January 28, 2021

Ms. Valerie Thorsen, P.E.
Director, Air Quality Division
Arizona Department of Environmental Quality
1110 West Washington St.
Phoenix, AZ 85007

RE: Submittal of Class I Air Permit Renewal Application – Lhoist North America of Arizona, Inc.

Dear Ms. Thorsen:

Attached please find the Class I Permit No. 63592 Renewal Application for the Lhoist North America of Arizona, Inc. (LNA) Nelson Lime Plant (NLP) located in northern Arizona. The current Class I Permit expires July 29, 2021. Pursuant to Arizona Administrative Code (A.A.C.) R18-2-304.D.2, LNA is required to submit a Class I Permit Renewal Application (the Application) to Arizona Department of Environmental Quality (ADEQ) between six and eighteen months prior to the expiration of the current Class I Permit. As such, LNA is submitting this application to renew the Class I Permit for the NLP. The enclosed Application includes a report detailing the proposed updates to the Class I Permit, required ADEQ Forms, and all supplemental information required for a complete Application.

If you have questions or comments about the information presented in this letter or the enclosed Application, please do not hesitate to contact me at (702) 236-1409.

Sincerely,

Justin Andrews, Regional Environmental Manager - West
Lhoist North America

cc: Emily Kolb, Trinity Consultants
Hunter Haynie, Trinity Consultants

CLASS I PERMIT RENEWAL APPLICATION

ADEQ Class I Permit 63592

Lhoist North America / Nelson, Arizona

Prepared By:

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January 2021

Project 200301.0090

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1. EXECUTIVE SUMMARY

Lhoist North America of Arizona, Inc. (LNA) owns and operates the Nelson Lime Plant (NLP), a lime manufacturing facility in northern Arizona. The plant is located approximately 2.5 miles south of U.S. Highway 66, mile post 112, approximately six (6) miles east of Peach Springs, in Yavapai County, Arizona. The NLP is regulated by the Arizona Department of Environmental Quality (ADEQ) and currently operates pursuant to the requirements of the ADEQ Class I Air Quality Permit 63592. Note that pursuant to Arizona Administrative Code (A.A.C.) R18-2-101.23, the NLP is a categorical source, i.e. fugitive emissions are included in determining major source status and an emissions threshold of 100 tons per year is used for Prevention of Significant Deterioration (PSD) applicability determination.

ADEQ Class I Permit 63592 was issued on July 29, 2016 and will expire on July 29, 2021. Pursuant to the A.A.C. R18-2-304.D.2, a "timely" renewal application for the permit must be submitted to the ADEQ at least 6 months, but not more than 18 months prior to the date of permit expiration. Therefore, the permit renewal application must be submitted to ADEQ before January 29, 2021. This permit renewal application is being submitted to meet this requirement. With this permit renewal application, LNA is proposing to:

- Update existing permit conditions based on the changes to the Lime Maximum Achievable Control Technology (MACT) regulation, located at 40 CFR Part 63 Subpart AAAAA (Lime MACT), since 2016. The Lime MACT rule was updated on the following date:
  - July 24, 2020 (changes to the startup, shutdown, and malfunction [SSM] provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP), requirements for submittals, and incorporation by reference (IBR) of alternative test methods and references)
- Incorporate historic updates/other permit actions at the NLP since the 2016 permit issuance, including the following:
  - Updates from 2016
    - Minor Permit Revision Application: Replacement of 219 Secondary Gyratory Crusher with a Cone Crusher in the Crushing and Screening Plant [January 5, 2016]
    - Notice of Facility Change Allowed Without Permit Revision: Installation of Additional Air Cannons for Kilns #1 and #2 [October 4, 2016]
  - Updates from 2017
    - Notice of Facility Change Allowed Without Permit Revision: Vibrating Feeder 504B Replacement [February 24, 2017]
    - Notice of Facility Change Allowed Without Permit Revision: Primary Screen 108 Replacement [February 28, 2017]
    - Minor Permit Revision Correction: Corrections to Subpart Y Requirement for Equipment in the Solid Fuel Handling System (Replacement of Screw Conveyor 1-613, replacement of Vibrating Feeder 504A, and relocation of solid fuel storage location 2) [May 15, 2017]
    - Notification of Construction Commencement; Actual Date of Initial Startup; and Date of Initial Performance Test of Screw Conveyor 1-613 [June 13, 2017]
    - Notice of Facility Change Allowed Without Permit Revision: Vibrating Feeder 301-3 Replacement [July 18, 2017]
    - Minor Permit Revision Application: Replacement of Vibrating Feeder 504A in the Solid Fuel Handling System [July 26, 2017]
    - Minor Permit Revision Application: Change in the Method of Solid Fuel Blending [August 9, 2017]
  - Updates from 2018
    - Minor Permit Revision Application: Hydrate Import by Railcar and Export by Truck [May 10, 2018]
    - Minor Permit Revision Application: Dry Lime Injection for Sulfur Dioxide Control [August 9, 2018]

    - Minor Permit Revision Application: Request to Transfer Provisions of Federal Implementation Plan to the Arizona State Implementation Plan Through a Permit Revision [August 29, 2018]
    - Notice of Facility Change Allowed Without Permit Revision: Vibrating Feeder 201 Replacement [November 9, 2018]
- Updates from 2019
    - Notice of Facility Change Allowed Without Permit Revision: Addition of Screw Conveyor 702B in the Hydrate System [January 10, 2019]
    - Notice of Facility Change Allowed Without Permit Revision: Vibrating Feeders 340A, B, C & D Replacement [April 9, 2019]
    - Minor Permit Revision: Change Identification of Select Solid Fuel Handling Equipment and Add Belt Conveyor 2-601B [March 27, 2019]
    - Minor Permit Revision Applicability Determination: Portable Conveying System to Bypass Damaged Belt Conveyor BC-208 in the Crushing & Screening Plant [June 26, 2019]
- Updates from 2020
    - Minor Permit Revision Application: Request to Install a Series of Air Cannons and a Bin Vent on Silo 3A [May 21, 2020]

The NLP is an existing major source under the PSD and Title V programs. However, there are no physical changes or changes in method of operation being proposed as part of this permit action. Therefore, this permit action will not trigger a PSD or New Source Review (NSR) for any pollutants, and a control technology evaluation, or ambient impacts review, is not needed as part of this renewal effort. Note that no changes to the current dust control plan are expected.

The following sections of this document provide all the information required by A.A.C. R18-2-304 for a permit renewal application. A completed Standard Application Form is provided at the end of Section 3 as part of this application. A summary of site-wide potential-to-emit (PTE) emission calculations is provided in Table 1-1 below.

Table 1-1. Maximum Potential to Emit for Criteria and Hazardous Air Pollutants at the NLP

Pollutant	Maximum Potential to Emit Non-Fugitive		Maximum Potential to Emit Fugitive	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM	26.55	90.24	288.70	1,059.92
PM_{10}	12.41	50.28	97.41	331.84
$PM_{2.5}$	3.58	20.49	14.17	45.73
CO	136.86	508.63	402.00	21.51
NO_x	289.27	1,219.92	102.00	5.46
SO_2	842.36	3,690.01	12.00	0.64
VOC	2.03	7.01	23.30	0.48
Highest Single HAP (HCl)	--	8.26	--	--
Total HAPs	--	9.33	--	0.19
CO_2e	--	924,267	--	--

2. APPLICATION COMPLETENESS

This section includes Table 2-1 which provides a list of all applicable application components and where they are located in this application.

Table 2-1. ADEQ Air Quality Permit Application Information Requirements

Filing Instructions Number	Information Required	Included in Application		Section in Application
		Yes	No	
1. & 2.	Description of all processes and products at the facility, including Source Classification Code.	X		Section 4.1 & 4.2
5.	Flow diagrams for all processes.	X		Section 4.6
3. & 4.	Description of alternate operating scenarios and products.	X		Section 4.3
6.	A material balance for all processes		X	N/A
7.	Potential emissions of regulated air pollutants.	X		Appendix A
8.	Citation and description of applicable requirements.	X		Section 8
9.	Explanation of proposed exemptions from otherwise applicable requirements.	X		Section 8
10.a – d, f	Maximum annual, hourly process rates	X		Section 4.4
10.e	Fuel burning equipment and characteristics	X		Appendix A
10.g	Anticipated operating schedules	X		Appendix A
10.h	Limitations on source operations and any work practice standards affecting emissions	X		Appendix A
11, 12 & 14.	Equipment list, including Air Pollution Control Equipment.	X		Appendix C
13.	Site Diagram with property boundary and equipment layout	X		Section 5
15.	Equipment manufacturer's bulletins		X	N/A
16.a	Compliance Plan		X	Section 3
16.b – d.	Compliance schedule.		X	N/A
17.a & b	Compliance certification: Identification of applicable requirements and methods for determining compliance.	X		Section 3
17.c & e	Compliance certification: Schedule for submitting compliance certifications, certification of truth, accuracy, and completeness	X		Section 3
18.	Acid rain information.		X	N/A
19.	New major source/major modification information.		X	N/A
20.	Calculations on which all information requested in this application is based	X		Appendix A

Filing Instructions Number	Information Required	Included in Application		Section in Application
		Yes	No	
----	Compliance Assurance Monitoring (CAM) Analysis	X		Section 11
----	Suggested draft permit updates for Lime MACT	X		Appendix D

3. ADEQ CLASS I PERMIT STANDARD APPLICATION FORM

This section contains the completed ADEQ Standard Class I Permit Application form and a compliance certification signed by a responsible official. The NLP is in compliance with all federal and state applicable requirements and as such no compliance plan submittal is required. Also, there is no proposed change to any compliance method except for those changes due to updates in the Lime MACT.

SECTION 2.1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS I PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):
   Lhoist North America of Arizona, Inc. - Nelson Lime Plant
2. Mailing Address: P.O. Box 370
   City: Peach Springs State: AZ ZIP: 86434
3. Name (or names) of Owners/ Principals: Lhoist North America of Arizona, Inc.
   Phone: 928-769-2271 Fax: 928-769-2305 Email: _____
4. Name of Owner's Agent: _____
   Phone: _____ Fax: _____ Email: _____
5. Plant/Site Manager/ Contact Person and Title: Jolene Leist / Nelson Plant Manager
   Phone: 928-769-2271 Fax: 928-769-2305 Email: _____
6. Plant Site Name: Lhoist North America of Arizona, Inc. - Nelson Lime Plant
7. Plant Site Location Address: 2.5 Miles South of U.S. Route 66, Mile Marker 112
   City: Peach Springs County: Yavapai Zip Code: 86434
   Indian Reservation (if applicable, which one): _____
   Latitude/ Longitude, Elevation: 35° 31' 07", 113° 18' 39", 5180 ft
   Section/ Township/ Range: _____
8. General Nature of Business: Lime Production
9. Type of Organization:
   ☒ Corporation ☐ Individual Owner ☐ Partnership ☐ Government Entity (Government Facility Code: ----------)
   ☐ Other _____
8. Permit Application Basis: ☐ New Source ☐ Revision ☒ Renewal of Existing Permit
   (Check all that apply.)
   For renewal or modification, include existing permit number (and exp. date): 63592 / Exp date July 29,2021
   Date of Commencement of Construction or Modification: N/A
   Primary Standard Industrial Classification Code: 1422 and 3274
9. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification,

or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Signature of Responsible Official: _____

Official Title of Signer: Nelson Plant Manager

Typed or Printed Name of Signer: Jolene Leist

Date: _____ Telephone Number: 928-769-2271 Ext 81645120

SECTION 2.2 - EMISSION SOURCES

PAGE _____ OF _____
DATE _____

Estimated "Potential to Emit" per A.A.C. R18-2-101.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]					NONPOINT	
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/ HR. [3]	TONS/ YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]	
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)
	See Appendix A													

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL _____ feet
ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.

2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_X), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM_{10}), etc. Abbreviations are O.K.
3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.

4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.

5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.

6. Supply additional information as follows if appropriate:
   (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
   (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.

7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

SECTION 2.3 - EQUIPMENT LIST

The following table should include all equipment utilized at the facility, and should be completed with all the requested information. Be sure to notate the units (tons/hour, horsepower, etc.) when recording the Maximum Rated Capacity information, the Serial Number and/or the Equipment ID Number. The date of manufacture must be included in order to determine if portions of the facility are NSPS applicable. Make additional copies of this form if necessary.

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Date of Manufacture	Equipment ID Number
See Appendix C						

SECTION 4.0 - APPLICATION ADMINISTRATIVE COMPLETENESS CHECKLIST

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?	X			
2	Has the responsible official signed the standard application form?	X			
3	Has a process description been provided?	X			
4	Are the facility's emissions documented with all appropriate supporting information?	X			
5	Is the facility subject to Minor NSR requirements? If the answer is "YES", answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7.		X		
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?			X	
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?			X	
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?			X	
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	X			
8	Does the application include an identification and description of Pollution Controls? (if applicable)	X			
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?			X	
10	For any current non-compliance issue, is a compliance schedule attached?			X	
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?			X	
12	For major sources, have all applicable requirements been identified?	X			
13	For major sources, has a CAM applicability analysis been provided? For CAM applicable units, have CAM plans been provided?	X			
14	For major sources subject to requirements under Article 4 of the A.A.C., have all necessary New Source Review analyses identified in the application been presented?	X			

4. PROCESS DESCRIPTION

This section summarizes the processes and products produced at the NLP. Process flow diagrams (PFDs) are presented in Section 4.6. The PFDs depict the main processes at the NLP. A detailed equipment list is provided in Appendix C of this application.

4.1 Process Description

4.1.1 Limestone Processing

The limestone processing operations consist of three (3) quarries, a crushing and screening plant, and auxiliary operations. The limestone processing operations produce: (a) crushed and sized limestone for the adjacent lime manufacturing operations and (b) crushed and sized limestone products for aggregate sales.

4.1.1.1 Quarry Operations

Quarry operations include:

- Drilling and blasting to fracture the overburden and stone;
- Breaking apart extra-large boulders leftover from the blasting with a rock hammer;
- Loading the limestone, waste rock and overburden to haul trucks;
- Hauling the limestone to the primary crusher or the plaza stockpile (stockpile area located adjacent to the primary crusher);
- Hauling overburden and waste rock to in-pit storage areas and to gravitational piles (see explanation below);
- Hauling and transferring off-spec limestone (chat) and waste (dirt and dust) from the crushing and screening plant to in-pit storage areas; and
- Hauling and transferring kiln dust, off-spec limestone (partially calcined limestone from kiln preheater), off-spec lime and off-spec hydrate from the lime manufacturing facility to in-pit storage areas.

Some overburden and waste rock is hauled and dumped onto gravitational piles within the quarry. As the material is dumped over the edge of the gravitational pile, dirt and other fine particles settle out in the upper sections of the side slope while the larger size stones accumulate at the bottom of the slope. The stones of acceptable size collecting at the bottom of the gravitational piles are loaded into haul trucks and transported to the crushing and screening plant.

Contractors may be used on occasion for mining activities. These contractor activities are in lieu of, not in addition to, mining activities that would be performed by plant personnel. LNA will submit the required notifications or revision applications to ADEQ when new and replacement equipment are purchased.

The process throughput was determined based on the maximum process rates. The NLP is capable of continuous operation with no limit on hours of operation.

4.1.1.2 Crushing and Screening

Limestone from the quarry is hauled to the crushing and screening plant where it is unloaded to either the dump hopper at the primary crusher or the plaza stockpile. Limestone from the plaza stockpile is subsequently reclaimed via front-end loader and loaded into the dump hopper. The crushing and screening plant processes the limestone through a series of crushers and screens in order to reduce the size of the

rock, and to separate out the very fine material (chat) and remove it from the system. The chat is conveyed from five (5) different screens in the crushing and screening plant to the chat silo. The chat is then loaded into haul trucks and stockpiled for sale. The chat is also used as quarry backfill, to build quarry safety berms or to build and maintain haul roads. The crushed limestone is conveyed to a kiln feed stockpile for use by the adjacent lime manufacturing operations. Kiln feed material is also occasionally sold or used onsite for gravel or road fill material.

4.1.2 Lime Manufacturing

The lime manufacturing equipment consists of two (2) lime kilns that convert crushed limestone ($CaCO_3$) into quicklime (CaO), along with auxiliary processing equipment. Operations include pre-kiln limestone handling, kiln operations, post-kiln lime handling, a lime hydrator, truck and rail loadout facilities, and solid fuel handling.

4.1.2.1 Kiln Feed System

Crushed limestone produced by the crushing and screening operations is stored in two (2) adjacent kiln feed stockpiles. The crushed limestone is reclaimed from the stockpiles via vibrating feeders located in the kiln feed stockpile reclaim tunnel. The feeders transfer the material onto a belt conveyor feeding a vibrating screen. The vibrating screen undersized material is transferred to the chat silo. The vibrating screen oversized material is transferred to the two (2) stone bins that feed the two (2) lime kilns.

4.1.2.2 Kiln 1

Kiln 1 is a Kennedy Van Saun (KVS) 15′ x 155′ (diameter x length) rotary kiln equipped with a 14 plunger polygon preheater. The Kiln 1 preheater is currently equipped with 15 air cannons which are used to prevent preheater pluggage by releasing compressed air that causes a shock wave that breaks up the preheater buildup. The rated design capacity of Kiln 1 is 39.38 tons per hour. The lime product from the kiln is cooled within a contact cooler and is then sent to either the Front Lime Handling System (FLHS) or the Back Lime Handling System (BLHS) for processing and storage.

Kiln 1 is capable of burning coal, petroleum coke and fuel oil, or any combination of such fuels. Typically, diesel torches are used to warm the kiln during cold and warm startups. Coal, coke or a mixture of coal and coke is then used to fuel the kiln once the proper solid fuel ignition temperatures are reached.

Particulate emissions from Kiln 1 are controlled with a multi-tube cyclone dust collector (multicyclone) and a negative pressure baghouse. A Selective Non-Catalyst Reduction (SNCR) system is also used to control oxides of nitrogen (NO_x) emissions. The lime kiln dust (LKD) is collected in the kiln dust collectors and transferred with screw conveyors directly to the Kiln 1 dust bin. LKD from the Kiln 1 dust bin is then: 1) either loaded into supersacks or trucks for sale, 2) loaded into a dust truck and transported to the kiln dust storage area in the quarry, or 3) transferred to the Kiln 2 Dust System.

4.1.2.3 Kiln 2

Kiln 2 is a KVS 17′ x 178′ (diameter x length) rotary kiln equipped with a eighteen (18) plunger polygon preheater. The Kiln 2 preheater is currently equipped with 16 air cannons which are used to prevent preheater pluggage by releasing compressed air that causes a shock wave that breaks up the preheater buildup. The rated design capacity of Kiln 2 is 58.96 tons per hour. The lime product from the kiln is cooled with a contact cooler and is then transferred to either the FLHS or the BLHS for processing and storage.

Kiln 2 is capable of burning coal, petroleum coke, and fuel oil, or any combination of such fuels. Typically, diesel torches are used to warm the kiln upon cold and warm startups. Coal, coke or a mixture of coal and coke is then used to fuel the kiln once the proper solid fuel ignition temperatures are reached.

Particulate emissions from Kiln 2 are controlled with a multicyclone and a negative pressure baghouse. A SNCR system is also used to control oxides of nitrogen (NO_x) emissions. The LKD is collected in the kiln dust collectors and transferred with screw conveyors directly to the Kiln 2 dust bin. LKD from the Kiln 2 dust bin is then: 1) loaded into the dust truck and transported to the kiln dust storage area in the quarry, 2) loaded into supersacks or trucks for sale, 3) pneumatically transferred to the BLHS truck/railcar loadout for sale, or 4) pneumatically transferred to the Dust Recovery Bin in the FLHS. LKD from the Dust Recovery Bin is then mixed with the lime product and loaded for shipment.

4.1.2.4 Kiln Pony Motors

Each kiln is equipped with an 80 horsepower (HP) diesel pony motor, used to keep the kiln spinning when there is a loss of electrical power to or failure of the kiln drive motor. The pony motors are, on occasion, used in non-emergency situations. These occasions are generally associated with the kiln shutdowns; whereby, the pony motor may be used to turn the kiln to accommodate the workers installing new refractory brick or when maintenance is being performed on the kiln drive motor and the kiln needs to be turned for a maintenance reason. Although the motors are usually used in emergency situations (i.e., loss of power), their other uses are described above.

4.1.2.5 Front Lime Handling System

The lime produced in the kilns is fed from the kiln coolers to the FLHS via vibrating feeders that feed a pair of apron conveyors. The FLHS produces various sizes of lime (-1/8”, -3/8", +3/4”, etc.). The lime is transferred from the second apron conveyor to a bucket elevator, then to a triple-deck screen. The product from the screen is then transferred to either a hammermill for size reduction and re-screening, or to a product silo. There are three (3) 3,300- ton product silos based on the size of the material. The material from the product silos is then loaded into trucks or railcars via two (2) loadout belt conveyors (one-ton supersacks can also be filled at the loadouts using a front-end loader). If necessary, lime from Silo 1A can be recycled through the system via a set of screw conveyors. Particulate emissions from the material handling and transfer points are controlled with sealed or enclosed equipment and with dust collectors.

The FLHS also houses a dolomitic lime silo which receives product from other LNA facilities. The dolomitic lime ($CaO \cdot MgO$) is pneumatically transferred to the silo and loaded into customer trucks, usually as a blend with quicklime produced at the NLP. Additionally, certain customers require that gypsum be added to their quicklime truck shipments. The gypsum is added to the shipments via the gypsum dispensing system. The gypsum arrives on site in 1-ton supersacks. The dispensing system allows the supersacks to be hoisted up into place above the dispensing screw conveyor 444R. The gypsum dispensing system is located under Silo 2A.

4.1.2.6 Back Lime Handling System

The lime produced in the kilns is fed from the kiln coolers to the BLHS via vibrating feeders feeding a belt conveyor. The BLHS also produces various sizes of lime (-1/8”, -3/8", +3/4”, etc.). Lime is first transferred to a bucket elevator from which the material is transferred to a double roll crusher. From the roll crusher, the material passes through a triple-deck screen from which, depending on size, the material goes back to: 1) the roll crusher, 2) a hammermill, or 3) one (1) of five (5) product silos. Product from these silos is transferred to truck or railcars via loadout spouts under each silo (one-ton supersacks can also be filled). Lime from the kilns can also completely bypass the crushing and screening process and be transferred directly to the silos. Off-spec lime from the kilns is transferred to a bucket elevator from which the material

is transferred directly to a haul truck or the ground via a transfer chute. Particulate emissions from the material handling and transfer points are controlled with sealed or enclosed equipment and with dust collectors.

4.1.2.7 Hydrate System

Hydrated lime is produced by pulverizing quicklime and mixing it with water. The quicklime for the hydrator is received from Silo 2 or Silo 5 located in the BLHS. The quicklime is sent to a pug mill where water is added and then through a seasoning chamber. The now hydrated lime then moves through a bucket elevator and is processed by an air separator to remove the oversized material. The oversized material is then crushed by a hammermill and sent back to the air separator. The air separator undersized material is transferred to Hydrated Lime Silo 6 and is loaded onto trucks, rail cars, or into supersacks via a loadout spout under the silo. Occasionally, off-spec hydrate from the air separator is rejected to the ground and picked up by a loader to be hauled to the quarry storage area.

Particulate emissions generated from some of the material processing points in the hydrator are controlled with a Ducon wet scrubber. Other processing points are controlled by sealed equipment or dust collectors. Material generated from cleaning the wet scrubber, as well as scrubber overflow, is discharged in a water solution into the hydrator pit. The solids in the pit are loaded and transported to the quarry waste storage area. The water/lime solution in the hydrator pit is transferred to the plant water truck for dust control.

4.1.2.8 Solid Fuel Handling System

The coal and petroleum coke used to fire the kilns is received by truck and railcar. The truck and railcar unloading system (underground) consists of a track hopper, roll crusher and belt conveyor. The fuel (separate coal (usually trucks) and coke (usually railcar) shipments) is unloaded at the track hopper, crushed, and then transferred to a bucket elevator via the belt conveyor. The bucket elevator feeds another belt conveyor that transfers the fuel to a surge pile. The coal or coke is then moved from the surge pile to either Stockpile Location 1 (adjacent to the FLHS) or Stockpile Location 2 (located in the quarry). The coal or coke is moved from Stockpile Location 2 back to Stockpile Location 1 as needed. The coal is blended with the petroleum coke using the unloading equipment (usually used for coke) along with another solid fuel hopper and weigh belt (usually used for coal). The blended fuel is transferred to a bucket elevator and then to a roll crusher. From the roll crusher the blended fuel is transferred to the two (2) solid fuel bins. Each kiln is equipped with a ball mill for further crushing of the fuel prior to entering the kiln burner pipe.

Solid fuel may also be shipped off-site by truck to meet the emergency fuel demands at other LNA facilities. These shipments are estimated not to exceed 5,000 tons per year.

4.1.2.9 Truck Wash and Detroit Diesel Emergency Fire-Pump Engine

The NLP operates a truck wash equipped with a hot water pressure washer. The unit has a 768,000 Btu/hr energy rating and is equipped to run on diesel fuel. The plant also operates a 140 horsepower Detroit Diesel Emergency Fire Pump Engine that is used for fire protection under emergency conditions.

4.1.2.10 Facility-Wide Spillage from Various Processes

Spillage of material from conveyors, elevators, and other equipment in the various material handling systems (stone, lime and fuel) is picked up with shovels, loaders, or similar equipment on a timely basis. The material is then loaded and hauled to waste storage areas in the quarry or recycled back into the system.

4.1.3 Closed Municipal Solid Waste Landfill

The NLP is collocated with a closed municipal solid waste landfill, herein called the "Nelson Landfill". The Nelson Landfill is assumed to have been constructed in the 1960's and in October of 1999, the NLP submitted a Landfill Closure Construction Certification Report to the ADEQ. A regulatory applicability analysis for the Nelson Landfill is presented in Section 8 of this application.

4.2 Process Product Descriptions

The products produced at the NLP are listed in Table 4-1 below. The NLP falls under the Standard Industry Code (SIC) 3274 and Source Classification Code (SCC) 3-05-016.

Table 4-1. Products of the Nelson Lime Plant

Product	Description
Limestone	Calcium Carbonate ($CaCO_3$)
Quicklime (Hi-Cal)	Calcium Oxide (CaO)
Quicklime (Dolomitic)	Calcium Oxide / Magnesium Oxide (CaO / MgO)
Hydrated Lime	Hydrated Lime ($Ca(OH)_2$)

4.3 Alternate Operating Scenarios

There are no alternate operating scenarios at the NLP.

4.4 Process Rates

Maximum process rates are included in Appendix A as a part of the site-wide emission calculations.

4.5 Anticipated Operating Schedule

The NLP is capable of continuous operation for 8,760 hours per year (24 hours per day, 365 days per year). LNA has not previously proposed nor have limitations on hours of operation or process rates been previously established for the NLP.

4.6 Process Flow Diagrams

PFDs for the NLP operations are contained in this section.

Figure 4-1. Quarry Operations Process Flow Diagram

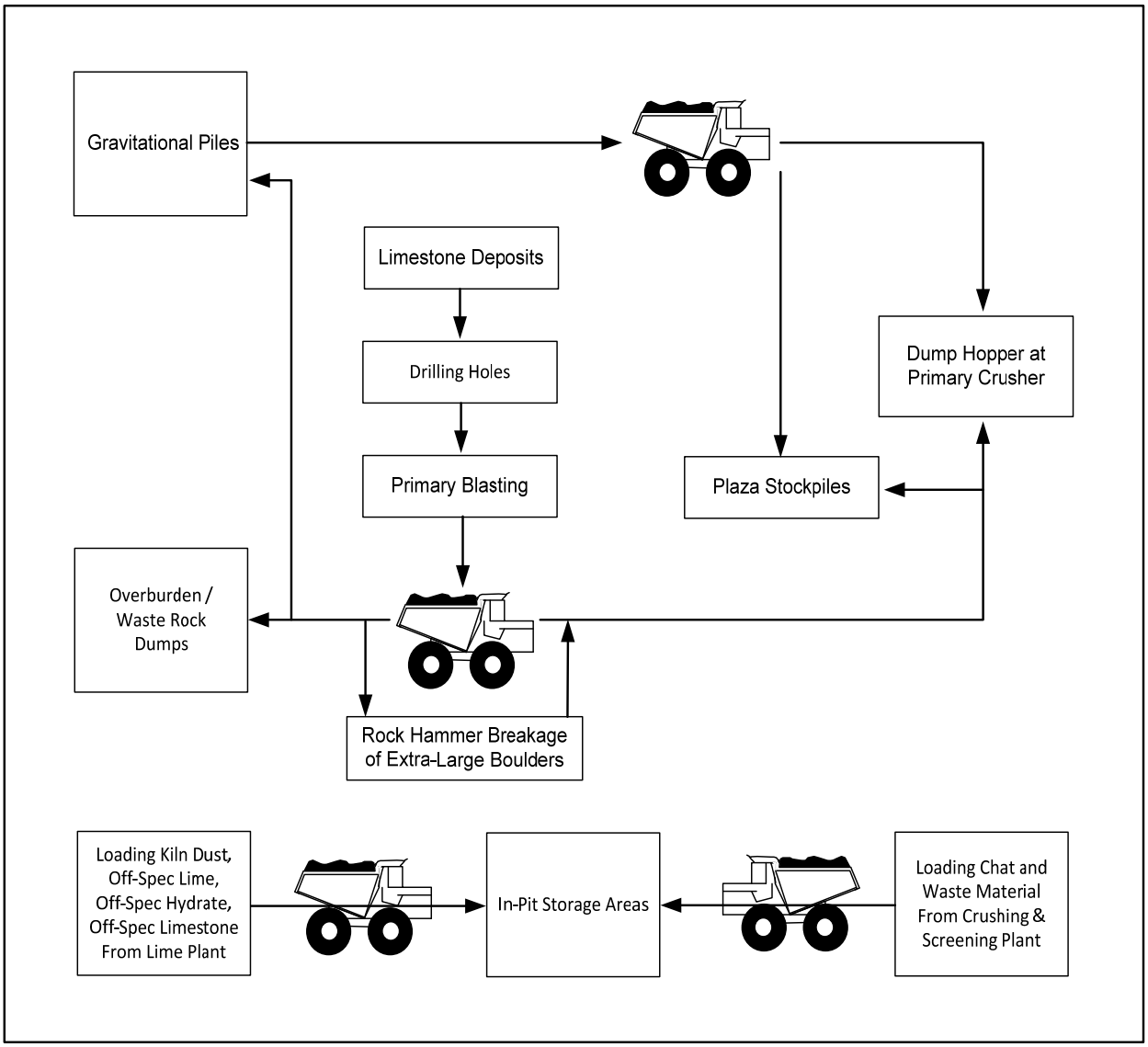


Figure 4-2. Crushing & Screening Process Plan View

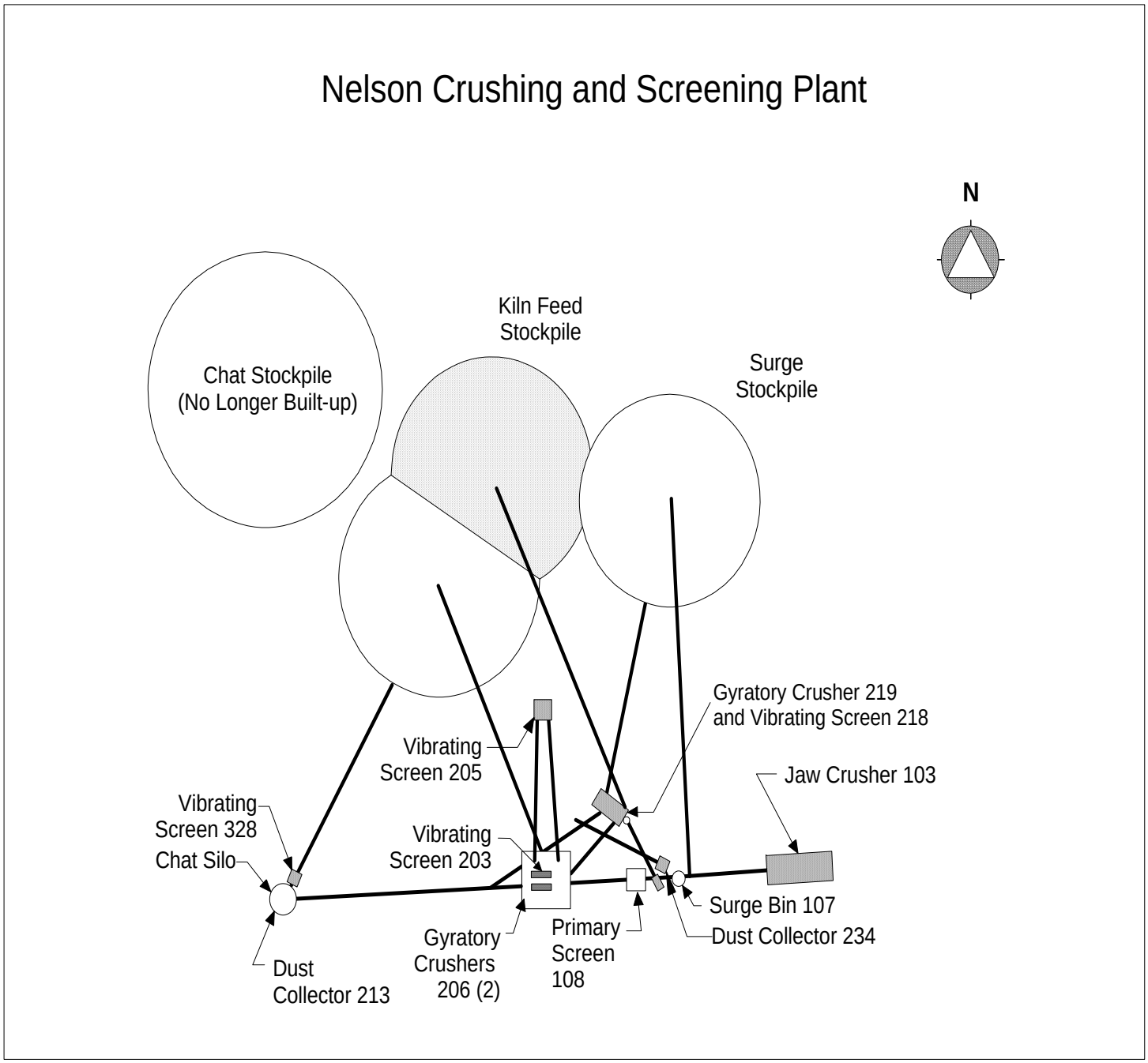


Figure 4-3. Crushing & Screening Process Flow Diagram

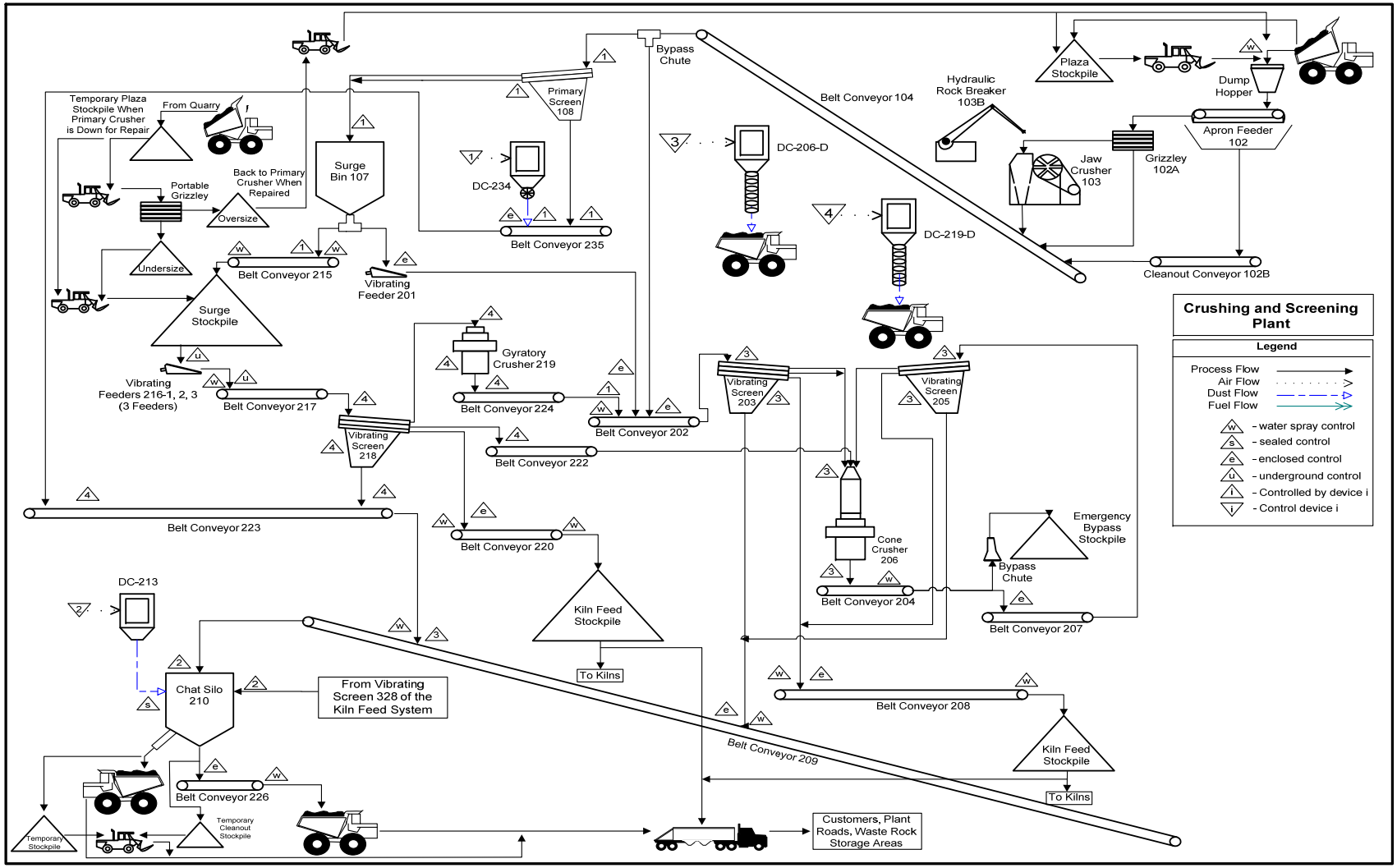


Figure 4-4. Lime Manufacturing Plant General Process Flow Diagram

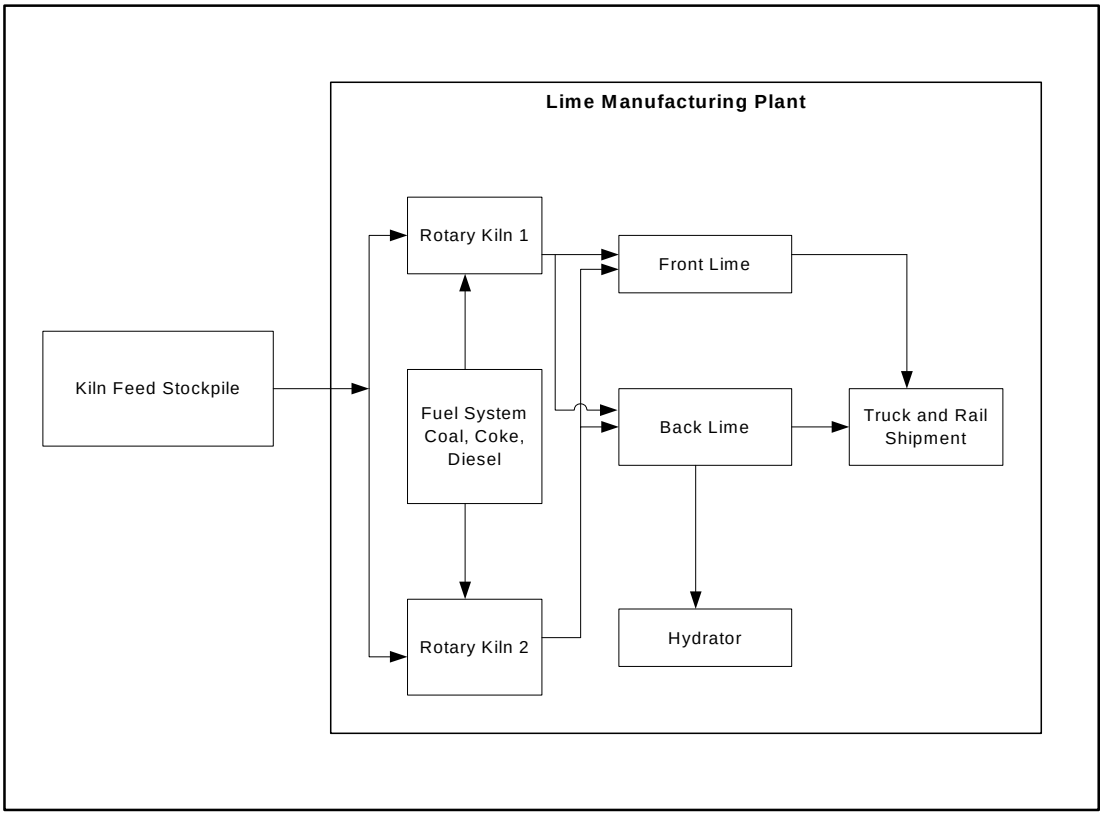


Figure 4-5. Kiln 1 System Process Flow Diagram

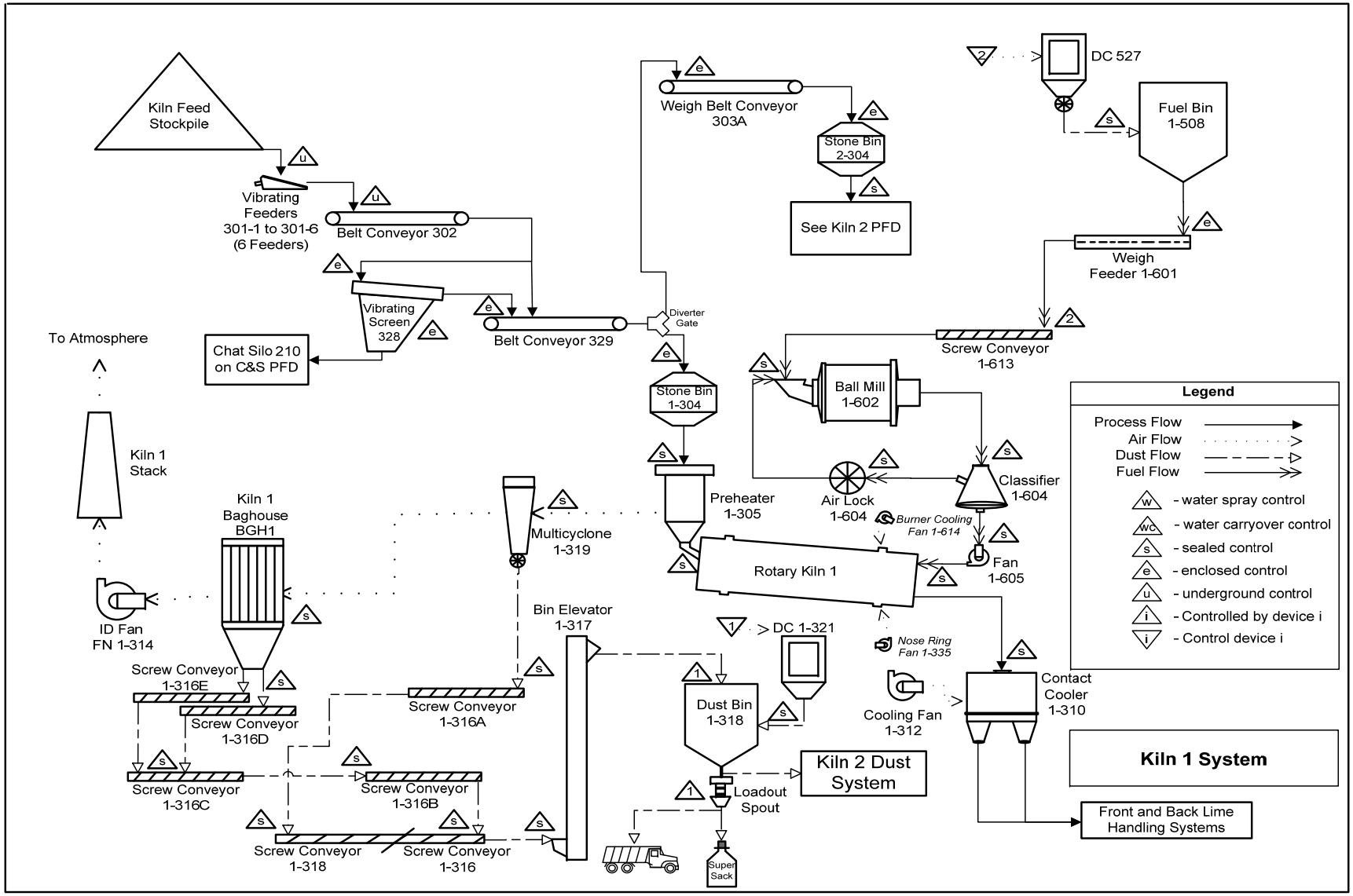


Figure 4-6. Kiln 2 System Process Flow Diagram

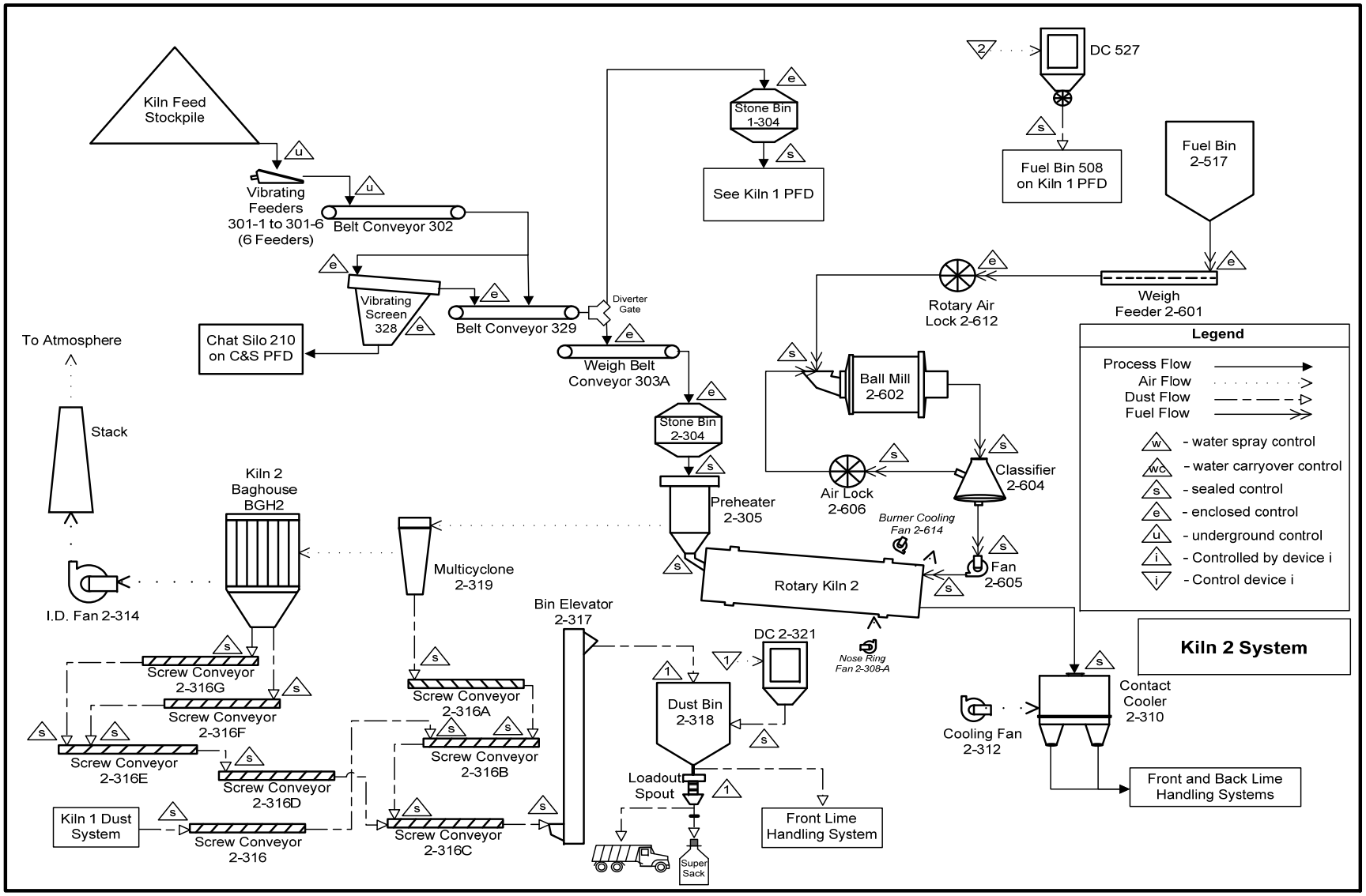


Figure 4-7. LKD Pneumatic Loadout System Process Flow Diagram

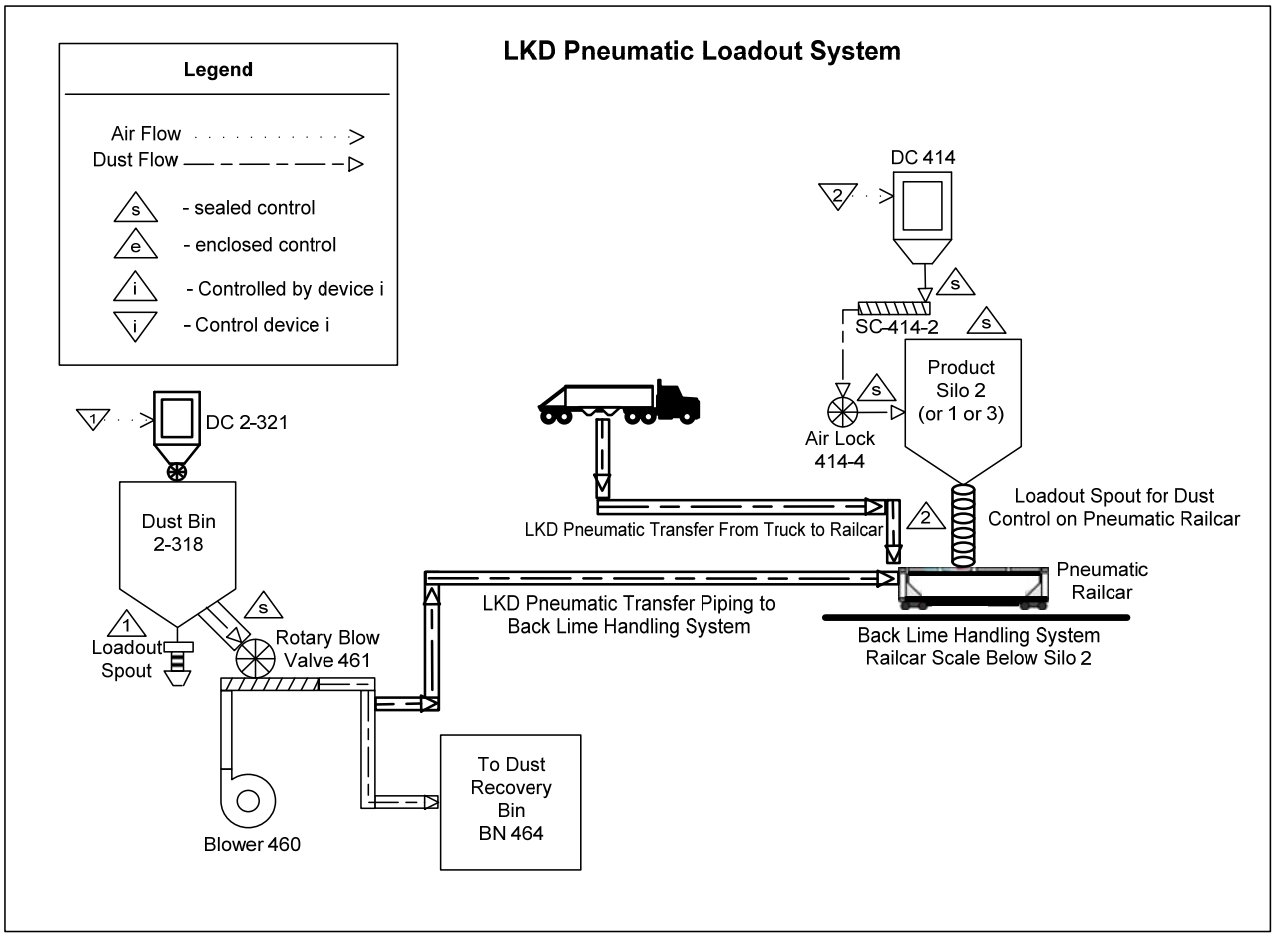


Figure 4-8. Front Lime Handling System Process Flow Diagram

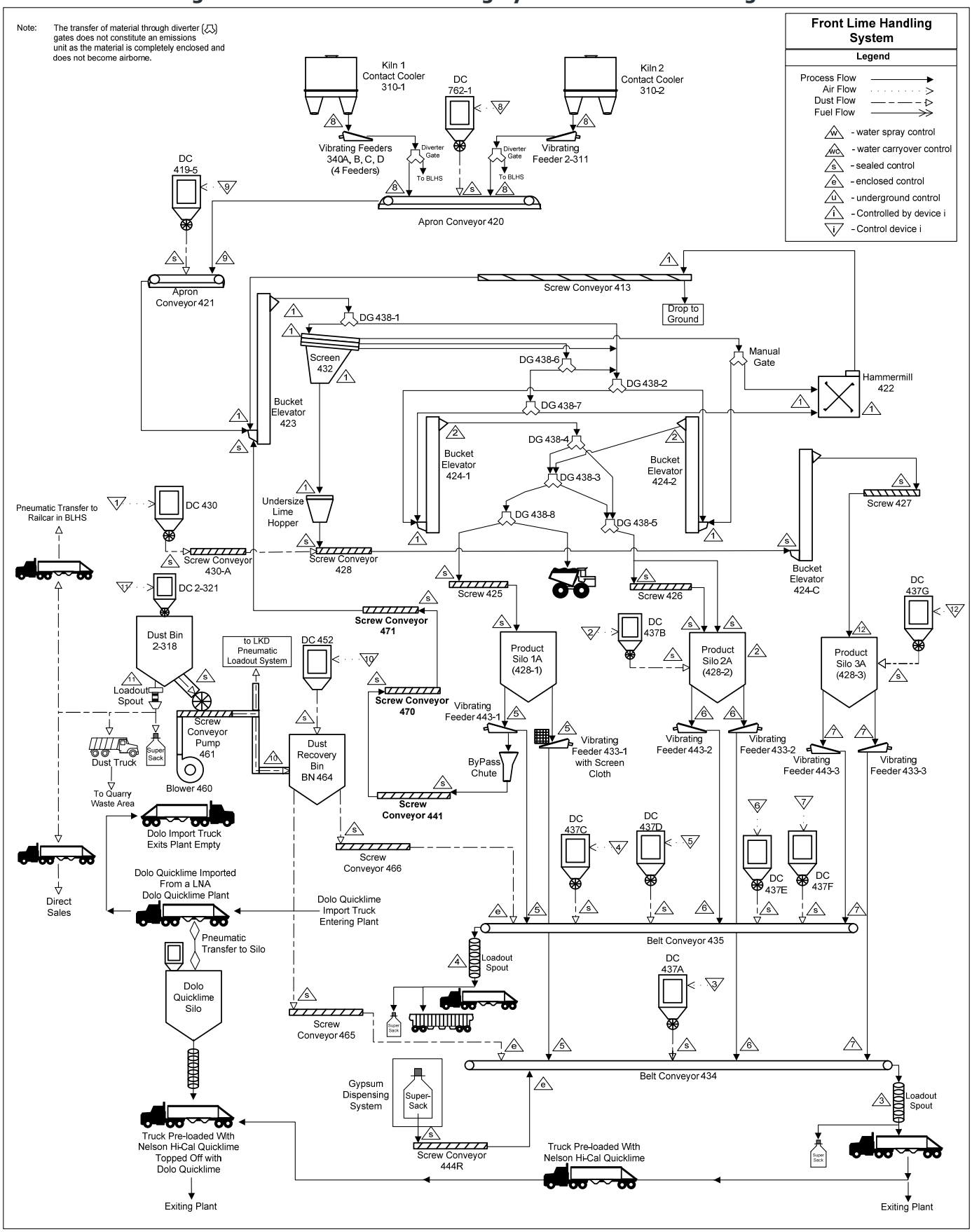


Figure 4-9. Back Lime Handling System Process Flow Diagram

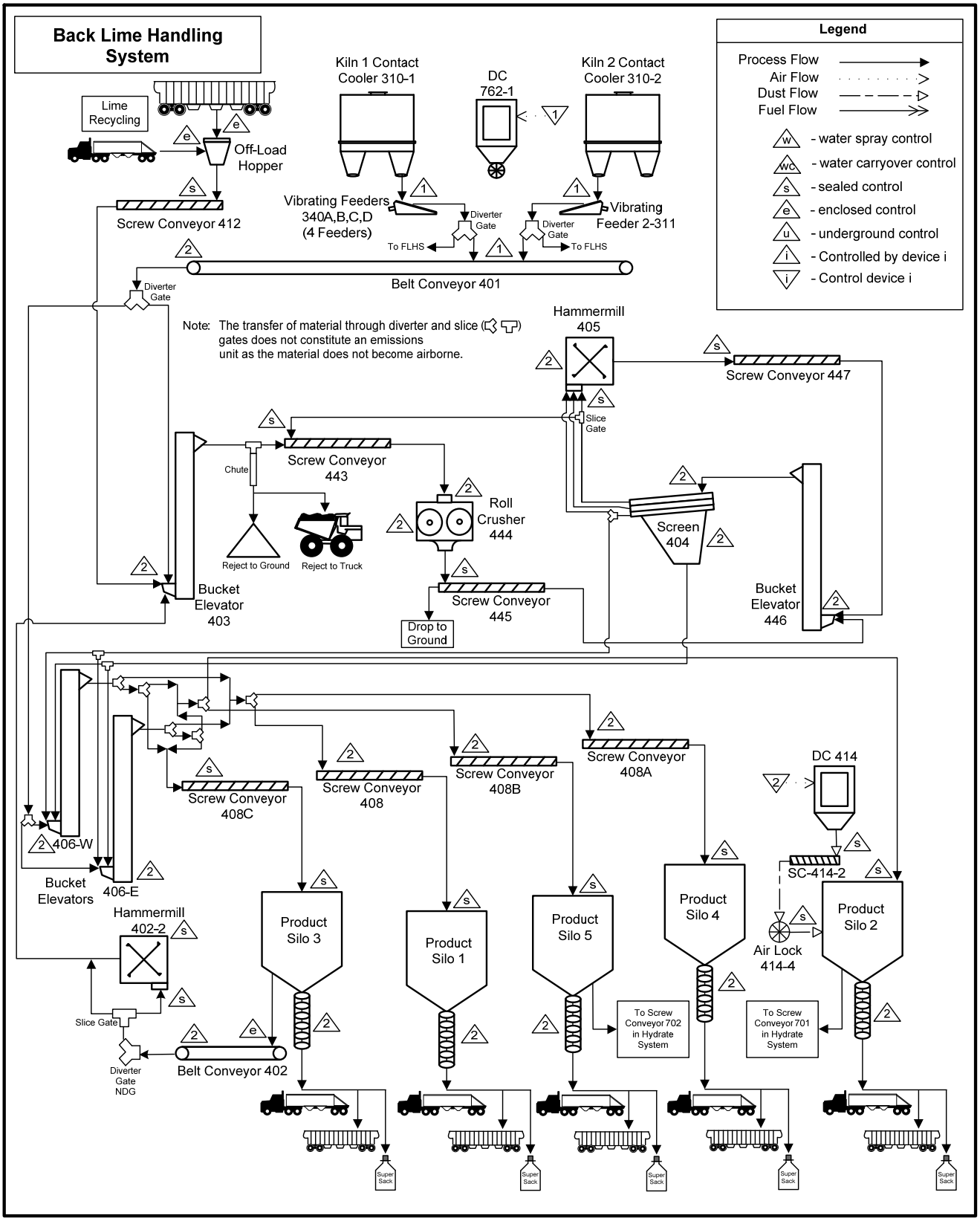


Figure 4-10. Hydrate System Process Flow Diagram

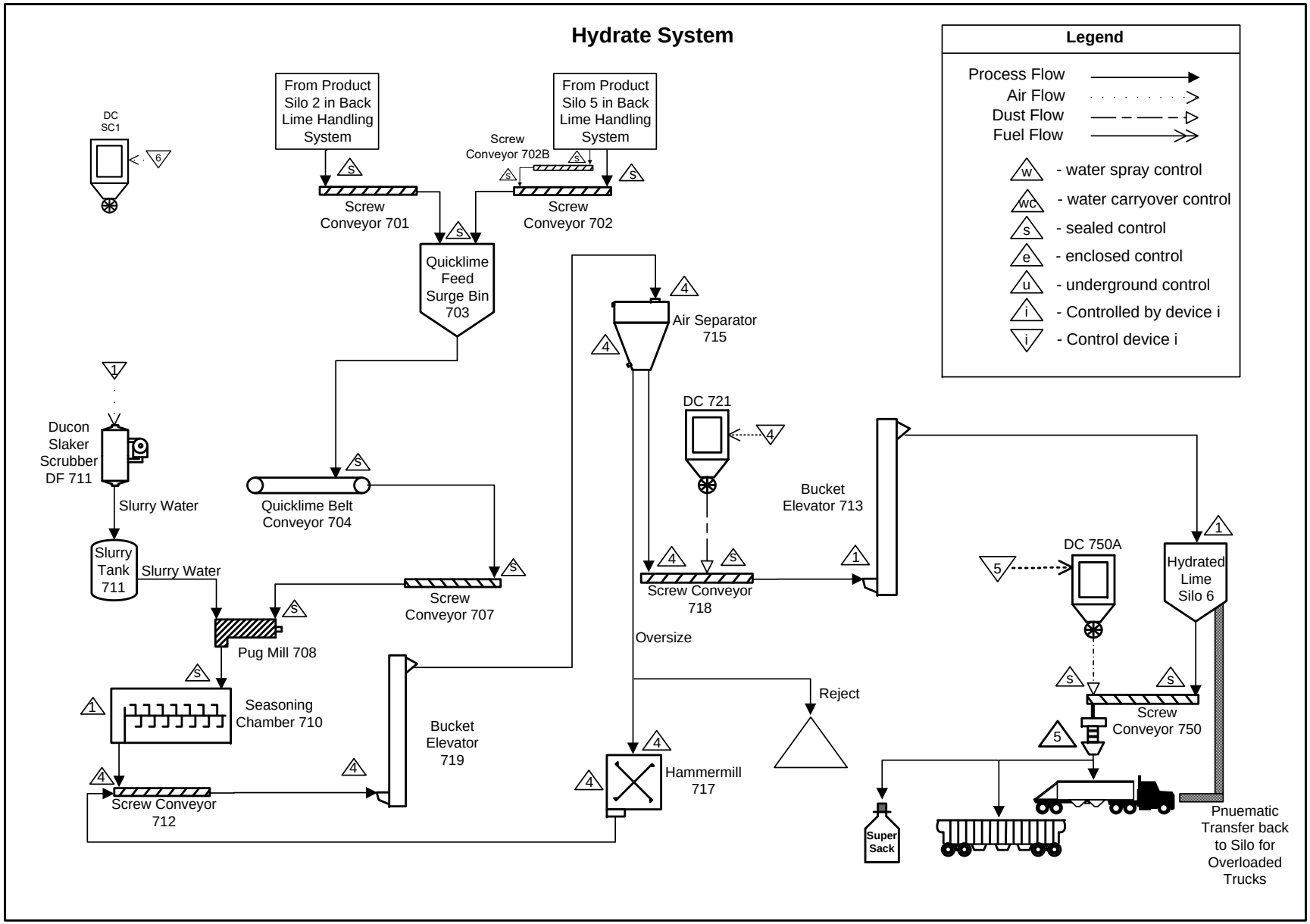


Figure 4-11. Solid Fuel Handling System Process Flow Diagram

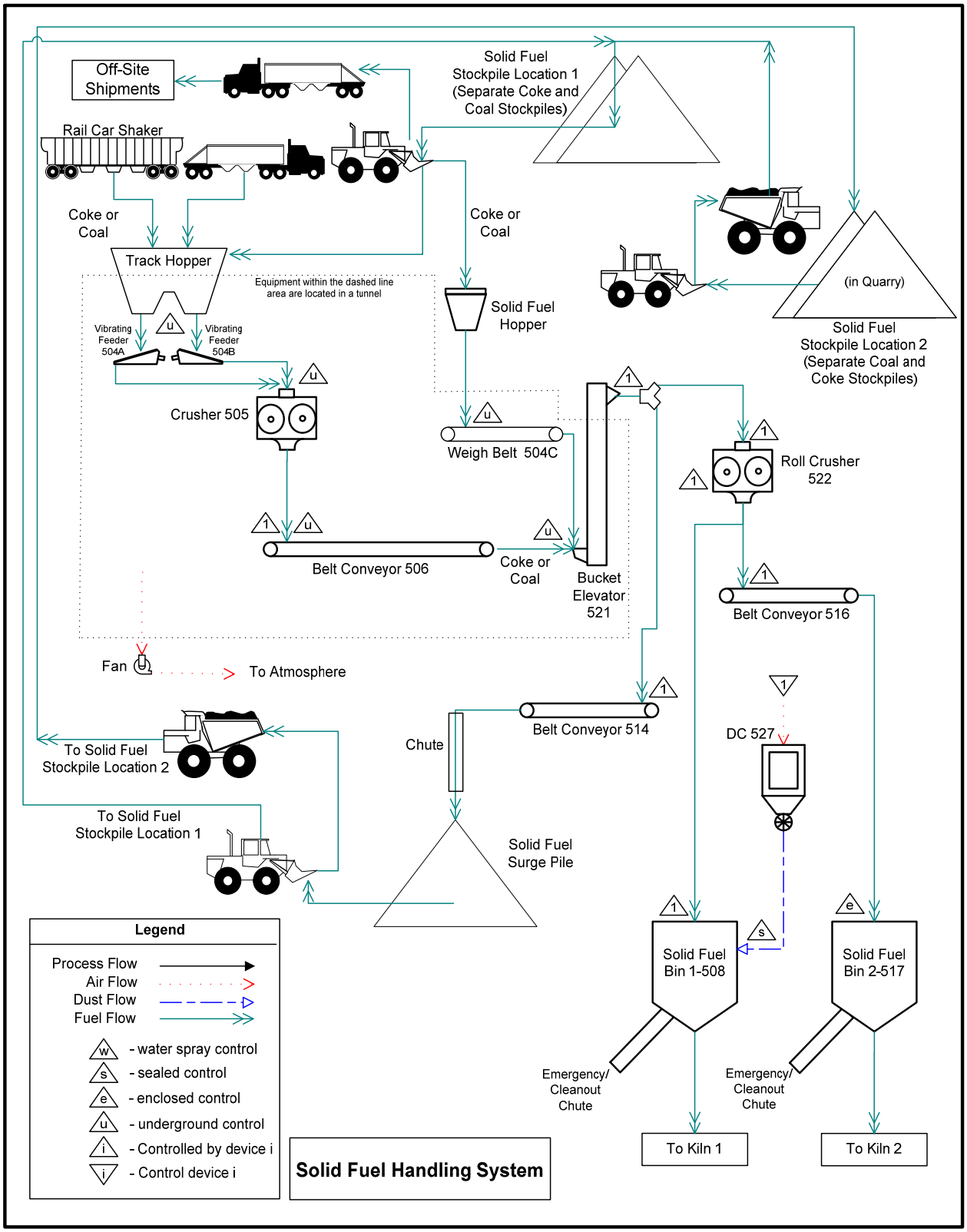
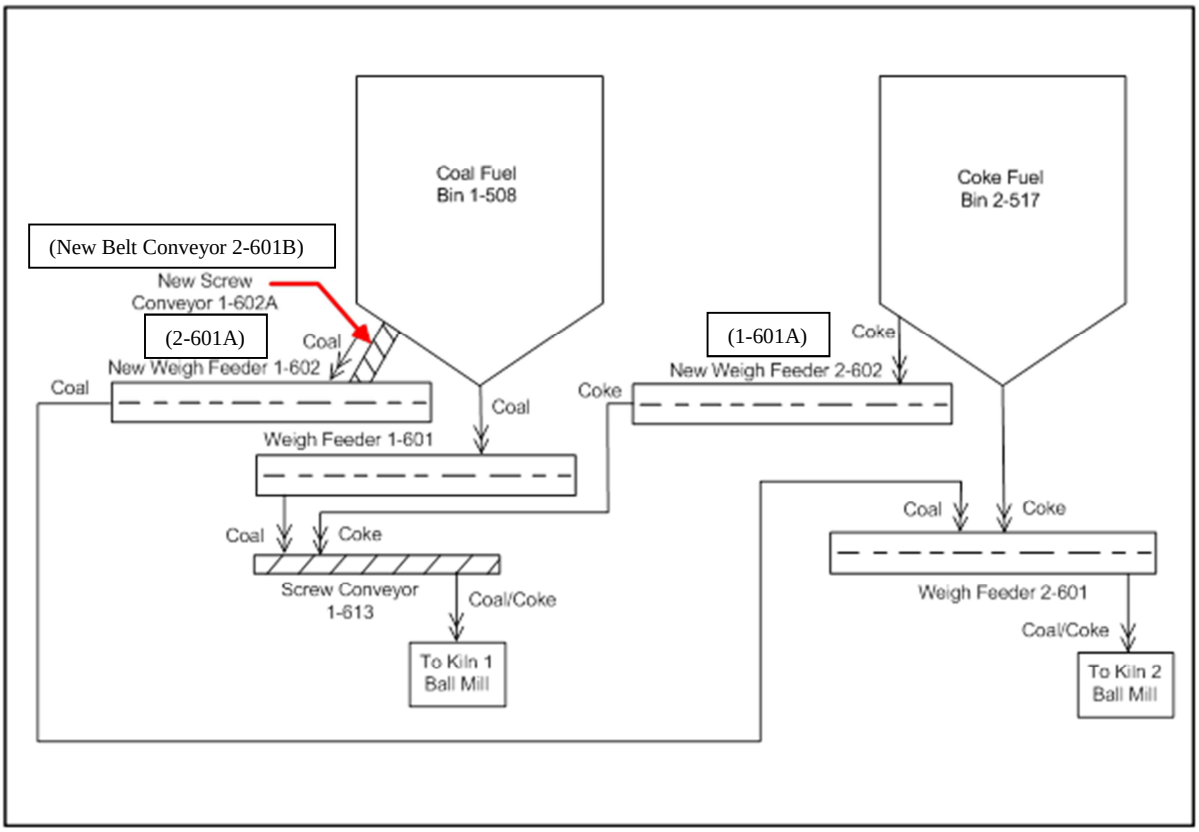


Figure 4-12. Solid Fuel Blending System Process Flow Diagram



5. SITE DIAGRAMS

This section contains the site diagrams depicting the NLP.

Figure 5-1. Map of Arizona Indicating the Location of The Nelson Lime Plant

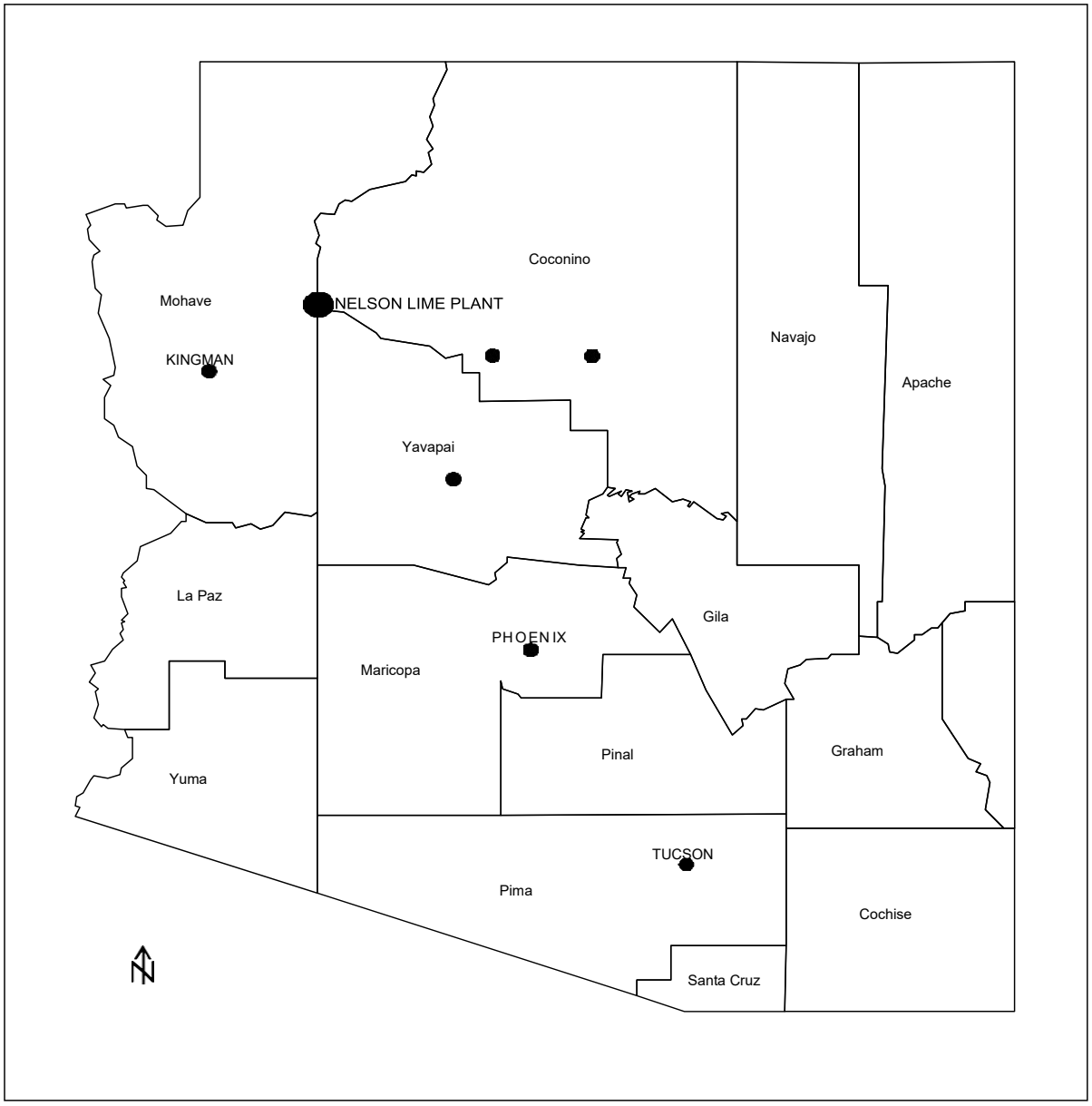


Figure 5-2. Topographic Map Showing Property Boundary of the Nelson Lime Plant

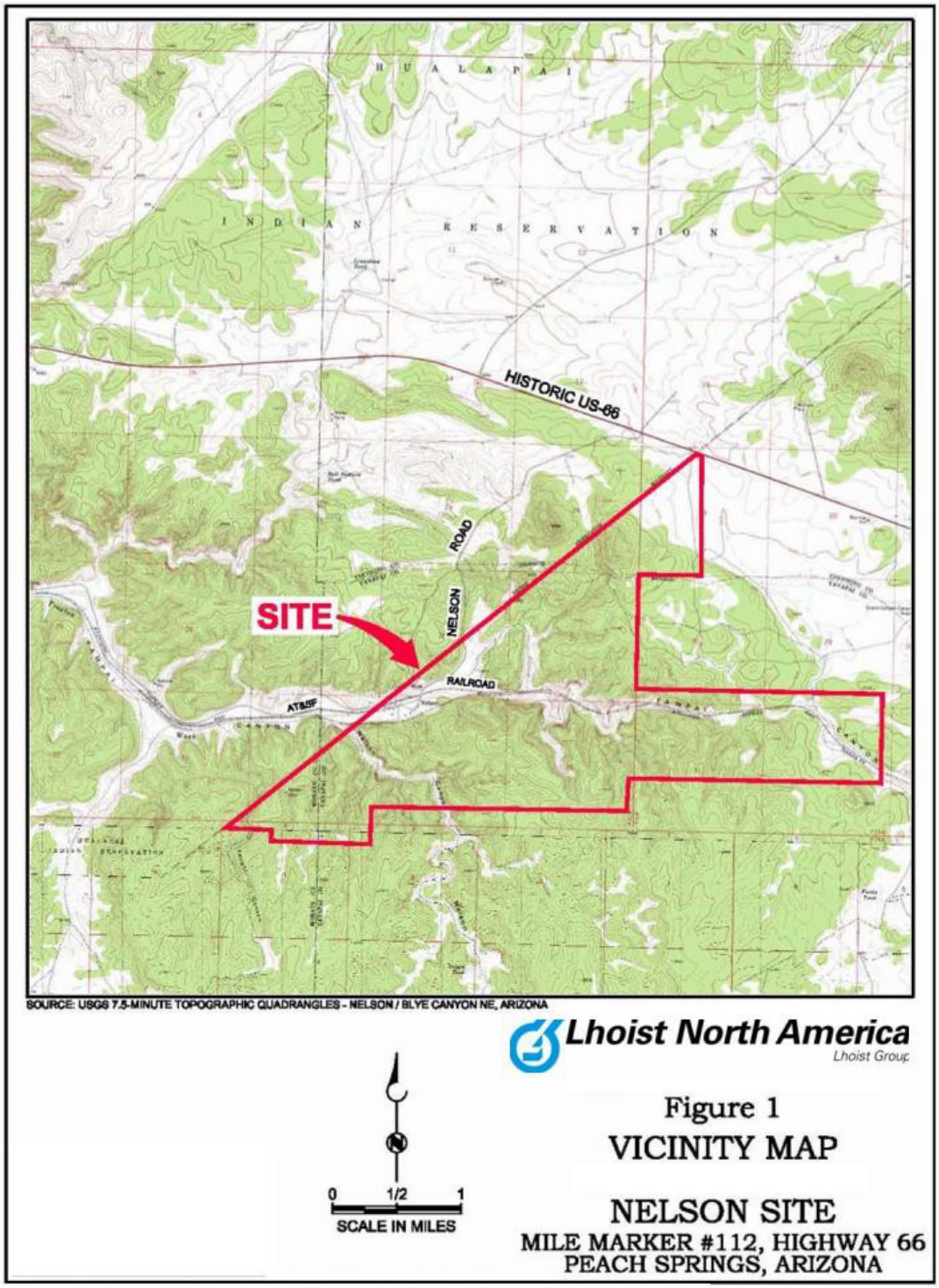
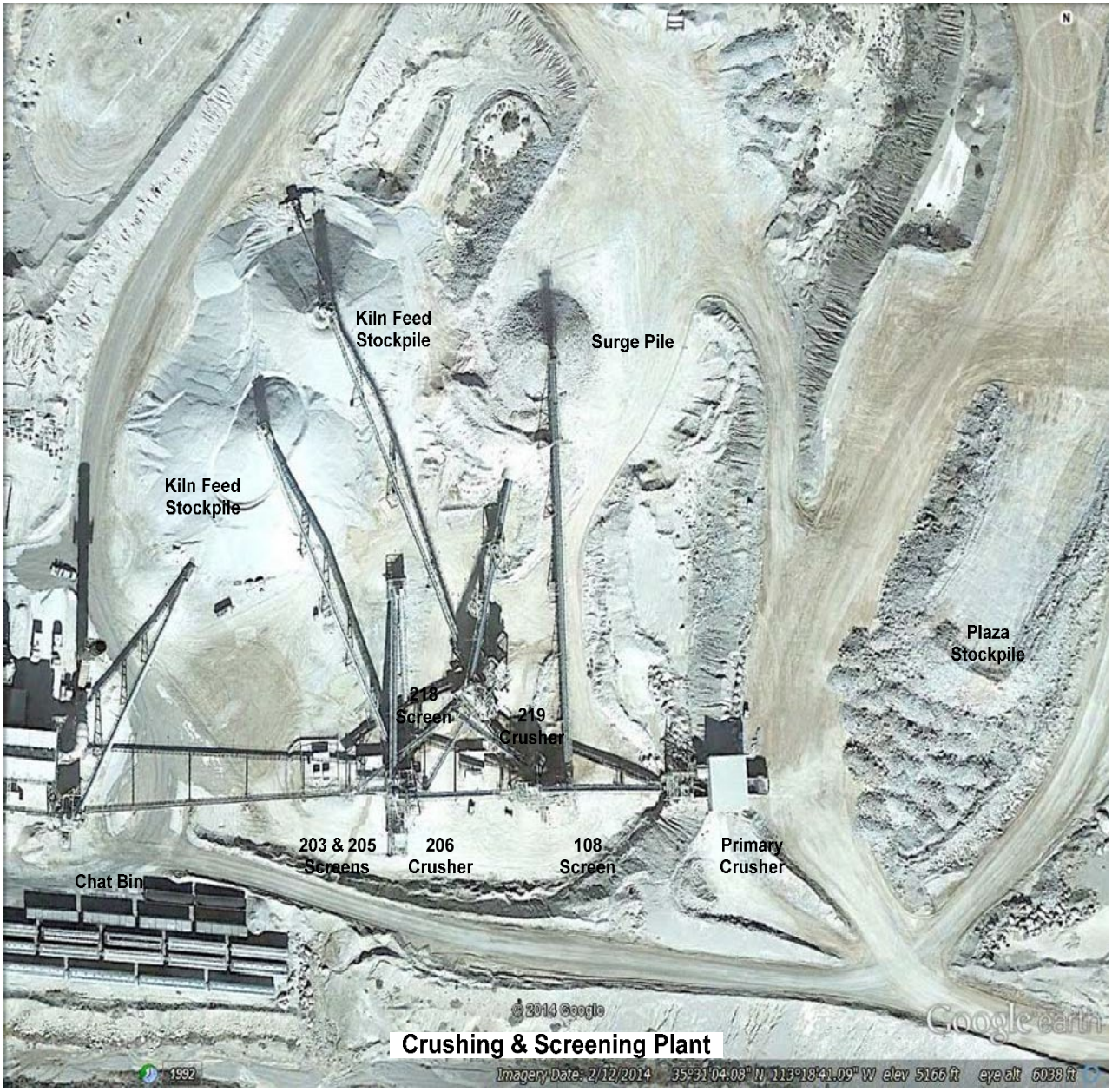


Figure 5-3. Aerial Photograph Overview of the Nelson Lime Plant's Operations

Figure 5-4. Aerial Photograph of the Lime Processing Plant at the Nelson Lime Plant

Figure 5-5. Aerial Photograph of the Crushing & Screening Plant at the Nelson Lime Plant



6. PERMIT PROCESSING FEE

LNA understands that the permit renewal processing fee is based on the total actual time spent by ADEQ processing the renewal application. Upon completion of the permit renewal review, ADEQ will send LNA a final bill for the processing fee, which will be paid by LNA in a timely manner.

7. EMISSIONS CALCULATIONS

The operations at the NLP may generate emissions of the following constituents:

- Particulate Matter (PM);
- Particulate matter less than 10 microns nominal aerodynamic diameter (PM_{10});
- Particulate matter less than 2.5 microns aerodynamic diameter ($PM_{2.5}$);
- Oxides of nitrogen (NO_x);
- Carbon monoxide (CO);
- Sulfur dioxide (SO_2);
- Volatile organic compounds (VOCs);
- Greenhouse gases (GHGs); and
- Hazardous air pollutants (HAPs).

PM, PM_{10}, and $PM_{2.5}$ are emitted due to mining processes, material handling processes, the lime kilns, and traffic. CO, NO_x, SO_2, VOCs, and GHGs are emitted from fuel burning equipment and chemical usage. HAPs are emitted from material handling and fuel combustion. HAPs may be calculated as representing components of PM and VOC emissions, or as distinct species emitted by an emission unit. The GHG emissions are calculated based on historic data and production throughput.

There are no physical changes or changes in the method of operation to the emission sources at the NLP being proposed in this permit renewal application. This section details the methods used to calculate particulate, gaseous and HAP emissions for the NLP.

7.1 Particulate Emissions

7.1.1 Drilling

The annual PTE from drilling activities for both ore and overburden was calculated using the following equation and the emission factor (EF) detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{number holes}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{hole}}\right)$$

The PM EF for drilling was taken from AP-42, Section 11.9, Table 11.9-4 (10/98):

$$\text{PM EF}\left(\frac{\text{lb}}{\text{hole}}\right)=1.3$$

Where PM_{10} is assumed to be 51% of PM (0.66 lb/hole), and $PM_{2.5}$ is assumed to be 15% PM (0.20 lb/hole), for drilling per AP-42 Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores.

7.1.2 Blasting

The annual PTE from blasting ore and overburden was calculated using the following equation and the emission factor detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{number blasts}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{blast}}\right)$$

The PM emission factor for blasting was taken from AP-42, Section 11.9, Table 11.9-1 (7/98):

$$\text{PM EF}\left(\frac{\text{lb}}{\text{blast}}\right)=0.000014A^{1.5}$$

Where,

$$PM_{10}\text{ EF }(\frac{\text{lb}}{\text{blast}})=0.52*(\text{PM EF})$$

$$PM_{2.5}\text{ EF}(\frac{\text{lb}}{\text{blast}})=0.03*(\text{PM EF})$$

and,

$$A=\text{Area Blasted, m}^2\ (465\text{m}^2)$$

7.1.3 Bulldozing

The annual PTE from bulldozing operations was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{hours operation}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{hour}}\right)$$

Uncontrolled PM and PM_{10} emissions from bulldozing operations were calculated from the emission factor expressions in AP-42, Table 11.9-1 (7/98) for the bulldozing of overburden at western surface coal mines. These expressions are:

$$EF_{PM}=\frac{5.7(s)^{1.2}}{M^{1.3}}$$

$$EF_{PM_{10}}=\frac{0.75(s)^{1.5}}{M^{1.4}}$$

$$EF_{PM_{2.5}}=0.105*\ EF_{PM}$$

Where:

EF = The PM emission factor (lb/hr) was assumed to be equal to the emission factor for TSP
s = The material silt content (6.9%)
M = The material moisture content (7.9%)

7.1.4 Material Transfer and Drop Processes

The annual PTE from material transfer and drop processes was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Emissions from material transfer and drop processes were calculated using maximum hourly material process rates and the following emissions expression found in AP-42, Section 13.2.4 (11/06), for aggregate storage and handling.

$$EF=\frac{K(0.0032)\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where:

EF = Emission in lb per ton of material transferred
K = 0.74 of PM, 0.35 for PM_{10}, and 0.053 for $PM_{2.5}$
U = Mean annual wind speed, miles per hours (mph) (5.3 mph for unprotected transfer points, 1.3 for protected transfer points)
M = Moisture content (0.7% for limestone, 0.3% for lime, 0.51% for hydrate, and 5.7% for coal and coke)

This equation was used to calculate emissions from ore and overburden loading and unloading operations, and for conveyor transfer points to process equipment, other conveyor belts, and stockpiles except for the transfer of hydrate from railcars to trucks.

The emissions from the pneumatic transfer of hydrate from railcars to trucks is calculated with the equation previously described and emission factors taken from AP-42, Section 11.12, Table 11.12-2 (06/06). Please see Appendix A for detailed emission calculations and emission factor inputs.

7.1.5 Crushers

The annual PTE from crushers was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Emission factors for tertiary and fines crushing were taken from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04) and are included in Appendix A.

7.1.6 Screens

The annual PTE from screening operations was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Emission factors for screening processes were taken from AP-42, Section 11.19.2, Table 11.19.2-2 (8/04) and are included in Appendix A.

7.1.7 Hydrator

The annual PTE from hydrating operations was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

Emission factors for hydrating were based on 2007 testing. See the emission calculations in Appendix A.

7.1.8 Fuel Burning Equipment Other Than the Kilns

The annual PTE from the Canyon Well Generator was calculated using the following equation:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{hp-hr}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{hp-hr}}\right)$$

The annual PTE from the pony motors and Detroit Diesel fire pump was calculated using the following equation:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{MMBtu}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{MMBtu}}\right)$$

The annual PTE from the kiln diesel torches and the hot water pressure washer was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{10^3\text{ gal}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{10^3\text{gal}}\right)$$

Particulate emission factors for the fuel burning equipment other than the kilns are presented in the emission calculations in Appendix A.

7.1.9 Dust Collectors

The annual PTE from the dust collector material handling operations was calculated using the following equations and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Material Captured by Dust Collectors}\left(\frac{\text{ton material}}{\text{year}}\right)*(1\text{-Control Efficiency})$$

Dust collector control efficiencies and emission factors are presented in Appendix A.

7.1.10 Kiln Emissions

The annual PTE from Kiln 1 and Kiln 2 was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

The particulate emission factors for Kiln 1 and Kiln 2 were based on the emission limitations for existing lime kilns presented in Table 1 of 40 CFR 63 Subpart AAAAA. See the emission calculations in Appendix A.

7.1.11 Open Dust Sources

The annual PTE from open dust sources was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Acres}*\frac{1\text{ ton}}{2000\text{ lbs}}*\frac{365\text{ days}}{1\text{ year}}*\text{Emission Factor}\left(\frac{\frac{\text{lb}}{\text{acre}}}{\text{day}}\right)$$

Emission factors due to wind erosion from stockpiles and overburden areas were determined using the following equation from the AP-42, Section 13.2.5 (11/06):

$$\text{EF}\left(\frac{\frac{\text{lb}}{\text{acre}}}{\text{day}}\right)=1.7\left(\frac{s}{1.5}\right)\left(\frac{365\text{-}p}{235}\right)\left(\frac{f}{15}\right)$$

Where:

s = Silt content of material (1.6% for limestone piles and open areas, 80% for dust piles, 6.2% for coal piles, 5.4 % for coke piles)

p = Number of days per year with precipitation ≥ 0.01" (60 for Nelson)

f = Percentage of time mean wind speed > 12 mph (28.3% for Nelson)

7.1.12 Traffic Emissions

Fugitive emissions will result from traffic-related activities. The NLP has both paved and unpaved roads. Some vehicular travel due to the limestone plant processing operations may occur on paved portions of the lime plant. For vehicles that travel on both paved and unpaved roads, it was assumed that 22.5% of travel is on paved roads. Individual parameters for each vehicle type and emission factors for unpaved and paved roads are presented in the Appendix A. The following vehicles were included in the traffic PTE to determine mean vehicle weight.

- Water Trucks
- Loaders
- Road Graders
- Drills
- Pickup Trucks
- Service Trucks
- Miscellaneous Vehicles

7.1.12.1 Travel on Unpaved Roads

The annual PTE from travel on unpaved roads was calculated using the following equation and the emission factor detailed below:

$$\text{Annual Emissions from Unpaved Roads}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{Total Maximum Annual VMT from Unpaved Roads}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{VMT}}\right)$$

The emission factors used for travel on unpaved roads was taken from AP-42, Section 13.2.2 (11/06):

$$EF=k\left(\frac{s}{12}\right)^{a}\left(\frac{W}{3}\right)^{b}\left[\frac{365-p}{365}\right]$$

Where:

EF = Emission factor (lb/VMT)
k = Constant (4.9 for PM, 1.5 for PM_{10} and 0.15 $PM_{2.5}$)
a = Constant (0.7 for PM, 0.9 for PM_{10} and $PM_{2.5}$)
b = Constant (0.45 for PM, PM_{10}, and $PM_{2.5}$)
s = Surface material silt content (8.3% for stone quarry)
W = Mean vehicle weight (tons)
p = Number of days with at least 0.1 in of precipitation per year (60 days for Nelson)

7.1.12.2 Travel on Paved Roads

The annual PTE from travel on paved roads was calculated using the following equation and the emission factor detailed below:

$$\text{Annual Emissions from Paved Roads}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{Total Maximum Annual VMT from Paved Roads}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{VMT}}\right)$$

The emission factor used for travel on paved roads is taken from AP-42, Section 13.2.1 (01/11):

$$EF=k(sL)^{a}(W)^{b}\left[1-\left(\frac{p}{4\times365}\right)\right]$$

Where:

EF = Emission factor (lb/VMT)
k = Particulate size multiplier (0.011 for PM, 0.0022 for PM_{10}, and 0.00054 for $PM_{2.5}$)
a = Constant (0.91)
b = Constant (1.02)
sL = Road surface silt loading (0.6 g/m^2 from AP-42 for <500 ADT)
W = Mean vehicle weight (tons)
p = Number of days with at least 0.1 in of precipitation per year (60 days for Nelson)

7.2 Gaseous Emissions

7.2.1 Kiln Emissions

The annual PTE from Kiln 1 and Kiln 2 was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton material}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton material}}\right)$$

CO emissions from the kilns was calculated using an emission factor based on the average hourly values from 2013 Engineering Tests (March, May and June).

SO_2 and NO_x emissions were calculated based on the emission limits published in the EPA Federal Implementation Plan (FIP), April 2015 (Federal Register, Vol. 80, No. 74, April 17, 2015), which become effective March 3, 2016 which were transferred to the Arizona State Implementation Plan (SIP) through a minor permit revision submitted in August 2018.

The VOC emissions were calculated based on the emission factor for Total Non-Methane Organic Compounds listed in AP-42 Table 1.1-19 for PC-fired, dry bottom, tangential boiler - 0.06 lbs/ton fuel. 100% coal usage was assumed.

7.2.2 Fuel Burning Equipment Other Than the Kilns

The annual PTE from the Canyon Well generator was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{hp-hr}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{hp-hr}}\right)$$

Gaseous emissions from the Canyon Well generator were based on emission factors for SO_2 and VOC from AP-42, Section 3.3, Table 3.3-1. CO and NO_x emission factors are from 40 CFR 60, Subpart IIII.

The annual PTE from the pony motor and Detroit Diesel fire pump was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{MMBtu}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{MMBtu}}\right)$$

Gaseous emissions for the pony motors and Detroit Diesel fire pump motor were based on emission factors from AP-42, Section 3.3, Table 3.3-1.

The annual PTE from the kiln diesel torches and the hot water pressure washer was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{10^3\text{ gal}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{10^3\text{gal}}\right)$$

Gaseous emissions for the kiln diesel torches and the hot water pressure washer were based on emission factors from AP-42, Section 1.3, Tables 1.3-1 and 1.3-3.

7.2.3 VOC Emissions from Chemical Usage

The annual PTE from the chemical usage was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{gal}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{gal}}\right)$$

The VOC emissions from chemical usage were determined using data from the safety data sheets (SDS) and using the emission factors presented in Appendix A.

7.2.4 Gaseous Emissions from Blasting

The annual PTE from blasting activities was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton ANFO}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton ANFO}}\right)$$

Uncontrolled gaseous emissions from blasting are calculated using emission factors from AP-42, Table 13.3-1 (10/96) for the detonation of ANFO. These emission factors are included in Appendix A.

7.3 HAP Emissions

7.3.1 HAP Emissions from Kilns

The annual HAP PTE, with the exception of Hydrochloric acid (HCl), from Kiln 1 and Kiln 2 was calculated using following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\frac{\text{ton fuel}}{\text{year}}*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{ton fuel}}\right)$$

The annual PTE for HCl from Kiln 1 and Kiln 2 was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Process Flowrate}\left(\frac{\text{ft}^3}{\text{min}}\right)*\frac{\text{hours of operation}}{\text{year}}*\frac{60\text{ min}}{\text{hr}}*\frac{(\text{ppmv HCl})}{10^6}$$
$$*\text{Molar Density}\left(\frac{\text{lbmol HCl}}{\text{ft}^3}\right)*\text{Molar Mass}\left(\frac{\text{lb HCl}}{\text{lbmol HCl}}\right)*\frac{1\text{ ton}}{2000\text{ lbs}}$$

HAP emissions from the kilns were based on emission factors from the following:

- AP-42, Section 1.1 (09/1998)
  - Dioxins/Furans (AP-42 Table 1.1-12 - ESP or FF)
  - Polycyclic Aromatic Hydrocarbons - PAH (AP-42 Table 1.1-13)
  - Organic Compounds (AP-42 Table 1.1-14)
  - Hydrogen Fluoride (AP-42 Table 1.1-15 - PC-fired, dry bottom, tangential)
  - Trace Metals (AP-42 Table 1.1-18)
- HCl emissions based on site specific Fourier transform infrared (FTIR) Testing

7.3.2 Non-Kiln Fuel Combustion

The annual PTE from the Canyon Well Generator, Kiln Pony Motors, and the Detroit Diesel Fire Pump Motor was calculated using the following equation and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Heat Input}\left(\frac{\text{MMBtu}}{\text{year}}\right)*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{\text{MMBtu}}\right)$$

The annual PTE from the Kiln Torches and Pressure Washer was calculated using the following equations and the emission factors detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Fuel Input}\left(\frac{10^3\text{gal}}{\text{year}}\right)*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{10^3\text{ gal}}\right)$$

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Heat Input}\left(\frac{10^{12}\text{ Btu}}{\text{year}}\right)*\frac{1\text{ ton}}{2000\text{ lbs}}*\text{Emission Factor}\left(\frac{\text{lb}}{10^{12}\text{ Btu}}\right)$$

HAP emissions from non-kiln diesel fuel combustion were based on emission factors from:

- Canyon Well Generator, Kiln Pony Motors, and Detroit Diesel Fire Pump Motor
  - Diesel fuel combustion based on AP-42, Section 3.3, Table 3.3-2 (10/1996) – up to 600 hp
- Kiln Torches and Pressure Washer
  - Diesel Fuel Combustion Based on AP-42, Section 1.3, Table 1.3-8 and Table 1.3-10 (05/2010)

7.3.3 Chemical Usage

The annual PTE from chemical usage was calculated using the following equation and the following assumption:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{VOC Emissions}\left(\frac{\text{ton}}{\text{year}}\right)*\text{Percent HAP Volatilized (\%)}$$

HAP emissions from chemical usage were estimated based on the composition data contained in the SDS for each chemical**.**

7.3.4 HAP Emissions Based on PM Emission Processes

7.3.4.1 Limestone, Lime Processing, and Mobile Sources

The annual PTE for HAP from limestone, lime processing, and mobile sources was calculated using the following equation and the assumptions detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Process Throughput}\left(\frac{\text{ton}}{\text{year}}\right)*\frac{\text{ppmw HAP}}{10^6}$$

HAP emissions from limestone and lime (other than from the kilns) processing and mobile sources (vehicular traffic on paved and unpaved roads), comprised of lead, mercury and nickel emissions (which based on LNA testing and as reflected in the Form-R Inventories submitted to EPA, represent the dominant metal HAPs), were calculated based on the following factors and assumptions.

- Lead emissions were calculated using the lead emission factor of 1.83 ppmw presented in the 2004 Form-R Inventory, assuming this is the lead concentration in the PM emissions from the limestone and lime processing emission units and mobile sources.
- Mercury emissions were calculated using the mercury emission factor of 0.014 ppmw presented in the 2004 Form-R Inventory, assuming this is the mercury concentration in the PM emissions from the limestone and lime processing emission units and mobile sources.
- Nickel emissions were calculated using the nickel emission factor of 4.09 ppmw presented in the 2004 Form-R Inventory, assuming this is the nickel concentration in the PM emissions from the limestone and lime processing emission units and mobile sources.

7.3.4.2 Solid Fuel Handling

The annual PTE for HAP from solid fuel handling operations was calculated using the following equation and the assumptions detailed below:

$$\text{Annual Emissions}\left(\frac{\text{tons}}{\text{year}}\right)=\text{Process Throughput}\left(\frac{\text{ton}}{\text{year}}\right)*\frac{\text{ppmw HAP}}{10^6}$$

HAP emissions from solid fuel handling (other than from combustion in the kilns), comprised of lead, mercury and nickel emissions, were calculated based on the following factors and assumptions.

- Lead emissions were calculated using the worst-case (among coal and coke) lead emission factor for coke of 2.3 ppmw presented in the 2004 Form-R Inventory, assuming this is the lead concentration in the PM emissions from the solid fuel handling emission units.
- Mercury emissions were calculated using the worst-case (among coal and coke) mercury emission factor for coal of 0.05 ppmw presented in the 2004 Form-R Inventory, assuming this is the mercury concentration in the PM emissions from the solid fuel handling emission units.
- Nickel emissions were calculated using the worst-case (among coal and coke) nickel emission factor for coke of 186 ppmw presented in the 2004 Form-R Inventory, assuming this is the nickel concentration in the PM emissions from the solid fuel handling emission units.

7.4 Control Efficiencies

The control efficiencies used to develop the emissions calculations are presented in Appendix A.

7.5 Emission Calculations Summary

The maximum annual emissions of regulated pollutants from the NLP are summarized below in Table 7-1. Detailed emission calculations are provided in Appendix A of this application.

Table 7-1. Maximum Potential to Emit for Criteria and Hazardous Air Pollutants at the NLP

Pollutant	Maximum Potential to Emit (tpy)	
	Non-Fugitive	Fugitive
PM	90.24	1,059.92
PM_{10}	50.28	331.84
$PM_{2.5}$	20.49	45.73
NO_x	508.63	21.51
SO_2	1,219.92	5.46
CO	3,690.01	0.64
VOC	7.01	0.48
Highest Single HAP (HCl)	8.26	--
Total HAPs	9.33	0.19
CO_2e	924,267	--

8. REGULATORY APPLICABILITY

The following section outlines the regulatory applicability and requirements for the NLP. A list of requested permit updates based on facility and regulatory changes is also outlined in the section below.

8.1 PSD, Major NSR and Title V Permitting Applicability

There are no physical changes or changes in the method of operation to the emission sources at the NLP being proposed in this permit renewal application. As such this permit action is not subject to any major NSR review at this time. The NLP is a categorical source pursuant to A.A.C. R18-2-101.23 (Lime Plants) i.e., fugitive emissions are included in determining major source status and an emissions threshold of 100 tons per year is used for PSD applicability determination. Note that the NLP is an existing Title V and major PSD source.

8.2 40 CFR Part 63 Applicability

All existing NESHAP requirements will continue to apply to the NLP. This section discusses any new or revised regulatory applicability.

8.2.1 40 CFR Part 63 Subpart AAAA - NESHAPs for Municipal Solid Waste Landfills

The NLP is collocated with a closed municipal solid waste landfill, herein called the "Nelson Landfill". The Nelson Landfill is assumed to have been constructed in the 1960's and in October of 1999, the NLP submitted a Landfill Closure Construction Certification Report to the ADEQ. On March 29, 1999, the ADEQ approved the closure of the Nelson Landfill. The Nelson Landfill closed in 1999, was less than 6 acres in area, and based on calculations of landfill capacity, is under the 2.5 million megagrams applicability threshold described in 40 CFR §63.1959(b).

While the Nelson Landfill itself is not a major source of HAPs, pursuant to 40 CFR §63.1935(a)(2), as a municipal solid waste landfill that that has accepted waste since November 8, 1987 that is collocated with a major source of HAPs, the NLP is subject to Subpart AAAA, *NESHAPs for Municipal Solid Waste Landfills*. The Nelson Landfill is an affected source under 40 CFR §63.1940(a) as it meets the criteria of 40 CFR §63.1935(a).

Per 40 CFR §63.1959(b) a landfill with greater or equal to 2.5 million megagrams capacity must comply with the requirements of 40 CFR §63.1959(b)(2). The Nelson Landfill is under the 2.5 million megagrams design capacity threshold and therefore does not have to comply with 40 CFR §63.1959(b)(2) which requires affected sources to calculate non-methane organic carbon (NMOC) emissions and requires those with an emission rate greater than 50 Mg/yr to install a landfill gas collection and control system (GCCS). Per 40 CFR §63.1959(b)(2) the Nelson Landfill is not required to calculate the NMOC emission rate and does not need to install a collection and control system. Therefore, the Nelson Landfill does not need to comply with the requirements of Subpart AAAA associated with emission control using a GCCS.

For the unusual case of a landfill that is subject to Subpart AAAA due to collocation but is below the rule's design capacity thresholds, there are only two applicable requirements: to submit an Initial Design Capacity Report under 40 CFR §63.1981(a), and if triggered, to submit an Amended Design Capacity Report under 40 CFR §63.1981(b). The Initial Design Capacity Report was submitted in late November 2020. Therefore, the only applicable requirement that may need to be codified is the requirement to submit an amended design capacity report if the landfill undergoes a design capacity expansion. However, to undertake such an

expansion at a closed landfill would constitute a modification under both Parts 60 and 63 triggering further permit changes and notification requirements. Therefore, it is proposed that no provisions related to Subpart AAAA need to be codified in the renewal permit.

8.2.2 40 CFR Part 63 Subpart AAAAA - NESHAPs for Lime Manufacturing Plants

Subpart AAAAA, *NESHAPs for Lime Manufacturing Plants*, is applicable to the NLP per 40 CFR §63.7081(a) because the NLP manufactures lime product as described in 40 CFR §63.7081(a)(1) and has been previously classified as a major source of HAPs as described in 40 CFR §63.7081(a)(2). Per 40 CFR §63.7083(b), the NLP is an existing affected source and must comply with the requirements for existing affected sources of this subpart.

Per 40 CFR §63.7110(a), as an existing affected source the NLP must conduct initial compliance testing no later than January 5, 2007. Initial particulate and opacity testing were conducted in November and December 2006, and on January 2, 2007. The NLP performed initial HCl testing to determine if the plant was a major source or an area source and determined through HCl testing (conducted in June 2006), that the plant is a major source.

The final revised Subpart AAAAA rule was recently published on July 24, 2020 and updated multiple requirements for operations at lime manufacturing plant. LNA would like to specifically point out the changes to Subpart AAAAA regarding SSM operations and compliance. Per 40 CFR §63.7083(e)(1), the NLP is taking action to align with the updated SSM compliance requirements, including the revised requirements of the OM&M plan, of Subpart AAAAA by the effective date of January 20, 2021.

With the exception of the newly revised rule, LNA is proposing to maintain all regulatory applicability contained in the current ADEQ Class I Permit 63592. Please see Appendix D for the proposed updates to the existing permit based on the newly revised Subpart AAAAA. Please note that the proposed permit language, in the form of a redline permit, provided in this application is only associated with the changes to Subpart AAAAA. Please see Appendix D for the proposed permit conditions presented in red text as well as proposed edits to existing conditions shown in red strikethrough text.

8.2.3 40 CFR Part 63 Subpart CCCCCC – NESHAPs for Gasoline Dispensing Facilities

Subpart CCCCCC, *NESHAPs for Gasoline Dispensing Facilities*, is applicable, per 40 CFR §63.11111(a), to affected sources located at area sources of HAPs. The NLP is currently designated as a major source of HAPs and dispenses gasoline from a 8,000 gallon tank. As such, Subpart CCCCCC is not applicable to the NLP as Subpart CCCCC is only applicable to area sources of HAPs.

8.3 40 CFR Part 60 Applicability

New Source Performance Standards (NSPS) are located in 40 CFR Part 60. All existing NSPS requirements will continue to apply to the NLP. This section discusses any new or revised regulatory applicability.

8.3.1 40 CFR Subpart Cc - Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

Subpart Cc, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*, is indirectly applicable to the Nelson Landfill per 40 CFR §60.32c(a) since the landfill was constructed before the applicability date of May 30, 1991.

As an Emission Guideline, this Subpart applies to permitting authorities, and requires them to develop for SIP approval rules that require their sources of the type specified to meet the specified emission control requirements. Subpart Cc requirements were applied to the Nelson Landfill by R18-2-731, which was SIP-approved by 40 CFR §62.600(a). This SIP approval also indicates that at §62.600(c) that the State Plan requirements of Subpart Cc are replaced by the requirements of Subpart Cf after August 27, 2020. Therefore, Subpart Cc requirements are no longer in effect in ADEQ's jurisdiction.

8.3.2 40 CFR Subpart Cf - Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

Subpart Cf, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*, is indirectly applicable to the Nelson Landfill per 40 CFR §60.31f(e). As an Emission Guideline, this Subpart applies to permitting authorities, and requires them to develop for SIP approval rules that require their sources of the type specified to meet the specified emission control requirements. Arizona's implementation of Subpart Cf requirements in R18-2-731 have been SIP-approved by 40 CFR §62.600(d)(2)(i)(A) and replaced Subpart Cc requirements effective August 27, 2020.

The Nelson Landfill meets the criteria to belong in the Closed Landfill Subcategory as defined in in Subpart Cf as a closure report was submitted prior to the September 27, 2017 date in the rule's definition of "closed landfill subcategory". As a copy of the historical Subpart Cc Initial Design Capacity Report could not be located, a new one was submitted in late November 2020 in the form of the Municipal Solid Waste Landfill Survey requested by the ADEQ.

Per 40 CFR §60.33f(d), landfills with a design capacity less than the 2.5 million megagram threshold must submit an initial design capacity report which fulfills the requirements of Subpart Cf. The Nelson Landfill closed in 1999, was under 6 acres in area, and based on calculations of landfill capacity, is under the 2.5 million megagrams applicability threshold. The Nelson Landfill has therefore fulfilled the requirements of Subpart Cf by submission of the initial design capacity report in November 2020. The only remaining potentially applicable requirement would be submittal of an amended design capacity report under 40 CFR 60.38f(b) if the landfill underwent a design capacity expansion. However, undergoing such an expansion at a closed landfill also constitutes a Part 63 modification, which would trigger permitting requirements and a variety of other new applicable requirements. Therefore, it is recommended that no new applicable requirements are required to be incorporated into the permit given the landfill's current status.

8.3.3 40 CFR Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014

Subpart WWW, *Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014*, is not applicable to the Nelson Landfill per 40 CFR §60.750(a) because the landfill was constructed prior to the applicability date.

8.3.4 40 CFR Subpart XXX- Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014

Subpart XXX, *Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014*, is not applicable to the Nelson Landfill per 40 CFR §60.760(a) because the landfill was constructed prior to the applicability date.

8.4 State Regulations (A.A.C.) Applicability

While there are no physical changes or changes in the method of operation to the emission sources at the NLP being proposed in this permit renewal application, there have been changes to the A.A.C since the previous renewal. Described below are the changes to A.A.C. since the 2016 renewal that have implications for the NLP.

8.4.1 R18-2-731 - Standards of Performance for Existing Municipal Solid Waste Landfills

The Nelson Landfill is subject to R18-2-731(A), as the landfill was constructed prior to the applicability date specified in R18-2-731(A)(1) and waste was accepted after the specified applicability date specified in R18-2-731(A)(2).

R-18-2-731 was revised in August 2018 to require under R18-2-731(C) that landfills subject to the rule comply with 40 CFR 60 Subpart Cf effective as of the date of the EPA approval. The Nelson Landfill is already in compliance with 40 CFR Subpart Cf so no action is required by the NLP. As such no new applicable requirements are required to be incorporated into the permit.

9. LIST OF INSIGNIFICANT ACTIVITIES

To determine if an emission source was insignificant, the A.A.C. R18-2-101.68 was referenced.

The list of insignificant activities from the 2016 renewal application is provided below in Table 9-1 as the activities have remained unchanged.

Multiple vehicles and equipment are listed as insignificant due to limitations of the emission calculation methodologies presented in AP-42 13.2.2, regarding vehicle weight. Emissions from vehicles under 2 tons traveling on industrial roads or vehicles under 1.5 tons traveling on public roads are not able to be calculated due to emission limitations of the AP-42 13.2.2 calculation methodologies.

Table 9-1. Insignificant Activities (Including Fuel Burning Equipment)

Qty	Equipment Description	Equipment #	Engine Size	Fuel	Annual Hours (Estimated)
1	1-ton Maintenance Truck	M408	7.3 liter turbo	Diesel	1600
1	1-ton Maintenance Truck	M409	7.3 liter turbo	Diesel	1600
1	Lube truck	M410	C7	Diesel	1800
1	Pick-up Truck	M002	V8	Gas	300
1	Pick-up Truck	M013	V8	Gas	200
1	Man Lift	M610	3 cyl. 124 cub. In	Diesel	150
1	Grove Crane	M901	8 cyl. 636 cu in.	Diesel	200
1	Daewoo Forklift	M600	2.4 liter	Gas	500
1	Cat. TH82 Forklift	M601	4 liter 4 cyl.	Diesel	500
2	Miller Legend Welder	--	2 cyl. 41 cu in.	Diesel	500
1	Miller Bobcat 250	-	3 cyl. 0.75 liter	Diesel	500
1	1200 Air Compressor	M303	6 cyl. 10.5 liter	Diesel	1000
3	Lincoln SAE 400 Welders	--	4 cyl. 4.4 liter	Diesel	100
1	Honda Water Pump	--	1 cyl. 389cc	Gas	10
2	Briggs & Stratton Water Pump	--	1 cyl. 23.6 cu in.	Gas	10
3	Light Plant 1, 2, 3	--	2 gal/hr	Diesel	1000
2	Pressure Washer 1, 2	--	1 gal/hr	Gasoline	500

10. AIR POLLUTION CONTROL INFORMATION

A list of the pollution control equipment at the NLP is presented in Table 10-1. Water sprays are also used at various material handling and transfer points as shown on the process flow diagrams in Figure 4-1 to Figure 4-12. The locations of the pollution control equipment associated with the lime manufacturing areas of the NLP are shown in Figure 5-2 to Figure 5-5.

Table 10-1. Summary of Air Pollution Control Equipment

Identification	Make	Model	CFM	Filter Area (ft^2)	Outlet Dimensions (equiv. dia.) (ft)	Outlet Temperature (°F)	Rated Efficiency (%)[a]	Operating Efficiency (est. %)
Kiln 1 Multicyclone 1-319	Research-Cottrell	CY-119	220,000	NA	[b]	550	50-75+	50-75+
Kiln 1 Baghouse BGH1	BoldEco	FBCL-14-2-18-16-10	227,000	TBD	10	370	99.87	99.5
Kiln 2 Multicyclone 2-319	Cyclo-Trell	5x8 C-24	280,000	NA	[b]	550	50-75+	50-75+
Kiln 2 Baghouse BGH2	Amerex Rex-Pulse	10RP-14-324D6	227,000	71,159	10	420	99.87	99.5
DC 1-321	Mikro-Pulsaire	365-8-30B	1,740	349	0.8	100	99+	99+
DC 2-321	Mikro-Pulsaire	64S-8-20B	3,100	620	1.1	100	99+	99+
DC 206-D	Industrial Accessories	120TB-BVT-225:S6	20,000	3645	2.7	Ambient	99+	99+
DC 213	Mikro-Pulsaire	64-S-8-20B	1,080	180	1.3	Ambient	99+	99+
DC 219-D	Industrial Accessories	120TB-BVT-100:S6	9,000	1620	2.4	Ambient	99+	99+
DC 234	Pneumafil	PCFH 284	6,000	1,081	1.5	Ambient	99+	99+
DC 414	Mikro-Pulsaire	1F-2-48	10,800	2,160	2.2	90	99+	99+

Identification	Make	Model	CFM	Filter Area (ft^2)	Outlet Dimensions (equiv. dia.) (ft)	Outlet Temperature (°F)	Rated Efficiency (%)[a]	Operating Efficiency (est. %)
DC 419-5	Mikro-Pulsaire	16S-8-30	1,210	242	0.9	100	99+	99+
DC 430	Mikro-Pulsaire	180S-8-20	8,700	1,743	1.9	100	99+	99+
DC 437A	Mikro-Pulsaire	25S-8-30	1,210	242	0.9	80	99+	99+
DC 437B	Mikro-Pulsaire	25S-8-30	1,210	242	0.9	100	99+	99+
DC 437C	Mikro-Pulsaire	36-10-20	2,178	436	0.9	80	99+	99+
DC 437D	Mikro-Pulsaire	49S-8-20	2,370	474	0.9	80	99+	99+
DC 437E	Mikro-Pulsaire	49S-8-20	2,370	474	0.9	80	99+	99+
DC 437F	Mikro-Pulsaire	49S-8-20	2,370	474	0.9	80	99+	99+
DC 437G	Bin Vent Dust Collector	9S-BV-05P	200	128.7		Ambient	99+	99+
DC 452	Pneumafil	PCFH-8BV	1,500	360	1.1	100	99+	99+
DC 527	Mikro-Pulsaire	100S-10-0	6,050	1,210	1.8	80	99+	99+
DC 721	American Air Filter	Millennium	10,000	1916	1.83	115	99+	99+
DC 750A	Industrial Accessories	108TB-BHI-36:S6	2,000	525	0.8	80	99+	99+
DC 762-1	Pneumafil	PKE-24	5,000	768	1.5	150	99+	99+
DC DS1	DSS	WAM 400 PJ	2,400	400	0.7	Ambient	99+	99+
DC -SC1	WAMGROUP	FNS4J36PP0Y				Ambient	99+	99+

Identification	Make	Model	CFM	Filter Area (ft^2)	Outlet Dimensions (equiv. dia.) (ft)	Outlet Temperature (°F)	Rated Efficiency (%)[a]	Operating Efficiency (est. %)
DF 711	Ducon Wet Scrubber	UW-4(48)	6,000	NA	1.7	190	95+	95+

Note:
a. Rated and operation efficiencies are based on typical published values for these types of equipment.
b. The multicyclones are followed by additional air pollution control equipment; therefore the outlet dimensions are not given.

11. COMPLIANCE ASSURANCE MONITORING (CAM)

The EPA under the Clean Air Act promulgated Compliance Assurance Monitoring (CAM) requirements in 40 CFR 64. These "improved" monitoring requirements assure compliance with emission limitations or standards in cases where these limitations and standards were proposed prior to November 15, 1990. Subsequent to this date, the EPA has included the appropriate monitoring requirements with the emission limitations and standards that have since been promulgated. CAM does not, therefore, apply to emission units subject to standards after this date.

The requirements of the CAM rule are applicable to each source of emissions or pollutant specific emission unit (PSEU) that meets the following criteria:

- Subject to an emission limitation or standard for an applicable regulated air pollutant;
- The PSEU uses a control device to achieve compliance with any such emission limitation or standard; and
- The PSEU has potential pre-control emissions that exceed or are equivalent to the major source threshold (100 tons per year).

The NLP has PSEUs with pre-control potential emissions exceeding the major source threshold (greater than 100 tons per year). The kilns (Kiln 1 or Kiln 2) are subject to 40 CFR 63 Subpart AAAAA and, therefore, meet the exemption requirements in 40 CFR 64.2(b)(1)(i):

"…(b) *Exemptions* - (1) *Exempt emission limitations or standards*. The requirements of this part shall not apply to any of the following emission limitations or standards: (i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act."

The emission standards of 40 CFR 63 Subpart AAAAA qualify the kilns for exemption which present limitations for PM emissions proposed after November 1990. There are NO_x emission limitations presented in the EPA FIP, April 2015 (Federal Register, Vol. 80, No. 74, April 17, 2015, that were transferred to the Arizona SIP through a MPR submitted in August 2018. These NO_x standards were promulgated after November 1990 and therefore qualify the kilns for exemption under the requirement presented above. No other PSEU has pre-control potential emissions exceeding the major source threshold and thus, a CAM Plan is not required for any PSEU.

APPENDIX A. EMISSION CALCULATIONS

Table 1. Particulate Emission Factors - LNA Nelson Plant PTE Inventory										
		Emission Factor				Prod.	Emission Factor Inputs			
Process Code	Process Description	PM	PM_{10}	$PM_{2.5}$	Units	Rate Units	M	s	U	Emission Factor Reference
Drilling Holes	Drilling Holes - Limestone & Overburden	1.3	0.66	0.20	lbs/hole	holes				AP-42, Section 11.9, Table 11.9-4 (7/98); 40 holes/blast
Blasting Holes	Blasting Holes - Limestone & Overburden	0.1404	0.0730	0.0042	lbs/blast	blasts				AP-42, Section 11.9, Table 11.9-1 (7/98)
Bulldozing	Bulldozing of Material	3.94	0.75	0.41	lb/hr	hrs	7.9	6.9		AP-42, Section 11.9, Table 11.9-1 (7/98)
Crushing	Primary/Secondary Crushing Limestone/Fuel	0.0054	0.0024	0.00081	lb/ton	tons				AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)
Fines Crushing	Fines Crushing Limestone/Lime/Fuel	0.0390	0.0150	0.0059	lb/ton	tons				AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)
Screening	Vibrating Screen - Limestone/Lime	0.0250	0.0087	0.0038	lb/ton	tons				AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)
Limestone Material Transfer	Unprotected Limestone/Overburden Material Drop	0.0111	0.0052	0.0008	lb/ton	tons	0.7		5.3	AP-42, Section 13.2.4 (11/06)
Enclosed Limestone Material Transfer	Enclosed Limestone Material Drop	0.0018	0.0008	0.0001	lb/ton	tons	0.7		1.3	AP-42, Section 13.2.4 (11/06)
Lime Material Transfer	Protected Lime Material Drop - 0.3% Moisture	0.0059	0.0028	0.0004	lb/ton	tons	0.3		1.3	AP-42, Section 13.2.4 (11/06)
Unprotected Lime Material Transfer	Unprotected Lime Material Drop - 0.3% Moisture	0.0362	0.0171	0.0026	lb/ton	tons	0.3		5.3	AP-42, Section 13.2.4 (11/06)
Hydrate Material Transfer	Protected Hydrate Material Drop - 0.51% Moisture	0.0028	0.0013	0.0002	lb/ton	tons	0.51		1.3	AP-42, Section 13.2.4 (11/06)
Dust Material Transfer	Unprotected Dust Material Drop - 0.3% Moisture	0.0362	0.0171	0.0026	lb/ton	tons	0.3		5.3	AP-42, Section 13.2.4 (11/06)
Fuel Material Transfer	Unprotected Fuel Material Drop	0.0006	0.0003	0.00004	lb/ton	tons	5.7		5.3	AP-42, Section 13.2.4 (11/06)
Enclosed Fuel Material Transfer	Enclosed Fuel Material Drop	0.0001	0.00004	0.00001	lb/ton	tons	5.7		1.3	AP-42, Section 13.2.4 (11/06)
Hydrate Transfer - Pneumatic	Hydrate Pneumatic Transfer	0.7300	0.47000	0.07100	lb/ton	tons				AP-42, Section 11.12, Table 11.12-2 (06/06)
Stack	Dust Collectors	0.022	0.022	0.022	gr/dscf	dscf				40 CFR 60, Part OOO maximum allowable grain loading
DF711	Ducon Slaker Scrubber 711	0.0573	0.0487	0.0172	lb/ton	tons				8/17/2007 Compliance Test Report
DC721	Hydrate System Dust Collector 721	0.0293	0.0249	0.0088	lb/ton	tons				8/17/2007 Compliance Test Report
DC750A	Dust Collector 750A	0.0176	0.0149	0.0053	lb/ton	tons				8/17/2007 Compliance Test Report
Air Separator	Air Separator with fabric filter	0.0320	0.0272	0.0096	lb/ton	tons				AP-42, Section 11.6, Table 11.6-4 (1/95)
Hydrator	Atmospheric Hydrator - Seasoning Chamber (Filt)	0.0573	0.0487	0.0172	lb/ton	tons	Emissions emit from DF 711			8/17/2007 Compliance Test Report
Hydrator-C	Atmospheric Hydrator - Seasoning Chamber (Cond)	0.0111			lb/ton	tons	Emissions emit from DF 711			AP-42, Section 11.17, Table 11.17-2 (2/98)
Kiln 1-PM	Rotary Kiln with Baghouse, Multi-tube Cyclone-Filterable	0.1200			lb/ton	tons				40 CFR 63 Subpart AAAAA Table 1
Kiln 2-PM	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.1200			lb/ton	tons				40 CFR 63 Subpart AAAAA Table 1
Kiln 1-PM10	Rotary Kiln with Baghouse, Multi-tube Cyclone		0.0660		lb/ton	tons				AP42, Section 11.17, Table 11.17-7 (02/98)
Kiln 2-PM10	Rotary Kiln with Baghouse, Multi-tube Cyclone		0.0660		lb/ton	tons				AP42, Section 11.17, Table 11.17-7 (02/98)
Kiln 1-PM2.5	Rotary Kiln with Baghouse, Multi-tube Cyclone			0.0324	lb/ton	tons				AP42, Section 11.17, Table 11.17-7 (02/98)
Kiln 2-PM2.5	Rotary Kiln with Baghouse, Multi-tube Cyclone			0.0324	lb/ton	tons				AP42, Section 11.17, Table 11.17-7 (02/98)
Truck/Rail Loading	Enclosed Truck/Rail Loading - Lime, Hydrate, Dust	0.6100	0.5185	0.1830	lb/ton	tons				AP-42, Section 11.17, Table 11.17-4 (2/98)
Gypsum Transfer Point	Unprotected Material Transfer Point - 0.3% Moisture	0.0362	0.0171	0.0026	lb/ton	tons	0.3		5.3	AP-42, Section 13.2.4 (11/06)
Portable Generator NSPS	Portable Diesel Generator NSPS applicable	0.00003	0.00003	0.00003	lb/hp-hr	hp-hr				40 CFR 60, Subpart IIII (40 CFR 60.4204(b))
Internal Diesel Combustion	Portable Diesel Generator	0.3100	0.3100	0.3100	lb/MMBtu	MMBtu				AP-42, Section 3.3, Table 3.3-1 (10/96)
External Diesel Combustion	Kiln Torches and Pressure Washer	3.3000	2.4000	2.1000	$lb/10^3$ gal	gal				AP-42, Section 1.3, Tables 1.3-1, 1.3-2 and 1.3-6 (05/10)
Generators	Electric Generators - Retired - Did Not Run in 2013	0.50	0.50	0.50	lb/hr	hr				Installation Permit 1226 Permit Limit
Unpav	Travel on Unpaved Roads	11.32	3.22	0.32	lb/VMT	VMT				AP-42, Section 13.2.2 (11/06)
Pav	Travel on Paved Roads	0.12	0.02	0.01	lb/VMT	VMT				AP-42, Section 13.2.1 (1/11)
Stockpiles	Stockpile Erosion	Various	Various	Various	lb/acre/year	acre				AP-42, Section 11.2.3 (5/83)
s = material silt content (%)				Shaded equals "Primary" (Filterable + Condensable) particulates						
M = material moisture content (%)				Shaded equals "Filterable" (total) particulates						
U = average annual wind speed (mph)				Shaded equals "Condensable" (total) particulates						
		Condensable Emission Factor								
		PM			Units					
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.5500			lbs/hr					AZ BART Five Factor Analysis - August 2013
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	1.0600			lbs/hr					AZ BART Five Factor Analysis - August 2013
	2012	0.3700			lbs/hr					AZ BART Applicability Modeling - September 2007
	2012	0.8200			lbs/hr					AZ BART Applicability Modeling - September 2007
Kilns	AP-42 11.17: PM-PM10-PM2.5 Filterable + Condensibles	0.6600	0.5300	0.4556	lb/ton	tons				AP42, Section 11.17, Tables 11.17-2 and 11.17-7 (02/98)

Table 2. Determination of $PM/PM_{10}/PM_{2.5}$ Fractions - LNA Nelson Plant PTE Inventory										
Emission Unit	Process Description	Emission Factor					Proposed Fraction (%) of PM/PM_x			
		PM	PM_{10}	$PM_{2.5}$	Units	Reference	PM	PM_{10}	$PM_{2.5}$	Reference
Drilling Holes	Drilling Holes - Limestone & Overburden	1.3	--	--	lb/hole	AP-42, Section 11.9, Table 11.9-4 (7/98)	--	0.51	0.15	AP-42, Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores
Crushing	Primary/Secondary Crushing Limestone/Fuel	0.0054	0.0024	--	lb/ton	AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)	--	--	0.15	AP-42, Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores
Fines Crushing	Fines Crushing Limestone/Lime/Fuel	0.0390	0.0150	--	lb/ton	AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)	--	--	0.15	AP-42, Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores
Screening	Vibrating Screen - Limestone/Lime	0.0250	0.0087	--	lb/ton	AP-42, Section 11.19.2, Table 11.19.2-2 (8/04)	--	--	0.15	AP-42, Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores
DF711	Ducon Slaker Scrubber 711	0.0573	--	--	lb/ton	8/17/2007 Compliance Test Report	--	0.85	0.30	AP-42, Appendix B.2 (09/96), Table B.2-2, Category 4, Processed Ores
DC721	Hydrate System Dust Collector 721	0.0293	--	--	lb/ton	8/17/2007 Compliance Test Report	--	0.85	0.30	AP-42, Appendix B.2 (09/96), Table B.2-2, Category 4, Processed Ores
DC750A	Dust Collector 750A	0.0176	--	--	lb/ton	8/17/2007 Compliance Test Report	--	0.85	0.30	AP-42, Appendix B.2 (09/96), Table B.2-2, Category 4, Processed Ores
Air Separator	Air Separator with fabric filter	0.0320	--	--	lb/ton	AP-42, Section 11.6, Table 11.6-4 (1/95)	--	0.85	0.30	AP-42, Appendix B.2 (09/96), Table B.2-2, Category 4, Processed Ores
Hydrator	Atmospheric Hydrator - Seasoning Chamber	Emissions controlled by DF 711. Emission Factor for DF 711 from stack test.								
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.0040	--	--	lb/ton	PM Filterable - 10/19/2011 Stack Test	--	--	--	
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.0137	--	--	lb/ton	PM Filterable - 10/19/2011 Stack Test	--	--	--	
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.1948	--	--	lb/ton	PM Condensible - 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	0.1948	--	--	lb/ton	PM Condensible - 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	--	lb/ton	PM10 Filterable - Percent of PM Filterable from 10/19/2011 Stack Test	--	0.55	--	AP42, Section 11.17, Table 11.17-7
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	--	lb/ton	PM10 Filterable - Percent of PM Filterable from 10/19/2011 Stack Test	--	0.55	--	AP42, Section 11.17, Table 11.17-7
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	0.0027	lb/ton	PM2.5 Filterable - 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	0.0027	lb/ton	PM2.5 Filterable - 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Kiln 1	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	0.1975	lb/ton	PM2.5 Filterable + Condensable- 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Kiln 2	Rotary Kiln with Baghouse, Multi-tube Cyclone	--	--	0.1975	lb/ton	PM2.5 Filterable + Condensable- 06/03/2011 Apex Kiln 4 Engineering Test	--	--	--	
Truck/Rail Loading	Enclosed Truck/Rail Loading - Lime, Hydrate, Dust	0.61	--	--	lb/ton	AP-42, Section 11.17, Table 11.17-4 (2/98)	--	0.85	0.30	AP-42, Appendix B.2 (09/96), Table B.2-2, Category 4, Processed Ores
Stockpile Erosion	Erosion of Stockpiles	Various	--	--	lb/ton	AP-42, Section 11.2.3 (5/83).	--	0.51	0.15	AP-42, Appendix B.2 (09/96), Table B.2.2, Category 3, Unprocessed Ores

Table 3. Particulate Matter Emission Factors - LNA Nelson Plant PTE Inventory

Process Code	Process Description	Uncontrolled Emission Factors					Particulate Matter Emission Factor Inputs [a]				Reference
		PM	PM_{10}	PM_6	$PM_{2.5}$	Units	k (PM)	k (PM_{10})	k (PM_6)	k ($PM_{2.5}$)	
LimeTransfer	Loading Lime to Storage Bins	1.00	0.47	0.27	0.07	lb/ton	1	0.47	--	0.07	Particle size fractions from AP-42, Section 13.2.4, Expression 1 (11/06), Material Drop Equation

Table 4. Particulate Matter Control Efficiencies - LNA Nelson Plant PTE Inventory

Control Code	Control Description	> 10 µm CE	6 - 10 µm CE	2.5 - 6 µm CE	< 2.5 µm CE	Reference
LBB	Lime Bin Baghouse	99.5%	99.5%	99.5%	99%	AP-42, Table B.2-3 (09/96) - Fabric Filter
WS	Wet Scrubber	99%	99%	95%	90%	AP-42, Table B.2-3 (09/96) - Wet Scrubber - Hi-Efficiency

Table 5. Particle Size Fraction Determination - LNA Nelson Plant PTE Inventory

Unit Description	Uncontrolled Size Fractions								EF Units	Control Code	> 10 µm CE	6 - 10 µm CE	2.5 - 6 µm CE	< 2.5 µm CE	Controlled Size Fractions							Controlled Fraction of PM			Control Efficiency		
	PM	PM_{10}	PM_6	$PM_{2.5}$	$PM_{>10}$	PM_{6-10}	$PM_{2.5-6}$	$PM_{<2.5}$							$PM_{>10}$	PM_{6-10}	$PM_{2.5-6}$	$PM_{<2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Lime Transfer - Baghouse Controlled	1.00	0.47	0.27	0.07	0.53	0.20	0.20	0.07	lb/ton	LBB	99.5%	99.50%	99.50%	99.00%	0.003	0.0010	0.0010	0.0007	0.005	0.00270	0.0007	1.00	0.50	0.13	99.47%	99.43%	99.00%
Lime Transfer - Wet Scrubber Controlled	1.00	0.47	0.27	0.07	0.53	0.200	0.200	0.070	lb/ton	WS	99.0%	99.0%	95.0%	90.0%	0.0053	0.00200	0.0100	0.0070	0.0243	0.0190	0.0070	1.00	0.78	0.29	97.57%	95.96%	90.00%

Table 6. Particulate Control Efficiencies - LNA Nelson Plant PTE Inventory			
Control ID	Control Description	Control Efficiency (%)	Reference
None	No Pollution Control	0.0%	Assumed
Enclosed	Enclosed Process	70.0%	Assumed Efficiency for Enclosed process
Sealed	Sealed - no fugitive emisisons	100.0%	Assumed
Underground	Underground Transfer Point	100.0%	Assumed
Water Spray	Use of Water Sprays	82.5%	AP-42, p. 11.19.1-5, Supplement A (11/95)
Water Carryover	Process Material is Wet From Sprays	82.5%	AP-42, p. 11.19.1-5, Supplement A (11/95)
Water 1	Water Truck	75.0%	Assumed Efficiency for Water Truck Travel (Recently Dampened)
Water 2	Watered Roads	50.0%	Assumed Efficiency for Watered Roads
Bags	Fabric Filter Bags on Silos	99.5%	Assumed Control Efficiency for Fabric Filter Bags
Dust Collector	Pick-up Efficiency of Dust Collectors	99.0%	Assumed Pick-up Efficiency for Each Dust Collector
DC 213	Dust Collector #213	99.0%	Assumed Control Efficiency for a Baghouse
DC 234	Dust Collector 234	99.0%	Assumed Control Efficiency for a Baghouse
DC 206-D	Dust Collector 206D	99.0%	Assumed Control Efficiency for a Baghouse
DC 219-D	Dust Collector 219D	99.0%	Assumed Control Efficiency for a Baghouse
DC 1-321	Dust Collector 1-321	99.0%	Assumed Control Efficiency for a Baghouse
DC 2-321	Dust Collector 2-321	99.0%	Assumed Control Efficiency for a Baghouse
DC 414	Dust Collector 414	99.0%	Assumed Control Efficiency for a Baghouse
DC 419-5	Dust Collector 419-5	99.0%	Assumed Control Efficiency for a Baghouse
DC 430	Dust Collector 430	99.0%	Assumed Control Efficiency for a Baghouse
DC 437A	Dust Collector 437A	99.0%	Assumed Control Efficiency for a Baghouse
DC 437B	Dust Collector 437B	99.0%	Assumed Control Efficiency for a Baghouse
DC 437C	Dust Collector 437C	99.0%	Assumed Control Efficiency for a Baghouse
DC 437D	Dust Collector 437D	99.0%	Assumed Control Efficiency for a Baghouse
DC 437E	Dust Collector 437E	99.0%	Assumed Control Efficiency for a Baghouse
DC 437F	Dust Collector 437F	99.0%	Assumed Control Efficiency for a Baghouse
DC 437G	Dust Collector 437G	99.0%	Assumed Control Efficiency for a Baghouse
DC 452	Dust Collector 452	99.0%	Assumed Control Efficiency for a Baghouse
DC 527	Dust Collector 527	99.0%	Assumed Control Efficiency for a Baghouse
DC 714	Dust Collector 714	99.0%	Assumed Control Efficiency for a Baghouse
DC 721	Hydrate System Dust Collector	99.0%	Assumed Control Efficiency for a Baghouse
DC 750A	Hydrate System Dust Collector	99.0%	Assumed Control Efficiency for a Baghouse
DC 762-1	Dust Collector 762-1	99.0%	Assumed Control Efficiency for a Baghouse
DC DS1	Dust Collector DS1	99.0%	Assumed Control Efficiency for a Baghouse
DC SC1	Dust Collector DC SC1	99.0%	Assumed Control Efficiency for a Baghouse
DF 711	Hydrate System Scrubber 711	95.0%	Assumed Control Efficiency for a Wet Scrubber

Table 7. Annual Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes		Emission Source Description	Process Description	SCC	P, C, F*	Annual PTE Process Rate	Rate Units	Emission Factor				Control Method	Control Device	Control or Capture Efficiency	PM (tons)		PM_{10} (tons)		$PM_{2.5}$ (tons)	
	Emission Unit	Process Unit							PM	PM_{10}	$PM_{2.5}$	Units				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																					
M001	412	01	Drilling Stone/Overburden	Drilling Holes	3-05-040-02	F	7,490	holes	1.3000	0.6630	0.1950	lbs/hole	none	none	0.0%	4.8685	4.8685	2.4829	2.4829	0.7303	0.7303
M002	412	02	Blasting Stone/Overburden	Blasting Holes	3-05-040-01	F	107	blasts	0.1404	0.0730	0.0042	lbs/blast	none	none	0.0%	0.0075	0.0075	0.0039	0.0039	0.0002	0.0002
M003	412	03	Loading Trucks	Limestone Material Transfer	3-05-040-20	F	3,750,000	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	20.7229	20.7229	9.8014	9.8014	1.4842	1.4842
M004	412	04	Bulldozing	Bulldozing	3-05-104-05	F	4,000	hours	3.9407	0.7528	0.4138	lb/hr	none	none	0.0%	7.8815	7.8815	1.5055	1.5055	0.8276	0.8276
M005	412	05	Unloading to Gravitational Piles	Limestone Material Transfer	3-05-104-05	F	50,000	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	0.2763	0.2763	0.1307	0.1307	0.0198	0.0198
M006	412	06	Unloading Off-Spec to Piles	Limestone Material Transfer	3-05-104-05	F	1,250,000	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	6.9076	6.9076	3.2671	3.2671	0.4947	0.4947
Crushing Plant																					
100	401	01	Truck to Dump Hopper	Limestone Material Transfer	3-05-104-05	F	2,500,000	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	13.8153	2.4177	6.5343	1.1435	0.9895	0.1732
101	401	02	Dump Hopper to Apron Feeder 102	Limestone Material Transfer	3-05-040-21	P	2,500,000	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	13.8153	2.4177	6.5343	1.1435	0.9895	0.1732
102	401	03	Apron Feeder 102 to Cleanup Belt Conveyor 102B	Limestone Material Transfer	3-05-040-21	P	250	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0014	0.0002	0.0007	0.0001	0.0001	0.00002
103	401	04	Cleanup Belt Conveyor 102B to Belt Conveyor 104	Limestone Material Transfer	3-05-040-21	P	250	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0014	0.0002	0.0007	0.0001	0.0001	0.00002
104	401	05	Grizzley 102A	Screening	3-05-040-34	P	2,499,750	tons	0.0250	0.0087	0.0038	lb/ton	Water Spray	Water Spray	82.5%	31.2469	5.4682	10.8739	1.9029	4.6870	0.8202
105			Portable Grizzley at Plaza Stockpile or Surgepile	This process only occurs if the primary crusher is inoperable, consequently emissions are in lieu of, not in addition to, and are much less than normal operations. hammer, to free material jamming the crusher. Therefore, negligible emissions are assumed.																	
106			Hydraulic Rock Breaker 103B	This equipment operates infrequently, in a manner similar to a jack hammer, to free material jamming the crusher. Therefore, negligible emissions are assumed.																	
107	401	06	Jaw Crusher 103	Crushing	3-05-040-30	P	2,499,750	tons	0.0054	0.0024	0.0008	lb/ton	Water Spray	Water Spray	82.5%	6.7493	1.1811	2.9997	0.5249	1.0124	0.1772
108	401	07	Belt Conveyor 104 to Belt Conveyor 202 via Diverter	Limestone Material Transfer	3-05-040-21	C	0	tons	0.0111	0.0052	0.0008	lb/ton	Enclosed	none	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
109	401	08	Primary Screen 108	Screening	3-05-040-34	C	2,500,000	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 234	99.0%	31.2500	0.3125	10.8750	0.1088	4.6875	0.0469
110	401	09	Belt Conveyor 235 to Belt Conveyor 223	Limestone Material Transfer	3-05-040-21	C	500,000	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 219-D	99.0%	2.7631	0.0276	1.3069	0.0131	0.1979	0.0020
111	401	10	Surge Bin 107 to Vibrating Feeder 201	Enclosed Limestone Material Transfer	3-05-040-20	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
112	401	11	Vibrating Feeder 201 to Belt Conveyor 202	Enclosed Limestone Material Transfer	3-05-040-21	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
113	401	12	Vibrating Screen 203	Screening	3-05-040-34	C	1,400,000	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 206-D	99.0%	17.5000	0.1750	6.0900	0.0609	2.6250	0.0263
114	401	13	Belt Conveyor 209 to Chat Silo 210	Limestone Material Transfer	3-05-040-21	C	803,636	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 213	99.0%	4.4410	0.0444	2.1005	0.0210	0.3181	0.0032
115	401	14	Belt Conveyor 208 to Kiln Feed Stockpile	Limestone Material Transfer	3-05-040-21	P	1,196,364	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	6.6112	1.1570	3.1269	0.5472	0.4735	0.0829
116	401	15	Cone Crusher 206	Crushing	3-05-040-31	C	1,272,727	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 206-D	99.0%	3.4364	0.0344	1.5273	0.0153	0.5155	0.0052
117	401	16	Belt Conveyor 204 to Belt Conveyor 207	Enclosed Limestone Material Transfer	3-05-040-21	P	1,272,727	tons	0.0018	0.0008	0.0001	lb/ton	Water Spray	Water Spray	82.5%	1.1373	0.1990	0.5379	0.0941	0.0815	0.0143
118	401	17	Belt Conveyor 204 to Emer. Bypass Pile via Bypass Chute	Limestone Material Transfer	3-05-040-21	P	0	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
119	401	18	Vibrating Screen 205	Screening	3-05-040-34	C	1,272,727	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 206-D	99.0%	15.9091	0.1591	5.5364	0.0554	2.3864	0.0239
120	401	19	Surge Bin 107 to Belt Conveyor 215	Limestone Material Transfer	3-05-040-21	C	2,000,000	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 234	99.0%	11.0522	0.1105	5.2274	0.0523	0.7916	0.0079
121	401	20	Belt Conveyor 215 to Surge Stockpile	Limestone Material Transfer	3-05-040-21	P	2,000,000	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	11.0522	1.9341	5.2274	0.9148	0.7916	0.1385
122	401	21	Surge Stockpile to Vibrating Feeders 216-1,2,3**	Limestone Material Transfer	3-05-040-20	P	2,000,000	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	11.0522	0.0000	5.2274	0.0000	0.7916	0.0000
123	401	22	Vibrating Feeders 216-1,2,3 to Belt Conveyor 217**	Limestone Material Transfer	3-05-040-21	P	2,000,000	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	11.0522	0.0000	5.2274	0.0000	0.7916	0.0000
124	401	23	Vibrating Screen 218	Screening	3-05-040-34	C	2,000,000	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 219-D	99.0%	25.0000	0.2500	8.7000	0.0870	3.7500	0.0375
125	401	24	Belt Conveyor 223 to Belt Conveyor 209	Limestone Material Transfer	3-05-040-21	C	600,000	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 206-D	99.0%	3.3157	0.0332	1.5682	0.0157	0.2375	0.0024
126	401	25	Belt Conveyor 220 to Kiln Feed Stockpile	Limestone Material Transfer	3-05-040-21	P	500,000	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	2.7631	0.4835	1.3069	0.2287	0.1979	0.0346
127	401	26	Cone Crusher 219	Crushing	3-05-040-34	C	1,400,000	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 219-D	99.0%	3.7800	0.0378	1.6800	0.0168	0.5670	0.0057
128	401	27	Belt Conveyor 224 to Belt Conveyor 202	Limestone Material Transfer	3-05-040-21	P	1,400,000	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	7.7366	1.3539	3.6592	0.6404	0.5541	0.0970
129	401	28	Chat Silo 210 to Belt Conveyor 226**	Enclosed Limestone Material Transfer	3-05-040-20	P	803,636	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.7181	0.7181	0.3396	0.3396	0.0514	0.0514
130	401	29	Belt Conveyor 226 to Truck	Limestone Material Transfer	3-05-040-20	P	803,636	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	4.4410	0.7772	2.1005	0.3676	0.3181	0.0557
Stone Feed to Kilns																					
200	402	01	Kiln Feed Stockpile to Vibrating Feeders 301 (6 Feeders)**	Limestone Material Transfer	3-05-016-07	P	1,490,283	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	8.2355	0.0000	3.8952	0.0000	0.5898	0.0000
201	402	02	Vibrating Feeders 301 (6 Feeders) to Belt Conveyor 302**	Limestone Material Transfer	3-05-016-07	P	1,490,283	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	8.2355	0.0000	3.8952	0.0000	0.5898	0.0000
202	402	03	Belt Conveyor 302 to Belt Conveyor 329**	Enclosed Limestone Material Transfer	3-05-040-20	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
203	402	04	Vibrating Screen 328	Screening	3-05-016-16	P	1,490,283	tons	0.0250	0.0087	0.0038	lb/ton	Enclosed	None	70.0%	18.6285	5.5886	6.4827	1.9448	2.7943	0.8383
204	402	05	Belt Conveyor 329 to Belt Conveyor 303-A**	Enclosed Limestone Material Transfer	3-05-040-20	P	803,820	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.7183	0.7183	0.3397	0.3397	0.0514	0.0514
205	402	06	Belt Conveyor 329 to Stone Bin 1-304**	Enclosed Limestone Material Transfer	3-05-040-20	P	643,056	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.5746	0.5746	0.2718	0.2718	0.0412	0.0412
206	402	07	Belt Conveyor 303-A to Stone Bin 2-304**	Enclosed Limestone Material Transfer	3-05-040-20	P	803,820	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.7183	0.7183	0.3397	0.3397	0.0514	0.0514
207	402	08	Stone Bin 1-304,2-304 to Lime Kiln 1,2	Limestone Material Transfer	3-05-016-07	P	1,446,876	tons	0.0111	0.0052	0.0008	lb/ton	Sealed	None	100.0%	7.9956	0.0000	3.7817	0.0000	0.5727	0.0000
Lime Production																					
300	403	01	Lime Kiln 1 to Contact Cooler 1-310**	Lime Material Transfer	3-05-016-11	P	343,392	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	1.0048	0.0000	0.4752	0.0000	0.0720	0.0000
301	403	02	Lime Kiln 2 to Contact Cooler 2-310**	Lime Material Transfer	3-05-016-11	P	429,240	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	1.2560	0.0000	0.5941	0.0000	0.0900	0.0000
302	403	03	Contact Cooler 1-310 to Vibrating Feeders 340A,B,C,D	Lime Material Transfer	3-05-016-15	C	343,392	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	1.0048	0.0100	0.4752	0.0048	0.0720	0.0007
303	403	04	Vibrating Feeders 340A,B,C,D to Apron Conveyor 420	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
304	403	05	Vibrating Feeders 340A,B,C,D to Belt Conveyor 401	Lime Material Transfer	3-05-016-15	C	343,392	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	1.0048	0.0100	0.4752	0.0048	0.0720	0.0007
305	403	06	Contact Cooler 2-310 to Vibrating Feeder 2-311	Lime Material Transfer	3-05-016-15	C	429,240	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	1.2560	0.0126	0.5941	0.0059	0.0900	0.0009
306	403	07	Vibrating Feeder 2-311 to Apron Conveyor 420	Lime Material Transfer	3-05-016-15	C	429,240	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	1.2560	0.0126	0.5941	0.0059	0.0900	0.0009
307	403	08	Vibrating Feeder 2-311 to Belt Conveyor 401	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 7. Annual Particulate Emissions from the LNA Nelson Plant - PTE																					
	SLEIS Codes								Emission Factor							PM (tons)		PM_{10} (tons)		$PM_{2.5}$ (tons)	
ID	Emission Unit	Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Annual PTE Process Rate	Rate Units	PM	PM_{10}	$PM_{2.5}$	Units	Control Method	Control Device	Control or Capture Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Front Lime Handling System																					
400	404	01	Apron Conveyor 420 to Apron Conveyor 421	Lime Material Transfer	3-05-016-15	C	429,240	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 419-5	99.0%	1.2560	0.0126	0.5941	0.0059	0.0900	0.0009
401	404	02	Apron Conveyor 421 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	C	429,240	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	1.2560	0.0126	0.5941	0.0059	0.0900	0.0009
402	404	03	Bucket Elevator 423 to Bucket Elevator 424-1	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
403	404	04	Bucket Elevator 423 to Bucket Elevator 424-2	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
404	404	05	Screen 432	Screening	3-05-016-30	C	579,474	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 430	99.0%	7.2434	0.0724	2.5207	0.0252	1.0865	0.0109
405	404	06	Hopper to Screw Conveyor 428	Lime Material Transfer	3-05-016-15	P	171,696	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.5024	0.0000	0.2376	0.0000	0.0360	0.0000
406	404	07	Screw Conveyor 428 to Bucket Elevator 424-C	Lime Material Transfer	3-05-016-15	P	171,696	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.5024	0.0000	0.2376	0.0000	0.0360	0.0000
407	404	08	Bucket Elevator 424-C to Screw Conveyor 427	Lime Material Transfer	3-05-016-15	P	171,696	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.5024	0.0000	0.2376	0.0000	0.0360	0.0000
408	404	09	Screw Conveyor 427 to Product Silo 428-3	Lime Material Transfer	3-05-016-15	C	861,458	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437G	99.0%	2.5207	0.0252	1.1922	0.0119	0.1805	0.0018
409	404	10	Hammermill 422	Fines Crushing	3-05-016-31	C	150,234	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 430	99.0%	2.9296	0.0293	1.1268	0.0113	0.4394	0.0044
410	404	11	Screw Conveyor 413 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	C	150,234	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.4396	0.0044	0.2079	0.0021	0.0315	0.0003
411	404	12	Bucket Elevators 424-1, 2 to Screw Conveyors 425, 426	Lime Material Transfer	3-05-016-15	C	257,544	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.7536	0.0000	0.3564	0.0000	0.0540	0.0000
412	404	13	Bucket Elevators 424-1, 2 to Truck	Lime Material Transfer	3-05-016-15	F	0	tons	0.0059	0.0028	0.0004	lb/ton	Enclosed	None	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
413	404	14	Screw Conveyors 425, 426 to Product Silos 428-1, 2	Lime Material Transfer	3-05-016-13	C	257,544	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.7536	0.0000	0.3564	0.0000	0.0540	0.0000
414	404	15	Bucket Elevators 424-1, 2 to Product Silo 428-2	Lime Material Transfer	3-05-016-13	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
415	404	16	Product Silo 428-1 to Vibrating Feeder 443-1	Lime Material Transfer	3-05-016-15	C	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0942	0.0009	0.0446	0.0004	0.0067	0.0001
416	404	17	Product Silo 428-2 to Vibrating Feeder 443-2	Lime Material Transfer	3-05-016-15	C	96,579	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.2826	0.0028	0.1337	0.0013	0.0202	0.0002
417	404	18	Product Silo 428-3 to Vibrating Feeder 443-3	Lime Material Transfer	3-05-016-15	C	430,729	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	1.2604	0.0126	0.5961	0.0060	0.0903	0.0009
418	404	19	Vibrating Feeder 443-1 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0942	0.0009	0.0446	0.0004	0.0067	0.0001
419	404	20	Vibrating Feeder 443-2 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	96,579	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.2826	0.0028	0.1337	0.0013	0.0202	0.0002
420	404	21	Vibrating Feeder 443-3 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	430,729	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	1.2604	0.0126	0.5961	0.0060	0.0903	0.0009
421	404	22	Belt Conveyor 435 to Rail/Super-Sack	Truck/Rail Loading	3-05-016-26	C	559,501	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 437C	99.0%	170.6478	1.7065	145.0506	1.4505	51.1943	0.5119
422	404	23	Product Silo 428-1 to Vibrating Feeder 433-1	Lime Material Transfer	3-05-016-15	C	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0942	0.0009	0.0446	0.0004	0.0067	0.0001
423	404	24	Product Silo 428-2 to Vibrating Feeder 433-2	Lime Material Transfer	3-05-016-15	C	96,579	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.2826	0.0028	0.1337	0.0013	0.0202	0.0002
424	404	25	Product Silo 428-3 to Vibrating Feeder 433-3	Lime Material Transfer	3-05-016-15	C	430,729	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	1.2604	0.0126	0.5961	0.0060	0.0903	0.0009
425	404	26	Vibrating Feeder 433-1 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0942	0.0009	0.0446	0.0004	0.0067	0.0001
426	404	27	Vibrating Feeder 433-2 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	96,579	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.2826	0.0028	0.1337	0.0013	0.0202	0.0002
427	404	28	Vibrating Feeder 433-3 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	430,729	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	1.2604	0.0126	0.5961	0.0060	0.0903	0.0009
428	404	29	Vibrating Feeders 433-1, 443-1 to Screw Conveyor 441	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
429	404	30	Screw Conveyor 441 to Screw Conveyor 470	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
430	404	31	Screw Conveyor 470 to Screw Conveyor 471	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
431	404	32	Screw Conveyor 471 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
432	404	33	Belt Conveyor 434 to Truck/Super-Sack	Truck/Rail Loading	3-05-016-26	C	559,501	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 437A	99.0%	170.6478	1.7065	145.0506	1.4505	51.1943	0.5119
433	404	34	Gypsum Supersack Dispensing Unit to Screw Conveyor 444-R	Gypsum Transfer Point	3-05-016-15	P	500	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	0.0090	0.0027	0.0043	0.0013	0.0006	0.0002
434	404	35	Screw Conveyor 444-R to Belt Conveyor 434	Gypsum Transfer Point	3-05-016-15	P	500	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	0.0090	0.0027	0.0043	0.0013	0.0006	0.0002
435	404	36	Pneumatic Transfer of Dolo Quicklime From Truck to Silo	Lime Material Transfer	3-05-016-15	C	25,000	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC DS1	99.0%	0.0732	0.0007	0.0346	0.0003	0.0052	0.00005
436	404	37	Unload Dolo Quicklime From Silo to Truck	Truck/Rail Loading	3-05-016-26	P	25,000	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC DS1	99.0%	7.6250	0.0763	6.4813	0.0648	2.2875	0.0229
Back Lime Handling System																					
500	405	01	Belt Conveyor 401 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	343,392	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	1.0048	0.0100	0.4752	0.0048	0.0720	0.0007
501	405	02	Rail Car to Hopper	Lime Material Transfer	3-05-016-15	F	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0942	0.0000	0.0446	0.0000	0.0067	0.0000
502	405	03	Hopper to Screw Conveyor 412	Lime Material Transfer	3-05-016-15	P	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0942	0.0000	0.0446	0.0000	0.0067	0.0000
503	405	04	Screw Conveyor 412 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	32,193	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0942	0.0009	0.0446	0.0004	0.0067	0.0001
504	405	05	Hammer Mill 402-2	Fines Crushing	3-05-016-31	C	0	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
505	405	06	Belt Conveyor 401 to Bucket Elevators 406E, W	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
506	405	07	Belt Conveyor 402 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
507	405	08	Bucket Elevator 403 to Screw Conveyor 443	Lime Material Transfer	3-05-016-15	C	375,585	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	1.0990	0.0000	0.5198	0.0000	0.0787	0.0000
508	405	09	Bucket Elevator 403 to Truck	Truck/Rail Loading	3-05-016-27	C	0	tons	0.6100	0.5185	0.1830	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
509	405	10	Roll Crusher 444	Fines Crushing	3-05-016-31	C	375,585	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	7.3239	0.0732	2.8169	0.0282	1.0986	0.0110
510	405	11	Screw Conveyor 445 to Bucket Elevator 446	Lime Material Transfer	3-05-016-15	C	375,585	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	1.0990	0.0110	0.5198	0.0052	0.0787	0.0008
511	405	12	Screen 404	Screening	3-05-016-30	C	563,378	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 414	99.0%	7.0422	0.0704	2.4507	0.0245	1.0563	0.0106
512	405	13	Hammermill 405	Fines Crushing	3-05-016-31	C	375,585	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	7.3239	0.0732	2.8169	0.0282	1.0986	0.0110
513	405	14	Screw Conveyor 447 to Bucket Elevator 446	Lime Material Transfer	3-05-016-15	C	375,585	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	1.0990	0.0110	0.5198	0.0052	0.0787	0.0008
514	405	15	Bucket Elevators 406E, W to Screw Conveyors 408, 408A, B, C	Lime Material Transfer	3-05-016-15	C	300,468	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.8792	0.0088	0.4158	0.0042	0.0630	0.0006
515	405	16	Screw Conveyors 408, 408A, B, C to Silos 1, 4, 5, 3 (respectively)	Lime Material Transfer	3-05-016-13	P	300,468	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.8792	0.0000	0.4158	0.0000	0.0630	0.0000
516	405	17	Silo 3 to Belt Conveyor 402	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Enclosed	None	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
517	405	18	Bucket Elevators 406E, W to Silo 2	Lime Material Transfer	3-05-016-13	P	75,117	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2198	0.0000	0.1040	0.0000	0.0157	0.0000
518	405	19	Silos 1, 2, 3, 4, 5 to Truck/Rail	Truck/Rail Loading	3-05-016-27	C	271,560	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 414	99.0%	82.8258	0.8283	70.4019	0.7040	24.8477	0.2485
519	405	20	Sorbacal Transfer From Railcar to Truck	Hydrate Transfer - Pneumatic		C	10,400	tons	0.7300	0.4700	0.0710	lb/ton	Dust Collector	DC SC1	99.0%	3.7960	0.0380	2.4440	0.0244	0.3692	0.0037

Table 7. Annual Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes: Emission Unit	SLEIS Codes: Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Annual PTE Process Rate	Rate Units	Emission Factor: PM	Emission Factor: PM_{10}	Emission Factor: $PM_{2.5}$	Emission Factor: Units	Control Method	Control Device	Control or Capture Efficiency	PM (tons): Uncontrolled	PM (tons): Controlled	PM_{10} (tons): Uncontrolled	PM_{10} (tons): Controlled	$PM_{2.5}$ (tons): Uncontrolled	$PM_{2.5}$ (tons): Controlled
Hydrator System																					
600	406	01	Quicklime Silos 2, 5 to Screw Conveyors 701, 702 (respectively)	Lime Material Transfer	3-05-016-15	P	104,025	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3044	0.0000	0.1440	0.0000	0.0218	0.0000
616	406	17	Screw Conveyor 702B to Screw Conveyor 702	Lime Material Transfer		P	5,201	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0152	0.0000	0.0072	0.0000	0.0011	0.0000
601	406	02	Screw Conveyors 701, 702 to Quicklime Feed Surge Bin 703	Lime Material Transfer	3-05-016-13	P	104,025	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3044	0.0000	0.1440	0.0000	0.0218	0.0000
602	406	03	Quicklime Feed Surge Bin 703 to Belt Conveyor 704	Lime Material Transfer	3-05-016-15	P	104,025	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3044	0.0000	0.1440	0.0000	0.0218	0.0000
603	406	04	Belt Conveyor 704 to Screw Conveyor 707	Lime Material Transfer	3-05-016-15	P	104,025	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3044	0.0000	0.1440	0.0000	0.0218	0.0000
604	406	05	Screw Conveyor 707 to Pug Mill 708	Lime Material Transfer	3-05-016-31	P	104,025	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3044	0.0000	0.1440	0.0000	0.0218	0.0000
605	406	06	Seasoning Chamber 710	Hydrator	3-05-016-09	C	124,830	tons	Emissions controlled by DF 711. Emission Factor for DF 711 from stack test.												
606	406	07	Seasoning Chamber 710 to Screw Conveyor 712	Hydrate Material Transfer	3-05-016-15	C	124,830	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.1738	0.0017	0.0822	0.0008	0.0124	0.00012
607	406	08	Screw Conveyor 712 to Bucket Elevator 719	Hydrate Material Transfer	3-05-016-15	C	149,796	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.2085	0.0021	0.0986	0.0010	0.0149	0.0001
608	406	09	Bucket Elevator 719 to Air Separator 715	Hydrate Material Transfer	3-05-016-15	C	149,796	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.2085	0.0021	0.0986	0.0010	0.0149	0.0001
609	406	10	Air Separator 715**	Air Separator	3-05-016-33	P	149,796	tons	0.0320	0.0272	0.0096	lb/ton	Dust Collector	DC 721	99.0%	2.3967	0.0240	2.0372	0.0204	0.7190	0.0072
610	406	11	Air Separator 715 to Screw Conveyor 718	Hydrate Material Transfer	3-05-016-15	C	124,830	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.1738	0.0017	0.0822	0.0008	0.0124	0.00012
611	406	12	Screw Conveyor 718 to Bucket Elevator 713	Hydrate Material Transfer	3-05-016-15	C	124,830	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DF 711	99.0%	0.1738	0.0017	0.0822	0.0008	0.0124	0.00012
612	406	13	Hammermill 717	Fines Crushing	3-05-016-15	C	24,966	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 721	99.0%	0.4868	0.0049	0.1872	0.0019	0.0730	0.0007
613	406	14	Bucket Elevator 713 to Hydrated Lime Silo 6	Hydrate Material Transfer	3-05-016-31	C	124,830	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DF 711	99.0%	0.1738	0.0017	0.0822	0.0008	0.0124	0.00012
614	406	15	Hydrated Lime Silo 6 to Screw Conveyor 750	Hydrate Material Transfer	3-05-016-15	P	124,830	tons	0.0028	0.0013	0.0002	lb/ton	Sealed	None	100.0%	0.1738	0.0000	0.0822	0.0000	0.0124	0.0000
615	406	16	Screw Conveyor 750 to Truck/Rail/Super-Sack	Truck/Rail Loading	3-05-016-15	C	124,830	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 750A	99.0%	38.0732	0.3807	32.3622	0.3236	11.4219	0.1142
Solid Fuel Handling																					
700	407	01	Coal/Coke Loading by Loader at Stockpile Location 1	Fuel Material Transfer	3-03-003-05	F	328,157	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0963	0.0963	0.0455	0.0455	0.0069	0.0069
701	407	02	Coal Unloading by Loader to Solid Fuel Hopper	Fuel Material Transfer	3-03-003-05	F	171,350	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0503	0.0503	0.0238	0.0238	0.0036	0.0036
702	407	03	Coal Truck Unloading to Track Hopper	Fuel Material Transfer	3-03-003-05	F	171,350	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0503	0.0503	0.0238	0.0238	0.0036	0.0036
703	407	04	Coke Rail Car to Track Hopper	Fuel Material Transfer	3-05-102-03	F	206,807	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0607	0.0607	0.0287	0.0287	0.0043	0.0043
704	407	05	Track Hopper to Vibrating Feeders 504A,B**	Fuel Material Transfer	3-05-010-11	P	378,157	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.1109	0.0000	0.0525	0.0000	0.0079	0.0000
705	407	06	Crusher 505**	Crushing	3-05-010-11	P	378,157	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 527	99.0%	1.0210	0.0102	0.4538	0.0045	0.1532	0.0015
706	407	07	Solid Fuel Hopper to Weigh Belt 504C	Fuel Material Transfer	3-05-010-10	P	171,350	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.0503	0.0000	0.0238	0.0000	0.0036	0.0000
707	407	08	Weigh Belt 504C to Bucket Elevator 521	Fuel Material Transfer	3-05-010-11	C	171,350	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.0503	0.0000	0.0238	0.0000	0.0036	0.0000
708	407	09	Belt Conveyor 506 to Bucket Elevator 521	Fuel Material Transfer	3-05-010-11	C	378,157	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.1109	0.0000	0.0525	0.0000	0.0079	0.0000
709	407	10	Bucket Elevator 521 to Belt Conveyor 514	Fuel Material Transfer	3-05-010-11	C	378,157	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.1109	0.0011	0.0525	0.0005	0.0079	0.00008
710	407	11	Belt Conveyor 514 to Solid Fuel Surge Piles	Fuel Material Transfer	3-05-010-11	P	378,157	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.1109	0.1109	0.0525	0.0525	0.0079	0.0079
711	407	12	Loader to Haul Truck at Solid Fuel Surge Pile	Fuel Material Transfer	3-05-010-11	F	50,000	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0147	0.0147	0.0069	0.0069	0.0011	0.0011
712	407	13	Haul Truck Dumping at Stockpile Location 2	Fuel Material Transfer	3-05-010-11	F	50,000	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0147	0.0147	0.0069	0.0069	0.0011	0.0011
713	407	14	Loader to Haul Truck at Stockpile Location 2	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
714	407	15	Haul Truck to Stockpile Location 1	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
715	407	16	Roll Crusher 522	Fines Crushing	3-05-010-11	C	328,157	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 527	99.0%	6.3991	0.0640	2.4612	0.0246	0.9599	0.0096
716	407	17	Belt Conveyor 516 to Fuel Bin 2-517**	Fuel Material Transfer	3-05-010-11	P	182,309	tons	0.0006	0.0003	0.00004	lb/ton	Enclosed	None	70.0%	0.0535	0.0160	0.0253	0.0076	0.0038	0.0011
717	407	18	Loading by Loader to Trucks for Shipment Offsite	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
718	407	19	Fuel Bin 1-508 to Weigh Feeder 1-601**	Enclosed Fuel Material Transfer	3-05-010-11	P	76,155	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0036	0.0036	0.0017	0.0017	0.0003	0.0003
718A	407	19A	Fuel Bin 1-508 to Belt Conveyor 2-601B**	Enclosed Fuel Material Transfer		P	95,194	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0045	0.0045	0.0021	0.0021	0.0003	0.0003
718B	407	19B	Belt Conveyor 2-601B to Weigh Feeder 2-601A	Enclosed Fuel Material Transfer		P	95,194	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0045	0.0045	0.0021	0.0021	0.0003	0.0003
719	407	20	Weigh Feeder 1-601 to Screw Conveyor 1-613	Fuel Material Transfer	3-05-010-11	C	76,155	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0223	0.0002	0.0106	0.0001	0.0016	0.00002
719A	407	20A	Weigh Feeder 1-601A to Screw Conveyor 1-613	Fuel Material Transfer		C	69,692	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0204	0.0002	0.0097	0.0001	0.0015	0.00001
720	407	21	Ball Mill 1-602	Fines Crushing	3-05-010-17	P	145,848	tons	0.0390	0.0150	0.0059	lb/ton	Sealed	None	100.0%	2.8440	0.0000	1.0939	0.0000	0.4266	0.0000
721	407	22	Classifier 604 to Kiln 1	Fuel Material Transfer	3-05-010-11	P	145,848	tons	0.0006	0.0003	0.00004	lb/ton	Sealed	None	100.0%	0.0428	0.0000	0.0202	0.0000	0.0031	0.0000
722	407	23	Fuel Bin 517-2 to Weigh Feeder 2-601**	Enclosed Fuel Material Transfer	3-05-010-11	P	87,115	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0041	0.0041	0.0020	0.0020	0.0003	0.0003
722A	407	23A	Fuel Bin 2-517 to Weigh Feeder 1-601A**	Enclosed Fuel Material Transfer		P	69,692	tons	0.0001	0.00004	0.00001	lb/ton	Dust Collector	DC 527	99.0%	0.0033	0.0000	0.0016	0.0000	0.0002	0.0000
722B	407	23B	Weigh Feeder 2-601A to Weigh Feeder 2-601	Fuel Material Transfer		C	95,194	tons	0.0006	0.00028	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0279	0.0003	0.0132	0.0001	0.0020	0.0000
723	407	24	Ball Mill 602-2	Fines Crushing	3-05-010-17	P	182,309	tons	0.0390	0.0150	0.0059	lb/ton	Sealed	None	100.0%	3.5550	0.0000	1.3673	0.0000	0.5333	0.0000
724	407	25	Classifier 2-604 to Kiln 2	Fuel Material Transfer	3-05-010-11	P	182,309	tons	0.0006	0.0003	0.00004	lb/ton	Sealed	None	100.0%	0.0535	0.0000	0.0253	0.0000	0.0038	0.0000
Internal and External Combustion																					
800	001	01	Portable Electric Generator NSPS - <125kW (Canyon Well Generator)	Portable Generator NSPS	1-01-005-01	P	1,468,395	hp-hr	0.00003	0.00003	0.00003	lb/hp-hr	None	None	0.0%	0.0241	0.0241	0.0241	0.0241	0.0241	0.0241
801	002	02	Truck Wash Hot Water Pressure Washer	External Diesel Combustion	1-02-005-03	P	5.72	10^3 gal	3.3000	2.4000	2.1000	lb/103 gal	None	None	0.0%	0.0094	0.0094	0.0069	0.0069	0.0060	0.0060
802	003	03	Kiln Pony Motors (2)	Internal Diesel Combustion	2-02-001-02	P	71.27	MMBtu	0.3100	0.3100	0.3100	lb/MMBtu	None	None	0.0%	0.0110	0.0110	0.0110	0.0110	0.0110	0.0110
803	004	04	Detroit Diesel Fire Pump Motor	Internal Diesel Combustion	2-02-001-02	P	177.97	MMBtu	0.3100	0.3100	0.3100	lb/MMBtu	None	None	0.0%	0.0276	0.0276	0.0276	0.0276	0.0276	0.0276
804	005	05	Kiln Torches	External Diesel Combustion	1-01-005-01	P	105.12	10^3 gal	3.3000	2.4000	2.1000	lb/103 gal	Multicyclone/ Baghouse	Multicyclone/ Baghouse	100.0%	0.1734	0.0000	0.1261	0.0000	0.1104	0.0000

Table 7. Annual Particulate Emissions from the LNA Nelson Plant - PTE																					
	SLEIS Codes								Emission Factor							PM (tons)		PM_{10} (tons)		$PM_{2.5}$ (tons)	
ID	Emission Unit	Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Annual PTE Process Rate	Rate Units	PM	PM_{10}	$PM_{2.5}$	Units	Control Method	Control Device	Control or Capture Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Dust Handling																					
900	408	01	Dust Collector 234 to Belt Conveyor 235	Dust Material Transfer	3-05-016-15	C	41.9	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	7.58E-04	0.00E+00	3.58E-04	0.00E+00	5.43E-05	0.00E+00
901	408	02	Dust Collector 213 to Chat Silo 210	Dust Material Transfer	3-05-016-15	C	4.4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	7.96E-05	0.00E+00	3.76E-05	0.00E+00	5.70E-06	0.00E+00
902	408	03	Dust Collector 206-D to Truck	Dust Material Transfer	3-05-016-15	C	39.8	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	7.19E-04	2.16E-04	3.40E-04	1.02E-04	5.15E-05	1.55E-05
903	408	04	Dust Collector 219-D to Truck	Dust Material Transfer	3-05-016-15	C	31.2	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	5.65E-04	1.70E-04	2.67E-04	8.02E-05	4.05E-05	1.21E-05
904	408	05	Dust Collector 750A to Screw Conveyor 750	Dust Material Transfer	3-05-016-15	C	37.7	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.82E-04	0.00E+00	3.23E-04	0.00E+00	4.89E-05	0.00E+00
905	408	06	Dust Collector 721 to Screw Conveyor 718	Dust Material Transfer	3-05-016-15	C	3.61	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.54E-05	0.00E+00	3.09E-05	0.00E+00	4.68E-06	0.00E+00
906	408	07	Dust Collector 527 to Fuel Bin 1-508	Dust Material Transfer	3-05-016-15	C	7.53	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.36E-04	0.00E+00	6.44E-05	0.00E+00	9.76E-06	0.00E+00
907	408	08	Kiln 1 Baghouse to Screw Conveyors 1-316D,E	Dust Material Transfer	3-05-016-15	P	29,188	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	5.28E-01	0.00E+00	2.50E-01	0.00E+00	3.78E-02	0.00E+00
908	408	09	Screw Conveyor 1-316C to Screw Conveyor 1-316B	Dust Material Transfer	3-05-016-15	P	29,188	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	5.28E-01	0.00E+00	2.50E-01	0.00E+00	3.78E-02	0.00E+00
909	408	10	Multicyclone 1-319 to Screw Conveyor 1-316A	Dust Material Transfer	3-05-016-15	P	5,151	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	9.32E-02	0.00E+00	4.41E-02	0.00E+00	6.68E-03	0.00E+00
910	408	11	Screw Conveyor 1-316B to Screw Conveyor 1-316	Dust Material Transfer	3-05-016-15	P	29,188	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	5.28E-01	0.00E+00	2.50E-01	0.00E+00	3.78E-02	0.00E+00
911	408	12	Screw Conveyor 1-316A to Screw Conveyor 1-318	Dust Material Transfer	3-05-016-15	P	5,151	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	9.32E-02	0.00E+00	4.41E-02	0.00E+00	6.68E-03	0.00E+00
912	408	13	Screw Conveyor 1-318 to Screw Conveyor 1-316	Dust Material Transfer	3-05-016-15	P	5,151	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	9.32E-02	0.00E+00	4.41E-02	0.00E+00	6.68E-03	0.00E+00
913	408	14	Bin Elevator 1-317 to Dust Bin 1-318	Dust Material Transfer	3-05-016-15	C	34,339	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 1-321	99.0%	6.21E-01	6.21E-03	2.94E-01	2.94E-03	4.45E-02	4.45E-04
914	408	15	Dust Bin 318-1 to Screw Conveyor 2-316	Dust Material Transfer	3-05-016-15	P	34,339	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.21E-01	0.00E+00	2.94E-01	0.00E+00	4.45E-02	0.00E+00
915	408	16	Dust Bin 1-318 to Truck/Super-Sack	Dust Material Transfer	3-05-016-15	C	0	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 1-321	99.0%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
916	408	17	Dust Collector 1-321 to Dust Bin 1-318	Dust Material Transfer	3-05-016-15	C	0.62	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.11E-05	0.00E+00	5.27E-06	0.00E+00	7.97E-07	0.00E+00
917	408	18	Kiln 2 Baghouse to Screw Conveyor 2-316G	Dust Material Transfer	3-05-016-15	P	18,243	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.30E-01	0.00E+00	1.56E-01	0.00E+00	2.36E-02	0.00E+00
918	408	19	Kiln 2 Baghouse to Screw Conveyor 2-316F	Dust Material Transfer	3-05-016-15	P	18,243	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.30E-01	0.00E+00	1.56E-01	0.00E+00	2.36E-02	0.00E+00
919	408	20	Screw Conveyor 2-316G to Screw Conveyor 2-316E	Dust Material Transfer	3-05-016-15	P	18,243	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.30E-01	0.00E+00	1.56E-01	0.00E+00	2.36E-02	0.00E+00
920	408	21	Screw Conveyor 2-316F to Screw Conveyor 2-316E	Dust Material Transfer	3-05-016-15	P	18,243	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.30E-01	0.00E+00	1.56E-01	0.00E+00	2.36E-02	0.00E+00
921	408	22	Screw Conveyor 2-316E to Screw Conveyor 2-316D	Dust Material Transfer	3-05-016-15	P	36,485	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.60E-01	0.00E+00	3.12E-01	0.00E+00	4.73E-02	0.00E+00
922	408	23	Screw Conveyor 2-316D to Screw Conveyor 2-316C	Dust Material Transfer	3-05-016-15	P	36,485	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.60E-01	0.00E+00	3.12E-01	0.00E+00	4.73E-02	0.00E+00
923	408	24	Multicyclone 2-319 to Screw Conveyor 2-316A	Dust Material Transfer	3-05-016-15	P	6,439	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.17E-01	0.00E+00	5.51E-02	0.00E+00	8.34E-03	0.00E+00
924	408	25	Screw Conveyor 2-316A to Screw Conveyor 2-316B	Dust Material Transfer	3-05-016-15	P	6,439	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.17E-01	0.00E+00	5.51E-02	0.00E+00	8.34E-03	0.00E+00
925	408	26	Screw Conveyor 2-316 to Screw Conveyor 2-316B	Dust Material Transfer	3-05-016-15	C	34,339	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.21E-01	0.00E+00	2.94E-01	0.00E+00	4.45E-02	0.00E+00
926	408	27	Screw Conveyor 2-316B to Screw Conveyor 2-316C	Dust Material Transfer	3-05-016-15	P	40,778	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	7.38E-01	0.00E+00	3.49E-01	0.00E+00	5.29E-02	0.00E+00
927	408	28	Screw Conveyor 2-316C to Bin Elevator 2-317	Dust Material Transfer	3-05-016-15	P	77,263	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.40E+00	0.00E+00	6.61E-01	0.00E+00	1.00E-01	0.00E+00
928	408	29	Bin Elevator 2-317 to Dust Bin 2-318	Dust Material Transfer	3-05-016-13	C	77,263	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 2-321	99.0%	1.40E+00	1.40E-02	6.61E-01	6.61E-03	1.00E-01	1.00E-03
929	408	30	Dust Bin 2-318 to Truck/Super-Sack	Dust Material Transfer	3-05-016-15	C	68,639	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 2-321	99.0%	1.24E+00	1.24E-02	5.87E-01	5.87E-03	8.90E-02	8.90E-04
930	408	31	Dust Bin 2-318 to Screw Conveyor 461	Dust Material Transfer	3-05-016-15	P	17,384	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.15E-01	0.00E+00	1.49E-01	0.00E+00	2.25E-02	0.00E+00
931	408	32	Screw Conveyor 461 to Dust Recovery Bin	Dust Material Transfer	3-05-016-15	C	17,384	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 452	99.0%	3.15E-01	3.15E-03	1.49E-01	1.49E-03	2.25E-02	2.25E-04
932	408	33	Dust Recovery Bin to Screw Conveyors 465, 466	Dust Material Transfer	3-05-016-15	P	17,384	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.15E-01	0.00E+00	1.49E-01	0.00E+00	2.25E-02	0.00E+00
933	408	34	Screw Conveyors 465, 466 to Belt Conveyors 434, 435	Dust Material Transfer	3-05-016-15	P	17,384	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	3.15E-01	9.44E-02	1.49E-01	4.46E-02	2.25E-02	6.76E-03
934	408	35	Dust Collector 2-321 to Dust Bin 318-2	Dust Material Transfer	3-05-016-13	C	2.61	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	4.73E-05	0.00E+00	2.24E-05	0.00E+00	3.39E-06	0.00E+00
935	408	36	Dust Collector 762-1 to Apron Conveyor 420	Dust Material Transfer	3-05-016-15	C	4.5	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	8.10E-05	0.00E+00	3.83E-05	0.00E+00	5.80E-06	0.00E+00
936	408	37	Dust Collector 430 to Screw Conveyor 430-A	Dust Material Transfer	3-05-016-15	C	11.7	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	2.13E-04	0.00E+00	1.01E-04	0.00E+00	1.52E-05	0.00E+00
937	408	38	Dust Collector 419-5 to Apron Conveyor 421	Dust Material Transfer	3-05-016-15	C	1.2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	2.25E-05	0.00E+00	1.06E-05	0.00E+00	1.61E-06	0.00E+00
938	408	39	Dust Collector 452 to Dust Recovery Bin	Dust Material Transfer	3-05-016-15	C	0.31	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	5.64E-06	0.00E+00	2.67E-06	0.00E+00	4.04E-07	0.00E+00
939	408	40	Dust Collector 437A to Belt Conveyor 434	Dust Material Transfer	3-05-016-15	C	168.9	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.06E-03	0.00E+00	1.45E-03	0.00E+00	2.19E-04	0.00E+00
940	408	41	Dust Collector 437B to Silo 428-2	Dust Material Transfer	3-05-016-15	C	0.0	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
941	408	42	Dust Collector 437C to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	168.9	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	3.06E-03	0.00E+00	1.45E-03	0.00E+00	2.19E-04	0.00E+00
942	408	43	Dust Collector 437D to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	0.4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.75E-06	0.00E+00	3.19E-06	0.00E+00	4.83E-07	0.00E+00
943	408	44	Dust Collector 437E to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	1.1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	2.03E-05	0.00E+00	9.58E-06	0.00E+00	1.45E-06	0.00E+00
944	408	45	Dust Collector 437F to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	5.0	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	9.03E-05	0.00E+00	4.27E-05	0.00E+00	6.47E-06	0.00E+00
945	408	46	Dust Collector 414 to Screw Conveyor 414-2	Dust Material Transfer	3-05-016-15	C	107.6	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.95E-03	0.00E+00	9.21E-04	0.00E+00	1.39E-04	0.00E+00
946	408	47	Screw Conveyor 414-2 to Silo 2	Dust Material Transfer	3-05-016-15	P	107.6	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.95E-03	0.00E+00	9.21E-04	0.00E+00	1.39E-04	0.00E+00
947	408	48	Filling Supersacks	Dust Material Transfer	3-05-016-15	F	0.0	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
948	408	49	Emptying sacks to Feed Hopper	Dust Material Transfer	3-05-016-15	F	500	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	9.05E-03	9.05E-03	4.28E-03	4.28E-03	6.48E-04	6.48E-04
949	408	50	Screw Conveyors 1-316D,E to Screw Conveyor 1-316C	Dust Material Transfer	3-05-016-16	P	29,188	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	5.28E-01	0.00E+00	2.50E-01	0.00E+00	3.78E-02	0.00E+00
950	408	51	Screw Conveyor 1-316 to Bin Elevator 1-317	Dust Material Transfer	3-05-016-15	P	34,339	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	6.21E-01	0.00E+00	2.94E-01	0.00E+00	4.45E-02	0.00E+00
951	408	52	Screw Conveyor 430-A to Screw Conveyor 428	Dust Material Transfer	3-05-016-15	C	11.7	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	2.13E-04	0.00E+00	1.01E-04	0.00E+00	1.52E-05	0.00E+00
951	409	53	Dust Collector 437G to Product Silo 3A (428-3)	Dust Material Transfer	3-05-016-15	C	2.5	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	4.52E-05	0.00E+00	2.14E-05	0.00E+00	3.23E-06	0.00E+00

Table 7. Annual Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes: Emission Unit	SLEIS Codes: Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Annual PTE Process Rate	Rate Units	Emission Factor: PM	Emission Factor: PM_{10}	Emission Factor: $PM_{2.5}$	Emission Factor: Units	Control Method	Control Device	Control or Capture Efficiency	PM (tons): Uncontrolled	PM (tons): Controlled	PM_{10} (tons): Uncontrolled	PM_{10} (tons): Controlled	$PM_{2.5}$ (tons): Uncontrolled	$PM_{2.5}$ (tons): Controlled
Dust Collectors																					
DC 213	401	30	Dust Collector 213	Stack		P	Total of all emissions from points controlled with Dust Collector 213							DC 213	99.0%	4.3966	0.0440	2.1005	0.0210	0.3181	0.0032
DC 234	401	31	Dust Collector 234	Stack		P	Total of all emissions from points controlled with Dust Collector 234							DC 234	99.0%	41.8792	0.4188	16.1024	0.1610	5.4791	0.0548
DC 206-D	401	32	Dust Collector 206D	Stack		P	Total of all emissions from points controlled with Dust Collector 206-D							DC 206-D	99.0%	39.7595	0.3976	14.7219	0.1472	5.7643	0.0576
DC 219-D	401	33	Dust Collector 219D	Stack		P	Total of all emissions from points controlled with Dust Collector 219D							DC 219-D	99.0%	31.2276	0.3123	11.6869	0.1169	4.5149	0.0451
DC 452	408	53	Dust Collector 452	Stack		P	Total of all emissions from points controlled with Dust Collector 452							DC 452	99.0%	0.3114	0.0031	0.1488	0.0015	0.0225	0.00023
DC 1-321	408	54	Dust Collector 1-321	Stack		P	Total of all emissions from points controlled with Dust Collector 1-321							DC 1-321	99.0%	0.6152	0.0062	0.2939	0.0029	0.0445	0.0004
DC 2-321	408	55	Dust Collector 2-321	Stack		P	Total of all emissions from points controlled with Dust Collector 2-321							DC 2-321	99.0%	2.6139	0.0261	1.2488	0.0125	0.1891	0.0019
DC 762-1	403	9	Dust Collector 762-1	Stack		P	Total of all emissions from points controlled with Dust Collector 762-1							DC 762-1	99.0%	4.4764	0.0448	2.1386	0.0214	0.3238	0.0032
DC 419-5	404	38	Dust Collector 419-5	Stack		P	Total of all emissions from points controlled with Dust Collector 419-5							DC 419-5	99.0%	1.2434	0.0124	0.5941	0.0059	0.0900	0.0009
DC 430	404	39	Dust Collector 430	Stack		P	Total of all emissions from points controlled with Dust Collector 430							DC 430	99.0%	11.7499	0.1175	4.4494	0.0445	1.6474	0.0165
DC 437A	404	40	Dust Collector 437A	Stack		P	Total of all emissions from points controlled with Dust Collector 437A							DC 437A	99.0%	168.9413	1.6894	145.0506	1.4505	51.1943	0.5119
DC 437B	404	41	Dust Collector 437B	Stack		P	Total of all emissions from points controlled with Dust Collector 437B							DC 437B	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC 437C	404	42	Dust Collector 437C	Stack		P	Total of all emissions from points controlled with Dust Collector 437C							DC 437C	99.0%	168.9413	1.6894	145.0506	1.4505	51.1943	0.5119
DC 437D	404	43	Dust Collector 437D	Stack		P	Total of all emissions from points controlled with Dust Collector 437D							DC 437D	99.0%	0.3730	0.0037	0.1782	0.0018	0.0270	0.0003
DC 437E	404	44	Dust Collector 437E	Stack		P	Total of all emissions from points controlled with Dust Collector 437E							DC 437E	99.0%	1.1191	0.0112	0.5346	0.0053	0.0810	0.0008
DC 437F	404	45	Dust Collector 437F	Stack		P	Total of all emissions from points controlled with Dust Collector 437F							DC 437F	99.0%	4.9910	0.0499	2.3845	0.0238	0.3611	0.0036
DC 437G	413	56	Dust Collector 437G	Stack		P	Total of all emissions from points controlled with Dust Collector 437G							DC 437G	99.0%	2.4955	0.0250	1.1922	0.0119	0.1805	0.0018
DC DS1	404	46	Dust Collector DC-DS1	Stack		P	Total of all emissions from points controlled with Dust Collector DS1							DC DS1	99.0%	7.6212	0.0762	6.5158	0.0652	2.2927	0.0229
DC 414	405	20	Dust Collector 414	Stack		P	Total of all emissions from points controlled with Dust Collector 414							DC 414	99.0%	107.6051	1.0761	80.4616	0.8046	28.4004	0.2840
DC 527	407	26	Dust Collector 527	Stack		P	Total of all emissions from points controlled with Dust Collector 527							DC 527	99.0%	7.5290	0.0753	3.0024	0.0300	1.1263	0.0113
DC 750A	406	17	Dust Collector 750A	DC750A		P	124,830	tons	0.0176	0.0149	0.0053	lb/ton		DC 750A	99.0%	109.7643	1.0976	93.2997	0.9330	32.9293	0.3293
DF 711	406	18	Ducon Slaker Scrubber 711-Filterable	DF711		P	124,830	tons	0.0573	0.0487	0.0172	lb/ton		DF 711	95.0%	71.5120	3.5756	60.7852	3.0393	21.4536	1.0727
DF 711	406	19	Ducon Slaker Scrubber 711-Condensable	Hydrator-C		P	124,830	tons	0.0111			lb/ton		DF 711	95.0%	13.8755	0.6938				
DC 721	406	20	Hydrate System Dust Collector 721	DC721		P	149,796	tons	0.0293	0.0249	0.0088	lb/ton		DC 721	99.0%	219.3575	2.1936	186.4539	1.8645	65.8073	0.6581
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM	3-05-016-22	P	343,392	tons	0.1200			lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%	4120.7040	20.6035				
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM	3-05-016-22	P	429,240	tons	0.1200			lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%	5150.8800	25.7544				
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM10	3-05-016-22	P	343,392	tons		0.0660		lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%			2266.3872	11.3319		
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM10	3-05-016-22	P	429,240	tons		0.0660		lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%			2832.9840	14.1649		
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM2.5	3-05-016-22	P	343,392	tons			0.0324	lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%					1112.5901	5.5630
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM2.5	3-05-016-22	P	429,240	tons			0.0324	lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%					1390.7376	6.9537
DC SC1	413	57	Sorbacal Transfer Dust Collector	Stack		P	10,400	tons						DC SC1	99.0%	3.7580	0.0376	2.4196	0.0242	0.3655	0.0037
Maintenance and Repair Emissions																					
Maint1	411	01	Kiln 1 Preheater Material Spillage	Limestone Material Transfer	3-05-016-15	F	5,000	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	0.0276	0.0276	0.0131	0.0131	0.0020	0.0020
Maint2	411	02	Kiln 1 Preheater Material to Dump	Limestone Material Transfer	3-05-016-15	F	5,000	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	0.0276	0.0276	0.0131	0.0131	0.0020	0.0020
Maint3	411	03	Kiln 2 Preheater Material Spillage	Limestone Material Transfer	3-05-016-15	F	5,000	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	0.0276	0.0276	0.0131	0.0131	0.0020	0.0020
Maint4	411	04	Kiln 2 Preheater Material to Dump	Limestone Material Transfer	3-05-016-15	F	5,000	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	0.0276	0.0276	0.0131	0.0131	0.0020	0.0020
Maint5	411	05	Calcined Waste to Truck	Unprotected Lime Material Transfer	3-05-016-15	F	1,959	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0355	0.0355	0.0168	0.0168	0.0025	0.0025
Maint6	411	06	Calcined Waste to Dump	Unprotected Lime Material Transfer	3-05-016-15	F	1,959	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0355	0.0355	0.0168	0.0168	0.0025	0.0025
Maint7	411	07	Kiln Off-Spec Lime to Truck	Unprotected Lime Material Transfer	3-05-016-15	F	4,683	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0847	0.0847	0.0401	0.0401	0.0061	0.0061
Maint8	411	08	Kiln Off-Spec Lime to Dump	Unprotected Lime Material Transfer	3-05-016-15	F	4,683	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0847	0.0847	0.0401	0.0401	0.0061	0.0061
Maint9	411	09	LKD to Dump	Unprotected Lime Material Transfer		F	68,639	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	1.2421	1.2421	0.5875	0.5875	0.0890	0.0890
															Total Point and Process Fugitive Emissions:	**11,137.89**	**90.24**	**6,433.94**	**50.28**	**2,961.06**	**20.49**
															Total Fugitive Emissions (non-point sources, stackers, truck loading/unloading):	**56.46**	**44.97**	**24.66**	**19.23**	**4.69**	**3.87**
															Total Emissions:	**11,194.35**	**135.21**	**6,458.60**	**69.50**	**2,965.75**	**24.35**

* Emissions due to the transfer of the dust collected by small control devices are assumed to be negligible due to the small process rate of the dust being transferred and the enclosed configuration of these transfer points

* C = controlled by a baghouse, P = Process fugitive, F = emissions from truck dumping into hoppers, conveyor discharges into storage piles or trucks, or non-point sources.

** These processes are controlled, but the control efficiency is taken into account in the emission factor so "0%" is shown in the "control or capture efficiency" column.

Shaded equals "Primary" (total) particulates
Shaded equals "Filterable" (total) particulates
Shaded equals "Condensable" (total) particulates

Table 8. Hourly Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes		Emission Source Description	Process Description	SCC	P, C, F*	Hourly PTE Process Rate	Rate Units	Emission Factor				Control Method	Control Device	Control or Capture Efficiency	PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
	Emission Unit	Process Unit							PM	PM_{10}	$PM_{2.5}$	Units				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Mining																					
M001	412	01	Drilling Stone/Overburden	Drilling Holes	3-05-040-02	F	4	holes	1.3000	0.6630	0.1950	lbs/hole	none	none	0.0%	5.2000	5.2000	2.6520	2.6520	0.7800	0.7800
M002	412	02	Blasting Stone/Overburden	Blasting Holes	3-05-040-01	F	1	blasts	0.1404	0.0730	0.0042	lbs/blast	none	none	0.0%	0.1404	0.1404	0.0730	0.0730	0.0042	0.0042
M003	412	03	Loading Trucks	Limestone Material Transfer	3-05-040-20	F	2,100	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	23.2097	23.2097	10.9775	10.9775	1.6623	1.6623
M004	412	04	Bulldozing	Bulldozing	3-05-104-05	F	1	hours	3.9407	0.7528	0.4138	lb/hr	none	none	0.0%	3.9407	3.9407	0.7528	0.7528	0.4138	0.4138
M005	412	05	Unloading to Gravitational Piles	Limestone Material Transfer	3-05-104-05	F	28	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	0.3095	0.3095	0.1464	0.1464	0.0222	0.0222
M006	412	06	Unloading Off-Spec to Piles	Limestone Material Transfer	3-05-104-05	F	700	tons	0.0111	0.0052	0.0008	lb/ton	none	none	0.0%	7.7366	7.7366	3.6592	3.6592	0.5541	0.5541
Crushing Plant																					
100	401	01	Truck to Dump Hopper	Limestone Material Transfer	3-05-104-05	F	1,400	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	15.4731	2.7078	7.3184	1.2807	1.1082	0.1939
101	401	02	Dump Hopper to Apron Feeder 102	Limestone Material Transfer	3-05-040-21	P	1,400	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	15.4731	2.7078	7.3184	1.2807	1.1082	0.1939
102	401	03	Apron Feeder 102 to Cleanup Belt Conveyor 102B	Limestone Material Transfer	3-05-040-21	P	0.14	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0015	0.0003	0.0007	0.0001	0.0001	0.00002
103	401	04	Cleanup Belt Conveyor 102B to Belt Conveyor 104	Limestone Material Transfer	3-05-040-21	P	0.14	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0015	0.0003	0.0007	0.0001	0.0001	0.00002
104	401	05	Grizzley 102A	Screening	3-05-040-34	P	1,400	tons	0.0250	0.0087	0.0038	lb/ton	Water Spray	Water Spray	82.5%	34.9965	6.1244	12.1788	2.1313	5.2495	0.9187
105			Portable Grizzley at Plaza Stockpile or Surgepile	This process only occurs if the primary crusher is inoperable, consequently emissions are in lieu of, not in addition to, and are much less than normal operations. hammer, to free material jamming the crusher. Therefore, negligible emissions are assumed.																	
106			Hydraulic Rock Breaker 103B	This equipment operates infrequently, in a manner similar to a jack hammer, to free material jamming the crusher. Therefore, negligible emissions are assumed.																	
107	401	06	Jaw Crusher 103	Crushing	3-05-040-30	P	1,400	tons	0.0054	0.0024	0.0008	lb/ton	Water Spray	Water Spray	82.5%	7.5592	1.3229	3.3597	0.5879	1.1339	0.1984
108	401	07	Belt Conveyor 104 to Belt Conveyor 202 via Diverter	Limestone Material Transfer	3-05-040-21	C	0	tons	0.0111	0.0052	0.0008	lb/ton	Enclosed	none	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
109	401	08	Primary Screen 108	Screening	3-05-040-34	C	1,400	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 234	99.0%	35.0000	0.3500	12.1800	0.1218	5.2500	0.0525
110	401	09	Belt Conveyor 235 to Belt Conveyor 223	Limestone Material Transfer	3-05-040-21	C	280	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 219-D	99.0%	3.0946	0.0309	1.4637	0.0146	0.2216	0.0022
111	401	10	Surge Bin 107 to Vibrating Feeder 201	Enclosed Limestone Material Transfer	3-05-040-20	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
112	401	11	Vibrating Feeder 201 to Belt Conveyor 202	Enclosed Limestone Material Transfer	3-05-040-21	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
113	401	12	Vibrating Screen 203	Screening	3-05-040-34	C	784	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 206-D	99.0%	19.6000	0.1960	6.8208	0.0682	2.9400	0.0294
114	401	13	Belt Conveyor 209 to Chat Silo 210	Limestone Material Transfer	3-05-040-21	C	450	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 213	99.0%	4.9739	0.0497	2.3525	0.0235	0.3562	0.0036
115	401	14	Belt Conveyor 208 to Kiln Feed Stockpile	Limestone Material Transfer	3-05-040-21	P	670	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	7.4046	1.2958	3.5022	0.6129	0.5303	0.0928
116	401	15	Cone Crusher 206	Crushing	3-05-040-31	C	713	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 206-D	99.0%	3.8487	0.0385	1.7105	0.0171	0.5773	0.0058
117	401	16	Belt Conveyor 204 to Belt Conveyor 207	Enclosed Limestone Material Transfer	3-05-040-21	P	713	tons	0.0018	0.0008	0.0001	lb/ton	Water Spray	Water Spray	82.5%	1.2737	0.2229	0.6024	0.1054	0.0912	0.0160
118	401	17	Belt Conveyor 204 to Emer. Bypass Pile via Bypass Chute	Limestone Material Transfer	3-05-040-21	P	0	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
119	401	18	Vibrating Screen 205	Screening	3-05-040-34	C	713	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 206-D	99.0%	17.8182	0.1782	6.2007	0.0620	2.6727	0.0267
120	401	19	Surge Bin 107 to Belt Conveyor 215	Limestone Material Transfer	3-05-040-21	C	1,120	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 234	99.0%	12.3785	0.1238	5.8547	0.0585	0.8866	0.0089
121	401	20	Belt Conveyor 215 to Surge Stockpile	Limestone Material Transfer	3-05-040-21	P	1,120	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	12.3785	2.1662	5.8547	1.0246	0.8866	0.1551
122	401	21	Surge Stockpile to Vibrating Feeders 216-1,2,3**	Limestone Material Transfer	3-05-040-20	P	1,120	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	12.3785	0.0000	5.8547	0.0000	0.8866	0.0000
123	401	22	Vibrating Feeders 216-1,2,3 to Belt Conveyor 217**	Limestone Material Transfer	3-05-040-21	P	1,120	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	12.3785	0.0000	5.8547	0.0000	0.8866	0.0000
124	401	23	Vibrating Screen 218	Screening	3-05-040-34	C	1,120	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 219-D	99.0%	28.0000	0.2800	9.7440	0.0974	4.2000	0.0420
125	401	24	Belt Conveyor 223 to Belt Conveyor 209	Limestone Material Transfer	3-05-040-21	C	336	tons	0.0111	0.0052	0.0008	lb/ton	Dust Collector	DC 206-D	99.0%	3.7135	0.0371	1.7564	0.0176	0.2660	0.0027
126	401	25	Belt Conveyor 220 to Kiln Feed Stockpile	Limestone Material Transfer	3-05-040-21	P	280	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	3.0946	0.5416	1.4637	0.2561	0.2216	0.0388
127	401	26	Cone Crusher 219	Crushing	3-05-040-34	C	784	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 219-D	99.0%	4.2336	0.0423	1.8816	0.0188	0.6350	0.0064
128	401	27	Belt Conveyor 224 to Belt Conveyor 202	Limestone Material Transfer	3-05-040-21	P	784	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	8.6649	1.5164	4.0983	0.7172	0.6206	0.1086
129	401	28	Chat Silo 210 to Belt Conveyor 226**	Enclosed Limestone Material Transfer	3-05-040-20	P	450	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.8043	0.8043	0.3804	0.3804	0.0576	0.0576
130	401	29	Belt Conveyor 226 to Truck	Limestone Material Transfer	3-05-040-20	P	450	tons	0.0111	0.0052	0.0008	lb/ton	Water Spray	Water Spray	82.5%	4.9739	0.8704	2.3525	0.4117	0.3562	0.0623
Stone Feed to Kilns																					
200	402	01	Kiln Feed Stockpile to Vibrating Feeders 301 (6 Feeders)**	Limestone Material Transfer	3-05-016-07	P	190	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	2.0964	0.0000	0.9915	0.0000	0.1501	0.0000
201	402	02	Vibrating Feeders 301 (6 Feeders) to Belt Conveyor 302**	Limestone Material Transfer	3-05-016-07	P	190	tons	0.0111	0.0052	0.0008	lb/ton	Underground	None	100.0%	2.0964	0.0000	0.9915	0.0000	0.1501	0.0000
202	402	03	Belt Conveyor 302 to Belt Conveyor 329**	Enclosed Limestone Material Transfer	3-05-040-20	P	0	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
203	402	04	Vibrating Screen 328	Screening	3-05-016-16	P	190	tons	0.0250	0.0087	0.0038	lb/ton	Enclosed	None	70.0%	4.7421	1.4226	1.6502	0.4951	0.7113	0.2134
204	402	05	Belt Conveyor 329 to Belt Conveyor 303-A**	Enclosed Limestone Material Transfer	3-05-040-20	P	110	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.1973	0.1973	0.0933	0.0933	0.0141	0.0141
205	402	06	Belt Conveyor 329 to Stone Bin 1-304**	Enclosed Limestone Material Transfer	3-05-040-20	P	74	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.1318	0.1318	0.0623	0.0623	0.0094	0.0094
206	402	07	Belt Conveyor 303-A to Stone Bin 2-304**	Enclosed Limestone Material Transfer	3-05-040-20	P	110	tons	0.0018	0.0008	0.0001	lb/ton	None	None	0.0%	0.1973	0.1973	0.0933	0.0933	0.0141	0.0141
207	402	08	Stone Bin 1-304,2-304 to Lime Kiln 1,2	Limestone Material Transfer	3-05-016-07	P	184	tons	0.0111	0.0052	0.0008	lb/ton	Sealed	None	100.0%	2.0353	0.0000	0.9627	0.0000	0.1458	0.0000
Lime Production																					
300	403	01	Lime Kiln 1 to Contact Cooler 1-310**	Lime Material Transfer	3-05-016-11	P	39	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2305	0.0000	0.1090	0.0000	0.0165	0.0000
301	403	02	Lime Kiln 2 to Contact Cooler 2-310**	Lime Material Transfer	3-05-016-11	P	59	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.3450	0.0000	0.1632	0.0000	0.0247	0.0000
302	403	03	Contact Cooler 1-310 to Vibrating Feeders 340A,B,C,D	Lime Material Transfer	3-05-016-15	C	39	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.2305	0.0023	0.1090	0.0011	0.0165	0.0002
303	403	04	Vibrating Feeders 340A,B,C,D to Apron Conveyor 420	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
304	403	05	Vibrating Feeders 340A,B,C,D to Belt Conveyor 401	Lime Material Transfer	3-05-016-15	C	39	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.2305	0.0023	0.1090	0.0011	0.0165	0.0002
305	403	06	Contact Cooler 2-310 to Vibrating Feeder 2-311	Lime Material Transfer	3-05-016-15	C	59	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.3450	0.0035	0.1632	0.0016	0.0247	0.0002
306	403	07	Vibrating Feeder 2-311 to Apron Conveyor 420	Lime Material Transfer	3-05-016-15	C	59	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.3450	0.0035	0.1632	0.0016	0.0247	0.0002
307	403	08	Vibrating Feeder 2-311 to Belt Conveyor 401	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 762-1	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 8. Hourly Particulate Emissions from the LNA Nelson Plant - PTE																					
	SLEIS Codes								Emission Factor							PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
ID	Emission Unit	Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Hourly PTE Process Rate	Rate Units	PM	PM_{10}	$PM_{2.5}$	Units	Control Method	Control Device	Control or Capture Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Front Lime Handling System																					
400	404	01	Apron Conveyor 420 to Apron Conveyor 421	Lime Material Transfer	3-05-016-15	C	59	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 419-5	99.0%	0.3450	0.0035	0.1632	0.0016	0.0247	0.0002
401	404	02	Apron Conveyor 421 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	C	59	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.3450	0.0035	0.1632	0.0016	0.0247	0.0002
402	404	03	Bucket Elevator 423 to Bucket Elevator 424-1	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
403	404	04	Bucket Elevator 423 to Bucket Elevator 424-2	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
404	404	05	Screen 432	Screening	3-05-016-30	C	80	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 430	99.0%	1.9899	0.0199	0.6925	0.0069	0.2985	0.0030
405	404	06	Hopper to Screw Conveyor 428	Lime Material Transfer	3-05-016-15	P	24	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.1380	0.0000	0.0653	0.0000	0.0099	0.0000
406	404	07	Screw Conveyor 428 to Bucket Elevator 424-C	Lime Material Transfer	3-05-016-15	P	24	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.1380	0.0000	0.0653	0.0000	0.0099	0.0000
407	404	08	Bucket Elevator 424-C to Screw Conveyor 427	Lime Material Transfer	3-05-016-15	P	24	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.1380	0.0000	0.0653	0.0000	0.0099	0.0000
408	404	09	Screw Conveyor 427 to Product Silo 428-3	Lime Material Transfer	3-05-016-15	C	98	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.5755	0.0000	0.2722	0.0000	0.0412	0.0000
409	404	10	Hammermill 422	Fines Crushing	3-05-016-31	C	21	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 430	99.0%	0.8048	0.0080	0.3095	0.0031	0.1207	0.0012
410	404	11	Screw Conveyor 413 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	C	21	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 430	99.0%	0.1208	0.0012	0.0571	0.0006	0.0086	0.0001
411	404	12	Bucket Elevators 424-1, 2 to Screw Conveyors 425, 426	Lime Material Transfer	3-05-016-15	C	35	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2070	0.0000	0.0979	0.0000	0.0148	0.0000
412	404	13	Bucket Elevators 424-1, 2 to Truck	Lime Material Transfer	3-05-016-15	F	0	tons	0.0059	0.0028	0.0004	lb/ton	Enclosed	None	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
413	404	14	Screw Conveyors 425, 426 to Product Silos 428-1, 2	Lime Material Transfer	3-05-016-13	C	35	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2070	0.0000	0.0979	0.0000	0.0148	0.0000
414	404	15	Bucket Elevators 424-1, 2 to Product Silo 428-2	Lime Material Transfer	3-05-016-13	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
415	404	16	Product Silo 428-1 to Vibrating Feeder 443-1	Lime Material Transfer	3-05-016-15	C	4	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0259	0.0003	0.0122	0.0001	0.0019	0.0000
416	404	17	Product Silo 428-2 to Vibrating Feeder 443-2	Lime Material Transfer	3-05-016-15	C	13	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.0776	0.0008	0.0367	0.0004	0.0056	0.0001
417	404	18	Product Silo 428-3 to Vibrating Feeder 443-3	Lime Material Transfer	3-05-016-15	C	49	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	0.2877	0.0029	0.1361	0.0014	0.0206	0.0002
418	404	19	Vibrating Feeder 443-1 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	4	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0259	0.0003	0.0122	0.0001	0.0019	0.0000
419	404	20	Vibrating Feeder 443-2 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	13	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.0776	0.0008	0.0367	0.0004	0.0056	0.0001
420	404	21	Vibrating Feeder 443-3 to Belt Conveyor 435	Lime Material Transfer	3-05-016-15	C	49	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	0.2877	0.0029	0.1361	0.0014	0.0206	0.0002
421	404	22	Belt Conveyor 435 to Rail/Super-Sack	Truck/Rail Loading	3-05-016-26	C	67	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 437C	99.0%	40.7831	0.4078	34.6656	0.3467	12.2349	0.1223
422	404	23	Product Silo 428-1 to Vibrating Feeder 433-1	Lime Material Transfer	3-05-016-15	C	4	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0259	0.0003	0.0122	0.0001	0.0019	0.0000
423	404	24	Product Silo 428-2 to Vibrating Feeder 433-2	Lime Material Transfer	3-05-016-15	C	13	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.0776	0.0008	0.0367	0.0004	0.0056	0.0001
424	404	25	Product Silo 428-3 to Vibrating Feeder 433-3	Lime Material Transfer	3-05-016-15	C	49	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	0.2877	0.0029	0.1361	0.0014	0.0206	0.0002
425	404	26	Vibrating Feeder 433-1 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	4	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437D	99.0%	0.0259	0.0003	0.0122	0.0001	0.0019	0.0000
426	404	27	Vibrating Feeder 433-2 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	13	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437E	99.0%	0.0776	0.0008	0.0367	0.0004	0.0056	0.0001
427	404	28	Vibrating Feeder 433-3 to Belt Conveyor 434	Lime Material Transfer	3-05-016-15	C	49	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 437F	99.0%	0.2877	0.0029	0.1361	0.0014	0.0206	0.0002
428	404	29	Vibrating Feeders 433-1, 443-1 to Screw Conveyor 441	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
429	404	30	Screw Conveyor 441 to Screw Conveyor 470	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
430	404	31	Screw Conveyor 470 to Screw Conveyor 471	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
431	404	32	Screw Conveyor 471 to Bucket Elevator 423	Lime Material Transfer	3-05-016-15	P	0	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
432	404	33	Belt Conveyor 434 to Truck/Super-Sack	Truck/Rail Loading	3-05-016-26	C	67	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 437A	99.0%	40.7831	0.4078	34.6656	0.3467	12.2349	0.1223
433	404	34	Gypsum Supersack Dispensing Unit to Screw Conveyor 444-R	Gypsum Transfer Point	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	0.0362	0.0109	0.0171	0.0051	0.0026	0.0008
434	404	35	Screw Conveyor 444-R to Belt Conveyor 434	Gypsum Transfer Point	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	0.0362	0.0109	0.0171	0.0051	0.0026	0.0008
435	404	36	Pneumatic Transfer of Dolo Quicklime From Truck to Silo	Lime Material Transfer	3-05-016-15	C	25	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC DS1	99.0%	0.1463	0.0015	0.0692	0.0007	0.0105	0.00010
436	404	37	Unload Dolo Quicklime From Silo to Truck	Truck/Rail Loading	3-05-016-26	P	25	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC DS1	99.0%	15.2500	0.1525	12.9625	0.1296	4.5750	0.0458
Back Lime Handling System																					
500	405	01	Belt Conveyor 401 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	39	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.2305	0.0023	0.1090	0.0011	0.0165	0.0002
501	405	02	Rail Car to Hopper	Lime Material Transfer	3-05-016-15	F	4	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0259	0.0000	0.0122	0.0000	0.0019	0.0000
502	405	03	Hopper to Screw Conveyor 412	Lime Material Transfer	3-05-016-15	P	4	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0259	0.0000	0.0122	0.0000	0.0019	0.0000
503	405	04	Screw Conveyor 412 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	4	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0259	0.0003	0.0122	0.0001	0.0019	0.0000
504	405	05	Hammer Mill 402-2	Fines Crushing	3-05-016-31	C	0	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
505	405	06	Belt Conveyor 401 to Bucket Elevators 406E, W	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
506	405	07	Belt Conveyor 402 to Bucket Elevator 403	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
507	405	08	Bucket Elevator 403 to Screw Conveyor 443	Lime Material Transfer	3-05-016-15	C	44	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2563	0.0000	0.1212	0.0000	0.0184	0.0000
508	405	09	Bucket Elevator 403 to Truck	Truck/Rail Loading	3-05-016-27	C	0	tons	0.6100	0.5185	0.1830	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
509	405	10	Roll Crusher 444	Fines Crushing	3-05-016-31	C	44	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	1.7083	0.0171	0.6570	0.0066	0.2562	0.0026
510	405	11	Screw Conveyor 445 to Bucket Elevator 446	Lime Material Transfer	3-05-016-15	C	44	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.2563	0.0026	0.1212	0.0012	0.0184	0.0002
511	405	12	Screen 404	Screening	3-05-016-30	C	66	tons	0.0250	0.0087	0.0038	lb/ton	Dust Collector	DC 414	99.0%	1.6426	0.0164	0.5716	0.0057	0.2464	0.0025
512	405	13	Hammermill 405	Fines Crushing	3-05-016-31	C	44	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 414	99.0%	1.7083	0.0171	0.6570	0.0066	0.2562	0.0026
513	405	14	Screw Conveyor 447 to Bucket Elevator 446	Lime Material Transfer	3-05-016-15	C	44	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.2563	0.0026	0.1212	0.0012	0.0184	0.0002
514	405	15	Bucket Elevators 406E, W to Screw Conveyors 408, 408A, B, C	Lime Material Transfer	3-05-016-15	C	35	tons	0.0059	0.0028	0.0004	lb/ton	Dust Collector	DC 414	99.0%	0.2051	0.0021	0.0970	0.0010	0.0147	0.0001
515	405	16	Screw Conveyors 408, 408A, B, C to Silos 1, 4, 5, 3 (respectively)	Lime Material Transfer	3-05-016-13	P	35	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.2051	0.0000	0.0970	0.0000	0.0147	0.0000
516	405	17	Silo 3 to Belt Conveyor 402	Lime Material Transfer	3-05-016-15	C	0	tons	0.0059	0.0028	0.0004	lb/ton	Enclosed	None	70.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
517	405	18	Bucket Elevators 406E, W to Silo 2	Lime Material Transfer	3-05-016-13	P	9	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0513	0.0000	0.0242	0.0000	0.0037	0.0000
518	405	19	Silos 1, 2, 3, 4, 5 to Truck/Rail	Truck/Rail Loading	3-05-016-27	C	31	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 414	99.0%	19.0942	0.1909	16.2301	0.1623	5.7283	0.0573
519	405	20	Sorbacal Transfer From Railcar to Truck	Hydrate Transfer - Pneumatic		C	20	tons	0.7300	0.4700	0.0710	lb/ton	Dust Collector	DC SC1	99.0%	14.6000	0.1460	9.4000	0.0940	1.4200	0.0142

Table 8. Hourly Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes		Emission Source Description	Process Description	SCC	P, C, F*	Hourly PTE Process Rate	Rate Units	Emission Factor				Control Method	Control Device	Control or Capture Efficiency	PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
	Emission Unit	Process Unit							PM	PM_{10}	$PM_{2.5}$	Units				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Hydrator System																					
600	406	01	Quicklime Silos 2, 5 to Screw Conveyors 701, 702 (respectively)	Lime Material Transfer	3-05-016-15	P	13	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0732	0.0000	0.0346	0.0000	0.0052	0.0000
616	406	17	Screw Conveyor 702B to Screw Conveyor 702	Lime Material Transfer		P	1	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0037	0.0000	0.0017	0.0000	0.0003	0.0000
601	406	02	Screw Conveyors 701, 702 to Quicklime Feed Surge Bin 703	Lime Material Transfer	3-05-016-13	P	13	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0732	0.0000	0.0346	0.0000	0.0052	0.0000
602	406	03	Quicklime Feed Surge Bin 703 to Belt Conveyor 704	Lime Material Transfer	3-05-016-15	P	13	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0732	0.0000	0.0346	0.0000	0.0052	0.0000
603	406	04	Belt Conveyor 704 to Screw Conveyor 707	Lime Material Transfer	3-05-016-15	P	13	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0732	0.0000	0.0346	0.0000	0.0052	0.0000
604	406	05	Screw Conveyor 707 to Pug Mill 708	Lime Material Transfer	3-05-016-31	P	13	tons	0.0059	0.0028	0.0004	lb/ton	Sealed	None	100.0%	0.0732	0.0000	0.0346	0.0000	0.0052	0.0000
605	406	06	Seasoning Chamber 710	Hydrator	3-05-016-09	C	15	tons	Emissions controlled by DF 711. Emission Factor for DF 711 from stack test.												
606	406	07	Seasoning Chamber 710 to Screw Conveyor 712	Hydrate Material Transfer	3-05-016-15	C	15	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.0418	0.0004	0.0198	0.0002	0.0030	0.00003
607	406	08	Screw Conveyor 712 to Bucket Elevator 719	Hydrate Material Transfer	3-05-016-15	C	18	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.0501	0.0005	0.0237	0.0002	0.0036	0.0000
608	406	09	Bucket Elevator 719 to Air Separator 715	Hydrate Material Transfer	3-05-016-15	C	18	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.0501	0.0005	0.0237	0.0002	0.0036	0.0000
609	406	10	Air Separator 715**	Air Separator	3-05-016-33	P	18	tons	0.0320	0.0272	0.0096	lb/ton	Dust Collector	DC 721	99.0%	0.5760	0.0058	0.4896	0.0049	0.1728	0.0017
610	406	11	Air Separator 715 to Screw Conveyor 718	Hydrate Material Transfer	3-05-016-15	C	15	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DC 721	99.0%	0.0418	0.0004	0.0198	0.0002	0.0030	0.00003
611	406	12	Screw Conveyor 718 to Bucket Elevator 713	Hydrate Material Transfer	3-05-016-15	C	15	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DF 711	99.0%	0.0418	0.0004	0.0198	0.0002	0.0030	0.00003
612	406	13	Hammermill 717	Fines Crushing	3-05-016-15	C	3	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 721	99.0%	0.1170	0.0012	0.0450	0.0005	0.0176	0.0002
613	406	14	Bucket Elevator 713 to Hydrated Lime Silo 6	Hydrate Material Transfer	3-05-016-31	C	15	tons	0.0028	0.0013	0.0002	lb/ton	Dust Collector	DF 711	99.0%	0.0418	0.0004	0.0198	0.0002	0.0030	0.00003
614	406	15	Hydrated Lime Silo 6 to Screw Conveyor 750	Hydrate Material Transfer	3-05-016-15	P	15	tons	0.0028	0.0013	0.0002	lb/ton	Sealed	None	100.0%	0.0418	0.0000	0.0198	0.0000	0.0030	0.0000
615	406	16	Screw Conveyor 750 to Truck/Rail/Super-Sack	Truck/Rail Loading	3-05-016-15	C	15	tons	0.6100	0.5185	0.1830	lb/ton	Dust Collector	DC 750A	99.0%	9.1500	0.0915	7.7775	0.0778	2.7450	0.0275
Solid Fuel Handling																					
700	407	01	Coal/Coke Loading by Loader at Stockpile Location 1	Fuel Material Transfer	3-03-003-05	F	38	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0224	0.0224	0.0106	0.0106	0.0016	0.0016
701	407	02	Coal Unloading by Loader to Solid Fuel Hopper	Fuel Material Transfer	3-03-003-05	F	20	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0117	0.0117	0.0055	0.0055	0.0008	0.0008
702	407	03	Coal Truck Unloading to Track Hopper	Fuel Material Transfer	3-03-003-05	F	20	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0117	0.0117	0.0055	0.0055	0.0008	0.0008
703	407	04	Coke Rail Car to Track Hopper	Fuel Material Transfer	3-05-102-03	F	278	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.1632	0.1632	0.0772	0.0772	0.0117	0.0117
704	407	05	Track Hopper to Vibrating Feeders 504A,B**	Fuel Material Transfer	3-05-010-11	P	298	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.1749	0.0000	0.0827	0.0000	0.0125	0.0000
705	407	06	Crusher 505**	Crushing	3-05-010-11	P	298	tons	0.0054	0.0024	0.0008	lb/ton	Dust Collector	DC 527	99.0%	1.6104	0.0161	0.7157	0.0072	0.2416	0.0024
706	407	07	Solid Fuel Hopper to Weigh Belt 504C	Fuel Material Transfer	3-05-010-10	P	20	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.0117	0.0000	0.0055	0.0000	0.0008	0.0000
707	407	08	Weigh Belt 504C to Bucket Elevator 521	Fuel Material Transfer	3-05-010-11	C	20	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.0117	0.0000	0.0055	0.0000	0.0008	0.0000
708	407	09	Belt Conveyor 506 to Bucket Elevator 521	Fuel Material Transfer	3-05-010-11	C	298	tons	0.0006	0.0003	0.00004	lb/ton	Underground	None	100.0%	0.1749	0.0000	0.0827	0.0000	0.0125	0.0000
709	407	10	Bucket Elevator 521 to Belt Conveyor 514	Fuel Material Transfer	3-05-010-11	C	298	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.1749	0.0017	0.0827	0.0008	0.0125	0.00013
710	407	11	Belt Conveyor 514 to Solid Fuel Surge Piles	Fuel Material Transfer	3-05-010-11	P	298	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.1749	0.1749	0.0827	0.0827	0.0125	0.0125
711	407	12	Loader to Haul Truck at Solid Fuel Surge Pile	Fuel Material Transfer	3-05-010-11	F	260	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.1525	0.1525	0.0721	0.0721	0.0109	0.0109
712	407	13	Haul Truck Dumping at Stockpile Location 2	Fuel Material Transfer	3-05-010-11	F	260	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.1525	0.1525	0.0721	0.0721	0.0109	0.0109
713	407	14	Loader to Haul Truck at Stockpile Location 2	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
714	407	15	Haul Truck to Stockpile Location 1	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
715	407	16	Roll Crusher 522	Fines Crushing	3-05-010-11	C	38	tons	0.0390	0.0150	0.0059	lb/ton	Dust Collector	DC 527	99.0%	1.4908	0.0149	0.5734	0.0057	0.2236	0.0022
716	407	17	Belt Conveyor 516 to Fuel Bin 2-517**	Fuel Material Transfer	3-05-010-11	P	21	tons	0.0006	0.0003	0.00004	lb/ton	Enclosed	None	70.0%	0.0125	0.0037	0.0059	0.0018	0.0009	0.0003
717	407	18	Loading by Loader to Trucks for Shipment Offsite	Fuel Material Transfer	3-05-010-11	F	0	tons	0.0006	0.0003	0.00004	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
718	407	19	Fuel Bin 1-508 to Weigh Feeder 1-601**	Enclosed Fuel Material Transfer	3-05-010-11	P	9	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0008	0.0008	0.0004	0.0004	0.0001	0.0001
718A	407	19A	Fuel Bin 1-508 to Belt Conveyor 2-601B**	Enclosed Fuel Material Transfer		P	11	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0011	0.0011	0.0005	0.0005	0.0001	0.0001
718B	407	19B	Belt Conveyor 2-601B to Weigh Feeder 2-601A	Enclosed Fuel Material Transfer		P	11	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
719	407	20	Weigh Feeder 1-601 to Screw Conveyor 1-613	Fuel Material Transfer	3-05-010-11	C	9	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0052	0.0001	0.0025	0.0000	0.0004	0.00000
719A	407	20A	Weigh Feeder 1-601A to Screw Conveyor 1-613	Fuel Material Transfer		C	8	tons	0.0006	0.0003	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0048	0.0000	0.0023	0.0000	0.0003	0.00000
720	407	21	Ball Mill 1-602	Fines Crushing	3-05-010-17	P	17	tons	0.0390	0.0150	0.0059	lb/ton	Sealed	None	100.0%	0.6626	0.0000	0.2548	0.0000	0.0994	0.0000
721	407	22	Classifier 604 to Kiln 1	Fuel Material Transfer	3-05-010-11	P	17	tons	0.0006	0.0003	0.00004	lb/ton	Sealed	None	100.0%	0.0100	0.0000	0.0047	0.0000	0.0007	0.0000
722	407	23	Fuel Bin 517-2 to Weigh Feeder 2-601**	Enclosed Fuel Material Transfer	3-05-010-11	P	10	tons	0.0001	0.00004	0.00001	lb/ton	None	None	0.0%	0.0010	0.0010	0.0005	0.0005	0.0001	0.0001
722A	407	23A	Fuel Bin 2-517 to Weigh Feeder 1-601A**	Enclosed Fuel Material Transfer		P	8	tons	0.0001	0.00004	0.00001	lb/ton	Dust Collector	DC 527	99.0%	0.0008	0.0000	0.0004	0.0000	0.0001	0.0000
722B	407	23B	Weigh Feeder 2-601A to Weigh Feeder 2-601	Fuel Material Transfer		C	11	tons	0.0006	0.00028	0.00004	lb/ton	Dust Collector	DC 527	99.0%	0.0065	0.0001	0.0031	0.0000	0.0005	0.0000
723	407	24	Ball Mill 602-2	Fines Crushing	3-05-010-17	P	21	tons	0.0390	0.0150	0.0059	lb/ton	Sealed	None	100.0%	0.8282	0.0000	0.3185	0.0000	0.1242	0.0000
724	407	25	Classifier 2-604 to Kiln 2	Fuel Material Transfer	3-05-010-11	P	21	tons	0.0006	0.0003	0.00004	lb/ton	Sealed	None	100.0%	0.0125	0.0000	0.0059	0.0000	0.0009	0.0000
Internal annd External Combustion																					
800	001	01	Portable Electric Generator NSPS - <125kW (Canyon Well Generat	Portable Generator NSPS	1-01-005-01	P	168	hp-hr	0.0000	0.0000	0.0000	lb/hp-hr	None	None	0.0%	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055
801	002	02	Truck Wash Hot Water Pressure Washer	External Diesel Combustion	1-02-005-03	P	0.01	10^3 gal	3.3000	2.4000	2.1000	lb/103 gal	None	None	0.0%	0.0182	0.0182	0.0132	0.0132	0.0116	0.0116
802	003	03	Kiln Pony Motors (2)	Internal Diesel Combustion	2-02-001-02	P	0.41	MMBtu	0.3100	0.3100	0.3100	lb/MMBtu	None	None	0.0%	0.1261	0.1261	0.1261	0.1261	0.1261	0.1261
803	004	04	Detroit Diesel Fire Pump Motor	Internal Diesel Combustion	2-02-001-02	P	0.36	MMBtu	0.3100	0.3100	0.3100	lb/MMBtu	None	None	0.0%	0.1103	0.1103	0.1103	0.1103	0.1103	0.1103
804	005	05	Kiln Torches	External Diesel Combustion	1-01-005-01	P	0.60	10^3 gal	3.3000	2.4000	2.1000	lb/103 gal	Multicyclone/ Baghouse	Multicyclone/ Baghouse	100.0%	1.9800	0.0000	1.4400	0.0000	1.2600	0.0000

Table 8. Hourly Particulate Emissions from the LNA Nelson Plant - PTE																					
	SLEIS Codes								Emission Factor							PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
ID	Emission Unit	Process Unit	Emission Source Description	Process Description	SCC	P, C, F*	Hourly PTE Process Rate	Rate Units	PM	PM_{10}	$PM_{2.5}$	Units	Control Method	Control Device	Control or Capture Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Dust Handling																					
900	408	01	Dust Collector 234 to Belt Conveyor 235	Dust Material Transfer	3-05-016-15	C	46.90	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.6976	0.0000	0.8029	0.0000	0.1216	0.0000
901	408	02	Dust Collector 213 to Chat Silo 210	Dust Material Transfer	3-05-016-15	C	4.924	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1782	0.0000	0.0843	0.0000	0.0128	0.0000
902	408	03	Dust Collector 206-D to Truck	Dust Material Transfer	3-05-016-15	C	44.53	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	1.6117	0.4835	0.7623	0.2287	0.1154	0.0346
903	408	04	Dust Collector 219-D to Truck	Dust Material Transfer	3-05-016-15	C	34.97	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	1.2658	0.3797	0.5987	0.1796	0.0907	0.0272
904	408	05	Dust Collector 750A to Screw Conveyor 750	Dust Material Transfer	3-05-016-15	C	9.059	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.3278	0.0000	0.1551	0.0000	0.0235	0.0000
905	408	06	Dust Collector 721 to Screw Conveyor 718	Dust Material Transfer	3-05-016-15	C	0.8680	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0314	0.0000	0.0149	0.0000	0.0022	0.0000
906	408	07	Dust Collector 527 to Fuel Bin 1-508	Dust Material Transfer	3-05-016-15	C	3.260	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1180	0.0000	0.0558	0.0000	0.0085	0.0000
907	408	08	Kiln 1 Baghouse to Screw Conveyors 1-316D,E	Dust Material Transfer	3-05-016-15	P	3	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1231	0.0000	0.0582	0.0000	0.0088	0.0000
908	408	09	Screw Conveyor 1-316C to Screw Conveyor 1-316B	Dust Material Transfer	3-05-016-15	P	3	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1231	0.0000	0.0582	0.0000	0.0088	0.0000
909	408	10	Multicyclone 1-319 to Screw Conveyor 1-316A	Dust Material Transfer	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0217	0.0000	0.0103	0.0000	0.0016	0.0000
910	408	11	Screw Conveyor 1-316B to Screw Conveyor 1-316	Dust Material Transfer	3-05-016-15	P	3	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1231	0.0000	0.0582	0.0000	0.0088	0.0000
911	408	12	Screw Conveyor 1-316A to Screw Conveyor 1-318	Dust Material Transfer	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0217	0.0000	0.0103	0.0000	0.0016	0.0000
912	408	13	Screw Conveyor 1-318 to Screw Conveyor 1-316	Dust Material Transfer	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0217	0.0000	0.0103	0.0000	0.0016	0.0000
913	408	14	Bin Elevator 1-317 to Dust Bin 1-318	Dust Material Transfer	3-05-016-15	C	4	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 1-321	99.0%	0.1448	0.0014	0.0685	0.0007	0.0104	0.0001
914	408	15	Dust Bin 318-1 to Screw Conveyor 2-316	Dust Material Transfer	3-05-016-15	P	4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1448	0.0000	0.0685	0.0000	0.0104	0.0000
915	408	16	Dust Bin 1-318 to Truck/Super-Sack	Dust Material Transfer	3-05-016-15	C	0	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 1-321	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
916	408	17	Dust Collector 1-321 to Dust Bin 1-318	Dust Material Transfer	3-05-016-15	C	0.1433	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0052	0.0000	0.0025	0.0000	0.0004	0.0000
917	408	18	Kiln 2 Baghouse to Screw Conveyor 2-316G	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0769	0.0000	0.0364	0.0000	0.0055	0.0000
918	408	19	Kiln 2 Baghouse to Screw Conveyor 2-316F	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0769	0.0000	0.0364	0.0000	0.0055	0.0000
919	408	20	Screw Conveyor 2-316G to Screw Conveyor 2-316E	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0769	0.0000	0.0364	0.0000	0.0055	0.0000
920	408	21	Screw Conveyor 2-316F to Screw Conveyor 2-316E	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0769	0.0000	0.0364	0.0000	0.0055	0.0000
921	408	22	Screw Conveyor 2-316E to Screw Conveyor 2-316D	Dust Material Transfer	3-05-016-15	P	4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1538	0.0000	0.0728	0.0000	0.0110	0.0000
922	408	23	Screw Conveyor 2-316D to Screw Conveyor 2-316C	Dust Material Transfer	3-05-016-15	P	4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1538	0.0000	0.0728	0.0000	0.0110	0.0000
923	408	24	Multicyclone 2-319 to Screw Conveyor 2-316A	Dust Material Transfer	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0271	0.0000	0.0128	0.0000	0.0019	0.0000
924	408	25	Screw Conveyor 2-316A to Screw Conveyor 2-316B	Dust Material Transfer	3-05-016-15	P	1	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0271	0.0000	0.0128	0.0000	0.0019	0.0000
925	408	26	Screw Conveyor 2-316 to Screw Conveyor 2-316B	Dust Material Transfer	3-05-016-15	C	4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1448	0.0000	0.0685	0.0000	0.0104	0.0000
926	408	27	Screw Conveyor 2-316B to Screw Conveyor 2-316C	Dust Material Transfer	3-05-016-15	P	5	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1719	0.0000	0.0813	0.0000	0.0123	0.0000
927	408	28	Screw Conveyor 2-316C to Bin Elevator 2-317	Dust Material Transfer	3-05-016-15	P	9	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.3257	0.0000	0.1541	0.0000	0.0233	0.0000
928	408	29	Bin Elevator 2-317 to Dust Bin 2-318	Dust Material Transfer	3-05-016-13	C	9	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 2-321	99.0%	0.3257	0.0033	0.1541	0.0015	0.0233	0.0002
929	408	30	Dust Bin 2-318 to Truck/Super-Sack	Dust Material Transfer	3-05-016-15	C	8	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 2-321	99.0%	0.2818	0.0028	0.1333	0.0013	0.0202	0.0002
930	408	31	Dust Bin 2-318 to Screw Conveyor 461	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0801	0.0000	0.0379	0.0000	0.0057	0.0000
931	408	32	Screw Conveyor 461 to Dust Recovery Bin	Dust Material Transfer	3-05-016-15	C	2	tons	0.0362	0.0171	0.0026	lb/ton	Dust Collector	DC 452	99.0%	0.0801	0.0008	0.0379	0.0004	0.0057	0.0001
932	408	33	Dust Recovery Bin to Screw Conveyors 465, 466	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0801	0.0000	0.0379	0.0000	0.0057	0.0000
933	408	34	Screw Conveyors 465, 466 to Belt Conveyors 434, 435	Dust Material Transfer	3-05-016-15	P	2	tons	0.0362	0.0171	0.0026	lb/ton	Enclosed	None	70.0%	0.0801	0.0240	0.0379	0.0114	0.0057	0.0017
934	408	35	Dust Collector 2-321 to Dust Bin 318-2	Dust Material Transfer	3-05-016-13	C	0.6015	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0218	0.0000	0.0103	0.0000	0.0016	0.0000
935	408	36	Dust Collector 762-1 to Apron Conveyor 420	Dust Material Transfer	3-05-016-15	C	1.140	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0412	0.0000	0.0195	0.0000	0.0030	0.0000
936	408	37	Dust Collector 430 to Screw Conveyor 430-A	Dust Material Transfer	3-05-016-15	C	3.228	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1168	0.0000	0.0553	0.0000	0.0084	0.0000
937	408	38	Dust Collector 419-5 to Apron Conveyor 421	Dust Material Transfer	3-05-016-15	C	0.3416	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0124	0.0000	0.0058	0.0000	0.0009	0.0000
938	408	39	Dust Collector 452 to Dust Recovery Bin	Dust Material Transfer	3-05-016-15	C	0.07928	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0029	0.0000	0.0014	0.0000	0.0002	0.0000
939	408	40	Dust Collector 437A to Belt Conveyor 434	Dust Material Transfer	3-05-016-15	C	40.38	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.4613	0.0000	0.6911	0.0000	0.1047	0.0000
940	408	41	Dust Collector 437B to Silo 428-2	Dust Material Transfer	3-05-016-15	C	0.0000	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
941	408	42	Dust Collector 437C to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	40.38	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	1.4613	0.0000	0.6911	0.0000	0.1047	0.0000
942	408	43	Dust Collector 437D to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	0.10248	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0037	0.0000	0.0018	0.0000	0.0003	0.0000
943	408	44	Dust Collector 437E to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	0.3074	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0111	0.0000	0.0053	0.0000	0.0008	0.0000
944	408	45	Dust Collector 437F to Belt Conveyor 435	Dust Material Transfer	3-05-016-15	C	1.1395	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.0412	0.0000	0.0195	0.0000	0.0030	0.0000
945	408	46	Dust Collector 414 to Screw Conveyor 414-2	Dust Material Transfer	3-05-016-15	C	24.88	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.9003	0.0000	0.4258	0.0000	0.0645	0.0000
946	408	47	Screw Conveyor 414-2 to Silo 2	Dust Material Transfer	3-05-016-15	P	24.88	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.9003	0.0000	0.4258	0.0000	0.0645	0.0000
947	408	48	Filling Supersacks	Dust Material Transfer	3-05-016-15	F	0	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
948	408	49	Emptying sacks to Feed Hopper	Dust Material Transfer	3-05-016-15	F	1	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.0362	0.0362	0.0171	0.0171	0.0026	0.0026
949	408	50	Screw Conveyors 1-316D,E to Screw Conveyor 1-316C	Dust Material Transfer	3-05-016-16	P	3	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1231	0.0000	0.0582	0.0000	0.0088	0.0000
950	408	51	Screw Conveyor 1-316 to Bin Elevator 1-317	Dust Material Transfer	3-05-016-15	P	4	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1448	0.0000	0.0685	0.0000	0.0104	0.0000
951	408	52	Screw Conveyor 430-A to Screw Conveyor 428	Dust Material Transfer	3-05-016-15	C	3.228	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.1168	0.0000	0.0553	0.0000	0.0084	0.0000
951	409	53	Dust Collector 437G to Product Silo 3A (428-3)	Dust Material Transfer	3-05-016-15	C	0.0	tons	0.0362	0.0171	0.0026	lb/ton	Sealed	None	100.0%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 8. Hourly Particulate Emissions from the LNA Nelson Plant - PTE

ID	SLEIS Codes		Emission Source Description	Process Description	SCC	P, C, F*	Hourly PTE Process Rate	Rate Units	Emission Factor				Control Method	Control Device	Control or Capture Efficiency	PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
	Emission Unit	Process Unit							PM	PM_{10}	$PM_{2.5}$	Units				Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Dust Collectors																					
DC 213	401	30	Dust Collector 213	Stack		P	Total of all emissions from points controlled with Dust Collector 213							DC 213	99.0%	4.9242	0.0492	2.3525	0.0235	0.3562	0.0036
DC 234	401	31	Dust Collector 234	Stack		P	Total of all emissions from points controlled with Dust Collector 234							DC 234	99.0%	46.9047	0.4690	18.0347	0.1803	6.1366	0.0614
DC 206-D	401	32	Dust Collector 206D	Stack		P	Total of all emissions from points controlled with Dust Collector 206-D							DC 206-D	99.0%	44.5306	0.4453	16.4885	0.1649	6.4560	0.0646
DC 219-D	401	33	Dust Collector 219D	Stack		P	Total of all emissions from points controlled with Dust Collector 219D							DC 219-D	99.0%	34.9749	0.3497	13.0893	0.1309	5.0567	0.0506
DC 452	408	53	Dust Collector 452	Stack		P	Total of all emissions from points controlled with Dust Collector 452							DC 452	99.0%	0.0793	0.0008	0.0379	0.0004	0.0057	0.00006
DC 1-321	408	54	Dust Collector 1-321	Stack		P	Total of all emissions from points controlled with Dust Collector 1-321							DC 1-321	99.0%	0.1433	0.0014	0.0685	0.0007	0.0104	0.0001
DC 2-321	408	55	Dust Collector 2-321	Stack		P	Total of all emissions from points controlled with Dust Collector 2-321							DC 2-321	99.0%	0.6015	0.0060	0.2874	0.0029	0.0435	0.0004
DC 762-1	403	9	Dust Collector 762-1	Stack		P	Total of all emissions from points controlled with Dust Collector 762-1							DC 762-1	99.0%	1.1395	0.0114	0.5444	0.0054	0.0824	0.0008
DC 419-5	404	38	Dust Collector 419-5	Stack		P	Total of all emissions from points controlled with Dust Collector 419-5							DC 419-5	99.0%	0.3416	0.0034	0.1632	0.0016	0.0247	0.0002
DC 430	404	39	Dust Collector 430	Stack		P	Total of all emissions from points controlled with Dust Collector 430							DC 430	99.0%	3.2279	0.0323	1.2223	0.0122	0.4526	0.0045
DC 437A	404	40	Dust Collector 437A	Stack		P	Total of all emissions from points controlled with Dust Collector 437A							DC 437A	99.0%	40.3752	0.4038	34.6656	0.3467	12.2349	0.1223
DC 437B	404	41	Dust Collector 437B	Stack		P	Total of all emissions from points controlled with Dust Collector 437B							DC 437B	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC 437C	404	42	Dust Collector 437C	Stack		P	Total of all emissions from points controlled with Dust Collector 437C							DC 437C	99.0%	40.3752	0.4038	34.6656	0.3467	12.2349	0.1223
DC 437D	404	43	Dust Collector 437D	Stack		P	Total of all emissions from points controlled with Dust Collector 437D							DC 437D	99.0%	0.1025	0.0010	0.0490	0.0005	0.0074	0.0001
DC 437E	404	44	Dust Collector 437E	Stack		P	Total of all emissions from points controlled with Dust Collector 437E							DC 437E	99.0%	0.3074	0.0031	0.1469	0.0015	0.0222	0.0002
DC 437F	404	45	Dust Collector 437F	Stack		P	Total of all emissions from points controlled with Dust Collector 437F							DC 437F	99.0%	1.1395	0.0114	0.5444	0.0054	0.0824	0.0008
DC 437G	413	56	Dust Collector 437G	Stack		P	Total of all emissions from points controlled with Dust Collector 437G							DC 437G	99.0%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC DS1	404	46	Dust Collector DC-DS1	Stack		P	Total of all emissions from points controlled with Dust Collector DS1							DC DS1	99.0%	15.2423	0.1524	13.0317	0.1303	4.5855	0.0459
DC 414	405	20	Dust Collector 414	Stack		P	Total of all emissions from points controlled with Dust Collector 414							DC 414	99.0%	24.8762	0.2488	18.5765	0.1858	6.5569	0.0656
DC 527	407	26	Dust Collector 527	Stack		P	Total of all emissions from points controlled with Dust Collector 527							DC 527	99.0%	3.2605	0.0326	1.3800	0.0138	0.4789	0.0048
DC 750A	406	17	Dust Collector 750A	DC750A		P	15	tons	0.0176	0.0149	0.0053	lb/ton		DC 750A	99.0%	0.0132	0.0001	0.0112	0.0001	0.0040	0.0000
DF 711	406	18	Ducon Slaker Scrubber 711-Filterable	DF711		P	15	tons	0.0573	0.0487	0.0172	lb/ton		DF 711	95.0%	0.0086	0.0004	0.0073	0.0004	0.0026	0.0001
DF 711	406	19	Ducon Slaker Scrubber 711-Condensable	Hydrator-C		P	15	tons	0.0111			lb/ton		DF 711	95.0%	0.0017	0.0001				
DC 721	406	20	Hydrate System Dust Collector 721	DC721		P	18	tons	0.0293	0.0249	0.0088	lb/ton		DC 721	99.0%	0.0264	0.0003	0.0224	0.0002	0.0079	0.0001
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM	3-05-016-22	P	39	tons	0.1200			lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%	0.4726	0.0024				
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM	3-05-016-22	P	59	tons	0.1200			lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%	0.7075	0.0035				
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM10	3-05-016-22	P	39	tons		0.0660		lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%			0.2599	0.0013		
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM10	3-05-016-22	P	59	tons		0.0660		lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%			0.3891	0.0019		
BGH1	409	01	Lime Kiln 1: Baghouse**	Kiln 1-PM2.5	3-05-016-22	P	39	tons			0.0324	lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%					0.1276	0.0006
BGH2	410	01	Lime Kiln 2: Baghouse**	Kiln 1-PM2.5	3-05-016-22	P	59	tons			0.0324	lb/ton	Multicyclone/ Baghouse	Multicyclone/ Baghouse	99.5%					0.1910	0.0010
DC SC1	413	57	Sorbacal Transfer Dust Collector	Stack		P	20	tons						DC SC1	99.0%	14.4540	0.1445	9.3060	0.0931	1.4058	0.0141
Maintenance and Repair Emissions																					
Maint1	411	01	Kiln 1 Preheater Material Spillage	Limestone Material Transfer	3-05-016-15	F	218	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	2.4094	2.4094	1.1396	1.1396	0.1726	0.1726
Maint2	411	02	Kiln 1 Preheater Material to Dump	Limestone Material Transfer	3-05-016-15	F	218	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	2.4094	2.4094	1.1396	1.1396	0.1726	0.1726
Maint3	411	03	Kiln 2 Preheater Material Spillage	Limestone Material Transfer	3-05-016-15	F	218	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	2.4094	2.4094	1.1396	1.1396	0.1726	0.1726
Maint4	411	04	Kiln 2 Preheater Material to Dump	Limestone Material Transfer	3-05-016-15	F	218	tons	0.0111	0.0052	0.0008	lb/ton	None	None	0.0%	2.4094	2.4094	1.1396	1.1396	0.1726	0.1726
Maint5	411	05	Calcined Waste to Truck	Unprotected Lime Material Transfer	3-05-016-15	F	5	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.1810	0.1810	0.0856	0.0856	0.0130	0.0130
Maint6	411	06	Calcined Waste to Dump	Unprotected Lime Material Transfer	3-05-016-15	F	5	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.1810	0.1810	0.0856	0.0856	0.0130	0.0130
Maint7	411	07	Kiln Off-Spec Lime to Truck	Unprotected Lime Material Transfer	3-05-016-15	F	40	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	1.4477	1.4477	0.6847	0.6847	0.1037	0.1037
Maint8	411	08	Kiln Off-Spec Lime to Dump	Unprotected Lime Material Transfer	3-05-016-15	F	40	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	1.4477	1.4477	0.6847	0.6847	0.1037	0.1037
Maint9	411	09	LKD to Dump	Unprotected Lime Material Transfer		F	8	tons	0.0362	0.0171	0.0026	lb/ton	None	None	0.0%	0.2818	0.2818	0.1333	0.1333	0.0202	0.0202
															Total Point and Process Fugitive Emissions:	**721.06**	**26.55**	**406.18**	**12.41**	**131.90**	**3.58**
															Total Fugitive Emissions (non-point sources, stackers, truck loading/unloading):	**69.76**	**56.97**	**32.08**	**26.03**	**5.53**	**4.61**
															Total Emissions:	**790.83**	**83.52**	**438.27**	**38.44**	**137.43**	**8.19**

* Emissions due to the transfer of the dust collected by small control devices are assumed to be negligible due to the small process rate of the dust being transferred and the enclosed configuration of these transfer points

* C = controlled by a baghouse, P = Process fugitive, F = emissions from truck dumping into hoppers, conveyor discharges into storage piles or trucks, or non-point sources.

** These processes are controlled, but the control efficiency is taken into account in the emission factor so "0%" is shown in the "control or capture efficiency" column.

Shaded equals "Primary" (total) particulates
Shaded equals "Filterable" (total) particulates
Shaded equals "Condensable" (total) particulates

Table 9. Average Parameter Calculations for Mobile Equipment - LNA Nelson Plant PTE Inventory								
		PTE	Unpaved Road Travel		Paved Road Travel		Weighted Averages	
ID	Equipment Description	Maximum Annual VMT	Vehicle Weight	Maximum Annual VMT	Vehicle Weight	Maximum Annual Rate	Paved	Unpaved
LNA Vehicles								
M202, M206, M210, M211	65 Ton Haul Trucks (4)	149,760	65.0	149,760				30.38
M100, M102	990 Loaders (2)	6,552	92.0	6,552				1.88
M105, M112	966 and IT38 Loaders	8,650	54.0	8,650				1.46
M104	950 Loader	1,040	23.3	1,040				0.08
M501	G12 Grader	10,400	22.6	10,400				0.73
M503	Water Wagon	37,440	25.0	37,440	25	8,424	11.53	2.92
M502, M504	824C Wheel and Komatsu D37	58,240	66.0	58,240				12.00
M609	International ANFO Truck	2,000	18.0	2,000				0.11
M608	Isuzu Maintenance Truck	2,000	1.8	2,000	1.8	450	0.04	0.01
M030, M031, M033, M038, M407, F150R, F150W	Miscellaneous Pick-up Trucks	14,000	2.0	14,000	2	3,150	0.34	0.09
M109, M111	246C Cat Skidsters (2)	2,000	3.4	2,000	3.4	450	0.08	0.02
M901	40 Ton Grove Crane	100	90.0	100	90	23	0.11	0.03
M411	Maintenance Truck	2,000	11.0	2,000				0.07
M600, M601	Forklifts (2)	200	6.5	200				0.00
M611	Freightliner Water Truck	2,000	18.2	2,000	18.2	450	0.45	0.11
M602	Pellican Sweeper	2,000	10.0	2,000	10	450	0.25	0.06
M614	Sterling Dust Truck	3,752	25.0	3,752	25	844	1.16	0.29
M410	Lube Truck	2,000	13.0	2,000				0.08
M612	Vac Truck	4,000	2.6	4,000	2.6	900	0.13	0.03
M610, M617	Manlifts (2)	200	5.0	200	5	45	0.01	0.00
M207	Dump Truck	2,000	7.0	2,000	7	450	0.17	0.04
M618, M619, M620	Utility Side-by-Sides (3)	2,000	0.5	2,000	0.5	450	0.01	0.00
V10	Lime Trucks	2,000	27.5	2,000	27.5	450	0.68	0.17
V11	Hydrate Trucks	2,000	27.5	2,000	27.5	450	0.68	0.17
V12	Fuel Delivery Trucks	2,000	30.0	2,000				0.19
V13	Misc. Delivery Trucks	2,000	15.0	2,000	15	450	0.37	0.09
V14	Sorbacal Transfer Trucks	832	27.5	83	27.5	832	1.25	0.01
	Total:	**321,166**		**320,417**		**18,268**	**17.26**	**51.04**

Table 10. Summary of Particulate Emission Factors for Mobile Equipment - LNA Nelson Plant PTE Inventory

ID	Equipment Description	PM EF[a]	PM10 EF	PM2.5 EF	EF Units	Emission Factor Inputs				Reference
						s	W	p	sL	
Unpav	Travel on Unpaved Roads	11.32	3.22	0.32	lb/VMT	8.3	51.04	60		AP-42, Section 13.2.2 (11/06)
Pav	Travel on Paved Roads	0.12	0.02	0.006	lb/VMT		17.26	60	0.6	AP-42, Section 13.2.1 (1/11)

[a] For mobile equipment for which annual precipitation (p) is an emission factor input, the emission factors shown are for annual emissions calculations only.

s = road silt content (%)
W = mean vehicle weight (tons)
p = number of days with ppt > 0.01"
sL = silt loading (g/m^2)

Table 11. Annual Road Related Particulate Emissions from Mobile Equipment - LNA Nelson Plant PTE Inventory																
			Maximum		PM	PM10	PM2.5		Control	Control	PM (tpy)		PM_{10} (tpy)		$PM_{2.5}$ (tpy)	
ID	Equipment Description	SCC	Annual Rate	Units	EF	EF	EF	Units	Method	Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Unpav	Travel on Unpaved Roads	3-05-040-99	320,417	VMT	11.32	3.22	0.32	lb/VMT	Water 2	50.0%	1814.16	907.08	515.88	257.94	51.59	25.79
Pav	Travel on Paved Roads	3-05-040-99	18,268	VMT	0.1211	0.0242	0.0059	lb/VMT	none	0.0%	1.11	1.11	0.22	0.22	0.05	0.05
										Total:	**1,815.27**	**908.19**	**516.10**	**258.16**	**51.64**	**25.85**

Table 12. Hourly Road Related Particulate Emissions from Mobile Equipment - LNA Nelson Plant PTE Inventory																
			Maximum		PM	PM10	PM2.5		Control	Control	PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
ID	Equipment Description	SCC	Hourly Rate	Units	EF	EF	EF	Units	Method	Efficiency	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
Unpav	Travel on Unpaved Roads	3-05-040-99	37	VMT	11.32	3.22	0.32	lb/VMT	Water 2	50.0%	414.19	207.10	117.78	58.89	11.78	5.89
Pav	Travel on Paved Roads	3-05-040-99	2	VMT	0.1211	0.0242	0.0059	lb/VMT	none	0.0%	0.25	0.25	0.05	0.05	0.012	0.012
										Total:	**414.45**	**207.35**	**117.83**	**58.94**	**11.79**	**5.90**

Table 13. Annual and Hourly Particulate Emissions from Open Storage Areas - LNA Nelson Plant PTE Inventory

ID	AEIMS Codes		Description	SCC	Area (acres)	Silt Content (%)	Emission Factor (tons/acre/yr)			Control Method	Control Efficiency	PM (tpy)		PM_{10} (tpy)		$PM_{2.5}$ (tpy)		PM (lb/hr)		PM_{10} (lb/hr)		$PM_{2.5}$ (lb/hr)	
	Group	Segment					PM	PM_{10}	$PM_{2.5}$			Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
W010	412	8	Gravitational Stockpile	3-05-103-05	1.50	1.60	0.81	0.41	0.12	None	0.0%	1.22	1.22	0.62	0.62	0.18	0.18	0.28	0.28	0.14	0.14	0.04	0.04
W011	412	9	Plaza Stockpile	3-05-103-05	1.00	1.60	0.81	0.41	0.12	None	0.0%	0.81	0.81	0.41	0.41	0.12	0.12	0.19	0.19	0.09	0.09	0.03	0.03
W012	412	11	Stone Waste Stockpile, North	3-05-103-05	16.50	1.60	0.81	0.41	0.12	None	0.0%	13.37	13.37	6.82	6.82	2.01	2.01	3.05	3.05	1.56	1.56	0.46	0.46
W013	412	10	Stone Waste Stockpile, South	3-05-103-05	4.00	1.60	0.81	0.41	0.12	None	0.0%	3.24	3.24	1.65	1.65	0.49	0.49	0.74	0.74	0.38	0.38	0.11	0.11
W014	412	15	Dust/Chat Bowl	3-05-103-05	3.50	40.80	20.66	10.54	3.10	None	0.0%	72.32	72.32	36.88	36.88	10.85	10.85	16.51	16.51	8.42	8.42	2.48	2.48
W015	412	12	Surge Stockpile	3-05-103-05	1.00	1.60	0.81	0.41	0.12	None	0.0%	0.81	0.81	0.41	0.41	0.12	0.12	0.19	0.19	0.09	0.09	0.03	0.03
W016	412	13	Kiln Feed Stockpile (post-secondary screen)	3-05-103-05	2.00	1.60	0.81	0.41	0.12	None	0.0%	1.62	1.62	0.83	0.83	0.24	0.24	0.37	0.37	0.19	0.19	0.06	0.06
W018	401	37	Kiln Feed Stockpile	3-05-103-05	1.50	1.60	0.81	0.41	0.12	None	0.0%	1.22	1.22	0.62	0.62	0.18	0.18	0.28	0.28	0.14	0.14	0.04	0.04
W020	407	27	Solid Fuel Stockpile 1	3-03-003-16	2.00	6.20	3.14	1.60	0.47	None	0.0%	6.28	6.28	3.20	3.20	0.94	0.94	1.43	1.43	0.73	0.73	0.22	0.22
W021	407	28	Solid Fuel Surge Pile	3-03-003-16	1.00	6.20	3.14	1.60	0.47	None	0.0%	3.14	3.14	1.60	1.60	0.47	0.47	0.72	0.72	0.37	0.37	0.11	0.11
W022	407	29	Solid Fuel Stockpile 2	3-03-003-16	1.00	5.40	2.73	1.39	0.41	None	0.0%	2.73	2.73	1.39	1.39	0.41	0.41	0.62	0.62	0.32	0.32	0.09	0.09
											Total:	**106.76**	**106.76**	**54.45**	**54.45**	**16.01**	**16.01**	**24.37**	**24.37**	**12.43**	**12.43**	**3.66**	**3.66**

[a] All open areas are fugitive sources.

* Emission factors from AP-42, Section 11.2.3 (5/83). Assumes 60 days with 0.01 in. precipitation per year and wind speed exceeding 12 mph 23.8% of time.

Table 14. Annual Gaseous Criteria Pollutant Emissions - LNA Nelson Plant PTE Inventory

ID	SLEIS Codes Emission Unit	SLEIS Codes Process Unit	Emission Source Description	Process Description	SCC	Point (P) or Fugitive (F)	PTE Process Rates	Units	Emission Factors CO	Emission Factors NO_X	Emission Factors SO_2	Emission Factors VOC	Emission Factors NH_3	Emission Factors Units	Emissions (tons/year) CO	Emissions (tons/year) NO_X	Emissions (tons/year) SO_2	Emissions (tons/year) VOC	Emissions (tons/year) NH_3
Blasting:																			
M002	412.	07	Blasting - ANFO Usage*	Blasting	3-05-040-01	F	642	tons	67	17.00	2	N/A	0.076	lb/ton	21.51	5.46	0.64		0.02
Kilns:																			
BGH1	409.	01	Lime Kiln 1**	Kiln 1-PM	3-05-016-22	P	343,392	tons	0.80	3.80	9.32	0.06 ***	--	lb/ton	137.36	652.44	1600.21	2.28	--
BGH2	410.	01	Lime Kiln 2**	Kiln 1-PM	3-05-016-22	P	429,240	tons	1.70	2.61	9.73	0.06 ***	--	lb/ton	364.85	560.16	2088.25	2.86	--
Generators ****																			
326a	003	03	Portable Electric Generator NSPS-60kW (Ca	Portable Generator NSPS		P	1,468,395	hp-hr	8.20E-03	7.71E-03	2.05E-03	2.47E-03	--	lb/hp-hr	6.02	5.66	1.51	1.81	--
326b	003	03	Kiln Pony Motors (2 - 80 hp each)	Diesel Motor		P	71.3	MMBtu	9.50E-01	4.41E+00	2.90E-01	3.50E-01	--	lb/MMBtu	0.0339	0.1572	0.0103	0.0125	--
326c	003	03	Detroit Diesel Fire Pump Motor (140 hp)	Diesel Motor		P	178.0	MMBtu	9.50E-01	4.41E+00	2.90E-01	3.50E-01	--	lb/MMBtu	0.08	0.39	0.026	0.03	--
326d	003	03	Kiln Diesel Torches	External Diesel Combustion		P	105.120	10^3 gal	5.00E+00	2.00E+01	2.13E-01	2.52E-01	--	lb/10^3 gal	0.2628	1.0512	0.0112	0.0132	--
326e	003	03	Truck Wash Hot Water Pressure Washer	External Diesel Combustion		P	5.72	10^3 gal	5.00E+00	2.00E+01	2.13E-01	2.52E-01	--	lb/10^3 gal	0.0143	0.0572	0.00061	0.00072	--
Chemical Usage: *****																			
	413.	02	Antifreeze			F	550	gal	--	--	--	0.51	--	lb/gal	--	--	--	0.14	--
	413.	03	Belt Dressing			F	20	gal	--	--	--	5.01	--	lb/gal	--	--	--	0.05	--
	413.	04	Starting Fluid			F	20	gal	--	--	--	3.76	--	lb/gal	--	--	--	0.04	--
	413.	06	Never-Sieze			F	5	gal	--	--	--	4.84	--	lb/gal	--	--	--	0.012	--
	413.	08	Paints			F	50	gal	--	--	--	8.35	--	lb/gal	--	--	--	0.21	--
	413.	09	Silicon Sealant			F	75	gal	--	--	--	0.83	--	lb/gal	--	--	--	0.03	--
														Total Point Emissions:	**508.63**	**1219.92**	**3690.01**	**7.01**	**0.00**
														Total Fugitive Emissions:	**21.51**	**5.46**	**0.64**	**0.48**	**0.02**
														Total Emissions:	**530.14**	**1,225.38**	**3,690.65**	**7.49**	**0.02**

N/A Not Applicable

* Emission Factor References: AP-42, Section 13.3

** Emission Factor References: CO = Average hourly values from 2013 Engineering Tests (March, May and June).

Emission Factor References: NO_x and SO_2 emission factors represent emission limits taken from the EPA Federal Implementation Plan (FIP), April 2015 (Federal Register, Vol. 80, No. 74, April 17, 2015), which become effective March 3, 2016 which were transferred to the Arizona State Implementation Plan (SIP) through a minor permit revision submitted is August 2018.

Note: The EPA FIP imposed NOx emission limits of 3.8 lb NOx/ton lime for Kiln 1 and 2.61 lb NOx/ton lime for Kiln 2 that become effective September 4, 2017.

*** The VOC emissions represent the emission factor for Total Non-Methane Organic Compounds listed in AP-42 Table 1.1-19 for PC-fired, dry bottom, tangential boiler - 0.06 lbs/ton fuel. Assumed 100% coal usage for each kiln used in calculation of emissions.

**** Emission factors for SO_2 and VOC for the NSPS portable generator are from AP-42, Section 3.3, Table 3.3-1. CO and NOx emission factors for the NSPS generator are from 40 CFR 60, Subpart IIII.

Emission factors for the Kiln Pony Motors and Detroit Diesel Fire Pump Motor are from AP-42, Section 3.3, Table 3.3-1.

Emission factors for the Kiln Diesel Torches and Truck Wash Pressure Washer are from AP-42, Section 1.3, Tables 1.3-1 and 1.3-2.

***** The VOC emission factors are based on MSDS.

Table 15. Hourly Gaseous Criteria Pollutant Emissions - LNA Nelson Plant PTE Inventory

ID	SLEIS Codes Emission Unit	SLEIS Codes Process Unit	Emission Source Description	Process Description	SCC	Point (P) or Fugitive (F)	PTE Process Rates	Units	Emission Factors CO	Emission Factors NO_X	Emission Factors SO_2	Emission Factors VOC	Emission Factors NH_3	Emission Factors Units	Emissions (lb/hr) CO	Emissions (lb/hr) NO_X	Emissions (lb/hr) SO_2	Emissions (lb/hr) VOC	Emissions (lb/hr) NH_3
Blasting:																			
M002	412.	07	Blasting - ANFO Usage*	Blasting	3-05-040-01	F	6	tons	67	17.00	2	N/A	0.076	lb/ton	402	102	12		0.46
Kilns:																			
BGH1	409.	01	Lime Kiln 1**	Kiln 1-PM	3-05-016-22	P	39	tons	0.80	2.77	8.56	0.06 ***	--	lb/ton	32	109	337	0.5	--
BGH2	410.	01	Lime Kiln 2**	Kiln 1-PM	3-05-016-22	P	59	tons	1.70	2.77	8.56	0.06 ***	--	lb/ton	100	163	505	0.7	--
Generators *****																			
326a	003	03	Portable Electric Generator NSPS-60kW	Portable Generator NSPS		P	168	hp-hr	8.20E-03	7.71E-03	2.05E-03	2.47E-03	--	lb/hp-hr	1.38	1.29	0.34	0.41	--
326b	003	03	Kiln Pony Motors (2 - 80 hp each)	Diesel Motor		P	0.4	MMBtu	9.50E-01	4.41E+00	2.90E-01	3.50E-01	--	lb/MMBtu	0.39	1.79	0.12	0.14	--
326c	003	03	Detroit Diesel Fire Pump Motor (140 hp)	Diesel Motor		P	0.4	MMBtu	9.50E-01	4.41E+00	2.90E-01	3.50E-01	--	lb/MMBtu	0.34	1.57	0.10	0.12	--
326d	003	03	Kiln Diesel Torches	External Diesel Combustion		P	0.600	10^3 gal	5.00E+00	2.00E+01	2.13E-01	2.52E-01	--	lb/10^3 gal	3.00	12.00	0.13	0.15	--
326e	003	03	Truck Wash Hot Water Pressure Washer	External Diesel Combustion		P	0.01	10^3 gal	5.00E+00	2.00E+01	2.13E-01	2.52E-01	--	lb/10^3 gal	0.03	0.11	0.001	0.001	--
Chemical Usage: ******																			
	413.	02	Antifreeze			F	1	gal	--	--	--	0.51	--	lb/gal	--	--	--	0.51	--
	413.	03	Belt Dressing			F	1	gal	--	--	--	5.01	--	lb/gal	--	--	--	5.01	--
	413.	04	Starting Fluid			F	1	gal	--	--	--	3.76	--	lb/gal	--	--	--	3.76	--
	413.	06	Never-Sieze			F	1	gal	--	--	--	4.84	--	lb/gal	--	--	--	4.84	--
	413.	08	Paints			F	1	gal	--	--	--	8.35	--	lb/gal	--	--	--	8.35	--
	413.	09	Silicon Sealant			F	1	gal	--	--	--	0.83	--	lb/gal	--	--	--	0.83	--
														Total Point Emissions:	**136.86**	**289.27**	**842.36**	**2.03**	**0.00**
														Total Fugitive Emissions:	**402.00**	**102.00**	**12.00**	**23.30**	**0.46**
														Total Emissions:	**538.86**	**391.27**	**854.36**	**25.33**	**0.46**

N/A Not Applicable

* Emission Factor References: AP-42, Section 13.3

** Emission Factor References: CO = Average hourly values from 2013 Engineering Tests (March, May and June).

Emission Factor References: NO_x and SO_2 emission factors represent emission limits taken from the EPA Federal Implementation Plan (FIP), April 2015 (Federal Register, Vol. 80, No. 74, April 17, 2015), which become effective March 3, 2016 which were transferred to the Arizona State Implementation Plan (SIP) through a minor permit revision submitted on August 2018. The hourly NOx and SO2 emission factors were derived by assuming an even split in emission rate from the kilns based on the combined limit of 3.27 ton/day and 10.10 ton/day respectively.

Note: The EPA FIP imposed NOx emission limits of 3.8 lb NOx/ton lime for Kiln 1 and 2.61 lb NOx/ton lime for Kiln 2 that become effective September 4, 2017.

*** The VOC emissions represent the emission factor for Total Non-Methane Organic Compounds listed in AP-42 Table 1.1-19 for PC-fired, dry bottom, tangential boiler - 0.06 lbs/ton fuel. Assumed 100% coal usage for each kiln used in calculation of emissions.

**** Emission factors for SO_2 and VOC for the NSPS portable generator are from AP-42, Section 3.3, Table 3.3-1. CO and NOx emission factors for the NSPS generator are from 40 CFR 60, Subpart IIII.

Emission factors for the Kiln Pony Motors and Detroit Diesel Fire Pump Motor are from AP-42, Section 3.3, Table 3.3-1.

Emission factors for the Kiln Diesel Torches and Truck Wash Pressure Washer are from AP-42, Section 1.3, Tables 1.3-1 and 1.3-3.

***** The VOC emission factors are based on MSDS.

Table 16. Hazardous Air Pollutant Emissions - LNA Nelson Plant Annual PTE Inventory

HAP Emissions Based on Speciated VOC Emissions

ID	Description	Point (P) or Fugitive (F)	VOC Emissions (tpy)	VOC Emissions (lb/yr)	HAP Information Name	HAP Information % Volatilized	Emissions (tpy)
Chemical Usage: [a]							
SLEIS 414-1	Antifreeze	F	0.14	282.55	Ethylene Glycol	57%	8.05E-02
	Belt Dressing	F	0.05	100.14	1,1,1-Trichloroethane	48%	2.40E-02
	Starting Fluid	F	0.04	75.11	Hexane	10%	3.76E-03
		F	0.04	75.11	Toluene	5%	1.88E-03
	Never-Sieze	F	0.01	24.20	1,1,1-Trichloroethane	58%	7.02E-03
	Paints	F	0.21	417.25	Toluene	6%	1.25E-02
		F	0.21	417.25	Xylene	11%	2.29E-02
		F	0.21	417.25	Ethyl Benzene	2%	4.80E-03
	Silicon Sealant	F	0.03	62.59	Hexane	79%	2.47E-02

HAP Emissions Based on AP-42, Section 1.1 (09/1998)

ID	Description	Point (P) or Fugitive (F)	Annual Process Rates Rate	Annual Process Rates Units	HAP Information Name	HAP Information EF	HAP Information Units	Emissions (tpy)
Dioxins/Furans (AP-42 Table 1.1-12 - ESP or FF)								
BGH1 & BGH2	Kiln 1 & Kiln 2	P	12696	tons (coal+coke)	2,3,7,8-TCDD	1.43E-11	lbs/ton	9.08E-11
Polycyclic Aromatic Hydrocarbons - PAH (AP-42 Table 1.1-13)								
BGH1 & BGH2	Kiln 1 & Kiln 2	P	12696	tons (coal+coke)	Biphenyl	1.70E-06	lbs/ton	1.08E-05
					Acenaphthene	5.10E-07	lbs/ton	3.24E-06
SLEIS 414-2					Acenaphthylene	2.50E-07	lbs/ton	1.59E-06
					Anthracene	2.10E-07	lbs/ton	1.33E-06
					Benzo(a)anthracene	8.00E-08	lbs/ton	5.08E-07
					Benzo(a)pyrene	3.80E-08	lbs/ton	2.41E-07
					Benzo(b,j,k)fluoranthene	1.10E-07	lbs/ton	6.98E-07
					Benzo(g,h,i)perylene	2.70E-08	lbs/ton	1.71E-07
					Chrysene	1.00E-07	lbs/ton	6.35E-07
					Fluoranthene	7.10E-07	lbs/ton	4.51E-06
					Fluorene	9.10E-07	lbs/ton	5.78E-06
					Indeno(1,2,3-cd)pyrene	6.10E-08	lbs/ton	3.87E-07
					Naphthalene	1.30E-05	lbs/ton	8.25E-05
					Phenanthrene	2.70E-06	lbs/ton	1.71E-05
					Pyrene	3.30E-07	lbs/ton	2.09E-06
					5-Methylchrysene	2.20E-08	lbs/ton	1.40E-07

Table 16. Hazardous Air Pollutant Emissions - LNA Nelson Plant Annual PTE Inventory								
Organic Compounds (AP-42 Table 1.1-14)								
BGH1 & BGH2	Kiln 1 & Kiln 2	P	12696	tons (coal+coke)	Acetaldehyde	5.70E-04	lbs/ton	3.62E-03
					Acetophenone	1.50E-05	lbs/ton	9.52E-05
SLEIS 414-2					Acrolein	2.90E-04	lbs/ton	1.84E-03
					Benzene	1.30E-03	lbs/ton	8.25E-03
					Benzyl Chloride	7.00E-04	lbs/ton	4.44E-03
					Bis(2-ethylhexyl)phthalate (DEHP)	7.30E-05	lbs/ton	4.63E-04
					Bromoform	3.90E-05	lbs/ton	2.48E-04
					Carbon Disulfide	1.30E-04	lbs/ton	8.25E-04
					2-Chloroacetophenone	7.00E-06	lbs/ton	4.44E-05
					Chlorobenzene	2.20E-05	lbs/ton	1.40E-04
					Chloroform	5.90E-05	lbs/ton	3.75E-04
					Cumene	5.30E-06	lbs/ton	3.36E-05
					Cyanide	2.50E-03	lbs/ton	1.59E-02
					2,4-Dinitrotoluene	2.80E-07	lbs/ton	1.78E-06
					Dimethyl Sulfate	4.80E-05	lbs/ton	3.05E-04
					Ethyl Benzene	9.40E-05	lbs/ton	5.97E-04
					Ethyl Chloride	4.20E-05	lbs/ton	2.67E-04
					Ethylene Dichloride	4.00E-05	lbs/ton	2.54E-04
					Ethylene Dibromide	1.20E-06	lbs/ton	7.62E-06
					Formaldehyde	2.40E-04	lbs/ton	1.52E-03
					Hexane	6.70E-05	lbs/ton	4.25E-04
					Isophorone	5.80E-04	lbs/ton	3.68E-03
					Methyl Bromide	1.60E-04	lbs/ton	1.02E-03
					Methyl Chloride	5.30E-04	lbs/ton	3.36E-03
					Methyl Hydrazine	1.70E-04	lbs/ton	1.08E-03
					Methyl Methacrylate	2.00E-05	lbs/ton	1.27E-04
					Methyl Tert Butyl Ether	3.50E-05	lbs/ton	2.22E-04
					Methylene Chloride	2.90E-04	lbs/ton	1.84E-03
					Phenol	1.60E-05	lbs/ton	1.02E-04
					Propionaldehyde	3.80E-04	lbs/ton	2.41E-03
					Tetrachloroethylene	4.30E-05	lbs/ton	2.73E-04
					Toluene	2.40E-04	lbs/ton	1.52E-03
					1,1,1-Trichloroethane	2.00E-05	lbs/ton	1.27E-04
					Styrene	2.50E-05	lbs/ton	1.59E-04
					Xylenes	3.70E-05	lbs/ton	2.35E-04
					Vinyl acetate	7.60E-06	lbs/ton	4.82E-05

Table 16. Hazardous Air Pollutant Emissions - LNA Nelson Plant Annual PTE Inventory

Hydrogen Fluoride (AP-42 Table 1.1-15 - PC-fired, dry bottom, tangential)

BGH1 & BGH2	Kiln 1 & Kiln 2	P	12696	tons (coal+coke)	HF	1.50E-01	lbs/ton	9.52E-01

Trace Metals (AP-42 Table 1.1-18)

BGH1 & BGH2	Kiln 1 & Kiln 2	P	12696	tons (coal+coke)	Antimony	1.80E-05	lbs/ton	1.14E-04
					Arsenic	4.10E-04	lbs/ton	2.60E-03
SLEIS 414-2					Beryllium	2.10E-05	lbs/ton	1.33E-04
					Cadmium	5.10E-05	lbs/ton	3.24E-04
					Chromium	2.60E-04	lbs/ton	1.65E-03
					Chromium VI	7.90E-05	lbs/ton	5.01E-04
					Cobalt	1.00E-04	lbs/ton	6.35E-04
					Lead	4.20E-04	lbs/ton	2.67E-03
					Manganese	4.90E-04	lbs/ton	3.11E-03
					Mercury	8.30E-05	lbs/ton	5.27E-04
					Nickel	2.80E-04	lbs/ton	1.78E-03
					Selenium	1.30E-03	lbs/ton	8.25E-03

HCL Emissions Based on FTIR Testing

		Point (P) or	Process Rates		HAP Information			Emissions
ID	Description	Fugitive (F)	Rate	Units	Name	EF	Units	(tpy)
BGH1	Kiln 1	P	84000	dscfm	HCl	1.5	ppmv	2.98E+00
BGH2	Kiln 2	P	97000	dscfm	HCl	2.3	ppmv	5.28E+00

Metal Emissions Based on Process Particulate Emissions

		Point (P) or	Process Rates		HAP Information			Emissions
ID	Description	Fugitive (F)	Rate	Units	Name	EF	Units	(tpy)
Limestone Processing:								
	Material Handling	P	25.6	tpy	Lead	1.83	ppmw	4.69E-05
SLEIS 414-4					Mercury	0.014	ppmw	3.59E-07
					Nickel	4.09	ppmw	1.05E-04
	Material Handling	F	43.2	tpy	Lead	1.83	ppmw	7.90E-05
SLEIS 414-5					Mercury	0.014	ppmw	6.05E-07
					Nickel	4.09	ppmw	1.77E-04
Lime Processing:								
	Material Handling	P	10.19	tpy	Lead	1.83	ppmw	1.86E-05
SLEIS 414-6					Mercury	0.014	ppmw	1.43E-07
					Nickel	4.09	ppmw	4.17E-05
	Material Handling	F	0.255	tpy	Lead	1.83	ppmw	4.66E-07
SLEIS 414-7					Mercury	0.014	ppmw	3.57E-09
					Nickel	4.09	ppmw	1.04E-06

Table 16. Hazardous Air Pollutant Emissions - LNA Nelson Plant Annual PTE Inventory								
Solid Fuels:								
SLEIS 414-8	Solid Fuel Handling	P	0.28	tpy	Lead (Coke)	2.3	ppmw	6.38E-07
					Mercury (Coal)	0.05	ppmw	1.39E-08
					Nickel (Coke)	186	ppmw	5.16E-05
SLEIS 414-9	Solid Fuel Handling	F	0.287	tpy	Lead (Coke)	2.3	ppmw	6.60E-07
					Mercury (Coal)	0.05	ppmw	1.43E-08
					Nickel (Coke)	186	ppmw	5.33E-05
Mobile Sources:								
SLEIS 414-10	Road Related	F	908	tpy	Lead	1.83	ppmw	1.66E-03
					Mercury	0.014	ppmw	1.27E-05
					Nickel	4.09	ppmw	3.71E-03
Diesel Fuel Combustion Based on AP-42, Section 3.3, Table 3.3.2 (10/1996) - up to 600 hp								
		Point (P) or	Process Rates		HAP Information			Emissions
ID	Description	Fugitive (F)	Rate	Units	Name	EF	Units	(tpy)
SLEIS 414-11	Diesel Combustion (Canyon Well Generator, Kiln Pony Motors and Detroit Diesel Fire Pump Motor)	P	20285	MMBtu	Acenaphthene	1.42E-06	lb/MMBtu	1.44E-05
					Acenaphthylene	5.06E-06	lb/MMBtu	5.13E-05
					Acetaldehyde	7.67E-04	lb/MMBtu	7.78E-03
					Acrolein	9.25E-05	lb/MMBtu	9.38E-04
					Anthracene	1.87E-06	lb/MMBtu	1.90E-05
					Benzene	9.33E-04	lb/MMBtu	9.46E-03
					Benzo(a)anthracene	1.68E-06	lb/MMBtu	1.70E-05
					Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	1.01E-06
					Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	1.57E-06
					Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	4.96E-06
					Benzo(a)pyrene	1.88E-07	lb/MMBtu	1.91E-06
					1,3-Butadiene	3.91E-05	lb/MMBtu	3.97E-04
					Chrysene	3.53E-07	lb/MMBtu	3.58E-06
					Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	5.91E-06
					Fluoranthene	7.61E-06	lb/MMBtu	7.72E-05
					Fluorene	2.92E-05	lb/MMBtu	2.96E-04
					Formaldehyde	1.18E-03	lb/MMBtu	1.20E-02
					Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	3.80E-06
					Naphthalene	8.48E-05	lb/MMBtu	8.60E-04
					Phenanthrene	2.94E-05	lb/MMBtu	2.98E-04
					Pyrene	4.78E-06	lb/MMBtu	4.85E-05
					Toluene	4.09E-04	lb/MMBtu	4.15E-03
					Xylenes	2.85E-04	lb/MMBtu	2.89E-03

Table 16. Hazardous Air Pollutant Emissions - LNA Nelson Plant Annual PTE Inventory

Diesel Fuel Combustion Based on AP-42, Section 1.3, Table 1.3-8 and Table 1.3-10 (05/2010)

ID	Description	Point (P) or Fugitive (F)	Process Rates		HAP Information			Emissions
			Rate	Units	Name	EF	Units	(tpy)
SLEIS 414-12	Diesel Combustion (Kiln Torches & Pressure Washer)	P	5825	gal	Formaldehyde	6.10E-02	lb/10^3 gal	1.78E-04
			0.0008	10^{12} Btu	Polycyclic Organic Matter	3.30E-03	lb/10^3 gal	9.61E-06
			804	MMBtu	Arsenic	4.00E+00	lb/10^{12} Btu	1.61E-06
					Beryllium	3.00E+00	lb/10^{12} Btu	1.21E-06
					Cadmium	3.00E+00	lb/10^{12} Btu	1.21E-06
					Chromium	3.00E+00	lb/10^{12} Btu	1.21E-06
					Lead	9.00E+00	lb/10^{12} Btu	3.62E-06
					Manganese	3.00E+00	lb/10^{12} Btu	1.21E-06
					Mercury	6.00E+00	lb/10^{12} Btu	2.41E-06
					Nickel	3.00E+00	lb/10^{12} Btu	1.21E-06
					Selenium	1.50E+01	lb/10^{12} Btu	6.03E-06
							Highest Individual HAP: Hydrogen Chloride (HCl) (tpy):	**8.26**
							Total HAP Point Emissions (tpy):	**9.33**
							Total HAP Fugitive Emissions (tpy):	**0.19**
							Total HAP Emissions (tpy):	**9.52**

[a] HAP emissions are estimated using MSDS

HAP

Polycyclic Aromatic Hydrocarbons - PAH - also Polycyclic Organic Matter (POM) which is a HAP

Table 17. Greenhouse Gas Emissions - LNA Nelson Plant Annual PTE Inventory			
GHG Emissions Reported to EPA	2012	2013	2014
CO_2 Emissions (metric tons CO_2e)	754,629.32	776,003.27	719,812.97
CH_4 Emissions (metric tons CO_2e)	750.32	904.22	838.85
N_2O Emissions (metric tons CO_2e)	1,611.82	1,568.54	1,455.17
Total GHG Emissions (metric tons CO_2e)	756,991.46	778,476.03	722,106.99
Kiln Output	2012	2013	2014
Total Quicklime Produced (short tons)	623,713.86	626,341.98	585,545.90
(short tons)	5,352.00	8,029.63	6,546.06
Kiln Output (short tons)	629,065.86	634,371.61	592,091.96
Emission / Quicklime Ratios	2012	2013	2014
CO_2	1.1996	1.2336	1.1443
CH_4	0.0012	0.0014	0.0013
N_20	0.0026	0.0025	0.0023
Total GHG	1.2034	1.2375	1.1479
PTE Calculations	Average Emission/QL Ratio	Maximum Kiln Output Under PTE (tons)	PTE GHG Emissions (metric tons CO_2e)
CO_2	1.1925	772,632	921,348
CH_4	0.0013	772,632	1,021
N_20	0.0025	772,632	1,898
Total GHG	**1.1963**	**772,632**	**924,267**

Table 18. Facility Wide PTE					
Regulated Air Pollutant	**Point Source Emissions**		**Fugitive Emissions**		**PTE**
	(lb/hr)	**tpy**	**(lb/hr)**	**tpy**	**tpy**
PM	26.55	90.24	288.70	1,059.92	1,150.16
PM_{10}	12.41	50.28	97.41	331.84	382.12
$PM_{2.5}$	3.58	20.49	14.17	45.73	66.21
CO	136.86	508.63	402.00	21.51	530.14
NO_X	289.27	1,219.92	102.00	5.46	1,225.38
SO_2	842.36	3,690.01	12.00	0.64	3,690.65
VOC	2.03	7.01	23.30	0.48	7.49
Highest Single HAP (HCl)	--	8.26	--	--	8.26
Total HAPs	--	9.33	--	0.19	9.52
CO_2e	--	924,267	--	--	924,267

APPENDIX B. LIME MACT OM&M PLAN

1.0 PURPOSE:

The Lime Maximum Achievable Control Technology (MACT) regulations require affected facilities to develop and implement an Operations, Maintenance and Monitoring Plan (*OMMP*). The present document is the *OMMP* for the Nelson Plant.

The purpose of the *OMMP* is to:

- Define the procedures to operate, maintain and monitor in compliance with applicable MACT standard for affected sources.

2.0 SCOPE:

The Nelson Plant contains three emission units subject to regulation under the Lime MACT: two Kiln systems (Kiln 1 and Kiln 2) and one Processed Stone Handling (PSH) systems for Kilns 1 & 2. The emission units are described in Tables 1 & 2 below.

TABLE 1. MACT REGULATED EMISSION UNITS AND EMISSION STANDARDS

Emission Unit	Process Equipment	Control Device
Kiln 1	NLK1	BH-K1
Kiln 2	NLK2	BH-K2
PSH	BC-329	Underground or Enclosed
PSH – Kiln 1	Stone Bin 1-304	Enclosed
PSH – Kiln 2	BC-303A, Stone Bin 2-304	Enclosed

TABLE 2. MACT MONITORING REQUIREMENTS AND STANDARDS

Emission Unit	Control Device	Parameter Monitored	Monitoring Method and Frequency	Monitoring Standard
Kiln 1	BH-K1	Opacity	COMS, Continuous	15% Opacity
Kiln 2	BH-K2	Opacity	COMS, Continuous	15% Opacity
PSH (Kilns 1 & 2)	Enclosed Conveyor	Visible emissions	63.7121(e) Monthly, semi-annual, annual	10% opacity (fugitives)

The present document applies to the systems concerned by the MACT regulation at the Nelson plant, as listed in Tables 1 & 2 above. These systems are called applicable systems in the present document.

3.0 DEFINITIONS:

3.1 **Processed Stone Handling system** (PSH): In the present document, PSH refers to the stone conveying systems to the kilns after screening (Vibrating Screen 328). The Nelson Plant contains a *Processed Stone Handling System* for Kiln 1 and Kiln 2. These units are subject to the Lime MACT.

3.2 **Kiln system (Calcining system)**: The purpose of this system is to perform the *calcination* of the lime. The Nelson Plant contains two *Calcining systems* called Kiln 1 and Kiln 2. These units are subject to the Lime MACT.

3.3 **Calcination**: Pyro transformation of carbonate into oxide

3.4 **Baghouse**: Type of de-dusting equipment that uses filter bags as a filter element. In this plan, that refers to the de-dusting equipment of the applicable systems. It receives dusty gases and delivers a clean air flow that is sent to the atmosphere through a stack.

3.5 **COMS:** Continuous Opacity Monitor System.

LNA is required to continuously monitor opacity from the *Calcining system* stacks. This is done using one *COMS* per stack. The *COMS* are installed, maintained, calibrated, and operated in accordance with Applicable PS-1 of 40 CFR Part 60, Appendix B. The kiln operator is in continuous attendance to monitor system alarms and is trained to take any necessary corrective action.

3.6 **Malfunction:** failure of an air pollution control and/or monitoring system, preventing it from operating in a normal or usual manner, which causes, or has the potential to cause, an excess in the applicable emissions.

3.7 **OMMP**: Plan covering Operations, Maintenance and Monitoring of relevant system.

3.8 **Startup**: Defined as the period from the time that the flame on the main burner is ignited and stone is introduced into the kiln, until the point at which on-spec lime exits the kiln, or 12-hour from the first discharge from the kiln, whichever is earlier.

3.9 **Shutdown**: Defined as the period beginning when feed to the kiln is reduced below planned production quantities and ends when stone feed is halted and fuel combustion from the main burner ceases.

4.0 RESPONSIBILITY:

The Plant Manager and Environmental, Health and Safety (EHS) Manager ensure that all personnel in charge of the applicable systems have the adequate training and experience to accomplish the related task in an efficient and safe way.

The Plant Manager and EHS Manager ensure compliance with this plan.

Each concerned Operator needs to know in detail the present procedure, and where to find it as well as its attachments for reference whenever needed.

5.0 PROCEDURE:

5.1 Operations

The Lime MACT requires maintaining proper operation of the applicable systems in order to minimize emissions.

The applicable systems are installed, operated and maintained in accordance to the vendors' manuals, written internal procedures and regulatory requirements.

The Nelson Plant has developed and implemented Standard Operating Procedures (SOP's) covering the applicable systems.

5.2 Startup and Shutdown

The Nelson Plant has developed a set of operation SOP's that establish methods to operate the affected emission units in order to minimize emissions. This includes startup, normal operation, and shutdown.

A downtime database has been established to keep track of every shutdown and startup of the applicable installations.

The Lime MACT establishes emission limits for the kilns and PSH system. This requires opacity to be maintained below the maximum levels listed in Table 3 of 40 CFR 63 Subpart AAAAA. The MACT rule requires compliance with the stack and fugitive opacity standards by continuous monitoring (kilns) and periodic visual monitoring (PSH system) using the methods specified in 40 CFR 63.7121(e) (e.g. periodic Visible Emission observations).

During startup, emissions from kilns with fabric filter control must meet the 15% opacity limit based on the average opacity measured over the entire startup period.

During shutdown, kiln emissions must meet the 15% opacity limit based on standard 6-minute block averages.

5.2.1 Kiln Startup Procedures

The kiln startup procedures can be different based upon the type of startup. For example, it can be a cold startup with new refractory or a warm startup after being down for only a short period of time. Refer to the Kiln SOP as listed in the related documents.

5.2.2 Kiln Shutdown Procedures

The kiln shutdown procedures can be different based upon the circumstances and cause of the shutdown (refer to the Kiln SOP as listed in the related documents). The Kiln Shutdown Procedures are included at the end of each startup procedure.

Note: Since emergencies can occur at any time, it is extremely important to ensure the operation of the kiln drive auxiliary motor. The motor should be run on a regular basis and should be started prior to foul weather that may cause a power outage.

5.3 Maintenance

The Nelson Plant has developed and implemented a set of Preventive Maintenance routines (PM). Maintenance jobs on the applicable systems are documented in the SAP Preventive and Corrective Maintenance Database. This system includes the maintenance schedule and the procedures for the maintenance of emission units and control devices. PM routines and PM schedules for the kilns, kiln baghouses, PSH equipment, dust collectors, and associated controls may be found in the SAP Maintenance Module.

5.4 Monitoring

The Lime MACT requires PSH equipment listed in Table 1 above to maintain opacity at less than maximum indicated in Table 2 of 40 CFR 63 subpart AAAAA. This is achieved by utilizing the controls listed in § 2 of the present document. The MACT rule requires compliance with the stack and fugitive opacity standards by periodically monitoring opacity using the methods specified in 40 CFR 63.7121(e) (*e.g*. periodic Visible Emissions observations).

The *COMS* continuously monitor the stack emissions of the kilns. During the calcining system operation, key process parameters are monitored and recorded using data loggers and/or manual reporting forms. The performance of the data collection devices are audited periodically to ensure that accurate and reliable data are collected and reported as specified in 40 CFR 63.7100(4)(ii).

During startup, emissions from kilns with fabric filter control must meet the 15% opacity limit based on the average opacity during the entire startup period.

During shutdown, kiln emissions must meet the 15% opacity limit based on a standard 6-minute block average.

- The operating procedures for the COMS are located in the COMS QA Manual
- COMS calibrations and certifications are completed on a quarterly basis.
- Data Quality Assurance procedures are located in the COMS QA Manual

5.5 Reporting

The Environmental, Health and Safety (EHS) Manager prepares a compliance report for management approval and submission. The report is submitted twice annually to the Arizona Department of Environmental Quality (ADEQ) and to the Environmental Protection Agency (EPA) through EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI).

6.0 COMMUNICATIONS:

The present document is communicated to the addressees indicated in the recipient list attached in § 12.0.

7.0 TRAINING REQUIREMENTS:

Any employee in charge of operating, maintaining and monitoring the installations within the scope of this plan have received documented training on the tasks pertaining to their responsibilities.

8.0 RECORDS:

This procedure is archived at the plant under the responsibility of the Plant Manager in accordance to LNA's retention policy and regulatory requirements. Records of deviations, malfunctions and monitoring are maintained in the custody of the EHS Manager at the plant and are retained for 5 years.

9.0 RELATED DOCUMENTATION:

i) Vendors supplied Manuals
ii) Standard Operating Procedures
iii) SAP database for Maintenance
iv) Lime MACT

10.0 REFERENCES:

i) Vendors supplied manuals
ii) *COMS* QA Manual
iii) Standard Operating Procedures
iv) SAP database
v) Lime MACT

11.0 TRACK OF MODIFICATIONS:

This document was put in application on: September 22, 2006

Modifications were implemented as follows:

Revision 2 on November 8, 2006

Revision 3 on January 29, 2010

Revision 4 on January 20, 2021

1. Updated to conform to new Lime MACT standard effective on January 20, 2021

This document is a controlled document. The original document is maintained electronically. Printed copies are considered uncontrolled documents and may not be current.

Amendments to the *OMMP* are requested under the responsibility of the Plant Manager and the EHS Manager and are submitted to the State approval.

Revisions to the plan are maintained for 5 years after the revision date.

12.0 ANNEXES:

i) List of recipients of this document

Annex i) List of recipients of this document

Below are the addressees of this document:

Plant Manager
Plant Quality Assurance Manager
Production Manager
Maintenance Manager
Maintenance Planner
Production Supervisors
Maintenance Supervisors
Kiln Operators
Maintenance Operators
EHS Manager
Regional Operation Director
Regional Environmental Manager

Applicable authority

APPENDIX C. EQUIPMENT LIST

The equipment list below provides detailed information for all equipment at the NLP. New equipment added since the 2016 permit issuance is shown in red text while equipment removed since the 2016 permit issuance is shown in red strikethrough text.

Table C-1. Equipment List

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Crushing and Screening Equipment					
Dump Hopper	1,400	NA	NA	NA	Section II
Apron Feeder 102	1,400	NA	NA	NA	Section II
Cleanup Belt Conveyor 102B	1,400	NA	NA	Pre-1983	Section II
Belt Conveyor 104	1,400	Hi-Line	42″	1973	Section II
Grizzley 102A	1,260	NA	NA	Pre-1983	Section II
Jaw Crusher 103	1260	KVS	48″x60″/554-P-73	1973	Section II
Belt Conveyor 202	1,400	Hi-Line	42″	Pre-1983	Section II
~~Primary Screen 108~~	~~1,400~~	~~Symons~~	~~GP-2820 / GP-8153~~	~~1999 (Like Kind Repl.)~~	~~Section II~~
Primary Screen 108	1,000	W.S Tyler	8′x20′ F-Class two-deck screen	2017	Section II
Belt Conveyor 235	0.04	Hi-Line	24″	1976	Section II
Belt Conveyor 223	630	Hi-Line	24″	1976	Section II
Surge Bin 107	60 ton	KVS	NA	1973	Section II
~~Vibrating Feeder 201~~	~~1,050~~	~~Syntron~~	~~RF-120~~	~~1973~~	~~Section II~~
Vibrating Feeder 201	700	Syntron	Model RF-450, 36″ x 54″	2018	Section II
Belt Conveyor 202	1,050	Hi-Line	42″	Pre-1983	Section II
Vibrating Screen 203	1,260	Tyler	F-900, 6″x16″	1973	Section II
Chat Silo 210	500 ton	KVS	NA	1973	Section II
~~Belt Conveyor 208~~	~~1,120~~	~~Hi-Line~~	~~24″~~	~~1973~~	~~Section II~~

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Belt Conveyor 208	1,120	Hi-Line	24″	2019	Section II
Belt Conveyor 222	300	Hi-Line	24″	1976	Section II
Cone Crusher 206	465	Symons	5 ½″ 5947	1981	Section II
Belt Conveyor 204	1,400	Hi-Line	30″	1973	Section II
Belt Conveyor 207	1,050	Hi-Line	30″	1973	Section II
Vibrating Screen 205	1,050	Tyler	F-900, 6″x16″	1973	Section II
Belt Conveyor 215	1,400	Hi-Line	42″	1976	Section II
Vibrating Feeders 216 - 1,2,3	1,400	Syntron	MF-200-B	Pre-1983	Section II
Belt Conveyor 217	1,400	Hi-Line	42″	1976	Section II
Vibrating Screen 218	1,050	Tyler	F-1406-X, 6″x16″	1976	Section II
Belt Conveyor 222	300	Hi-Line	24″	1976	Section II
Belt Conveyor 209	630	Hi-Line	24″	1973	Section II
~~Belt Conveyor 220~~	~~200~~	~~Hi-Line~~	~~24″~~	~~1976~~	~~Section II~~
Belt Conveyor 220	910	Hi-Line	24″	1976	Section II
~~219 KVS Gyratory Crusher~~	~~650~~	~~KVS~~	~~1752 / 557-P-73~~	~~1973~~	~~Section II~~
Cone Crusher 219	302	Symons	5½″ Short Head Cone Crusher / 5803	1977	Section II
Belt Conveyor 224	910	Hi-Line	30″	1976	Section II
Belt Conveyor 202	910	Hi-Line	42″	1973	Section II
Belt Conveyor 226	630	NA	NA	1999	Section III
Portable Grizzly	25	NA	NA	Pre-1983	Section II
Dust Collector DC 234	4,853 dscfm	Pneumafil	PCFH 284	NA	Section II

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Dust Collector DC 213	895 dscfm	Mikro-Pulsaire	64-S-8-20B	1973	Section II
Dust Collector DC 206-D	5108 dscfm	Industrial Accessories	120TB-BVT-225:S6	NA	Section II
Dust Collector DC 219-D	1532 dscfm	Industrial Accessories	120TB-BVT-100:S6	NA	Section II
Kiln Feed System Equipment					
~~Vibrating Feeders 301-1 to 301-6 (6 Feeders)~~	~~393~~	~~Syntron~~	~~RF-40 and RF-80~~	~~1976~~	~~Section II~~
Vibrating Feeders 301-1, 301-2, 301-4, 301-5 301-6 (5 Feeders)	393	Syntron	RF-40 and RF-80	1976	Section II
Vibrating Feeder 301-3	500	Syntron	Model F-380HP, 32" x 48"	2017	Section II
Belt Conveyor 302	393	Hi-Line	30"	1973 (extended in 1976)	Section II
Vibrating Screen 328	393	Tyler	R-1005-CS-G	1997	Section III
Belt Conveyor 329	393	Hi-Line	24"	1973 (extended in 1976)	Section VI
Belt Conveyor 303-A	236	Hi-Line	24"	1976	Section VI
Stone Bin 1-304	800 ton	KVS	NA	1973	Section VI
Stone Bin 2-304	700 ton	KVS	NA	1976	Section VI
Solid Fuel Handling Equipment					
Solid Fuel Hopper	220	KVS	NA	1973	Section IV
Belt Conveyor 506	220	Rex	1618-05M	1976	Section IV
Track Hopper	220	KVS	NA	1973	Section IV
~~Vibrating Feeder 504A~~	~~220~~	~~Syntron~~	~~FH-24-D-HP~~	~~1970's~~	~~Section V~~
Vibrating Feeder 504A	220	Syntron	FH-24-D-HP	2017	Section V

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
~~Vibrating Feeder 504B~~	~~220~~	~~Syntron~~	~~FH-24-D-HP~~	~~1973~~	~~Section V~~
Vibrating Feeder 504B	220	Syntron	FH-24-D-HP	2017	Section V
Crusher 505	220	McLanahan	36" x 18"/1400-73	1973	Section IV
Weigh Belt 504C	220	NA	NA	2001	Section V
Bucket Elevator 521	220	Rex	1618-05M	1973	Section IV
Belt Conveyor 514	220	Hi-Line	24"	1973 (extended 1976)	Section IV
Roll Crusher 522	220	KVS	36"x36" / 891-P-76	1973	Section IV
Belt Conveyor 516	220	KVS	24"	1976	Section V
Fuel Bin 2-517	650 ton	KVS	NA	1976	Section V
Fuel Bin 1-508	500 ton	KVS	NA	1973	Section IV
Weigh Feeder 1-601	14	Ramsey	10-301	1973	Section IV
~~Weigh Feeder 1-602~~	~~21~~	~~TBD~~	~~TBD~~	~~2017~~	~~Section V~~
Weigh Feeder 2-601A	121	Thermo Fischer Scientific	Weigh Belt Feeder 90.125A / 18099852	2017	Section V
~~Screw Conveyor 1-613~~	~~14~~	~~Martin Thomas Conveyor~~	~~14"~~	~~2005~~	~~Section V~~
Screw Conveyor 1-613	14	Thomas Conveyor	12" x 32.4'	2009	Section V
Ball Mill 1-602	28	KVS	9'x12'6"	1973	Section IV
Classifier 1-604	28	Vari-Mesh	No. 6	1973	Section IV
Weigh Feeder 2-601	21	Ramsey	10-301	1976	Section V
~~Weigh Feeder 2-602~~	~~14~~	~~TBD*~~	~~TBD*~~	~~2017~~	~~Section V~~
Weigh Feeder 1-601A	14	Thermo Fischer Scientific	Weigh Belt Feeder 90.125A / 18099851	2017	Section V

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Belt Conveyor 2-601B	21	Thermo Fischer Scientific	Weigh Belt Feeder 900957-0105	2018	Section V
Ball Mill 2-602	42	KVS	10'x10'6"	1976	Section V
Classifier 2-604	42	Vari-Mesh	NA	1976	Section V
Dust Collector 527	4,795 dscfm	Mikro-Pulsaire	100-S-10-20	1973	Section IV
Kiln 1 and Kiln 2 System Equipment					
Kiln 1	39.38	KVS	15'dia x 155'	1973	Sections VI and XIV
Kiln 1 Multicyclone 1-319	200,000 acfm	Research Cottrell	CY-119	1973	Section VI
Kiln 1 Baghouse BGH1	82,612 dscfm	BoldEco	FBCL-14-2-18-16-10	2006	Section VI
Kiln 2	58.96	KVS	17'diax178.5'	1976	Sections VI and XIV
Kiln 2 Multicyclone 2-319	200,000 acfm	Cyclo-Trell	Type C-24 / 41-311738	1976	Section VI
Kiln 2 Baghouse BGH2	109431 dscfm	Amerex RexPulse	10RP-14-324D6	1998	Section VI
Contact Cooler 1-310	39.38	Ferenco	Knimes	1995	Section VI
Contact Cooler 2-310	58.96	KVS	20' dia.	1976	Section VI
Pneumatic Dry Lime Injection System	2000 pounds/hour	Lhoist	Injection Trailer	TBD	Section XIV
Kiln 1 and Kiln 2 Dust Handling					
Screw Conveyor 1-316E	12	Bold-Eco	10"	2006	Section VII
Screw Conveyor 1-316D	12	Bold-Eco	10"	2006	Section VII
Screw Conveyor 1-316C	24	Bold-Eco	12"	2006	Section VII
Screw Conveyor 1-316B	24	Bold-Eco	12"	2006	Section VII
Screw Conveyor 1-316A	24	Ft Worth Steel	12"	1973	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Screw Conveyor 1-318/1-316	24	Ft Worth Steel	12″	1973	Section VII
Bin Elevator 1-317	24	Rexnord	1110-01	1973	Section VII
Dust Bin 1-318	50 ton	KVS	NA	1973	Section VII
Screw Conveyor 2-316	24	Ft Worth Steel	9″	1976	Section VII
Dust Collector DC 1-321	1,324 dscfm	Mikro-Pulsaire	36S-8-30	1973	Section VII
Screw Conveyor 2-316G	36	NA	NA	1998	Section VII
Screw Conveyor 2-316F	36	NA	NA	1998	Section VII
Screw Conveyor 2-316E	36	NA	NA	1998	Section VII
Screw Conveyor 2-316D	36	NA	NA	1998	Section VII
Screw Conveyor 2-316C	36	Ft. Worth Steel	16″	1976	Section VII
Screw Conveyor 2-316A	36	Ft. Worth Steel	9″	1976	Section VII
Screw Conveyor 2-316B	36	Ft. Worth Steel	12″	1976	Section VII
Screw Conveyor 2-316C	36	Ft. Worth Steel	16″	1976	Section VII
Bin Elevator 2-317	36	Rexnord	1112-01	1976	Section VII
Dust Bin 2-318	150 ton	KVS	NA	1976	Section VII
Dust Collector DC 2-321	2,331 dscfm	Mikro-Pulsaire	64S-8-20B	1976	Section VII
Screw Conveyor 461	36	Mesco Conveying Corp	UT 40-40-08	1994	Section VII
Front Lime Handling System					
~~Vibrating Feeders 340A, B, C, D~~	~~39.38~~	~~NA~~	~~NA~~	~~1995~~	~~Section VII~~
Vibrating Feeders 340A	135	Syntron MAT HND	F-280-B-DT, 16″ x 54″ / 770652,	1995	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Vibrating Feeders 340B	135	Syntron MAT HND	F-280-B-DT, 16" x 54" / T106664	2019	Section VII
Vibrating Feeders 340C	135	Syntron MAT HND	F-280-B-DT, 16" x 54" / 770654	1995	Section VII
Vibrating Feeders 340D	135	Syntron MAT HND	F-280-B-DT, 16" x 54" / 770655	1995	Section VII
Apron Conveyor 420	39.38	Rexnord	24"	1976	Section VII
Vibrating Feeder 2-311	58.96	KVS	60"	1976	Section VII
Apron Conveyor 420	58.96	Rexnord	24"	1976	Section VII
Dust Collector DC 762-1	3,464 dscfm	Pneumafil	PKE-24	NA	Section VII
Apron Conveyor 421	98	Rexnord	42"	1976	Section VII
Apron Conveyor 421	0.0004	Rexnord	42"	1976	Section VII
Dust Collector DC 419-5	925 dscfm	Mikro-Pulsaire	16S-8-30	NA	Section VII
Bucket Elevator 423	98	Rexnord	1100 Series	1976	Section VII
Bucket Elevator 424-1	98	Rexnord	1100 Series	1976	Section VII
Bucket Elevator 424-2	98	Rexnord	1100 Series	1976	Section VII
Screen 432	197	Tyler	5"x14" 3S R-1406X/50-2685	1976	Section VII
Undersize Lime Hopper	10	NA	NA	1999	Section VII
Screw Conveyor 430-A	0.006	NA	NA	NA	Section VII
Screw Conveyor 428	36	Purvis Bearing	20"	1999	Section VII
Dust Collector DC 430	6,568 dscfm	Mikro-Pulsaire	196S-10-TRH	1976	Section VII
Screw Conveyor 428	10	Purvis Bearing	20"	1999	Section VII
Bucket Elevator 424-C	10	Rexnord	1100 Series	1999	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Screw Conveyor 427	10	Ft. Worth Steel	24″	1976	Section VII
Product Silo 3A (428-3)	3,300 ton capacity	KVS	45′ dia.	1976	Section VII
Dust Collector DC 437G	200 acfm	Baghouse	9S-BV-05P	6/1/2020	Section VII
Hammer mill 422	98	NA	NA	1999	Section VII
Screw Conveyor 413	98	Ft. Worth Steel	16″	1973	Section VII
Bucket Elevator 423	98	Rexnord	1100 Series	NA	Section VII
Screw Conveyor 425	98	Ft. Worth Steel	24″	1976	Section VII
Screw Conveyors 426	98	Ft. Worth Steel	24″	1976	Section VII
Product Silo 1A (428-1)	3,300 ton capacity	KVS	45′ dia	1976	Section VII
Product Silo 2A(428-2)	3,300 ton capacity	KVS	45′ dia	1976	Section VII
Dust Collector DC 437B	925 dscfm	Mikro-Pulsaire	25S-8-30	1976	Section VII
Vibrating Feeder 443-1	167	FMC	Syntron RF-80 30″ x 54″	1976	Section VII
Vibrating Feeder 443-2	167	FMC	Syntron MF-200-B 48″ x 84″	1976	Section VII
Vibrating Feeder 443-3	167	FMC	Syntron MF-200-B 48″ x 84″	1976	Section VII
Belt Conveyor 435	167	Hi-Line	42″	1976	Section VII
Vibrating Feeder 433-1	83	FMC	Syntron RF-80 30″ x 54″	1976	Section VII
Vibrating Feeder 433-2	83	FMC	Syntron RF-80 30″ x 54″	1976	Section VII
Vibrating Feeder 433-3	83	FMC	Syntron RF-80 30″ x 54″	1976	Section VII
Belt Conveyor 434	83	Hi-Line	30″	1976	Section VII
Screw Conveyor 441	10	NA	NA	NA	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Screw Conveyor 470	10	Purvis Bearing	9″	1999	Section VII
Screw Conveyor 471	10	Purvis Bearing	9″	1999	Section VII
Bucket Elevator 423	10	Rexnord	1100 Series	NA	Section VII
Screw Conveyor 444	25	NA	NA	NA	Section VII
Belt Conveyor 434	25	Hi-Line	30″	1976	Section VII
Dust Recovery Bin BN 464	16 ton	Silotek	NA	1994	Section VII
Screw Conveyor 465	36	NA	9″	1994	Section VII
Screw Conveyor 466	36	NA	9″	1994	Section VII
Belt Conveyor 434	36	Hi-Line	30″	1976	Section VII
Belt Conveyor 435	36	Hi-Line	42″	1976	Section VII
Dust Collector DC 452	1,122 dscfm	Pneumafil	PCFH 8BV	1994	Section VII
Dust Collector DC 437A	809 dscfm	Mikro-Pulsaire	25S-8-30	1976	Section VII
Dust Collector DC 437C	809 dscfm	Mikro-Pulsaire	36S-10-30	1976	Section VII
Dust Collector DC 437D	1,858 dscfm	Mikro-Pulsaire	49S-8-20	NA	Section VII
Dust Collector DC 437E	1,858 dscfm	Mikro-Pulsaire	49S-8-20	NA	Section VII
Dust Collector DC 437F	1,858 dscfm	Mikro-Pulsaire	49S-8-20	NA	Section VII
Dolo QL Silo	60 tons	DSS	WAM 400 PJ	2012	Section VII
Dust Collector DC DS1	2400 cfm	DSS	550 BBL Port	2012	Section VII
Back Lime Handling System					
Belt Conveyor 401	58.96	Hi-Line	24″	1973 (extended 1976)	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Bucket Elevator 403	98	Rexnord	1612-02	1973	Section VII
Off-Load Hopper	100	NA	NA	NA	Section VII
Screw Conveyor 412	100	Ft. Worth Steel	16”	1973	Section VII
Bucket Elevator 403	100	Rexnord	1612-02	1973	Section VII
Hammer Mill 402-2	98	Williams	C-32 Slugger/14399	1992	Section VII
Bucket Elevators 406E, W	98	Rexnord	1612-01	1973	Section VII
Screw Conveyor 443	250	Conveyor Inc.	24”	1991	Section VII
Roll Crusher 444	250	McLanahan	24” x36”/903060	1991	Section VII
Screw Conveyor 445	250	Conveyors Inc.	24”	1991	Section VII
Bucket Elevator 446	250	NA	NA	1991	Section VII
Screen 404	250	Tyler	F-600, 4’ x 12’/20423	1973	Section VII
Hammermill 405	98	Williams	340R/15562	1998	Section VII
Screw Conveyor 447	98	Conveyors, Inc.	16”	1991	Section VII
Bucket Elevator 446	98	NA	NA	1991	Section VII
Screw Conveyor 408	98	NA	NA	1994	Section VII
Screw Conveyors 408A, B, C	98	Thomas Conveyors	20”	1994	Section VII
Silos 1, 3, 4, 5	950 ton	KVS	NA	1973	Section VII
Silo 2	950 ton	KVS	NA	1973	Section VII
Belt Conveyor 402	98	NA	NA	NA	Section VII
Dust Collector DC 414	4,940 dscfm	Mikro-Pulsaire	1F-2-48	1973	Section VII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Screw Conveyor 414-2	0.23	NA	NA	NA	Section VII
Filling Supersacks	2	NA	NA	NA	Section VII
Hydrator System					
Screw Conveyor 701	15	NA	NA	1988	Section VIII
Screw Conveyor 702	15	NA	NA	1988	Section VIII
Screw Conveyor 702B		KWS Manufacturing	Model 0142501 / SN# 15022234070	2018	
Quicklime Feed Surge Bin 703	15	3 Tons	NA	1988	Section VIII
Belt Conveyor 704	15	Ramsey	Belt Scale System/ Scale 10-101R1/Integrator 2001	1988	Section VIII
Screw Conveyor 707	15	NA	NA	1988	Section VIII
Pug Mill 708	15	Ehrsam	Twin Paddle	1988	Section VIII
Seasoning Chamber 710	15	18′ x 8′ Diameters	NA	1988	Section VIII
Ducon Slaker Scrubber DF 711	3,909 dscfm	Ducon Wet Scrubber	UW-4(48)	1988	Section VIII
Screw Conveyor 712	16	NA	NA	1999	Section VIII
Bucket Elevator 719	31	NA	NA	1999	Section VIII
Air Separator 715	31	Sturtevant	Whirlwind 12”/3086	1999	Section VIII
Screw Conveyor 718	16	NA	NA	1999	Section VIII
Dust Collector DC 721	6,192 dscfm	American Air Filter	Millenium	1999	Section VIII
Bucket Elevator 713	31	NA	NA	1988	Section VIII
Hammermill 717	16	Williams	Meteor Mill, Size 18	1999	Section VIII

Equipment	Rated Capacity (tons/hour or indicated units)	Make	Model/Serial No.	Date of Manufacture	Applicable Section
Hydrated Lime Silo 6	31	KVS	950 Ton Bin/#409-6	1973	Section VIII
Dust Collector 750A	2,000 dscfm	Industrial Accessories	108TB-BHI-36-S6	NA	Section VIII
Pneumatic Dust Collector DC-SC1	NA	WAMGROUP	FNS4J36PP0Y / 11-FN-19-0010017	2019	Section VIII
Screw Conveyor 750	31	NA	NA	NA	Section VIII
Diesel Generators/Engines					
Canyon Well Generator	<125 kW	Generac	361PSL1647 / 4045HFG92D	2013	Section X
Detroit Diesel Emergency Fire Pump Engine	140 hp	Detroit Diesel	5043-7001/4D-104282	1975	Section IX
Kiln 1 Pony Motor	80 hp	Cummins	4B3.9C/44641085	1991	Section IX
Kiln 2 Pony Motor	80 hp	Cummins	4B3.9C/46178244	2002	Section IX
Hot Water Pressure Washer	768,000 btu	Hotsey	5730SS/PW16	2012	Section XIII
Gasoline Storage Tank #11	8,000 gallons	NA	NA	NA	Section XI
Diesel Storage Tank #12	20,000 gallons	NA	NA	NA	Section XII
Diesel Storage Tank #10	10,000 gallons	NA	NA	NA	Section XII

*TBD – To Be Determined

APPENDIX D. PROPOSED PERMIT CONDITIONS

This section contains the proposed permit conditions as a result of the changes to the Lime MACT that are scheduled to become effective in January 2021. The NLP would like to incorporate the following changes (denoted in red text and strikethrough text) into its Class I permit during this renewal to align with the changes that have been made to the Lime MACT.

Proposed Conditions in Permit Attachment "B" Specific Permit Conditions

Section VI. "Kiln 1 and Kiln 2 Systems and Associated Stone Handling Facilities"

Condition VI.B.1.b
~~The Permittee shall implement a SSMP according to the requirements in 40 CFR 63.6(e)(3).~~

Condition VI.C.1.b
The Permittee shall not cause or allow to be emitted into the atmosphere from each kiln and associated lime cooler any gases which exhibit opacity greater than 15 percent, based on a 6-minute block average for normal and shutdown operating conditions, and the startup period block average (not to exceed 12 hours) for startup periods.

Condition VI.C.1.e
The Permittee shall be in compliance with the opacity limits in Conditions VI.C.1.b and c above at all times. ~~*except during periods of startup, shutdown, and malfunction. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the opacity and visible emission standards, then that emission point shall still be required to comply with the opacity and visible emission standards and other applicable requirements*~~

Condition VI.C.3.c
At all times, including periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. ~~*During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the Permittee reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the Permittee to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the Permittee to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan, review of operation and maintenance records, and inspection of the source.*~~

Condition VI.C.4.b.(3)
For each lime kiln, the Permittee shall demonstrate continuous compliance by collecting the COMS data at a frequency of at least once every 15 seconds, determining block averages for each 6- minute period and demonstrating for each 6-minute block period the average opacity does not exceed 15 percent. During startup periods, the averaging period shall be the startup period block average, not to exceed 12 hours.

Condition VI.C.7.c

The Permittee shall report as a deviation each instance in which the operating limit, opacity limit, or VE limit in Table 2, 3 and 7 ~~and Table 6~~ of 40 CFR §63 Subpart AAAAA as applicable are exceeded. This includes periods of startup, shutdown, and malfunction.

Condition VI.C.7.d

~~Consistent with 40 CFR 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if the Permittee demonstrates to the Director that the facility and equipment were operating in accordance with 40 CFR 63.6(e)(1). The Director will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in §63.6(e).~~

Condition VI.C.8.b

~~The Permittee shall keep records specified in 40 CFR 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.~~

Table E-2. Stack Parameters

Stack ID	Description	Exit Temperature (ºF)	Exit Velocity (fps)	Stack Height (ft)	Inside Diameter (ft)
BGH1	Kiln 1 Stack	459	38	140	10
BGH2	Kiln 2 Stack	430	36	141	10
DC 1-321	Dust Collector 1-321	100	58	45	0.8
DC 2-321	Dust Collector 2-321	100	54	66	1.1
DC 206-D	Dust Collector 206-D	68	60	5	1.5
DC 213	Dust Collector 213	68	14	75	1.3
DC 219-D	Dust Collector 219-D	68	18	5	1.5
DC 234	Dust Collector 234	68	57	40	1.5
DC 414	Dust Collector 414	90	34	125	2.0
DC 419-5	Dust Collector 419-5	100	32	8	0.9
DC 430	Dust Collector 430	100	51	33	1.9
DC 437A	Dust Collector 437A	80	27	40	0.9
DC 437B	Dust Collector 437B	100	32	120	0.9
DC 437C	Dust Collector 437C	80	27	40	0.9
DC 437D	Dust Collector 437D	80	62	26	0.9
DC 437E	Dust Collector 437E	80	62	26	0.9
DC 437F	Dust Collector 437F	80	62	26	0.9
DC 437G	Dust Collector 437G	Ambient	200 ACFM	68.5	
DC 452	Dust Collector 452	100	26	10	1.1
DC 527	Dust Collector 527	80	40	90	1.8
DC 721	Dust Collector 721	115	55	42	1.8
DC 750A	Dust Collector 750A	80	18	5	1.5
DC 762-1	Dust Collector 762-1	150	47	12	1.5
DF 711	Ducon Scrubber	190	44	92	1.7
DC DS1	Dust Collector DS1	68	57	33	0.7
DC-SC1	Pneumatic Dust Collector	Ambient		10	