



**Results of Testing in Accordance with  
MIL-A-22262B(SH) of JETMAG<sup>®</sup> 30-60**

**KTA Project No. 340714-R2**

**Presented to:**

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A blue ink signature of Daniel G. Chasky is written over a horizontal line. The signature is stylized, with the first name 'Daniel' and last name 'Chasky' clearly legible.

**Daniel G. Chasky  
Project Manager/Coatings Application Specialist  
June 9, 2015**

cc: Mr. Marc Giroux of Olimag Sands, Inc. <[marc.giroux@quartzind.com](mailto:marc.giroux@quartzind.com)>

DGC/CMM:jsc  
JN340714-R2  
(340714-R2 Olimag.doc)

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**R2** – A revision was issued to include a toxicity characteristics results tables.

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**NOTICE:** This report represents the opinion of KTA-TATOR, INC. This report is issued in conformance with generally acceptable industry practices. While customary precautions were taken to insure that the information gathered and presented is accurate, complete and technically correct, it is based on the information, data, time, materials, and/or samples afforded. This report should not be reproduced except in full.

## **INTRODUCTION**

In accordance with KTA-Tator, Inc. (KTA) Proposal No. PN144794, the signed Authorization to Proceed (ATP) received July 9, 2014, and the subsequent advance payment by check received on September 11, 2014, KTA has performed testing on one submitted abrasive material in accordance with sections of MIL-A-22262B(SH), "Military Specification Abrasive Blasting Media Ship Hull Blast Cleaning." This report describes the testing procedures employed and contains the results of the testing.

## **SUMMARY**

One abrasive material was received from Olimag Sands, Inc. (Olimag) and analyzed in accordance with selected quantitative requirements of MIL-A-22262B(SH) for particle size distribution (sieve analysis), moisture content, weight change on ignition, chloride content, free flow, crystalline silica content, specific gravity, carbonates and gypsum, conductivity (water soluble contaminants), oil content, radioactivity, hardness, shape, soluble metals content, total metals content and toxicity characteristics. The abrasive met the requirements of the specification for all tests performed.

## **SAMPLES**

Two plastic containers each containing approximately 46 to 49 pounds of abrasive material, labeled as JETMAG<sup>®</sup> 30-60, were received from Olimag on August 9, 2014. It should be noted that at no time did KTA personnel witness the manufacturing or packaging of these samples.

## **LABORATORY INVESTIGATION**

The laboratory investigation consisted of testing the abrasive materials for particle size distribution (sieve analysis), moisture content, weight change on ignition, chloride content, free flow, crystalline silica content, specific gravity, carbonates and gypsum, conductivity (water soluble contaminants), oil content, radioactivity, hardness, shape, soluble metals content, total metals content and toxicity characteristics in accordance with sections of MIL-A-22262B(SH).

### **Particle Size Determination (Sieve Analysis)**

**MIL-A-22262B(SH) Requirement: None**

**Sample Performance: *See Appendix I***

A sieve analysis was performed in accordance with ASTM C136-06, "Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates." A 100 g sample of the material was collected and tamped through a series of sieves (screen numbers 16, 20, 30, 40, 50, 70, and a pan at the bottom) for seven minutes using an automated tamper. The abrasive collected on each screen was emptied and retained. The underside of each screen was cleaned with a brass brush to loosen any trapped particles, which were also collected. The combined

portions were weighed and documented. The data for the sieve analysis is provided in the Appendix 1, “KTA Sieve Analysis Data Form.”

### **Moisture Content**

**MIL-A-22262B(SH) Requirement: 0.5% maximum**

**Sample Performance: 0.02%; Abrasive sample met the requirement**

The moisture content was determined in accordance with MIL-A-22262B(SH), Section 4.5.5. Approximately 200 grams of abrasive was weighed and dried in a convection oven set at  $105 \pm 5^{\circ}\text{C}$  for three hours or until a constant weight was achieved. The percent moisture content was then calculated.

### **Weight Change on Ignition**

**MIL-A-22262B(SH) Requirement: 1.0% loss maximum, 5.0% gain maximum**

**Sample Performance: 0.01% loss; Abrasive sample met the requirement**

Weight change on ignition testing was performed in accordance with MIL-A-22262B(SH), Section 4.5.6. A representative sample was dried in a convection oven for one hour at  $105 \pm 5^{\circ}\text{C}$ . One gram of the dried abrasive was placed into a tarred crucible. The crucible containing the abrasive sample was placed into a muffle furnace at approximately  $900^{\circ}\text{C}$  (the maximum capability of the muffle furnace) for approximately 30 minutes, allowed to cool to room temperature and weighed again. The percent weight change was then calculated.

### **Chloride Content**

**MIL-A-22262B(SH) Requirement: < 0.03% by weight**

**Sample Performance: 0.016%; Abrasive sample met the requirement**

Chloride content testing was performed in accordance with MIL-A-22262B(SH), Section 4.5.7 and ASTM D1411-09, “Standard Test Methods for Water-Soluble Chlorides Present as Admixtures in Graded Aggregate Road Mixes.” In preparation, approximately 400 grams of material was weighed out and combined with a solution consisting of 479 mL deionized (DI) water, 20 mL of ferric ammonium sulfate, and 1 mL of ammonium hydroxide. The mixture was agitated for approximately 15 hours and filtered to obtain a testing solution. The following reagents were used to obtain the total chloride percentage of the solution: ammonium thiocyanate standard solution ( $\text{NH}_4\text{SCN}$ ), benzyl alcohol, nitric acid ( $\text{HNO}_3$ ), silver nitrate ( $\text{AgNO}_3$ ), and volhard indicator solution. The solution was acidified using the concentrated nitric acid and mixed with a known volume of  $\text{AgNO}_3$ , heated to a boil (to coagulate silver chloride), and allowed to cool to room temperature. Once cooled, the benzyl alcohol was added, the solution was shaken vigorously, and reverse titration was performed using the volhard indicator solution. The percent chloride was calculated using the data obtained.

## **Free Flow**

**MIL-A-22262B(SH) Requirement:** *99% minimum free flow of abrasive from cylinder with no apparent solidification or clump formation*

**Sample Performance:** *99.9% free flow and no apparent solidification or clump formation; Abrasive sample met the requirement*

Free flow testing was performed in accordance with MIL-A-22262B(SH), Section 4.5.8. Approximately  $50 \pm 1$  g of abrasive was poured into a bronze cylinder fitted with a solid end cap. The cylinder was then filled with DI water and allowed to soak for approximately one hour. After the soaking period, the cap was replaced with a hole bearing cap to allow for drainage of the DI water. The cylinder with the abrasive was then placed horizontally in an oven set to a temperature of approximately 120°C for approximately three hours. Once the heating period was complete, the cylinder was removed, allowed to cool at room temperature and then poured out into a tarred beaker at a 75° angle and weighed again. The free flow was then calculated. The cylinder and cap were examined for clump formation and solidification.

## **Crystalline Silica Content**

**MIL-A-22262B(SH) Requirement:** *Maximum of 1.0 percent by weight crystalline silica*

**Sample Performance:** *< 0.5% quartz, 1.0% cristobalite; Abrasive sample met the requirements*

The crystalline silica content testing was subcontracted to HIH Laboratory, Inc. of Webster, Texas, for determination in accordance with NIOSH Method 7500. The HIH Laboratory, Inc. report containing the test results is provided in Appendix 2, "HIH Laboratory, Inc. Crystalline Silica Report." The stated cristobalite result provided in the report is "1%". HIH Laboratory, Inc. confirmed that the result was 1.0%; however, a revised report could not be issued.

## **Specific Gravity**

**MIL-A-22262B(SH) Requirement:** *2.5 for mineral or slag abrasives, minimum*

**Sample Performance:** *Specific gravity of 3.187; Abrasive sample met the requirement*

Specific gravity was determined in accordance with ASTM C128-12, "Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate." ASTM C128 was substituted for ASTM C188 due to applicability to the materials being tested. Briefly, a graduated cylinder was used to determine the volume of abrasive and displaced water and combined and tested using the gravimetric (pycnometer) procedure.

## **Carbonates and Gypsum**

**MIL-A-22262B(SH) Requirement:** *Carbonates and Gypsum shall not be detected*

**Sample Performance:** *No carbonates or gypsum detected. Abrasive sample met the requirement*

Carbonates and gypsum testing was conducted in accordance with MIL-A-22262B(SH), Section 4.5.1. For this testing, the following reagents were utilized: hydrochloric acid (200 mL of concentrated hydrochloric acid mixed with 200 mL of DI water), barium chloride (11.7 g of reagent grade barium chloride mixed with 88 mL of DI water) and lead acetate test paper (approximately 6 mm by 50 mm paper strips soaked in a reagent of 19.0 g of lead acetate mixed with 100 mL of DI water). Approximately 5 g of abrasive was combined with 100 mL of the hydrochloric acid reagent in a beaker. The evolution of gas indicated the presence of carbonates or sulfides. The lead acetate paper was soaked in DI water and was used to test the gas produced. The paper turned brown/black, signifying that the gas was hydrogen sulfide, as opposed to staying white, which signifies that the gas is carbon dioxide and is cause for rejection of the samples. Once the carbonates test was concluded, the mixture was gently boiled for approximately 10 minutes. After boiling, 150 mL of DI water was added to the mixture and 25 mL of the new slurry was filtered through #41 Whatman filter paper. Approximately 10 mL of barium chloride reagent was added to the solution filtrate. No white precipitate formed, indicating that no gypsum was detected.

## **Conductivity (Water Soluble Contaminants)**

**MIL-A-22262B(SH) Requirement:** *290  $\mu$ S/cm, maximum*

**Sample Performance:** *276  $\mu$ S/cm; Abrasive sample met the requirement*

Conductivity testing was performed in accordance with MIL-A-22262B(SH), Section 4.5.10, which references ASTM D4940-10, "Standard Test Method for Conductimetric Analysis of Water Soluble Ionic Contamination of Blasting Abrasives." A slurry of the sample was prepared with 300 mL of reverse-osmosis filtered, DI water and 300 mL of sample material, and stirred for one minute. The slurry was allowed to settle for eight minutes and was stirred again, then filtered. The supernatant liquid produced from the slurry was then tested with an Oakton<sup>®</sup> COND 6+ conductivity meter.

## **Oil Content**

**MIL-A-22262B(SH) Requirement:** *Less than 0.030% by weight*

**Sample Performance:** *0.011% residue by weight; Abrasive sample met the requirement*

The oil content was determined in accordance with MIL-A-22262B (SH), Section 4.5.11.5, Alternate Methods. Solvent extraction and infrared spectroscopy were employed. Two beakers, each containing 500 g of sample material, were each combined with 125 mL of acetone. The samples were stirred, and the solvent was decanted and filtered through Whatman #41 filter paper. The process was repeated with a second 125 mL portion of acetone. A control sample

was prepared in the same manner. The solvent was boiled off and the resulting residues were weighed. It should be noted that a slimy residue was observed in both beakers.

Potassium bromide powder was added to a portion of the residue from each beaker and pellets were formed under high pressure. The pellet obtained from the control beaker was used as a background scan. The pellets were placed in the optical path of a Mattson Galaxy Model 3020 Fourier transform infrared spectrometer and a spectrum of the residue was obtained over the range of 4000 to 400  $\text{cm}^{-1}$ . The infrared spectrum obtained is provided in Appendix 3, "KTA Oil Content Spectrum." The presence of hydrocarbons was revealed by spectral bands near 2900  $\text{cm}^{-1}$ , indicating that the residue contained oil.

### **Radioactivity**

**MIL-A-22262B(SH) Requirement:** *No greater than 20.0 pCi/g, maximum*

**Sample Performance:** *1.8 ( $\pm 2.4$ ) pCi/g; Abrasive sample met the requirement*

Radioactivity testing was subcontracted to Hazen Research, Inc. of Golden, Colorado, for determination in accordance with MIL-A-22262B(SH), Section 4.5.13. The Hazen Research, Inc. report containing the test results is provided in Appendix 4, "Hazen Research, Inc. Radioactivity Report."

### **Hardness**

**MIL-A-22262B(SH) Requirement:** *75% of grains scratch glass, minimum*

**Sample Performance:** *100% of grains scratched glass; Abrasive sample met the requirement*

Hardness testing was performed in accordance with MIL-A-22262B(SH), Section 4.5.14. Briefly, to obtain a representative test sample, 5 g of the abrasive sample was examined using a microscope at 10X magnification. A few grains (10 total grains) representing each color and shape were chosen and placed on a glass slide. A second glass slide was then placed on top of the selected abrasive. Moderate pressure was used to push and move the second slide over the abrasive for 10 seconds. The glass slides were then examined for scratches. If 75% of the grains are found to scratch the glass slides, then the abrasive is rated as having a minimum hardness of 6 on the Mohs scale.

### **Shape**

**MIL-A-22262B(SH) Requirement:** *80% of grains exhibit angular shape, minimum*

**Sample Performance:** *100% of grains exhibited angular shape; Abrasive sample met the requirement*

Testing for shape was performed in accordance with MIL-A-22262B(SH), Section 4.5.15. Briefly, to obtain a representative test sample, 5 g of the abrasive sample was examined using a microscope at 10X magnification. Approximately 10 grains representing each color and shape were chosen and placed on a glass slide. Each of the grains was examined under

magnification to determine if each exhibited an angular profile so that there is an ability to cut the surface rather than peen.

### **Soluble Metals Content, Total Metals Content and Toxicity Characteristics**

**MIL-A-22262B(SH) Requirement:** *Tables I, II, and III; Sample shall not exceed maximum limits*

**Sample Performance:** *Table I: Soluble Metals Content: Met all requirements*

*Table II: Total Metals Content: Met all requirements*

*Table III: Toxicity Characteristics: Met all requirements*

The soluble metals content, total metals content and toxicity characteristics testing was subcontracted to Schneider Laboratories Global, Inc. of Richmond, Virginia, for determination in accordance with MIL-A-22262B(SH), Sections 3.4.12.1 and 3.4.12.2. Testing methods included EPA 6010C, EPA 7196A, EPA 7471A, and SW846 9056M for soluble metals content; EPA 6010B/3050B, EPA 7196A, EPA 7471A/3005, and SW846 9056M for total metals content; and EPA 7471B/1311, EPA 6010C/1311, SW946 8151A/EPA 1312, SW846 8081B/EPA 1312, SW846 8270D/EPA 1311, and SW846 8260B/EPA 1311 for toxicity characteristics. Note that the fluoride content is reported in units of mg/kg, not mg/L. Based on correspondence with Schneider Laboratories Global, Inc., the fluoride analysis was performed using a solid; however, the result was below the maximum limit of 1.8% by weight required by Table II of MIL-A-22262B(SH). The results of the soluble metals content analysis are contained in Table 1, "Soluble Metals Content Results." The results of the total metals content analyses are contained in Table 2, "Total Metals Content Results." The results of the toxicity characteristic analyses are contained in Table 3, "Toxicity Characteristic Results." The Schneider Laboratories Global, Inc. reports containing the test results are provided in Appendix 5, "Schneider Laboratories Global, Inc. Soluble Metals Content Report, Total Metals Content Report, and Toxicity Characteristics Report."



**Table 1 – Soluble Metals Content Results**

<b>Manufacturer: Olimag Sands, Inc.</b>			
<b>Product Name: JETMAG 30-60</b>			
<b>Date of Analysis: November 6, 2014</b>			
<b>Compound(s)</b>	<b>Maximum Soluble Metals Content (mg/L) – Mil-A-22262B(SH), Section 3.4.12.1, Table I</b>	<b>Results (mg/L)</b>	<b>Sample Met Requirement?</b>
Antimony	5	< 0.08	Yes
Arsenic	5	< 0.08	Yes
Barium (excluding barite)	100	0.102	Yes
Beryllium	0.75	< 0.08	Yes
Cadmium	1	< 0.08	Yes
Chromium (VI)	5	< 0.02	Yes
Chromium & (III)	25	0.238	Yes
Cobalt	80	0.144	Yes
Copper	25	< 0.200	Yes
Fluoride Salts	180	< 5.00 (mg/kg)	Yes
Lead	1	0.279	Yes
Mercury	0.2	< 0.0005	Yes
Molybdenum	35	< 0.08	Yes
Nickel	10	2.09	Yes
Selenium	1	0.0936	Yes
Silver	5	< 0.08	Yes
Thallium	7	< 0.08	Yes
Vanadium	24	< 0.08	Yes
Zinc	50	0.865	Yes

**Table 2 – Total Metals Content Results**

<b>Manufacturer: Olimag Sands, Inc.</b>			
<b>Product Name: JETMAG 30-60</b>			
<b>Dates of Analysis: November 4, 2014, and November 6, 2014</b>			
<b>Compound(s)</b>	<b>Maximum Total Metals Content (mg/kg) – Mil-A-22262B(SH), Section 3.4.12.1, Table II</b>	<b>Results (mg/kg)</b>	<b>Sample Met Requirement?</b>
Antimony	500	< 3.72	Yes
Arsenic	500	< 3.72	Yes
Barium (excluding barite)	10000	< 3.72	Yes
Beryllium	750	< 3.72	Yes
Cadmium	100	< 3.72	Yes
Chromium (VI)	500	< 0.80	Yes
Chromium & (III)	2500	47.2	Yes
Cobalt	8000	20.9	Yes
Copper	2500	43.6	Yes
Fluoride Salts	18000	< 5.00	Yes
Lead	100	< 3.72	Yes
Mercury	20	< 0.118	Yes
Molybdenum	3500	10.6	Yes
Nickel	1000	533	Yes
Selenium	100	< 3.72	Yes
Silver	500	< 3.72	Yes
Thallium	700	< 3.72	Yes
Vanadium	2400	4.09	Yes
Zinc	5000	< 9.31	Yes

**Table 3 – Toxicity Characteristic Results**

<b>Manufacturer: Olimag Sands, Inc.</b>			
<b>Product Name: JETMAG 30-60</b>			
<b>Dates of Analysis: November 4, 2014, November 5, 2014, November 13, 2014 and November 14, 2014</b>			
<b>Compound(s)</b>	<b>Maximum Total Metals Content (mg/L) – Mil-A-22262B(SH), Section 3.4.12.2, Table III</b>	<b>Results</b>	<b>Sample Met Requirement?</b>
Arsenic	5.0	< 0.0800 mg/L	Yes
Barium	100.0	< 0.0800 mg/L	Yes
Benzene	0.50	< 5.00 µg/L	Yes
Cadmium	1.0	< 0.0800 mg/L	Yes
Carbon Tetrachloride	0.50	< 5.00 µg/L	Yes
Chlordane	0.03	< 5.00 µg/L	Yes
Chlorobenzene	100.0	< 5.00 µg/L	Yes
Chloroform	6.0	< 5.00 µg/L	Yes
Chromium	5.0	< 0.200 mg/L	Yes
o-Cresol (2 methylphenol)	200.0	< 0.0500 µg/L	Yes
m-Cresol (3 methylphenol)	200.0	< 0.0500 µg/L	Yes
p-Cresol (4 methylphenol)			Yes
2, 4-D	10.0	< 1.00 µg/L	Yes
1, 4-Dichlorobenzene	7.5	< 5.00 µg/L	Yes
1,2-Dichloroethane	0.50	< 5.00 µg/L	Yes
1,1-Dichloroethylene	0.70	< 5.00 µg/L	Yes
2,4-Dinitrotoluene	0.13	< 0.0500 µg/L	Yes
Endrin	0.02	< 0.250 µg/L	Yes
Heptachlor (and epoxide)	0.008	< 0.500 µg/L	Yes
Hexachlorobutadiene	0.05	< 0.0500 µg/L	Yes
Hexachloroethane	3.0	< 0.0500 µg/L	Yes
Lead	1.0	< 0.0800 mg/L	Yes
Lindane	0.40	< 0.250 µg/L	Yes
Mercury	0.20	0.00879 mg/L	Yes
Methoxychlor	10.0	< 0.250 µg/L	Yes
Methyl Ethyl Ketone	200.0	156 µg/L	Yes
Nitrobenzene	2.0	< 0.0500 µg/L	Yes
Pentachlorophenol	100.0	< 0.0500 µg/L	Yes
Pyridine	5.0	< 0.0500 µg/L	Yes
Selenium	1.0	< 0.08 mg/L	Yes
Silver	5.0	< 0.08 mg/L	Yes
Tetrachloroethylene	0.70	< 5.00 µg/L	Yes
Toxaphene	0.50	< 5.00 µg/L	Yes
Trichloroethylene (Trichloroethene)	0.50	< 5.00 µg/L	Yes
2,4,5-Trichlorophenol	400.0	< 0.0500 µg/L	Yes
2,4,6-Trichlorophenol	2.0	< 0.0500 µg/L	Yes
2,4,5-TP (Silvex)	1.0	< 1.00 µg/L	Yes
Vinyl Chloride	0.20	< 5.00 µg/L	Yes

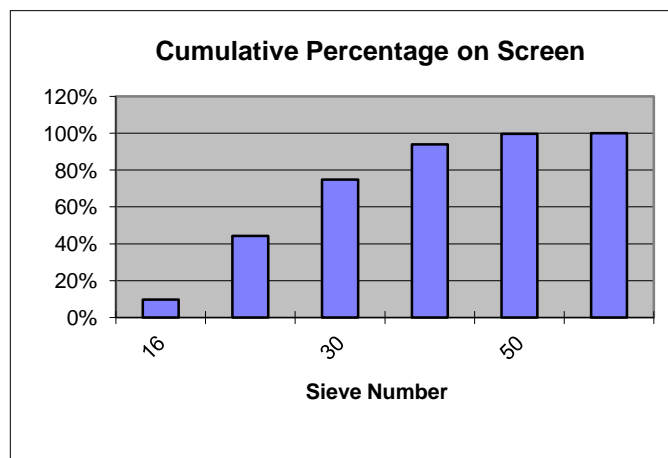
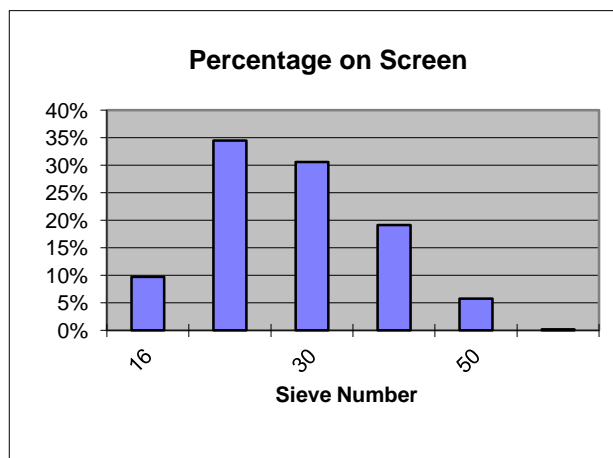
# **APPENDIX 1**



# KTA-Tator, Inc. Sieve Analysis Data Form

Sample ID No.: 340714-1 Date: 10/30/2014  
Sample Description: JetMag Technician: DGC  
Initial Sample Mass (g): 100.08

US Standard Sieve No.	Retained Sample (g)	% of Total	Cumulative % of Total	Nominal Sieve Opening Size (mm)	Retained Sample (g) * Opening (mm)
16	9.820	9.716%	9.72%	1.180	11.588
20	34.860	34.491%	44.21%	0.850	29.631
30	30.950	30.622%	74.83%	0.600	18.570
40	19.340	19.135%	93.96%	0.425	8.220
50	5.850	5.788%	99.75%	0.300	1.755
70	0.200	0.198%	99.95%	0.212	0.042
Pan*	0.050	0.049%	100.00%	0.038	0.002
Total	101.1			Sum =	69.81
				Average particle size (mm) =	0.69



# **APPENDIX 2**

**HIH LABORATORY, INC.**

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Webster, Tx 77598

(281) 338-9000

FAX (281) 338-2351

**Report Number** 38901**LABORATORY ANALYSIS REPORT**

KTA-TATOR, INC.

115 TECHNOLOGY DRIVE

PITTSBURGH PA 15275

**Attention:**

Mr. Dan Chaskey

**Report Number** 38901**Date Received:** 11/03/2014**Client Number:** 992 2**Date Reported:** 11/07/2014

<i>HIH Sample Number:</i>	<i>Client Sample ID</i>	<i>Date Collected</i>	<i>Sample time (min)</i>	<i>Sample Vol. (L) or Area</i>					
<i>Analyte</i>	<i>Result</i>	<i>Units</i>	<i>Actual Exp</i>	<i>Units</i>	<i>Test date:</i>	<i>Reporting Limit</i>	<i>Blank Corrected</i>	<i>Lower 95% Confidence Limit</i>	<i>Upper 95% Confidence Limit</i>
<b>479574</b>	<b>340714-1</b>								
Cristobalite	10000	ug/g	1	%	11/6/2014	5000 ug/g	N/A		
Quartz	< 5000	ug/g	< 0.5	%	11/6/2014	5000 ug/g	N/A		

**HIH LABORATORY, INC.**

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*100 E. NASAParkway, Suite 210**P.O. Box 57727**Webster, Tx 77598**(281) 338-9000**FAX (281) 338-2351***Report Number** 38901**LABORATORY ANALYSIS REPORT**Report Number  
38901**SUPPLEMENTARY QUALITY ASSURANCE INFORMATION**

Analyte	Method	Media	Test date:	Analyst:	Instrument:	MSD % RECOVERY:	NUMBER OF SPIKES:	MS % Recovery:	LCS % Recovery:	Precision (% Sr)	Result	DUP RPD	MS/M SD RPD:	Range:	Batch No:	Lit Ref	Smp #
Cristobalite	NIOSH 7500	Bulk Material	11/06/2014		NM	---	---	---	---	---	---	---	---	2777	31078		479574
Quartz	NIOSH 7500	Bulk Material	11/06/2014		NM	---	---	---	95.8	---	---	---	---	---	31078		479574

**Method Literature References**

HIH Laboratory did not collect these samples; therefore, calculations are based on client-supplied sampling data.

Samples arrived in good condition unless otherwise noted.

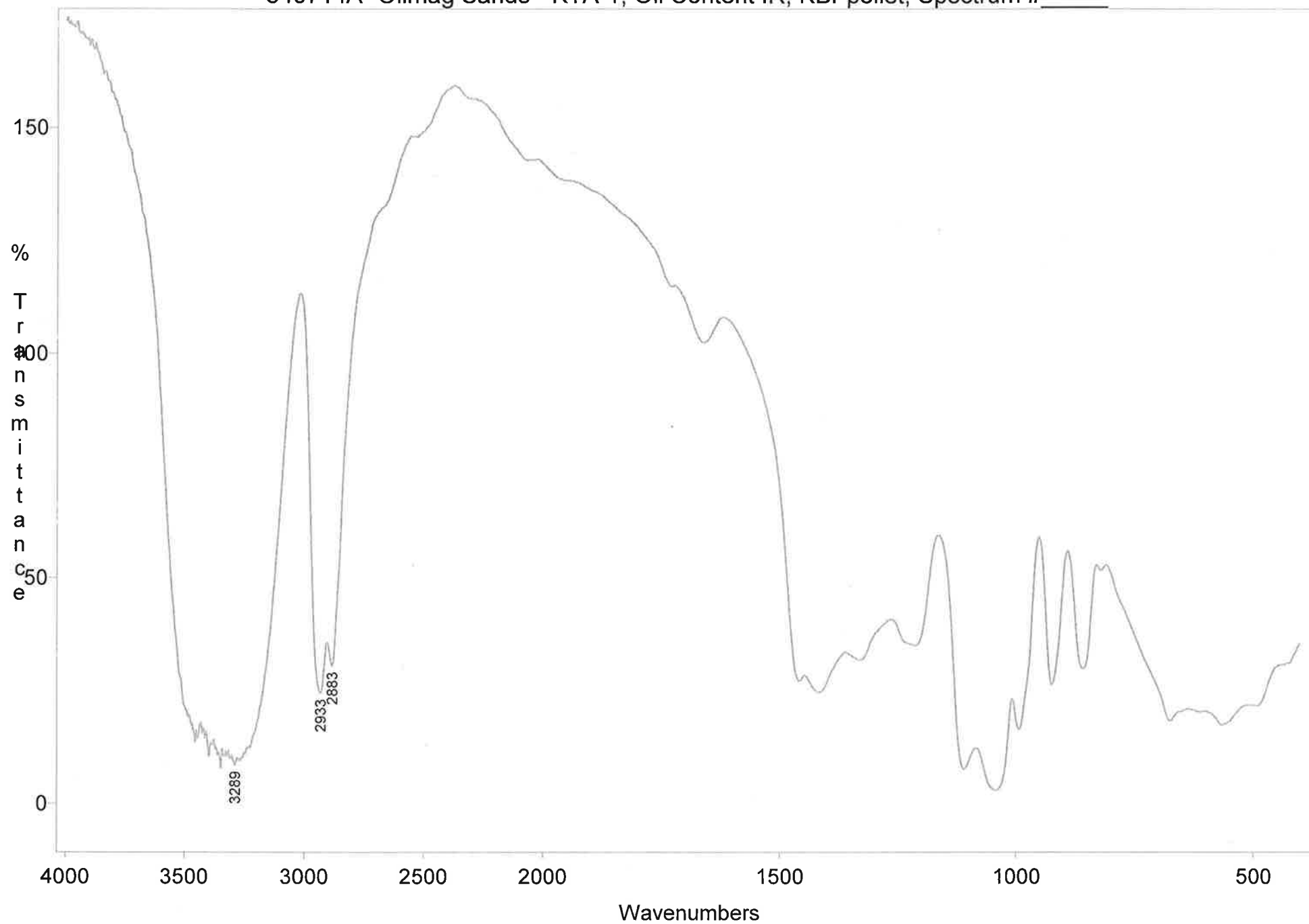
**Approved By:** Carole A. Newman, Quality Manager

Carole A. Newman, Quality Manager



# APPENDIX 3

340714A- Olimag Sands - KTA-1, Oil Content IR, KBr pellet, Spectrum #



Operator: vs  
Resolution: 4.0

Appendix 3  
1 of 1

Scans: 32  
Date: Tue Sep 23 17:46:49:12 2014

# **APPENDIX 4**

**Hazen Research, Inc.**

4601 Indiana Street  
Golden, CO 80403 USA  
Tel: (303) 279-4501  
Fax: (303) 278-1528

DATE October 14, 2014  
HRI PROJECT 002-HBM  
HRI SERIES NO 1333/14  
DATE REC'D. 9/26/2014  
CUST. P.O.# PO14-401

KTA-Tator, Inc.  
Daniel Chasky  
115 Technology Drive  
Pittsburgh, PA 15275

**REPORT OF ANALYSIS**

SAMPLE NO. I333/14-1

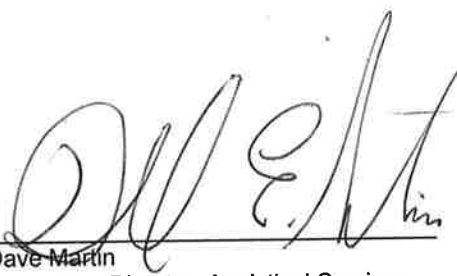
SAMPLE IDENTIFICATION: 340714 - 100g Abrasive Aggregate

PARAMETER	RESULT	DETECTION LIMIT	METHOD	ANALYSIS DATE	ANALYST
Gross Gamma (Co-60 Equiv.)(+Prec.*), pCi/g	1.8(+2.4)	2.4	MIL-A-22262 B(SH)	10/7/2014 @ 1507	AN

\*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.  
Certification ID's: CO/EPA CO00008; CT PH-0152; KS E-10265; NYELAP 11417;  
RI LAO00284; TX T104704256-11-2; WI 998376610

Results reported herein relate only to discrete samples submitted by the client. Hazen Research, Inc. does not warrant that the results are representative of anything other than the samples that were received in the laboratory.

CODES: (T) = Total (D) = Dissolved (S) = Suspended (R) = Total Recoverable  
(PD) = Potentially Dissolved < = Less Than

By:   
Dave Martin  
Laboratory Director, Analytical Services

# APPENDIX 5



## Analysis Report

## Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275**Order #:** 113903**Matrix** Bulk, STLC  
**Received** 11/03/14  
**Analyzed** 11/06/14  
**Reported** 11/11/14**PO Number:** 14PO-464**Attn:**  
**Project:**  
**Location:**  
**Number:**

Sample ID	Cust. Sample ID	Location	Sample Date	Result	Units	RL	Analyst
Parameter		Method					
<b>113903-001</b>	340714-1						
Antimony		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Arsenic		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Barium		EPA 6010C	10/30/14	0.102	mg/L	0.0800	DLJ
Beryllium		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Cadmium		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Chromium		EPA 6010C	10/30/14	0.238	mg/L	0.200	DLJ
Cobalt		EPA 6010C	10/30/14	0.144	mg/L	0.0800	DLJ
Copper		EPA 6010C	10/30/14	< 0.200	mg/L	0.200	DLJ
Lead		EPA 6010C	10/30/14	0.279	mg/L	0.0800	DLJ
Molybdenum		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Nickel		EPA 6010C	10/30/14	2.09	mg/L	0.0800	DLJ
Selenium		EPA 6010C	10/30/14	0.0936	mg/L	0.0800	DLJ
Silver		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Thallium		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Vanadium		EPA 6010C	10/30/14	< 0.0800	mg/L	0.0800	DLJ
Zinc		EPA 6010C	10/30/14	0.865	mg/L	0.200	DLJ
Selenium and Thallium LCS failure due to interference between element wavelengths							
Chromium (VI)		EPA 7196A	10/30/14	< 0.0200	mg/L	0.0200	OHE
Mercury		EPA 7471A	10/30/14	< 0.0005	mg/L	0.0005	OHE
Initial pH		WET Method	10/30/14	4.11	pH Units		WT
<b>113903-002</b>	340714-1						
Fluoride		SW846 9056M	10/30/14	< 5.00	mg/kg	5.00	BHH

113903-11/11/14 04:02 PM

Reviewed By: Irma Faszewski  
QC Director

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. The analysis data reported relates only to the samples as submitted. Values are reported to three significant figures. The signature above certifies that all results conform to the current NELAC standards unless otherwise noted.



## Analysis Report

## Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113918

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 11/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL	Units	Analysis Date	Analyst
Parameter		Method					
113918-001	340714-1	Jet Mag 340714-1					
<b>Metals Analysis</b>							
Antimony		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Arsenic		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Barium		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Beryllium		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Cadmium		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Chromium		EPA 6010B / 3050B	47.2	9.31	mg/kg	11/04/14	DLJ
Cobalt		EPA 6010B / 3050B	20.9	3.72	mg/kg	11/04/14	DLJ
Copper		EPA 6010B / 3050B	43.6	9.31	mg/kg	11/04/14	DLJ
Lead		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Molybdenum		EPA 6010B / 3050B	10.6	3.72	mg/kg	11/04/14	DLJ
Nickel		EPA 6010B / 3050B	533	37.2	mg/kg	11/04/14	DLJ
Selenium		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Silver		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Thallium		EPA 6010B / 3050B	< 3.72	3.72	mg/kg	11/04/14	DLJ
Vanadium		EPA 6010B / 3050B	4.09	3.72	mg/kg	11/04/14	DLJ
Zinc		EPA 6010B / 3050B	< 9.31	9.31	mg/kg	11/04/14	DLJ
Chromium (VI)		EPA 7196A	< 0.800	0.800	mg/kg	11/06/14	SA
Mercury		EPA 7471A / 3005	< 0.118	0.118	mg/kg	11/06/14	IH
<b>Wet Chemistry Analysis</b>							
Fluoride		SW846 9056M	< 5.00	5.00	mg/kg	11/04/14	BHH

113918-11/10/14 02:46 PM

Reviewed By: **Alfreda Jones**  
Project Manager

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.

Accrediting bodies: AIHA-LAP, LLC 100527, VELAP/NELAC 460135.



## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113918

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 11/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL	Units	Analysis Date	Analyst
Parameter		Method					

### Certifications

Parameter	Method	Matrix	CA	CT	FL	LA	NJ	NY	VA
Antimony	EPA 6010B	Bulk	X						
Arsenic	EPA 6010B	Bulk	X						
Barium	EPA 6010B	Bulk	X						
Beryllium	EPA 6010B	Bulk	X						
Cadmium	EPA 6010B	Bulk	X						
Chromium	EPA 6010B	Bulk	X						
Chromium (VI)	EPA 7196A	Bulk		X	X	X	X		X
Cobalt	EPA 6010B	Bulk	X						
Copper	EPA 6010B	Bulk	X						
Fluoride	SW846 9056M	Bulk							
Lead	EPA 6010B	Bulk	X						
Mercury	EPA 7471A	Bulk	X				X	X	
Molybdenum	EPA 6010B	Bulk	X						
Nickel	EPA 6010B	Bulk	X						
Selenium	EPA 6010B	Bulk	X						
Silver	EPA 6010B	Bulk	X						
Thallium	EPA 6010B	Bulk	X						
Vanadium	EPA 6010B	Bulk	X						
Zinc	EPA 6010B	Bulk	X						

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.





## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
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**Customer:** KTA-Tator, Inc. (1861)  
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Pittsburgh, PA 15275

**Order #:** 113918

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 11/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL	Units	Analysis Date	Analyst
Parameter		Method					

### Certifications

Parameter	Method	Matrix	CA	CT	FL	LA	NJ	NY	VA
-----------	--------	--------	----	----	----	----	----	----	----

### Key

State	Regulatory Agency - Lab ID	Certificate Number
CA	CA ELAP	2078
CT	CT DPH	PH-0118
FL	FL ELAP	E87828-13
KS	KS ELAP	E-10348
LA	LELAP	04073A
NJ	NJDEP	NLC13001
NY	NYELAP	51309
VA	Virginia DCLS/DEQ - 460135	5437

'X' indicates that the analyte is accredited.

If your state is not listed above, call laboratory for accreditation/certification information.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.

Accrediting bodies: AIHA-LAP, LLC 100527, VELAP/NELAC 460135.



## Analysis Report

## Schneider Laboratories Global, Inc

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804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 12/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
113919-001	340714-1	Jet Mag 340714-1					
<b>Metals Analysis</b>							
Mercury		EPA 7471B / 1311	0.00879	0.0005	mg/L	11/05/14	OHE
Arsenic		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
Barium		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
Cadmium		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
Chromium		EPA 6010C / 1311	< 0.200	0.200	mg/L	11/05/14	DLJ
Lead		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
Selenium		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
Silver		EPA 6010C / 1311	< 0.0800	0.0800	mg/L	11/05/14	DLJ
<b>MS Failed due to matrix interference.</b>							
Initial pH		EPA 1311	9.37		pH Units	11/04/14	WT
Post pH		EPA 1311	2.05		pH Units	11/04/14	WT
<b>Semi-volatile Organic Compounds - Herbicides</b>							
2,4,5-T		SW846 8151A / EPA 1312	< 1.00	1.00	µg/L	11/17/14	APS
2,4,5-TP (Silvex)		SW846 8151A / EPA 1312	< 1.00	1.00	µg/L	11/17/14	APS
2,4-D		SW846 8151A / EPA 1312	< 1.00	1.00	µg/L	11/17/14	APS
Herbicides TCLP - Surrogate Recoveries							
DCAA		62%					
<b>Semi-volatile Organic Compounds - Pesticides</b>							
Chlordane		SW846 8081B / EPA 1312	< 5.00	5.00	µg/L	11/14/14	APS
Endrin		SW846 8081B / EPA 1312	< 0.250	0.250	µg/L	11/14/14	APS
Heptachlor		SW846 8081B / EPA 1312	< 0.250	0.250	µg/L	11/14/14	APS
Heptachlor epoxide		SW846 8081B / EPA 1312	< 0.250	0.250	µg/L	11/14/14	APS
Lindane		SW846 8081B / EPA 1312	< 0.250	0.250	µg/L	11/14/14	APS
Methoxychlor		SW846 8081B / EPA 1312	< 0.250	0.250	µg/L	11/14/14	APS
Toxaphene		SW846 8081B / EPA 1312	< 5.00	5.00	µg/L	11/14/14	APS
Pesticides TCLP - Surrogate Recoveries							
DCB		51%					
TCMX		69%					

### Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.

Accrediting bodies: AIHA-LAP, LLC 100527, VELAP/NELAC 460135.



## Analysis Report

## Schneider Laboratories Global, Inc

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804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 12/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
113919-001	340714-1	Jet Mag 340714-1					
<b>Semi-volatile Organic Compounds</b>							
2,4,5-trichlorophenol		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
2,4,6-trichlorophenol		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
2,4-Dinitrotoluene		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
2-Methylphenol		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
3,4-Methylphenol		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Hexachlorobenzene		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Hexachlorobutadiene		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Hexachloroethane		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Nitrobenzene		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Pentachlorophenol		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
Pyridine		SW846 8270D / EPA 1311	< 0.0500	0.0500	µg/L	11/13/14	THN
SVOC TCLP - Surrogate Recoveries							
2,4,6-Tribromophenol		76%					
2-Fluorobiphenyl		54%					
2-Fluorophenol		58%					
Nitrobenzene d-5		78%					
Phenol d-5		33%					
Terphenyl d-14		128%					
<b>Volatile Organic Compounds</b>							
1,1-Dichloroethene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
1,2-Dibromoethane		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
1,2-Dichloroethane		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
1,4-Dichlorobenzene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
2-Butanone (MEK)		SW846 8260B / EPA 1311	156	5.00	µg/L	11/05/14	APS
Benzene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
Carbon Tetrachloride		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
Chlorobenzene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS

### Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.

Accrediting bodies: AIHA-LAP, LLC 100527, VELAP/NELAC 460135.



## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 12/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
113919-001	340714-1	Jet Mag 340714-1					
Chloroform		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
Tetrachloroethene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
Trichloroethene		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
Vinyl chloride		SW846 8260B / EPA 1311	< 5.00	5.00	µg/L	11/05/14	APS
VOC TCLP - Surrogate Recoveries							
1,2-Dichloroethane d-4		90%					
4-Bromofluorobenzene		102%					
Dibromofluoromethane		93%					
Toluene d-8		95%					

113919-12/10/14 02:03 PM

Reviewed By: **Irma Faszewski**  
QC Director

### Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.



## Analysis Report

# Schneider Laboratories Global, Inc

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**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
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**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					

### Certifications

Parameter	Method	Matrix	CT	FL	LA	NC	NJ	NY	RI	SC	VA
1,1-Dichloroethene	SW846 8260B	Bulk					X				
1,2-Dibromoethane	SW846 8260B	Bulk									
1,2-Dichloroethane	SW846 8260B	Bulk	X						X		X
1,4-Dichlorobenzene	SW846 8260B	Bulk									
2,4,5-T	SW846 8151A	Bulk									
2,4,5-TP (Silvex)	SW846 8151A	Bulk									
2,4,5-trichlorophenol	SW846 8270D	Bulk									
2,4,6-trichlorophenol	SW846 8270D	Bulk	X				X		X		X
2,4-D	SW846 8151A	Bulk									
2,4-Dinitrotoluene	SW846 8270D	Bulk					X				
2-Butanone (MEK)	SW846 8260B	Bulk									
2-Methylphenol	SW846 8270D	Bulk					X				
3,4-Methylphenol	SW846 8270D	Bulk									
Arsenic	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Barium	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Benzene	SW846 8260B	Bulk	X						X		X
Cadmium	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Carbon Tetrachloride	SW846 8260B	Bulk	X				X		X		X
Chlordane	SW846 8081B	Bulk					X				
Chlorobenzene	SW846 8260B	Bulk									
Chloroform	SW846 8260B	Bulk	X						X		X
Chromium	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Endrin	SW846 8081B	Bulk	X				X		X		X
Heptachlor	SW846 8081B	Bulk	X				X		X		X
Heptachlor epoxide	SW846 8081B	Bulk					X				
Hexachlorobenzene	SW846 8270D	Bulk	X				X		X		X

### Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.



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# Schneider Laboratories Global, Inc

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**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 12/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					

### Certifications

Parameter	Method	Matrix	CT	FL	LA	NC	NJ	NY	RI	SC	VA
Hexachlorobutadiene	SW846 8270D	Bulk	X						X		X
Hexachloroethane	SW846 8270D	Bulk	X						X		X
Lead	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Lindane	SW846 8081B	Bulk	X				X		X		X
Mercury	EPA 7471B	Bulk	X	X	X	X		X	X	X	X
Methoxychlor	SW846 8081B	Bulk	X						X		X
Nitrobenzene	SW846 8270D	Bulk	X				X		X		X
Pentachlorophenol	SW846 8270D	Bulk	X				X		X		X
Pyridine	SW846 8270D	Bulk									
Selenium	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Silver	EPA 6010C	Bulk	X	X	X	X	X	X	X	X	X
Tetrachloroethene	SW846 8260B	Bulk	X				X		X		X
Toxaphene	SW846 8081B	Bulk	X				X		X		X
Trichloroethene	SW846 8260B	Bulk	X				X		X		X
Vinyl chloride	SW846 8260B	Bulk	X				X		X		X

### Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.



## Analysis Report

# Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117  
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

**Customer:** KTA-Tator, Inc. (1861)  
**Address:** 115 Technology Drive  
Pittsburgh, PA 15275

**Order #:** 113919

**Matrix** Bulk  
**Received** 11/03/14  
**Reported** 12/10/14

**Attn:**

**Project:**

**Location:**

**Number:**

**PO Number:** 14PO-464

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					

### Certifications

Parameter	Method	Matrix	CT	FL	LA	NC	NJ	NY	RI	SC	VA
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### Key

State	Regulatory Agency - Lab ID	Certificate Number
CT	CT DPH	PH-0118
FL	FL ELAP	E87828-13
KS	KS ELAP	E-10348
LA	LELAP	04073A
NC	NC DENR	593
NJ	NJ DEP	NLC13001
NY	NY ELAP	51309
RI	RIDOH	LAO00084
SC	SC DHEC	93003003
VA	Virginia DCLS/DEQ - 460135	5437

'X' indicates that the analyte is accredited.

If your state is not listed above, call laboratory for accreditation/certification information.

### EPA TCLP Regulatory Limits

Parameter	Reg. Limit	Unit
Arsenic	5.00	mg/L
Barium	100	mg/L
Cadmium	1.00	mg/L
Chromium	5.00	mg/L
Lead	5.00	mg/L
Mercury	0.200	mg/L
Selenium	1.00	mg/L
Silver	5.00	mg/L

### **Report Amended. Added 1,2-dichloroethane and changed units for all the SVOCs to ug/l instead of mg/l.**

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and \*Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. PPM = mg/kg | PPB = µg/kg. The analysis data reported relates only to the samples as submitted.

Accrediting bodies: AIHA-LAP, LLC 100527, VELAP/NELAC 460135.