 Emission Factor (g/bhp-hr)	5.50	0.005	0.10	1.50	0.30
	Emission Rate per Locomotive (lb)	0.30	0.000	0.01	0.08	0.02
	Daily Emission Rate all Locomotives (lb/day)	0.00	0.000	0.00	0.00	0.00
	Annual Emission Rate all Locomotives (lb/yr)	0.0	0.000	0.0	0.0	0.0
	Annual Emission Rate all Locomotives (ton/yr)	0.000	0.0000	0.000	0.000	0.000
Switch Engines	Switch Engine Tier 3 Emission Factor (g/bhp-hr)	5.00	0.006	0.10	2.40	0.60
	Emission Rate per Locomotive (lb)	0.34	0.00	0.01	0.16	0.04
	Daily Emission Rate all Locomotives (lb/day)	0.00	0.00	0.00	0.00	0.00
	Annual Emission Rate all Locomotives (lb/yr)	0.0	0.00	0.00	0.00	0.00
	Annual Emission Rate all Locomotives (ton/yr)	0.000	0.000	0.000	0.000	0.000
Total	**Annual Emissions (lb/yr)**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Notes:

Sulfur content (ppm) 15

density of diesel fuel (lb/gal) 6.94

SO2 (g/bhp-hr) = (fuel density) × (64 g SO2/32 g S) × (s content of fuel) x (conversion factor bhp-hr/gal)

Emission factors: 40 CFR PART 1033—CONTROL OF EMISSIONS FROM LOCOMOTIVES

The majority of the time the line-haul engine will operate in Notch 1 or idling, therefore emissions were conservatively estimated for Notch 1 horsepow
Notch percentage presented in PORT OF LONG BEACH AIR EMISSIONS INVENTORY for 2007 (POLB, Jan 2009) derived from EPA data.

Locomotive type	EPA Conversion Factors (bhp-hr/gal)
Large Line-haul	20.8
Switching	15.2

Onsite Train Greenhouse Gas Emissions

Phase	Emissions	Fuel usage per railcar moved (gal)	CO2	CH4	N2O	CO2e
Baseline						
	Global Warming Potential		1	25	298	
Delivery Locomotives	Emission factor (g/gal)	1.2	10,210	0.8	0.3	-
	Emission Rate per Locomotive (lb)		27	0.0	0.0	27
	Annual Emission Rate all Locomotives (MT/yr)		9	0.0	0.0	9
Switch Engines	Emission factor (g/gal)	2.1	10,210	0.8	0.3	-
	Emission Rate per Locomotive (lb)		46	0.0	0.0	47
	Annual Emission Rate all Locomotives (MT/yr)		16	0.0	0.0	16
Total	**Annual Emission Rate all Locomotives (MT/yr)**		**24.7**	**0.002**	**0.001**	**24.9**
Project Increment						
Delivery Locomotives	Emission factor (g/gal)	1.2	10,210	0.8	0.3	-
	Emission Rate per Locomotive (lb)		27	0.0	0.0	27
	Annual Emission Rate all Locomotives (MT/yr)		0	0.0	0.0	0
Switch Engines	Emission factor (g/gal)	2.1	10,210	0.8	0.3	-
	Emission Rate per Locomotive (lb)		46	0.0	0.0	47
	Annual Emission Rate all Locomotives (MT/yr)		0	0	0	0
Total	**Annual Emission Rate all Locomotives (MT/yr)**		**0**	**0**	**0**	**0**

EPA, Greenhouse Gas Inventory Guidance, Direct Emissions from Mobile Combustion Sources, Jan 2016

Tables A-1 CO2, and B-8, for rail for CH4 & N2O

Train Model Inputs

AERMOD source parameters

The District recommends the following for modeling vehicles on paved roadways:

1. Separate volume sources

2. Top of Plume Height = 1.0 x VH	16 ft	4.88 m		
3. Volume Source Release Height = 0.5 x Top of Plume Height	8 ft	2.44 m		
VW = vehicle width	12 ft	3.66 m		
4. Width of Plume = VW or lane width	31.7 ft	9.66 m	AERMOD View input	4.83 m

From EPA - Width of Plume = VW + 6m for single lane roadways / Road Width + 6mfor two lane roadways

5. Initial Sigma Z - Top of Plume Height/2.15	7.44 ft	2.27 m		
6. Initial Sigma Y - Width of Plume/2.15	14.74 ft	4.49 m		
7. Emissions input as g/s				

SJVAPCD Guidance from Glenn T. Reed, Senior Air Quality Specialist, Thursday, August 22, 2013

Project Increment

		Hourly Emissions (lb/hr)				
3 truck segments	**Volume source length (m)**	**NOx**	**SO2**	**PM10**	**CO**	**VOC**
RAIL1	300.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RAIL2	117.5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RAIL3	53.4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total Onsite Rail	**471.1**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Total Offsite Rail	**398.3**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

		Annual Emissions (lb/yr)				
3 truck segments	**Volume source length (m)**	**NOx**	**SO2**	**PM10**	**CO**	**VOC**
RAIL1	300.2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RAIL2	117.5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RAIL3	53.4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total Onsite Rail	**471.1**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Total Offsite Rail	**398.3**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

Truck Emissions

Purpose	Vehicle Type	Vehicles per day	Vehicles per week	Vehicles per year	Distance travelled onsite roundtrip (miles)	Distance travelled offsite roundtrip (miles)	Idling Time onsite per Vehicle (hr)
Baseline							
Raw Material Deliveries	HHDT Trucks	17	114	5928	0.15	30	0.083
Product Deliveries	HHDT Trucks	28	190	9880	0.15	30	0.083
Supply deliveries	HHDT Trucks	1	5	260	0.15	30	0.083
Workers	Passenger vehicles	48	336	17472	0.15	30	NA
Project Increment							
Raw Material Deliveries	HHDT Trucks	9	57	2964	0.15	30	0.083
Product Deliveries	HHDT Trucks	13	90	4680	0.15	30	0.083
Supply deliveries	HHDT Trucks	0	0	0	0.15	30	0.083
Workers	Passenger vehicles	8	56	2912	0.15	30	NA

HHDT = Heavy-heavy-duty trucks
Average speed onsite = 10 mph
Average speed offsite = 40 mph

7	days/week
52	weeks/year

Truck Criteria Pollutant Emissions

Phase	Emissions	NOx	SO2	PM10	CO	VOC
HHDT Emission factors	Idling Emission Factor (g/hr)	72.75	0.15	0.11	9.61	2.57
	Emission Factor Onsite (g/mile)	16.49	0.02	0.06	3.47	0.90
	Emission Factor Offsite (g/mile)	4.32	0.02	0.03	0.56	0.13
Passenger vehicle Emission factors	Emission Factor Onsite (g/mile)	0.16	0.003	0.01	1.78	0.09
	Emission Factor Offsite (g/mile)	0.11	0.003	0.002	1.18	0.03

Location	Phase	NOx	SO2	PM10	CO	VOC	NOx	SO2	PM10	CO	VOC
Baseline											
		Daily Emission Rate all Trucks (lb/day)					**Annual Emission Rate all Trucks (lb/yr)**				
Onsite Idling	Raw Material Deliveries	2.27E-01	4.55E-04	3.30E-04	3.00E-02	8.00E-03	79.2	0.2	0.1	10.5	2.8
	Product Deliveries	3.74E-01	7.49E-04	5.43E-04	4.94E-02	1.32E-02	131.9	0.3	0.2	17.4	4.7
	Supply deliveries	1.34E-02	2.67E-05	1.94E-05	1.76E-03	4.71E-04	3.5	0.0	0.0	0.5	0.1
Onsite travel	Raw Material Deliveries	9.35E-02	8.80E-05	3.17E-04	1.97E-02	5.12E-03	32.6	0.0	0.1	6.9	1.8
	Product Deliveries	1.54E-01	1.45E-04	5.21E-04	3.24E-02	8.43E-03	54.4	0.1	0.2	11.4	3.0
	Supply deliveries	5.50E-03	5.18E-06	1.86E-05	1.16E-03	3.01E-04	1.4	0.0	0.0	0.3	0.1
	Passenger vehicles	2.55E-03	5.35E-05	1.27E-04	2.85E-02	1.40E-03	0.9	0.0	0.0	10.4	0.5
Offsite travel	Raw Material Deliveries	4.85E+00	1.74E-02	2.83E-02	6.29E-01	1.47E-01	1,691.5	6.1	9.9	219.3	51.1
	Product Deliveries	7.99E+00	2.87E-02	4.66E-02	1.04E+00	2.42E-01	2,819.2	10.1	16.4	365.5	85.2
	Supply deliveries	2.85E-01	1.03E-03	1.66E-03	3.70E-02	8.63E-03	74.2	0.3	0.4	9.6	2.2
	Passenger vehicles	3.41E-01	1.06E-02	7.66E-03	3.73E+00	8.71E-02	124.0	3.9	2.8	1,359.0	31.7
Total		**1.43E+01**	**5.93E-02**	**8.61E-02**	**5.60E+00**	**5.21E-01**	**5,012.8**	**20.9**	**30.2**	**2,010.8**	**183.3**
Project Increment											
		Daily Emission Rate all Trucks (lb/day)					**Annual Emission Rate all Trucks (lb/yr)**				
Onsite Idling	Raw Material Deliveries	1.20E-01	2.41E-04	1.75E-04	1.59E-02	4.24E-03	39.6	0.1	0.1	5.2	1.4
	Product Deliveries	1.74E-01	3.48E-04	2.52E-04	2.29E-02	6.12E-03	62.5	0.1	0.1	8.3	2.2
	Supply deliveries	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	0.0	0.0	0.0	0.0
Onsite travel	Raw Material Deliveries	4.95E-02	4.66E-05	1.68E-04	1.04E-02	2.71E-03	16.3	0.0	0.1	3.4	0.9
	Product Deliveries	7.15E-02	6.73E-05	2.42E-04	1.50E-02	3.91E-03	25.7	0.0	0.1	5.4	1.4
	Supply deliveries	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	0.0	0.0	0.0	0.0
	Passenger vehicles	4.26E-04	8.91E-06	2.11E-05	4.74E-03	2.33E-04	0.2	0.0	0.0	1.7	0.1
Offsite travel	Raw Material Deliveries	2.57E+00	9.23E-03	1.50E-02	3.33E-01	7.77E-02	845.8	3.0	4.9	109.6	25.6
	Product Deliveries	3.71E+00	1.33E-02	2.16E-02	4.81E-01	1.12E-01	1,335.4	4.8	7.8	173.1	40.4
	Supply deliveries	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0	0.0	0.0	0.0	0.0
	Passenger vehicles	5.68E-02	1.76E-03	1.28E-03	6.22E-01	1.45E-02	20.7	0.6	0.5	226.5	5.3
Total		**6.75E+00**	**2.50E-02**	**3.88E-02**	**1.51E+00**	**2.22E-01**	**2,346.1**	**8.7**	**13.5**	**533.3**	**77.2**

Assumes all delivery trucks are diesel HHDT

Truck Greenhouse Gas Emissions

Phase	Emissions	CO2	CH4	N2O	CH4 & N2O Emission Factor reference
HHDT Emission factors	Idling Emission Factor (g/hr)	15294	Neg	Neg	
	Emission Factor Onsite (g/mile)	3039	0.0051	0.0048	Table B-1 HHDT
	Emission Factor Offsite (g/mile)	1623	0.0051	0.0048	Table B-1 HHDT
Passenger vehicle Emission factors	Emission Factor Onsite (g/mile)	795	0.0173	0.0036	Table B-2 Passenger cars
	Emission Factor Offsite (g/mile)	363	0.0173	0.0036	Table B-2 Passenger cars
Global Warming Potential		1	25	298	

Location	Phase	CO2	CH4	N2O	CO2e
Baseline					
		Annual Emission Rate all Trucks (MT/yr)			
Onsite Idling	Raw Material Deliveries	7.6			7.6
	Product Deliveries	12.6			12.6
	Supply deliveries	0.3			0.3
Onsite travel	Raw Material Deliveries	2.7	0.000	0.000	2.7
	Product Deliveries	4.5	0.000	0.000	4.5
	Supply deliveries	0.1	0.000	0.000	0.1
	Passenger vehicles	2.1	0.000	0.000	2.1
Offsite travel	Raw Material Deliveries	288.4	0.001	0.001	288.7
	Product Deliveries	480.7	0.002	0.001	481.1
	Supply deliveries	12.6	0.000	0.000	12.7
	Passenger vehicles	190.1	0.009	0.002	190.9
Total		**1,001.8**	**0.012**	**0.004**	**1,003.4**
Project Increment					
		Annual Emission Rate all Trucks (MT/yr)			
Onsite Idling	Raw Material Deliveries	3.8			3.8
	Product Deliveries	6.0			6.0
	Supply deliveries	0.0			0.0
Onsite travel	Raw Material Deliveries	1.4	0.000	0.000	1.4
	Product Deliveries	2.2	0.000	0.000	2.2
	Supply deliveries	0.0	0.000	0.000	0.0
	Passenger vehicles	0.4	0.000	0.000	0.4
Offsite travel	Raw Material Deliveries	144.2	0.000	0.000	144.3
	Product Deliveries	227.7	0.001	0.001	227.9
	Supply deliveries	0.0	0.000	0.000	0.0
	Passenger vehicles	31.7	0.002	0.000	31.8
Total		**417.2**	**0.003**	**0.001**	**417.7**

EPA, Greenhouse Gas Inventory Guidance, Direct Emissions from Mobile Combustion Sources, Jan 2016

Truck Model Inputs

The District recommends the following for modeling vehicles on paved roadways:

1. Separate volume sources					
2. Top of Plume Height = 1.0 x VH	13.6 ft	4.15 m			
3. Volume Source Release Height = 0.5 x Top of Plume Height	6.8 ft	2.07 m			
VW = vehicle width	9 ft	2.74 m			
4. Width of Plume = VW or lane width (Each lane should be modeled separately.)	28.7 ft	8.74 m	AERMOD View input	4.37 m	

From EPA - Width of Plume = VW + 6m for single lane roadways / Road Width + 6mfor two lane roadways

5. Initial Sigma Z - Top of Plume Height/2.15	6.33 ft	1.93 m
6. Initial Sigma Y - Width of Plume/2.15	13.34 ft	4.07 m
7. Emissions input as g/s		

SJVAPCD Guidance from Glenn T. Reed, Senior Air Quality Specialist, Thursday, August 22, 2013

			Project Increment									
			Hourly Emissions (lb/hr)					Annual Emissions (lb/yr)				
3 truck segments	Volume source length (m)	Emissions estimation distance basis (m)	NOx	SO2	PM10	CO	VOC	NOx	SO2	PM10	CO	VOC
TRUCKON	227.4	243.8	4.72E-03	4.77E-06	1.67E-05	1.17E-03	2.66E-04	3.94E+01	3.99E-02	1.40E-01	9.86E+00	2.22E+00
TRUCKIDLE	75.3	NA	1.22E-02	2.45E-05	1.78E-05	1.62E-03	4.32E-04	1.02E+02	2.04E-01	1.48E-01	1.35E+01	3.60E+00
TRUCKOFF	453.6	48,280	2.48E-03	9.52E-06	1.48E-05	5.62E-04	8.00E-05	2.07E+01	7.97E-02	1.24E-01	4.78E+00	6.69E-01

Includes worker vehicles

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Baseline Annual GHG Emissions

Unit	CO_2	CH_4	N_2O	CO_2e
	Annual Emissions (metric tons/year)			
Direct Emissions				
N-8234-4 Line 1	9,952	0.149	0.015	9,960
N-8234-5 Line 2				
N-8234-6 Line 3				
N-8234-15 Line 4	0	0	0	0
3-RTO Units	8,784	0.131	0.013	8,791
N-8234-10 Boiler-1	4,709	0.070	0.007	4,713
N-8234-11 Boiler-2				
N-8234-12 Emergency Diesel Fire pump	0.9	3.82E-05	7.64E-06	0.9
Total Stationary Source Emissions	***23,446***	***0.35***	***0.04***	***23,465***
Trucks & Worker Vehicles	1,002	0.012	0.004	1,003
Trains	25	0.002	0.001	25
Total Mobile Source Emissions	***1,027***	***0.01***	***0.00***	***1,028***
Annual Baseline Direct Emissions	**24,472**	**0.36**	**0.04**	**24,493**
Indirect Emissions				
Wastewater Usage Indirect Power Consumption	1	4.41E-05	9.37E-06	1
Electricity Usage Indirect Power Consumption	9,072	3.16E-01	6.72E-02	9,100
Annual Baseline Indirect Emissions	**9,073**	**0.32**	**0.07**	**9,101**
Total Annual Baseline Direct & Indirect Emissions	**33,546**	**0.68**	**0.11**	**33,594**

Line 4 Project Increment Annual GHG Emissions

Unit	CO_2	CH_4	N_2O	CO_2e
	Annual Emissions (metric tons/year)			
Direct Emissions				
N-8234-4 Line 1	0	0	0	0
N-8234-5 Line 2				
N-8234-6 Line 3				
N-8234-15 Line 4	5,827	0.087	0.009	5,831
3-RTO Units	2,928	0.044	0.004	2,930
N-8234-10 Boiler-1	2,146	0.032	0.003	2,148
N-8234-11 Boiler-2				
N-8234-12 Emergency Diesel Fire pump	0	0	0	0
Total Stationary Source Emissions	***10,900***	***0.16***	***0.02***	***10,909***
Trucks & Worker Vehicles	417	0.003	0.001	418
Trains	0	0	0	0
Total Mobile Source Emissions	***417***	***0.003***	***0.001***	***418***
Annual Project Incremental Direct Emissions	**11,317**	**0.17**	**0.02**	**11,327**
Indirect Emissions				
Wastewater Usage Indirect Power Consumption	0.4	1.47E-05	3.12E-06	0.4
Electricity Usage Indirect Power Consumption	1,814	6.32E-02	1.34E-02	1,820
Annual Project Incremental Indirect Emissions	**1,815**	**0.06**	**0.01**	**1,820**
Total Annual Project Incremental Direct & Indirect Emissions	**13,132**	**0.23**	**0.03**	**13,147**

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Indirect GHG Emissions

Water & Electricity Indirect Energy Consumption

Water Usage Data	Baseline	Project Increment
Process water all from onsite wells (gal/day)	10,500	3,500
Wastewater generation (gal/day)	4,800	1,600
Wastewater energy intensity Northern California (kWh/MG)	1,911	1,911
Wastewater - indirect energy usage (MW-hr/yr)	3	1

Since the process water is from existing onsite wells, there are no indirect GHG emissions associated with transport and processing.

Source: CEC, REFINING ESTIMATES OF WATER RELATED ENERGY USE IN CALIFORNIA, CEC-500-2006-118

MG = million gallons

Electricity Usage Data	Baseline	Project Increment
Annual Electricity Usage (MW-hr/yr)	24,003	4,801

Maximum electricity usage from 2016-2017 occurred in 2017.

Line 4 will require an electricity usage increase of 20%.

Emission factors	CO2	CH4	N2O	CO2e
CA power generation EF (lb/MW-hr)	833	0.029	0.00617	
Global Warming Potential	1	25	298	-

Emission factor source: CalEEMod for Modesto Irrigation District

Baseline Indirect GHG Emissions

Parameters	CO2	CH4	N2O	CO2e
	Annual Emissions (metric tons/year)			
Process Water Usage Indirect Power Consumption	0.0	0.0	0.0	0.0
Wastewater Usage Indirect Power Consumption	1.3	0.00004	0.00001	1.3
Electricity Usage Indirect Power Consumption	9072.0	0.3	0.1	9,100.0
Annual Baseline Emissions	**9,073.3**	**0.3**	**0.1**	**9,101**

Project Increment Indirect GHG Emissions

Parameters	CO2	CH4	N2O	CO2e
	Annual Emissions (metric tons/year)			
Process Water Usage Indirect Power Consumption	0.0	0.0	0.0	0.0
Wastewater Usage Indirect Power Consumption	0.4	0.00001	0.00000	0.4
Electricity Usage Indirect Power Consumption	1814.4	0.06	0.01	1,820.0
Annual Project Increment Emissions	**1,814.8**	**0.1**	**0.0**	**1,820**

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Line 4 Project Incremental Criteria Pollutant Emissions for AERMOD Modeling

Type	Source ID	Description	Max Hourly Emission Rate (g/s)			24-hr Emissions (g/s)
			NO_X	SO_X	CO	PM_{10}
POINT	RTO1	dryer and RTO emissions	9.31E-02	1.89E-03	2.61E-01	2.97E-02
POINT	RTO2	dryer and RTO emissions	9.31E-02	1.89E-03	2.61E-01	2.97E-02
POINT	RTO3	dryer and RTO emissions	9.31E-02	1.89E-03	2.61E-01	2.97E-02
POINT	BOILER1	N-8234-11	2.54E-03	6.58E-04	8.54E-03	6.93E-04
POINT	BOILER2	N-8234-10	2.54E-03	6.58E-04	8.54E-03	6.93E-04
POINT	BAG1A	Unit 1 baghouse A - N-8234-1	0	0	0	1.18E-03
POINT	BAG1B	Unit 1 baghouse B - N-8234-1	0	0	0	1.18E-03
POINT	BAG2	Unit 2 baghouse - N-8234-2	0	0	0	1.14E-02
POINT	BAG3A	Unit 3 baghouse A - N-8234-3	0	0	0	1.04E-02
POINT	BAG3B	Unit 3 baghouse B - N-8234-3	0	0	0	1.04E-02
POINT	BAG3C	Unit 3 baghouse C - N-8234-3	0	0	0	1.04E-02
POINT	THIELE1	Packaging line 1 N-8234-7	0	0	0	4.34E-04
POINT	THIELE2	Packaging line 2 N-8234-8	0	0	0	4.34E-04
POINT	UVA	Packaging line 3 N-8234-9	0	0	0	5.91E-04
POINT	THIELE3	Packaging line 4 N-8234-14	0	0	0	4.93E-04
LINE_VOLUME	TRUCKON	onsite truck travel	5.952E-04	6.020E-07	1.480E-04	2.111E-06
LINE_VOLUME	TRUCKIDLE	truck idling onsite	1.544E-03	3.092E-06	2.040E-04	2.243E-06
LINE_VOLUME	TRUCKOFF	offsite truck travel 1/4 mile	3.127E-04	1.201E-06	7.090E-05	1.871E-06

APPENDIX C –AERMOD INPUT PARAMETERS

Diamond Pet Foods of Ripon: Stack Parameters

Point Sources

Source	UTM x (m)	UTM y (m)	Stack height (m)	Stack diameter (m)	Exit velocity (m/s)	Stack temp (K)	Stack height (ft)	Exhaust Flow Rate (acfm)	Stack temp (F)	Stack diameter (ft)	Notes
RTO1	665,902	4,177,661	9.14	1.52	16.07	376.5	30	61,797	218	5.0	--
RTO2	665,905	4,177,650	9.14	1.52	16.07	376.5	30	61,797	218	5.0	--
RTO3	665,909	4,177,639	9.14	1.52	16.07	376.5	30	61,797	218	5.0	--
Boiler 1	665,970	4,177,689	10.06	0.50	10.24	405	33	4,182	270	1.625	--
Boiler 2	665,974	4,177,691	10.06	0.50	10.24	405	33	4,182	270	1.625	--
BAG1A	665,962	4,177,840	4.88	0.76	12.9	ambient	16	12,500	ambient	2.5	--
BAG1B	665,970	4,177,814	4.88	0.76	12.9	ambient	16	12,500	ambient	2.5	--
BAG2	665,982	4,177,776	6.40	0.61	7.3	ambient	21	4,500	ambient	2.0	--
BAG3A	665,946	4,177,751	21.64	0.15	33.8	ambient	71	1,306	ambient	0.5	--
BAG3B	665,948	4,177,745	21.64	0.15	33.8	ambient	71	1,306	ambient	0.5	--
BAG3C	665,950	4,177,740	21.64	0.15	33.8	ambient	71	1,306	ambient	0.5	--
Thiele1	665,863	4,177,693	13.72	1.02	0.001	ambient	45	545	ambient	3.35	Horizontal/capped
Thiele2	665,850	4,177,689	13.72	1.02	0.001	ambient	45	545	ambient	3.35	Horizontal/capped
Thiele3	665,845	4,177,687	13.72	1.02	0.001	ambient	45	334	ambient	3.35	Horizontal/capped
UVA	665,825	4,177,680	13.72	0.72	0.001	ambient	45	545	ambient	2.37	Horizontal/capped
Fire pump	665,998	4,177,700	3.81	0.15	57.5	622	12.5	2,222	660	0.5	Cumulative HRA only

UTM in NAD83 zone 10

RTO stack parameters from vendor (Durr Systems) Data

Boiler stack parameters based on similar equipment and EPA Method 19 (68°F, 20°C)

Fire pump stack temperature and exit velocity from CARB Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, 2000

Line Volume Sources

Source	Initial UTM x (m)	Initial UTM y (m)	Final UTM x (m)	Final UTM y (m)	Release height (m)	Plume height (m)	Plume width (m)	Initial lateral dimension (m)	Initial vertical dimension (m)		Notes
TRUCKON	665,722	4,177,856	665,772	4,177,874	2.07	4.15	4.37	4.07	1.93		--
TRUCKIDLE	665,829	4,177,786	665,807	4,177,858	2.07	4.15	4.37	4.07	1.93		--
TRUCKOFF	665,769	4,177,887	665,341	4,177,736	2.07	4.15	4.37	4.07	1.93		--
RAIL1	665,878	4,177,799	666,165	4,177,881	2.44	4.88	4.83	4.49	2.27		Cumulative HRA only
RAIL2	665,984	4,177,745	666,049	4,177,838	2.44	4.88	4.83	4.49	2.27		Cumulative HRA only
RAIL3	665,946	4,177,872	665,996	4,177,854	2.44	4.88	4.83	4.49	2.27		Cumulative HRA only
OFFRAIL	666,049	4,178,021	666,333	4,177,743	2.44	4.88	4.83	4.49	2.27		Cumulative HRA only

UTM in NAD83 zone 10

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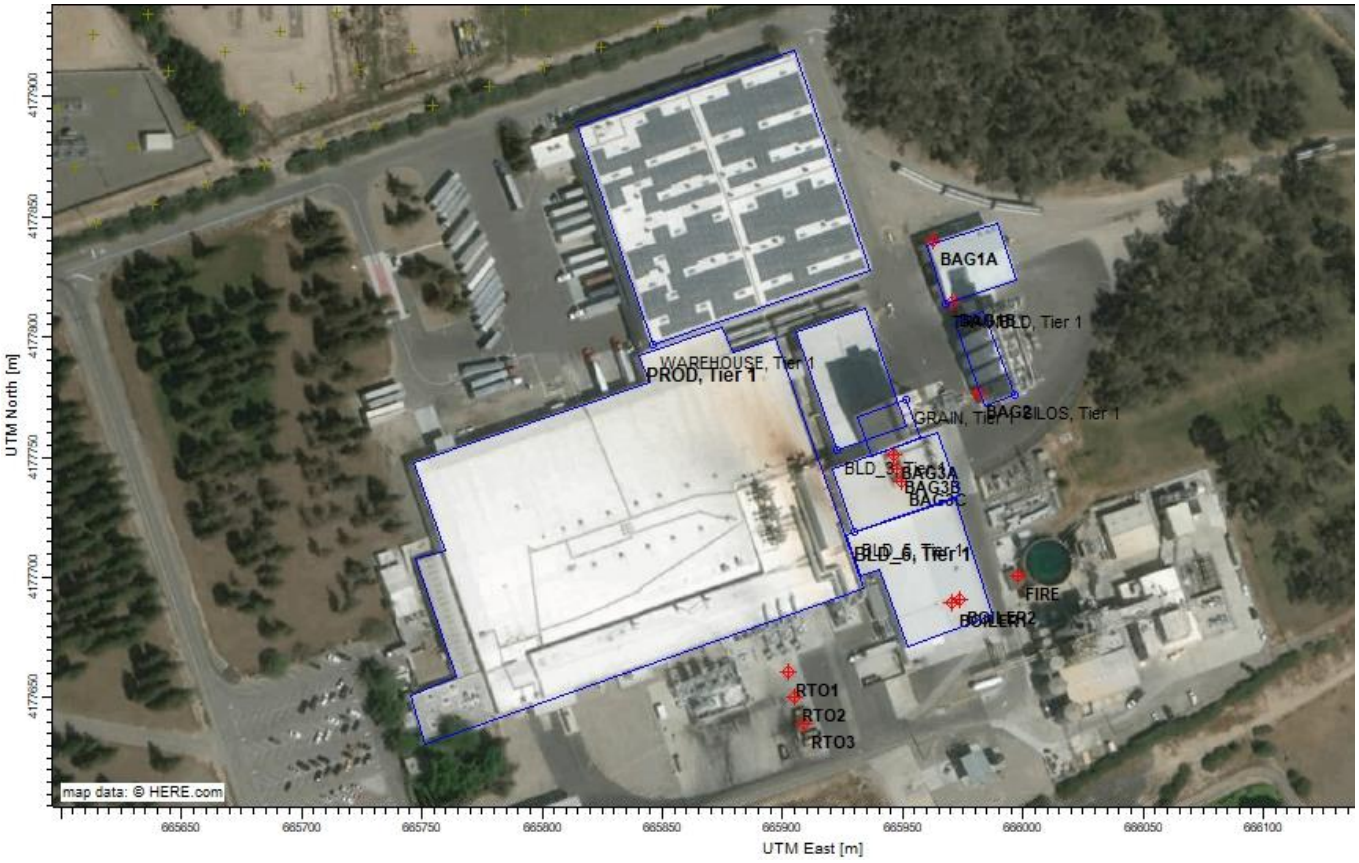
Diamond Pet Food Processors of Ripon - Buildings

Building ID	Description	Height (m)	Length (m)	Width (m)
WAREHOUSE	warehouse	9.75	95.64	96.44
BLD_3	Building 3	7.62	29.78	52.27
PROD	Main Production building	9.75	not a rectangle	
GRAIN	Grain elevator	42.21	21.61	17.11
BLD_5	Building 5	17.22	46.59	27.56
BLD_6	Building 6	9.6	not a rectangle	
TRAINBLD	train unloading building	9.6	30.46	25.17
SILOS	storage silos	25.91	36.96	12.76



APPENDIX D – HARP2 PROJECT INCREMENT SUMMARY REPORT AND RESULTS

Yorke ENGINEERING, LLC
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Maximum Predicted Health Risks at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Project Scenario

Health Risk	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Maximum Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
	Risk	**Receptor**	**Risk**	**Receptor**	**Risk**	**Receptor**	**Risk**	**Receptor**
Cancer Risk (in a million)	0.85	3984	0.09	7	0.01	12	0.06	2
Chronic Hazard Index	0.0003	3984	0.0001	7	0.00001	12	0.0004	13
Acute Hazard Index	0.0007	3991	0.0003	5	0.0001	12	0.0005	7

Yorke ENGINEERING, LLC
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Cancer Risk by Source for All Pollutants Combined at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Project Scenario

Sources	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
	receptor #	3984	receptor #	7	receptor #	12	receptor #	2
	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)
ALL	8.47E-07	100%	9.06E-08	100%	1.49E-08	100%	5.62E-08	100%
RTO1	1.03E-08	1.21%	8.39E-09	9.27%	7.09E-10	4.76%	5.69E-10	1.01%
RTO2	8.82E-09	1.04%	8.09E-09	8.93%	6.67E-10	4.47%	4.84E-10	0.86%
RTO3	9.05E-09	1.07%	7.73E-09	8.53%	6.83E-10	4.58%	4.55E-10	0.81%
BOILER1	1.27E-08	1.49%	4.87E-09	5.37%	1.30E-09	8.74%	4.70E-10	0.84%
BOILER2	1.29E-08	1.52%	4.83E-09	5.33%	1.31E-09	8.81%	4.74E-10	0.84%
TRUCKIDL	2.19E-07	25.86%	1.50E-08	16.54%	3.74E-09	25.12%	1.25E-08	22.34%
TRUCKOFF	2.88E-07	34.03%	2.33E-08	25.78%	3.02E-09	20.28%	2.04E-08	36.33%
TRUCKON	2.86E-07	33.76%	1.83E-08	20.24%	3.46E-09	23.24%	2.08E-08	36.97%

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Maximum Cancer Risk by Pollutant at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Project Scenario

Pollutant CAS	Pollutant	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
		receptor #	3984	receptor #	7	receptor #	12	receptor #	2
		Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)
-	ALL	8.47E-07	100%	9.06E-08	100%	1.49E-08	100%	5.62E-08	100%
9901	DieselExhPM	7.93E-07	93.66%	5.67E-08	62.56%	1.02E-08	68.64%	5.37E-08	95.64%
75070	Acetaldehyde	1.80E-10	0.02%	1.20E-10	0.13%	1.53E-11	0.10%	2.49E-11	0.04%
107028	Acrolein	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
7664417	Ammonia	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
71432	Benzene	3.36E-09	0.40%	2.23E-09	2.47%	2.85E-10	1.91%	4.63E-10	0.82%
100414	Ethyl Benzene	3.48E-10	0.04%	2.31E-10	0.26%	2.96E-11	0.20%	4.80E-11	0.09%
50000	Formaldehyde	1.50E-09	0.18%	9.96E-10	1.10%	1.27E-10	0.85%	2.07E-10	0.37%
110543	Hexane	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
91203	Naphthalene	1.74E-10	0.02%	1.09E-10	0.12%	1.52E-11	0.10%	2.35E-11	0.04%
1151	PAHs-w/o	4.81E-08	5.68%	3.02E-08	33.37%	4.20E-09	28.19%	1.68E-09	3.00%
115071	Propylene	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
108883	Toluene	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
1330207	Xylenes	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%

HARP Project Summary Report 4/11/2019 11:50:12 AM

PROJECT INFORMATION
HARP Version: 19044
Project Name: Diamond-Project
Project Output Directory: C:\HARP2\projects\Diamond-Project
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:65
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
RTO1	0	0	75070	Acetaldehyde	1	0.184	2.22E-05	1
RTO1	0	0	107028	Acrolein	1	0.115	1.39E-05	1
RTO1	0	0	71432	Benzene	1	0.342	4.12E-05	1
RTO1	0	0	100414	Ethyl Benzene	1	0.406	4.9E-05	1
RTO1	0	0	50000	Formaldehyde	1	0.727	8.76E-05	1
RTO1	0	0	110543	Hexane	1	0.269	3.25E-05	1
RTO1	0	0	91203	Naphthalene	1	0.0128	1.55E-06	1
RTO1	0	0	1151	PAHs-w/o	1	0.00428	5.16E-07	1
RTO1	0	0	115071	Propylene	1	31.3	0.00377	1
RTO1	0	0	108883	Toluene	1	1.57	0.000189	1
RTO1	0	0	1330207	Xylenes	1	1.16	0.00014	1
RTO2	0	0	75070	Acetaldehyde	1	0.184	2.22E-05	1
RTO2	0	0	107028	Acrolein	1	0.115	1.39E-05	1
RTO2	0	0	71432	Benzene	1	0.342	4.12E-05	1
RTO2	0	0	100414	Ethyl Benzene	1	0.406	4.9E-05	1
RTO2	0	0	50000	Formaldehyde	1	0.727	8.76E-05	1
RTO2	0	0	110543	Hexane	1	0.269	3.25E-05	1
RTO2	0	0	91203	Naphthalene	1	0.0128	1.55E-06	1
RTO2	0	0	1151	PAHs-w/o	1	0.00428	5.16E-07	1
RTO2	0	0	115071	Propylene	1	31.3	0.00377	1
RTO2	0	0	108883	Toluene	1	1.57	0.000189	1
RTO2	0	0	1330207	Xylenes	1	1.16	0.00014	1

RTO3	0	0	75070	Acetaldehyde	1	0.184	2.22E-05	1
RTO3	0	0	107028	Acrolein	1	0.115	1.39E-05	1
RTO3	0	0	71432	Benzene	1	0.342	4.12E-05	1
RTO3	0	0	100414	Ethyl Benzene	1	0.406	4.9E-05	1
RTO3	0	0	50000	Formaldehyde	1	0.727	8.76E-05	1
RTO3	0	0	110543	Hexane	1	0.269	3.25E-05	1
RTO3	0	0	91203	Naphthalene	1	0.0128	1.55E-06	1
RTO3	0	0	1151	PAHs-w/o	1	0.00428	5.16E-07	1
RTO3	0	0	115071	Propylene	1	31.3	0.00377	1
RTO3	0	0	108883	Toluene	1	1.57	0.000189	1
RTO3	0	0	1330207	Xylenes	1	1.16	0.00014	1
BOILER1	0	0	7664417	NH3	1	64.2	0.00733	1
BOILER1	0	0	75070	Acetaldehyde	1	0.0488	5.57E-06	1
BOILER1	0	0	107028	Acrolein	1	0.0425	4.85E-06	1
BOILER1	0	0	71432	Benzene	1	0.0912	1.04E-05	1
BOILER1	0	0	100414	Ethyl Benzene	1	0.109	1.24E-05	1
BOILER1	0	0	50000	Formaldehyde	1	0.193	2.21E-05	1
BOILER1	0	0	110543	Hexane	1	0.0723	8.26E-06	1
BOILER1	0	0	91203	Naphthalene	1	0.00472	5.39E-07	1
BOILER1	0	0	1151	PAHs-w/o	1	0.00157	1.8E-07	1
BOILER1	0	0	115071	Propylene	1	8.34	0.000952	1
BOILER1	0	0	108883	Toluene	1	0.417	4.76E-05	1
BOILER1	0	0	1330207	Xylenes	1	0.31	3.54E-05	1
BOILER2	0	0	7664417	NH3	1	64.2	0.00733	1
BOILER2	0	0	75070	Acetaldehyde	1	0.0488	5.57E-06	1
BOILER2	0	0	107028	Acrolein	1	0.0425	4.85E-06	1
BOILER2	0	0	71432	Benzene	1	0.0912	1.04E-05	1
BOILER2	0	0	100414	Ethyl Benzene	1	0.109	1.24E-05	1
BOILER2	0	0	50000	Formaldehyde	1	0.193	2.21E-05	1
BOILER2	0	0	110543	Hexane	1	0.0723	8.26E-06	1
BOILER2	0	0	91203	Naphthalene	1	0.00472	5.39E-07	1
BOILER2	0	0	1151	PAHs-w/o	1	0.00157	1.8E-07	1
BOILER2	0	0	115071	Propylene	1	8.34	0.000952	1
BOILER2	0	0	108883	Toluene	1	0.417	4.76E-05	1
BOILER2	0	0	1330207	Xylenes	1	0.31	3.54E-05	1
FIRE	0	0	9901	DieselExhPM	1	0	0	1
TRUCKON	0	0	9901	DieselExhPM	1	0.14	0	1
TRUCKIDL	0	0	9901	DieselExhPM	1	0.148	0	1
TRUCKOFF	0	0	9901	DieselExhPM	1	0.124	0	1
RAIL1	0	0	9901	DieselExhPM	1	0	0	1
RAIL2	0	0	9901	DieselExhPM	1	0	0	1
RAIL3	0	0	9901	DieselExhPM	1	0	0	1
OFFRAIL	0	0	9901	DieselExhPM	1	0	0	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

_____

100414MAXHR.txt
100414PER.txt
107028MAXHR.txt
107028PER.txt
108883MAXHR.txt
108883PER.txt
110543MAXHR.txt
110543PER.txt
115071MAXHR.txt
115071PER.txt
1151MAXHR.txt
1151PER.txt
1330207MAXHR.txt
1330207PER.txt
50000MAXHR.txt
50000PER.txt
71432MAXHR.txt
71432PER.txt
75070MAXHR.txt
75070PER.txt
7664417MAXHR.txt
7664417PER.txt
91203MAXHR.txt
91203PER.txt
9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH18232
Official: True

PolID PolAbbrev InhCancer OralCancer AcuteREL InhChronicREL OralChronicREL InhChronic8HRREL

_____

75070 Acetaldehyde 0.01 470 140 300
107028 Acrolein 2.5 0.35 0.7
71432 Benzene 0.1 27 3 3
100414 Ethyl Benzene 0.0087 2000
50000 Formaldehyde 0.021 55 9 9
110543 Hexane 7000
91203 Naphthalene 0.12 9
1151 PAHs-w/o 3.9 12
115071 Propylene 3000
108883 Toluene 37000 300

1330207	Xylenes		22000	700
7664417	NH3		3200	200
9901	DieselExhPM	1.1		5

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list

_____
01H1G001.PLT
01H1G002.PLT
01H1G003.PLT
01H1G004.PLT
01H1G005.PLT
01H1G006.PLT
01H1G007.PLT
01H1G008.PLT
01H1G009.PLT
01H1G010.PLT
01H1G011.PLT
01H1G012.PLT
01H1G013.PLT
PE00G001.PLT
PE00G002.PLT
PE00G003.PLT
PE00G004.PLT
PE00G005.PLT
PE00G006.PLT
PE00G007.PLT
PE00G008.PLT
PE00G009.PLT

PE00G010.PLT
PE00G011.PLT
PE00G012.PLT
PE00G013.PLT

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)

_____
BOILER1.DPF-Proj-CancerRisk.csv
BOILER1.DPF-Proj-CancerRiskSumByRec.csv
BOILER1.DPF-Proj-GLCList.csv
BOILER1.DPF-Proj-HRAInput.hra
BOILER1.DPF-Proj-NCAcuteRisk.csv
BOILER1.DPF-Proj-NCAcuteRiskSumByRec.csv
BOILER1.DPF-Proj-NCChronicRisk.csv
BOILER1.DPF-Proj-NCChronicRiskSumByRec.csv
BOILER1.DPF-Proj-PathwayRec.csv
BOILER1.DPF-Proj-PolDB.csv
BOILER2.DPF-Proj-CancerRisk.csv
BOILER2.DPF-Proj-CancerRiskSumByRec.csv
BOILER2.DPF-Proj-GLCList.csv
BOILER2.DPF-Proj-HRAInput.hra
BOILER2.DPF-Proj-NCAcuteRisk.csv
BOILER2.DPF-Proj-NCAcuteRiskSumByRec.csv
BOILER2.DPF-Proj-NCChronicRisk.csv
BOILER2.DPF-Proj-NCChronicRiskSumByRec.csv
BOILER2.DPF-Proj-PathwayRec.csv
BOILER2.DPF-Proj-PolDB.csv
DPF-Proj-CancerRisk.csv
DPF-Proj-CancerRiskSumByRec.csv
DPF-Proj-GLCList.csv
DPF-Proj-HRAInput.hra
DPF-Proj-NCAcuteRisk.csv
DPF-Proj-NCAcuteRiskSumByRec.csv
DPF-Proj-NCChronicRisk.csv
DPF-Proj-NCChronicRiskSumByRec.csv
DPF-Proj-Output.txt
DPF-Proj-PathwayRec.csv
DPF-Proj-PolDB.csv
FIRE.DPF-Proj-CancerRisk.csv
FIRE.DPF-Proj-CancerRiskSumByRec.csv
FIRE.DPF-Proj-GLCList.csv
FIRE.DPF-Proj-HRAInput.hra
FIRE.DPF-Proj-NCAcuteRisk.csv
FIRE.DPF-Proj-NCAcuteRiskSumByRec.csv
FIRE.DPF-Proj-NCChronicRisk.csv
FIRE.DPF-Proj-NCChronicRiskSumByRec.csv
FIRE.DPF-Proj-PathwayRec.csv

FIRE.DPF-Proj-PolDB.csv
OFFRAIL.DPF-Proj-CancerRisk.csv
OFFRAIL.DPF-Proj-CancerRiskSumByRec.csv
OFFRAIL.DPF-Proj-GLCList.csv
OFFRAIL.DPF-Proj-HRAInput.hra
OFFRAIL.DPF-Proj-NCAcuteRisk.csv
OFFRAIL.DPF-Proj-NCAcuteRiskSumByRec.csv
OFFRAIL.DPF-Proj-NCChronicRisk.csv
OFFRAIL.DPF-Proj-NCChronicRiskSumByRec.csv
OFFRAIL.DPF-Proj-PathwayRec.csv
OFFRAIL.DPF-Proj-PolDB.csv
RAIL1.DPF-Proj-CancerRisk.csv
RAIL1.DPF-Proj-CancerRiskSumByRec.csv
RAIL1.DPF-Proj-GLCList.csv
RAIL1.DPF-Proj-HRAInput.hra
RAIL1.DPF-Proj-NCAcuteRisk.csv
RAIL1.DPF-Proj-NCAcuteRiskSumByRec.csv
RAIL1.DPF-Proj-NCChronicRisk.csv
RAIL1.DPF-Proj-NCChronicRiskSumByRec.csv
RAIL1.DPF-Proj-PathwayRec.csv
RAIL1.DPF-Proj-PolDB.csv
RAIL2.DPF-Proj-CancerRisk.csv
RAIL2.DPF-Proj-CancerRiskSumByRec.csv
RAIL2.DPF-Proj-GLCList.csv
RAIL2.DPF-Proj-HRAInput.hra
RAIL2.DPF-Proj-NCAcuteRisk.csv
RAIL2.DPF-Proj-NCAcuteRiskSumByRec.csv
RAIL2.DPF-Proj-NCChronicRisk.csv
RAIL2.DPF-Proj-NCChronicRiskSumByRec.csv
RAIL2.DPF-Proj-PathwayRec.csv
RAIL2.DPF-Proj-PolDB.csv
RAIL3.DPF-Proj-CancerRisk.csv
RAIL3.DPF-Proj-CancerRiskSumByRec.csv
RAIL3.DPF-Proj-GLCList.csv
RAIL3.DPF-Proj-HRAInput.hra
RAIL3.DPF-Proj-NCAcuteRisk.csv
RAIL3.DPF-Proj-NCAcuteRiskSumByRec.csv
RAIL3.DPF-Proj-NCChronicRisk.csv
RAIL3.DPF-Proj-NCChronicRiskSumByRec.csv
RAIL3.DPF-Proj-PathwayRec.csv
RAIL3.DPF-Proj-PolDB.csv
RTO1.DPF-Proj-CancerRisk.csv
RTO1.DPF-Proj-CancerRiskSumByRec.csv
RTO1.DPF-Proj-GLCList.csv
RTO1.DPF-Proj-HRAInput.hra
RTO1.DPF-Proj-NCAcuteRisk.csv
RTO1.DPF-Proj-NCAcuteRiskSumByRec.csv
RTO1.DPF-Proj-NCChronicRisk.csv

RTO1.DPF-Proj-NCChronicRiskSumByRec.csv
RTO1.DPF-Proj-PathwayRec.csv
RTO1.DPF-Proj-PolDB.csv
RTO2.DPF-Proj-CancerRisk.csv
RTO2.DPF-Proj-CancerRiskSumByRec.csv
RTO2.DPF-Proj-GLCList.csv
RTO2.DPF-Proj-HRAInput.hra
RTO2.DPF-Proj-NCAcuteRisk.csv
RTO2.DPF-Proj-NCAcuteRiskSumByRec.csv
RTO2.DPF-Proj-NCChronicRisk.csv
RTO2.DPF-Proj-NCChronicRiskSumByRec.csv
RTO2.DPF-Proj-PathwayRec.csv
RTO2.DPF-Proj-PolDB.csv
RTO3.DPF-Proj-CancerRisk.csv
RTO3.DPF-Proj-CancerRiskSumByRec.csv
RTO3.DPF-Proj-GLCList.csv
RTO3.DPF-Proj-HRAInput.hra
RTO3.DPF-Proj-NCAcuteRisk.csv
RTO3.DPF-Proj-NCAcuteRiskSumByRec.csv
RTO3.DPF-Proj-NCChronicRisk.csv
RTO3.DPF-Proj-NCChronicRiskSumByRec.csv
RTO3.DPF-Proj-PathwayRec.csv
RTO3.DPF-Proj-PolDB.csv
TRUCKIDL.DPF-Proj-CancerRisk.csv
TRUCKIDL.DPF-Proj-CancerRiskSumByRec.csv
TRUCKIDL.DPF-Proj-GLCList.csv
TRUCKIDL.DPF-Proj-HRAInput.hra
TRUCKIDL.DPF-Proj-NCAcuteRisk.csv
TRUCKIDL.DPF-Proj-NCAcuteRiskSumByRec.csv
TRUCKIDL.DPF-Proj-NCChronicRisk.csv
TRUCKIDL.DPF-Proj-NCChronicRiskSumByRec.csv
TRUCKIDL.DPF-Proj-PathwayRec.csv
TRUCKIDL.DPF-Proj-PolDB.csv
TRUCKOFF.DPF-Proj-CancerRisk.csv
TRUCKOFF.DPF-Proj-CancerRiskSumByRec.csv
TRUCKOFF.DPF-Proj-GLCList.csv
TRUCKOFF.DPF-Proj-HRAInput.hra
TRUCKOFF.DPF-Proj-NCAcuteRisk.csv
TRUCKOFF.DPF-Proj-NCAcuteRiskSumByRec.csv
TRUCKOFF.DPF-Proj-NCChronicRisk.csv
TRUCKOFF.DPF-Proj-NCChronicRiskSumByRec.csv
TRUCKOFF.DPF-Proj-PathwayRec.csv
TRUCKOFF.DPF-Proj-PolDB.csv
TRUCKON.DPF-Proj-CancerRisk.csv
TRUCKON.DPF-Proj-CancerRiskSumByRec.csv
TRUCKON.DPF-Proj-GLCList.csv
TRUCKON.DPF-Proj-HRAInput.hra
TRUCKON.DPF-Proj-NCAcuteRisk.csv

TRUCKON.DPF-Proj-NCAcuteRiskSumByRec.csv
TRUCKON.DPF-Proj-NCChronicRisk.csv
TRUCKON.DPF-Proj-NCChronicRiskSumByRec.csv
TRUCKON.DPF-Proj-PathwayRec.csv
TRUCKON.DPF-Proj-PolDB.csv

Spatial averaging files (\sa\)

HARP2 - HRACalc (dated 19044) 4/11/2019 11:56:38 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: ON
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-CancerRisk.csv
Cancer risk total by receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-CancerRiskSumByRec.csv
Cancer risk total by receptor and source saved to: C:\HARP2\projects\Diamond-Project\hra\CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCChronicRiskSumByRec.csv
Chronic risk total by receptor and source saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCChronicRiskSumByRecBySrc.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCAcuteRisk.csv

Acute risk total by receptor saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCAcuteRiskSumByRec.csv
Acute risk total by receptor and source saved to: C:\HARP2\projects\Diamond-Project\hra\DPF-Proj-NCAcuteRiskSumByRecBySrc.csv
HRA ran successfully

APPENDIX E – HARP2 CUMULATIVE SUMMARY REPORT AND RESULTS

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Maximum Predicted Health Risks at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Cumulative Analysis (Baseline + Project)

Health Risk	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Maximum Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
	Risk	Receptor	Risk	Receptor	Risk	Receptor	Risk	Receptor
Cancer Risk (in a million)	12.40	20	2.54	1	0.34	12	1.21	7
Chronic Hazard Index	0.0032	20	0.0007	1	0.00012	12	0.0027	7
Acute Hazard Index	0.0022	3989	0.0010	5	0.0003	12	0.0016	7

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Cancer Risk by Source for All Pollutants Combined at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Cumulative Analysis (Baseline + Project)

Sources	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
	receptor #	20	receptor #	1	receptor #	12	receptor #	7
	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)
ALL	1.24E-05	100%	2.54E-06	100%	3.42E-07	100%	1.21E-06	100%
RTO1	8.56E-09	0.07%	6.78E-09	0.27%	2.22E-09	0.65%	1.01E-09	0.08%
RTO2	8.20E-09	0.07%	6.52E-09	0.26%	2.09E-09	0.61%	7.55E-10	0.06%
RTO3	7.54E-09	0.06%	6.13E-09	0.24%	2.14E-09	0.63%	5.95E-10	0.05%
BOILER1	8.42E-09	0.07%	6.24E-09	0.25%	4.16E-09	1.22%	8.69E-10	0.07%
BOILER2	8.43E-09	0.07%	6.23E-09	0.25%	4.20E-09	1.23%	7.76E-10	0.06%
FIRE	7.22E-08	0.58%	5.11E-08	2.01%	3.35E-08	9.80%	1.27E-08	1.05%
TRUCKIDL	3.71E-08	0.30%	2.57E-08	1.01%	1.16E-08	3.40%	1.89E-08	1.56%
TRUCKOFF	1.58E-08	0.13%	1.22E-08	0.48%	9.77E-09	2.86%	4.51E-09	0.37%
TRUCKON	3.03E-08	0.24%	2.18E-08	0.86%	1.14E-08	3.34%	1.23E-08	1.02%
OFFRAIL	1.01E-05	81.69%	1.66E-06	65.46%	1.22E-07	35.82%	6.38E-08	5.27%
RAIL1	1.72E-06	13.84%	5.39E-07	21.27%	9.04E-08	26.44%	3.23E-07	26.71%
RAIL2	2.42E-07	1.96%	1.30E-07	5.12%	3.10E-08	9.07%	7.04E-07	58.12%
RAIL3	1.15E-07	0.93%	6.41E-08	2.53%	1.69E-08	4.94%	6.73E-08	5.56%

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Maximum Cancer Risk by Pollutant at PMI, MEIR, MEIW and Sensitive Receptor
Diamond Pet Food - Cumulative Analysis (Baseline + Project)

Pollutant CAS	Pollutant	Point of Maximum Impact (PMI)		Maximally Exposed Individual Resident (MEIR)		Sensitive Receptor		Maximally Exposed Individual Worker (MEIW)	
		receptor #	20	receptor #	1	receptor #	12	receptor #	7
		Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)	Cancer Risk	Contribution (%)
-	ALL	1.24E-05	100%	2.54E-06	100%	3.42E-07	100%	1.21E-06	100%
9901	DieselExhPM	1.24E-05	99.67%	2.50E-06	98.74%	3.27E-07	95.67%	1.21E-06	99.67%
75070	Acetaldehyde	1.41E-10	0.00%	1.10E-10	0.00%	4.85E-11	0.01%	4.06E-11	0.00%
107028	Acrolein	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
7664417	Ammonia	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
71432	Benzene	2.62E-09	0.02%	2.04E-09	0.08%	9.01E-10	0.26%	7.53E-10	0.06%
100414	Ethyl Benzene	2.72E-10	0.00%	2.12E-10	0.01%	9.36E-11	0.03%	7.83E-11	0.01%
50000	Formaldehyde	1.17E-09	0.01%	9.12E-10	0.04%	4.03E-10	0.12%	3.36E-10	0.03%
110543	Hexane	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
91203	Naphthalene	1.34E-10	0.00%	1.03E-10	0.00%	4.83E-11	0.01%	3.86E-11	0.00%
1151	PAHs-w/o	3.68E-08	0.30%	2.85E-08	1.12%	1.33E-08	3.89%	2.76E-09	0.23%
115071	Propylene	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
108883	Toluene	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%
1330207	Xylenes	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%	0.00E+00	0.00%

HARP Project Summary Report 4/11/2019 11:08:23 AM

PROJECT INFORMATION
HARP Version: 19044
Project Name: DPF-Base-Project
Project Output Directory: C:\HARP2\projects\DPF-Base-Project
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:65
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
RTO1	0	0	75070	Acetaldehyde	1	0.578	7.05E-05	1
RTO1	0	0	107028	Acrolein	1	0.363	4.43E-05	1
RTO1	0	0	71432	Benzene	1	1.07	0.000131	1
RTO1	0	0	100414	Ethyl Benzene	1	1.28	0.000156	1
RTO1	0	0	50000	Formaldehyde	1	2.28	0.000279	1
RTO1	0	0	110543	Hexane	1	0.846	0.000103	1
RTO1	0	0	91203	Naphthalene	1	0.0403	4.92E-06	1
RTO1	0	0	1151	PAHs-w/o	1	0.0134	1.64E-06	1
RTO1	0	0	115071	Propylene	1	98.2	0.012	1
RTO1	0	0	108883	Toluene	1	4.92	0.0006	1
RTO1	0	0	1330207	Xylenes	1	3.65	0.000446	1
RTO2	0	0	75070	Acetaldehyde	1	0.578	7.05E-05	1
RTO2	0	0	107028	Acrolein	1	0.363	4.43E-05	1
RTO2	0	0	71432	Benzene	1	1.07	0.000131	1
RTO2	0	0	100414	Ethyl Benzene	1	1.28	0.000156	1
RTO2	0	0	50000	Formaldehyde	1	2.28	0.000279	1
RTO2	0	0	110543	Hexane	1	0.846	0.000103	1
RTO2	0	0	91203	Naphthalene	1	0.0403	4.92E-06	1
RTO2	0	0	1151	PAHs-w/o	1	0.0134	1.64E-06	1
RTO2	0	0	115071	Propylene	1	98.2	0.012	1
RTO2	0	0	108883	Toluene	1	4.92	0.0006	1
RTO2	0	0	1330207	Xylenes	1	3.65	0.000446	1

RTO3	0	0	75070	Acetaldehyde	1	0.578	7.05E-05	1
RTO3	0	0	107028	Acrolein	1	0.363	4.43E-05	1
RTO3	0	0	71432	Benzene	1	1.07	0.000131	1
RTO3	0	0	100414	Ethyl Benzene	1	1.28	0.000156	1
RTO3	0	0	50000	Formaldehyde	1	2.28	0.000279	1
RTO3	0	0	110543	Hexane	1	0.846	0.000103	1
RTO3	0	0	91203	Naphthalene	1	0.0403	4.92E-06	1
RTO3	0	0	1151	PAHs-w/o	1	0.0134	1.64E-06	1
RTO3	0	0	115071	Propylene	1	98.2	0.012	1
RTO3	0	0	108883	Toluene	1	4.92	0.0006	1
RTO3	0	0	1330207	Xylenes	1	3.65	0.000446	1
BOILER1	0	0	7664417	NH3	1	205	0.0234	1
BOILER1	0	0	75070	Acetaldehyde	1	0.156	1.78E-05	1
BOILER1	0	0	107028	Acrolein	1	0.136	1.55E-05	1
BOILER1	0	0	71432	Benzene	1	0.291	3.33E-05	1
BOILER1	0	0	100414	Ethyl Benzene	1	0.347	3.96E-05	1
BOILER1	0	0	50000	Formaldehyde	1	0.618	7.05E-05	1
BOILER1	0	0	110543	Hexane	1	0.231	2.64E-05	1
BOILER1	0	0	91203	Naphthalene	1	0.0151	1.72E-06	1
BOILER1	0	0	1151	PAHs-w/o	1	0.00502	5.74E-07	1
BOILER1	0	0	115071	Propylene	1	26.6	0.00304	1
BOILER1	0	0	108883	Toluene	1	1.33	0.000152	1
BOILER1	0	0	1330207	Xylenes	1	0.99	0.000113	1
BOILER2	0	0	7664417	NH3	1	205	0.0234	1
BOILER2	0	0	75070	Acetaldehyde	1	0.156	1.78E-05	1
BOILER2	0	0	107028	Acrolein	1	0.136	1.55E-05	1
BOILER2	0	0	71432	Benzene	1	0.291	3.33E-05	1
BOILER2	0	0	100414	Ethyl Benzene	1	0.347	3.96E-05	1
BOILER2	0	0	50000	Formaldehyde	1	0.618	7.05E-05	1
BOILER2	0	0	110543	Hexane	1	0.231	2.64E-05	1
BOILER2	0	0	91203	Naphthalene	1	0.0151	1.72E-06	1
BOILER2	0	0	1151	PAHs-w/o	1	0.00502	5.74E-07	1
BOILER2	0	0	115071	Propylene	1	26.6	0.00304	1
BOILER2	0	0	108883	Toluene	1	1.33	0.000152	1
BOILER2	0	0	1330207	Xylenes	1	0.99	0.000113	1
FIRE	0	0	9901	DieselExhPM	1	2.76	0	1
TRUCKON	0	0	9901	DieselExhPM	1	0.462	0	1
TRUCKIDL	0	0	9901	DieselExhPM	1	0.46	0	1
TRUCKOFF	0	0	9901	DieselExhPM	1	0.401	0	1
RAIL1	0	0	9901	DieselExhPM	1	3.26	0	1
RAIL2	0	0	9901	DieselExhPM	1	1.28	0	1
RAIL3	0	0	9901	DieselExhPM	1	0.58	0	1
OFFRAIL	0	0	9901	DieselExhPM	1	4.1	0	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

_____

100414MAXHR.txt
100414PER.txt
107028MAXHR.txt
107028PER.txt
108883MAXHR.txt
108883PER.txt
110543MAXHR.txt
110543PER.txt
115071MAXHR.txt
115071PER.txt
1151MAXHR.txt
1151PER.txt
1330207MAXHR.txt
1330207PER.txt
50000MAXHR.txt
50000PER.txt
71432MAXHR.txt
71432PER.txt
75070MAXHR.txt
75070PER.txt
7664417MAXHR.txt
7664417PER.txt
91203MAXHR.txt
91203PER.txt
9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH18232
Official: True

PolID PolAbbrev InhCancer OralCancer AcuteREL InhChronicREL OralChronicREL InhChronic8HRREL

_____

75070 Acetaldehyde 0.01 470 140 300
107028 Acrolein 2.5 0.35 0.7
71432 Benzene 0.1 27 3 3
100414 Ethyl Benzene 0.0087 2000
50000 Formaldehyde 0.021 55 9 9
110543 Hexane 7000
91203 Naphthalene 0.12 9
1151 PAHs-w/o 3.9 12
115071 Propylene 3000
108883 Toluene 37000 300

1330207	Xylenes		22000	700
7664417	NH3		3200	200
9901	DieselExhPM	1.1		5

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list

_____
01H1G001.PLT
01H1G002.PLT
01H1G003.PLT
01H1G004.PLT
01H1G005.PLT
01H1G006.PLT
01H1G007.PLT
01H1G008.PLT
01H1G009.PLT
01H1G010.PLT
01H1G011.PLT
01H1G012.PLT
01H1G013.PLT
PE00G001.PLT
PE00G002.PLT
PE00G003.PLT
PE00G004.PLT
PE00G005.PLT
PE00G006.PLT
PE00G007.PLT
PE00G008.PLT
PE00G009.PLT

PE00G010.PLT
PE00G011.PLT
PE00G012.PLT
PE00G013.PLT

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)

_____
BOILER1.DPF-base-project-CancerRisk.csv
BOILER1.DPF-base-project-CancerRiskSumByRec.csv
BOILER1.DPF-base-project-GLCList.csv
BOILER1.DPF-base-project-HRAInput.hra
BOILER1.DPF-base-project-NCAcuteRisk.csv
BOILER1.DPF-base-project-NCAcuteRiskSumByRec.csv
BOILER1.DPF-base-project-NCChronicRisk.csv
BOILER1.DPF-base-project-NCChronicRiskSumByRec.csv
BOILER1.DPF-base-project-PathwayRec.csv
BOILER1.DPF-base-project-PolDB.csv
BOILER2.DPF-base-project-CancerRisk.csv
BOILER2.DPF-base-project-CancerRiskSumByRec.csv
BOILER2.DPF-base-project-GLCList.csv
BOILER2.DPF-base-project-HRAInput.hra
BOILER2.DPF-base-project-NCAcuteRisk.csv
BOILER2.DPF-base-project-NCAcuteRiskSumByRec.csv
BOILER2.DPF-base-project-NCChronicRisk.csv
BOILER2.DPF-base-project-NCChronicRiskSumByRec.csv
BOILER2.DPF-base-project-PathwayRec.csv
BOILER2.DPF-base-project-PolDB.csv
DPF-base-project-CancerRisk.csv
DPF-base-project-CancerRiskSumByRec.csv
DPF-base-project-CancerRiskSumByRecBySrc.csv
DPF-base-project-GLCList.csv
DPF-base-project-HRAInput.hra
DPF-base-project-NCAcuteRisk.csv
DPF-base-project-NCAcuteRiskSumByRec.csv
DPF-base-project-NCAcuteRiskSumByRecBySrc.csv
DPF-base-project-NCChronicRisk.csv
DPF-base-project-NCChronicRiskSumByRec.csv
DPF-base-project-NCChronicRiskSumByRecBySrc.csv
DPF-base-project-Output.txt
DPF-base-project-PathwayRec.csv
DPF-base-project-PolDB.csv
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FIRE.DPF-base-project-CancerRiskSumByRec.csv
FIRE.DPF-base-project-GLCList.csv
FIRE.DPF-base-project-HRAInput.hra
FIRE.DPF-base-project-NCAcuteRisk.csv
FIRE.DPF-base-project-NCAcuteRiskSumByRec.csv

FIRE.DPF-base-project-NCChronicRisk.csv
FIRE.DPF-base-project-NCChronicRiskSumByRec.csv
FIRE.DPF-base-project-PathwayRec.csv
FIRE.DPF-base-project-PolDB.csv
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RAIL1.DPF-base-project-NCAcuteRiskSumByRec.csv
RAIL1.DPF-base-project-NCChronicRisk.csv
RAIL1.DPF-base-project-NCChronicRiskSumByRec.csv
RAIL1.DPF-base-project-PathwayRec.csv
RAIL1.DPF-base-project-PolDB.csv
RAIL2.DPF-base-project-CancerRisk.csv
RAIL2.DPF-base-project-CancerRiskSumByRec.csv
RAIL2.DPF-base-project-GLCList.csv
RAIL2.DPF-base-project-HRAInput.hra
RAIL2.DPF-base-project-NCAcuteRisk.csv
RAIL2.DPF-base-project-NCAcuteRiskSumByRec.csv
RAIL2.DPF-base-project-NCChronicRisk.csv
RAIL2.DPF-base-project-NCChronicRiskSumByRec.csv
RAIL2.DPF-base-project-PathwayRec.csv
RAIL2.DPF-base-project-PolDB.csv
RAIL3.DPF-base-project-CancerRisk.csv
RAIL3.DPF-base-project-CancerRiskSumByRec.csv
RAIL3.DPF-base-project-GLCList.csv
RAIL3.DPF-base-project-HRAInput.hra
RAIL3.DPF-base-project-NCAcuteRisk.csv
RAIL3.DPF-base-project-NCAcuteRiskSumByRec.csv
RAIL3.DPF-base-project-NCChronicRisk.csv
RAIL3.DPF-base-project-NCChronicRiskSumByRec.csv
RAIL3.DPF-base-project-PathwayRec.csv
RAIL3.DPF-base-project-PolDB.csv
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RTO1.DPF-base-project-CancerRiskSumByRec.csv
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RTO1.DPF-base-project-HRAInput.hra

RTO1.DPF-base-project-NCAcuteRisk.csv
RTO1.DPF-base-project-NCAcuteRiskSumByRec.csv
RTO1.DPF-base-project-NCChronicRisk.csv
RTO1.DPF-base-project-NCChronicRiskSumByRec.csv
RTO1.DPF-base-project-PathwayRec.csv
RTO1.DPF-base-project-PolDB.csv
RTO2.DPF-base-project-CancerRisk.csv
RTO2.DPF-base-project-CancerRiskSumByRec.csv
RTO2.DPF-base-project-GLCList.csv
RTO2.DPF-base-project-HRAInput.hra
RTO2.DPF-base-project-NCAcuteRisk.csv
RTO2.DPF-base-project-NCAcuteRiskSumByRec.csv
RTO2.DPF-base-project-NCChronicRisk.csv
RTO2.DPF-base-project-NCChronicRiskSumByRec.csv
RTO2.DPF-base-project-PathwayRec.csv
RTO2.DPF-base-project-PolDB.csv
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RTO3.DPF-base-project-CancerRiskSumByRec.csv
RTO3.DPF-base-project-GLCList.csv
RTO3.DPF-base-project-HRAInput.hra
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RTO3.DPF-base-project-NCChronicRisk.csv
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TRUCKON.DPF-base-project-NCChronicRiskSumByRec.csv
TRUCKON.DPF-base-project-PathwayRec.csv
TRUCKON.DPF-base-project-PolDB.csv

Spatial averaging files (\sa\)

HARP2 - HRACalc (dated 19044) 4/11/2019 11:07:01 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 70

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 54

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: ON
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02
Soil mixing depth (m): 0.01
Dermal climate: Mixed

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS
Tier2 not used.

****

Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-CancerRisk.csv
Cancer risk total by receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-CancerRiskSumByRec.csv
Cancer risk total by receptor and source saved to: C:\HARP2\projects\DPF-Base-Project\hra\CancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCChronicRisk.csv
Chronic risk total by receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCChronicRiskSumByRec.csv
Chronic risk total by receptor and source saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCChronicRiskSumByRecBySrc.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCAcuteRisk.csv

Acute risk total by receptor saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCAcuteRiskSumByRec.csv
Acute risk total by receptor and source saved to: C:\HARP2\projects\DPF-Base-Project\hra\DPF-base-project-NCAcuteRiskSumByRecBySrc.csv
HRA ran successfully

Yorke
ENGINEERING, LLC
www.YorkeEngr.com

August 4, 2020

Patia Siong
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno, CA 93726
E-mail: Patia.Siong@valleyair.org

Subject: DPF-Ripon Line 4 Project CEQA $PM_{2.5}$ Modeling Study

Dear Ms. Siong:

At the request of San Joaquin Valley Air Pollution Control District (SJVAPCD) $PM_{2.5}$ modeling was conducted to assess the potential impacts from the proposed Line 4 Project for California Environmental Quality Act (CEQA) review. Diamond Pet Foods – Ripon (DPF–Ripon) intends to install a new Pet Food Processing Line (Line 4), which will add additional equipment and increase product and ingredient handling capacity.

This $PM_{2.5}$ modeling study has been prepared by Yorke Engineering, LLC (Yorke) to be used in support of the Draft Environmental Impact Report (EIR) prepared by Ascent Environmental for the City of Ripon, who is the Lead Agency for this project.

SUMMARY

The $PM_{2.5}$ modeling was conducted following the SJVAPCD policy APR-1925 (SJVAPCD 2014) and Guidance for Air Dispersion Modeling (SJVAPCD 2006). Per the SJVAPCD guidance, for pollutants where the background concentration is already greater than the ambient air quality standard (AAQS), such as with $PM_{2.5}$, the analysis is conducted following Step 2 procedures which compare the maximum modeled concentration to the corresponding Significant Impact Level (SIL). If the Project concentration is less than the SIL, then Project emissions do not contribute significantly to a violation of a California or National ambient air quality standard (CAAQS or NAAQS). As requested, SIL modeling was conducted for $PM_{2.5}$ as the background concentrations are greater than the CAAQS and NAAQS for 24-hour and annual averaging times.

Table 1 shows that the predicted 24-hour and annual $PM_{2.5}$ concentrations are below the respective SILs, therefore the Project will not contribute significantly to a violation of the CAAQS or NAAQS.

Table 1: $PM_{2.5}$ Modeling Results

	$PM_{2.5}$ 24-hour Concentration ($\mu g/m^3$)	**$PM_{2.5}$ Annual Concentration ($\mu g/m^3$)**
$PM_{2.5}$ Model Results	0.934	0.130
SIL	1.2	0.2
Below SIL?	Yes	Yes

MODELING PARAMETERS

The Ambient Air Quality Analysis (AAQA) modeling was conducted using the same parameters described in the Line 4 Air Quality Technical Report date April 2019. The modeling analysis used AERMOD with the same meteorological data from Modesto for 2013-2017, same receptors, building(s), and source parameters, with the following changes that have occurred since April of 2019.

- Addition of two new downstream (located inside production building) product packaging lines, permitted in May 2020 (Project N1193405);
- Reduction in PM_{10} emissions via change in permit condition limit for PM_{10} emission factor from permit units N-8234-4, '-5, -6 (Project N1191493, submitted in May 2020, currently under review by SJVAPCD);
- Reduction in PM_{10} emissions potential from removal of pre-grinder source from permit unit N-8234-2, submitted in August 2020.

The impact of the PM_{10} and $PM_{2.5}$ emission reductions from these actions are noted below.

Emissions

Similar to the AAQA conducted in the Line 4 Air Quality Technical Report, this analysis looked at the Line 4 Project Incremental Emissions. Since the DPF-Ripon facility is not a major $PM_{2.5}$ source, this analysis examines only directly emitted $PM_{2.5}$ (per APR-1925). The $PM_{2.5}$ modeling used the highest 24-hour emission rate for both the 24-hour and annual analyses, which is conservative for the longer annual averaging time.

As $PM_{2.5}$ is a subset of PM_{10} emissions, the $PM_{2.5}$ emissions were derived from the PM_{10} emissions by applying an appropriate fraction for each source.

For combustion sources, it was assumed that all PM_{10} emissions were equal to $PM_{2.5}$ emissions. This applied to three RTOs exhaust, two boilers (N-8234-10 and 11) and truck exhaust. There is no change in usage to the fire pump engine or trains associated with the Line 4 Project, thus there are no emissions from these sources.

The $PM_{2.5}$ emissions from the material handling baghouses were estimated at 35% of the PM_{10} emissions based on the "Grinding with fabric filter control" from EPA AP-42 Table 11.19.2-4. This factor was applied to the three ingredient handling sources (N-8234-1, 2 and 3) and the six packaging lines (N-8234-7, 8, 9, 14, 16, 17).

The $PM_{2.5}$ emissions from the production line pet food processing were estimated at 17% of the PM_{10} emissions based on the description in AP-42 Chapter 9.9.1 Grain Handling. This factor was applied to the dryer/production Line 4 exhaust (proposed N-8234-15).

To reflect recently requested changes to PM permit limits, the PM_{10} emissions were updated from those presented in the Line 4 Air Quality Technical Report. Overall, these permit changes caused the total PM_{10} emissions from the Line 4 Project to decrease as shown in Table 2, thus the PM_{10} AAQA previously conducted remains a conservative estimate of potential PM_{10} impacts.

The modifications to the PM sources since the Line 4 Air Quality Technical Report include:

- The addition of packaging lines 5 and 6, from ATC dated May 7, 2020, although this change did not change the total packaging lines throughput, it is now distributed across six lines instead of four lines.
- The revised RTO Systems PM_{10} emission factor, requested in the May 2020 RTO modification application, which is based on January 2019 source test data.
- The Pre-grind operations associated with Unit 2 are no longer used, thus the throughput was set to 0 tons per day.

Table 2 shows that the revised PM_{10} emissions, which are the basis for this $PM_{2.5}$ analysis, are lower than the PM_{10} emissions analyzed in the April 2019 Line 4 Air Quality Technical Study, thus the previously conducted PM_{10} AAQA was a conservative estimate of Line 4 impacts and does not need to be updated.

Table 2: Revised PM_{10} Emissions compared to April 2019 Study

Source	Revised PM_{10} Emissions		April 2019 Study PM_{10} Emissions	
	Annual (lb/yr)	**Daily (lb/day)**	**Annual (lb/yr)**	**Daily (lb/day)**
Total Stationary Source Emissions	5,831	16.22	8,718	26.18
Total Mobile Source Emissions	13	0.04	13	0.04
Total Incremental Emissions	**5,845**	**16.26**	**8,731**	**26.22**

Table 3 presents the Line 4 Project incremental $PM_{2.5}$ annual and daily emissions by source that were used in this AAQA modeling. Attachment 1 includes the detailed emission calculations.

Table 3: $PM_{2.5}$ Emissions for AAQA Modeling

Unit	$PM_{2.5}$ Annual Emissions (lb/year)	$PM_{2.5}$ Daily Emissions (lb/day)
N-8234-1 Receiving, storage, load-out	50	0.16
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	3	0.02
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	761	2.09
N-8234-4 Line 1	0	0
N-8234-5 Line 2		
N-8234-6 Line 3		
N-8234-15 Line 4	494	1.35
3-RTO Units	333	1.05
N-8234-7 Packaging Line 1, THIELE-1	61	0.17
N-8234-8 Packaging Line 2, THIELE-2		
N-8234-9 Packaging Line 3, UVA-1		
N-8234-14 Packaging Line 4, THIELE-3		
N-8234-16 Packaging Line 5, UVA-2		
N-8234-17 Packaging Line 6, THIELE-4		
N-8234-10 Boiler-1	96	0.26
N-8234-11 Boiler-2		
N-8234-12 Emergency Diesel Fire pump	0	0
Total Stationary Source Emissions	***1,797***	***5.10***
Trucks & Worker Vehicles	13	0.04
Trains	0	0
Total Mobile Source Emissions	***13***	***0.04***
Total Annual Incremental Emissions	**1,811**	**5.14**

RESULTS

Table 4 presents the predicted $PM_{2.5}$ 24-hour and annual concentrations per source type. As shown in Tables 1 and 4, the $PM_{2.5}$ 24-hour and annual concentrations from all Line 4 Project sources combined are below the SILs, thus the Project will not contribute significantly to a violation of the CAAQS or NAAQS.

Table 4: $PM_{2.5}$ Modeling Results per Source Type

Source	$PM_{2.5}$ 24-hour Concentration ($\mu g/m^3$)	$PM_{2.5}$ Annual Concentration ($\mu g/m^3$)
SIL	**1.2**	**0.2**
All Sources	0.934	0.130
RTOs/Dryers	0.370	0.046
Unit 1	0.186	0.032
Unit 2	0.023	0.003
Unit 3	0.765	0.080
Boilers	0.081	0.011
Packaging Lines	0.130	0.012
Mobile Sources	0.005	0.001

CONCLUSION

The $PM_{2.5}$ modeling results are less than the SILs, thus the Project will not contribute significantly to a violation of the CAAQS or NAAQS. The modeling files are provided with this letter for your review.

Should you have any questions or concerns, please contact me at (619) 375-9142.

Sincerely,

Julie Mitchell
Senior Air Quality Scientist
Yorke Engineering, LLC
JMitchell@YorkeEngr.com

cc: Mark Ferguson, Diamond Pet Foods – Ripon
Jodi Smith, Partner – Environmental General Counsel, LLP
Randy Frazier, Yorke Engineering, LLC
Kyle Melching, SJVAPCD
Jessica Mohatt, Yorke Engineering, LLC

Enclosures:
1. Attachment 1 – Emission Calculations

ATTACHMENT 1 – EMISSION CALCULATIONS

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Baseline Annual PM Emissions (lb/yr)

Unit	PM_{10}	$PM_{2.5}$
	Annual Emissions (lb/year)	
N-8234-1 Receiving, storage, load-out	345	121
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	137	48
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	5,044	1,765
N-8234-4 Line 1	6,294	1,070
N-8234-5 Line 2		
N-8234-6 Line 3		
N-8234-15 Line 4	0	0
3-RTO Units	998	998
N-8234-7 Packaging Line 1	118	41
N-8234-8 Packaging Line 2	122	43
N-8234-9 Packaging Line 3	22	8
N-8234-14 Thiele Packaging Line 4	34	12
N-8234-10 Boiler-1	211	211
N-8234-11 Boiler-2		
N-8234-12 Emergency Diesel Fire pump	3	3
Total Stationary Source Emissions	***13,327***	***4,319***
Trucks & Worker Vehicles	30	30
Trains	9	9
Total Mobile Source Emissions	***39***	***39***
Total Annual Baseline Emissions	**13,367**	**4,359**

Line 4 Project Incremental PM Annual Emissions (lb/yr)

Unit	PM_{10}	$PM_{2.5}$
	Annual Emissions (lb/year)	
N-8234-1 Receiving, storage, load-out	143	50
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	8	3
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	2,175	761
N-8234-4 Line 1	0	0
N-8234-5 Line 2		
N-8234-6 Line 3		
N-8234-15 Line 4	2,904	494
3-RTO Units	333	333
N-8234-7 Packaging Line 1, THIELE-1	174	61
N-8234-8 Packaging Line 2, THIELE-2		
N-8234-9 Packaging Line 3, UVA-1		
N-8234-14 Packaging Line 4, THIELE-3		
N-8234-16 Packaging Line 5, UVA-2		
N-8234-17 Packaging Line 6, THIELE-4		
N-8234-10 Boiler-1	96	96
N-8234-11 Boiler-2		
N-8234-12 Emergency Diesel Fire pump	0	0
Total Stationary Source Emissions	***5,831***	***1,797***
Trucks & Worker Vehicles	13	13
Trains	0	0
Total Mobile Source Emissions	***13***	***13***
Total Annual Incremental Emissions	**5,845**	**1,811**

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Line 4 Project Incremental PM Daily Emissions (lb/day)

Unit	PM_{10}	$PM_{2.5}$
	Daily Emissions (lb/day)	
N-8234-1 Receiving, storage, load-out	0.45	0.16
N-8234-2 Dispensing, Pre-grinding, Conveying, Storage	0.07	0.02
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	5.96	2.09
N-8234-4 Line 1	0	0
N-8234-5 Line 2		
N-8234-6 Line 3		
N-8234-15 Line 4	7.96	1.35
3-RTO Units	1.05	1.05
N-8234-7 Packaging Line 1, THIELE-1	0.47	0.17
N-8234-8 Packaging Line 2, THIELE-2		
N-8234-9 Packaging Line 3, UVA-1		
N-8234-14 Packaging Line 4, THIELE-3		
N-8234-16 Packaging Line 5, UVA-2		
N-8234-17 Packaging Line 6, THIELE-4		
N-8234-10 Boiler-1	0.26	0.26
N-8234-11 Boiler-2		
N-8234-12 Emergency Diesel Fire pump	0	0
Total Stationary Source Emissions	***16.22***	***5.10***
Trucks & Worker Vehicles	0.04	0.04
Trains	0	0
Total Mobile Source Emissions	***0.04***	***0.04***
Total Daily Incremental Emissions	**16.26**	**5.14**

Yorke ENGINEERING, LLC
www.YorkeEngr.com

Diamond Pet Food Processors of Ripon
Pet Food Material Transfer and Storage Operations (N-8432-1)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Throughput	631 tons/day	300 tons/day	1200 tons/day
Max. Annual Throughput	230,141 tons/year	95,000 tons/year	380,000 tons/year
Capacity	61%	25%	100%
Operating Schedule			
365 days/year			
24 hours/day			

Pollutant	Emission Factor (lb/tons of material processed)
PM_{10}	0.0015

PM2.5 fraction of PM10	35%

Based on AP-42 Table 11.19.2-4 Grinding with fabric filter control

N-8432-1 Emissions			
Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
Daily PM_{10}	0.9 lbs/day	0.45 lbs/day	1.8 lbs/day
Annual PM_{10}	345.2 lbs/year	142.5 lbs/year	570.0 lbs/year
Daily $PM_{2.5}$	0.3 lbs/day	0.2 lbs/day	0.6 lbs/day
Annual $PM_{2.5}$	120.8 lbs/year	49.9 lbs/year	199.5 lbs/year

Notes:

Maximum annual material throughput during 2015-2017 occurred in 2017. Daily throughput based on the annual emissions / 365 days/yr

There are no proposed changes to the daily or annual throughput due to permitting for Line 4.

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Diamond Pet Food Processors of Ripon

Pet Food Material Dispensing, Pre-grinding, Conveying and Storage Operations (N-8432-2)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Pre-grind Throughput	16 tons/day	0 tons/day	0 tons/day
Max. Daily Mill Tower Throughput	185 tons/day	275 tons/day	1,100 tons/day
Max. Annual Pre-grind Throughput	5,711 tons/year	0 tons/year	0 tons/year
Max. Annual Mill Tower Throughput	67,650 tons/year	30,000 tons/year	120,000 tons/year
Pre-grind Capacity	12%	25%	100%
Mill Tower Capacity	75%	25%	100%

Operating Schedule
365 days/year
24 hours/day

Pollutant	Emission Factor (lb/tons of material processed)
PM_{10} - pregrinding	0.021
PM_{10} - material handling	0.00025

PM2.5 fraction of PM10	35%

Based on AP-42 Table 11.19.2-4 Grinding with fabric filter control

N-8432-2 Emissions

Pollutant	Baseline	Project Increment	Post-Project Permitted Emissions
Daily PM_{10}	0.37 lbs/day	0.07 lbs/day	0.28 lbs/day
Annual PM_{10}	136.8 lbs/year	7.5 lbs/year	30.0 lbs/year
Daily $PM_{2.5}$	0.13 lbs/day	0.02 lbs/day	0.10 lbs/day
Annual $PM_{2.5}$	47.9 lbs/year	2.6 lbs/year	10.5 lbs/year

Notes:

Maximum annual pre-grind material throughput during 2015-2017 occurred in 2015. Daily throughput based on the annual emissions / 365 days/yr

Maximum annual mill tower material throughput during 2015-2017 occurred in 2016. Daily throughput based on the annual emissions / 365 days/yr

The pre-grind daily permitted capacity will drop to 0

The mill tower permitted capacity will increase from 800 tpd to 1100 tpd, and the annual capacity will increase from 90,000 tpy to 120,000 tpy.

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Diamond Pet Food Processors of Ripon

od Material Dispensing, Mixing, Grinding and Screening, Extrusion Surge Bins, and Associated Conveying Operations (N-84

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Daily Hammermill Systems Throughput	631 tons/day	275 tons/day	1100 tons/day
Max. Daily Truck Loadout Throughput	631 tons/day	200 tons/day	800 tons/day
Max. Annual Hammermill System Throughput	230,141 tons/year	100,375 tons/year	401,500 tons/year
Max. Annual Tower Loading Throughput	230,141 tons/year	73,000 tons/year	292,000 tons/year
Capacity of permit max	79%	25%	100%

Operating Schedule
365 days/year
24 hours/day

Pollutant	Emission Factor (lb/tons of material processed)
PM_{10} -Hammermill Systems	0.021
PM_{10} - Truck Loadout	0.000917

PM2.5 fraction of PM10	35%

Based on AP-42 Table 11.19.2-4 Grinding with fabric filter control

In Project N-1122403, the 0.000917 lb/ton for truck loadout operation includes Animal Feed Mills Feed Shipping EF from AP-42, Table 9.9.1-2 (3/03), which was stated as 0.0008 lb/tons. Upon review, the Animal Feed Mills Feed Shipping used was without control factor applied.

N-8432-3 Emissions

Pollutant	Baseline	Project Increment	Post-Project Permitted Emissions
Daily PM_{10}	13.8 lbs/day	6.0 lbs/day	23.8 lbs/day
Annual PM_{10}	5,044 lbs/year	2,175 lbs/year	8,699 lbs/year
Daily $PM_{2.5}$	4.84 lbs/day	2.09 lbs/day	8.34 lbs/day
Annual $PM_{2.5}$	1,765.4 lbs/year	761.2 lbs/year	3,044.7 lbs/year

Notes:

Maximum annual material throughput during 2015-2017 occurred in 2017. Daily throughput based on the annual emissions / 365 days/yr

The hammermill permitted capacity will increase from 800 tpd to 1100 tpd. There is no separate annual limit.

There is no proposed change to the daily throughput for the tower/truck-loadout due to permitting for Line 4. There is no separate annual limit.

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Diamond Pet Food Processors of Ripon
Pet Food Processing Line - Dryers and RTOs (N-8234-4,5,6,15)

Dryer Parameters			
Source Parameterization	**Baseline**	**Project Increment**	**Post-Project Permitted Capacity**
Max. Daily Production (ton/day)	780	260	1040
Annual Production all lines (ton/yr)	205,697	94,900	379,600
Annual Production capacity	72%	25%	100%
# of production line	3	1	4
Dryer Capacity	57%	100 % Line-4 Dryer	100%
Each Dryer Burner Rating (MMBtu/hr)	10	10	10
Hour - Total Dryer Burner Rating (MMBtu/hr)	17.1	10	40
Day - Total Dryer Burner Rating (MMBtu/day)	410	240	960
Annual - Total Dryer Burner Rating (MMBtu/yr)	149,625	87,600	350,400
Dryer Operating Schedule			
24	hour/day		
365	day/year		

Notes:

Maximum annual production capacity during 2015-2017 occurred in 2016

Maximum annual dryer operations capacity during 2015-2017 occurred in 2017

The production permitted capacity will increase from 780 tpd to 1040 tpd. There is no separate annual limit.

Dryer Emission Factors			
Pollutant	**Emission Factor**	**Units**	**Reference**
PM_{10}	0.0306	lb/tons of finished material	PTO
$PM_{2.5}$	0.005202	lb/tons of finished material	AP-42 Chapter 9.9.1 Grain Handling PM2.5 is 17% of PM10
PM2.5 fraction of PM10	17%		AP-42 Chapter 9.9.1 Grain Handling PM2.5 is 17% of PM10

Total Dryer Annual Emissions (lb/yr)			
Pollutant	**Baseline Dryers (N-8234-4,5,6)**	**Project Increment Dryer (N-8234-15)**	**Post-Project Dryers Permitted Capacity (N-8234-4,5,6,15)**
PM_{10}	6,294	2,904	11,616
$PM_{2.5}$	1,070	494	1,975

Total Dryer Short-term Emissions		
Pollutant	**Project Increment Hourly Emissions (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
PM_{10}	0.33	8.0
$PM_{2.5}$	0.06	1.4

RTO Parameters			
Source Parameterization	**Baseline**	**Project Increment**	**Post-Project Permitted Capacity**
Number of RTOs	3	3	3
Total RTO Capacity	75%	25%	100%
Max RTO Fuel Consumption during Startup or Steady State Operation (MMBtu/hr)	7.7	7.7	7.7
Annual Average RTO Fuel Consumption during Normal Steady State Operation (MMBtu/hr)	6.7	6.7	6.7
Max Hour - Total RTO Rating (MMBtu/hr)	17.325	5.775	23.1
Max Daily - Total RTO Rating (MMBtu/day)	415.8	138.6	554.4
Annual - Total RTO Rating (MMBtu/yr)	131,333	43,778	175,111

RTO Operating Schedule		
Estimated Downtime	2	days/year
Estimated Downtime	48	hours/yr
RTO Annual Operating Hours	8712	hours/yr

RTO Combustion Emission Factors			
Pollutant	**Emission Factor Steady State**	**Units**	**Reference**
$PM_{10}/PM_{2.5}$	0.0076	lb/MMBtu	AP-42 1.4

Total RTO Annual Emissions (lb/yr)			
Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
$PM_{10}/PM_{2.5}$	998	333	1,331

Total RTO Short-term Emissions		
Pollutant	**Project Increment Hourly Emissions Steady State (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
$PM_{10}/PM_{2.5}$	0.044	1.05

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Diamond Pet Food Processors of Ripon
Pet Food Packaging Operations (N-8432-7,8,9,14)

	Baseline	Project Increment	Post-Project Permitted Capacity
Max. Individual or Total Daily Throughput	637 tons/day	300 tons/day	1200 tons/day
Max. Total Annual Throughput	232,652 tons/year	109,500 tons/year	438,000 tons/year
Capacity	53%	25%	100%
N-8234-7 Packaging Line 1 Throughput	94,149 tons/year		
N-8234-8 Packaging Line 2 Throughput	97,308 tons/year		
N-8234-9 Packaging Line 3 Throughput	13,908 tons/year		
N-8234-14 Packaging Line 4 Throughput	27,287 tons/year		
Operating Schedule			
365 days/year			
24 hours/day			

Source	PM_{10} Emission Factor (lb/tons of material processed)	Emission Factor Source
N-8234-7 Packaging Line 1	0.00125	ATC 4/27/2020
N-8234-8 Packaging Line 2	0.00125	ATC 4/27/2020
N-8234-9 Packaging Line 3	0.00158	ATC 4/27/2020
N-8234-14 Packaging Line 4	0.00125	ATC 4/27/2020
N-8234-16 Packaging Line 5	0.00133	ATC 4/27/2020
N-8234-17 Packaging Line 6	0.00125	ATC 4/27/2020
PM2.5 fraction of PM10	35%	

Based on AP-42 Table 11.19.2-4 Grinding with fabric filter control

N-8432-7,8,9,14 Annual Emissions

Source	Baseline	Project Increment	Post-Project Permitted Emissions
	PM Annual Emission (lb/yr)		
N-8234-7 Packaging Line 1, THIELE-1	117.69	-	-
N-8234-8 Packaging Line 2, THIELE-2	121.64	-	-
N-8234-9 Packaging Line 3, UVA-1	21.97	-	-
N-8234-14 Packaging Line 4, THIELE-3	34.11	-	-
All combined PM10	**295.40**	**173.50**	**694.00**
All combined PM2.5	**103.39**	**60.73**	**242.90**

Notes:

N-8432-7,8,9,14 Short-term Emissions

Source	Project Increment PM Hourly Emission (lb/hour)	Project Increment PM Daily Emission (lb/day)
All combined PM10	**0.0198**	**0.47**
All combined PM2.5	**0.0069**	**0.166**

Notes:

Baseline emissions are based on the permit limit emission factor and actual usage per unit

Project increment and Post-Project emissions are based on the maximum emission factor from all units times the total annual throughput. Combined annual emissions from engineering evaluation Apr 27, 2020 evaluation Apr 27, 2020

Combined daily emissions are max EF times throughput

Combined hourly emissions are daily/24

The naming of these sources does not link them with the production lines

Maximum annual production throughput during 2015-2017 occurred in 2016 for Lines 1-3 and in 2017 for the Thiele Line 4. Daily throughput based on the annual emissions / 365 days/yr

There are no proposed changes to the daily or annual throughput due to permitting for Line 4, since Apr 2020 packaging permit revision

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Diamond Pet Food Processors of Ripon
Boilers (N-8234-10,11)

Source Parameterization	Baseline	Project Increment	Post-Project Permitted Capacity
Boiler Rating (MMBtu/hr)	14.65	14.65	14.65
Capacity	55%	25%	100%
Annual rating (MMBtu/yr)	70,412	32,084	128,334
Annual fuel usage (mmscf/yr)	69.03	31.45	125.82

Operating Schedule
365 days/year
24 hours/day

Notes:

Maximum annual boiler operations during 2015-2017 occurred in 2017

One boiler is a backup, thus only 1 is considered in emission calculations

The permit limits the annual emissions to the capacity of one boiler.

Boiler Emission Factors - Particulate Matter		
Pollutant	**Emission Factor**	**Units**
$PM_{10}/PM_{2.5}$	0.003	lb/MMBtu

Emission factors are from the PTO or SJVAPCD APR-1110 for PM10.

Boiler Particulate Matter Annual Emissions (lb/yr)			
Pollutant	**Baseline**	**Project Increment**	**Post-Project Permitted Emissions**
$PM_{10}/PM_{2.5}$	211	96	385

Boiler PM Short-term Emissions		
Pollutant	**Project Increment Hourly Emissions (lb/hr)**	**Project Increment Daily Emissions (lb/day)**
$PM_{10}/PM_{2.5}$	0.011	0.264

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Diamond Pet Food Processors of Ripon
Fire Pump (N-8234-12)

Source Parameterization	*Baseline*	*Project Increment*	*Post-Project Permitted Capacity*
Engine Rating (hp)	270	270	270
Estimated Engine Rating (MMBtu/hr)	0.687	0.687	0.687
Estimated fuel usage (gal/hr)	4.98	4.98	4.98
Operating Schedule			
hour/day	1	0	1
hours/year	18.5	0	100.0

Notes:

Maximum annual fire pump operations during 2015-2017 occurred in 2015

Heating Value (MMBtu/gallon)	0.138
Conversion factor (Btu/hr /hp)	2543.5
Diesel sulfur content (%)	0.0015
Density of diesel (lb/gal)	7.05
Molecular weight SO2 (lb/lb-mol)	64
Molecular weight S (lb/lb-mol)	32

Fire Pump Emission Factors - Particulate Matter

Pollutant	Emission Factor	Units
$PM_{10}/PM_{2.5}$	0.25	g/hp-hr

Notes:

Emission factors from the permit

The fire pump emissions will not change operations due to the line 4 project.

Fire Pump Particulate Matter Annual Emissions (lb/yr)

Pollutant	*Baseline*	*Project Increment*	*Post-Project Permitted Emissions*
$PM_{10}/PM_{2.5}$	2.76	0.00	14.87

Fire Pump Particulate Matter Short-term Emissions

Pollutant	*Project Increment Hourly Emissions (lb/hr)*	*Project Increment Daily Emissions (lb/day)*
$PM_{10}/PM_{2.5}$	0.000	0.000

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Train Emissions							
Purpose	**Locomotive Type**	**Railcars per day**	**Railcars per month**	**Railcars per year**	**Locomotive Engine Power Rating (hp)**	**Percentage of full power**	**Time Operating Onsite per Railcar (hr)**
Baseline							
Delivery Locomotive	Line-haul Locomotives	3	62	744	3000	5%	0.17
Switching Locomotive (on site Trakmobile)	Switch Locomotive	3	62	744	130	48%	0.50
Project Increment							
Delivery Locomotive	Line-haul Locomotives	0	0	0	3000	5%	0.17
Switching Locomotive (on site Trakmobile)	Switch Locomotive	0	0	0	130	48%	0.50

Trackmobile, Model: Viking, Engine Spec: TM-1084842, 130 HP, Tier 3, Manufactured March 2012

Baseline: 9 months of data from 2016 averaged 62 railcars per month. the railcar mover ran an average of 32.7 hours per month. Therefore 30 minutes of use per railcar.

Diamond's policy is to only move 2 or less cars at a time. The Trackmobile is under load (2 cars) ~40% of the time and ~60% without a load; and never under full load of 3 cars as designed.

Trackmobile average load conservatively estimated to be = 40% x 90% load + 60% x 20%

Project Increase: The average of 62 cars per month will remain even with the addition of a fourth line, as we will start receiving peas via truck loads, which accounts for ten cars per month we are currently receiving.

Project data identifies 1 railcar per delivery locomotive and 1 designated onsite switch engine.

Delivery locomotives spend approximately 10 minutes per railcar dropping and picking up in the 0.25 miles next to the site

7 days/week

52 weeks/year

Onsite Train Particulate Matter Emissions

Phase	Emissions	Baseline	Project Increment
		PM10/PM2.5	
Delivery Locomotives	Line-Haul Tier 2-3 Emission Factor (g/bhp-hr)	0.10	0.10
	Emission Rate per Locomotive (lb)	0.01	0.01
	Daily Emission Rate all Locomotives (lb/day)	0.02	0.00
	Annual Emission Rate all Locomotives (lb/yr)	4.1	0.0
	Annual Emission Rate all Locomotives (ton/yr)	0.002	0.000
Switch Engines	Switch Engine Tier 3 Emission Factor (g/bhp-hr)	0.10	0.10
	Emission Rate per Locomotive (lb)	0.01	0.01
	Daily Emission Rate all Locomotives (lb/day)	0.02	0.00
	Annual Emission Rate all Locomotives (lb/yr)	5.11	0.00
	Annual Emission Rate all Locomotives (ton/yr)	0.003	0.000
Total	**Annual Emissions (lb/yr)**	**9.2**	**0.0**

Notes:

Sulfur content (ppm) 15

density of diesel fuel (lb/gal) 6.94

SO2 (g/bhp-hr) = (fuel density) × (64 g SO2/32 g S) × (s content of fuel) x (conversion factor bhp-hr/gal)

Emission factors: 40 CFR PART 1033—CONTROL OF EMISSIONS FROM LOCOMOTIVES

The majority of the time the line-haul engine will operate in Notch 1 or idling, therefore emissions were conservatively estimated for Notch 1 horsepower. Notch percentage presented in PORT OF LONG BEACH AIR EMISSIONS INVENTORY for 2007 (POLB, Jan 2009) derived from EPA data.

Locomotive type	EPA Conversion Factors (bhp-hr/gal)
Large Line-haul	20.8
Switching	15.2

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Truck Emissions

Purpose	Vehicle Type	Vehicles per day	Vehicles per week	Vehicles per year	Distance travelled onsite roundtrip (miles)	Distance travelled offsite roundtrip (miles)	Idling Time onsite per Vehicle (hr)
Baseline							
Raw Material Deliveries	HHDT Trucks	17	114	5928	0.15	30	0.083
Product Deliveries	HHDT Trucks	28	190	9880	0.15	30	0.083
Supply deliveries	HHDT Trucks	1	5	260	0.15	30	0.083
Workers	Passenger vehicles	48	336	17472	0.15	30	NA
Project Increment							
Raw Material Deliveries	HHDT Trucks	9	57	2964	0.15	30	0.083
Product Deliveries	HHDT Trucks	13	90	4680	0.15	30	0.083
Supply deliveries	HHDT Trucks	0	0	0	0.15	30	0.083
Workers	Passenger vehicles	8	56	2912	0.15	30	NA

HHDT = Heavy-heavy-duty trucks

Average speed onsite = 10 mph

Average speed offsite = 40 mph

7 days/week

52 weeks/year

Truck Particulate Matter Emissions

Phase	Emissions	PM10
HHDT Emission factors	Idling Emission Factor (g/hr)	0.11
	Emission Factor Onsite (g/mile)	0.06
	Emission Factor Offsite (g/mile)	0.03
Passenger vehicle Emission factors	Emission Factor Onsite (g/mile)	0.01
	Emission Factor Offsite (g/mile)	0.002

Location	Phase	Baseline		Project Increment	
		PM10/PM2.5			
		Daily Emissions all Trucks (lb/day)	Annual Emission all Trucks (lb/yr)	Daily Emissions all Trucks (lb/day)	Annual Emission all Trucks (lb/yr)
Onsite Idling	Raw Material Deliveries	3.30E-04	0.1	1.75E-04	0.1
	Product Deliveries	5.43E-04	0.2	2.52E-04	0.1
	Supply deliveries	1.94E-05	0.0	0.00E+00	0.0
Onsite travel	Raw Material Deliveries	3.17E-04	0.1	1.68E-04	0.1
	Product Deliveries	5.21E-04	0.2	2.42E-04	0.1
	Supply deliveries	1.86E-05	0.0	0.00E+00	0.0
	Passenger vehicles	1.27E-04	0.0	2.11E-05	0.0
Offsite travel	Raw Material Deliveries	2.83E-02	9.9	1.50E-02	4.9
	Product Deliveries	4.66E-02	16.4	2.16E-02	7.8
	Supply deliveries	1.66E-03	0.4	0.00E+00	0.0
	Passenger vehicles	7.66E-03	2.8	1.28E-03	0.5
Total		**8.61E-02**	**30.2**	**3.88E-02**	**13.5**

Assumes all delivery trucks are diesel HHDT

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Line 4 CEQA Project Incremental Particulate Matter Emissions for AERMOD Modeling

Type	Source ID	Description	24-hr Emissions (g/s)	24-hr Emissions (g/s)
			PM_{10}	$PM_{2.5}$
POINT	RTO1	dryer and RTO emissions	1.58E-02	4.21E-03
POINT	RTO2	dryer and RTO emissions	1.58E-02	4.21E-03
POINT	RTO3	dryer and RTO emissions	1.58E-02	4.21E-03
POINT	BOILER1	N-8234-11	6.93E-04	6.93E-04
POINT	BOILER2	N-8234-10	6.93E-04	6.93E-04
POINT	BAG1A	Unit 1 baghouse A - N-8234-1	1.18E-03	4.14E-04
POINT	BAG1B	Unit 1 baghouse B - N-8234-1	1.18E-03	4.14E-04
POINT	BAG2	Unit 2 baghouse - N-8234-2	3.61E-04	1.26E-04
POINT	BAG3A	Unit 3 baghouse A - N-8234-3	1.04E-02	3.65E-03
POINT	BAG3B	Unit 3 baghouse B - N-8234-3	1.04E-02	3.65E-03
POINT	BAG3C	Unit 3 baghouse C - N-8234-3	1.04E-02	3.65E-03
POINT	THIELE1	Packaging line 1 N-8234-7	4.15E-04	1.45E-04
POINT	THIELE2	Packaging line 2 N-8234-8	4.15E-04	1.45E-04
POINT	UVA1	Packaging line 3 N-8234-9	4.15E-04	1.45E-04
POINT	THIELE3	Packaging line 4 N-8234-14	4.15E-04	1.45E-04
POINT	UVA2	N-8234-16 Packaging Line 5	4.15E-04	1.45E-04
POINT	THIELE4	N-8234-17 Packaging Line 6	4.15E-04	1.45E-04
LINE_VOLUME	TRUCKON	onsite truck travel	2.111E-06	2.111E-06
LINE_VOLUME	TRUCKIDLE	truck idling onsite	2.243E-06	2.243E-06
LINE_VOLUME	TRUCKOFF	offsite truck travel 1/4 mile	1.871E-06	1.871E-06

Summary of Criteria Air Pollutant and Precursor Emissions from Yorke's April 2019 Tech Report and August 2020 PM2.5 Report

Existing Operational Annual Emissions of Criteria Air Pollutants and Precursors

	VOC	NOx	CO	SOx	PM10	units	source/notes	PM2.5	units	source/notes
Stationary Sources										
N-8234-1 Receiving, Storage, Loadout	0	0	0	0	345	lb/yr	Source 1, Table 2-8	121	lb/yr	Source 2, Attachment 1
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0	0	0	0	137	lb/yr	Source 1, Table 2-8	48	lb/yr	Source 2, Attachment 1
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	0	0	5,044	lb/yr	Source 1, Table 2-8	1,765	lb/yr	Source 2, Attachment 1
N-8234-4 Line 1										Source 2, Attachment 1
N-8234-5 Line 2	1,028	3,571	16,666	424	12,589	lb/yr	Source 1, Table 2-8	5,035	lb/yr	Source 2, Attachment 1
N-8234-6 Line 3										Source 2, Attachment 1
N-8234-15 Line 4 (dryers)	0	0	0	0	0	lb/yr	Source 1, Table 2-8	0	lb/yr	Source 2, Attachment 1
3-RTO Units	722	44,916	115,573	374	998	lb/yr	Source 1, Table 2-8	998	lb/yr	Source 2, Attachment 1
N-8234-7 Packaging Line 1	0	0	0	0	104	lb/yr	Source 1, Table 2-8	41	lb/yr	
N-8234-8 Packaging Line 2	0	0	0	0	107	lb/yr	Source 1, Table 2-8	43	lb/yr	
N-8234-9 Packaging Line 3	0	0	0	0	21	lb/yr	Source 1, Table 2-8	8	lb/yr	Source 2, Attachment 1
N-8234-14 Thiele Packaging Line 4	0	0	0	0	34	lb/yr	Source 1, Table 2-8	12	lb/yr	
N-8234-10 Boiler 1	282	775	2,605	201	211	lb/yr	Source 1, Table 2-8	211	lb/yr	Source 2, Attachment 1
N-8234-11 Boiler 2										Source 2, Attachment 1
N-8234-12 Emergency Diesel Fire Pump	8	66	20	0.02	3	lb/yr	Source 1, Table 2-8	3	lb/yr	Source 2, Attachment 1
Subtotal, Stationary Sources	2,041	49,328	134,864	999	19,592	lb/yr	Source 1, Table 2-8	8,284	lb/yr	Source 2, Attachment 1
Subtotal, Stationary Sources	1.0	24.7	67.4	0.5	9.8	ton/yr	conversion calc	4.1	ton/yr	Source 2, Attachment 1
Mobile Sources										
Trucks and Worker Vehicles	183	5,013	2,011	21	30	lb/yr	Source 1, Table 2-8	30	lb/yr	Source 2, Attachment 1
Trains	43	481	184	0.5	9	lb/yr	Source 1, Table 2-8	9	lb/yr	Source 2, Attachment 1
Subtotal, Mobile Sources	226	5,494	2,195	21	39	lb/yr	Source 1, Table 2-8	39	lb/yr	Source 2, Attachment 1
Subtotal, Mobile Sources	0.11	2.75	1.10	0.01	0.02	ton/yr	conversion calc	0.02	ton/yr	Source 2, Attachment 1
Total	2,267	54,822	137,059	1,021	19,632	lb/yr	Source 1, Table 2-8	8,324	lb/yr	Source 2, Attachment 1
Total	1	27	69	1	10	ton/yr	conversion calc	4.2	ton/yr	conversion calc

Incremental Increase in Operational Annual Emissions of Criteria Air Pollutants and Precursors

	VOC	NOx	CO	SOx	PM10	units	source/notes	PM2.5	units	source/notes
Stationary Sources										
N-8234-1 Receiving, Storage, Loadout	0	0	0	0	143	lb/yr	Source 1, Table 2-9	50	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0	0	0	0	8	lb/yr	Source 1, Table 2-9	3	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0	0	0	0	2,175	lb/yr	Source 1, Table 2-9	761	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-4 Line 1										
N-8234-5 Line 2	0	0	0	0	0	lb/yr	Source 1, Table 2-9	0	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-6 Line 3										
N-8234-15 Line 4	472	2,091	9,757	248	2,904	lb/yr	Source 1, Table 2-9	2,323	lb/yr	Source 2, Table 3 & Attachment 1
3-RTO Units	241	14,972	38,524	125	333	lb/yr	Source 1, Table 2-9	333	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-7 Packaging Line 1	0	0	0	0		lb/yr	Source 1, Table 2-9		lb/yr	
N-8234-8 Packaging Line 2	0	0	0	0		lb/yr	Source 1, Table 2-9		lb/yr	
N-8234-9 Packaging Line 3	0	0	0	0		lb/yr	Source 1, Table 2-9	61	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-14 Thiele Packaging Line 4	0	0	0	0	174	lb/yr	Source 1, Table 2-9		lb/yr	
N-8234-16 Packaging Line 5, UVA-2	*This source was not included in Source 1.*									
N-8234-17 Packaging Line 6, THIELE-4	*This source was not included in Source 1.*									
N-8234-10 Boiler 1	128	353	1,187	91	96	lb/yr	Source 1, Table 2-9	96	lb/yr	Source 2, Table 3 & Attachment 1
N-8234-11 Boiler 2										
N-8234-12 Emergency Diesel Fire Pump	0	0	0	0	0	lb/yr	Source 1, Table 2-9	0	lb/yr	Source 2, Table 3 & Attachment 1
Subtotal, Stationary Sources	841	17,416	49,468	464	5,831	lb/yr	Source 1, Table 2-9	3,626	lb/yr	Source 2, Table 3 & Attachment 1
Subtotal, Stationary Sources	0.4	8.7	24.7	0.2	2.9	ton/yr	conversion calc	1.8	ton/yr	conversion calc
Mobile Sources										
Trucks and Worker Vehicles	77	2,346	533	9	13	lb/yr	Source 1, Table 2-9	13	lb/yr	Source 2, Table 3 & Attachment 1
Trains	0	0	0	0	0	lb/yr	Source 1, Table 2-9	0	lb/yr	Source 2, Table 3 & Attachment 1
Subtotal, Mobile Sources	77	2,346	533	9	13	lb/yr	Source 1, Table 2-9	13	lb/yr	Source 2, Table 3 & Attachment 1
Subtotal, Mobile Sources	0.04	1.17	0.27	0.00	0.01	ton/yr	conversion calc	0.01	ton/yr	conversion calc
Total	918	19,762	50,002	472	5,845	lb/yr	summation	3,640	lb/yr	Source 2, Table 3 & Attachment 1
Total	0.5	9.9	25.0	0.2	2.9	ton/yr	conversion calc	1.8	ton/yr	conversion calc
SJVAPCD Thresholds	10	10	100	27	15	ton/yr	SJVAPCD 2015 GAMAQI, p. 80	15	ton/yr	SJVAPCD 2015 GAMAQI, p. 80

	value	units	source
Mass conversion rate	2,000	lb/ton	www.onlineconversion.com/weight_common.htm

Incremental Increase in Operational Daily Emissions of Criteria Air Pollutants and Precursors

	VOC	NOx	CO	SOx	PM10	units	source/notes	PM2.5
Stationary Sources								
N-8234-1 Receiving, Storage, Loadout	0.00	0.00	0.00	0.00	0.45	lb/day	Source 1, Table 2-10	0.16
N-8234-2 Dispensing, Pre-Grinding, Conveying, Storage	0.00	0.00	0.00	0.00	0.07	lb/day	Source 1, Table 2-10	0.02
N-8234-3 Dispensing, Mixing, Grinding, Extrusion Surge Bins	0.00	0.00	0.00	0.00	5.96	lb/day	Source 1, Table 2-10	2.09
N-8234-4 Line 1								
N-8234-5 Line 2	0.00	0.00	0.00	0.00	0.00	lb/day	Source 1, Table 2-10	0
N-8234-6 Line 3								
N-8234-15 Line 4	1.30	5.76	26.88	0.68	7.96	lb/day	Source 1, Table 2-10	6.36
3-RTO Units	0.76	47.40	121.97	0.40	1.05	lb/day	Source 1, Table 2-10	1.05
N-8234-7 Packaging Line 1	0.00	0.00	0.00	0.00		lb/day	Source 1, Table 2-10	
N-8234-8 Packaging Line 2	0.00	0.00	0.00	0.00		lb/day	Source 1, Table 2-10	
N-8234-9 Packaging Line 3	0.00	0.00	0.00	0.00		lb/day	Source 1, Table 2-10	0.17
N-8234-14 Thiele Packaging Line 4	0.00	0.00	0.00	0.00	0.47	lb/day	Source 1, Table 2-10	
N-8234-16 Packaging Line 5, UVA-2	0.00	0.00	0.00	0.00				
N-8234-17 Packaging Line 6, Thiele-4	0.00	0.00	0.00	0.00				
N-8234-10 Boiler 1	0.35	0.97	3.25	0.25	0.26	lb/day	Source 1, Table 2-10	
N-8234-11 Boiler 2								0.26
N-8234-12 Emergency Diesel Fire Pump	0.00	0.00	0.00	0.00	0.00	lb/day	Source 1, Table 2-10	0
Subtotal, Stationary Sources	2.41	54.13	152.10	1.33	16.22	lb/day	Source 1, Table 2-10	10.11
Mobile Sources								
Trucks and Worker Vehicles	0.22	6.75	1.51	0.03	0.04	lb/day	Source 1, Table 2-10	0.04
Trains	0.00	0.00	0.00	0.00	0.00	lb/day	Source 1, Table 2-10	0
Subtotal, Mobile Sources	0.22	6.75	1.51	0.03	0.04	lb/day	Source 1, Table 2-10	0.04
Total	2.64	60.88	153.61	1.36	16.26	lb/day	Source 1, Table 2-10	10.15
SJVAPCD Thresholds	—	100	100	—	—	lb/day	SJVAPCD 2015 GAMAQI, p. 93–94	

Construction-Generated Emissions of Criteria Air Pollutants and Precursors

	ROG	NOx	CO	SOx	PM10	PM2.5	units	source/notes
Annual Emissions	0.02	0.12	0.11	0	0.04	0.01	ton/yr	Source 1, Table 2-3
SJVAPCD Thresholds	10	10	100	27	15	15	ton/yr	SJVAPCD 2015 GAMAQI, p. 80
Daily Emissions	0.29	5.25	1.87	0.02	0.73	0.22	lb/day	Source 1, Table 2-4
SJVAPCD Thresholds	100	100	100	100	100	100	lb/day	SJVAPCD 2015 GAMAQI, p. 93–94

Sources:

1 Yorke Engineering. 2019 (April). *Line 4 Air Quality Technical Report* . Prepared for Diamond Pet Foods Inc.

2 Yorke Engineering. 2020 (August). *DPF-Ripon Line 4 Project CEQA PM2.5 Modeling Study* . A technical memorandum to Patia Siong of the San Joaquin Valley Air Pollution Control District.

3 San Joaquin Valley Air Pollution Control District. 2015 (March 19). *Guidance for Assessing and Mitigating Air Quality Impacts* . Available: http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed August 14, 2018.