



212 S Rhododendron DR
Port Townsend, WA 98368
360-890-0752

Received
JUL 22 2022

ORCAA

July 20, 2022

Mark Goodin, PE
Aaron Manley, PE
Olympic Region Clean Air Agency
2940 Limited Lane NW
Olympia, WA 98502

Dear Mark and Aaron:

Attached is an Notice of Construction (Form 1) and a supporting set of documents submitted on behalf of SGTM - West End Forest Industries, LLC for a re-start of the Beaver Saw Mill at Beaver, WA.

Following this letter is the Notice of Construction (NOC)), and Attachments. (A signed original NOC has been sent to you by USPS on 7-21-22.)

NOC Attachments:

1. SEPA MDNS Determination
2. Project Description
3. Process Flow Diagram
4. Site Map
5. Technical Descriptions of Proposed Equipment
6. BACT Analysis
 - a. Analysis Description
 - b. Form 6
7. Air Pollution Emissions Assessment
 - a. Potential to Emit - Form 4
 - b. Form 4 Supplement with PM-2.5 Information
 - c. Trucks (Paved)
 - d. Trucks (Unpaved)
 - e. Loader (Unpaved)
 - f. Debarking & Waste Bin Drop
8. Ambient Air Quality Analysis (Results of Aerscreen Model – Area Module)
 - a. Emission Rate Calculations
 - b. Model Output (Chart)
 - c. Model Configuration & Output (Text)

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1- NOTICE OF CONSTRUCTION

TO CONSTRUCT - INSTALL - ESTABLISH OR MODIFY AN AIR CONTAMINANT SOURCE

Form 1 Instructions:

1. Please complete all the fields below. **This NOC application is considered incomplete until signed.**
2. If the application contains any confidential business information, please complete a Request of Confidentiality of Records (www.orcaa.org).
3. **Duty to Correction Application:** An applicant has the duty to supplement or correct an application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application must, upon becoming aware of such failure or incorrect submittal, promptly submit supplementary factors or corrected information.

Business Name: SGTM- West End Forest Industries, LLC	For ORCAA use only File No: 1000 County No: 9 Source No: 133 Application No: 22NOC1570
Mailing Address: 24200 County Road 561	Date Received: <div style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;"> Received JUL 22 2022 ORCAA </div>
Physical Address of Project or New Source: 200673 Highway 101, Beaver, WA 98305	
Billing Address: 200673 Highway 101, Beaver, WA 98305	
Project or Equipment to be installed/established: Refurbish, Re-start, and Operation of Sawmill Operations (former Interfor Sawmill)	
Anticipated startup date: <u>06</u> / <u>01</u> / <u>23</u> Is facility currently registered with ORCAA? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
This project must meet the requirements of the State Environmental Policy Act (SEPA) before ORCAA can issue final approval. Indicate the SEPA compliance option: <input checked="" type="checkbox"/> SEPA was satisfied by <u>Clallam County</u> (government agency) on <u>12/31/20</u> (date) - Include a copy of the SEPA determination <input type="checkbox"/> SEPA threshold determination by _____ (government agency) is pending - Include a copy of the environmental checklist <input type="checkbox"/> ORCAA is the only government agency requiring a permit - Include ORCAA Environmental Checklist <input type="checkbox"/> This project is exempt from SEPA per _____ (WAC citation).	
Name of Owner of Business: Tony Raynor	Agency Use Only
Title: <u>Owner</u>	
Email: <u>raynor5@outlook.com</u>	Phone: <u>407-470-0142</u>
Authorized Representative for Application (if different than owner): Edward (Ted) Marra	
Title: <u>Mill Re-Start Manager</u>	
Email: <u>edwardbmarra@gmail.com</u>	Phone: <u>610-587-5948</u>
I hereby certify that the information contained in this application is, to the best of my knowledge, complete and correct.	
Signature of Owner or Authorized Representative: (sign in Blue Ink)	
	Date: <u>7-21-22</u>
IMPORTANT: Do not send via email or other electronic means. ORCAA must receive Original, hardcopy, signed application and payment prior to processing application.	

OLYMPIC REGION CLEAN AIR AGENCY

2940 Limited Lane NW - Olympia, Washington 98502 - 360-539-7610 – Fax 360-491-6308

FORM 1D- Contact Information

Business Name SGTM- West End Forest Industries, LLC	FOR ORCAA USE
Physical Site Address (Street address, city, state, zip) 200673 Highway 101, Beaver, WA 98305	FILE # 1000
	CTY # 9
	SRC # 133
Previous Business Name (if applicable) Interfor Beaver Sawmill	Date Received
	Received JUL 22 2022

ORCAA

Contact Information

Inspection Contact	
Name Edward Marra	Title <i>Project manager</i>
Phone	Email <i>edward b marra@gmail.com</i>
Billing Contact	
Name Edward Marra	Title
Phone	Email
Emission Inventory Contact	
Name Edward Marra	Title
Phone	Email
Complaint Contact	
Name Edward Marra	Title
Phone	Email
Permit Contact	
Name Edward Marra	Title
Phone	Email

The **inspection contact** is the on-site person responsible for the everyday operation of the site and is available for inspections.

The **billing contact** is the person invoices are sent.

The **emission inventory contact** is the person requests for emissions information and material use information are sent.

The **complaint contact** is the person who receives and responds to complaints received on-site and who is contacted regarding complaints ORCAA receives.

The **permit contact** is the person responsible for filling out permit applications and receiving approval from ORCAA.



**STATE ENVIRONMENTAL POLICY ACT (SEPA), CHAPTER 43.21C RCW
MITIGATED DETERMINATION OF NON-SIGNIFICANCE (MDNS)**

CLALLAM COUNTY D.C.D.
EXHIBIT 5
DATE 1/21/21

Applicant: Oakes Family Lumber LLC

SEPA Project #: ECL2020-00013, CUP2020-00006

Lead Agency: Clallam County Department of Community Development.

Description of Proposal: The applicant is proposing to reopen an inactive lumber mill near Lake Pleasant. The applicant will use the existing three buildings (71,200 s.f. 3,840 s.f. and 2,400 s.f.) located on a 12.63 acre parcel, and construct an additional 11,264 s.f. dry kiln and a 2,500 s.f. boiler building, and future plans to construct an 8,000 s.f. planer building. The remaining 31 acres of the property will be used as log storage. The site is intended to employ 45-50 people. The property is located in the Western Region Rural Center (WRC), which conditionally allows Wood Manufacturing.

Location of Proposal: The subject property is located south of Lake Pleasant, north of Highway 101, being within Section 35, Township 30 N, Range 13 W. W.M., Clallam County, Washington. Assessor's parcel numbers 133035-319010, 133035-319020, 133035-329030, and 133035-329040.

Required Permits/Approvals: Building permits, stormwater permit, and septic review, and water availability, landscaping plan

SEPA Threshold Determination: The lead agency has issued a Mitigated Determination of Non-Significance (MDNS) under WAC 197-11-350 based on a determination that the below mitigating conditions, along with required compliance with applicable county, state and federal regulations and permit requirements will mitigate all probable significance adverse impacts upon the environment. An environmental impact statement is not required under RCW 43.21.030(2)(C). This decision was made after review of a completed environmental checklist and other information on file with the lead agency and existing regulations applicable to the proposal. This information is available to the public upon request during normal business hours and can be found on the Clallam County Online Permit website at www.clallam.net/Permits.

Mitigating Conditions:

Impact	Mitigating Condition
Stormwater	The applicant shall submit for review and approval to Clallam County an engineered stormwater management plan (SMP) that meets the minimum requirements of the 2019 Stormwater Management Manual for Western Washington prior to commencing land disturbing activities and construction of site improvements.
Lighting	A lighting plan shall be submitted and approved prior to the issuance of a building permit to ensure no off-site glare to the street or adjacent properties. All outdoor lighting shall be directed downward and shielded to prevent glare and light trespass onto neighboring properties and roads. The lighting plan shall be prepared by a qualified professional and note the location, type, and intensity of lighting. It shall also demonstrate how location, type, and mitigation measures (i.e., shielding) will prevent glare and light trespass. The approved plan must be implemented and any significant changes to the number of lighting fixtures, location, and intensity will require an updated lighting plan to be approved by Clallam County.

Public Hearing: A Public Hearing (where public testimony can be given) on this proposal has been scheduled for January 21, 2021 before the Clallam County Hearing Examiner at 2:00pm in Room 160 of the Clallam County Courthouse, 223 East Fourth Street, Port Angeles, WA 98362. The decision on the Conditional Use Permit will be made by the Hearing Examiner within 10 working days of the record closing. Any person may write a request to DCD to receive notice of the decision once it is made.

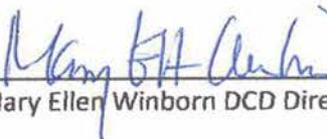
Comment Period: The DCD SEPA Memo dated December 29, 2020 (attached) provides supplemental analysis of the impacts of this proposal. Comments on this MDNS and the environmental impacts can be provided at the hearing scheduled January 21, 2021 at 2pm. Unless the Responsible Official withdraws the threshold determination pursuant to WAC 197-11-340(3)(a), the threshold determination shall be final at the end of the comment period. Agencies and interested parties will be notified if the threshold determination is withdrawn.

Staff Contact: For additional information, contact Donella Clark at the address below or 360-417-2594, dclark@co.clallam.wa.us

Responsible Official: Mary Ellen Winborn, DCD Director/SEPA Responsible Official

Address: Clallam County Department of Community Development
RE: SEPA COMMENTS
223 E. 4th Street, Suite 5
Port Angeles, WA 98362

Issuance Date: 12/31/2020

Signature: 
Mary Ellen Winborn DCD Director/SEPA Responsible Official

Appeals: This may be the only opportunity to comment on the environmental impacts of the proposal. The final threshold determination may be appealed to the Hearing Examiner by filing a written appeal with the applicable fee. Contact the Clallam County Permit Center for SEPA appeal procedures, Donella Clark, Principal Planner, Clallam County DCD Permit Center, 223 East Fourth Street, Suite 5, Port Angeles, WA 98362, (360)417-2594 or by e-mail at dclark@co.clallam.wa.us.

PROJECT DESCRIPTION RE-START BEAVER SAW MILL

BEAVER, WA

1. OVERVIEW

Current NOC: SGTM- West End Forest Industries, LLC (WEFI) plans to reopen an existing lumber mill near Lake Pleasant, on four parcels totaling approximately 43.63 acres, that has been in active since 2015. The developed portion of the subject property is 12.63 acres and has three existing mill buildings measuring 71,200 square feet, 3,840 square feet, and 2,400 square feet. WEFI would use these existing buildings in operation of the reopened mill. The remainder of the property, approximately 31 acres, will be used, as in the past, for log storage.

2. PREVIOUS OPERATIONS

Prior to shut down in 2015, this mill has been in operation for many years. Since the 1990's, the mill was under ownership of Portac and Interfor, and regulated under ORCAA approvals.

3. PLANNED OPERATIONS

The first phase of this project will be to re-start the mill in a similar configuration as in the past (no kiln, boiler, or planer buildings). A process flow diagram is provided as Attachment 2.

The mill will operate 5 days/week, 16 hours/day, and 50 weeks/year. The anticipated processing volumes are:

- Log trucks – 100/day
- Logs processed per day -3000 tons
- Hog fuel / woodwaste trucks – 13/day (390)
- Lumber trucks (product) – 39/day
- Annual production (MBF) – 100,000
- Chip trucks – 34/day
- Chips processed (tons) – 1020/day

4. TSP SOURCES

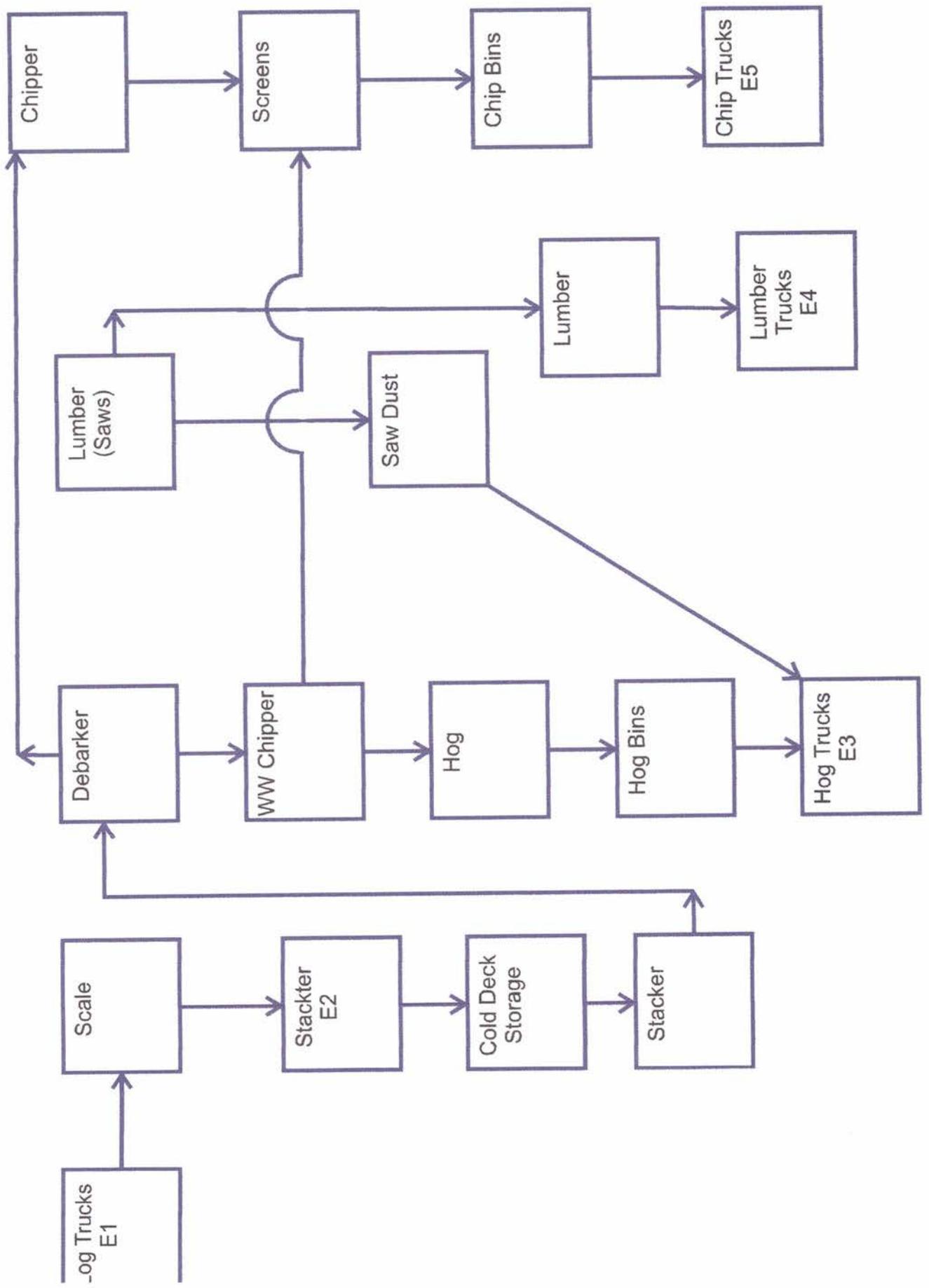
- Log Truck ingress / egress (paved / unpaved)
- Wood waste Trucks ingress / egress (paved / unpaved)
- Lumber Trucks ingress / egress (paved / unpaved)
- Fork lift (paved)
- Log Loaders (unpaved)
- Sawdust moved to bins via conveyor

5. TSP MITIGATION

Unpaved surfaces – water for dust suppression as required

Beaver Saw Mill - Process Flow Chart Emission Points

Attachment 3





Scale valid when printed at 24"x36"

Rev 0

Descriptive Process

For

Sawmill Site Located in

Beaver, Washington

Prepared for

Mulch Manufacturing, Inc.

24200 CR-561

Astatula Florida, 34705

Prepared by

Saw Machine Integrators, LLC

PO Box 482

Melfa, VA 23410

610-587-5948

Process Description

Logs are brought into the plant at 41' and 49' lengths by truck, the truck is weighed and unloaded with a wheel loader and logs are stored in cold log decks (piles) to await processing.

Debarking and Merchandising

Processing starts with a wheel loader moving the logs from the cold decks to the log infeed. The logs are mechanically conveyed into the mill and run through a ring debarker to remove the bark and any foreign material lodged on the log. After debarking the logs are diverted to one of two log merchandising saws which will buck the logs to the lengths best suited to that particular log. This operation is fully mechanized with the operators of the two merchandising saws operating the line from operating cabs.

Once logs have been merchandised non saw logs are diverted directly to the chipper for processing into chips, the saw logs are then diverted into the sawmill or to a surge bin for processing at a later date or for sale on the open/export market.

Primary breakdown

Saw logs enter the sawmill through a mechanized conveyor system and are presented length wise to the operator for his rotation decision carried out by a mechanized log rotator. Once logs are rotated to optimum breakdown position logs are impaled on a linear sharp chain log feeding mechanism and propelled through an optimizing scanner that makes the setworks decision for the primary breakdown of the log. Primary breakdown consists of two opposing chipping cantor heads to remove the very outer slab of the log directly followed by Quad Bandsaw (twin opposed band saws) that remove the jacket boards of the log which has now become a two sided cant.

Secondary breakdown

Jacket slab/boards fall away from the cant and are mechanically conveyed sideways through a traverse scanner that makes edging decisions for the jackets through a Newnes 4" optimized edger system. Cants leave the sharp chain conveying system and continue down to a kicker that kicks them sideways onto a mechanical conveyor to a gang saw which saws the two sided cant into dimensional boards at a feed speed of 150 to 350 feet per minute depending on cant thickness. Both the gang saw and the edger saw discharge onto a conveyor that transversely conveys the boards through a scanner that makes defect trimming and sorting decisions for the multi saw trimmer to trim the boards to length and sort the boards by width and length. After trimming, boards that are candidates to be resawn to increase their value can then be resawn and reintroduced back to the conveyor for rescanning and retrimming. Boards proceeding onto

the bin sorter are dropped into one of thirty bins according to their width, length and quality. Once a bin has reached its capacity for a full bundle of boards sorted to it, the bin empties onto a mechanical conveyor that conveys that full unit to an automated bundle stacker that stacks the unit with or without kiln sticks for kiln drying or green lumber planing.

A planer has been contemplated as being added to the plant that would discharge in front of the scanner so the trimmer, sorter and stacker can be used for finishing green dimensional lumber without the addition of a separate scanner, trimmer, sorter and stacker saving over 5 million dollars worth of additional equipment.

The production process described above and the equipment outlined in this report represent modern, up to date sawmill technology capable of safely producing large volumes of quality lumber products at a high recovery rate and a low production cost.

Previous Production Specification's

Log Size:

6 min Top - 32" max Butt

10-18" Average Log diameter

41' and 49' length's

Production Speeds:

80- 410 Ft. per minute Sharp Chain Chipping Canter Quad Band line

4" Cants 350 Ft. per minute thru the 12" Gang

12" Cants 150 Ft. per minute thru 12" Gang

25 Lugs per minute on the Edger

100 Lugs per minute on the trimmer / Sorter

Output:

48,000 to 52,000 Board foot per hour Rough Green Dimension

100,000,000 Board Foot Annual Output

DEBARKER, MERCHANDISER & CHIPPER PLANT

- A. 8 strand main log infeed deck 6"x10" x ½" wall Strand tubes w /C5x6.7 Raceway 12 tooth Drive sprockets on 3" shafting and 12 tooth Tail sprockets with bearing and 2" shaft w/ 15 hp
- B. 48' Debarker infeed chain w/ 15 hp drive and stop and load mechanism including all sub steel and mounting platform for a knuckle boom crane. Cost to replace and install
- C. 2-Box chain conveyors w/5 hp drives under debarker with sub steel
- D. Nicholson 35" A5 ring debarker
- E. Secondary bark waste box chain conveyor to hog w/15 hp drive (hog removed).
- F. 50' HCMA Debarker outfeed, double log sweep w/double log drag chains 5 hp drives to cutoff saw and sub steel structure.
- G. Dual Linden RH and LH 72" cut off saws and Box Chain waste conveyor w/5 hp drive
- H. 2- Operators cab and controls for cut off saws and merchandisers
- I. Box Chain waste conveyor w/5 hp drive
- J. Hyd Power unit and Valves for Merchandiser lines
- K. Screw air compressor for Debarker and Merchandiser line
- L. Dual log merchandiser, RH stops at 8', 10', 12', 4m, 14',16',18' 20'. LH stops 8', 10', 12', 4m, 14',16',18' 20',8 m, Dual Star log sweeps to center log takeaway belt 15 hp drive, steel sub structure.
- M. 48' takeaway belt and gravity log accumulation deck from LH merchandiser, 5 hp S belt drive.
- N. Star log kicker to 5 strand log deck to chipper chain, 5 hp drive.
- O. Drag Chain to chipper
- P. 104" Nicholson Chipper 1200 Hp Motor and Starter EXT
- Q. 48" Performance hog and screen S/N 202 with 400 hp motor w/ sub steel, stairs and cat walks.
- R. One- 30 unit chip-bin.
- S. Two- 30 unit chip-bins connected by auger.
- T. 150' drag chain conveyor to chipper w/ 15 hp drive, sub steel.
- U. 3-Strand box chain conveyor to chip surge bin, 15 hp drive steel sub structure.

SAWMILL PLANT

1. 5-Strand Hot deck infeed with overhead log entry kicker from merchandiser, 5 hp drive.
2. 20' 3-Step, Step Feeder and hyd pack
3. HCMA 5-Strand log ladder w/15 hp drive and 6 even ending rolls, 5 hp drive.
4. Barn sweep under log infeed.
5. Saw Line Cab and controls
6. USNR Log Turner S/N 9011-1130.
7. Kockums Can Car log thumber.
8. ASM Sharp chain system with head and tail pulleys (no drive). ½
9. Optimizing Scanner and Controls.
10. 2- CM&E chipping canters
11. 6' Twin band NTP
12. WASTE Conveyor from canter twin to Main conveyor
13. Kockums Hold down rolls.
14. Sideboard separator
15. Slant slat chain with cant kicker and 5 hp drive.
16. 16'x5 strand Gang infeed with gang infeed roll case motor and drive
17. 10-12" gang motor and controls
18. 8-Strand x 20' gang outfeed chain deck with slab dropout to Green chain.
19. 6-Strand x 70' green chain to trimmer.
20. Newnes 10 strand lug transfer deck.
21. 20' Transverse scanner.
22. Newnes Edger infeed Duckel Table.
23. Newnes 4" optimizing edger, Model 90-119-JF, S/N ED-04-05.
24. Newnes Hydraulic Shifting Finger Tailer w/out feed belt, 5hp drive.
25. Newnes 8x12" Resaw Model 90-119-KE, S/N ER-08-09.
26. Hydraulic Resaw tailing system with outfeed belt to green chain.
27. 11-Strand 22' wide x 53' long Slab waste chain conveyor w/ 15 hp drive.
28. 11-Strand 19' wide x 53' long Slab waste chain conveyor w/ 15 hp drive.
29. 20' Sawmill trimmer and charging table
30. 6-Strand radial conveyor to sorter
31. Newnes 20' x 30 bin J-bar sorter.
32. 20' stacker
33. Package Bander and outfeed rolls
34. Bandsaw sharpening room
35. Circular saw sharpening room
36. Truck scale
37. 324' Main sawmill waste conveyor
38. 58" Slab chipper BD

39. 63' Waste conveyor from slab chipper to main conveyor
40. 3 Screw compressors with dryer
41. 100" B&M chip screen

BEAVER SAW MILL – BACT ANALYSIS

Beaver, WA

Best Available Control Technology (BACT) is the most effective control option which is technically feasible considering economic, energy, and other environmental impacts.

Below is a description of analysis following the recommended procedures:

1. IDENTIFY AVAILABLE CONTROL TECHNOLOGIES

“Pollutants in question” need to be determined. For this operation, particulates were determined to be the only significant pollutant considered.

The following sources, emission unit, activity, or processes were evaluated or applicability of BACT for particulate control.

- Log Debarking
- Wood Waste Bin Transfer
- Fugitive Dust from Roadways

A search of literature did not reveal well documented BACT evaluations for debarking or wood waste bin transfers. Consequently, BACT was not performed on these sources. These sources of particulates (uncontrolled), provide an estimated 30% of expected emissions for this project.

2. ELIMINATE TECHNICALLY INFEASIBLE OPTIONS

To control particulates from roadways, paving has the most significant effect. However, use of water & aggregate on unpaved surfaces is nearly as effective. There are no infeasible treatment options from a technical standpoint, only the following considerations:

3. RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS

The existing facility has a paved surface of more than 7 acres (nearly 20% of the site). This is the portion of the site that has stormwater treatment and control prior to stormwater discharge to Lake Pleasant.

The paved areas are those supporting access to the site and the saw mill operation. The log storage area (approximately 31 acres) consists of unpaved surfaces (roadways) for access to the log decks. Not all the 31 acres is fully utilized. There is ample areas throughout the property for drainage, and buffers to existing properties. In addition, portions of the property are needed for stormwater infiltration.

Existing Conditions: As a result of this layout, approximately half of log truck traffic is on paved surfaces, and half on unpaved surfaces. Nearly all other truck traffic is on paved surfaces. These assumptions was used with PTE calculations.

The attached spreadsheet (Attachment 7b) is provided as equivalent to Form 6 (BACT Analysis). The following scenarios were examined (compared to the existing conditions):

Pave additional roadways – to and from the log decks: To accomplish this scenario approximately 3000' feet of roadway would need to be surfaced. The depth of asphalt is estimated at 10" developing a cost of approximately \$900,000. The estimated emission reduction (placing all truck traffic on pavement and about half of the loader traffic on pavement) would be 1.26 tons of PM-10 per year. The cost would be approximately \$80,000 per ton per year if the pavement life is 10 years. This options will be further discussed below:

Pave the entire site: This scenario was used in a BACT analysis by PORTAC. It clearly was not feasible then, and not now. Not only is the cost high – over \$10 million depending on the extent, but the effects on the existing environment could be negative overall. Most obvious in this assessment, that more pavement on areas that are not heavily trafficked, will not reduce emissions that much.

4. ENERGY, ENVIRONMENTAL, AND ECONOMIC CONSIDERATIONS

BACT Proposal – Pave Existing Roads to Log Storage

Potential Emission Reduction – Approximately 1 ton PM-10 per year over existing site paving

Energy: There are not significant impacts on energy with this proposal.

Environment: Paving this much area can affect drainage, but the overall impact with pavement over graveled roadways might provide cleaner runoff to infiltration areas and extend their maintenance frequency.

Financial: This will be approximately a \$1M project and should be considered with the potential benefit (reduction of about 1 ton/year of PM-10. This is a rural area and the particulate emissions from the facility are not expected to contribute to any violation of ambient standards.

Based on cost/benefit considerations and the low potential impact to human health and the environment, the existing facility with the existing pavement profile should be considered BACT. No additional pavement should be required.

FORM 4 FACILITY EMISSIONS SUMMARY

Facility: Beaver Saw Mill

Instructions: on back.

Emission Unit ID#	TSP	PM-10	SOx	NOx	VOC	CO
Trucks (Paved)	5.58	1.59				
Trucks (Unpaved)	4.09	1.17				
Loaders or Stackers (Unpaved)	8.83	2.52				
Hog Bins (Drop)	3.10	1.47				
Debarking	7.50	4.13				
Facility Total	29.11 tons/yr	10.87 tons/yr				

Form 4 Particulates

Actuals from Spreadsheet	TSP	PM10	PM-2.5
	Tons/yr		
Trucks Paved	5.58	1.59	0.16
Trucks Unpaved	4.09	1.17	0.12
Loader (Stacker) Unpaved	8.83	2.52	0.25
Bin Dust	3.10	1.47	0.22
Debarking	7.50	4.13	2.25
Total	29.11	10.87	3.00

Attachment 7b

Emission Calculations - Actual Emissions

Road Dust - Paved

Created 10/1/13, Updated 9/14/21

Use drop down list

Lumber sawmills/ log yards

Forks

Water only

Truck Data/Schedule

(for silt loading data)

(for precipitation data)

(for control efficiencies)

(vehicle data for log yards, production data for sand & gravel)

Source:

EI Year:

Date:

Control Measures Used (check all that apply)

- None
- Watering
- Sweeping

Type: Vacuum Broom

Frequency: Weekly Quarterly Other _____

VEHICLE DATA - PAVED ROAD		Enter schedule & Round Trip Miles OR				Enter VMT/yr
ENTER Vehicle Name	Class	ENTER Vehicle Wt. T Avg of Loaded	ENTER Number of Trips per Day	ENTER Number of Days per Week	ENTER Number of Weeks per Year	ENTER Miles Round Trip (Paved)
Log Trucks		32.5	100	5	50	0.35
Chip Trucks		32.5	34	5	50	0.702
Hog Trucks		32.5	13	5	50	0.702
Lumber Trucks		28	39	5	50	0.702
						0
Total (W) Mean Vehicle Wt. T						31.2
						Total VMT/yr
						23863

Lumber		Actual Production	ton/yr
Truck Wt (default = 17 tons)		17.5	tons
Load Wt (default = 20 tons)		30	tons
Round Trip (default = 0.5 mile)		0.076	miles
Loads		0	loads

*Maximum gross weight in WA is 80,000 lbs (40 T)

Transfer dump trucks (w/ trailers) - Load Wt 26 tons

Regular dump truck (no trailer) - Load Wt 20 tons

Regular dump truck (no trailer) - Truck Wt 17 tons

Pollutant	Constants			Precip & Controls		Actual Emission T/Yr
	Silt Loading %	Particle Size Multiplier	Constant	# Days >0.01 in Precip	% Control	
PM	8.4	4.9	0.7	212	50%	5.6
PM-10	8.4	1.5	0.9	212	50%	1.59
PM 2.5	8.4	0.15	0.9	212	50%	0.16
Crystalline Silica				212	50%	0.32

Notes

See ORCAA Road Dust Emissions Calculations - Emission Factor Review (September 2013) for more details.

- 1 Emission factors equation and silt loading values from AP-42 Section 13.2.2 (11/06). Changes to methodology include using unpaved emission factor equation with a 90% control efficiency for paving. Additional control efficiency applied for water application, vacuum sweeping, and broom sweeping.
- 2 Total Mean Vehicle Weight takes into account VMT for each class of vehicle.
- 3 Precipitation Copyright ©2011 Western Regional Climate Center - Desert Research Institute - Reno, Nevada.
- 4 Assumes 20% of the respirable PM10 is crystalline silica, which was determined worst case by ORCAA in 2013 based on researching MSDS for crushed rock and other information.

Attachment 7c

Emission Calculations - Actual Emissions

Road Dust - Unpaved

Created 10/1/13, Updated 9/14/21

Use drop down lists

Facility Type Lumber sawmills/log yards

Nearest City Forks

Control Measures Water only - every 2 hours

Calculation Method Truck Data/Schedule

(for silt loading data)

(for precipitation data)

(for control efficiencies)

(vehicle data for log yards, production data for sand & gravel)

Source:

EI Year:

Date:

Control Measures Used (check all that apply)

- None
- Gravel with little or no exposed dirt
- Watering (check one)
 - Hourly
 - Every 2 hours
 - Every 3 hours
 - Every 4 hours

Sand & Gravel

Actual Production Data		ton/yr
Actual Production:		
Truck Wt (default = 17 tons)		17
Load Wt (default = 20 tons)		18
Round Trip (default = 0.5 mile)		0.626
Loads		0

*Maximum gross weight in WA is 80,000 lbs (40 T)
 Transfer dump trucks (w/ trailers) - Load Wt 26 tons
 Regular dump truck (no trailer) - Load Wt 20 tons
 Regular dump truck (no trailer) - Truck Wt 17 tons

ENTER Vehicle Name	Class	ENTER Vehicle Wt. T Avg of Loaded + Unloaded	Enter schedule & Round Trip Miles OR			Enter VMT/Yr
			ENTER Number of Trips per Day	ENTER Number of Days per Week	ENTER Number of Weeks per Year (Unpaved)	
Log	Trucks	32.5	100	5	50	8750
						0
						0
						0
Total (W) Mean Vehicle Wt. T						8750

Pollutant	Silt Loading %	Particle Size Multiplier	Constants			Emission Factor Unctrl lb/VMT	Precip & Controls # Days >0.01 in Precip	Emission Factor Control lb/VMT	Actual Emission T/Yr
			Constant a	Constant b	% Control				
PM	8.4	4.9	0.7	0.45	11.15	212	0.94	4.1	
PM-10	8.4	1.5	0.9	0.45	3.18	212	0.27	1.17	
PM 2.5	8.4	0.15	0.9	0.45	0.32	212	0.03	0.12	
Crystalline Silica					0.64	212	0.05	0.2	

Notes

- See ORCAA Road Dust Emissions Calculations - Emission Factor Review (September 2013) for more details.
- Emission factors equation and silt loading values from AP-42 Section 13.2.2 (11/06). Changes to methodology include addition of control efficiency for well-maintained gravel and watering.
- Total Mean Vehicle Weight takes into account VMT for each class of vehicle.
- Precipitation Copyright ©2011 Western Regional Climate Center - Desert Research Institute - Reno, Nevada.
- Assumes 20% of the respirable PM10 is crystalline silica, which was determined worst case by ORCAA in 2013 based on researching MSDS for crushed rock and other information.

Attachment 7d

Emission Calculations - Actual Emissions
 Road Dust - Unpaved
 Created 10/1/13, Updated 9/14/21

Facility Type: Lumber sawmills/hg yards (for silt loading data)
 Nearest City: Forks (for precipitation data)
 Control Measures: Gravel & water - every 3 hours (for control efficiencies)
 Calculation Method: Truck Data/Schedule (vehicle data for log yards, production data for sand & gravel)

Source: _____
 El Year: _____
 Date: _____

Control Measures Used (check all that apply)

- None
- Gravel with little or no exposed dirt
- Watering (check one)
 - Hourly
 - Every 2 hours
 - Every 3 hours
 - Every 4 hours

Lumber	
Actual Production Data	
Actual Production	ton/yr
Truck Wt (default = 17 tons)	tons
Load Wt (default = 20 tons)	tons
Round Trip (default = 0.5 mile)	miles
Loads	#DIV/0!

*Maximum gross weight in WA is 80,000 lbs (40 T)
 Transfer dump trucks (w/ trailers) - Load Wt 26 tons
 Regular dump truck (no trailer) - Load Wt 20 tons
 Regular dump truck (no trailer) - Truck Wt 17 tons

VEHICLE DATA - UNPAVED ROAD		Enter schedule & Round Trip Miles OR		Enter VMT/yr
ENTER Vehicle Wt. T Avg of Loaded + Unloaded	ENTER Number of Trips per Day	ENTER Number of Days per Week	ENTER Number of Weeks per Year (Unpaved)	ENTER Miles Round Trip (Unpaved)
73	200	5	50	12500
Total (W) Mean Vehicle Wt. T				73.0
Total VMT/Yr				12500

VEHICLE EMISSIONS - UNPAVED ROAD		Constants		Precip & Controls		Emission Factor Control	Actual Emission T/Yr
Pollutant	Silt Loading %	Particle Size Multiplier	Constant a	Constant b	# Days >0.01 in Precip	% Control	lb/VMT
PM	8.4	4.9	0.7	0.45	2.12	79%	1.41
PM-10	8.4	1.5	0.9	0.45	2.12	79%	0.40
PM 2.5	8.4	0.15	0.9	0.45	2.12	79%	0.04
Crystalline Silica					2.12	79%	0.08

- Notes
- See ORCAA Road Dust Emissions Calculations - Emission Factor Review (September 2013) for more details.
 - Emission factors equation and silt loading values from AP-42 Section 13.2.2 (11/06). Changes to methodology include addition of control efficiency for well-maintained gravel and watering.
 - Total Mean Vehicle Weight takes into account VMT for each class of vehicle.
 - Precipitation Copyright ©2011 Western Regional Climate Center - Desert Research Institute - Reno, Nevada.
 - Assumes 20% of the respirable PM10 is crystalline silica, which was determined worst case by ORCAA in 2013 based on researching MSDS for crushed rock and other information.

Plant Production 3000 tons/day
 Days 5
 week 50

750000 Tons/year

Debarking
 PM

0.02 lbs/ton of logs processed Emission Factor
 15000 lbs pm/yr
 7.5 tons/year PM

Pm-10

0.011 lbs/ton Emission Factor
 8250 lbs/year pm-10
 4.125 tons/year pm-10

OM - 2.5

0.006 lbs/ton Emission Factor
 4500 lbs/year pm-2.5
 2.25 tons/year pm-2.5

Wood waste

390 Tons/day
 97500 tons/year

Bin Haul O PM

k	0.74	0.00017
u	6.7	1.462973
M	0.25	0.054409

E	0.063671 lbs/ton	26.88823
	6207.955 lbs /year PM	0.00456 Check formula
	3.103977 tons/year pm	

Bin Haul O PM-10

k	0.35
u	6.7
M	0.25

E	0.030115 lbs/ton
	2936.195 lbs /year PM-10
	1.468097 tons/year PM-10

PM-2.5?

k	0.053
u	6.7
M	0.25

E	0.00456 lbs/ton
	444.6238 lbs /year PM-10
	0.222312 tons/year PM-10

Attachment 8a

PM

29.11 t/y
2000 lb/t
58213.67945 lbs/year
365
159.4895327 lbs/day
86400 seconds
0.001845944 lbs/sec
453.6
0.837320047 g/s

Actuals from Spreadsheet

TSP Emission Inventory
Trucks Paved
Trucks Unpaved
Loader Unpaved
Bin Dust

PM-10

10.87 t/y
2000 lb/t
21734.52461 lbs/year
365
59.54664276 lbs/day
86400 seconds
0.000689197 lbs/sec
453.6
0.312619875 g/s

Attachment 8b

Beaver Saw Mill - PM10 Ambient



AERSCREEN 21112 / AERMOD 22112

07/16/22

09:40:36

TITLE: BEAVER SAW MILL

***** AREA PARAMETERS *****

SOURCE EMISSION RATE:	0.3130 g/s	2.484 lb/hr
AREA EMISSION RATE:	0.124E-05 g/(s-m2)	0.986E-05 lb/(hr-m2)
AREA HEIGHT:	0.00 meters	0.00 feet
AREA SOURCE LONG SIDE:	630.00 meters	2066.93 feet
AREA SOURCE SHORT SIDE:	400.00 meters	1312.34 feet
INITIAL VERTICAL DIMENSION:	1.00 meters	3.28 feet
RURAL OR URBAN:	RURAL	
INITIAL PROBE DISTANCE =	5000. meters	16404. feet

***** BUILDING DOWNWASH PARAMETERS *****

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

***** FLOW SECTOR ANALYSIS *****

25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo	SURFACE	1-HR CONC	RADIAL	DIST	TEMPORAL
SECTOR	ROUGHNESS	(ug/m3)	(deg)	(m)	PERIOD
1*	1.300	54.07	30	350.0	WIN

* = worst case diagonal

***** MAKEMET METEOROLOGY PARAMETERS *****

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Coniferous Forest

DOMINANT CLIMATE TYPE: Average Moisture

DOMINANT SEASON: Winter

ALBEDO: 0.35

BOWEN RATIO: 1.50

ROUGHNESS LENGTH: 1.300 (meters)

SURFACE FRICTION VELOCITY (U*) ADJUSTED

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR MO DY JDY HR

-- -- -- -- --

10 01 01 1 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-0	LEN	Z0	BOWEN	ALBEDO	REF WS
-15.81	0.186	-9.000	0.020	-999.	184.	31.2	1.300	1.50	0.35	0.50	

HT	REF TA	HT
10.0	250.0	2.0

***** AERSCREEN AUTOMATED DISTANCES *****
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
0.99	44.51	2525.00	13.18
25.00	45.48	2550.00	13.14

50.00	46.43	2575.00	13.10
75.00	47.32	2600.00	13.06
100.00	48.16	2625.00	13.02
125.00	48.96	2650.00	12.99
150.00	49.72	2675.00	12.95
175.00	50.44	2700.00	12.91
200.00	51.12	2725.00	12.87
225.00	51.77	2750.00	12.83
250.00	52.39	2775.00	12.80
275.00	52.98	2800.00	12.76
300.00	53.55	2825.00	12.72
325.00	54.02	2850.00	12.68
350.00	54.07	2875.00	12.65
375.00	40.27	2900.00	12.61
400.00	32.20	2925.00	12.57
425.00	27.43	2950.00	12.53
450.00	24.43	2975.00	12.49
475.00	22.26	3000.00	12.46
500.00	20.98	3025.00	12.42
525.00	19.44	3050.00	12.39
550.00	18.14	3075.00	12.35
575.00	17.64	3100.00	12.32
600.00	17.28	3125.00	12.28
625.00	16.97	3150.00	15.38
650.00	16.73	3175.00	15.29
675.00	16.52	3200.00	15.21
700.00	16.34	3225.00	15.13
725.00	16.17	3250.00	15.05
750.00	16.02	3275.00	14.97
775.00	15.88	3300.00	14.89
800.00	15.77	3325.00	14.81
825.00	15.68	3350.00	14.73
850.00	15.62	3375.00	14.65
875.00	15.56	3400.00	14.58
900.00	15.50	3425.00	14.50
924.99	15.45	3450.00	14.43
950.00	15.40	3475.00	14.36
975.00	15.36	3500.00	14.28
1000.00	15.33	3525.00	14.21
1025.00	15.29	3550.00	14.14
1050.00	15.25	3575.00	14.07
1075.00	15.21	3600.00	14.01
1100.00	15.16	3625.00	13.94
1125.01	15.12	3650.00	13.87
1150.00	15.07	3675.00	13.80
1175.00	15.03	3700.00	13.74
1200.00	14.98	3725.00	13.67
1225.00	14.94	3750.00	13.61
1249.99	14.89	3775.00	13.55
1275.00	14.84	3800.00	13.49

1300.00	14.80	3825.00	13.42
1325.00	14.76	3850.00	13.36
1350.01	14.73	3875.00	13.30
1375.00	14.69	3900.00	13.24
1400.00	14.66	3925.00	13.18
1425.00	14.64	3950.00	13.60
1450.00	14.62	3975.00	13.54
1475.00	14.59	4000.00	13.48
1500.00	14.57	4025.00	13.43
1525.00	14.54	4050.00	13.37
1550.00	14.52	4075.00	13.31
1575.00	14.49	4100.00	13.25
1600.00	14.47	4125.00	13.20
1625.00	14.44	4150.00	13.14
1650.00	14.41	4175.00	13.09
1675.00	14.38	4200.00	13.03
1700.00	14.35	4225.00	12.98
1725.00	14.32	4250.00	12.92
1750.00	14.29	4275.00	12.87
1775.00	14.26	4300.00	12.82
1800.00	14.23	4325.00	12.77
1825.00	14.19	4350.00	12.71
1850.00	14.16	4375.00	12.66
1875.00	14.13	4400.00	12.61
1900.00	14.10	4425.00	12.56
1925.00	14.06	4450.00	12.51
1950.00	14.03	4475.00	12.46
1975.00	13.99	4500.00	12.42
2000.00	13.96	4525.00	12.37
2025.00	13.92	4550.00	12.32
2050.00	13.89	4575.00	12.27
2075.00	13.85	4600.00	12.23
2100.00	13.81	4625.00	12.18
2125.00	13.78	4650.00	12.13
2150.00	13.74	4675.00	12.09
2175.00	13.70	4700.00	12.04
2200.00	13.67	4725.00	12.00
2225.00	13.63	4750.00	11.96
2250.00	13.60	4775.00	11.91
2275.00	13.56	4800.00	11.87
2300.00	13.52	4825.00	11.82
2325.00	13.48	4850.00	11.78
2350.00	13.44	4875.00	11.74
2375.00	13.40	4900.00	11.70
2400.00	13.37	4925.00	11.66
2425.00	13.33	4950.00	11.61
2450.00	13.29	4975.00	11.57
2475.00	13.25	5000.00	11.53
2500.00	13.22		

 ***** AERSCREEN MAXIMUM IMPACT SUMMARY *****

3-hour, 8-hour, and 24-hour scaled concentrations are equal to the 1-hour concentration as referenced in SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
 Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
 under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	54.21	54.21	54.21	54.21	N/A
DISTANCE FROM SOURCE	362.00 meters				
IMPACT AT THE AMBIENT BOUNDARY	44.51	44.51	44.51	44.51	N/A
DISTANCE FROM SOURCE	0.99 meters				