# 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



# 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.

www.mde.maryland.gov



# 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, <u>www.mde.maryland.gov</u>, 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_Engli sh_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		

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# 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 <u>Collin@aggmgt.com</u>. Thank you for your assistance.

Sincerely,

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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	10642 Weedshere Rd Weedshere MD
ADDRESS:	
CONTACT	INFORMATION FOR THIS PERMIT APPLICATION
CONTACT NAME:	Collin Sumpter
JOB TITLE:	Resource Manager
PHONE NUMBER:	(443) 835-7255
EMAIL ADDRESS:	Collin@aggmgt.com
DES	CRIPTION OF EQUIPMENT OR PROCESS
Addition of one (1) cr	usher, 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.

- $\mathbf{X}$ Application package cover letter describing the proposed project
- $\mathbf{X}$ Complete application forms (Note the number of forms included or NA if not applicable.)
  - No. <u>1</u> Form 5 No. \_\_\_\_ Form 11 No. 1 Form 5T
  - No. 7 Form 5EP
  - No. \_\_\_\_ Form 6

- No.
   Form 41

   No.
   Form 42

   No.
   Form 44
- No. \_\_\_\_ Form 10

- $\mathbf{X}$ Vendor/manufacturer specifications/guarantees
- $\mathbf{X}$ Evidence of Workman's Compensation Insurance
- X Process flow diagrams with emission points
- X Site plan including the location of the proposed source and property boundary
- $\mathbf{X}$ Material balance data and all emissions calculations
- $\mathbf{X}$ Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.
- $\square$ Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission <sup>(1)</sup>
- Documentation that the proposed installation complies with local zoning and land  $\square$ use requirements <sup>(2)</sup>
  - (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

Permit to Construct A Registration Update	Initial Registration
A. Owner of Equipment/Company Name Laurel Sand & Gravel, Inc.	DO NOT WRITE IN THIS BLOCK 2. REGISTRATION NUMBER
Mailing Address P.O. Box 850	County No. Premises No.
Street Address	
LaurelMD20725CityStateZip	Registration Class Equipment No
Telephone Number	
(410) 792-7234 x 1120	
( <u></u> ) <u></u>	- Data Year
Signature	
Calli In	12-13 Application Date
Collin Sumpter - Resource Manager	04/16/2022
Print Name and Title	Date
10642 Woodsboro Rd. Street Number and Street Name	
Woodsboro MD	21798 (301) 750-2760
City/Town State	Zip Telephone Number
Premises Name (if different from above)	
Status (A= New, B= Modification to Existing Equipment, C=New ConstructionNew ConstructionStatusBegun (MM/YY)Completed (MM/Y)B07231516-1920-23	Existing Equipment)onExisting InitialYY)Operation (MM/YY)309220-23
Describe this Equipment: Make, Model, Features, Manufactur ddition of one (1) crusher, two (2) feeders, three (3) conveyors and various w	rer (include Maximum Hourly Input Rate, et washing equipment. Replacement of one (1) scree
ee Emissions Calculations for maximum input rates. Workmen's Compensation Coverage WC700908	12/31/2023
Binder/Policy Number	Expiration Date
NOTE: Before a Permit to Construct may be issued by the Department, the a worker's compensation coverage as required under Section 1-2	applicant must provide the Department with proof a 202 of the Worker's Compensation Act.
A. Number of Pieces of Identical Equipment Units to be Reg	istered/Permitted at this Time1
B. Number of Stack/Emission Points Associated with this E	quipment7
m Number: 5 9/27/2002	Page 1 of 4



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_QuarryvilleState_PATelephone(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 Spray/Adsorb Venturi Carbon Electrostatic Baghouse Thermal/Catalytic Dry
Cyclone Tower Scrubber Adsorber Precipitator Alterburner 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 <sup>3</sup> 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 OTHER FUEL ANNUAL AMOUNT CONSUMED
(Specify Type) 66-1 (Specify Units of Measure) (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     1     2     6     0
67-1 67-2 68-69 70-71 72 73-75
No Variation Winter Percent Spring Percent Summer Percent Fall Percent (Total Seasons= 100%)
76 77-78 79-80 81-82 83-84



If not, then       Height Avove Ground (FT)       Inside Diameter at Top       Exit Temperature (°F)       Exit Velocity (FT/SEC)         Image: series of the se								
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)								
If not, then       Height Avove Ground (FT)       Inside Diameter at rop       Exit Temperature (F)       Exit Velocity (FT/SEC)         Image: State of the st								
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?								
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?								
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Is any of this data to be considered confidential? N (Y or N)								
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								
1,000 Tons 3,120,000 Tons								
3.								
<u>4.</u>								
5.								
6.								
7								
8								
9.								
TOTAL								
14. Output Materials (for this equipment)								
Process/Product Stream								
Process/Product Stream OUTPUT RATE								
Process/Product Stream           OUTPUT RATE           NAME         CAS NO. (IF APPLICABLE)         PER HOUR         UNITS         PER YEAR         UNITS								
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								
Process/Product Stream         NAME       CAS NO. (IF APPLICABLE)       PER HOUR       UNITS       PER YEAR       UNITS         1. Aggregate Products (Finish Side)       1,000       Tons       3,120,000       Tons         2.								
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         3.       4       4       4       4       4								
Process/Product Stream         NAME       CAS NO. (IF APPLICABLE)       PER HOUR       UNITS       PER YEAR       UNITS         1. Aggregate Products (Finish Side)       1,000       Tons       3,120,000       Tons         3.								
Process/Product Stream         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.       1.000       1.000       1.000         5.       6.       0       0       0       0       0								
Process/Product Stream         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.       1.000       Tons       3,120,000       Tons         4.       5.       1.000       1.000       1.000       1.000         5.       1.000       1.000       1.000       1.000       1.000         7.       1.000       1.000       1.000       1.000       1.000								
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Process/Product Stream           NAME       CAS NO. (IF APPLICABLE)       PER HOUR       UNITS       PER YEAR       UNITS         1. Aggregate Products (Finish Side)       1,000       Tons       3,120,000       Tons         2.       1.000       Tons       3,120,000       Tons         3.       1.000       Tons       3,120,000       Tons         4.       1.000       1.000       1.000       1.000         5.       1.000       1.000       1.000       1.000         6.       1.000       1.000       1.000       1.000         7.       1.000       1.000       1.000       1.000         9.       1.000       1.000       1.000       1.000         15. Waste Streams- Solid and Liquid       OUTPUT RATE       1.000       1.000       1.000         NAME       CAS NO. (IF APPLICABLE)       PER HOUR       UNITS       PER YEAR       UNITS								
Process/Product Stream           NAME       CAS NO. (IF APPLICABLE)       PER HOUR       UNITS       PER YEAR       UNITS         1. Aggregate Products (Finish Side)       1,000       Tons       3,120,000       Tons         2.       1       1       1       1       1         3.       1       1       1       1       1         4.       1       1       1       1       1       1         5.       1								
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NAME         CAS NO. (IF APPLICABLE)         PER HOUR         UNITS         PER YEAR         UNITS           1. Aggregate Products (Finish Side)         1,000         Tons         3,120,000         Tons           2.         1,000         Tons         3,120,000         Tons           3.         1,000         Tons         3,120,000         Tons           4.         1,000         1,000         1,000         1,000           5.         1,000         1,000         1,000         1,000           6.         1,000         1,000         1,000         1,000           7.         1,000         1,000         1,000         1,000           8.         1,000         1,000         1,000         1,000           9.         1,000         1,000         1,000         1,000           TOTAL         1,000         1,000         1,000         1,000           1.         N/A         1,000         1,000         1,000         1,000           1.         N/A         1,000         1,000         1,000         1,000         1,000           1.         N/A         1,000         1,000         1,000         1,000         1,000         1,000								
NAME         CAS NO. (IF APPLICABLE)         PER HOUR         UNITS         PER YEAR         UNITS           1. Aggregate Products (Finish Side)         1,000         Tons         3,120,000         Tons           2.         1.000         Tons         3,120,000         Tons           3.         1.000         Tons         3,120,000         Tons           5.         1.000         1.000         1.000         1.000         Tons           5.         1.000         1.000         1.000         1.000         1.000           6.         1.000         1.000         1.000         1.000         1.000         1.000           9.         1.000         1.000         1.000         1.000         1.000         1.000           15. Waste Streams- Solid and Liquid         1.000         1.000         1.000         1.000         1.000         1.000         1.000         1.00								
NAME         CAS NO. (IF APPLICABLE)         PER HOUR         UNITS         PER YEAR         UNITS           1. Aggregate Products (Finish Side)         1,000         Tons         3,120,000         Tons           2.         1.000         Tons         3,120,000         Tons           3.         1.000         Tons         3,120,000         Tons           4.         1.000         1.000         1.000         1.000         1.000           5.         1.000         1.000         1.000         1.000         1.000           6.         1.000         1.000         1.000         1.000         1.000         1.000           7.         1.000         1.000         1.000         1.000         1.000         1.000           7.         1.000         1.000         1.000         1.000         1.000         1.000           8.         1.0000								
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.         1.000         Tons         3,120,000         Tons           3.         1         1.000         Tons         3,120,000         Tons           3.         1         1.000         Tons         3,120,000         Tons           3.         1         1         1         1         1           4.         1         1         1         1         1           5.         1         1         1         1         1           6.         1         1         1         1         1           7.         1         1         1         1         1         1           9.         1         1         1         1         1         1         1           15. Waste Streams- Solid and Liquid         1         1         1         1         1         1         1         1         1         1         1         1         1								
Name         CAS NO. (IF APPLICABLE)         PER HOUR         UNITS         PER YEAR         UNITS           1.Aggregate Products (Finish Side)         1,000         Tons         3,120,000         Tons           3.         1,000         Tons         3,120,000         Tons           3.         1         1         1         1           4.         1         1         1         1           5.         1         1         1         1           6.         1         1         1         1           7.         1         1         1         1         1           9.         1         1         1         1         1         1           15. Waste Streams - Solid and Liquid         0         1         1         1         1           15. N/A         1         1         1         1         1         1         1           1< N/A								



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



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# MARYLAND DEPARTMENT OF THE ENVIRONMENT

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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 Schedul	e for the	Emiss	sion	Point					
Continuous or Intermittent (C/I	)?	6		Seasonal Variation					
	,	C		Check box if none: X Oth	erwis	e estimate s	seaso	nal va	ariation:
Minutes per hour:		60		Winter Percent					
Hours per day:		12		Spring Percent					
Days per week:		5		Summer Percent					
A Emission Point Info	rmation	52		Fail Percent					
	mation					Longth	.		Width:
Height above ground (ft):		N/A		Length and width dimension	าร	Lengin	•		vvidtr.
Height above structures (ft):		N/A		at top of rectangular stack (	ft):	N/A			N/A
Exit temperature (°F):		N/A		Inside diameter at top of round stack (ft): N/A					N/A
Exit velocity (ft/min):		N/A		Distance from emission point to nearest property line (ft): N/A					N/A
Exhaust gas volumetric flow ra	te			Building dimensions if emis	sion	Height	Len	gth	Width
(acfm):		N/A		point is located on building (ft) N/A N/A				/A	N/A
5. Control Devices As	sociated	l with t	he E	Emission Point		1	1		
Identify each control device associated with the emission point and indicate the number of devices. <u>A Form 6 is</u> <u>also required for each control device</u> . If none check none:									
None				Thermal Oxidizer		No			
Baghouse	No			Regenerative					
Cyclone	No			Catalytic Oxidizer		No			
Elec. Precipitator (ESP)	No			Nitrogen Oxides Reductio	on	No			
Dust Suppression System	No			Selective	Ę	] Non-Sele	ective		
🗌 Venturi Scrubber	No				L		arytic		
Spray Tower/Packed Bed	No			Specify: Wet Suppression		NO			
Carbon Adsorber	No								
Cartridge/Canister									
Regenerative									

FORM 5EP: Emission Point Data								
6. Estimated Emissions from the Emission Point								
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Canacity	At	At Projected Operations					
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/hr) (lb/day)					
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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 Schedul	e for the	e Emiss	sion	Point					
Continuous or Intermittent (C/I	)?	С		Seasonal Variation	herwis	e estimate s	seaso	nal va	ariation
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 Info	rmatior	1	•						
Height above ground (ft):		N/A		Length and width dimension	ns	Length	:		Width:
Height above structures (ft):		N/A	-	at top of rectangular stack (	(ft):	N/A			N/A
Exit temperature (°F):		N/A		Inside diameter at top of rou	ieter at top of round stack (ft): N/A				N/A
Exit velocity (ft/min):		N/A		Distance from emission point to nearest N// property line (ft):				N/A	
Exhaust gas volumetric flow ra	te	N/A		Building dimensions if emission Height Lengt				gth /^	Width
5. Control Devices As	sociate	d with t	he F	mission Point	9 (11)	IN/A		/A	IN/A
Identify each control device associated with the emission point and indicate the number of devices. <u>A Form 6 is</u> also required for each control device. If none check none:									
□ None			[	☐ Thermal Oxidizer		No			
Baghouse	No			Regenerative					
Cyclone	No		[	Catalytic Oxidizer		No			
Elec. Precipitator (ESP)	No		[	Nitrogen Oxides Reductio	on	No			
Dust Suppression System	No			Selective	Ę	] Non-Sele	ective		
🗌 Venturi Scrubber	No				L		arytic		
Spray Tower/Packed Bed	No		S	X Other Specify: Wet Suppression		No			
Carbon Adsorber	No								
Cartridge/Canister									
Regenerative									

FORM 5EP: Emission Point Data								
6. Estimated Emissions from the Emission Point								
	At Design Capacity	At	At Projected Operations					
Criteria Pollutants	(lb/hr)	(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)								
	At Design Capacity	At Projected Operations						
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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

## 2. Emission Point Description

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

3. Emissions Schedule	e for the	Emiss	sion P	Point							
Continuous or Intermittent (C/I)	?	C		Seasonal Variation		4: 4					
Minutes per hour:		60		Winter Percent	ierwis	e estimate s	seaso				
Hours per day:		12		Spring Percent							
Days per week:		5		Summer Percent							
Weeks per year:		52		Fall Percent							
4. Emission Point Info	rmation										
Height above ground (ft):		N/A	L	Length and width dimensior	ns	Length:			Width:		
Height above structures (ft):		N/A	a	at top of rectangular stack (	(ft): N/A				N/A		
Exit temperature (°F):		N/A	h	Inside diameter at top of round stack (ft):					N/A		
Exit velocity (ft/min):		N/A	С р	Distance from emission point to nearest property line (ft):					N/A		
Exhaust gas volumetric flow rat	e	NI/A	E	Building dimensions if emission Height Len				gth	Width		
(acfm):		N/A	р	point is located on building	/A	N/A					
5. Control Devices Ass	5. Control Devices Associated with the Emission Point										
Identify each control device ass also required for each contro	sociated v <u>I device</u> .	with the If none	emiss checł	sion point and indicate the r ck none:	numb	er of device	es. <u>A</u>	For	<u>m 6 is</u>		
None				Thermal Oxidizer		No					
🗌 Baghouse	No			Regenerative							
Cyclone	No			Catalytic Oxidizer		No					
Elec. Precipitator (ESP)	No			Nitrogen Oxides Reductio	on	No					
Dust Suppression System	No			Selective	Ę	] Non-Sele	ective				
🗌 Venturi Scrubber	No				L		arytic				
Spray Tower/Packed Bed	No		S	Specify: Wet Suppression		No					
Carbon Adsorber	No										
Cartridge/Canister											
☐ Regenerative											

FORM 5EP: Emission Point Data								
6. Estimated Emissions from the	e Emission Point							
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Canacity	At	Projected Opera	tions				
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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

## 2. Emission Point Description

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

3. Emissions Schedule	e for the	Emiss	sion P	Point							
Continuous or Intermittent (C/I)	?	C		Seasonal Variation		4: 4					
Minutes per hour:		60		Winter Percent	ierwis	e estimate s	seaso				
Hours per day:		12		Spring Percent							
Days per week:		5		Summer Percent							
Weeks per year:		52		Fall Percent							
4. Emission Point Info	rmation										
Height above ground (ft):		N/A	L	Length and width dimensior	ns	Length:			Width:		
Height above structures (ft):		N/A	a	at top of rectangular stack (	(ft): N/A				N/A		
Exit temperature (°F):		N/A	h	Inside diameter at top of round stack (ft):					N/A		
Exit velocity (ft/min):		N/A	С р	Distance from emission point to nearest property line (ft):					N/A		
Exhaust gas volumetric flow rat	e	NI/A	E	Building dimensions if emission Height Len				gth	Width		
(acfm):		N/A	р	point is located on building	/A	N/A					
5. Control Devices Ass	5. Control Devices Associated with the Emission Point										
Identify each control device ass also required for each contro	sociated v <u>I device</u> .	with the If none	emiss checł	sion point and indicate the r ck none:	numb	er of device	es. <u>A</u>	For	<u>n 6 is</u>		
None				Thermal Oxidizer		No					
Baghouse	No			Regenerative							
Cyclone	No			Catalytic Oxidizer		No					
Elec. Precipitator (ESP)	No			Nitrogen Oxides Reductio	on	No					
Dust Suppression System	No			Selective	Ę	] Non-Sele	ective				
🗌 Venturi Scrubber	No				L		arytic				
Spray Tower/Packed Bed	No		S	Specify: Wet Suppression		No					
Carbon Adsorber	No										
Cartridge/Canister											
☐ Regenerative											

FORM 5EP: Emission Point Data								
6. Estimated Emissions from th	e Emission Point							
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Capacity	At	Projected Opera	tions				
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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

## 2. Emission Point Description

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

3. Emissions Schedule	3. Emissions Schedule for the Emission Point								
Continuous or Intermittent (C/I)	)?	0		Seasonal Variation					
	,.	C		Check box if none: X Ot	herwis	e estimate s	seaso	nal va	riation:
Minutes per hour:		60		Winter Percent					
Hours per day:		12		Spring Percent					
Weeks per year:		5		Summer Percent					
4 Emission Point Info	rmatio	<u></u>		1 di l'elcent					
Height above ground (ft):		N/A		Length and width dimensions			· ·	Width:	
Height above structures (ft):		N/A	a	at top of rectangular stack	(ft):	N/A			N/A
Exit temperature (°F):		N/A	I	Inside diameter at top of ro	ound s	tack (ft):			N/A
Exit velocity (ft/min):		N/A	Distance from emission point to nearest property line (ft):			emission point to nearest ft):			N/A
Exhaust gas volumetric flow rat	te		E	Building dimensions if emis	ssion	Height	Len	gth	Width
(acfm):		N/A	F	point is located on buildin	ıg (ft)	N/A	N	/A	N/A
5. Control Devices As	sociate	ed with t	he E	mission Point		1			
Identify each control device ass also required for each contro	Identify each control device associated with the emission point and indicate the number of devices. <u>A Form 6 is</u> also required for each control device. If none check none:								
□ None				Thermal Oxidizer		No			
Baghouse	No			Regenerative					
Cyclone	No		C	Catalytic Oxidizer		No			
Elec. Precipitator (ESP)	No		C	Nitrogen Oxides Reduct	ion	No			
Dust Suppression System	No				Ę	] Non-Sele	ective		
🗌 Venturi Scrubber	No				L		alytic		
Spray Tower/Packed Bed	No		≥ S	⊠ Other Specify: Wet Suppression		No			
Carbon Adsorber	No								
Cartridge/Canister									
Regenerative									

FORM 5EP: Emission Point Data								
6. Estimated Emissions from the	e Emission Point							
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Canacity	At	Projected Opera	tions				
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

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# FORM 5EP: Emission Point Data

<u>Complete one (1) Form 5EP for EACH emission point</u> (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

## 2. Emission Point Description

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

3. Emissions Schedule	3. Emissions Schedule for the Emission Point								
Continuous or Intermittent (C/I)	)?	0		Seasonal Variation					
	,.	C		Check box if none: X Ot	herwis	e estimate s	seaso	nal va	riation:
Minutes per hour:		60		Winter Percent					
Hours per day:		12		Spring Percent					
Weeks per year:		5		Summer Percent					
4 Emission Point Info	rmatio	<u></u>		Tail Tercent					
Height above ground (ft):		N/A		Length and width dimensions			· ·	Width:	
Height above structures (ft):		N/A	a	at top of rectangular stack	(ft):	N/A			N/A
Exit temperature (°F):		N/A	I	Inside diameter at top of ro	ound s	tack (ft):			N/A
Exit velocity (ft/min):		N/A	Distance from emission point to nearest property line (ft):			emission point to nearest ft):			N/A
Exhaust gas volumetric flow rat	te		E	Building dimensions if emis	ssion	Height	Len	gth	Width
(acfm):		N/A	F	point is located on buildin	ıg (ft)	N/A	N	/A	N/A
5. Control Devices As	sociate	ed with t	he E	mission Point		1			
Identify each control device ass also required for each contro	Identify each control device associated with the emission point and indicate the number of devices. <u>A Form 6 is</u> also required for each control device. If none check none:								
□ None				] Thermal Oxidizer		No			
Baghouse	No			Regenerative					
Cyclone	No		C	Catalytic Oxidizer		No			
Elec. Precipitator (ESP)	No		C	Nitrogen Oxides Reduct	ion	No			
Dust Suppression System	No				Ę	] Non-Sele	ective		
🗌 Venturi Scrubber	No				L		alytic		
Spray Tower/Packed Bed	No		≥ S	⊠ Other Specify: Wet Suppression		No			
Carbon Adsorber	No								
Cartridge/Canister									
Regenerative									

FORM 5EP: Emission Point Data								
6. Estimated Emissions from the	e Emission Point							
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Canacity	At	Projected Opera	tions				
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

# 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

<u>Complete one (1) Form 5EP for EACH emission point</u> (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 f	or the Emis	ssion	Point							
Continuous or Intermittent (C/I)?	0		Seasonal Variation							
	C		Check box if none: X Ot	herwis	se estimate s	seaso	nal va	ariation:		
Minutes per hour:	60		Winter Percent							
Davs per week:	12		Summer Percent							
Weeks per vear	52		Fall Percent							
4. Emission Point Inform	ation		r un r oroont	<u> </u>						
Height above ground (ft):	N/A		Length and width dimension	ons	Length	:		Width:		
Height above structures (ft):	N/A		at top of rectangular stack	(ft):	it): N/A			N/A		
Exit temperature (°F):	N/A		Inside diameter at top of ro	ound s	tack (ft):			N/A		
Exit velocity (ft/min):	N/A		Distance from emission po property line (ft):	oint to	nearest			N/A		
Exhaust gas volumetric flow rate (acfm):	N/A		Building dimensions if emission Height Leng point is located on building (ft) N/A N					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. <u>A Form 6 is</u> <u>also required for each control device</u> . If none check none:										
□ None			Thermal Oxidizer		No					
Baghouse No	·		Regenerative							
Cyclone No			Catalytic Oxidizer		No					
Elec. Precipitator (ESP)			Nitrogen Oxides Reduct	ion	No					
Dust Suppression System No			☐ Selective ☐ Catalytic	[	_ Non-Sele _ Non-Cata	ective alytic				
Venturi Scrubber No	·	1	X Other		No					
Spray Tower/Packed Bed No			Specify: Wet Suppression		NO					
Carbon Adsorber No	·									
Cartridge/Canister										
☐ Regenerative										

FORM 5EP: Emission Point Data								
6. Estimated Emissions from th	e Emission Point							
	At Design Capacity	At	Projected Opera	tions				
Criteria Pollutants	(lb/hr)	(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)								
	At Design Capacity	At	Projected Opera	tions				
Greenhouse Gases (GHG)	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				
Carbon Dioxide (CO <sub>2</sub> )								
Methane (CH <sub>4</sub> )								
Nitrous Oxide (N <sub>2</sub> O)								
Hydrofluorocarbons (HFCs)								
Perfluorocarbons (PFCs)								
Sulfur Hexafluoride (SF6)								
Total GHG (as CO <sub>2</sub> e)								
List individual federal Hazardous Air	At Design Capacity	At	Projected Opera	tions				
Pollutants (HAP) below:	(lb/hr)	(lb/hr)	(lb/day)	(ton/yr)				

(Attach additional sheets as necessary.)

1800 Washington Boulevard • Baltimore, Maryland 21230	(410)537-3225 • 1-800-633-6101• <u>www.mde.maryland.gov</u>
	1800 Washington Boulevard • Baltimore, Maryland 21230

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

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

<u>Step 1:</u> 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.

	s of TAP nises Wide	nises Wide otal TAP nissions	.) (Ib/yr)	1500	400		 	
	nission	Pren Tc En	(Ib/hr	0.75	1.00			
	emises Wide Er	Projected TAP Emissions from Proposed Installation	(Ib/hr)	0.15	0.75			
	Estimated P	Actual Total Existing TAP Emissions	(Ib/hr)	0.60	0.5			
		µg/m³)	Annual	N/A	0.13			
	ng Levels (I		8-hour	3769	16			
у.		Screen	1-hour	18843	80			
	Class I or Class II?			11	1			
a documentat	CAS Number			64175	71432			
1000 1000 1000 1000 1000 1000 1000 100		Toxic Air Pollutant (TAP)		ex. ethanol	ex. benzene	N/A		

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (<u>http://www.mde.maryland.gov</u>) 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  $\mu g/m^3$ .

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))

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  $\mu g/m^3$ , and any applicable annual screening level for the TAP must be greater than 1  $\mu g/m^3$ . 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

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 5	T: Toxi	c Air P	ollutant	(TAP) En	nissions	Summar	y and Com	pliance D	emonstra	tion	
Step 3: Best Ava In the following ta should be listed ir necessary.	l <b>ilable Con</b> ble, list all <sup>-</sup> n order begi	<b>trol Tech</b> TAP emis inning wit	nology sion red h the mo	for Toxic: uction opti ist effectiv	<b>s Require</b> l ons consic e control s	<b>ment (T-B</b> Jered whe itrategy to	<b>3ACT, COM</b> in determinii the least ef	<b>AR 26.11.15</b> ng T-BACT fr fective strate	. <b>05)</b> or the propo gy. Attach :	sed installa supporting c	tion. The c documenta	options tion as
				;	% Emis	sion		Cost	(0		T-BA(	CT Option
I arget Pollu	tants	Emissio	on Contro	ol Option	Reduct	tion	Ü	apital	Annual Op	oerating	Selecte	d? (yes/no)
ex. ethanol and b	enzene	Th	nermal Oxid	'izer	66		\$50,00	0	\$100,0	000		ои
ex. ethanol and b	enzene	Γον	v VOC mate	erials	80		0		\$100.0	000		yes
(attach additional	sheets as r	Jecessary	()									
Step 4: Demonst	rating Con	npliance	with the	Ambient	Impact R	equireme	int (COMAF	R 26.11.15.06	) 		1	
The evaluation cc	empt in Stel Insists of a	p Z must series of	increasir 	dually eva	onservativ	e (and inc	that the emi reasingly ric	jorous) tests	Once a T/	AP passes a	impact put a test in the	olic nealtn. • evaluation,
Pollutant (TAP) following table.	Regulation Attach su	pporting	AR 26.1 docume	11.15.06)	" provides	s guidanc ary.		ucting the e	valuation.	Summariz	e your res	sults in the
Toxic Air Pollutant (TAP)	CAS	Scre	tening Le (µg/m <sup>3</sup> )	svels	Premise Total Emiss	es Wide TAP sions	Allowable Rate (A COMAR 26	Emissions VER) per 3.11.16.02A	Off-site C Scree	Concentrati ening Analy (µg/m³)	ons per sis	Compliance Method Used?
		1-hour	8-hour	Annual	(Ib/hr)	(Ib/yr)	(Ib/hr)	(Ib/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 r	recessary	<>									
If compliance wi	th the amb	ient imp	act requ	irement c	annot be	met usin(	g the allow:	able emissic	ons rate me	thod or the	Screening	g analysis
prior to conduct	ing dispers	sion mod	lelina me	ethods to	demonst	rate comp	ase consum oliance.					
			2									

#### **Emissions Calculations**

Laurel Hill Quarry (021-0003) - Modification

		April 18	3, 2023			
	AP-42 Em	ission Factors			Max Operatin	ng Schedule
		PM	PM-10	PM-2.5	Tons/Hour	1,200
Convey	or Transfer Point (Controlled)	0.00014	0.000046	0.000013	Hours/Day	12
1	Screening (Controlled)	0.0022	0.00074	0.00005	Days/Year	260
	Crushers (controlled)	0.0012	0.00054	0.0001	Hours/Year	3,120

		Equipme	nt 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 M	atter (PM-10)			
Emission Point	Description	Canacity (TPH)	AP-42 Factor	Emissions (Ib/bour)	Emissions (lb/day)	Emissions (tons/year)
LIIIISSIOITFOIIIL	Description	capacity (1111)				(tons) year j
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

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		Particulate M	atter (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



		<u>GENERAL AIR QUALITY NOTES:</u>				
		1. REFER TO 08-12-20 AGG-FLOW ANALYSIS FOR MATERIAL FLOW		WET SUPRESSI	DN SYST	FEM #2 SPRA
		VOLUMES THROUGH PLANT. 2. SEE DRAWING SSI-876-1E & 2E FOR ITEM LISTINGS.	=			
		WET SUDDESSION SYSTEM NOTES:	WS1-#	# NOZZLES SIZE NOZZLES	FLOW (GPM)	
		<u>I SUPPESSION SYSTEM FOLIDMENT TO BE INSTALLED IN TWO ENCLOSURES</u>	WS2-1	2 1/4 BX-3	1.7	CONVEYOR #14 DISCHAR
		EACH TO INCLUDE 500 GAL SURGE TANK, FILTRATION SYSTEM, 100 PSI	WS2-2	2 1/4 BX-3	1.7	CONVEYOR #15 DISCHAR
		PUMP, AND SOLENOIDS TO CONTROL FLOW TO EACH SPRAY BAR.	WS2-2A	2 1/4 BX-3	1.7	CONVEYOR #15A FEED
		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 calvanized pipe and to include	WS2-2B	2 1/4 BX-3	1.7	CONVEYOR #15A DISCHA
	WS2-1	END CLEANOUT BALL VALVES.	WS2-3	6 1/4 BX-3	5.1	CH660 DISCHARGE, CON
		4. SWITCHES TO BE LOCATED IN CONTROL TOWER FOR ACTIVATION OF ALL SPRAY BARS.	WS2-4	2 1/4 BX-3	1.7	CONVEYOR #16 DISCHAR
		5. NUZZLES SELECTED FROM BEX CATALOG 50A. 6. PLANT WATER REQUIREMENTS:	W52-5	2 1/4 BX-3	1.7	CONVEYOR #18 FEED
	27	A. 63.5 GPM - WET SUPRESSION SYSTEM #1	WS2-7	2 1/4 BX=3	1.7	CONVEYOR #19 FEED
		B. 73.1 GPM – WET SUPRESSION SYSTEM #2 C. 3.000 CPM – RINSE SCREENS AND SCREW, ITEMS 44, 49, 54, 58, & 67	WS2-7	2 1/4 BX-3	1.7	
		TOTAL - 3.137  GPM	WS2-0	2 1/4 BX-3	1.7	CONVEYOR #19 DISCHAR
		7. WS-1 AND WS-2 OPERATE ONLY DURING TRUCK DUMP	WS2-10	2 1/4 BX-3	1.7	CONVEYOR #20 FEED
			WS2-11	2 1/4 BX-3	1.7	CONVEYOR #20 DISCHAR
			WS2-12	2 1/4 BX-3	1.7	CONVEYOR #21 DISCHAR
		57'S 100.000 TONS	WS2-13	2 1/4 BX-3	1.7	CONVEYOR #22 FEED
			WS2-14	2 1/4 BX-3	1.7	CONVEYOR #22 DISCHAR
			WS2-15	2 1/4 BX-3	1.7	CONVEYOR #23 DISCHAR
			WS2-16	2 1/4 BX-3	1.7	6X16 SCREEN DISCHARG
			WS2-17	2 1/4 BX-3	1.7	CONVEYOR #24 DISCHAR
			WS2-18	2 1/4 BX-3	1.7	CONVEYOR #25 DISCHAR
			WS2-19	2 1/4 BX-3	1.7	CONVEYOR #26 FEED
			WS2-20	2 1/4 BX-3	1.7	CONVEYOR #26 DISCHAR
			WS2-21	2 1/4 BX-3	1.7	CONVEYOR #27 DISCHAR
	(29)		WS2-22	2 1/4 BX-3	1.7	6X16 SCREEN DISCHARG
			WS2-23	2 1/4 BX-3	1.7	CONVEYOR #28 DISCHAR
	$(31) \qquad \qquad$	$7A$ $ws_2-2A$ $ws_2-2B$ $27C$ $ws_2-11$	WS2-24	2 1/4 BX-3	1.7	CONVEYOR #29 DISCHAR
						1
	73 WS2-2 WS2-2					
	WS2-3 (74) WS2-41	WS2-17 / 170' RUNWAY WS2-18				
				7'S		
	WS2-4 (33)	WS2-6 $(36)$ $WS2-9$ $(39)$ $WS2-13$ $WS2-13$		65,000	TONS	_
	MCC #2	WS2-7 37 WS2-31 WS2-14			WS2-:	24
SAND 110,000 TONS	WS#2	52 WS2-25			-	
		$\frac{(47)}{(47)}$				
WS2-35		$\frac{WS2-19}{WC2-20}$	/		(51	
				/		~ _
02			$\langle$	/		
		WS2-27		$\prec$	3 E	
		WS2-32 WS2-15		$\sim$		
/ 110' RUNWAY						
		67) WS2-16				
	(61)					
70 NOT SHOWN	$\int$					<u> </u>
WS2-37 & 38		60 (68) (54) (49) (WS2-22)				s2-23
		ws2-28				(55)
WS2-34 WS2-36						

# <u>Plani equipmeni schedule</u>

	TPH	HP	AUTOMATION DEVICE	CONTROL DEVICE		) ITEM DESCRIPTION	TPH	HP	AUTOMATION DEVICE	CONTROL DEVICE
(26) 54"X408' BELT CONVEYOR #14	1400	75	OS-FS-SS	WS2-1	50	) 36"X440' BELT CONVEYOR #28	400	30		
27) 54"X292' BELT CONVEYOR #15	1400	100	OS-MD-MAG-BS	WS2-1, WS2-2	51	) 36"X100'-150' TELESCOPING STACKING CONVEYOR #29	400	30/30/5 REV/3	OS	WS2-23, WS2-24
27A) FMC MF-200 48"x78" ELECTROMECHANICAL FEEDER	1000	5	·	WS2-2A	52	) 36"X48' BELT CONVEYOR #30	400	15	OS	WS2-25
27B) 54"X206' BELT CONVEYOR #15A	1000	100		WS2-2A, WS2-2B	53	) 36"X136' BELT CONVEYOR #31	400	25	OS	WS2-26, WS2-27
27C) 8'X20' 3D DEISTER SCALPING SCREEN	1000	40/40		WS2-2B	54	) 6'X16' S.D. DEISTER RINSE SCREEN	400	30		
28) 14'X28' 100 TON CRUSHER SURGE BIN	1800		LI-HYD	WS2-2	55	) 36"X794' BELT CONVEYOR #32	400	40	OS	WS2-27, WS2-28
29) TWO (2) FMC MF-200 48"x96" ELECTROMECHANICAL FEEDERS	1200/600	5/5		WS2-2	56	) 36"x150' RADIAL STACKING CONVEYOR #33	400	50/5 REV	OS	WS2-29, WS2-30
30 SANDVIK CH660 TERTIARY CONE CRUSHER CR003	600	400/7.5/7.5/1/1	LI-AMP	WS2-2, WS2-3	57	) 36"X160' BELT CONVEYOR #34	400	25	OS	WS2-31, WS2-32
31) SANDVIK CH660 TERTIARY CONE CRUSHER CR004	600	400/7.5/7.5/1/1	LI-AMP	WS2-3, WS2-12	58	) 54"x33' TWIN SCREW CLASSIFIER	400	30/30		
32) 54"X66' BELT CONVEYOR #16	1800	50	OS	WS2-3, WS2-4	59	) 5'x12' DEISTER DEWATERING SCREEN	400	15		
33) 54"X170' BELT CONVEYOR #17	1800	100	OS	WS2-4, WS2-5	60	) 36"X70' BELT CONVEYOR #35	400	20	OS	WS2-32, WS2-33
34) 10'X20' SPLITTER BIN	1800		LI-HYD	WS2-5	61	) 36"X560' BELT CONVEYOR #36	400	100	OS	WS2-33, WS2-34
TWO (2) FMC MF-200 42"x78" ELECTROMECHANICAL FEEDERS	750/750	5/5		WS2-5	62	) 36"x150' RADIAL STACKING CONVEYOR #37	400	40/5 REV	OS	WS2-34, WS2-35
36) 48"X206' BELT CONVEYOR #18	750	75	OS	WS2-6, WS2-8	63	) WET SUPPRESSION SYSTEM #1 SUPPLY		10/10	SOL	
37) 48"X206' BELT CONVEYOR #19	750	75	OS	WS2-7, WS2-9	64	) WET SUPPRESSION SYSTEM #2 SUPPLY		10/10	SOL	
38) 8'X24' 4D DEISTER INCLINED FINISHING SCREEN	750	50/50		WS2-8	65	FRESH WATER PUMP		150		
39) 8'X24' 4D DEISTER INCLINED FINISHING SCREEN	750	50/50		WS2-9	66	) SLURRY PUMP		150		
40) 48"X55' BELT CONVEYOR #20	600	20	OS	WS2-10	67	) 7'x16' SINGLE DECK SSI WASH SCREEN	250	15/15/2		
41) 48"X390' BELT CONVEYOR #21	600	75	OS-MD-MAG	WS2-11, WS2-12	68	MCLANAHAN S1036A40X SEPARATOR		125 ACVS		
42) 36"X48' BELT CONVEYOR #22	600	15	OS	WS2-13	69	) 36"X400' SSI TRANSFER CONVEYOR #38	300	25	OS	WS2-36, WS2-37
43) 36"X130' BELT CONVEYOR #23	600	30	OS	WS2-14, WS2-15	70	) 36"X120' SSI RADIAL STACKING CONVEYOR #39	300	30/3	OS	WS2-37, WS2-38
44) 6'X16' D.D. DEISTER RINSE SCREEN	600	30			71	) 36"X40' SSI BELT CONVEYOR #40	300	15	OS	WS2-39, WS2-40
45) 36"X200' BELT CONVEYOR #24	600	25	OS	WS2-16, WS2-17	72	) 36"X390' SSI BELT CONVEYOR #41	300	50	OS	WS2-40, WS2-41
46 36"X100'-150' TELESCOPING STACKING CONVEYOR #25	600	30/30/5 REV/3	OS	WS2-17, WS2-18	73	) 14'X14'X16' 60 TON CRUSHER SURGE BIN	300		LI-HYD	WS2-41
47) 36"X48' BELT CONVEYOR #26	400	15	OS	WS2-19	74	) 36"X18' SSI BELT FEEDER FD12	300	25	·	WS2-41
48 36"X136' BELT CONVEYOR #27	400	25	OS	WS2-20, WS2-21	(75	SANDVIK CH660 QUATERNARY CONE CRUSHER CR005	300	400/7.5/7.5/1/1	LI-AMP	WS2-3, WS2-41
(49) 6'X16' S.D. DEISTER RINSE SCREEN	400	30				· · · · · · · · · · · · · · · · · · ·				

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# <u>Plani equipmeni schedule</u>

NO.

# AY BARS

# WET SUPRESSION SYSTEM #2 SPRAY BARS



SCALE:

1" = 50'

2. Never service equipment while in operation nor operate without all guards in place. 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.

CHECKED BY: SSI DWG NO. 

	۹ <i>C</i>	Client	#: 32 I <b>FI</b>	2334 <b>CA</b>				LAUR	san CE	DATE (M	M/DD/YYYY)
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PRO		R Sources Services Inc				CONTA NAME:	<sup>CT</sup> Marla K	Mayles			
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Cu	nbe	rland, MD 21502			-	ADDRE	ss: mmayle	s@cbiz.cor	n		
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		Laurel Sand & Gravel, Inc.			-	INSURE	R C : RSUI Ind	emnity Comp	any		22314
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		Laurel, MD 20725-0850			_	INSURE	RE:				
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Α	Χ	UMBRELLA LIAB X OCCUR			CUP4K1300832214		12/31/2022	12/31/2023	EACH OCCURRENCE	\$15,0	00,000
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	ANY	PROPRIETOR/PARTNER/EXECUTIVE	N / A						E.L. EACH ACCIDENT	\$1,00	0,000
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		1800 Washington Blvd.									
		Baltimore, MD 21230				AUTHO	RIZED REPRESE	NTATIVE			

AUTHORIZED	REPRESENTATIVE

CBIZ Insurance Services, Inc.



# LSG Sandstone

#### Laurel Sand & Gravel, Inc.

Chemwatch: 5366-65 Version No: 2.1.1.1 Chemwatch Hazard Alert Code: 4

Issue Date: 24/06/2020

Print Date: 24/06/2020

S.GHS.USA.EN.RISK

Safety Data Sheet according to OSHA HazCom Standard (2012) requirement	ts

#### **SECTION 1 IDENTIFICATION**

## Product Identifier

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



0 Note: The hazard catego of this SDSs are NOT to Health Red = Fire Yellow reactive substances)

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
Classification	*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.

#### \*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

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

#### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

P501

#### 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	<ul> <li>If this product comes in contact with the eyes:</li> <li>Wash out immediately with fresh running water.</li> <li>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.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
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	<ul> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>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.</li> <li>Transport to hospital, or doctor.</li> <li>If dust is inhaled, remove from contaminated area.</li> <li>Encourage patient to blow nose to ensure clear breathing passages.</li> <li>Ask patient to rinse mouth with water but to not drink water.</li> <li>Seek immediate medical attention.</li> </ul>
Ingestion	<ul> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

Most important symptoms and effects, both acute and delayed

See Section 11

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 a	Ind precautions for fire-fighters	
	Alert Fire Brigade and tell them location and nature of hazard.	

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

#### 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	<ul> <li>Remove all ignition sources.</li> <li>Clean up all spills immediately.</li> <li>Avoid contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective equipment.</li> </ul>
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	<ul> <li>Avoid all personal contact, including inhalation.</li> <li>Wear protective clothing when risk of exposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Prevent concentration in hollows and sumps.</li> </ul>			
Other information	<ul> <li>Keep dry.</li> <li>Store under cover.</li> <li>Protect containers against physical damage.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>			
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 +Pag	Not Available ge 28 of 52	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

			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	3	33 mg/m3	200 mg/m3
Ingredient	Original IDLH		Revised ID	LH	
sandstone	Not Available		Not Availab	le	
silica crystalline - quartz	25 mg/m3 / 50 mg/m3		Not Availab	le	

#### 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	<ul> <li>Safety glasses with side shields.</li> <li>Chemical goggles.</li> <li>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.</li> </ul>
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. • pitch rule rule rule.
Body protection	See Other protection below
Other protection	<ul> <li>Overalls.</li> <li>P.V.C apron.</li> <li>Barrier cream.</li> <li>Skin cleansing cream.</li> </ul>

# 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

\* - 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	<ul> <li>Unstable in the presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
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 Inhaled Effects	aterial is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, es, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Ion of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. Is with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability solve concentrations of particulate are inhaled. damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be ted on individuals who may be exposed to further risk if handling and use of the material result ssive exposures. on lungs are significantly enhanced in the presence of respirable particles.
Ingestion Not no	mally a hazard due to the physical form of product. The material is a physical irritant to the gastro-intestinal tract

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 Not Available	IRRITATION Not Available	
sandstone	TOXICITY Not Available	IRRITATION Not Available	
silica crystalline - quartz	TOXICITY Oral (rat) LD50: =500 mg/kg <sup>[2]</sup>	IRRITATION Not Available	
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise		

sandstone	No data of toxicological significance identified in literature search.				
SILICA CRYSTALLINE - QUARTZ	<ul> <li>WARNING: For inhalation exposure <u>ONLY</u>: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS</li> <li>The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (&lt;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.</li> <li>Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.</li> <li>* 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.</li> </ul>				
Acute Toxicity	X Carcinogenicity				
Skin Irritation/Corrosion	×	Reproductivity	×		
Serious Eye Damage/Irritation	X STOT - Single Exposure X				
Respiratory or Skin sensitisation	X STOT - Repeated Exposure				
Mutagenicity	×	Aspiration Hazard	×		
Legend: 🗙 – Data either not available or does not fill the criteria for classification					

Pata either not available or does not fill the criteria for classi
 Data available to make classification

#### SECTION 12 ECOLOGICAL INFORMATION

#### Toxicity

•				
LSG Sandstone	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE SOUR
	Not Available	Not Available	Not Available	Not Not Available Availat
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE SOUR
sandstone	Not Available	Not Available	Not Available	Not Not Available Availat
silica crystalline - quartz	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE SOUR
	Not Available	Not Available	Not Available	Not Not Available Availat
Legend:	Extracted from V3.12 (QSAR) Data 6. NITE (J	1. IUCLID Toxicity Data 2. Europe ECHA Reg Aquatic Toxicity Data (Estimated) 4. US EPA apan) - Bioconcentration Data 7. METI (Japa	yistered Substances - Ecotoxicological Int A, Ecotox database - Aquatic Toxicity Data n) - Bioconcentration Data 8. Vendor Dat	formation - Aquatic Toxicity 3. EPIWIN a 5. ECETOC Aquatic Hazard Assessm a

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

US DOE Temporary Emergency Exposure Limits (TEELs)

#### Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

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

#### 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<sub>o</sub> IDLH: Immediately Dangerous to Life or Health Concentrations OSF: Odour Safety Factor NOAEL: No Observed Adverse Effect Level LOAEL: Lowest 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

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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 pebblecrushing application. Achieve high performance by selecting the Sandvik crushing chamber that's right for your application.





# ADVANTAGES

- Hydroset<sup>™</sup> system provides safety and setting-adjustment functions
- ASRi<sup>™</sup> 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

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# HEAVY DUTY INCLINED VIBRATING SCREENS





The Standard of Excellence Since 1912.

# **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



Page 38 of 52

# **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 ½" x 3½" vertical braces (¾" thick sideplates standard on 3', 4' & 5' wide models; ¾" 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

В	H-Beam Base
Н	Heavy Duty Inclined
Т	Top Mounted Vibrating Mechanism
М	Middle Vibrating Mechanism
CS	Cable Suspended Unit
XH	Extra Heavy
P	Portable Plant Type

# Explanation of Model Numbers

FIRST	Number
NUMBER	of Decks
SECOND	Width
NUMBER	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.



# **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 %", %", 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 counterweight 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 ¾" 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.



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# **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

Thick bed at input and is quickly stratified and

sizing of thinned bed.

Holding action to <u>retain</u> near size material for maximum grading.

# TYPE-BHT

moved forward rapidly

to spread heavy bed.



Automatic spring tension 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.



#### **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 "holddowns" 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 %"-thick 7"x 13" steel frames welded to the sideplates. Easily removed plates cover the openings.

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# **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,  $\frac{1}{2}$  x  $\frac{1}{4}$  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 ½" 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 %"-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 %"-thick A-R steel. The standard sides are 10-gauge steel.

See page 7 also.



# **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-<sup>1</sup>/<sub>3</sub> 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.

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# 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

T Jan

**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 VIRRATING 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	_						Т					
	_	Α	х	В	х	С	х	D	х	Ε	х	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
<b>Stone</b> .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
<b>Coal</b> .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	<u>Wet Scr</u> Size of Opening	<u>eening</u> Factor E	Deck	Factor F
10%	1.05	70%	2.25	10%	.55	1/32"	1.25	Тор	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 11/2 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.

$$D = \frac{T \times K}{\Gamma \times C}$$

5 x S x W

D = Depth of material in inches

- T = TPH over screen deck
- K = Number of cubic feet per ton of material
- $S = 70 \, \text{fpm}$

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 <sup>3</sup>/<sub>4</sub>"; and make a <sup>1</sup>/<sub>4</sub>" and <sup>1</sup>/<sub>4</sub>" separation at 94% efficiency?

# **Crusher Product Sizes**

	+%	1%	1.5 tons	+1/2 "	61.5 tons	41% oversize on ½" deck
- %	+¾	13%	19.5 tons	- 1/2 "	88.5 tons	59% undersize on ½" deck
- ¾	+%	13%	19.5 tons	- 1/4 "	49.5 tons	33% of 150 tons feed less than ½ size of $\%$ " opening
- %	+½	14%	21.0 tons			
- ½	+¾	13%	19.5 tons	- 1/2 "	88.5 tons	feed to ¼" deck
- ¾	+1/4	13%	19.5 tons	- 1/2" + 1/4"	39.0 tons	44% of 88.5 tons feed to ¼" deck
- 1/4	+1%	14%	21.0 tons	- 1/4 "	49.5 tons	through ¼" deck
	- 1/8	19%	28.5 tons	- 1/8 "	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.

	- Factor	А	(½")	=	1.75			- Factor	А	$(\frac{1}{4}")$	=	1.10
	Factor	В	(41%)	=	.95			Factor	В	(44%)	=	.93
1/2 "	Factor	С	(94%)	=	1.05		1/4 "	Factor	С	(94%)	=	1.05
	Factor	D	(33%)	=	.86			Factor	D	(32%)	=	.84
	Factor	Е	(1.0)	=	1.00			Factor	Е	(1.0)	=	1.00
	– Factor	F	(top)	=	1.00			– Factor	F	(2nd)	=	.90
						1						

2) Feed Tonnage Method Feed factor to ½" = .4 Feed factor to ½" = .56

S = F	( C
S = 15	0 tons x .4 = 60 sq. ft.
S = 88	.5 tons x .56 = 50 sq. ft

USE 5' x 14'

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

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

S = 88.5 1.75 x .95 x 1.05 x .86 x 1.00 x 1.00

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

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

3) Depth of Bed Met	hod	$D = \frac{T \times K}{5 \times S \times W}$		
_ Factor T =	61.5 F	actor T =	= 39.0	61.5 x 20 To K (Loss than two times
Factor K =	20.0 Fa	actor K =	= 20.0	$D = \frac{1}{5 \times 70 \times 4.5} = .78^{\circ}$ (Less than two times size of opening)
½" Factor S =	70.0 1/4" _ Fa	actor S =	= 70.0	39 × 20
– Factor W =	4.5 - Fi	actor W =	= 4.5	$D = \frac{33 \times 20}{5 \times 70 \times 4.5} = .495$ " (Less than two times size of opening)
				1 5,



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





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.

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# FREDERICK COUNTY GOVERNMENT

Jan H. Gardner County Executive

**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 § <u>1-19-8.251</u>.

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,

store.

Tolson DeSa Zoning Administrator

ec: M.Wilkins K. Mitchell