

Report of:

## Industrial Hygiene Sampling

Husqvarna Construction Products  
Olathe, KS

Palmetto EHS Report No: 2017039 Rev. 1  
Submitted March 2, 2017

Prepared for:

## Husqvarna Construction Products

Prepared By:



**Palmetto EHS**  
[www.PalmettoEHS.com](http://www.PalmettoEHS.com)

Palmetto EHS, LLC  
100 Old Cherokee Rd.  
Suite F, Box 163  
Lexington, SC 29072  
803-462-4404 (Phone)  
803-462-4408 (Fax)



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www.PalmettoEHS.com

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March 2, 2017

Husqvarna Construction Products  
17400 West 119th St.  
Olathe, KS 66061

**Attention:** Mr. Richard Tremain  
**Reference:** **REPORT OF INDUSTRIAL HYGIENE SAMPLING**  
Palmetto EHS Report No. 2017039 Rev. 1

Dear Mr. Tremain:

Palmetto EHS, LLC (Palmetto EHS) is pleased to provide the enclosed Industrial Hygiene Sampling report for the referenced site. The assessment was conducted on February 1, 2017. The report includes an executive summary, investigative methods, results and conclusions.

This work was performed in general conformance with Palmetto EHS Proposal Number 2017039 dated January 25, 2017. This report is provided for the sole use of Husqvarna Construction Products. Use of this report by any other parties will be at such party's sole risk and Palmetto EHS disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the sampling period and of the specific areas referenced.

We appreciate the opportunity to work with you. If you have any questions concerning this report, please call us at (803) 462-4404.

Sincerely,  
**Palmetto EHS, LLC**

Rachel Morgan, MPH, ASP  
EHS Specialist



Colleen Eubanks, CIH, CSP, CET  
President

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## Executive Summary

Palmetto EHS conducted sampling for respirable dust and silica (quartz, cristobalite, and tridymite) on February 1, 2017 to assess employee and area exposure in Charlotte, NC for Seretta Construction Mid-Atlantic LLC employees using a Soff-Cut 4000 Saw made by Husqvarna Construction Products.

The results of the chemical sampling indicated that both of the personal samples were below the Permissible Exposure Limits (PELs) and Action Level (ALs) established by the Occupational Safety and Health Administration (OSHA), as well as below the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for respirable dust, quartz, tridymite, and cristobalite. The area sample was below the respective OSHA PELs, OSHA ALs, and ACGIH TLVs for respirable dust, tridymite, and cristobalite, however the area sample for quartz was above the OSHA AL and the non-regulatory ACGIH TLV.

Recommendations are provided in the “Conclusions and Recommendations” section of this report.

OSHA requires employers to notify employees of sample results within 5 days of the employer’s receipt of results. We recommend using the Exposure Notification Forms (provided in Appendix II of this report) to share exposure results with employees. Employees should sign these forms and they should be maintained as a record of the notification.

## Scope of Work

The purpose of the monitoring was to assess employee exposure to respirable dust and silica in Charlotte, NC for Seretta Construction Mid-Atlantic LLC employees using a Soff-Cut 4000 Saw made by Husqvarna Construction Products on February 1, 2017. Samples were collected as task length personal samples and area samples for comparison to the OSHA PELs, OSHA ALs, and ACGIH TLVs.

## Materials and Methods

### *Chemical Sampling*

Air sampling for respirable dust and silica were performed using air sampling pumps and chemical specific sampling media. A cyclone was also used to capture the respirable fraction of the dust for silica and respirable dust samples. Pumps were pre-calibrated and calibration was also verified after the sampling was complete. Samples were analyzed by *Galson Laboratories Inc.*, which is accredited by the American Industrial Hygiene Association (AIHA).

The analytical methods used are listed below.

Chemical Agent	Analytical Method
Respirable Dust	NIOSH 0600
Silica: Quartz, Cristobalite, Tridimytie	NIOSH 7500/OSHA ID 142

NIOSH = National Institute of Occupational Safety and Health  
 OSHA = Occupational Safety and Health Administration

## Results and Discussion

### Background Information

The results of the exposure monitoring were compared to the PELs established by OSHA in 29 CFR 1910, General Industry Standard and the ACGIH TLVs. The limits for the chemical agents are as follows:

Agent	OSHA PEL	ACGIH TLV
Respirable Dust	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
Silica: Quartz, Cristobalite, Tridymite	25 µg/m <sup>3</sup> (0.025 mg/m <sup>3</sup> ) AL 50 µg/m <sup>3</sup> (0.05 mg/m <sup>3</sup> ) PEL	25 µg/m <sup>3</sup> (0.025 mg/m <sup>3</sup> )

OSHA = Occupational Safety and Health Administration  
 Industrial Hygienists  
 PEL = Permissible Exposure Limit  
 ACGIH = American Conference of Governmental  
 Industrial Hygienists  
 TLV = Threshold Limit Value  
 AL = Action Level

A summary of the sample results are provided as Appendix I, employee notification forms are provided as Appendix II, and analytical results from the laboratory are provided as Appendix III.

### Respirable Dust & Silica

Personal exposure monitoring was performed for respirable dust and silica (quartz, cristobalite, and tridymite) on one employee working as a Concrete Finisher on February 1, 2017. The employee was performing early entry crack control joint cutting into a concrete slab during the sampling period. During this type of concrete cutting, the concrete is not completely dry and employees have approximately a two hour window in which they can perform the early entry cutting. The employee wears personal protective equipment including safety glasses, steel toed shoes, a hard hat, an N95 respirator, and a high visibility vest. The sample results were below the respective OSHA PELs, OSHA ALs, and ACGIH TLVs for respirable dust, quartz, cristobalite, and tridymite on the day of the sampling.

Personal exposure monitoring was performed for respirable dust and silica (quartz, cristobalite, and tridymite) on one employee working as a Concrete Finisher on February 1, 2017. The employee was adding protection into the cracks where corners come together and sweeping the lines of concrete dust that are created by the early entry crack control joint cutting into the concrete slab during the sampling period. This employee follows the employee operating the Husqvarna Soff-Cut 4000 Saw with a broom to sweep up the concrete dust created by the cutting. The employee wears personal protective equipment including safety glasses, steel toed shoes, a hard hat, and a high visibility vest. The sample results were below the respective

OSHA PELs, OSHA ALs, and ACGIH TLVs for respirable dust, quartz, cristobalite, and tridymite on the day of the sampling.

One area sample was collected for respirable dust and silica (quartz, cristobalite, and tridymite) on February 1, 2017. The cassette and cyclone were affixed to the Husqvarna Soff-Cut 4000 Saw in order to determine the levels of respirable dust and silica near the blade. The sample results were below the respective OSHA PELs, OSHA ALs, and ACGIH TLVs for respirable dust, cristobalite, and tridymite on the day of the sampling. The sample result for quartz was below the OSHA PEL, but above the OSHA AL and the non regulatory ACGIH TLV on February 1, 2017.

Please note that the weather conditions on the day of the sampling may have impacted the results. Wind gusts between 15 and 30 miles per hour occurred frequently during the sampling period. Additionally, based on the situation and area/environment where the employees will be cutting concrete in the future would likely give different exposure levels due to ventilation changes, work practices of employees, etc.

Note: OSHA issued a final rule on silica, which became effective on June 23, 2016. The rule, however, provides a staggered implementation schedule for many of the requirements of the standard. The silica standard to which we refer in this report is the new standard, which became effective on June 23, 2016.

## Conclusion and Recommendations

The results of the monitoring indicate the following:

- All personal sample results were below the OSHA PELs, OSHA ALs, and ACGIH TLVs on the day of the sampling.
  - Monitoring may be discontinued for these employees and the employees represented by their exposure, unless there is a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.
  - Although the personal sample results were below regulatory limits, the OSHA Silica Standard states that the employer must not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.
- The area sample was above the OSHA AL and the non-regulatory ACGIH TLV for quartz, but below the OSHA PEL. The area sample was below the OSHA PELs, OSHA ALs, and ACGIH TLVs for respirable dust, tridymite, and cristobalite on the day of the sampling.
- OSHA requires employers to notify employees of sample results within 5 days of the employer's receipt of results. The employer must individually notify each affected employee in writing of the results of the assessment or post the results in an appropriate location accessible to all affected employees.
  - We recommend using the Exposure Notification Forms (provided in Appendix II of this report) to share exposure results with employees. Employees should sign these forms and they should be maintained as a record of the notification.

## **APPENDIX I**

### Summary of Monitoring Results

Date	Employee	Sample No.	Area/Position	Time (Min.)	Agent	Result (TWA)	OSHA PEL	ACGIH TLV
<b>Cristobalite</b>								
2/1/17	Field Blank	R-1	---	---	Cristobalite	---	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Area (affixed to the saw)	R-2	Area (affixed to the saw)	215	Cristobalite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	██████████	R-3	Concrete Finisher - Cutting	218	Cristobalite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	██████████	R-4	Concrete Finisher - Sweeping	212	Cristobalite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
<b>Quartz</b>								
2/1/17	Field Blank	R-1	---	---	Quartz	---	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Area (affixed to the saw)	R-2	Area (affixed to the saw)	215	Quartz	<b>30.0 µg/m<sup>3</sup></b>	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	██████████	R-3	Concrete Finisher - Cutting	218	Quartz	5.45 µg/m <sup>3</sup>	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	██████████	R-4	Concrete Finisher - Sweeping	212	Quartz	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
<b>Respirable Dust</b>								
2/1/17	Field Blank	R-1	---	---	Respirable Dust	---	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2/1/17	Area (affixed to the saw)	R-2	Area (affixed to the saw)	215	Respirable Dust	0.40 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2/1/17	██████████	R-3	Concrete Finisher - Cutting	218	Respirable Dust	0.08 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2/1/17	██████████	R-4	Concrete Finisher - Sweeping	212	Respirable Dust	0.04 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
<b>Tridymite</b>								
2/1/17	Field Blank	R-1	---	---	Tridymite	---	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	NA
2/1/17	Area (affixed to the saw)	R-2	Area (affixed to the saw)	215	Tridymite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	NA
2/1/17	██████████	R-3	Concrete Finisher - Cutting	218	Tridymite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	NA
2/1/17	██████████	R-4	Concrete Finisher - Sweeping	212	Tridymite	LDL	25 µg/m <sup>3</sup> AL *50 µg/m <sup>3</sup> PEL	NA

\*50 µg/m<sup>3</sup> is the new OSHA PEL for respirable crystalline silica of which employers in construction must be in compliance by June 23, 2017.



## **APPENDIX II**

### **Employee Exposure Notification Forms**

**EMPLOYEE EXPOSURE NOTIFICATION FORM**

**Employee:** [REDACTED]

**Employer:** **Seretta Construction Mid-Atlantic LLC**

**Location/Task:** **Concrete Finisher - Cutting**

The results of your exposure evaluation performed by Palmetto EHS are provided below. The results indicate chemical exposures below regulatory limits. Your cooperation was greatly appreciated. If you have any questions concerning your results, please contact your supervisor or the Safety Department.

Date	Agent	Result	OSHA PEL	ACGIH TLV
2/1/17	Cristobalite	LDL	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Quartz	5.45 µg/m <sup>3</sup>	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Respirable Dust	0.08 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2/1/17	Tridymite	LDL	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	NA

- Note 1: TWA = 8-hour Time Weighted Average
- Note 2: OSHA = Occupational Safety and Health Administration
- Note 3: NA = Not Applicable
- Note 4: LDL = Less than detectable limit
- Note 5: PEL = Permissible Exposure Limit
- Note 6: ACGIH = American Conference of Governmental Industrial Hygienists
- Note 7: TLV = Threshold Limit Value
- Note 8: mg/m<sup>3</sup> = milligrams per cubic meter
- Note 9: AL = Action Level
- Note 10: µg/m<sup>3</sup> = micrograms per cubic meter

\_\_\_\_\_  
**Employee Signature**

\_\_\_\_\_  
**Date**

**EMPLOYEE EXPOSURE NOTIFICATION FORM**

**Employee:** [REDACTED]

**Employer:** Seretta Construction Mid-Atlantic LLC

**Location/Task:** Concrete Finisher - Sweeping

The results of your exposure evaluation performed by Palmetto EHS are provided below. The results indicate chemical exposures below regulatory limits. Your cooperation was greatly appreciated. If you have any questions concerning your results, please contact your supervisor or the Safety Department.

Date	Agent	Result	OSHA PEL	ACGIH TLV
2/1/17	Cristobalite	LDL	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Quartz	LDL	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	25 µg/m <sup>3</sup>
2/1/17	Respirable Dust	0.04 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
2/1/17	Tridymite	LDL	25 µg/m <sup>3</sup> AL 50 µg/m <sup>3</sup> PEL	NA

- Note 1: TWA = 8-hour Time Weighted Average
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- Note 7: TLV = Threshold Limit Value
- Note 8: mg/m<sup>3</sup> = milligrams per cubic meter
- Note 9: AL = Action Level
- Note 10: µg/m<sup>3</sup> = micrograms per cubic meter

\_\_\_\_\_  
**Employee Signature**

\_\_\_\_\_  
**Date**

## **APPENDIX III**

### **Analytical Results**