MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

DOCKET #08-23

COMPANY: Laurel Sand & Gravel, Inc. – Laurel Hill Quarry

LOCATION: 10642 Woodsboro Road, Woodsboro, MD 21798

APPLICATION: Modification of an existing crushing and screening plant with the addition of one (1) crusher and three (3) conveyors and the replacement of one (1) screener.

ITEM	DESCRIPTION
1	Notice of Application and Opportunity to Request an Informational Meeting
2	Environmental Justice (EJ) Information - EJ Fact Sheet and MDE Score and Screening Report
3	Permit to Construct Application Forms No. Form 5, Form 5T, Form 5EP; Vendor/manufacturer specifications/guarantees; Evidence of Workman's Compensation Insurance; Process flow diagrams with emission points; Site plan including the location of the proposed source and property boundary; Material balance data and all emissions calculations; Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.
4	Zoning Approval

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF APPLICATION AND
OPPORTUNITY TO REQUEST AN INFORMATIONAL MEETING

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Laurel Sand & Gravel, Inc. – Laurel Hill Quarry on May 19, 2023, to modify their existing crushing and screening plant with the addition of one (1) crusher and three (3) conveyors and the replacement of one (1) screener. The installation is located at 10642 Woodsboro Road, Woodsboro, MD 21798.

In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the project is located using the Maryland EJ mapping tool. The EJ Score, expressed as a statewide percentile, was shown to be 14.69 which the Department has verified. This score considers three demographic indicators – minority population above 50%, poverty rate above 25% and limited English proficiency above 15%.

Copies of the application, the EJ mapping tool screening report (which includes the score), and other supporting documents are available for public inspection on the Department's website at https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx (click on Docket Number 08-23). Any applicant-provided information regarding a description of the environmental and socioeconomic indicators contributing to that EJ score can also be found at the listed website. Such information has not yet been reviewed by the Department. A review of the submitted information will be conducted when the Department undertakes its technical review of all documents included in the application.

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Department will hold an informational meeting to discuss the application and the permit review process if the Department receives a written request for a meeting within 10 working days from the date of the second publication of this notice. A requested informational meeting will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person informational meeting is received. All requests for an informational meeting should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program, Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Christopher R. Hoagland, Director
Air and Radiation Administration

Maryland Department of the Environment

The Applicant's Guide to Environmental Justice and Permitting

What You Need to Know

This fact sheet is designed to provide guidance to applicants on incorporating environmental justice screening requirements pursuant to House Bill 1200, effective October 1, 2022.

What is Environmental Justice?

The concept behind the term environmental justice (EJ) is that regardless of race, color, national origin, or income, all Maryland residents and communities should have an equal opportunity to enjoy an enhanced quality of life. How to assess whether equal protection is being applied is the challenge.

Communities surrounded by a disproportionate number of polluting facilities puts residents at a higher risk for health problems from environmental exposures. It is important that residents who may be adversely affected by a proposed source be aware of the current environmental issues in their community in order to have meaningful involvement in the permitting process. Resources may be available from government and private entities to ensure that community health is not negatively impacted by a new source located in the community.

Extensive research has documented that health disparities exist between demographic groups in the United States, such as differences in mortality and morbidity associated with factors that include race/ethnicity, income, and educational attainment. House Bill 1200 adds to MDE's work incorporating diversity, equity and inclusion into our mission to help overburdened and underserved communities with environmental issues.

What is House Bill 1200 and what does it require?

Effective October 1, 2022, House Bill 1200 requires a person applying for a permit from the Department under §1-601 of the Environment Article of the Annotated Code of Maryland or any permit requiring public notice and participation to include in the application an EJ Score for the census tract where the applicant is seeking the permit; requiring the Department, on receiving a certain permit application to review the EJ Score; and requiring notices to include information related to EJ Scores and generally relating to environmental permits and environmental justice screenings.

What is a "Maryland EJ Tool"?

The term "Maryland EJ Tool" means a publicly available state mapping tool that allows users to: (1) explore layers of environmental justice concern; (2) determine an overall EJ score for census tracts in the state; and (3) view additional context layers relevant to an area.

Maryland Department of the Environment

The Applicant's Guide to Environmental Justice and Permitting

What You Need to Know

What is an "EJ Score"?

The term "EJ Score" means an overall evaluation of an area's environment and environmental justice indicators, as defined by MDE in regulation, including: (1) pollution burden exposure; (2) pollution burden environmental effects; (3) sensitive populations; and (4) socioeconomic factors.

The Maryland EJ Screening Tool uses three demographic indicators – minority population above 50%, poverty rate above 25% and percent of the population having limited English proficiency above 15% - to calculate a score that can be used as an indicator of susceptibility to environmental exposure. It is that score, linked to the census tract where the project is to be located, that needs to be reported to MDE as part of your permit application.

What does the application require?

The link for the Maryland EJ Tool is located on the Department's website, www.mde.maryland.gov, under Quick Links as EJ Screening Tool. At the top right, please click the first button for the MDE Screening Report. Input the address of the proposed installation in the address bar. Click on the Report button. Once the report has been generated select the print icon.

The applicant needs to include the MDE Screening Report with the EJ Score from the Maryland EJ Tool as part of the permit application upon submission. An application will not be considered complete without the report.

The applicant is encouraged to provide the Department with a discussion about the environmental exposures in the community. This will provide pertinent information about how the applicant should proceed with engaging with the community. Residents of a community with a high indicator score and a high degree of environmental exposure should be afforded broader opportunities to participate in the permit process and understand the impacts a project seeking permit approval may have on them.

Questions

For air quality permits, please call 410-537-3230.
For water permits, please call 410-537-4145.
For land permits pertaining to Solid Waste, please call 410-537-3098.
For land permits pertaining to Oil Control, please call 410-537-3483.
For land permits pertaining to Animal Feeding Operations, please call 410-537-4423.
For land permits pertaining to Biosolids, please call 410-537-3403.

Environmental Justice Discussion

Laurel Hill Quarry (021-0003)

May 18, 2023

The Laurel Hill Quarry (021-0003) is located at 10642 Woodsboro Rd, Woodsboro, MD 21798. An existing crushing and screening plant is operated on site in order to produce aggregate material for the construction and transportation industries. This permit to construct application contains the addition of one (1) crusher, two (2) feeders, three (3) conveyors and various washing equipment as well as the replacement of one (1) screen in-kind.

The attached Environmental Justice (EJ) Screening Report shows the EJ scores for the site. It is a priority to develop and maintain a positive relationship with the surrounding community regardless of race, color, national origin, or income. An open line of communication with neighbors is encouraged and additional information about the site is shared in order to provide a better understanding of ongoing operations. When possible, tours of the facility are provided to interested members of the community. Any feedback received is promptly addressed and responded to.

The existing and proposed control measures ensure that the surrounding community is protected from environmental exposures. A variety of techniques are employed in order to properly control fugitive dust on site. This includes equipment installed on the processing plant as well as practices employed around the site.

The processing plant is equipped with a wet suppression system used as necessary to prevent the discharge of emissions. The existing wet suppression system will be expanded to cover the proposed modifications to the plant. Routine inspections will continue to be performed to ensure the system is operating as intended. If any nozzles are found to be malfunctioning, corrective action will be taken within 24 hours. Any spillage or residual materials from the plant will be promptly cleaned up and returned to the raw material stockpile.

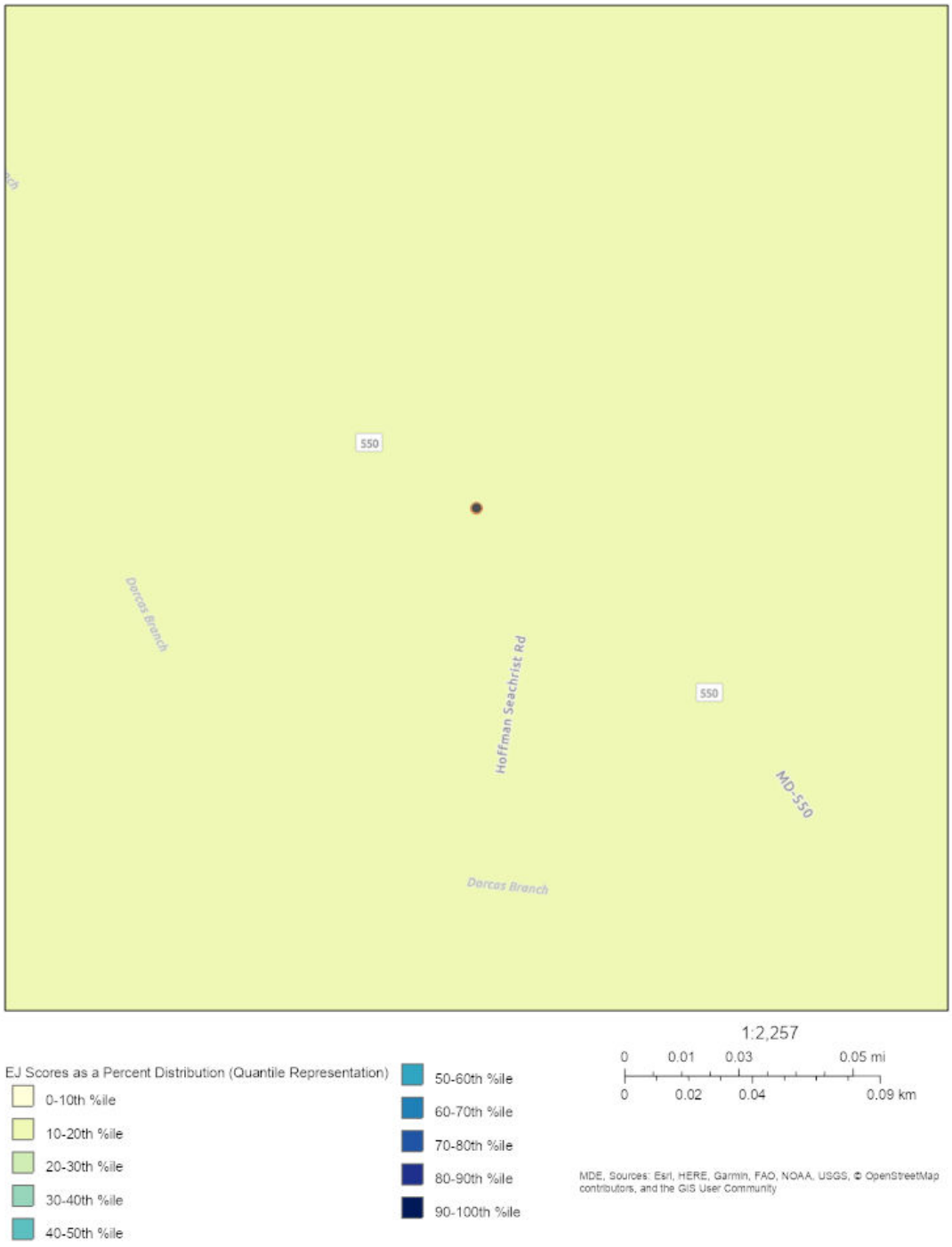
A water truck will be used in order to control dust from vehicular traffic on internal roads. Speed limits for vehicles on site will be posted and enforced. Prior to leaving the site, all trucks will be required to have their loads covered. Stockpiles will not be worked more than necessary and the water truck will be used to wet the material as needed.

Developing a positive relationship with the surrounding community and employing the best available techniques to eliminate environmental exposures will ensure the continued fair treatment and meaningful involvement of all stakeholders.

MDE EJ Screening Report

Area of Interest (AOI) Information

Apr 26 2023 16:20:34 Eastern Daylight Time



10642 WOODSBORO RD, WOODSBORO, MD, 21798

Summary

Name	Count	Area(ft²)	Length(ft)
EJ Scores as a Percent Distribution (Quantile Representation)	1	N/A	N/A
Active High Air Emission Facilities	0	N/A	N/A
LRP Facilities	0	N/A	N/A
Maryland Dam Locations	0	N/A	N/A
Maryland Pond Locations	0	N/A	N/A
Wastewater Discharge Facilities	0	N/A	N/A
Historic Mine Locations	0	N/A	N/A
Significant Wastewater Treatment Plants	0	N/A	N/A
Point Source Discharges	0	N/A	N/A
All Permitted Solid Waste Acceptance Facilities	0	N/A	N/A
Municipal Solid Waste Acceptance Facilities	0	N/A	N/A

EJ Scores as a Percent Distribution (Quantile Representation)

#	Geographic Area Name	Percent Minority	Percent Poverty	Percent_Limited_English_Proficiency	SocioScore Percent Tract Only
1	Census Tract 7676, Frederick County, Maryland	6.30	18.43	0.00	8.24

#	Socio Percentile (All MD)	Socio Percentile (All MD) %	Area(ft²)
1	14.69	14.686%	N/A

LAUREL SAND & GRAVEL, INC.

WASHINGTON AREA
301-953-7650

6110 FROST PLACE, SUITE 150
LAUREL, MD 20707
P.O. BOX 850
LAUREL, MD 20725

FAX: 301-470-4075

BALTIMORE AREA
410-792-7234

April 18, 2023

Ms. Sarah Wells
Air & Radiation Administration
Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230

Re: Permit to Construct Application– Laurel Hill Quarry (021-0003)

Dear Ms. Wells:

Please find attached a permit to construct application for the addition of one (1) crusher, two (2) feeders, three (3) conveyors and various washing equipment to the above referenced permit. The application also includes the replacement of one (1) screen in-kind. If you have any questions or require additional information, please contact me at 410-792-7234 ex 1120 or by email at Collin@aggmgt.com. Thank you for your assistance.

Sincerely,

Collin Sumpter
Resource Manager

AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Laurel Sand & Gravel, Inc.
COMPANY ADDRESS:	P.O. Box 850, Laurel, MD 20725
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Laurel Hill Quarry (021-0003)
PREMISES ADDRESS:	10642 Woodsboro Rd., Woodsboro, MD
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Collin Sumpter
JOB TITLE:	Resource Manager
PHONE NUMBER:	(443) 835-7255
EMAIL ADDRESS:	Collin@aggmgt.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Addition of one (1) crusher, two (2) feeders, three (3) conveyors and various washing equipment. Replacement of one (1) screen.	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

☒ Application package cover letter describing the proposed project

☒ Complete application forms (Note the number of forms included or NA if not applicable.)

No. 1 Form 5
No. 1 Form 5T
No. 7 Form 5EP
No. _____ Form 6
No. _____ Form 10
No. _____ Form 11
No. _____ Form 41
No. _____ Form 42
No. _____ Form 44

☒ Vendor/manufacturer specifications/guarantees

☒ Evidence of Workman's Compensation Insurance

☒ Process flow diagrams with emission points

☒ Site plan including the location of the proposed source and property boundary

☒ Material balance data and all emissions calculations

☒ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.

☐ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission (1)

☐ Documentation that the proposed installation complies with local zoning and land use requirements (2)

(1) Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

(2) Required for applications subject to Expanded Public Participation Requirements.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪1-800-633-6101 ▪ www.mde.state.md.us
Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☒ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name
Laurel Sand & Gravel, Inc.

Mailing Address
P.O. Box 850
Street Address

Laurel	MD	20725
City	State	Zip

Telephone Number
(410) 792-7234 x 1120

Signature
Collin Sumpter - Resource Manager
Print Name and Title

04/18/2023
Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)
10642 Woodsboro Rd.
Street Number and Street Name

Woodsboro	MD	21798	(301) 750-2760
City/Town	State	Zip	Telephone Number

Laurel Hill Quarry (021-0003)
Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status (15)	New Construction Begun (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
B	0723	0923	0921

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)
Addition of one (1) crusher, two (2) feeders, three (3) conveyors and various washing equipment. Replacement of one (1) screen.

See Emissions Calculations for maximum input rates.

5. Workmen's Compensation Coverage WC700908 (Binder/Policy Number) 12/31/2023 (Expiration Date)
Company Rockwood Casualty Insurance Company
NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 7

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name Scott Gartzke Title Plant Engineer

Company Steel Systems Installations

Mailing Address/Street 175 N. Lime St.

City/Town Quarryville State PA Telephone (717) 278-6841

8. Major Activity, Product or Service of Company at this Location

Crushing & screening operations for the production of aggregate materials.

9. Control Devices Associated with this Equipment

None ☐ 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
☐	☐	☐	☐	☐	☐	☐	☐
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

[X] Describe Wet Suppression

24-9

10. Annual Fuel Consumption for this Equipment N/A - Electric

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS ☐ ANNUAL AMOUNT CONSUMED

(Specify Type) 66-1 (Specify Units of Measure)

OTHER FUEL ☐ ANNUAL AMOUNT CONSUMED

(Specify Type) 66-2 (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per Year
[X]	☐		☐	12	5	260
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
[X]					
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Innformation- is Exhaust through Doors, Windows, etc. Only? (Y/N) Y (85)

If not, then	Height Avove Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
	86-88	89-91	92-95	96-98

NOTE:
Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? N (Y or N)

		INPUT RATE			
NAME	**CAS NO. (IF APPLICABLE)**	**PER HOUR**	**UNITS**	**PER YEAR**	**UNITS**
1. Aggregate Products (Finish Side)		1,000	Tons	3,120,000	Tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

14. Output Materials (for this equipment)
Process/Product Stream

		OUTPUT RATE			
NAME	**CAS NO. (IF APPLICABLE)**	**PER HOUR**	**UNITS**	**PER YEAR**	**UNITS**
1. Aggregate Products (Finish Side)		1,000	Tons	3,120,000	Tons
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

15. Waste Streams- Solid and Liquid

		OUTPUT RATE			
NAME	**CAS NO. (IF APPLICABLE)**	**PER HOUR**	**UNITS**	**PER YEAR**	**UNITS**
1. N/A					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
177-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
9.70		
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compounds	PM-10
		3.71
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
2					2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ **Date Rec'd. State** _____ **Return to Local Jurisdiction** **Date**_____ **By**_____

Reviewed by Local Jurisdiction Date_____ By_____ **Reviewed by State** Date_____ By_____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20. Annual Operating Rate (186-192) **Maximum Design Hourly Rate** (193-199) **Permit to Operate Month** (200-201) **Transaction Date (MM/DD/YR)** (202-207)

Staff Code (208-210) **VOC Code** (211 212) **SIP Code** (213 214) **Regulation Code** (215-218) **Confidentiality** (219)

Point Description (220-238) **Action** (239) A: Add C: Change

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#27A

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
MF-200 48"x78" Feeder

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☒ Other No. _____
Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.046	0.046	0.552	0.072
Particulate Matter (filterable as PM2.5)	0.013	0.013	0.156	0.020
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#27B

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Belt Conveyor #15A

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☒ Other No. _____
  Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.046	0.046	0.552	0.072
Particulate Matter (filterable as PM2.5)	0.013	0.013	0.156	0.020
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#71

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Belt Conveyor #40

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☒ Other No. _____
Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.014	0.014	0.166	0.022
Particulate Matter (filterable as PM2.5)	0.004	0.004	0.047	0.006
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#72

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Belt Conveyor #41

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

- ☐ None
- ☐ Baghouse No. _____
- ☐ Cyclone No. _____
- ☐ Elec. Precipitator (ESP) No. _____
- ☐ Dust Suppression System No. _____
- ☐ Venturi Scrubber No. _____
- ☐ Spray Tower/Packed Bed No. _____
- ☐ Carbon Adsorber No. _____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal Oxidizer No. _____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. _____
- ☐ Nitrogen Oxides Reduction No. _____
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☒ Other No. _____
  Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.014	0.014	0.166	0.022
Particulate Matter (filterable as PM2.5)	0.004	0.004	0.047	0.006
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#73

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Surge Bin

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☒ Other No. _____
Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.014	0.014	0.166	0.022
Particulate Matter (filterable as PM2.5)	0.004	0.004	0.047	0.006
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#74

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Belt Feeder

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☒ Other No. _____
Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.014	0.014	0.166	0.022
Particulate Matter (filterable as PM2.5)	0.004	0.004	0.047	0.006
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
#75

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Sandvik CH660 Cone Crusher

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	C	**Seasonal Variation** Check box if none: ☒ Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	5	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	N/A	Length and width dimensions at top of rectangular stack (ft):	Length: N/A	Width: N/A	
Height above structures (ft):	N/A				
Exit temperature (ºF):	N/A	Inside diameter at top of round stack (ft):		N/A	
Exit velocity (ft/min):	N/A	Distance from emission point to nearest property line (ft):		N/A	
Exhaust gas volumetric flow rate (acfm):	N/A	Building dimensions if emission point is located on building (ft)	Height N/A	Length N/A	Width N/A

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device***. If none check none:

☐ None

☐ Baghouse No. _____

☐ Cyclone No. _____

☐ Elec. Precipitator (ESP) No. _____

☐ Dust Suppression System No. _____

☐ Venturi Scrubber No. _____

☐ Spray Tower/Packed Bed No. _____

☐ Carbon Adsorber No. _____

- ☐ Cartridge/Canister
- ☐ Regenerative

☐ Thermal Oxidizer No. _____

- ☐ Regenerative

☐ Catalytic Oxidizer No. _____

☐ Nitrogen Oxides Reduction No. _____

- ☐ Selective ☐ Non-Selective
- ☐ Catalytic ☐ Non-Catalytic

☒ Other No. _____
Specify: Wet Suppression

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.162	0.162	1.944	0.253
Particulate Matter (filterable as PM2.5)	0.030	0.030	0.360	0.047
Particulate Matter (condensables)				
Volatile Organic Compounds (VOC)				
Oxides of Sulfur (SOx)				
Oxides of Nitrogen (NOx)				
Carbon Monoxide (CO)				
Lead (Pb)				

Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO_2)				
Methane (CH_4)				
Nitrous Oxide (N_2O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO_2e)				

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: Laurel Sand & Gravel, Inc. - Laurel Hill Quarry (021-0003)

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels (µg/m^3)			Estimated Premises Wide Emissions of TAP			
						Actual Total Existing TAP Emissions	Projected TAP Emissions from Proposed Installation	Premises Wide Total TAP Emissions	
			1-hour	8-hour	Annual	(lb/hr)	(lb/hr)	(lb/hr)	(lb/yr)
ex. ethanol	*64175*	*II*	*18843*	*3769*	*N/A*	*0.60*	*0.15*	*0.75*	*1500*
ex. benzene	*71432*	*I*	*80*	*16*	*0.13*	*0.5*	*0.75*	*1.00*	*400*
N/A									

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (http://www.mde.maryland.gov) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))
A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))
A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 µg/m^3, and any applicable annual screening level for the TAP must be greater than 1 µg/m^3.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)
In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	*Thermal Oxidizer*	*99*	*$50,000*	*$100,000*	*no*
ex. ethanol and benzene	*Low VOC materials*	*80*	*0*	*$100.000*	*yes*

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)
Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels ($\mu g/m^3$)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis ($\mu g/m^3$)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
ex. ethanol	*64175*	*18843*	*3769*	*N/A*	*0.75*	*1500*	*0.89*	*N/A*	*N/A*	*N/A*	*N/A*	*AER*
ex. benzene	*71432*	*80*	*16*	*0.13*	*1.00*	*400*	*0.04*	*36.52*	*1.5*	*1.05*	*0.12*	*Screen*

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

Emissions Calculations

Laurel Hill Quarry (021-0003) - Modification

April 18, 2023

AP-42 Emission Factors				Max Operating Schedule	
	PM	PM-10	PM-2.5	Tons/Hour	1,200
Conveyor Transfer Point (Controlled)	0.00014	0.000046	0.000013	Hours/Day	12
Screening (Controlled)	0.0022	0.00074	0.00005	Days/Year	260
Crushers (controlled)	0.0012	0.00054	0.0001	Hours/Year	3,120

Equipment Added

Particulate Matter (PM)

Emission Point	Description	Capacity (TPH)	AP-42 Factor (lb/ton)	Emissions (lb/hour)	Emissions (lb/day)	Emissions (tons/year)
27A	MF-200 Feeder	1,000	0.00014	0.140	1.680	0.218
27B	Belt Conveyor #15A	1,000	0.00014	0.140	1.680	0.218
71	Belt Conveyor #40	300	0.00014	0.042	0.504	0.066
72	Belt Conveyor #41	300	0.00014	0.042	0.504	0.066
73	Surge Bin	300	0.00014	0.042	0.504	0.066
74	Belt Feeder	300	0.00014	0.042	0.504	0.066
75	Sandvik CH660 Cone Crusher	300	0.0012	0.360	4.320	0.562
			Total	**0.808**	**9.696**	**1.260**

Particulate Matter (PM-10)

Emission Point	Description	Capacity (TPH)	AP-42 Factor (lb/ton)	Emissions (lb/hour)	Emissions (lb/day)	Emissions (tons/year)
27A	MF-200 Feeder	1,000	0.000046	0.046	0.552	0.072
27B	Belt Conveyor #15A	1,000	0.000046	0.046	0.552	0.072
71	Belt Conveyor #40	300	0.000046	0.014	0.166	0.022
72	Belt Conveyor #41	300	0.000046	0.014	0.166	0.022
73	Surge Bin	300	0.000046	0.014	0.166	0.022
74	Belt Feeder	300	0.000046	0.014	0.166	0.022
75	Sandvik CH660 Cone Crusher	300	0.00054	0.162	1.944	0.253
			Total	**0.309**	**3.710**	**0.482**

Particulate Matter (PM-2.5)

Emission Point	Description	Capacity (TPH)	AP-42 Factor (lb/ton)	Emissions (lb/hour)	Emissions (lb/day)	Emissions (tons/year)
27A	MF-200 Feeder	1,000	0.000013	0.013	0.156	0.020
27B	Belt Conveyor #15A	1,000	0.000013	0.013	0.156	0.020
71	Belt Conveyor #40	300	0.000013	0.004	0.047	0.006
72	Belt Conveyor #41	300	0.000013	0.004	0.047	0.006
73	Surge Bin	300	0.000013	0.004	0.047	0.006
74	Belt Feeder	300	0.000013	0.004	0.047	0.006
75	Sandvik CH660 Cone Crusher	300	0.0001	0.030	0.360	0.047
			Total	**0.072**	**0.859**	**0.112**

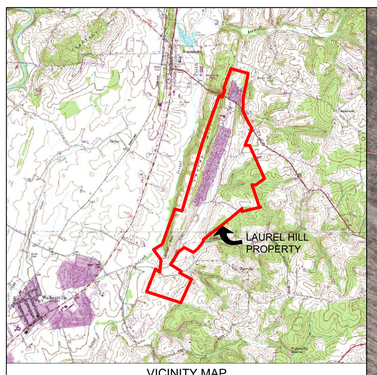
Equipment Replaced In-Kind

(27A)* - 8'x16' D.D. Deister Scalping Screen	Replaced By:	(27C) - 8'x20' 3D Deister Scalping Screen

*Previous Numbering

Washing Equipment Added (No Emissions)

#67 - 7' x 16' Single Deck SSI Wash Screen	#69 - SSI Transfer Conveyor #38
#68 - McLanahan S1036A40X Seperator	#70 - SSI Radial Stacking Conveyor #39



VICINITY MAP
LOCATED ON WOODSBORO & WALKERSVILLE QUADRANGLES
SCALE: 1" = 1 MILE

LEGEND

LAUREL HILL PROPERTY

TAX MAP PARCELS

N/F
JERRY W. & DONNA E.
CAMPBELL

N/F
COLE TRACEY
RHODES

N/F
LAUREL SAND &
GRAVEL INC.

WOODSBORO RD

N/F
LAUREL SAND &
GRAVEL INC.

HOFFMAN SEACHRIST RD

N/F
BARBARA ANN
MARTIN

N/F
LAUREL SAND &
GRAVEL INC.

N/F
WOODSBORO LLC

N/F
LAUREL SAND &
GRAVEL INC.

N/F
JAMES L. GRAHAM
TRUSTEE,
SHOEMAKER FAMILY
TRUST

HOFFMAN SEACHRIST RD

N/F
LAUREL SAND &
GRAVEL INC.

N/F
JAMES L. GRAHAM
TRUSTEE,
SHOEMAKER FAMILY
TRUST

N/F
LAUREL SAND &
GRAVEL INC.

N/F
LAUREL SAND &
GRAVEL INC.

N
W
E
S

0 100 200 300

REVISION		

DRAWN BY:	JDR
CHECKED BY:	WEL
DATE:	4/7/2023
SCALE:	1" = 100'
CTR INTERVAL:	10' INDEX
FILE NAME:	LH AQ Exhibit 20230407.DWG

Laurel Hill Quarry
10642 Woodsboro Rd
Woodsboro, MD 21796
Phone: (410) 792-7234

AIR QUALITY EXHIBIT

LAUREL HILL QUARRY
A DIVISION OF
LAUREL SAND & GRAVEL
6110 FROST PLACE - SUITE 150, LAUREL, MD 20707

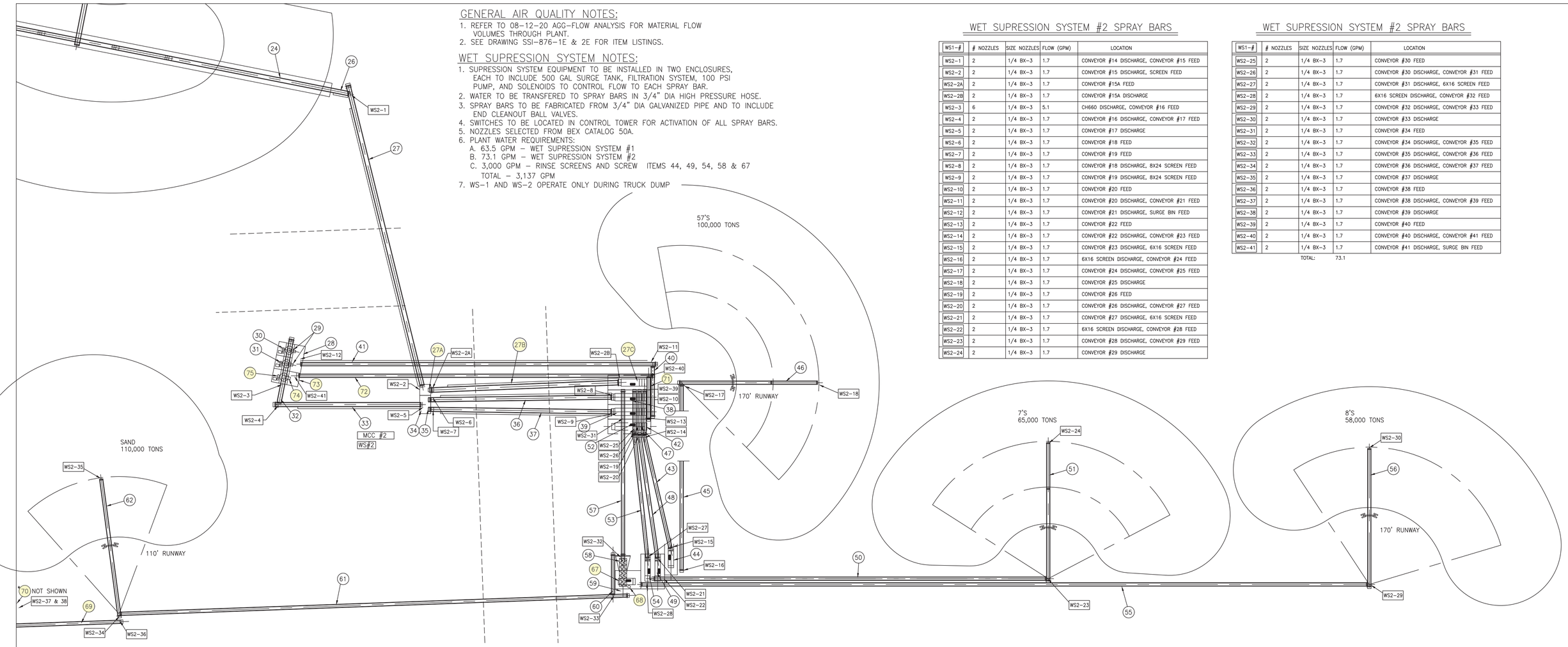
P:\Projects\Laurel Hill\Drawing\Current\LH AQ Exhibit 20230407.dwg, Layout1, 4/14/2023 9:29:54 AM

GENERAL AIR QUALITY NOTES:

1. REFER TO 08-12-20 AGG-FLOW ANALYSIS FOR MATERIAL FLOW VOLUMES THROUGH PLANT.
2. SEE DRAWING SSI-876-1E & 2E FOR ITEM LISTINGS.

WET SUPRESSION SYSTEM NOTES:

1. SUPRESSION SYSTEM EQUIPMENT TO BE INSTALLED IN TWO ENCLOSURES, EACH TO INCLUDE 500 GAL SURGE TANK, FILTRATION SYSTEM, 100 PSI PUMP, AND SOLENOIDS TO CONTROL FLOW TO EACH SPRAY BAR.
2. WATER TO BE TRANSFERED TO SPRAY BARS IN 3/4" DIA HIGH PRESSURE HOSE.
3. SPRAY BARS TO BE FABRICATED FROM 3/4" DIA GALVANIZED PIPE AND TO INCLUDE END CLEANOUT BALL VALVES.
4. SWITCHES TO BE LOCATED IN CONTROL TOWER FOR ACTIVATION OF ALL SPRAY BARS.
5. NOZZLES SELECTED FROM BEX CATALOG 50A.
6. PLANT WATER REQUIREMENTS:
   A. 63.5 GPM - WET SUPRESSION SYSTEM #1
   B. 73.1 GPM - WET SUPRESSION SYSTEM #2
   C. 3,000 GPM - RINSE SCREENS AND SCREW ITEMS 44, 49, 54, 58 & 67
   TOTAL - 3,137 GPM
7. WS-1 AND WS-2 OPERATE ONLY DURING TRUCK DUMP



WET SUPRESSION SYSTEM #2 SPRAY BARS

WS1-#	# NOZZLES	SIZE NOZZLES	FLOW (GPM)	LOCATION
WS2-1	2	1/4 BX-3	1.7	CONVEYOR #14 DISCHARGE, CONVEYOR #15 FEED
WS2-2	2	1/4 BX-3	1.7	CONVEYOR #15 DISCHARGE, SCREEN FEED
WS2-2A	2	1/4 BX-3	1.7	CONVEYOR #15A FEED
WS2-2B	2	1/4 BX-3	1.7	CONVEYOR #15A DISCHARGE
WS2-3	6	1/4 BX-3	5.1	CH660 DISCHARGE, CONVEYOR #16 FEED
WS2-4	2	1/4 BX-3	1.7	CONVEYOR #16 DISCHARGE, CONVEYOR #17 FEED
WS2-5	2	1/4 BX-3	1.7	CONVEYOR #17 DISCHARGE
WS2-6	2	1/4 BX-3	1.7	CONVEYOR #18 FEED
WS2-7	2	1/4 BX-3	1.7	CONVEYOR #19 FEED
WS2-8	2	1/4 BX-3	1.7	CONVEYOR #18 DISCHARGE, 8X24 SCREEN FEED
WS2-9	2	1/4 BX-3	1.7	CONVEYOR #19 DISCHARGE, 8X24 SCREEN FEED
WS2-10	2	1/4 BX-3	1.7	CONVEYOR #20 FEED
WS2-11	2	1/4 BX-3	1.7	CONVEYOR #20 DISCHARGE, CONVEYOR #21 FEED
WS2-12	2	1/4 BX-3	1.7	CONVEYOR #21 DISCHARGE, SURGE BIN FEED
WS2-13	2	1/4 BX-3	1.7	CONVEYOR #22 FEED
WS2-14	2	1/4 BX-3	1.7	CONVEYOR #22 DISCHARGE, CONVEYOR #23 FEED
WS2-15	2	1/4 BX-3	1.7	CONVEYOR #23 DISCHARGE, 6X16 SCREEN FEED
WS2-16	2	1/4 BX-3	1.7	6X16 SCREEN DISCHARGE, CONVEYOR #24 FEED
WS2-17	2	1/4 BX-3	1.7	CONVEYOR #24 DISCHARGE, CONVEYOR #25 FEED
WS2-18	2	1/4 BX-3	1.7	CONVEYOR #25 DISCHARGE
WS2-19	2	1/4 BX-3	1.7	CONVEYOR #26 FEED
WS2-20	2	1/4 BX-3	1.7	CONVEYOR #26 DISCHARGE, CONVEYOR #27 FEED
WS2-21	2	1/4 BX-3	1.7	CONVEYOR #27 DISCHARGE, 6X16 SCREEN FEED
WS2-22	2	1/4 BX-3	1.7	6X16 SCREEN DISCHARGE, CONVEYOR #28 FEED
WS2-23	2	1/4 BX-3	1.7	CONVEYOR #28 DISCHARGE, CONVEYOR #29 FEED
WS2-24	2	1/4 BX-3	1.7	CONVEYOR #29 DISCHARGE

WET SUPRESSION SYSTEM #2 SPRAY BARS

WS1-#	# NOZZLES	SIZE NOZZLES	FLOW (GPM)	LOCATION
WS2-25	2	1/4 BX-3	1.7	CONVEYOR #30 FEED
WS2-26	2	1/4 BX-3	1.7	CONVEYOR #30 DISCHARGE, CONVEYOR #31 FEED
WS2-27	2	1/4 BX-3	1.7	CONVEYOR #31 DISCHARGE, 6X16 SCREEN FEED
WS2-28	2	1/4 BX-3	1.7	6X16 SCREEN DISCHARGE, CONVEYOR #32 FEED
WS2-29	2	1/4 BX-3	1.7	CONVEYOR #32 DISCHARGE, CONVEYOR #33 FEED
WS2-30	2	1/4 BX-3	1.7	CONVEYOR #33 DISCHARGE
WS2-31	2	1/4 BX-3	1.7	CONVEYOR #34 FEED
WS2-32	2	1/4 BX-3	1.7	CONVEYOR #34 DISCHARGE, CONVEYOR #35 FEED
WS2-33	2	1/4 BX-3	1.7	CONVEYOR #35 DISCHARGE, CONVEYOR #36 FEED
WS2-34	2	1/4 BX-3	1.7	CONVEYOR #36 DISCHARGE, CONVEYOR #37 FEED
WS2-35	2	1/4 BX-3	1.7	CONVEYOR #37 DISCHARGE
WS2-36	2	1/4 BX-3	1.7	CONVEYOR #38 FEED
WS2-37	2	1/4 BX-3	1.7	CONVEYOR #38 DISCHARGE, CONVEYOR #39 FEED
WS2-38	2	1/4 BX-3	1.7	CONVEYOR #39 DISCHARGE
WS2-39	2	1/4 BX-3	1.7	CONVEYOR #40 FEED
WS2-40	2	1/4 BX-3	1.7	CONVEYOR #40 DISCHARGE, CONVEYOR #41 FEED
WS2-41	2	1/4 BX-3	1.7	CONVEYOR #41 DISCHARGE, SURGE BIN FEED
		TOTAL:	73.1	

PLANT EQUIPMENT SCHEDULE

#	ITEM DESCRIPTION	TPH	HP	AUTOMATION DEVICE	CONTROL DEVICE
26	54"X408' BELT CONVEYOR #14	1400	75	OS-FS-SS	WS2-1
27	54"X292' BELT CONVEYOR #15	1400	100	OS-MD-MAG-BS	WS2-1, WS2-2
27A	FMC MF-200 48"x78" ELECTROMECHANICAL FEEDER	1000	5	———	WS2-2A
27B	54"X206' BELT CONVEYOR #15A	1000	100	———	WS2-2A, WS2-2B
27C	8'X20' 3D DEISTER SCALPING SCREEN	1000	40/40	———	WS2-2B
28	14'X28' 100 TON CRUSHER SURGE BIN	1800	———	LI-HYD	WS2-2
29	TWO (2) FMC MF-200 48"x96" ELECTROMECHANICAL FEEDERS	1200/600	5/5	———	WS2-2
30	SANDVIK CH660 TERTIARY CONE CRUSHER CR003	600	400/7.5/7.5/1/1	LI-AMP	WS2-2, WS2-3
31	SANDVIK CH660 TERTIARY CONE CRUSHER CR004	600	400/7.5/7.5/1/1	LI-AMP	WS2-3, WS2-12
32	54"X66' BELT CONVEYOR #16	1800	50	OS	WS2-3, WS2-4
33	54"X170' BELT CONVEYOR #17	1800	100	OS	WS2-4, WS2-5
34	10'X20' SPLITTER BIN	1800	———	LI-HYD	WS2-5
35	TWO (2) FMC MF-200 42"x78" ELECTROMECHANICAL FEEDERS	750/750	5/5	———	WS2-5
36	48"X206' BELT CONVEYOR #18	750	75	OS	WS2-6, WS2-8
37	48"X206' BELT CONVEYOR #19	750	75	OS	WS2-7, WS2-9
38	8'X24' 4D DEISTER INCLINED FINISHING SCREEN	750	50/50	———	WS2-8
39	8'X24' 4D DEISTER INCLINED FINISHING SCREEN	750	50/50	———	WS2-9
40	48"X55' BELT CONVEYOR #20	600	20	OS	WS2-10
41	48"X390' BELT CONVEYOR #21	600	75	OS-MD-MAG	WS2-11, WS2-12
42	36"X48' BELT CONVEYOR #22	600	15	OS	WS2-13
43	36"X130' BELT CONVEYOR #23	600	30	OS	WS2-14, WS2-15
44	6'X16' D.D. DEISTER RINSE SCREEN	600	30	———	———
45	36"X200' BELT CONVEYOR #24	600	25	OS	WS2-16, WS2-17
46	36"X100'-150' TELESCOPING STACKING CONVEYOR #25	600	30/30/5 REV/3	OS	WS2-17, WS2-18
47	36"X48' BELT CONVEYOR #26	400	15	OS	WS2-19
48	36"X136' BELT CONVEYOR #27	400	25	OS	WS2-20, WS2-21
49	6'X16' S.D. DEISTER RINSE SCREEN	400	30	———	———

PLANT EQUIPMENT SCHEDULE

#	ITEM DESCRIPTION	TPH	HP	AUTOMATION DEVICE	CONTROL DEVICE
50	36"X440' BELT CONVEYOR #28	400	30	———	———
51	36"X100'-150' TELESCOPING STACKING CONVEYOR #29	400	30/30/5 REV/3	OS	WS2-23, WS2-24
52	36"X48' BELT CONVEYOR #30	400	15	OS	WS2-25
53	36"X136' BELT CONVEYOR #31	400	25	OS	WS2-26, WS2-27
54	6'X16' S.D. DEISTER RINSE SCREEN	400	30	———	———
55	36"X794' BELT CONVEYOR #32	400	40	OS	WS2-27, WS2-28
56	36"x150' RADIAL STACKING CONVEYOR #33	400	50/5 REV	OS	WS2-29, WS2-30
57	36"X160' BELT CONVEYOR #34	400	25	OS	WS2-31, WS2-32
58	54"x33' TWIN SCREW CLASSIFIER	400	30/30	———	———
59	5'x12' DEISTER DEWATERING SCREEN	400	15	———	———
60	36"X70' BELT CONVEYOR #35	400	20	OS	WS2-32, WS2-33
61	36"X560' BELT CONVEYOR #36	400	100	OS	WS2-33, WS2-34
62	36"x150' RADIAL STACKING CONVEYOR #37	400	40/5 REV	OS	WS2-34, WS2-35
63	WET SUPPRESSION SYSTEM #1 SUPPLY	———	10/10	SOL	———
64	WET SUPPRESSION SYSTEM #2 SUPPLY	———	10/10	SOL	———
65	FRESH WATER PUMP	———	150		———
66	SLURRY PUMP	———	150		———
67	7'x16' SINGLE DECK SSI WASH SCREEN	250	15/15/2	———	———
68	MCLANAHAN S1036A40X SEPARATOR	———	125 ACVS	———	———
69	36"X400' SSI TRANSFER CONVEYOR #38	300	25	OS	WS2-36, WS2-37
70	36"X120' SSI RADIAL STACKING CONVEYOR #39	300	30/3	OS	WS2-37, WS2-38
71	36"X40' SSI BELT CONVEYOR #40	300	15	OS	WS2-39, WS2-40
72	36"X390' SSI BELT CONVEYOR #41	300	50	OS	WS2-40, WS2-41
73	14'X14'X16' 60 TON CRUSHER SURGE BIN	300	———	LI-HYD	WS2-41
74	36"X18' SSI BELT FEEDER FD12	300	25	———	WS2-41
75	SANDVIK CH660 QUATERNARY CONE CRUSHER CR005	300	400/7.5/7.5/1/1	LI-AMP	WS2-3, WS2-41

GENERAL NOTES:
1. THIS DRAWING IS FOR ESTIMATE PURPOSES ONLY. DIMENSIONS AND ELEVATIONS SHOWN ARE APPROXIMATE.
2. IN PLANT CONVEYORS HAVE 60' SPANS, AND USE TWO TYPE 2 PIERS ON ON SUPPORTS OVER 20' TALL.
3. PRODUCT TRANSFER CONVEYORS USE 40' SPANS

NO.	REVISION	DRAWN	CHCK'D	DATE
1	ADDED QUATERNARY CRUSHING CIRCUIT	SVG		2-7-23

NOTE:
1. Equipment items, structural steel, and foundations outlined on this drawing are designed for a specific application and are not to be relocated, modified, or used for any other application without the consent of Steel Systems Installation.
2. Never service equipment while in operation nor operate without all guards in place.
3. This print is loaned subject to return upon demand and is not to be used in any way detrimental to the interests of Steel Systems Installation.

Steel Systems Installations
AGGREGATE PROCESSING AND MATERIAL HANDLING SYSTEMS
P.O. BOX 307
175 NORTH LIME STREET
QUARRYVILLE, PA 17566
PHONE (717) 786-1264
FAX (717) 786-2763
WWW.STEELSYSTEMS.COM

DRAWING TITLE: AIR QUALITY DRAWING - FINISH PLANT
LAUREL HILL - NEW PLANT
GENERAL LAYOUT

PROJECT OWNER: LAUREL S&G
PROJECT DESCRIPTION: PLANT MODIFICATIONS

DATE:	DRAWN BY:	SSI JOB NO.
2-7-2023	SVG	876
SCALE: 1" = 50'	CHECKED BY:	SSI DWG NO. SSI-876-13E-R1

Client#: 32334 LAURSAN

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 1/09/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Marla K Mayles	
CBIZ Insurance Services, Inc. 44 Baltimore Street Cumberland, MD 21502 301 777-1500	PHONE (A/C, No, Ext): 301 784-2363	FAX (A/C, No):
	E-MAIL ADDRESS: mmayles@cbiz.com	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Travelers Property Casualty Co of Ameri	25674
INSURER B : Rockwood Casualty Insurance Company	35505
INSURER C : RSUI Indemnity Company	22314
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Laurel Sand & Gravel, Inc.
PO BOX 850
Laurel, MD 20725-0850

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X BI/PD Ded: $10,000 GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			Y6300152L504TIL22	12/31/2022	12/31/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$1,000,000 $300,000 $5,000 $1,000,000 $2,000,000 $2,000,000 $
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY			8101L5541222214G	12/31/2022	12/31/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$1,000,000 $ $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $0			CUP4K1300832214	12/31/2022	12/31/2023	EACH OCCURRENCE AGGREGATE $	$15,000,000 $15,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC700908	12/31/2022	12/31/2023	X PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000
A	Contr Equipment			QT6600E360101	12/31/2022	12/31/2023	$100,000 lesed/rented	
C	Excess Liability			NHA100376	12/31/2022	12/31/2023	$5,000,000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
CBIZ Insurance Services, Inc.

LSG Sandstone

Laurel Sand & Gravel, Inc.

Chemwatch Hazard Alert Code: **4**

Chemwatch: **5366-65**
Version No: **2.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **24/06/2020**
Print Date: **24/06/2020**
S.GHS.USA.EN.RISK

SECTION 1 IDENTIFICATION

Product Identifier

Product name	LSG Sandstone
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Used in the building industry.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Laurel Sand & Gravel, Inc.**
Address	6110 Frost Place, Suite 150 Laurel MD 20707 United States
Telephone	+1 301 953 7650
Fax	+ 301 470 4075
Website	Not Available
Email	Not Available

Emergency phone number

Association / Organisation	**Laurel Sand & Gravel, Inc**
Emergency telephone numbers	+1 301 953 7650
Other emergency telephone numbers	Not Available

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	1	
Body Contact	1	
Reactivity	0	
Chronic	4	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Carcinogenicity Category 1A, Specific target organ toxicity - repeated exposure Category 2 **LIMITED EVIDENCE*

Label elements

Hazard pictogram(s)	
SIGNAL WORD	**DANGER**

Hazard statement(s)

H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Page 1 continued...

**LIMITED EVIDENCE*

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume.
P281	Use personal protective equipment as required.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	>90	sandstone
Not Available		comprising sand grains, feldspar, lime, mica
Not Available		and clayey matter
Not Available		and containing
14808-60-7	>1	silica crystalline - quartz

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor. ▸ If dust is inhaled, remove from contaminated area. ▸ Encourage patient to blow nose to ensure clear breathing passages. ▸ Ask patient to rinse mouth with water but to not drink water. ▸ Seek immediate medical attention.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Continued...

Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. ▸ **CAUTION**: Advise personnel in area. ▸ Alert Emergency Services and tell them location and nature of hazard. ▸ Control personal contact by wearing protective clothing.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Keep dry. ▸ Store under cover. ▸ Protect containers against physical damage. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	None known

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	silica crystalline - quartz	Cristobalite, Quartz, Tridymite, Tripoli	0.05 mg/m3	Not Available	Not Available	Ca See Appendix A
US OSHA Permissible Exposure Levels (PELs) - Table Z3	silica crystalline - quartz	Silica: Crystalline Quartz	10 / (% SiO2 + 2) mg/m3 / 250 / (%SiO2 +	Not Available	Not Available	(Name ((Respirable) ((f) This standard applies to any operations or sectors for which the respirable crystalline silica standard, 1910.1053, is stayed or is otherwise not in effect.))); (TWA mppcf (((b) The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those

Continued...

			5) mppcf			instances in which other methods have been shown to be applicable.))); (TWA mg/m3 (((e) Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics: Aerodynamic diameter (unit density sphere), Percent passing selector 2, 90 | 2.5, 75 | 3.5, 50 | 5.0, 25 | 10, 0. The measurements under this note refer to the use of an AEC (now NRC) instrument. The respirable fraction of coal dust is determined with an MRE; the figure corresponding to that of 2.4 mg/m3 in the table for coal dust is 4.5 mg/m3K.)))
US OSHA Permissible Exposure Levels (PELs) - Table Z1	silica crystalline - quartz	Silica, crystalline, respirable dust: Quartz	Not Available	Not Available	Not Available	see 1910.1053; (7) See Table Z-3 for the exposure limit for any operations or sectors where the exposure limit in § 1910.1053 is stayed or is otherwise not in effect.
US ACGIH Threshold Limit Values (TLV)	silica crystalline - quartz	Silica, crystalline -α-quartz and cristobalite (Inhalable fraction and vapor)	0.025 ppm / 0.025 mg/m3	Not Available	Not Available	Pulm fibrosis; lung cancer

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
silica crystalline - quartz	Silica, crystalline-quartz; (Silicon dioxide)	0.075 mg/m3	33 mg/m3	200 mg/m3

Ingredient	Original IDLH	Revised IDLH
sandstone	Not Available	Not Available
silica crystalline - quartz	25 mg/m3 / 50 mg/m3	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. ▸ Protective gloves eg. Leather gloves or gloves with Leather facing Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. ▸ polychloroprene. ▸ nitrile rubber. ▸ butyl rubber.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

Continued...

* - Negative pressure demand ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

If inhalation risk above the TLV exists, wear approved dust respirator.
Use respirators with protection factors appropriate for the exposure level.

- Up to 5 X TLV, use valveless mask type; up to 10 X TLV, use 1/2 mask dust respirator
- Up to 50 X TLV, use full face dust respirator or demand type C air supplied respirator
- Up to 500 X TLV, use powered air-purifying dust respirator or a Type C pressure demand supplied-air respirator
- Over 500 X TLV wear full-face self-contained breathing apparatus with positive pressure mode or a combination respirator with a Type C positive pressure supplied-air full-face respirator and an auxiliary self-contained breathing apparatus operated in pressure demand or other positive pressure mode
- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Grey coloured ore, solid, no odour; insoluble in water.

Physical state	Divided Solid	**Relative density (Water = 1)**	2.70
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Applicable
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Applicable	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Applicable
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Applicable
Vapour pressure (kPa)	Not Applicable	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Applicable
Vapour density (Air = 1)	Not Applicable	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures. Effects on lungs are significantly enhanced in the presence of respirable particles.
Ingestion	Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract

Continued...

Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
Chronic	Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Crystalline silicas activate the inflammatory response of white blood cells after they injure the lung epithelium. Chronic exposure to crystalline silicas reduces lung capacity and predisposes to chest infections. Overexposure to the breathable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity and chest infections. Repeated exposures in the workplace to high levels of fine-divided dusts may produce a condition known as pneumoconiosis, which is the lodgement of any inhaled dusts in the lung, irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50000 inch) are present. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Inhalation of dusts containing crystalline silicas may lead to silicosis. Effects are cumulative, with scarring, impairment of breathing, emphysema, and restriction and obstruction of lung function.

LSG Sandstone	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
sandstone	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
silica crystalline - quartz	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: =500 mg/kg[2]	Not Available
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

sandstone	No data of toxicological significance identified in literature search.
SILICA CRYSTALLINE - QUARTZ	**WARNING:** For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: **CARCINOGENIC TO HUMANS** The International Agency for Research on Cancer (IARC) has classified occupational exposures to **respirable** (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease. Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours. * Millions of particles per cubic foot (based on impinger samples counted by light field techniques). NOTE : the physical nature of quartz in the product determines whether it is likely to present a chronic health problem. To be a hazard the material must enter the breathing zone as respirable particles.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✗	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✓
Mutagenicity	✗	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

LSG Sandstone	**ENDPOINT**	**TEST DURATION (HR)**	**SPECIES**	**VALUE**	**SOURCE**
	Not Available	Not Available	Not Available	Not Available	Not Available
sandstone	**ENDPOINT**	**TEST DURATION (HR)**	**SPECIES**	**VALUE**	**SOURCE**
	Not Available	Not Available	Not Available	Not Available	Not Available
silica crystalline - quartz	**ENDPOINT**	**TEST DURATION (HR)**	**SPECIES**	**VALUE**	**SOURCE**
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Continued...

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Management Authority for disposal. ▸ Bury residue in an authorised landfill. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

SANDSTONE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

SILICA CRYSTALLINE - QUARTZ IS FOUND ON THE FOLLOWING REGULATORY LISTS

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1 : Carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US ACGIH Threshold Limit Values (TLV)
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Levels (PELs) - Table Z1
US OSHA Permissible Exposure Levels (PELs) - Table Z3
US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US OSHA Permissible Exposure Limits - Annotated Table Z-3 (Spanish)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Continued...

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	Yes
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations

US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - CALIFORNIA PROPOSITION 65 - CARCINOGENS: LISTED SUBSTANCE

Silica, crystalline (airborne particles of respirable size) Listed

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (silica crystalline - quartz)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Revision Date	24/06/2020
Initial Date	24/06/2020

SDS Version Summary

Version	Issue Date	Sections Updated
2.1.1.1	24/06/2020	Chronic Health, Classification, Name

Continued...

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

The information in this SDS is believed to be current and accurate. No warranty, expressed or implied, of merchantability, fitness or otherwise is made. Laurel Sand & Gravel, Inc. is not responsible for the condition, performance, handling, storage, or disposal of the material after the buyer takes title by pickup or deliver to the buyer's jobsite by Laurel Sand & Gravel, Inc.

end of SDS

EQUIPMENT > CRUSHING AND SCREENING

< CONE CRUSHERS

Sandvik CH660

Our Sandvik CH660 cone crusher has a hydraulically supported main shaft that is supported at both ends. It also has a robust crusher design, adjustable eccentric throw, and a constant intake opening. This crusher is suitable for a high-capacity secondary application or a high-reduction tertiary or pebble-crushing application. Achieve high performance by selecting the Sandvik crushing chamber that's right for your application.



ADVANTAGES

- Hydroset™ system provides safety and setting-adjustment functions
- ASRi™ automatically adapts crusher to feed conditions
- Unibody mainframe ensures optimal strength and less maintenance
- Lifting from above minimizes risks and allows for safer maintenance

TECHNICAL DATA

Nominal capacity	78 - 543 mtph
Max feed size	45 - 235 mm
Engine power	315 kW
Closed side setting (CSS) range	8 - 51 mm
Eccentric throw range	18 - 50 mm
Mantles (inner liners)	A/B/HC/EF/HC
Concaves (outer liners)	EC, CX, C, MC, M, MF, I
Weight	26760 kg
Lubrication tank	Standard
Offline lubrication filtration unit	Optional

HEAVY DUTY INCLINED VIBRATING SCREENS

DEISTER HEAVY DUTY INCLINED VIBRATING SCREENS

With rising production costs, more rigid specifications and stiffer competition, it takes the best screening equipment to meet the challenge – big capacity, cost cutting, hard working Deister screens – of the proper size and type, and designed specifically to fit your application. Whatever the specification or material type, Deister engineers will find the right solution for you.

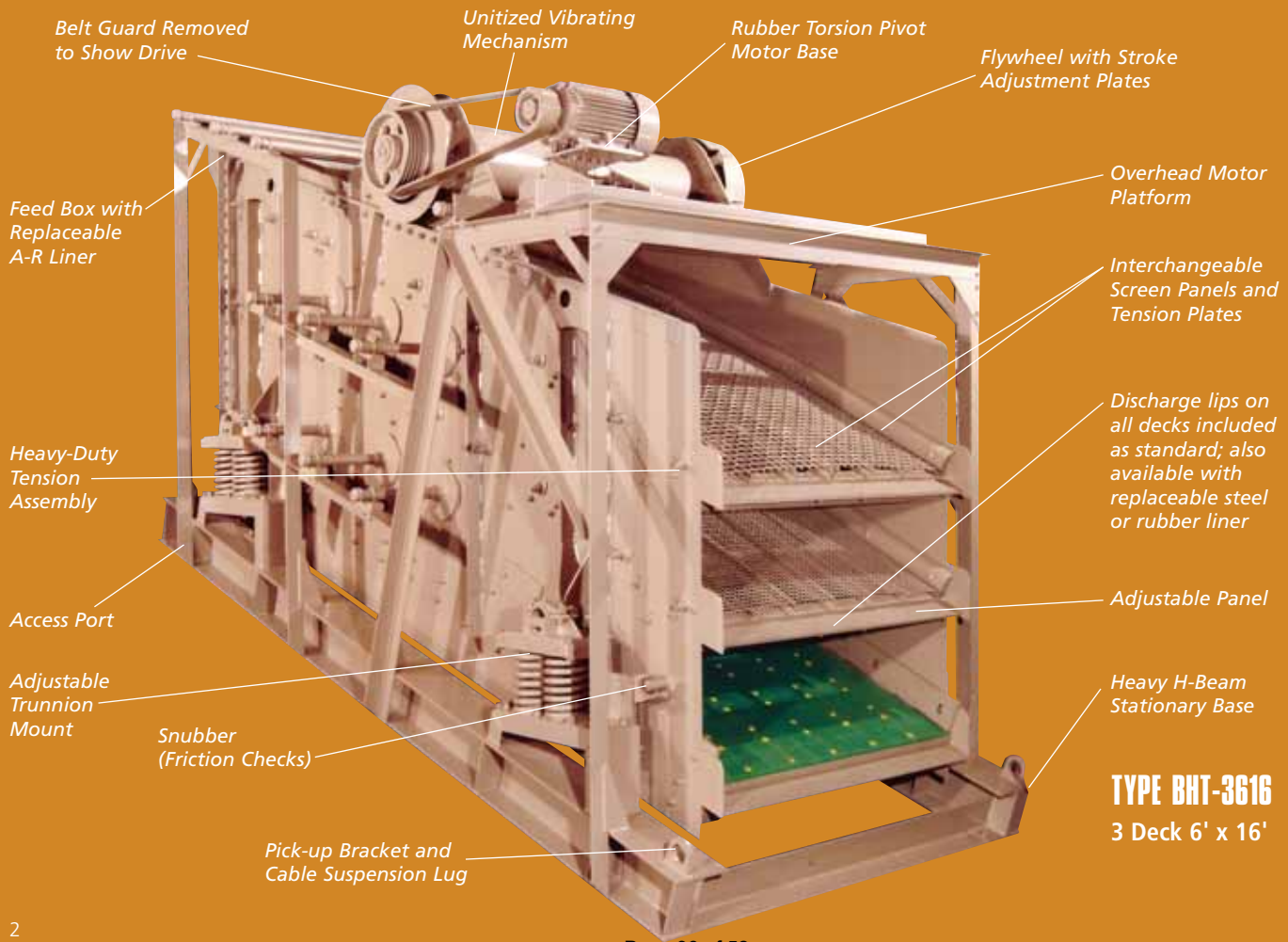
Ruggedly built and requiring minimal maintenance, Deister screens deliver unmatched precision performance day after day and year after year. *Extra protection* is provided at all vital points, and quantity-controlled oil lubrication ensures long bearing life – and dependable production even under adverse operating conditions, or when handling the most abrasive material types.

And, Deister screens are backed by a follow-through parts and service policy without equal – for Deister top management is personally interested in the continued profitable operation of every Deister screen.

Deister Vibrating Screens have many outstanding features which are standard on each unit:

Note: Throughout this bulletin, many of the products have belt and flywheel guards removed to show the drives

TYPE HT AND BHT SIZES UP TO AND INCLUDING 16' MODELS



TYPE BHT-3616
3 Deck 6' x 16'

Standard Equipment

- Oil lubricated vibrating mechanism
- Steel coil spring suspension system
- Snubbers (friction checks)
- Pick-up brackets and cable suspension lugs
- "Automatic" spring-tension screen cloth tensioning device
- Tension plates of exclusive design
- Interchangeable screen panels
- Bolted construction for easy replacement of wear parts
- Access ports
- Discharge lips
- Removable back plates, or rubber flaps, completely seal feed end
- Adjustable throw
- Sideplates reinforced with ⅝" x 3½" vertical braces (7/16" thick sideplates standard on 3', 4' & 5' wide models; ⅜" thick side plates standard on 6', 7', 8' & 10' wide models)

Oil Level Gauge
Used on most units with mechanism between decks.

Optional Equipment

- Wide-flange H-beam base
- Feed box
- Oil filtration system
- Spring covers
- Snubber guards
- Motor mount, V-belt drive, and guard
- Spray pipe holes
- Spray pipe equipment
- Turbo washer troughs
- Horizontal sub-base
- Dust enclosure
- Ball tray decks
- Heated decks
- Extra Heavy Duty (XH) Models
- Rubber coating on exposed surfaces
- Tension wedges for screen cloth tensioning
- Rubber splash curtain
- A-R steel, rubber or urethane wear liners
- Rubber- or urethane-covered tension plates
- Manganese and A-R steel wear plates for tension plates

Explanation of Model Letters

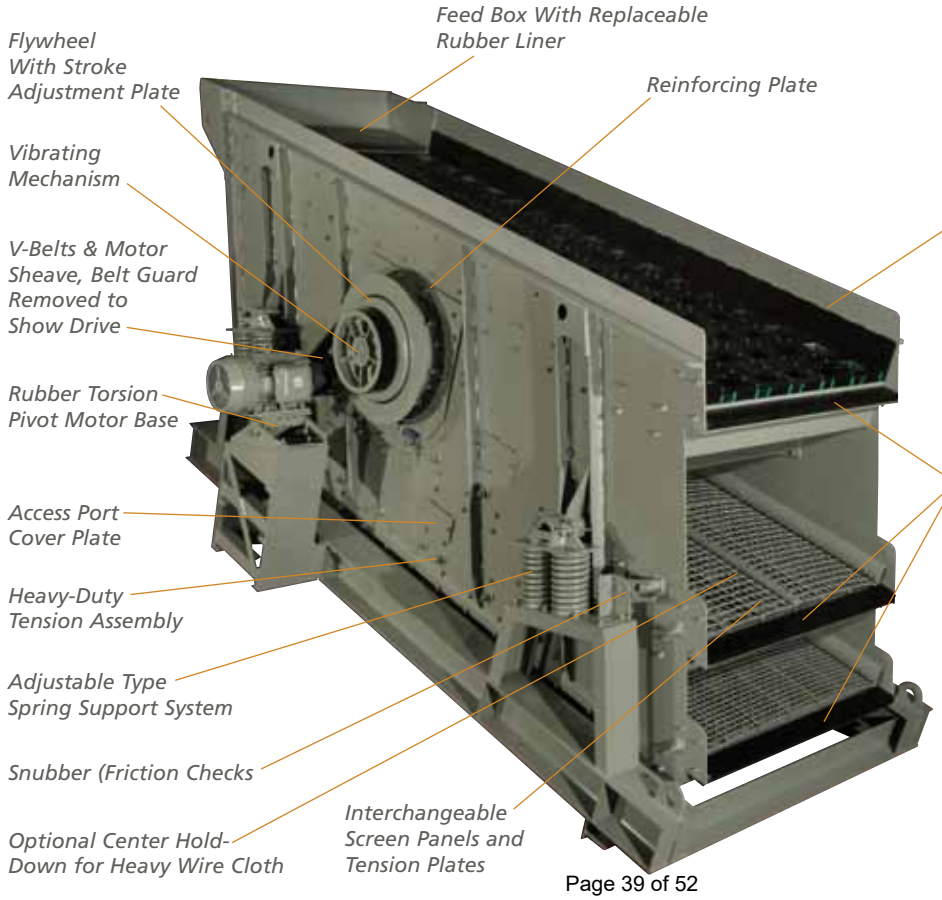
B	H-Beam Base
H	Heavy Duty Inclined
T	Top Mounted Vibrating Mechanism
M	Middle Vibrating Mechanism
CS	Cable Suspended Unit
XH	Extra Heavy
P	Portable Plant Type

Explanation of Model Numbers

FIRST NUMBER	Number of Decks
SECOND NUMBER	Width in Feet
THIRD & FOURTH NUMBERS	Length in Feet

Example: BHM-3820

H-Beam Base; Inclined; Middle Vibrating Mechanism; Three Decks, 8' wide x 20' long.



TYPE HM AND BHM

TYPE BXHM-3616

3 Deck 6' x 16'

DEISTER UNITIZED LONG-LIFE VIBRATING MECHANISM

An outstanding feature of the **Type T** Deister Vibrating Screen is the exclusive "unitized" vibrating mechanism mounted on top of the vibrating frame.

The entire vibrating mechanism is a precision constructed, jig assembled unit, which incorporates all the advantages of a two-bearing vibrating mechanism and runs in a bath of oil with internal and external labyrinth seals to prevent loss of oil and entrance of dirt.

The lower portion of the shaft casing tube serves as the oil reservoir across its entire length. The oil is agitated by slingers on the eccentric shaft and constantly envelops the spherical roller bearings and all moving parts. It should never be necessary to add oil to the mechanism, with only periodic oil changes recommended. Renewable sleeves between the inner race of the bearing and the shaft prevent wear on the shaft. Should wear on the sleeve occur, even after years of rugged service, the original close "factory tolerances" can be easily restored by the simple replacement of the renewable sleeve.

Since 1926, Deister has always designed its vibrating mechanisms with the bearing a slip fit on the replaceable sleeve, and a press fit in the housing. The replaceable sleeve is a slip fit on the shaft. Slip fits assure more even wear on the bearings and sleeves – providing longer life and easier replacement.

The vibrating mechanism is demountable and readily interchangeable. Where a number of the same size screens are in operation, the "unitized" mechanism can be unbolted and attached to another frame without disturbing any of the internal clearances of the shaft and bearings. The large diameter shaft casing tube, welded or bolted to ⅝", ¾", or 1" thick housing plates, maintains proper alignment of the entire assembly.

Stroke (throw) adjustments can be made in the field by simply adding or removing counter-weight plates to/ from the unbalanced fly wheels.

Slingermist Lubrication

Deister's exclusive slingermist lubricating system makes it possible for Deister screens to operate at higher speeds and at lower operating temperatures. This system is the ultimate in oil lubrication of anti-friction bearings and assures safe operating temperatures under extremely hot climatic conditions where it, in effect, acts as an oil cooling system.

Type M Vibrating Mechanism

The vibrating mechanism is located between the decks on all **Type M** units, regardless of size. Since it is not economically feasible nor practical from an engineering standpoint, the vibrating mechanism is located between decks on all units longer than 16' or on most units that are 7', 8', or 10' wide.

The vibrating mechanism mounted between decks incorporates all the features of the Type T top-mounted mechanism, with the exception of the "unitized" feature. The steel tube shaft casing is protected by the standard ⅜" thick steel-backed rubber tack-welded to the tube, or a replaceable steel shield or thicker rubber when required.

The **Type M** mechanism produces a uniform true circle movement of the vibrating frame and screening surface.

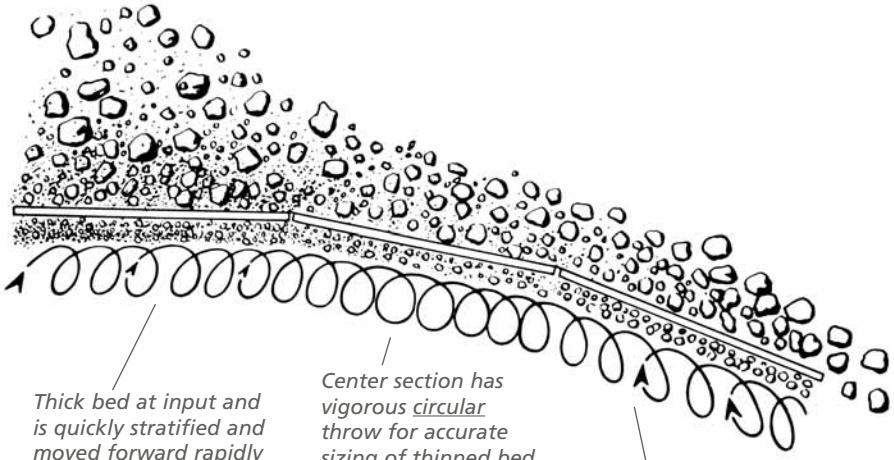
Dual vibrating mechanisms are standard on 2 and 3 deck, 8' x 20'; and on 2 deck, 8' x 24' screens. Triple vibrating mechanisms are standard on 3 deck 8' x 24' and larger units. The two shafts of the dual mechanism are each individually motor driven while the triple mechanism is driven on the feed end and discharge end shafts. Timing belts on the dual and triple mechanisms prevent any non-synchronous motion.

DEISTER OPPOSED ELLIPTICAL THROW

The **Type T** Vibrating Screens feature Deister's powerful positive opposed elliptical throw action, which permits the screens to be operated at a flatter screening angle by controlling the movement of material on the screen for the greatest speed and efficiency in sizing. Note from the diagram below that the path of travel at any point on the surface of the screen cloth nearer the feed end takes the form of an ellipse which revolves and leans toward the discharge end of the screen. As the discharge end is approached and the surface of the cloth takes a steeper slope, this elliptical path, while revolving in the same direction as before, leans back toward the feed end of the machine.

The small arrows alongside the ellipse show graphically the accelerating or forward conveying motion on the flatter sections of the screen and the retarding effect, or backward thrust, of the same force on the steeper sections.

To further improve the efficiency of Deister **Type T** Screens, adjustable slope panels are provided as standard equipment with the unit. This feature permits the slope of the screen cloth panels to be independently adjusted at both the feed and discharge ends in order to increase or decrease the screening angle. If it is desirable to accelerate the movement of the feed coming onto the screen in order to thin out the bed and provide even quicker stratification, the adjustable panel permits the required increase of slope. If it has been found that at the discharge end of the screen, where the bed has thinned out, that the particles have a tendency to pass over the screen a little too rapidly, travel at the discharge end can be slowed or retarded by decreasing the slope of the end panel.



Thick bed at input and is quickly stratified and moved forward rapidly to spread heavy bed.

Center section has vigorous circular throw for accurate sizing of thinned bed.

Holding action to retain near size material for maximum grading.

TYPE-BHT

Automatic spring tension

Access Ports

Access Ports (hand-holes) are provided on multiple deck units to permit removal and replacement of any one screening surface without disturbing the other decks and eliminating the necessity of a person or persons between decks when "hold-downs" are not used. These ports with doors removed, also provide the operator easy inspection of the screening surface to check deck wear, possible blinding or plugging, depth of bed, or any matters connected with the operation of that particular deck.

These oval-ended rectangular openings, 5"x 10", are reinforced with ⅝"-thick 7"x 13" steel frames welded to the sideplates. Easily removed plates cover the openings.

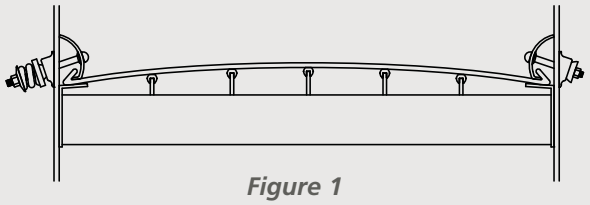


Figure 1

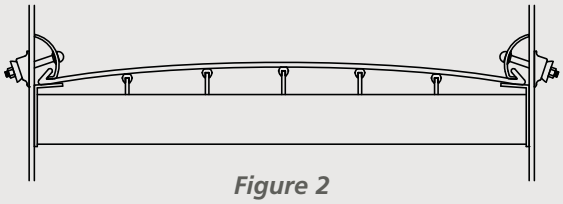


Figure 2

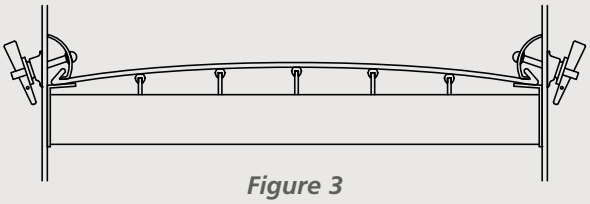


Figure 3

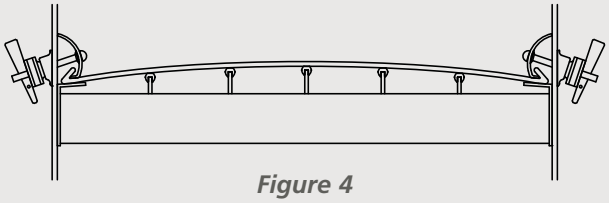


Figure 4

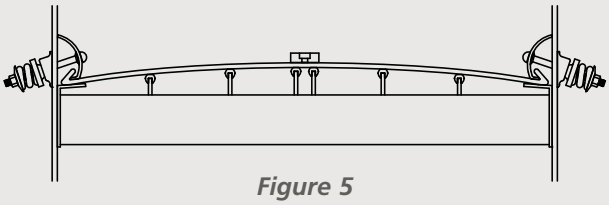


Figure 5

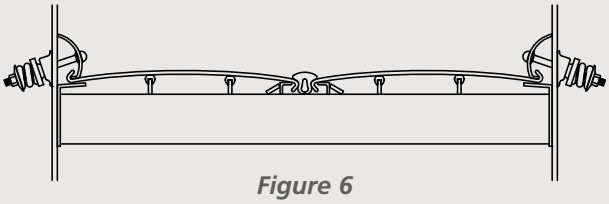


Figure 6

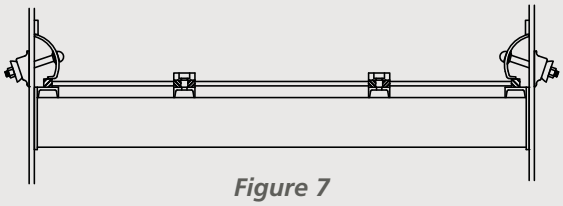


Figure 7

DECK SURFACE TENSION SYSTEMS

Figure 1: Standard "automatic" spring tension assembly for 3', 4', 5' & 6' wide models. Powerful coil tension springs and tension plates hold the screen cloth over a series of support bars arranged in an arc. Support spacing is governed by size of opening and shape of screening media. As the screen cloth wire wears thin or becomes stretched, the springs automatically keep the cloth in constant tension, thereby preventing the whipping or flexing of the cloth that causes wire breakage. The side opposite the spring is held by a half-sphere cast iron nut with indentations fitting the lugs on the steel casting welded to the sideplate, which prevent the nut from backing off.

Ledge angles are formed to 94° to provide the correct interlocking fit between tension plate, screen cloth hook strip, and the supporting ledge angle – to prevent the pinching or "rocking-up" of the screen cloth in the hook-strip area, which causes premature breakage.

Fewer tension assemblies are required due to the stronger curved tension plates. The method shown in Figure 1 is recommended for medium and fine screen cloth or lightweight perforated plate.

All assemblies (Figures 1 through 7) are interchangeable, as holes and castings in sideplates are identically located.

Figure 2: Standard heavy duty tension assembly for heavy wire cloth or perforated plate with hook strips.

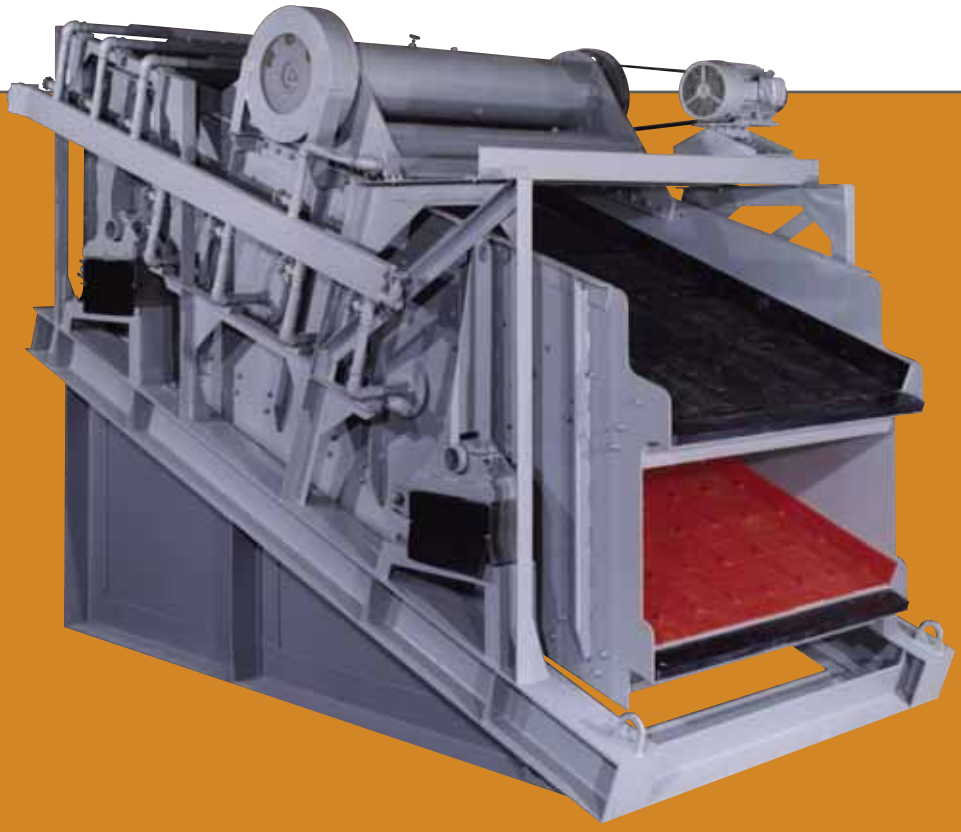
Figure 3: Optional tension wedge assembly – interchangeable with all assemblies (Figures 1 – 7) by substitution of forged slotted bolt, spherical washer, and wedge, using the same holes and steel casting in sideplate as above, with same tension plate.

Figure 4: Optional tension wedge and "rubber spring" assemblies combine advantages of both types illustrated in Figures 1 and 3; and same specs as Figure 3 with addition of "rubber spring." Wedges held firmly in place by spring action with constant attention unnecessary.

Figure 5: Standard "automatic" spring tension assembly at both side plates with dual center support bars and center hold down.

Figure 6: Standard "automatic" spring tension assembly for 7', 8' & 10' wide units – double crown with split screen cloths – downward hooks in center with molded rubber (as shown) or steel "bolted-type" cover strip – provides easier replacement, even flow of material over entire width of unit, better tensioning capability giving longer screen life. Standard heavy duty (Figure 2) or tension wedge (Figures 3 & 4) can also be used with this type construction.

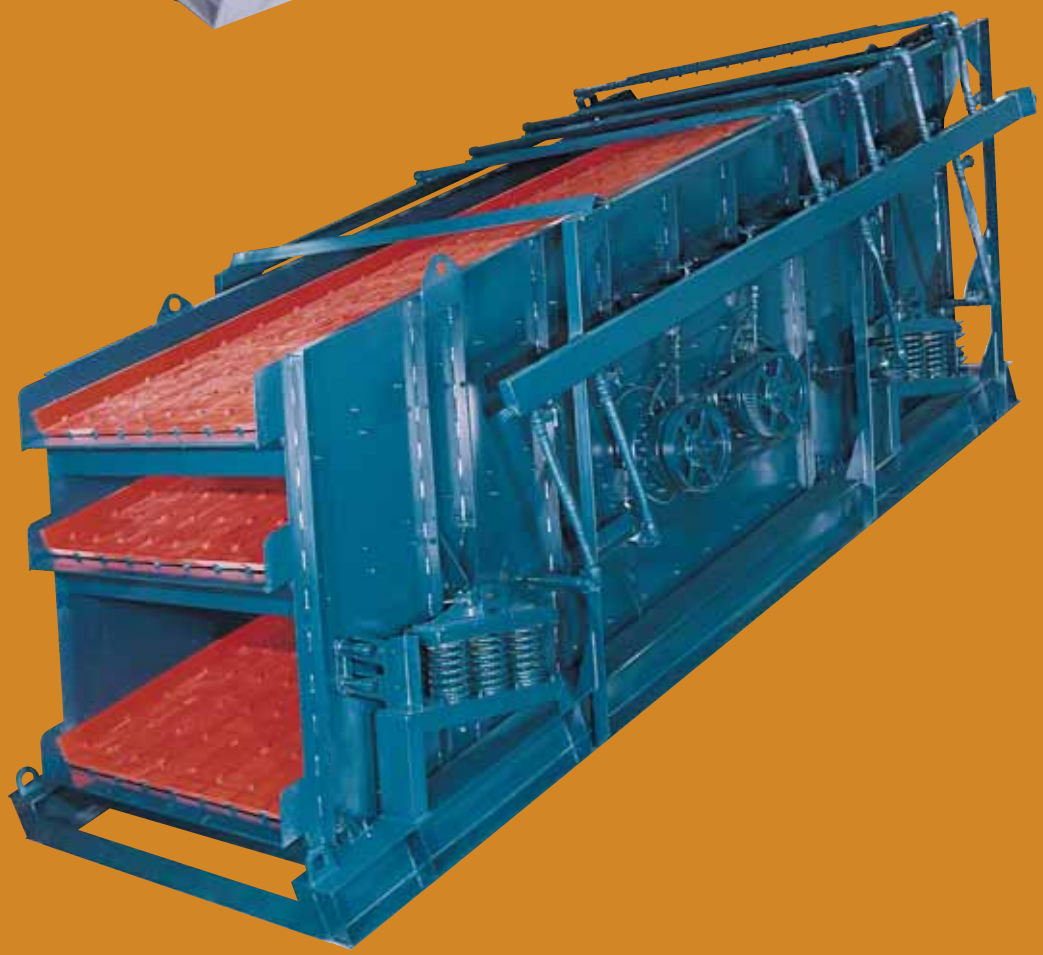
Figure 7: Standard heavy duty tension assembly (See Figure 2) for use with profile wire panels. Standard hold-down strips. Standard tension plates are available with abrasion-resistant rubber wear surface, ¼" x 1¼" manganese steel wear surface or with A-R steel formed wear plates welded to tension plate.



TYPE BHT-2716

2 Deck 7' x 16'

Rinsing Screen with modular rubber on top deck and modular urethane on the bottom deck; spring covers; and horizontal sub-base.



TYPE BHM-3820

3 Deck 8' x 20'

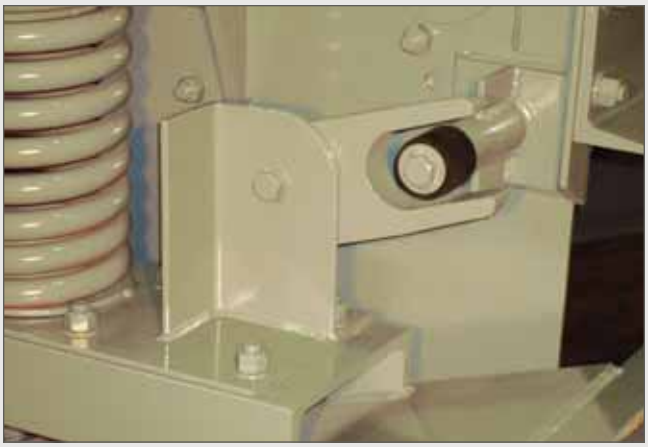
Rinsing Screen with dual vibrating mechanisms; and modular urethane.

Side Motor Mount

The side-mounted motor drive consists of a motor platform bolted to the H-beam base, Deister rubber torsion pivot motor base, wide-band V-belt, motor sheave, and belt and flywheel guard. The motor(s) may be mounted for either right-hand or left-hand drive.

Overhead Motor Mount

The overhead motor drive consists of a motor support mounted on the H-beam base, adjustable motor platform, Deister rubber torsion pivot motor base, V-belts, motor sheave and belt guard. The motor may be mounted for either right-hand or left-hand drive and can be changed at any time. Where necessary, the platform can have an overhanging offset to either side. The driven sheave is bored eccentrically to help compensate for the vibrating action. See additional illustration on page 5.



Snubber

Snubbers (friction checks) are an important part of any "base-mounted" type unit, as can be seen by illustrations on this and other pages. The spring-loaded horse-shoe-shaped arm comes in contact with the pin extension only when the vibrating frame passes through the critical speed area on startup and shutdown. The snubbing action prevents the live frame from hitting chutes or any stationary structural members during this period, in addition to dampening possible excessive vibration transmission at the same time.

Tension Wedge

The Deister Tension Wedge and "Rubber-Spring" screen cloth tensioning device offers the advantage of quick tightening or easy release, while providing constant tension through the action of the molded rubber spring.

Cable Suspension from H-Beam Base

Steel cables or rods can be attached directly to the lugs on the H-beam base. The effectiveness of the spring mounts in conjunction with the base eliminates the need for overhead suspension springs. See illustration on page 2.

TYPE HM-2620

2 Deck 6' x 20'

Heavy duty tension assemblies; replaceable A-R steel wear plates on both decks; discharge lips, and feed box; reinforced tension plates; heavy duty center hold-down on top deck

Snap-On Rubber Center

Deister "snap-on" molded rubber center hold-down strip generally used on most 7', 8' & 10' wide screen cloth applications, eliminating the bolted cover strip.

TYPE XHM-4824

4 Deck 8' x 24'

Extra heavy duty; triple-shaft vibrating mechanism; top deck for bolt-down media

Spray Pipe Equipment

Deister screens can be equipped with specially designed spray equipment – stationary supporting brackets and 2" pipe headers fitted with threaded spray nozzles, and complete manifold systems. The supporting framework is welded to the H-beam base, with the individual headers resting on small UHMW blocks to allow for height adjustment. Where the headers pass through the sideplates between decks, the round hole in the sideplate is reinforced by a ⅝" thick steel ring welded to the plate. The opening is sealed by a polyurethane flange that fits over the spray pipe and is placed against the reinforcing ring.

The brass, steel or urethane nozzles fan out water jets into sheets, which provide broad bands entirely across the screen, giving complete coverage under each header. The nozzles are "staggered" in order to provide two solid sheets of water per header.

Complete manifold systems including all piping, fittings, and individual brass gate valves for each header, mounted on the H-beam base, can be furnished as optional equipment.

Spray Pipe Holes

Spray pipe holes can be provided for operator installation of spray pipes or for possible future addition of spray equipment. The holes in the sideplate are 8" in diameter with a ⅝"-thick steel ring 12" in diameter welded to the sideplate. This ring may be drilled and tapped to accommodate capscrews fastening a steel cover-plate until future installation of spray pipe equipment.

TurboWasher

The Deister TurboWasher screen is designed for maximum efficiency in screening fine materials. The TurboWasher incorporates V-shaped troughs in the deck separated by screen media panels.

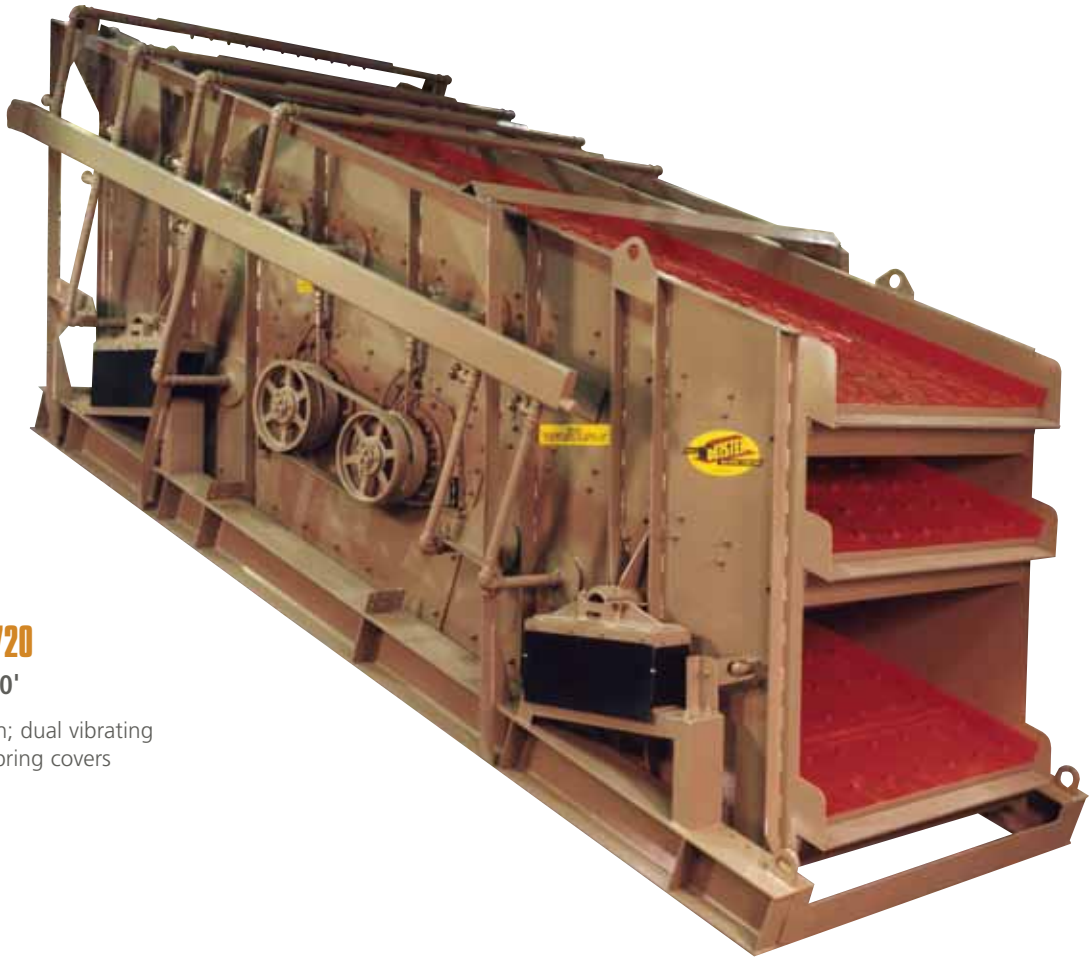
Water sprays mounted above these repulping troughs increase the mixing and scrubbing action, releasing additional fines. These are then carried through the screen section immediately following the TurboWasher trough.

Horizontal Sub-Base

For ease of installation and/or to provide a collecting hopper for undersize material, a horizontal sub-base can be furnished – either "open" (without sides or back) or totally enclosed types. It is constructed of 8"x 8"x ½" structural angle welded framework, either welded or bolted to the standard wide-flange H-beam base, depending on customer preference or over-the-road shipping height limitations.

If enclosed, the backplate can be installed vertically or at an angle. If angled, it is constructed of ⅜"-thick A-R steel. The standard sides are 10-gauge steel.

See page 7 also.



TYPE BHM-3720

3 Deck 7' x 20'

Washing Screen; dual vibrating mechanisms; spring covers

TYPE BHM-2820

2 Deck 8' x 20'

Equipped with dual vibrating mechanisms; heated bottom deck

TYPE BXHM-2616-G

2 Deck 6' x 16'

Extra Heavy Duty Screen; equipped with bolt-down rubber perforated plate; adjustable grizzly section

TYPE BHM-3824D-03T

3-⅓ Deck 8' x 24'

Equipped with triple shaft vibrating mechanism; combination modular rubber and side-tension screen cloth on top deck; steeper incline on bottom deck

ENCLOSED SCREENS

Where dust or noise is a problem, or where regulations require such control, Deister Vibrating Screens are available in partially or fully enclosed models. The removable enclosure panels or covers are held firmly on the stationary frame by spring-loaded knock-around fasteners, which are easily removed in seconds for access to any part of the screen. Enclosed units can be furnished with or without the totally enclosed horizontal sub-base.

TYPE BHM-3820-E

3 DECK 8' x 20'

Fully Enclosed Screen equipped with dual vibrating mechanism

TYPE BHM-3824-03T-E

3 Deck 8' x 24'

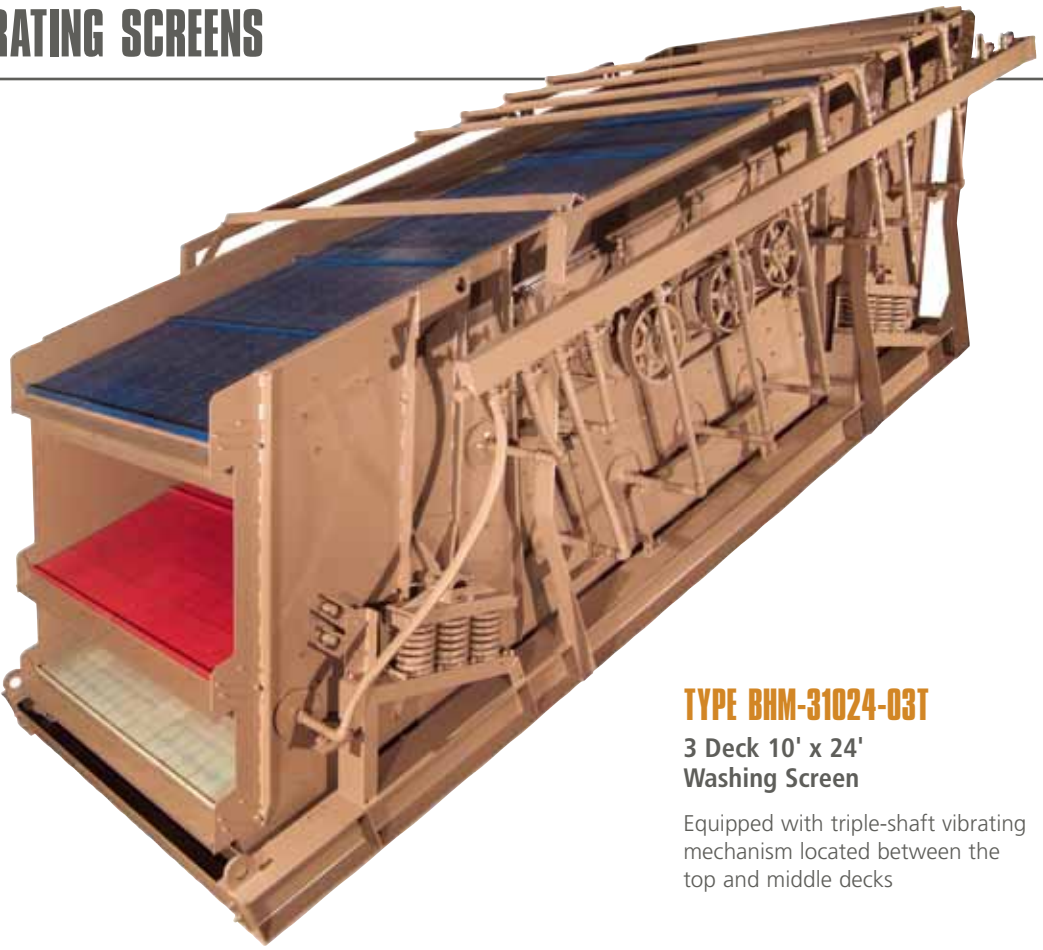
Fully Enclosed Screen equipped with rubber canopy-style dust enclosure; triple shaft vibrating mechanism

Ball Tray Decks

The ball tray is used as a means of reducing or eliminating blinding of the meshes in the screen cloth, usually in the bottom deck. It consists of a wire cloth panel or perforated plate with relatively large openings placed beneath the screen cloth, and the space between divided into compartments for the purpose of carrying resilient rubber cleaning balls. The vibration of the screen causes the balls to bounce up against the underside of the screen cloth, driving out the near-size irregular shaped particles wedging in apertures, as well as creating a secondary vibration in the screen cloth that prevents fine particles from sticking and building up on the wires. In most cases, a ball tray will be effective with material containing as much as 5% moisture.

TRIPLE SHAFT VIBRATING SCREENS

As the vibrating frame gets larger, a third shaft allows for smaller bearings to be used and higher operating speeds attained, due to the extra set of bearings. This means that the screening capacity and efficiency per square foot of the larger machines is comparable to the smaller machines.



TYPE BHM-31024-03T

3 Deck 10' x 24'
Washing Screen

Equipped with triple-shaft vibrating mechanism located between the top and middle decks

TYPE BHM-31020-03T

3 Deck 10' x 20'
Washing Screen

Equipped with triple-shaft vibrating mechanism located between middle and bottom decks

CAPACITY OF DEISTER VIBRATING SCREENS

The capacity of a vibrating screen is governed by many factors, among which are: type of material, amount of oversize material, undersize material, moisture content, shape of particles, amount of near-size material, percentage of open area of the screening medium, and others. In addition, there are numerous variables which cannot be determined in advance. Non-uniform feed rate, surge loads, changes in crusher settings, and fluctuating moisture content are factors which will affect vibrating screen capacity.

To more accurately determine the size of vibrating screen needed, we recommend using the following three capacity calculations: through-flow tonnage, feed tonnage, and depth of material bed.

For multiple deck units, the screen cloth area for each deck must be figured separately. The deck requiring the greatest area determines the size of screen needed. The screen selected should be large enough to allow for a margin of safety.

1) Through-flow Tonnage Method

To determine the size of screen, obtain screen cloth area (S) needed by dividing the through-flow tonnage (T) by factors A, B, C, D, E & F.

$$S = \frac{T}{A \times B \times C \times D \times E \times F}$$

Factor A – Capacity in TPH passing through 1 sq. ft. of screen cloth based on 94 % efficiency with 25% oversize.

Size of Sq. Opening	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"
Gravel	.90	1.12	1.35	1.55	1.75	2.10	2.42	2.70	2.90	3.20	3.62	4.00	4.80	5.60	6.40	7.90	8.30
Stone	.70	.90	1.10	1.30	1.50	1.75	2.00	2.25	2.45	2.65	3.00	3.35	3.87	4.20	5.40	6.70	7.50
Coal	.54	.69	.85	.97	1.10	1.30	1.51	1.70	1.85	2.00	2.29	2.50	2.90	3.60	4.00	5.00	6.00

Amount of Oversize (per deck)	Factor B	Desired Efficiency	Factor C	Amount of feed less than 1/2 size of opening	Factor D	Wet Screening Size of Opening	Wet Screening Factor E	Deck	Factor F
10%	1.05	70%	2.25	10%	.55	1/32"	1.25	Top	1.00
20%	1.01	75%	2.00	20%	.70	1/16"	1.75	Second	.90
30%	.98	80%	1.75	30%	.80	1/8"	2.00	Third	.80
40%	.95	85%	1.50	40%	1.00	3/16"	2.00		
50%	.90	90%	1.25	50%	1.20	5/16"	1.75		
60%	.86	92%	1.15	60%	1.40	3/8"	1.50		
70%	.80	94%	1.05	70%	1.80	1/2"	1.30		
80%	.65	95%	1.00	80%	2.20	3/4"	1.20		
85%	.50			90%	3.00				
90%	.30			100%					

Note: *Factor C – Slight inaccuracies are seldom objectionable in screening aggregate and perfect separation (100% efficiency) is not consistent with economy. For finished products, 98% efficiency is the extreme practicable limit and 94% is usually satisfactory; while 60% to 75% efficiency is usually acceptable for scalping purposes.*

Factor E – If material is dry, use factor 1.00. If there is water in the material, or if water is sprayed on the screen, use proper factor given above. Wet screening means the use of about 3 to 5 GPM of water per ton of material per hour. Rinsing requires about 1½ to 3 GPM per ton of material per hour.

2) Feed Tonnage Method

S = F x C (S = Screen cloth area F = TPH feed)

C= Square Feet of Screen Surface for each TPH of feed.

Size of Sq. Opening	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/2"	3"	3-1/2"	4"	5"
100 lb/cu.ft. material	.56	.45	.4	.34	.3	.26	.25	.23	.2	.19	.18	.16	.15	.14	.12	.10
Coal	.8	.65	.55	.5	.42	.38	.35	.3	.28	.25	.24	.21	.20	.18	.16	.14

The above areas are approximate for feeds containing up to 60% of oversize and having 50% of the undersize smaller than one-half the screen opening.

3) Depth of Bed Method

In general, depth of bed of material on the screen deck should not exceed 4 times the size of the openings in the screen for materials weighing 100 lb/cu.ft., and 2½ times or 3 times for material weighing 50 lb/cu.ft.

$$D = \frac{T \times K}{5 \times S \times W}$$

D = Depth of material in inches
T = TPH over screen deck
K = Number of cubic feet per ton of material
S = 70 fpm
W = Net width of screen in feet (nominal width minus 6")

Example:

What size vibrating screen is required to handle a feed of 150 TPH of stone from a crusher set at ¾"; and make a ½" and ¼" separation at 94% efficiency?

Crusher Product Sizes

	+⅞	1%	1.5 tons	+½"	61.5 tons	41% oversize on ½" deck
- ⅞	+¾	13%	19.5 tons	- ½"	88.5 tons	59% undersize on ½" deck
- ¾	+⅝	13%	19.5 tons	- ¼"	49.5 tons	33% of 150 tons feed less than ½ size of ½" opening
- ⅝	+½	14%	21.0 tons			
- ½	+⅜	13%	19.5 tons	- ½"	88.5 tons	feed to ¼" deck
- ⅜	+¼	13%	19.5 tons	- ½" + ¼"	39.0 tons	44% of 88.5 tons feed to ¼" deck
- ¼	+⅛	14%	21.0 tons	- ¼"	49.5 tons	through ¼" deck
	- ⅛	19%	28.5 tons	- ⅛"	28.5 tons	32% of 88.5 tons feed to ¼" deck
		100%	150.0 tons			less than ½ size of ¼" opening

1) Through-flow Tonnage Method

To determine the size of screen, obtain screen cloth area (S) needed by dividing the through-flow tonnage (T) by factors A, B, C, D, E & F.

½"	Factor A	(½")	=	1.75
	Factor B	(41%)	=	.95
	Factor C	(94%)	=	1.05
	Factor D	(33%)	=	.86
	Factor E	(1.0)	=	1.00
	Factor F	(top)	=	1.00

¼"	Factor A	(¼")	=	1.10
	Factor B	(44%)	=	.93
	Factor C	(94%)	=	1.05
	Factor D	(32%)	=	.84
	Factor E	(1.0)	=	1.00
	Factor F	(2nd)	=	.90

$$S = \frac{T}{A \times B \times C \times D \times E \times F}$$

$$S = \frac{88.5}{1.75 \times .95 \times 1.05 \times .86 \times 1.00 \times 1.00}$$

$$S = \frac{88.5}{1.5} = 59 \text{ sq. ft.}$$ **USE 5' x 14'**

$$S = \frac{49.5}{1.10 \times .93 \times 1.05 \times .84 \times 1.00 \times .90}$$

$$S = \frac{49.5}{.81} = 61.1 \text{ sq. ft.}$$

2) Feed Tonnage Method

Feed factor to ½" = .4
Feed factor to ¼" = .56

S = F x C
S = 150 tons x .4 = 60 sq. ft.
S = 88.5 tons x .56 = 50 sq. ft. **USE 5' x 14'**

3) Depth of Bed Method

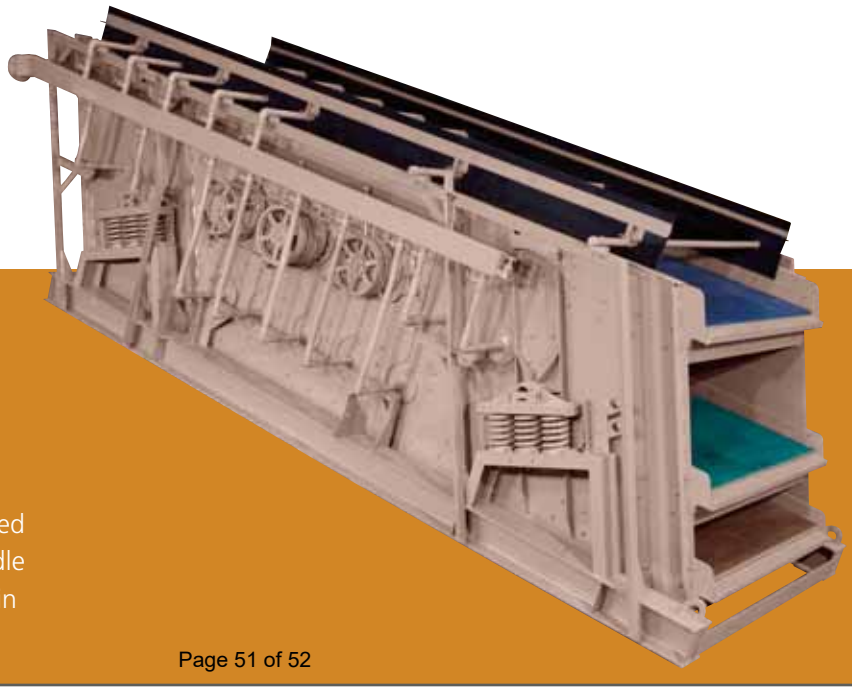
½"	Factor	T	=	61.5
	Factor	K	=	20.0
	Factor	S	=	70.0
	Factor	W	=	4.5

¼"	Factor	T	=	39.0
	Factor	K	=	20.0
	Factor	S	=	70.0
	Factor	W	=	4.5

$$D = \frac{T \times K}{5 \times S \times W}$$

$$D = \frac{61.5 \times 20}{5 \times 70 \times 4.5} = .78"$$ (Less than two times size of opening)

$$D = \frac{39 \times 20}{5 \times 70 \times 4.5} = .495"$$ (Less than two times size of opening)

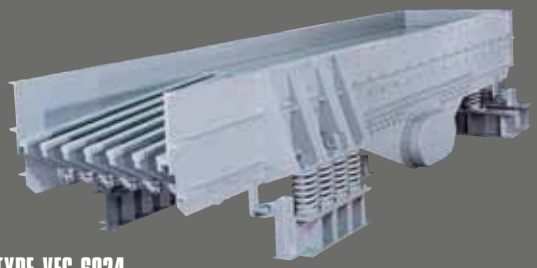


TYPE BHM-3824-03T
3 Deck 8' x 24' Washing Screen

Equipped with triple shaft vibrating mechanism located between the top and middle decks; rubber splash curtain

TYPE BFO-2510

TYPE BTFM3P-3620



TYPE VFG-6024

TYPE USM-2512

TYPE BFO-1814-DW

DEISTER.

ALWAYS FAMILY-OWNED.
ALWAYS CUSTOMER-FOCUSED.

Since 1912, Deister has maintained its tradition as the leading manufacturer of vibrating screens and feeders – through customized solutions and a solid focus on putting the customer first.

Our customer relationships – developed over years of intense support, consultation and service – have resulted in ongoing improvements in the design, engineering and customization of Deister feeding and screening equipment.

Teamwork, leadership and valued customer relationships – that's our standard of excellence since 1912.

DEISTER MACHINE COMPANY, INC.
P.O. Box 1 • Fort Wayne, IN 46801
260-426-7495 • Fax: 260-422-1523
email: info@deistermachine.com
www.deistermachine.com

U.S.A. 5M 2/08

Jan H. Gardner
County Executive

FREDERICK COUNTY GOVERNMENT

DIVISION OF PLANNING & PERMITTING
Department of Development Review

Steven C. Horn, Division Director
Michael L. Wilkins, Director

April 27, 2020

Laurel Sand & Gravel, Inc.
6110 Frost Place
Suite 150
Laurel, MD 20707

Re: 10642 Woodsboro Road
Woodsboro MD 21798
Tax Map 42, Parcel 97
Tax ID #1111281087
Zoning Mineral Mining (MM)
V260007

To Whom It May Concern,

This letter is in response to your zoning verification application submitted on April 16, 2020. In your letter you requested "confirmation from the local zoning authority, that the proposed crushing and screening operation is a permitted use for the property on which it will be installed".

The above referenced property (Property) is currently zoned Mineral Mining (MM) under the Frederick County Zoning Ordinance (Ordinance).

Ordinance Section 1-19-5.250(D) Industrial Zoning District. The Mineral Mining District (MM) is a floating zone established for the purpose of providing for the development of needed mineral resources in areas where such resources exist subject to adequate safeguard for the conservation of the environment

Ordinance Section 1-19-10.400.6.**Land Use**. Mineral Mining as used herein, applies to the extraction and processing of crushed stone, building stone, sand, clay, limestone, gravel deposits, and other minerals mined in a quarry type operation. The standards set forth in this section do not regulate or permit the extraction of metallic minerals, fossil fuels or other minerals not specifically enumerated above.

(A) The uses permitted in the mineral mining district shall be agricultural activities and forestry activities permitted in the agricultural zone over which the mineral mining designation was attached and the following:

(1) Mineral extraction and processing, including grinding, polishing, washing, mixing and sorting, stockpiling, and manufacture of finished products which contain at least 40% of material derived on site;

(2) Borrow pits and rubble fills; and

(3) Those accessory uses listed under § 1-19-8.251.

The description of the proposed use that is provided in your zoning verification request letter is consistent with Ordinance Section 1-19-10.400.6. Land Use.

A review of the records available to this office does not indicate any existing zoning violations at this Property at this time.

If you have any further questions, please contact me at 301-600-1491.

Sincerely,

Tolson DeSa
Zoning Administrator

ec: M.Wilkins
K. Mitchell

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

SUPPLEMENT TO
DOCKET #08-23

COMPANY: Laurel Sand & Gravel, Inc. – Laurel Hill Quarry

LOCATION: 10642 Woodsboro Road, Woodsboro, MD 21798

APPLICATION: Modification of an existing crushing and screening plant with the addition of one (1) crusher and three (3) conveyors and the replacement of one (1) screener.

ITEM	DESCRIPTION
1	Notice of Tentative Determination, Opportunity to Request a Public Hearing, and Opportunity to Submit Written Comments
2	Fact Sheet and Tentative Determination
3	Draft Permit to Construct and Conditions
4	Supplemental Information References List
5	Privilege Log – Not Applicable

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF TENTATIVE DETERMINATION, OPPORTUNITY TO REQUEST A PUBLIC HEARING, AND OPPORTUNITY TO SUBMIT WRITTEN COMMENTS

FIRST NOTICE

The Department of the Environment, Air and Radiation Administration (ARA) has completed its review of an application for a Permit to Construct submitted by Laurel Sand & Gravel, Inc. – Laurel Hill Quarry on May 19, 2023, to modify their existing crushing and screening plant with the addition of one (1) crusher and three (3) conveyors and the replacement of one (1) screener. The installation is located at 10642 Woodsboro Road, Woodsboro, MD 21798.

Pursuant to Section 1-604, of the Environment Article, Annotated Code of Maryland, the Department has made a tentative determination that the Permit to Construct can be issued and is now ready to receive public comment on the application. Copies of the Department's tentative determination, the application, the draft permit to construct with conditions, and other supporting documents are available for public inspection on the Department's website. Look for Docket # 08-23 at the following link:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

In accordance with HB 1200/Ch. 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the project is located using the Maryland EJ Screening Tool. The EJ Score, expressed as a statewide percentile, was shown to be 61 which the Department has verified. This score considers three demographic indicators, minority population above 50%, poverty rate above 25% and limited English proficiency above 15% to identify underserved communities. Multiple environmental health indicators are used to identify overburdened communities. The Department's review of the environmental and socioeconomic indicators contributing to that EJ score is included in the tentative determination that is available for public inspection.

Interested persons may request a public hearing and/or submit written comments on the tentative determination. Requests for a public hearing must be submitted in writing and must be received by the Department no later than 20 days from the date of this notice. A requested public hearing will be held virtually using teleconference or internet-based conferencing technology unless a specific request for an in-person public hearing is received. Written comments must be received by the Department no later than 30 days from the date of this notice.

Interested persons may request an extension to the public comment period. The extension request must be submitted in writing and must be received by the Department no later than 30 days from the date of this notice or within 5 days after the hearing (if a hearing is requested), whichever is later. The public comment period may only be extended one time for a 60-day period.

All requests for a public hearing, requests for an extension to the public comment period, and all written comments should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program by email to shannon.heafey@maryland.gov or by mail to the Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christopher R. Hoagland, Director
Air and Radiation Administration

MARYLAND DEPARTMENT OF ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

FACT SHEET AND TENTATIVE DETERMINATION
LAUREL SAND & GRAVEL, INC. – LAUREL HILL QUARRY

PROPOSED MODIFICATION OF ONE (1) STONE CRUSHING AND SCREENING PLANT, RATED AT 1,200 TONS PER HOUR, POWERED BY ELECTRICITY

I. INTRODUCTION

The Maryland Department of the Environment (the "Department") received an application from Laurel Sand & Gravel, Inc. on May 19, 2023 for a Permit to Construct to modify their existing electric powered 1,200 ton per hour crushing and screening plant with the addition of one (1) crusher and three (3) conveyors and the replacement of one (1) screener. The plant is located at 10642 Woodsboro Road, Woodsboro, MD 21798.

A notice was placed in The Frederick News-Post on August 19, 2023 and August 26, 2023 announcing an opportunity to request an informational meeting to discuss the application for a Permit to Construct. An informational meeting was not requested.

As required by law, all public notices were also provided to elected officials in all State, county, and municipality legislative districts located within a one-mile radius of the facility's property boundary.

The Department has reviewed the application and has made a tentative determination that the proposed facility is expected to comply with all applicable air quality regulations. A notice will be published to provide the public with opportunities to request a public hearing and to comment on the application, the Department's tentative determination, the draft permit conditions, and other supporting documents. The Department will not schedule a public hearing unless a legitimate request is received.

If the Department does not receive any comments that are adverse to the tentative determination, the tentative determination will automatically become a final determination. If adverse comments are received, the Department will review the comments, and will then make a final determination with regard to issuance or denial of the permit. A notice of final determination will be published in a newspaper of general circulation in the affected area. The final determination may be subject to judicial review pursuant to Section 1-601 of the Environment Article, Annotated Code of Maryland.

II. CURRENT STATUS AND PROPOSED INSTALLATION

A. Current Status

Laurel Sand & Gravel, Inc. currently operates one (1) 1,200 ton per hour stone crushing and screening plant consisting of the following, equipped with wet suppression and connected to the local power grid:

- one (1) primary jaw crusher;
- one (1) secondary cone crusher;
- two (2) tertiary cone crushers;
- two (2) 2-deck screens;
- one (1) 3-deck screen;
- two (2) 4-deck screens;
- three (3) rinse screens;
- one (1) twin-screw classifier;
- thirty-one (31) belt conveyors;
- ten (10) feeders; and
- eight (8) stacking conveyors.

In addition to the crushing and screening plant Laurel Sand & Gravel also operates a finishing plant.

B. Proposed Installation

Laurel Sand & Gravel, Inc. would like to modify the existing crushing and screening plant with the addition of the following equipment:

- one (1) quaternary cone crusher;
- two (2) feeders;
- three (3) conveyors;
- one (1) screener (like kind replacement); and
- various washing equipment.

III. APPLICABLE REGULATIONS

The proposed installation is subject to all applicable Federal and State air quality control regulations, including, but not limited to the following:

(a) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in federal New Source Performance Standards (NSPS) promulgated under 40 CFR 60, Subpart A (General Provisions) and Subpart OOO for Nonmetallic Mineral Processing Plants.

(b) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in the submittals.

(c) COMAR 26.11.06.03C and D, which requires that the Permittee take reasonable precautions to prevent particulate matter from unconfined sources and materials handling and construction operations from becoming airborne.

(d) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

(e) COMAR 26.11.15.05, which requires that the Permittee implement "Best Available Control Technology for Toxics" (T – BACT) to control emissions of toxic air pollutants.

(f) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions will unreasonably endanger human health.

IV. GENERAL AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six (6) criteria pollutants, i.e., sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead. The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation.

The Department utilizes a statewide air monitoring network, operated in accordance with EPA guidelines, to measure the concentrations of criteria pollutants in Maryland's ambient air. The measurements are used to project statewide ambient air quality, and currently indicate that Frederick County complies with the NAAQS for sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, and lead.

Ground level ozone continues to present a problem for the entire Washington metropolitan area, which is classified as a non-attainment area for ozone. The primary contributors to the formation of ozone are emissions of oxides of nitrogen, primarily from combustion equipment, and emissions of Volatile Organic Compounds (VOC) such as paint solvents and gasoline vapors. Frederick County is included in the non-attainment area for ozone.

With regard to toxic air pollutants (TAPs), screening levels (i.e., acceptable ambient concentrations for toxic air pollutants) are generally established at 1/100 of allowed worker exposure levels (TLVs)[1]. The Department has also developed additional screening levels for carcinogenic compounds. The additional screening levels are established such that continuous exposure to the subject TAP at the screening level for a period of 70 years is expected to cause an increase in lifetime cancer risk of no more than 1 in 100,000.

[1] TLVs are threshold limit values (exposure limits) established for toxic materials by the American Conference of Governmental Industrial Hygienists (ACGIH). Some TLVs are established for short-term exposure (TLV – STEL), and some are established for longer-term exposure (TLV – TWA), where TWA is an acronym for time-weight average.

V. ENVIRONMENTAL JUSTICE ANALYSIS

The concept behind the term environmental justice (EJ) is that regardless of race, color, national origin, or income, all Maryland residents and communities should have an equal opportunity to enjoy an enhanced quality of life. How to assess whether equal protection is being applied is the challenge.

Communities surrounded by a disproportionate number of polluting facilities puts residents at a higher risk for health problems from environmental exposures. It is important that residents who may be adversely affected by a proposed source be aware of the current environmental issues in their community in order to have meaningful involvement in the permitting process. Resources may be available from government and private entities to ensure that community health is not negatively impacted by a new source located in the community.

Extensive research has documented that health disparities exist between demographic groups in the United States, such as differences in mortality and morbidity associated with factors that include race/ethnicity, income, and educational attainment.

The Maryland General Assembly passed HB 1200, effective October 1, 2022, that adds to MDE's work incorporating diversity, equity and inclusion into our mission to help overburdened and underserved communities with environmental issues. In accordance with HB 1200/Ch, 588 of 2022, the applicant provided an environmental justice (EJ) Score for the census tract in which the proposed source is located using the Maryland EJ Screening Tool. The EJ Score, expressed as a statewide percentile, was shown to be 61, which the Department has verified. This score considers three demographic indicators, minority population above 50%, poverty rate above 25% and limited English proficiency above 15%, to identify underserved communities. Multiple environmental health indicators are used to identify overburdened communities.

To account for other sources of pollution surrounding the proposed source, the Department conducted an additional EJ Score analysis to evaluate the impact of other sources located within 1 mile of the proposed source. The highest EJ Score in a census tract located within 1 mile of the proposed source, expressed as a statewide percentile, was shown to be 61.

An EJ Score of 61 indicates that the proposed installation is located in an area that is not disproportionately impacted by sources of pollution or at a higher risk of health problems from environmental exposures than other areas in Maryland. The Department has reviewed the air quality impacts from this proposed installation and has determined that the proposed installation will meet all applicable air quality standards.

VI. COMPLIANCE DEMONSTRATION AND ANALYSIS

The proposed installation must comply with all State imposed emissions limitations and screening levels, as well as the NAAQS. The Department has conducted an engineering and air quality review of the application. The emissions were projected based on U.S. EPA emission factors for crushing and screening plants. The conservative U.S. EPA's SCREEN3 model was also used to project the maximum ground level concentrations from the proposed facility, which were then compared to the screening levels and the NAAQS.

A. **Estimated Emissions** - The maximum emissions of air pollutants of concern from the proposed installation are listed in Table I.

B. **Compliance with National Ambient Air Quality Standards -** The maximum ground level concentration for particulate matter based on the emissions from the proposed installation is listed in column 2 of Table II. The combined impact of the projected contribution from the proposed installation and the ambient background concentration for each pollutant shown in column 3 of Table II is less than the NAAQS for each pollutant shown in column 4.

C. **Compliance with Air Toxics Regulations** – The toxic air pollutant of concern that would be emitted from this installation is listed in column 1 of Table III. The predicted maximum off-site ambient concentration of this toxic air pollutant is shown in column 4 of Table III, and the maximum concentration is less than the corresponding screening level for the toxic air pollutant shown in column 2.

VI. TENTATIVE DETERMINATION

Based on the above information, the Department has concluded that the proposed installation will comply with all applicable Federal and State air quality control requirements. In accordance with the Administrative Procedure Act, Department has made a tentative determination to issue the Permit to Construct.

Enclosed with the tentative determination is a copy of the draft Permit to Construct.

TABLE I
PROJECTED MAXIMUM EMISSIONS FROM THE PROPOSED INSTALLATION

POLLUTANT	PROJECTED MAXIMUM EMISSIONS FROM PROPOSED INSTALLATION	
	(lbs/day)	(tons/year)
Particulate Matter (PM_{10})	11.01	0.73

TABLE II
PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE PROPOSED INSTALLATION ON AMBIENT AIR QUALITY

POLLUTANTS	**MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS CAUSED BY EMISSIONS FROM PROPOSED PROCESS ($\mu g/m^3$)**	**BACKGROUND AMBIENT AIR CONCENTRATIONS ($\mu g/m^3$)***	**NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ($\mu g/m^3$)**
Particulate Matter (PM_{10})	24-hr max → 1.9	24-hr max.→ 101	24-hr max.→ 150

*Background concentrations were obtained from Maryland air monitoring stations as follows:
PM_{10} → Monitoring Station in Old Town, Baltimore City

TABLE III
PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR TOXIC AIR POLLUTANTS EMITTED FROM THE PROPOSED INSTALLATION

TOXIC AIR POLLUTANTS	**SCREENING LEVELS ($\mu g/m^3$)**	**PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)**	**PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu g/m^3$)**
Crystalline Silica	1-hour→ None 8-hour→ 0.25 Annual→ None	0.0013	1-hour→ None 8-hour→ 0.01 Annual→ None

The values represent maximum facility-wide emissions of toxic air pollutants during any 1-hour period of facility operation.

The values are based on worst-case emissions from the proposed facility and were predicted by EPA's SCREEN3 model, which provides conservative estimations concerning the impact of pollutants on ambient air quality.

DRAFT PERMIT

Wes Moore Serena McIlwain

Air and Radiation Administration

1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

☒ Construction Permit ☐ Operating Permit

PERMIT NO.
021-0003-6-0696

DATE ISSUED:

PERMIT FEE:
2000.00 (PAID)

EXPIRATION DATE:
In accordance with
COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS
Laurel Sand & Gravel, Inc.
P.O. Box 850
Laurel, MD 20725
Attention: Mr. Collin Sumpter Resource Manager

SITE
Laurel Hill Quarry
10642 Woodsboro Rd
Woodsboro, MD 21798
AI # 2859

SOURCE DESCRIPTION

The permit authorizes the installation of one (1) crusher two (2) feeders and one (1) screen to be added to an existing quarry.

This Permit to Construct also serves as a Temporary Permit to Operate the new equipment that expires 180 days after initiating operation of the plant.

This Permit supersedes all previous Permits to Construct issued to Premises No. 021-0003.

This source is subject to the conditions described on the attached pages.

Program Manager

Director, Air and Radiation Administration

LAUREL SAND & GRAVEL, INC.
LAUREL HILL QUARRY
PERMIT-TO-CONSTRUCT CONDITIONS
PREMISES No. 021-0003

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Part B – Applicable Regulations
Part C – Construction Conditions
Part D – Operating Conditions
Part E – Notifications, Testing and Monitoring
Part F – Record Keeping and Reporting
Part G – Temporary Permit-to-Operate Conditions

This permit-to-construct incorporates requirements for the following registered installations:

ARA Registration Number	Description	Date of Installation
021-0003-6-0696	One (1) stone crushing and screening plant with an average throughput of 1,200 tons per hour, equipped with wet suppression systems and consisting of: One (1) Lippman primary jaw crusher; One (1) Sandvik S6800 secondary cone crusher; Two (2) Sandvik CH660 tertiary cone crushers; One (1) Sandvik CH660 quaternary cone crusher; One (1) Deister 6'x16' 2D high speed inclined screen; One (1) Deister 8'x20' 3D inclined scalping screen; One (1) Deister 8'x20' 4D scalping screen; Two (2) Deister 8'x24' 4D finishing screens; Two (2) Deister 6'x16' SD rinse screens; One (1) Deister 6'x16' 2D rinse screen; One (1) Deister 5'x12' dewatering screen; One (1) SSI 7'x16' SD wash screen; One (1) twin-screw classifier; One (1) McLanahan separator; Thirty-four (34) belt conveyors; Eight (8) stacking conveyors; and Twelve (12) feeders. Rinse and wash screens are included for inventory purposes only and are not required to be permitted or registered with ARA.	2020 modified in 2024

Part A – General Provisions

(1) The following Air and Radiation Administration (ARA) permit-to-construct applications and supplemental information are incorporated into this permit by reference:

(a) All valid applications for Processing or Manufacturing Equipment (Form 5) received at the Department prior to issuance of this permit and pertaining to all registered equipment. This includes the Form 5 received May 19, 2023, for the installation of one (1) quaternary crusher, one (1) screen, two (2) feeders, and three (3) conveyors all powered by on grid electricity and equipped with a wet suppression system.

(b) All valid Emissions Data (Form 5B) received at the Department prior to issuance of this permit and pertaining to all registered equipment. This includes the seven (7) Form 5EP received May 19, 2023, for the installation of one (1) quaternary crusher, one (1) screen, two (2) feeders, and three (3) conveyors all powered by on grid electricity and equipped with a wet suppression system.

(c) All valid Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration (Form 5T) received at the Department prior to issuance of this permit and pertaining to facility-wide emissions of any toxic air pollutants of all registered equipment. This includes the Form 5T received May 19, 2023, for the installation of one (1) quaternary crusher, one (1) screen, two (2) feeders, and three (3) conveyors all powered by on grid electricity and equipped with a wet suppression system.

(d) All valid Supplemental Information received at the Department prior to issuance of this permit of all registered equipment including a process flow diagram sight plan, safety data sheets, zoning approval, and vendor literature received May 19, 2023, for the installation of one (1) quaternary crusher, one (1) screen, two (2) feeders, and three (3) conveyors all powered by on grid electricity and equipped with a wet suppression system.

If there are any conflicts between representations in this permit and representations in the applications, the representations in the permit shall govern. Estimates of dimensions, volumes, emissions rates, operating rates, feed rates and hours of operation included in the applications do not constitute

enforceable numeric limits beyond the extent necessary for compliance with applicable requirements.

(2) Upon presentation of credentials, representatives of the Maryland Department of the Environment ("MDE" or the "Department") and the Frederick County Health Department shall at any reasonable time be granted, without delay and without prior notification, access to the Permittee's property and permitted to:

(a) inspect any construction authorized by this permit;

(b) sample, as necessary to determine compliance with requirements of this permit, any materials stored or processed on-site, any waste materials, and any discharge into the environment;

(c) inspect any monitoring equipment required by this permit;

(d) review and copy any records, including all documents required to be maintained by this permit, relevant to a determination of compliance with requirements of this permit; and

(e) obtain any photographic documentation or evidence necessary to determine compliance with the requirements of this permit.

(f) exercise its right of entry through use of an unmanned aircraft system to conduct inspections, collect samples, or make visual observations through photographic or video recordings to determine compliance with the requirements of this permit.

(3) The Permittee shall notify the Department prior to increasing quantities and/or changing the types of any materials referenced in the application or limited by this permit. If the Department determines that such increases or changes constitute a modification, the Permittee shall obtain a permit-to-construct prior to implementing the modification.

(4) Nothing in this permit authorizes the violation of any rule or regulation or the creation of a nuisance or air pollution.

(5) If any provision of this permit is declared by proper authority to be invalid, the remaining provisions of the permit shall remain in effect.

(6) This permit supersedes all previous permits to construct issued under ARA Registration number 021-0003.

(7) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a State permit-to-operate issued pursuant to COMAR 26.11.02.13.

Part B – Applicable Regulations

(1) This source is subject to all applicable federal air pollution control requirements including, but not limited to, the following:

(a) All applicable terms, provisions, emissions standards, testing, monitoring, record keeping, and reporting requirements included in federal New Source Performance Standards (NSPS) promulgated under 40 CFR 60, Subpart A (General Provisions), and Subpart OOO for Nonmetallic Mineral Processing Plants.

(b) All notifications required under 40 CFR 60, Subparts A and OOO shall be submitted to both of the following:

The Administrator
Compliance Program
Maryland Department of the Environment
Air and Radiation Administration
1800 Washington Boulevard, STE 715
Baltimore MD 21230

and

United States Environmental Protection Agency
Region III, Enforcement & Compliance Assurance Division
Air, RCRA and Toxics Branch (3ED21)
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2852

(2) This source is subject to all applicable federally enforceable State air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.

(b) COMAR 26.11.02.04B, which states that a permit to construct or an approval expires if, as determined by the Department:

(i) Substantial construction or modification is not commenced within 18 months after the date of issuance of the permit or approval, unless the Department specifies a longer period in the permit or approval;

(ii) Construction or modification is substantially discontinued for a period of 18 months after the construction or modification has commenced; or

(iii) The source for which the permit or approval was issued is not completed within a reasonable period after the date of issuance of the permit or approval

(c) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in a manner that would cause changes in the quantity, nature, or characteristics of emissions from the installation as referenced in this permit.

(d) COMAR 26.11.06.03C and D, which requires that the Permittee take reasonable precautions to prevent particulate matter from unconfined sources and materials handling and construction operations from becoming airborne.

(e) COMAR 26.11.06.12, which states that a person may not construct, modify, or operate, or cause to be constructed, modified, or operated, a New Source Performance Standard (NSPS) source in a manner which results or will result in violation of the provisions of 40 CFR, Part 60.

(3) This source is subject to all applicable State-only enforceable air pollution control requirements including, but not limited to, the following regulations:

(a) COMAR 26.11.02.13A(16), which requires that the Permittee obtain from the Department, and maintain and renew as required, a valid State permit-to-operate.

(b) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in such submittals.

(c) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

(d) COMAR 26.11.15.05, which requires that the Permittee implement "Best Available Control Technology for Toxics" (T – BACT) to control emissions of toxic air pollutants.

(e) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions would unreasonably endanger human health.

Part C – Construction Conditions

(1) Except as otherwise provided in this part, the installation of the one (1) crusher, three (3) conveyors and one (1) screener shall be constructed in accordance with the specifications included in the incorporated applications.

(2) The one (1) crusher, three (3) conveyors and one (1) screener shall be equipped with wet suppression systems to meet the visible emissions of Subpart OOO and the particulate matter requirements of COMAR 26.11.06.03 as listed in (3) of Part D.

Part D – Operating Conditions

(1) The Permittee shall maintain and operate all installations and associated air pollution control equipment, including the proposed quaternary crusher, so as to assure full and continuous compliance with all applicable air pollution control regulations and permit conditions.

(2) The Permittee shall properly maintain, calibrate, and operate all control panel instrumentation and all devices employed to monitor performance of the facility's air pollution control devices.

(3) Wet suppression systems shall be used as needed to comply with the fugitive particulate matter requirements of COMAR 26.11.06.03C and COMAR 26.11.03D and the following opacity limits specified in 40 CFR, Part 60, Subpart OOO for affected facilities at nonmetallic mineral processing plants constructed, modified, or reconstructed on or after April 22, 2008:

(a) No more than 12 percent opacity from each crusher; and

(b) No more than 7 percent opacity from all other fugitive sources.
[Reference: 40 CFR §60.672(b) and Table 3 to 40 CFR 60 Subpart OOO]

(4) The Permittee shall perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression systems for affected facilities at nonmetallic mineral processing plants constructed, modified, or reconstructed on or after April 22, 2008. The Permittee must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the Permittee finds that water is not flowing properly during an inspection of the water spray nozzles. **[Reference: 40 CFR §60.674(b) and 40 CFR §60.676(b)]**

(5) The Permittee shall comply with the following requirements of the Department-approved Fugitive Dust Plan, unless the Permittee obtains an approval from the Department for an alternate plan:

(a) The Permittee shall minimize stockpile height and maintain stockpiles such that materials remain contained to designated areas.

(b) Wet suppression system shall be used whenever necessary to control fugitive dust from materials handling operations, process equipment and material transfer points.

(c) Fugitive dust from plant roads and stockpiles shall be controlled, as necessary, by using water or approved chemical dust suppressants or a combination of both.

(d) The Permittee shall wet roadways as necessary.

(e) The Permittee shall control traffic speeds and ensure that vehicles leaving the facility with materials have their loads covered.

Part E – Notifications, Testing & Monitoring

(1) The Permittee shall submit written or electronic notification to the Department of the actual date of initial startup of the one (1) crusher, three (3) conveyors and one (1) screener within 15 business days of the date to be reported.
[Reference: 40 CFR §60.7(a)(3) and §60.676(i)]

(2) Within 60 days after, but not later than 180 days after initial startup of the one (1) crusher, three (3) conveyors and one (1) screener the Permittee shall

demonstrate compliance with all applicable opacity standards. **[Reference: 40 CFR §60.11(b) and §60.672(b)]**

(3) During the compliance demonstration, the plant shall be operated at 90% or higher, of the normal operational throughput or at other operating conditions approved by the Department.

(4) The Permittee shall use Method 9 of Appendix A-4 to 40 CFR, Part 60 and the procedures in 40 CFR §60.11, with the following additions:

(a) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(b) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9 of Appendix A–4 of this part, Section 2.1) must be followed.

(c) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

[Reference: 40 CFR §60.675(c)(1)]

(5) The duration of the Method 9 (40 CFR, Part 60, Appendix A–4) observations must be 30 minutes (five 6-minute averages). Compliance with the applicable opacity standards must be based on the average of the five 6-minute averages. **[Reference: 40 CFR §60.675(c)(3)]**

(6) In accordance with 40 CFR, Subpart A, §60.8, the Permittee shall notify the Department in writing at least 30 days prior to any performance test to afford the Department the opportunity to have an observer present. In the event of a delay to the original test date, the Permittee shall notify the Department as soon as possible, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Department.

(7) Within 45 days following the required Method 9 observations, the Permittee shall submit the results to the Department.

Part F – Record Keeping & Reporting

(1) The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:

(a) The amount of materials processed in the crushing and screening plant in tons per month;

(b) The hours of operation for each piece of equipment for each operating day;

(c) All opacity observation and particulate matter performance test results;

(d) A log of each periodic inspection of the wet suppression systems including dates and any corrective actions taken; **[Reference: 40 CFR §60.674(b) and §60.676(b)(1)]**

(e) A log of actions taken to control fugitive dust at the facility; and

(f) A copy of the facility's Fugitive Dust Control Plan.

(2) The Permittee shall maintain at the facility for at least five (5) years records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:

(a) Mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;

(b) Accounts of the methods and assumptions used to quantify emissions;

(c) All operating data, including operating schedules and production data, that were used in determinations of emissions;

(d) Any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:

(i) all emissions data generated by such monitors;

(ii) all monitor calibration data;

(iii) information regarding the percentage of time each monitor was available for service; and

(iv) information concerning any equipment malfunctions.

(e) Information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:

(i) identifications and descriptions of all such equipment;

(ii) operating schedules for each item of such equipment;

(iii) accounts of any significant maintenance performed;

(iv) accounts of all malfunctions and outages; and

(v) accounts of any episodes of reduced efficiency.

(f) Limitations on source operation or any work practice standards that significantly affect emissions; and

(g) Other relevant information as required by the Department.

(3) The Permittee shall submit to the Department by April 1 of each year during the term of this permit a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements, as applicable, adopted under COMAR 26.11.01.05 – 1 and COMAR 26.11.02.19D.

(a) Certifications of emissions shall be submitted on forms obtained from the Department.

(b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the facility's registered sources of emissions.

(c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

(4) The Permittee shall submit to the Department by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. Such analysis shall include either:

(a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

(b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.

(5) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.

Part G – Temporary Permit-to-Operate Conditions

(1) This permit-to-construct shall also serve as a temporary permit-to-operate that confers upon the Permittee authorization to operate the crushing and screening plant for a period of up to 180 days after initiating operating of the crushing and screening plant.

(2) The Permittee shall provide the Department with written or electronic notification of the date on which operation of the crushing and screening plant is initiated. Such notification shall be provided within 15 business days of the date to be reported.

(3) During the effective period of the temporary permit-to-operate the Permittee shall operate the new installation as required by the applicable terms and conditions of this permit-to-construct, and in accordance with operating procedures and recommendations provided by equipment vendors.

(4) The Permittee shall submit to the Department an application for a State permit-to-operate no later than 60 days prior to expiration of the effective period of the temporary permit-to-operate.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION

SUPPLEMENTAL INFORMATION REFERENCES

The Code of Maryland Regulations (COMAR) is searchable by COMAR citation at the following Division of State Documents website:
http://www.dsd.state.md.us/COMAR/ComarHome.html

The Code of Federal Regulations (CFR), including New Source Performance Standards (NSPS) at 40 CFR, Part 60 and National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR, Parts 61 and 63, is searchable by CFR citation at the following U.S. Government Publishing Office website:
http://www.ecfr.gov

Information on National Ambient Air Quality Standards (NAAQS) is located at the following U.S. Environmental Protection Agency (EPA) website:
https://www.epa.gov/criteria-air-pollutants/naaqs-table

Information on Maryland's Ambient Air Monitoring Program is located at the following Maryland Department of the Environment website:
http://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/index.aspx

Information on the U.S. EPA's Screen3 computer model and other EPA-approved air dispersion models is located at the following U.S. EPA website:
http://www.epa.gov/scram001/dispersion_screening.htm

Information on the U.S. EPA TANKS Emission Estimation Software is located at the following U.S. EPA website:
http://www.epa.gov/ttn/chief/software/tanks/index.html

Information on the U.S. EPA Emission Factors and AP-42 is located at the following U.S. EPA website:
https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors