



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 5 CHICAGO REGIONAL LABORATORY**  
**536 SOUTH CLARK STREET**  
**CHICAGO, ILLINOIS 60605**



**Date:** 8/31/2017

**Subject:** Review of Region 5 Data for Mid America Steel Drum, Inc.

**To:** RCRA, LCD, US EPA Region 5  
 77 West Jackson Boulevard  
 Chicago, IL 60604

**From:** Wayne Whipple, Chemist  
 US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL’s data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X \_\_\_\_\_

Please contact the analyst with any technical report issues, Robert Thompson at (312)-353-9078 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

**Attached are Results for: Mid America Steel Drum, Inc.**

/ /

\_\_\_\_\_  
 Data Coordinator and Date Transmitted

**Analyses included in this report:**

Air Toxics Reimer 5



Environmental Protection Agency Region 5  
**Chicago Regional Laboratory**

536 South Clark Street, Chicago, IL 60605  
Phone:(312)353-8370 Fax:(312)886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Analysis Case Narrative for Volatile Organic Compounds (VOC) Air Toxics

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### General Information:

Nine 3.2 L canisters were received on 2 March, 2017 in good condition. The samples were analyzed within the 30 day holding time. The pressure in the canisters were too low to analyze directly so each of the samples were diluted by a factor of 1.5 to 4 depending on the initial canister pressure. The reporting limits were adjusted proportional to the dilution factors.

Samples were analyzed using the CRL SOP MS005 ver 2 with Pen and Ink 8327 and 9102 which allows for the use of the new Entech 7200 Preconcentrator and 7650 Robotic arm for sample analysis and an extended list of target compounds. Pen and Ink 9436 is also included that corrects the discrepancy between data review and analytical SOP for recovery limits of the Initial Calibration Verification sample. The data produced for this analysis meets the requirements in this SOP.

These project objectives were to quantify target analytes and the presence of any other high concentration analytes detectable by this laboratory's SOP that is based on the TO-15 analysis. Data verification was performed and the data is acceptable to use for this purpose.

Preliminary results were sent on July 20, 2017. There are no significant changes to the preliminary data target analytes that have been reported. The addition of the tentatively identified compound (TIC) ethyl acetate has been added as an estimated TIC to samples 1707008-06, -07, -08, -09. Reporting limits and analyte flags or qualifiers were also added as needed.

Data are reported to the reporting limit.

### Sample Analysis and Results:

The initial pressure was recorded in each canister. Samples were brought to a working pressure using a static dilution system with clean zero air from a zero air generator. The reporting limits are raised by the respective dilution factors. The chromatograms were inspected for unidentified peaks and in 4 of the samples ethyl acetate (the LIMS has a spelling error of acrtate) was the only major non-target peak detected. The concentration was approximated using vinyl acetate 43 ion response in the current calibration curve. Results were reported as "N" tentatively identified and "J" as estimated. Acrylonitrile and acrolein are flagged with a matrix interference in sample 1707008-01. The results are probably an overestimate and cannot be determined because of a coeluting hydrocarbon in the sample. The reporting limits have been raised to the concentration result found in the specific sample.

Isopropanol is flagged as having a matrix interference in sample 1707008-03. The reporting limit has been raised to match the result because the coeluting compound (most likely methylene chloride) interferes with the identification and quantification of the isopropanol.

### Quality Control:

Reporting limits were set for this project at 100 pptv. The samples arrived with far less pressure because the samplers only sampled one half the time set for the regulators filling the canisters to less than half atmospheric pressure.

The Initial Calibration Verification Standard was analyzed three different times. The first two were from a new standard that was prepared approximately 15 hours prior using the static diluter and still seems to be fractionated with the later



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compounds causing them not to pass acceptance criteria so another previously prepared standard was used to verify the calibration for the ICV and passed.

Acetaldehyde is rejected because the calibration performance is poor with only four of the higher calibration standards in QC limits. It is not likely that the compound is present in the samples in the ppb range or greater.

Acetone failed the initial calibration verification criteria and is flagged as such "ICV" and estimated "J".

Hexane had a high result in 1707008-01 normal injection volume analysis of above 18 ppbv but could not be confirmed in the smaller injection volume analysis. The result is lower than the detection limit in the second analysis but will be reported from that lower dilution analysis. This was checked with a reanalysis and having the same results as the diluted sample.

Methanol in the duplicate and the blank sample are reported above the calibration curve and is flagged estimated. The source sample 1707008-04 is reported from the undiluted analysis which is just below the highest calibration concentration. The duplicate results are within acceptable precision. All methanol concentrations are flagged as potential blank interferences because of the high blank concentration.

Acetone and isopropyl alcohol are reported above the calibration curve's highest concentration sample for sample 1707008-07 in the smaller injection volume sample and each result is flagged as estimated. The results are around 20% difference between the smaller and larger injection volumes.

Methanol is reported above the calibration curve in B17G028-DUP1

The detection and reporting limit for 1-propanol and 1-butanol have been lowered to just below the amount detected in the calibration check and laboratory control sample to allow the reporting in the data report.

Detection and reporting limits for the halocarbon sample monitoring compounds were lowered to allow reporting for informational purposes. These compounds are present in the air at very reproducible concentrations.

Ethanol reporting limits were raised to a level that meets the first concentration that passes calibration SOP criteria which is 250 pptv.

Many of the Freon sample monitoring compounds are too low in concentration in the 20 mL injections with dilution to meet the acceptance criteria and sample 1707008-03RE1 has more than the allowed number of compounds out. The few reported compounds are still acceptable to report from that analysis.

RPD for duplicate samples were acceptable for compounds with results that were above the reporting limit but the LIMS report includes the data to the detection limit and therefore ends up not meeting the RPD criteria. The duplicates show the results are acceptable above the reporting limit.



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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1	1707008-01	Air	Jul-17-17 09:23	Jul-18-17 09:43
2	1707008-02	Air	Jul-17-17 09:26	Jul-18-17 09:43
3	1707008-03	Air	Jul-17-17 09:49	Jul-18-17 09:43
4	1707008-04	Air	Jul-17-17 09:39	Jul-18-17 09:43
5	1707008-05	Air	Jul-17-17 10:06	Jul-18-17 09:43
6	1707008-06	Air	Jul-17-17 13:15	Jul-18-17 09:43
7	1707008-07	Air	Jul-17-17 13:16	Jul-18-17 09:43
8	1707008-08	Air	Jul-17-17 13:21	Jul-18-17 09:43
9	1707008-09	Air	Jul-17-17 13:25	Jul-18-17 09:43



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**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

**1 (1707008-01) Matrix: Air Sampled: Jul-17-17 09:23 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Chlorodifluoromethane (HCFC-22) (R-22)</b>	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Propene + propane</b>	0.768	B, J		0.300	"	"	"	"	"
<b>Chloromethane</b>	0.519			0.300	"	"	"	"	"
<b>Vinyl chloride</b>	U			0.300	"	"	"	"	"
<b>Isobutene</b>	U			0.300	"	"	"	"	"
<b>1,3-butadiene</b>	U			0.300	"	"	"	"	"
<b>Acetaldehyde</b>	Rejected			15.0	"	"	"	"	"
<b>Bromomethane</b>	U			0.300	"	"	"	"	"
<b>Chloroethane</b>	U			0.300	"	"	"	"	"
<b>Acrolein</b>	U			0.390	"	"	"	"	"
<b>Acetonitrile</b>	U			0.300	"	"	"	"	"
<b>Propanal</b>	0.501	B		0.300	"	"	"	"	"
<b>Pentane</b>	U			0.300	"	"	"	"	"
<b>Isoprene</b>	U			0.300	"	"	"	"	"
<b>1,1-Dichloroethene</b>	U			0.300	"	"	"	"	"
<b>Methyl iodide</b>	U			0.300	"	"	"	"	"
<b>Acrylonitrile</b>	U	MI		0.960	"	"	"	"	"
<b>Carbon disulfide</b>	0.391			0.300	"	"	"	"	"
<b>1-Propanol</b>	2.53			1.50	"	"	"	"	"
<b>Cyclopentane</b>	U			0.300	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	U			0.300	"	"	"	"	"
<b>Methacrolein</b>	U			0.300	"	"	"	"	"
<b>1,1-Dichloroethane</b>	U			0.300	"	"	"	"	"
<b>Vinyl acetate</b>	U			0.300	"	"	"	"	"
<b>Methyl vinyl ketone</b>	U			0.300	"	"	"	"	"
<b>Butanal</b>	1.06			0.300	"	"	"	"	"
<b>2-Butanone</b>	7.55			0.300	"	"	"	"	"
<b>cis-1,2-Dichloroethene</b>	U			0.300	"	"	"	"	"
<b>trans-1,2-Dichloroethene</b>	U			0.300	"	"	"	"	"



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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

1 (1707008-01)

Matrix: Air

Sampled: Jul-17-17 09:23

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Chloroform	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
1,2-Dichloroethane	U			0.300	"	"	"	"	"
1-Butanol	1.68			1.50	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
Pentanal	0.357			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"
Trichloroethene	U			0.300	"	"	"	"	"
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	U			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	2.98			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.554			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	0.473			0.300	"	"	"	"	"
m+p-Xylene	1.85			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,1,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	0.496			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"



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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**1 (1707008-01) Matrix: Air Sampled: Jul-17-17 09:23 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>1,2,3-Trimethylbenzene</b>	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>1,2-Dichlorobenzene</b>	U			0.300	"	"	"	"	"
<b>Hexachlorobutadiene</b>	U			0.300	"	"	"	"	"
<b>1,2,4-Trichlorobenzene</b>	U			0.300	"	"	"	"	"
<b>Naphthalene</b>	U			0.300	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.427	B		84%		70-130	"	"	"
<i>Dichlorotetrafluoroethane</i>	0.0184			92%		60-140	"	"	"
<i>Trichlorofluoromethane</i>	0.235			100%		70-130	"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0785			109%		70-130	"	"	"
<i>1,1,1-Trichloroethane</i>	4.17E-3	J		104%		50-150	"	"	"
<i>Carbon tetrachloride</i>	0.0836			101%		70-130	"	"	"

**1 (1707008-01RE1) Matrix: Air Sampled: Jul-17-17 09:23 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Methanol</b>	22.4	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Ethanol</b>	13.8			7.50	"	"	"	"	"
<b>Isopropyl alcohol</b>	10.6			3.00	"	"	"	"	"
<b>Acetone</b>	39.5	B, (ICV), J		7.50	"	"	"	"	"
<b>Methylene chloride</b>	10.4			3.00	"	"	"	"	"
<b>Hexane</b>	U	J		3.00	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.514	B		101%		70-130	"	"	"
<i>Trichlorofluoromethane</i>	0.283			121%		70-130	"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0924			128%		70-130	"	"	"
<i>Carbon tetrachloride</i>	0.0819			99%		70-130	"	"	"

**2 (1707008-02) Matrix: Air Sampled: Jul-17-17 09:26 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Chlorodifluoromethane (HCFC-22) (R-22)</b>	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17



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2 (1707008-02)

Matrix: Air

Sampled: Jul-17-17 09:26

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Propene + propane	1.06	B, J		0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Chloromethane	0.563			0.300	"	"	"	"	"
Vinyl chloride	U			0.300	"	"	"	"	"
Isobutene	0.394			0.300	"	"	"	"	"
1,3-butadiene	U			0.300	"	"	"	"	"
Acetaldehyde	Rejected			15.0	"	"	"	"	"
Bromomethane	U			0.300	"	"	"	"	"
Chloroethane	U			0.300	"	"	"	"	"
Acrolein	U			0.300	"	"	"	"	"
Acetonitrile	0.474	B		0.300	"	"	"	"	"
Propanal	0.663			0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	1.13			0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	0.667			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"
1-Butanol	2.47			1.50	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"





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2 (1707008-02)

Matrix: Air

Sampled: Jul-17-17 09:26

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
3-Pentanone	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Pentanal	0.304			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"
Trichloroethene	U			0.300	"	"	"	"	"
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	U			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	2.70			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.941			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,2,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2-Dichlorobenzene	U			0.300	"	"	"	"	"
Hexachlorobutadiene	U			0.300	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.300	"	"	"	"	"
Naphthalene	U			0.300	"	"	"	"	"



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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**2 (1707008-02) Matrix: Air Sampled: Jul-17-17 09:26 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.424	B		83%		70-130	B17G028	Jul-19-17	Jul-19-17
Dichlorotetrafluoroethane	0.0171			86%		60-140	"	"	"
Trichlorofluoromethane	0.234			100%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0776			108%		70-130	"	"	"
1,1,1-Trichloroethane	2.52E-3	J		63%		50-150	"	"	"
Carbon tetrachloride	0.0871			105%		70-130	"	"	"

**2 (1707008-02RE1) Matrix: Air Sampled: Jul-17-17 09:26 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Methanol</b>	<b>32.2</b>	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Ethanol</b>	<b>10.7</b>			7.50	"	"	"	"	"
<b>Isopropyl alcohol</b>	<b>56.8</b>			3.00	"	"	"	"	"
<b>Acetone</b>	<b>80.6</b>	B, (ICV), J		7.50	"	"	"	"	"
<b>Methylene chloride</b>	<b>30.8</b>			3.00	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.535	B		105%		70-130	"	"	"
Trichlorofluoromethane	0.298			127%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0858			119%		70-130	"	"	"
Carbon tetrachloride	0.101			122%		70-130	"	"	"

**3 (1707008-03) Matrix: Air Sampled: Jul-17-17 09:49 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Chlorodifluoromethane (HCFC-22) (R-22)</b>	<b>U</b>			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Propene + propane</b>	<b>0.603</b>	B, J		0.300	"	"	"	"	"
<b>Chloromethane</b>	<b>0.552</b>			0.300	"	"	"	"	"
<b>Vinyl chloride</b>	<b>U</b>			0.300	"	"	"	"	"
<b>Isobutene</b>	<b>U</b>			0.300	"	"	"	"	"
<b>1,3-butadiene</b>	<b>U</b>			0.300	"	"	"	"	"
<b>Acetaldehyde</b>	<b>Rejected</b>			15.0	"	"	"	"	"



# Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605  
Phone: (312)353-8370 Fax: (312)886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

3 (1707008-03)

Matrix: Air

Sampled: Jul-17-17 09:49

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Bromomethane	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Chloroethane	U			0.300	"	"	"	"	"
Ethanol	4.92			0.750	"	"	"	"	"
Acrolein	U			0.300	"	"	"	"	"
Acetonitrile	U			0.300	"	"	"	"	"
Isopropyl alcohol	U	MI		3.90	"	"	"	"	"
Propanal	0.405	B		0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	0.664			0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	2.52			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"
1-Butanol	U			1.50	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
Pentanal	U			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
 Project Number: MASD 07-17-17  
 Project Manager: Jamie Paulin

**Reported:**  
 Aug-31-17 18:07

**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

**3 (1707008-03) Matrix: Air Sampled: Jul-17-17 09:49 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Trichloroethene	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	0.592			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	1.34			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.568			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,2,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2-Dichlorobenzene	U			0.300	"	"	"	"	"
Hexachlorobutadiene	U			0.300	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.300	"	"	"	"	"
Naphthalene	U			0.300	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.409	B	80%	70-130	"	"	"



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**3 (1707008-03) Matrix: Air Sampled: Jul-17-17 09:49 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorotetrafluoroethane	0.0189			94%		60-140	B17G028	Jul-19-17	Jul-19-17
Trichlorofluoromethane	0.229			97%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0786			109%		70-130	"	"	"
1,1,1-Trichloroethane	U	J, Q		%		50-150	"	"	"
Carbon tetrachloride	0.0848			102%		70-130	"	"	"

**3 (1707008-03RE1) Matrix: Air Sampled: Jul-17-17 09:49 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Methanol	13.4	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Acetone	20.8	B, (ICV), J		7.50	"	"	"	"	"
Methylene chloride	7.53			3.00	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.564	B		111%		70-130	"	"	"
Trichlorofluoromethane	0.320	Q		136%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.110	Q		152%		70-130	"	"	"
Carbon tetrachloride	0.112	Q		136%		70-130	"	"	"

**4 (1707008-04) Matrix: Air Sampled: Jul-17-17 09:39 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Chlorodifluoromethane (HCFC-22) (R-22)	0.255			0.150	ppbv	1.5	B17G028	Jul-19-17	Jul-19-17
Propene + propane	0.258	B, J		0.150	"	"	"	"	"
Chloromethane	0.495			0.150	"	"	"	"	"
Methanol	3.07	B		0.150	"	"	"	"	"
Vinyl chloride	U			0.150	"	"	"	"	"
Isobutene	U			0.150	"	"	"	"	"
1,3-butadiene	U			0.150	"	"	"	"	"
Acetaldehyde	Rejected			7.50	"	"	"	"	"
Bromomethane	U			0.150	"	"	"	"	"
Chloroethane	U			0.150	"	"	"	"	"



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**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

4 (1707008-04)

Matrix: Air

Sampled: Jul-17-17 09:39

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ethanol	0.892	B		0.375	ppbv	1.5	B17G028	Jul-19-17	Jul-19-17
Acrolein	U			0.150	"	"	"	"	"
Acetonitrile	U			0.150	"	"	"	"	"
Isopropyl alcohol	0.243	B		0.150	"	"	"	"	"
Propanal	0.218	B		0.150	"	"	"	"	"
Acetone	1.86	B, (ICV), J		0.375	"	"	"	"	"
Pentane	U			0.150	"	"	"	"	"
Isoprene	U			0.150	"	"	"	"	"
1,1-Dichloroethene	U			0.150	"	"	"	"	"
Methyl iodide	U			0.150	"	"	"	"	"
Acrylonitrile	U			0.150	"	"	"	"	"
Methylene chloride	U			0.150	"	"	"	"	"
Carbon disulfide	U			0.150	"	"	"	"	"
1-Propanol	U			0.750	"	"	"	"	"
Cyclopentane	U			0.150	"	"	"	"	"
Methyl tert-butyl ether	U			0.150	"	"	"	"	"
Methacrolein	U			0.150	"	"	"	"	"
1,1-Dichloroethane	U			0.150	"	"	"	"	"
Vinyl acetate	U			0.150	"	"	"	"	"
Methyl vinyl ketone	U			0.150	"	"	"	"	"
Butanal	0.274	B		0.150	"	"	"	"	"
Hexane	U			0.150	"	"	"	"	"
2-Butanone	0.170			0.150	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.150	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.150	"	"	"	"	"
Chloroform	U			0.150	"	"	"	"	"
1,2-Dichloroethane	U			0.150	"	"	"	"	"
1-Butanol	U			0.750	"	"	"	"	"
Cyclohexane	U			0.375	"	"	"	"	"
Benzene	U			0.150	"	"	"	"	"
2-Pentanone	U			0.150	"	"	"	"	"
Pentanal	U			0.150	"	"	"	"	"
3-Pentanone	U			0.150	"	"	"	"	"
1,2-Dichloropropane	U			0.150	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
 Project Number: MASD 07-17-17  
 Project Manager: Jamie Paulin

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**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

**4 (1707008-04) Matrix: Air Sampled: Jul-17-17 09:39 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Trichloroethene	U			0.150	ppbv	1.5	B17G028	Jul-19-17	Jul-19-17
Bromodichloromethane	U			0.150	"	"	"	"	"
1,4-Dioxane	U			0.150	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.150	"	"	"	"	"
4-Methyl-2-pentanone	0.161			0.150	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.150	"	"	"	"	"
1,1,2-Trichloroethane	U			0.150	"	"	"	"	"
Dibromochloromethane	U			0.150	"	"	"	"	"
Toluene	U			0.150	"	"	"	"	"
3-Hexanone	U			0.150	"	"	"	"	"
2-Hexanone	U			0.150	"	"	"	"	"
Hexanal	0.202	B		0.150	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.150	"	"	"	"	"
Tetrachloroethene	U			0.150	"	"	"	"	"
Chlorobenzene	U			0.150	"	"	"	"	"
Ethylbenzene	U			0.150	"	"	"	"	"
m+p-Xylene	U			0.300	"	"	"	"	"
Bromoform	U			0.150	"	"	"	"	"
Styrene	U			0.150	"	"	"	"	"
1,1,2,2-Tetrachloroethane	U			0.150	"	"	"	"	"
o-Xylene	U			0.150	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.150	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.150	"	"	"	"	"
1,3-Dichlorobenzene	U			0.150	"	"	"	"	"
Benzyl chloride	U			0.150	"	"	"	"	"
1,4-Dichlorobenzene	U			0.150	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.150	"	"	"	"	"
1,2-Dichlorobenzene	U			0.150	"	"	"	"	"
Hexachlorobutadiene	U			0.150	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.150	"	"	"	"	"
Naphthalene	U			0.150	"	"	"	"	"

Surogate	Result	%REC	%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.456	89%	70-130	"	"	"



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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**4 (1707008-04) Matrix: Air Sampled: Jul-17-17 09:39 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorotetrafluoroethane	0.0179			90%		60-140	B17G028	Jul-19-17	Jul-19-17
Trichlorofluoromethane	0.220			93%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0762			106%		70-130	"	"	"
1,1,1-Trichloroethane	2.24E-3	J		56%		50-150	"	"	"
Carbon tetrachloride	0.0803			97%		70-130	"	"	"

**5 (1707008-05) Matrix: Air Sampled: Jul-17-17 10:06 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Chlorodifluoromethane (HCFC-22) (R-22)	U			0.400	ppbv	4	B17G028	Jul-19-17	Jul-20-17
Propene + propane	0.622	B, J		0.400	"	"	"	"	"
Chloromethane	0.553			0.400	"	"	"	"	"
Vinyl chloride	U			0.400	"	"	"	"	"
Isobutene	U			0.400	"	"	"	"	"
1,3-butadiene	U			0.400	"	"	"	"	"
Acetaldehyde	Rejected			20.0	"	"	"	"	"
Bromomethane	U			0.400	"	"	"	"	"
Chloroethane	U			0.400	"	"	"	"	"
Acrolein	U			0.400	"	"	"	"	"
Acetonitrile	U			0.400	"	"	"	"	"
Propanal	0.537	B		0.400	"	"	"	"	"
Pentane	U			0.400	"	"	"	"	"
Isoprene	U			0.400	"	"	"	"	"
1,1-Dichloroethene	U			0.400	"	"	"	"	"
Methyl iodide	U			0.400	"	"	"	"	"
Acrylonitrile	U			0.400	"	"	"	"	"
Methylene chloride	4.09			0.400	"	"	"	"	"
Carbon disulfide	U			0.400	"	"	"	"	"
1-Propanol	5.29			2.00	"	"	"	"	"
Cyclopentane	U			0.400	"	"	"	"	"
Methyl tert-butyl ether	U			0.400	"	"	"	"	"
Methacrolein	U			0.400	"	"	"	"	"





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**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

**5 (1707008-05) Matrix: Air Sampled: Jul-17-17 10:06 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,1-Dichloroethane	U			0.400	ppbv	4	B17G028	Jul-19-17	Jul-20-17
Vinyl acetate	U			0.400	"	"	"	"	"
Methyl vinyl ketone	U			0.400	"	"	"	"	"
Butanal	0.923			0.400	"	"	"	"	"
Hexane	U			0.400	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.400	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.400	"	"	"	"	"
Chloroform	U			0.400	"	"	"	"	"
1,2-Dichloroethane	U			0.400	"	"	"	"	"
1-Butanol	2.53			2.00	"	"	"	"	"
Cyclohexane	U			1.00	"	"	"	"	"
Benzene	U			0.400	"	"	"	"	"
2-Pentanone	U			0.400	"	"	"	"	"
Pentanal	0.664			0.400	"	"	"	"	"
3-Pentanone	U			0.400	"	"	"	"	"
1,2-Dichloropropane	U			0.400	"	"	"	"	"
Trichloroethene	U			0.400	"	"	"	"	"
Bromodichloromethane	U			0.400	"	"	"	"	"
1,4-Dioxane	U			0.400	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.400	"	"	"	"	"
4-Methyl-2-pentanone	2.71			0.400	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.400	"	"	"	"	"
1,1,2-Trichloroethane	U			0.400	"	"	"	"	"
Dibromochloromethane	U			0.400	"	"	"	"	"
Toluene	3.89			0.400	"	"	"	"	"
3-Hexanone	U			0.400	"	"	"	"	"
2-Hexanone	U			0.400	"	"	"	"	"
Hexanal	0.700			0.400	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.400	"	"	"	"	"
Tetrachloroethene	U			0.400	"	"	"	"	"
Chlorobenzene	U			0.400	"	"	"	"	"
Ethylbenzene	0.776			0.400	"	"	"	"	"
m+p-Xylene	3.11			0.800	"	"	"	"	"
Bromoform	U			0.400	"	"	"	"	"
Styrene	U			0.400	"	"	"	"	"



# Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605  
Phone: (312)353-8370 Fax: (312)886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**5 (1707008-05) Matrix: Air Sampled: Jul-17-17 10:06 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>1,1,2,2-Tetrachloroethane</b>	U			0.400	ppbv	4	B17G028	Jul-19-17	Jul-20-17
<b>o-Xylene</b>	<b>0.828</b>			0.400	"	"	"	"	"
<b>1,3,5-Trimethylbenzene</b>	U			0.400	"	"	"	"	"
<b>1,2,4-Trimethylbenzene</b>	U			0.400	"	"	"	"	"
<b>1,3-Dichlorobenzene</b>	U			0.400	"	"	"	"	"
<b>Benzyl chloride</b>	U			0.400	"	"	"	"	"
<b>1,4-Dichlorobenzene</b>	U			0.400	"	"	"	"	"
<b>1,2,3-Trimethylbenzene</b>	U			0.400	"	"	"	"	"
<b>1,2-Dichlorobenzene</b>	U			0.400	"	"	"	"	"
<b>Hexachlorobutadiene</b>	U			0.400	"	"	"	"	"
<b>1,2,4-Trichlorobenzene</b>	U			0.400	"	"	"	"	"
<b>Naphthalene</b>	U			0.400	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	%REC	%REC Limits	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.424	B	83%	70-130	"	"	"
<i>Dichlorotetrafluoroethane</i>	0.0176		88%	60-140	"	"	"
<i>Trichlorofluoromethane</i>	0.225		96%	70-130	"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0808		112%	70-130	"	"	"
<i>1,1,1-Trichloroethane</i>	0.0187	J, Q	468%	50-150	"	"	"
<i>Carbon tetrachloride</i>	0.0854		103%	70-130	"	"	"

**5 (1707008-05RE1) Matrix: Air Sampled: Jul-17-17 10:06 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Methanol</b>	<b>18.0</b>	B		4.00	ppbv	4	B17G028	Jul-19-17	Jul-19-17
<b>Ethanol</b>	<b>19.7</b>			10.0	"	"	"	"	"
<b>Isopropyl alcohol</b>	<b>19.0</b>			4.00	"	"	"	"	"
<b>Acetone</b>	<b>26.9</b>	B, (ICV), J		10.0	"	"	"	"	"
<b>2-Butanone</b>	<b>14.3</b>			4.00	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	%REC	%REC Limits	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.538	B	105%	70-130	"	"	"
<i>Trichlorofluoromethane</i>	0.311	Q	132%	70-130	"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0716		99%	70-130	"	"	"



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

6 (1707008-06)

Matrix: Air

Sampled: Jul-17-17 13:15

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ethyl acrylate	18.0	NJ			ppbv	3	B17G028	Jul-19-17	Jul-20-17
Chlorodifluoromethane (HCFC-22) (R-22)	U			0.300	"	"	"	"	"
Propene + propane	0.636	B, J		0.300	"	"	"	"	"
Chloromethane	0.532			0.300	"	"	"	"	"
Vinyl chloride	U			0.300	"	"	"	"	"
Isobutene	U			0.300	"	"	"	"	"
1,3-butadiene	U			0.300	"	"	"	"	"
Acetaldehyde	Rejected			15.0	"	"	"	"	"
Bromomethane	U			0.300	"	"	"	"	"
Chloroethane	U			0.300	"	"	"	"	"
Ethanol	4.42			0.750	"	"	"	"	"
Acrolein	U			0.300	"	"	"	"	"
Acetonitrile	1.05			0.300	"	"	"	"	"
Propanal	0.369	B		0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	0.637			0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	0.649			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

6 (1707008-06)

Matrix: Air

Sampled: Jul-17-17 13:15

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1-Butanol	2.42			1.50	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	0.461	B		0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
Pentanal	0.324			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"
Trichloroethene	U			0.300	"	"	"	"	"
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	0.782			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	2.26			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.608			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,2,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**6 (1707008-06) Matrix: Air Sampled: Jul-17-17 13:15 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>1,2-Dichlorobenzene</b>	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
<b>Hexachlorobutadiene</b>	U			0.300	"	"	"	"	"
<b>1,2,4-Trichlorobenzene</b>	U			0.300	"	"	"	"	"
<b>Naphthalene</b>	U			0.300	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	MDL	%REC	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.428	B		84%				"	"	"
<i>Dichlorotetrafluoroethane</i>	0.0170			85%				"	"	"
<i>Trichlorofluoromethane</i>	0.220			94%				"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0785			109%				"	"	"
<i>1,1,1-Trichloroethane</i>	2.01E-3	J		50%				"	"	"
<i>Carbon tetrachloride</i>	0.0866			104%				"	"	"

**6 (1707008-06RE1) Matrix: Air Sampled: Jul-17-17 13:15 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Methanol</b>	19.7	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Isopropyl alcohol</b>	145	J		3.00	"	"	"	"	"
<b>Acetone</b>	39.6	B, (ICV), J		7.50	"	"	"	"	"
<b>Methylene chloride</b>	14.9			3.00	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	MDL	%REC	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.540	B		106%				"	"	"
<i>Trichlorofluoromethane</i>	0.308	Q		131%				"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.102	Q		142%				"	"	"
<i>Carbon tetrachloride</i>	0.101			122%				"	"	"

**7 (1707008-07) Matrix: Air Sampled: Jul-17-17 13:16 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Ethyl acetate</b>	30.0	NJ			ppbv	3	B17G028	Jul-19-17	Jul-20-17
<b>Chlorodifluoromethane (HCFC-22) (R-22)</b>	U			0.300	"	"	"	"	"
<b>Propene + propane</b>	0.935	B, J		0.300	"	"	"	"	"
<b>Chloromethane</b>	0.565			0.300	"	"	"	"	"



**Environmental Protection Agency Region 5**  
**Chicago Regional Laboratory**

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Project: Mid America Steel Drum, Inc.  
 Project Number: MASD 07-17-17  
 Project Manager: Jamie Paulin

**Reported:**  
 Aug-31-17 18:07

**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

7 (1707008-07)

Matrix: Air

Sampled: Jul-17-17 13:16

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Vinyl chloride	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Isobutene	0.395			0.300	"	"	"	"	"
1,3-butadiene	U			0.300	"	"	"	"	"
Acetaldehyde	Rejected			15.0	"	"	"	"	"
Bromomethane	U			0.300	"	"	"	"	"
Chloroethane	U			0.300	"	"	"	"	"
Acrolein	0.311			0.300	"	"	"	"	"
Acetonitrile	0.324	B		0.300	"	"	"	"	"
Propanal	0.484	B		0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	0.791			0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	0.765			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
Pentanal	0.327			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"



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**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

7 (1707008-07)

Matrix: Air

Sampled: Jul-17-17 13:16

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Trichloroethene	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	0.503			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	5.75			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.771			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,1,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2-Dichlorobenzene	U			0.300	"	"	"	"	"
Hexachlorobutadiene	U			0.300	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.300	"	"	"	"	"
Naphthalene	U			0.300	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.415	B	81%	70-130	"	"	"



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Project Manager: Jamie Paulin

**Reported:**  
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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**7 (1707008-07) Matrix: Air Sampled: Jul-17-17 13:16 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorotetrafluoroethane	0.0191			95%		60-140	B17G028	Jul-19-17	Jul-20-17
Trichlorofluoromethane	0.230			98%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0845			117%		70-130	"	"	"
1,1,1-Trichloroethane	4.17E-3	J		104%		50-150	"	"	"
Carbon tetrachloride	0.0952			115%		70-130	"	"	"

**7 (1707008-07RE1) Matrix: Air Sampled: Jul-17-17 13:16 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Chlorodifluoromethane (HCFC-22) (R-22)	U			3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Methanol	44.2	B		3.00	"	"	"	"	"
Ethanol	9.61			7.50	"	"	"	"	"
Isopropyl alcohol	66.8	J		3.00	"	"	"	"	"
Methylene chloride	42.2			3.00	"	"	"	"	"
1-Butanol	U			15.0	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.585	B		115%		70-130	"	"	"
Trichlorofluoromethane	0.338	Q		144%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0972	Q		135%		70-130	"	"	"
Carbon tetrachloride	0.104			125%		70-130	"	"	"

**8 (1707008-08) Matrix: Air Sampled: Jul-17-17 13:21 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ethyl acetate	24.0	NJ			ppbv	3	B17G028	Jul-19-17	Jul-20-17
Chlorodifluoromethane (HCFC-22) (R-22)	U			0.300	"	"	"	"	"
Propene + propane	0.685	B, J		0.300	"	"	"	"	"
Chloromethane	0.587			0.300	"	"	"	"	"
Vinyl chloride	U			0.300	"	"	"	"	"
Isobutene	U			0.300	"	"	"	"	"
1,3-butadiene	U			0.300	"	"	"	"	"





# Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605  
Phone: (312) 353-8370 Fax: (312) 886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

8 (1707008-08)

Matrix: Air

Sampled: Jul-17-17 13:21

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Acetaldehyde	Rejected			15.0	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Bromomethane	U			0.300	"	"	"	"	"
Chloroethane	U			0.300	"	"	"	"	"
Ethanol	4.42			0.750	"	"	"	"	"
Acrolein	U			0.300	"	"	"	"	"
Acetonitrile	U			0.300	"	"	"	"	"
Propanal	0.501	B		0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	0.664			0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	1.02			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"
1-Butanol	2.14			1.50	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
Pentanal	0.675			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"



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Project Number: MASD 07-17-17  
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**Reported:**  
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## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

8 (1707008-08)

Matrix: Air

Sampled: Jul-17-17 13:21

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Trichloroethene	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Bromodichloromethane	U			0.300	"	"	"	"	"
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	0.449			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	2.36			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.622			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,1,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2-Dichlorobenzene	U			0.300	"	"	"	"	"
Hexachlorobutadiene	U			0.300	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.300	"	"	"	"	"
Naphthalene	U			0.300	"	"	"	"	"

Surogate	Result		%REC	%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.425	B	83%	70-130	"	"	"



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

**8 (1707008-08) Matrix: Air Sampled: Jul-17-17 13:21 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorotetrafluoroethane	0.0175			88%		60-140	B17G028	Jul-19-17	Jul-20-17
Trichlorofluoromethane	0.235			100%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0837			116%		70-130	"	"	"
1,1,1-Trichloroethane	4.08E-3	J		102%		50-150	"	"	"
Carbon tetrachloride	0.0878			106%		70-130	"	"	"

**8 (1707008-08RE1) Matrix: Air Sampled: Jul-17-17 13:21 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Methanol	20.1	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
Isopropyl alcohol	19.3			3.00	"	"	"	"	"
Acetone	26.7	B, (ICV), J		7.50	"	"	"	"	"
Methylene chloride	13.3			3.00	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.580	B		114%		70-130	"	"	"
Trichlorofluoromethane	0.334	Q		142%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0993	Q		138%		70-130	"	"	"
Carbon tetrachloride	0.100			121%		70-130	"	"	"

**9 (1707008-09) Matrix: Air Sampled: Jul-17-17 13:25 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ethyl acetate	3.00	NJ			ppbv	3	B17G028	Jul-19-17	Jul-20-17
Chlorodifluoromethane (HCFC-22) (R-22)	U			0.300	"	"	"	"	"
Propene + propane	0.379	B, J		0.300	"	"	"	"	"
Chloromethane	0.588			0.300	"	"	"	"	"
Vinyl chloride	U			0.300	"	"	"	"	"
Isobutene	U			0.300	"	"	"	"	"
1,3-butadiene	U			0.300	"	"	"	"	"
Acetaldehyde	Rejected			15.0	"	"	"	"	"
Bromomethane	U			0.300	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
 Project Number: MASD 07-17-17  
 Project Manager: Jamie Paulin

**Reported:**  
 Aug-31-17 18:07

**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

9 (1707008-09)

Matrix: Air

Sampled: Jul-17-17 13:25

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Chloroethane	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
Ethanol	1.90	B		0.750	"	"	"	"	"
Acrolein	U			0.300	"	"	"	"	"
Acetonitrile	0.459			0.300	"	"	"	"	"
Propanal	0.384	B		0.300	"	"	"	"	"
Pentane	U			0.300	"	"	"	"	"
Isoprene	U			0.300	"	"	"	"	"
1,1-Dichloroethene	U			0.300	"	"	"	"	"
Methyl iodide	U			0.300	"	"	"	"	"
Acrylonitrile	U			0.300	"	"	"	"	"
Methylene chloride	3.49			0.300	"	"	"	"	"
Carbon disulfide	U			0.300	"	"	"	"	"
1-Propanol	U			1.50	"	"	"	"	"
Cyclopentane	U			0.300	"	"	"	"	"
Methyl tert-butyl ether	U			0.300	"	"	"	"	"
Methacrolein	U			0.300	"	"	"	"	"
1,1-Dichloroethane	U			0.300	"	"	"	"	"
Vinyl acetate	U			0.300	"	"	"	"	"
Methyl vinyl ketone	U			0.300	"	"	"	"	"
Butanal	0.458	B		0.300	"	"	"	"	"
Hexane	U			0.300	"	"	"	"	"
2-Butanone	0.334			0.300	"	"	"	"	"
cis-1,2-Dichloroethene	U			0.300	"	"	"	"	"
trans-1,2-Dichloroethene	U			0.300	"	"	"	"	"
Chloroform	U			0.300	"	"	"	"	"
1,2-Dichloroethane	U			0.300	"	"	"	"	"
1-Butanol	U			1.50	"	"	"	"	"
Cyclohexane	U			0.750	"	"	"	"	"
Benzene	U			0.300	"	"	"	"	"
2-Pentanone	U			0.300	"	"	"	"	"
Pentanal	U			0.300	"	"	"	"	"
3-Pentanone	U			0.300	"	"	"	"	"
1,2-Dichloropropane	U			0.300	"	"	"	"	"
Trichloroethene	U			0.300	"	"	"	"	"



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

9 (1707008-09)

Matrix: Air

Sampled: Jul-17-17 13:25

Received: Jul-18-17 09:43

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Bromodichloromethane	U			0.300	ppbv	3	B17G028	Jul-19-17	Jul-20-17
1,4-Dioxane	U			0.300	"	"	"	"	"
cis-1,3-Dichloropropene	U			0.300	"	"	"	"	"
4-Methyl-2-pentanone	0.654			0.300	"	"	"	"	"
trans-1,3-Dichloropropene	U			0.300	"	"	"	"	"
1,1,2-Trichloroethane	U			0.300	"	"	"	"	"
Dibromochloromethane	U			0.300	"	"	"	"	"
Toluene	0.666			0.300	"	"	"	"	"
3-Hexanone	U			0.300	"	"	"	"	"
2-Hexanone	U			0.300	"	"	"	"	"
Hexanal	0.581			0.300	"	"	"	"	"
1,2-Dibromoethane (EDB)	U			0.300	"	"	"	"	"
Tetrachloroethene	U			0.300	"	"	"	"	"
Chlorobenzene	U			0.300	"	"	"	"	"
Ethylbenzene	U			0.300	"	"	"	"	"
m+p-Xylene	U			0.600	"	"	"	"	"
Bromoform	U			0.300	"	"	"	"	"
Styrene	U			0.300	"	"	"	"	"
1,1,2,2-Tetrachloroethane	U			0.300	"	"	"	"	"
o-Xylene	U			0.300	"	"	"	"	"
1,3,5-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2,4-Trimethylbenzene	U			0.300	"	"	"	"	"
1,3-Dichlorobenzene	U			0.300	"	"	"	"	"
Benzyl chloride	U			0.300	"	"	"	"	"
1,4-Dichlorobenzene	U			0.300	"	"	"	"	"
1,2,3-Trimethylbenzene	U			0.300	"	"	"	"	"
1,2-Dichlorobenzene	U			0.300	"	"	"	"	"
Hexachlorobutadiene	U			0.300	"	"	"	"	"
1,2,4-Trichlorobenzene	U			0.300	"	"	"	"	"
Naphthalene	U			0.300	"	"	"	"	"

Surogate	Result	Flags / Qualifiers	%REC	%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.429	B	84%	70-130	"	"	"
Dichlorotetrafluoroethane	0.0185		92%	60-140	"	"	"



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**Reported:**  
 Aug-31-17 18:07

**Air Toxics by GC/MS, EPA TO-15 (modified)**  
**US EPA Region 5 Chicago Regional Laboratory**

**9 (1707008-09) Matrix: Air Sampled: Jul-17-17 13:25 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>Trichlorofluoromethane</i>	0.235			100%		70-130	B17G028	Jul-19-17	Jul-20-17
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0814			113%		70-130	"	"	"
<i>1,1,1-Trichloroethane</i>	0.0371	J, Q		928%		50-150	"	"	"
<i>Carbon tetrachloride</i>	0.0820			99%		70-130	"	"	"

**9 (1707008-09RE1) Matrix: Air Sampled: Jul-17-17 13:25 Received: Jul-18-17 09:43**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
<b>Methanol</b>	<b>9.25</b>	B		3.00	ppbv	3	B17G028	Jul-19-17	Jul-19-17
<b>Isopropyl alcohol</b>	<b>34.5</b>			3.00	"	"	"	"	"
<b>Acetone</b>	<b>14.4</b>	B, (ICV), J		7.50	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
<i>Dichlorodifluoromethane</i>	0.502	B		98%		70-130	"	"	"
<i>Trichlorofluoromethane</i>	0.282			120%		70-130	"	"	"
<i>1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)</i>	0.0813			113%		70-130	"	"	"
<i>Carbon tetrachloride</i>	0.0762			92%		70-130	"	"	"



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**Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control**  
**US EPA Region 5 Chicago Regional Laboratory**

**Batch B17G028 - ColdTrap Dehydration**

Blank (B17G028-BLK1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chlorodifluoromethane (HCFC-22) (R-22)	U			0.100	ppbv						
Propene + propane	U	J		0.100	"						
Chloromethane	U			0.100	"						
Methanol	2.92	B, J, Q		0.100	"						
Vinyl chloride	U			0.100	"						
Isobutene	U			0.100	"						
1,3-butadiene	U			0.100	"						
Acetaldehyde	Rejected			5.00	"						
Bromomethane	U			0.100	"						
Chloroethane	U			0.100	"						
Ethanol	U			0.250	"						
Acrolein	U			0.100	"						
Acetonitrile	U			0.100	"						
Isopropyl alcohol	U			0.100	"						
Propanal	U			0.100	"						
Acetone	0.146	(ICV), J, Q		0.140	"						
Pentane	U			0.100	"						
Isoprene	U			0.100	"						
1,1-Dichloroethene	U			0.100	"						
Methyl iodide	U			0.100	"						
Acrylonitrile	U			0.100	"						
Methylene chloride	U			0.100	"						
Carbon disulfide	U			0.100	"						
1-Propanol	U			0.500	"						



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**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Blank (B17G028-BLK1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Cyclopentane	U			0.100	ppbv						
Methyl tert-butyl ether	U			0.100	"						
Methacrolein	U			0.100	"						
1,1-Dichloroethane	U			0.100	"						
Vinyl acetate	U			0.100	"						
Methyl vinyl ketone	U			0.100	"						
Butanal	U			0.100	"						
Hexane	U			0.100	"						
2-Butanone	U			0.100	"						
cis-1,2-Dichloroethene	U			0.100	"						
trans-1,2-Dichloroethene	U			0.100	"						
Chloroform	U			0.100	"						
1,2-Dichloroethane	U			0.100	"						
1-Butanol	U			0.500	"						
Cyclohexane	U			0.250	"						
Benzene	U			0.100	"						
2-Pentanone	U			0.100	"						
Pentanal	U			0.100	"						
3-Pentanone	U			0.100	"						
1,2-Dichloropropane	U			0.100	"						
Trichloroethene	U			0.100	"						
Bromodichloromethane	U			0.100	"						
1,4-Dioxane	U			0.100	"						
cis-1,3-Dichloropropene	U			0.100	"						
4-Methyl-2-pentanone	U			0.100	"						
trans-1,3-Dichloropropene	U			0.100	"						
1,1,2-Trichloroethane	U			0.100	"						
Dibromochloromethane	U			0.100	"						
Toluene	U			0.100	"						
3-Hexanone	U			0.100	"						





# Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605  
Phone:(312)353-8370 Fax:(312)886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Blank (B17G028-BLK1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
2-Hexanone	U			0.100	ppbv						
Hexanal	U			0.100	"						
1,2-Dibromoethane (EDB)	U			0.100	"						
Tetrachloroethene	U			0.100	"						
Chlorobenzene	U			0.100	"						
Ethylbenzene	U			0.100	"						
m+p-Xylene	U			0.200	"						
Bromoform	U			0.100	"						
Styrene	U			0.100	"						
1,1,1,2-Tetrachloroethane	U			0.100	"						
o-Xylene	U			0.100	"						
1,3,5-Trimethylbenzene	U			0.100	"						
1,2,4-Trimethylbenzene	U			0.100	"						
1,3-Dichlorobenzene	U			0.100	"						
Benzyl chloride	U			0.100	"						
1,4-Dichlorobenzene	U			0.100	"						
1,2,3-Trimethylbenzene	U			0.100	"						
1,2-Dichlorobenzene	U			0.100	"						
Hexachlorobutadiene	U			0.100	"						
1,2,4-Trichlorobenzene	U			0.100	"						
Naphthalene	U			0.100	"						
Surrogate: Dichlorodifluoromethane	U	Q		0.100	"	0.5100		6%	70-130		
Surrogate: Dichlorotetrafluoroethane	U	Q		2.50E-3	"	2.000E-2		%	60-140		
Surrogate: Trichlorofluoromethane	U	Q		2.50E-3	"	0.2350		%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon)	U	Q		2.50E-3	"	7.200E-2		%	70-130		
Surrogate: 1,1,1-Trichloroethane	U	Q		1.00E-4	"	4.000E-3		%	50-150		
Surrogate: Carbon tetrachloride	U	Q		2.50E-3	"	8.300E-2		%	70-130		



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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

LCS (B17G028-BS1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Chlorodifluoromethane (HCFC-22) (R-22)</b>	<b>0.522</b>			0.0250	ppbv	0.5310		98%	70-130		
<b>Propene</b>	<b>0.578</b>	B, J		0.100	"	0.5370		108%	70-130		
<b>Chloromethane</b>	<b>0.591</b>			0.100	"	0.5490		108%	70-130		
<b>Methanol</b>	<b>0.504</b>	B		0.100	"	0.5170		97%	60-140		
<b>Vinyl chloride</b>	<b>0.550</b>			0.100	"	0.5370		102%	70-130		
<b>Isobutene</b>	<b>0.547</b>			0.100	"	0.5300		103%	70-130		
<b>1,3-butadiene</b>	<b>0.545</b>			0.100	"	0.5450		100%	70-130		
<b>Acetaldehyde</b>	<b>Rejected</b>	Q		5.00	"	0.5390		%	60-140		
<b>Bromomethane</b>	<b>0.524</b>			0.100	"	0.5540		95%	70-130		
<b>Chloroethane</b>	<b>0.533</b>			0.100	"	0.5510		97%	70-130		
<b>Ethanol</b>	<b>0.519</b>	B		0.250	"	0.5060		103%	60-140		
<b>Acrolein</b>	<b>0.512</b>			0.100	"	0.5180		99%	60-140		
<b>Acetonitrile</b>	<b>0.519</b>			0.100	"	0.5050		103%	60-140		
<b>Isopropyl alcohol</b>	<b>0.497</b>			0.100	"	0.5000		99%	60-140		
<b>Propanal</b>	<b>0.486</b>			0.100	"	0.5220		93%	60-140		
<b>Acetone</b>	<b>0.492</b>	B, (ICV), J		0.250	"	0.5410		91%	60-140		
<b>Pentane</b>	<b>0.517</b>			0.100	"	0.5600		92%	70-130		
<b>Isoprene</b>	<b>0.518</b>			0.100	"	0.5420		96%	70-130		
<b>1,1-Dichloroethene</b>	<b>0.512</b>			0.100	"	0.5220		98%	70-130		
<b>Methyl iodide</b>	<b>0.515</b>			0.100	"	0.5340		96%	70-130		
<b>Acrylonitrile</b>	<b>0.486</b>			0.100	"	0.5010		97%	60-140		
<b>Methylene chloride</b>	<b>0.477</b>			0.100	"	0.5000		95%	70-130		
<b>Carbon disulfide</b>	<b>0.474</b>			0.100	"	0.4990		95%	60-140		
<b>1-Propanol</b>	<b>0.457</b>			0.440	"	0.4790		95%	60-140		
<b>Cyclopentane</b>	<b>0.472</b>			0.100	"	0.4940		95%	70-130		
<b>Methyl tert-butyl ether</b>	<b>0.457</b>			0.100	"	0.5040		91%	60-140		
<b>Methacrolein</b>	<b>0.438</b>			0.100	"	0.4790		92%	60-140		
<b>1,1-Dichloroethane</b>	<b>0.491</b>			0.100	"	0.4950		99%	70-130		
<b>Vinyl acetate</b>	<b>0.450</b>			0.100	"	0.4950		91%	60-140		
<b>Methyl vinyl ketone</b>	<b>0.444</b>			0.100	"	0.4920		90%	60-140		



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Project Manager: Jamie Paulin

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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

LCS (B17G028-BS1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Butanal	0.449			0.100	ppbv	0.4790		94%	60-140		
Hexane	0.442			0.100	"	0.4970		89%	70-130		
2-Butanone	0.491			0.100	"	0.5230		94%	60-140		
cis-1,2-Dichloroethene	0.479			0.100	"	0.4960		97%	70-130		
trans-1,2-Dichloroethene	0.474			0.100	"	0.5060		94%	70-130		
Chloroform	0.492			0.100	"	0.5110		96%	70-130		
1,2-Dichloroethane	0.488			0.100	"	0.4950		99%	70-130		
1-Butanol	0.495			0.470	"	0.5030		98%	60-140		
Cyclohexane	0.472			0.250	"	0.5050		93%	70-130		
Benzene	0.511			0.100	"	0.5040		101%	70-130		
2-Pentanone	0.451			0.100	"	0.5020		90%	60-140		
Pentanal	0.502			0.100	"	0.4940		102%	60-140		
3-Pentanone	0.448			0.100	"	0.5070		88%	60-140		
1,2-Dichloropropane	0.488			0.100	"	0.5010		97%	70-130		
Trichloroethene	0.398			0.100	"	0.5010		79%	70-130		
Bromodichloromethane	0.529			0.100	"	0.5240		101%	70-130		
1,4-Dioxane	0.514			0.100	"	0.5300		97%	60-140		
cis-1,3-Dichloropropene	0.467			0.100	"	0.5100		92%	70-130		
4-Methyl-2-pentanone	0.469			0.100	"	0.5020		93%	60-140		
trans-1,3-Dichloropropene	0.477			0.100	"	0.5130		93%	70-130		
1,1,2-Trichloroethane	0.540			0.100	"	0.5020		108%	70-130		
Dibromochloromethane	0.521			0.100	"	0.5060		103%	70-130		
Toluene	0.464			0.100	"	0.4920		94%	70-130		
3-Hexanone	0.454			0.100	"	0.5050		90%	60-140		
2-Hexanone	0.423			0.100	"	0.4950		86%	60-140		
Hexanal	0.457			0.100	"	0.5010		91%	60-140		
1,2-Dibromoethane (EDB)	0.492			0.100	"	0.5080		97%	70-130		
Tetrachloroethene	0.503			0.100	"	0.4990		101%	70-130		
Chlorobenzene	0.454			0.100	"	0.5070		90%	70-130		
Ethylbenzene	0.490			0.100	"	0.4890		100%	70-130		



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### Batch B17G028 - ColdTrap Dehydration

#### LCS (B17G028-BS1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
m+p-Xylene	1.01			0.200	ppbv	0.9850		103%	70-130		
Bromoform	0.528			0.100	"	0.5240		101%	70-130		
Styrene	0.479			0.100	"	0.5020		95%	70-130		
1,1,2,2-Tetrachloroethane	0.527			0.100	"	0.5070		104%	70-130		
o-Xylene	0.480			0.100	"	0.4860		99%	70-130		
1,3,5-Trimethylbenzene	0.510			0.100	"	0.5030		101%	70-130		
1,2,4-Trimethylbenzene	0.495			0.100	"	0.5020		99%	70-130		
1,3-Dichlorobenzene	0.457			0.100	"	0.4980		92%	70-130		
Benzyl chloride	0.521			0.100	"	0.5150		101%	70-130		
1,4-Dichlorobenzene	0.483			0.100	"	0.5260		92%	70-130		
1,2,3-Trimethylbenzene	0.450			0.100	"	0.4380		103%	70-130		
1,2-Dichlorobenzene	0.455			0.100	"	0.5140		89%	70-130		
Hexachlorobutadiene	0.486			0.100	"	0.4890		99%	70-130		
1,2,4-Trichlorobenzene	0.457			0.100	"	0.5120		89%	70-130		
Naphthalene	0.518			0.100	"	0.5130		101%	70-130		
Surrogate: Dichlorodifluoromethane	0.491			0.100	"	0.5210		94%	70-130		
Surrogate: Dichlorotetrafluoroethane	0.522			2.50E-3	"	0.5250		99%	70-130		
Surrogate: Trichlorofluoromethane	0.535			2.50E-3	"	0.5370		100%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon)	0.474			2.50E-3	"	0.5250		90%	70-130		
Surrogate: 1,1,1-Trichloroethane	0.494			1.00E-4	"	0.5080		97%	70-130		
Surrogate: Carbon tetrachloride	0.499			2.50E-3	"	0.5000		100%	70-130		

#### LCS Dup (B17G028-BSD1)

Prepared: Jul-19-17 Analyzed: Jul-20-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chlorodifluoromethane (HCFC-22) (R-22)	0.549			0.0250	ppbv	0.5310		103%	70-130	5	30
Propene	0.526	B, J		0.100	"	0.5370		98%	70-130	9	30
Chloromethane	0.564			0.100	"	0.5490		103%	70-130	5	30
Methanol	0.521	B		0.100	"	0.5170		101%	60-140	3	40
Vinyl chloride	0.534			0.100	"	0.5370		99%	70-130	3	30



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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

LCS Dup (B17G028-BSD1)

Prepared: Jul-19-17 Analyzed: Jul-20-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Isobutene	0.529			0.100	ppbv	0.5300		100%	70-130	3	30
1,3-butadiene	0.518			0.100	"	0.5450		95%	70-130	5	30
Acetaldehyde	Rejected	Q		5.00	"	0.5390		%	60-140	200	40
Bromomethane	0.528			0.100	"	0.5540		95%	70-130	0.6	30
Chloroethane	0.524			0.100	"	0.5510		95%	70-130	2	30
Ethanol	0.522	B		0.250	"	0.5060		103%	60-140	0.4	40
Acrolein	0.472			0.100	"	0.5180		91%	60-140	8	40
Acetonitrile	0.516			0.100	"	0.5050		102%	60-140	0.5	40
Isopropyl alcohol	0.485			0.100	"	0.5000		97%	60-140	3	40
Propanal	0.451			0.100	"	0.5220		86%	60-140	7	40
Acetone	0.485	B, J, (ICV)		0.250	"	0.5410		90%	60-140	1	40
Pentane	0.505			0.100	"	0.5600		90%	70-130	2	30
Isoprene	0.478			0.100	"	0.5420		88%	70-130	8	30
1,1-Dichloroethene	0.518			0.100	"	0.5220		99%	70-130	1	30
Methyl iodide	0.522			0.100	"	0.5340		98%	70-130	1	30
Acrylonitrile	0.474			0.100	"	0.5010		95%	60-140	2	40
Methylene chloride	0.495			0.100	"	0.5000		99%	70-130	4	30
Carbon disulfide	0.502			0.100	"	0.4990		101%	60-140	6	40
1-Propanol	0.443			0.440	"	0.4790		93%	60-140	3	40
Cyclopentane	0.433			0.100	"	0.4940		88%	70-130	8	30
Methyl tert-butyl ether	0.460			0.100	"	0.5040		91%	60-140	0.6	40
Methacrolein	0.429			0.100	"	0.4790		89%	60-140	2	40
1,1-Dichloroethane	0.490			0.100	"	0.4950		99%	70-130	0.2	30
Vinyl acetate	0.463			0.100	"	0.4950		94%	60-140	3	40
Methyl vinyl ketone	0.443			0.100	"	0.4920		90%	60-140	0.01	40
Butanal	0.444			0.100	"	0.4790		93%	60-140	1	40
Hexane	0.442			0.100	"	0.4970		89%	70-130	0.2	30
2-Butanone	0.476			0.100	"	0.5230		91%	60-140	3	40
cis-1,2-Dichloroethene	0.472			0.100	"	0.4960		95%	70-130	2	30
trans-1,2-Dichloroethene	0.487			0.100	"	0.5060		96%	70-130	3	30



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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

LCS Dup (B17G028-BSD1)

Prepared: Jul-19-17 Analyzed: Jul-20-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chloroform	0.512			0.100	ppbv	0.5110		100%	70-130	4	30
1,2-Dichloroethane	0.491			0.100	"	0.4950		99%	70-130	0.6	30
1-Butanol	0.480			0.470	"	0.5030		95%	60-140	3	40
Cyclohexane	0.449			0.250	"	0.5050		89%	70-130	5	30
Benzene	0.488			0.100	"	0.5040		97%	70-130	4	30
2-Pentanone	0.438			0.100	"	0.5020		87%	60-140	3	40
Pentanal	0.506			0.100	"	0.4940		102%	60-140	0.7	40
3-Pentanone	0.441			0.100	"	0.5070		87%	60-140	2	40
1,2-Dichloropropane	0.470			0.100	"	0.5010		94%	70-130	4	30
Trichloroethene	0.397			0.100	"	0.5010		79%	70-130	0.4	30
Bromodichloromethane	0.510			0.100	"	0.5240		97%	70-130	4	30
1,4-Dioxane	0.474			0.100	"	0.5300		89%	60-140	8	40
cis-1,3-Dichloropropene	0.441			0.100	"	0.5100		87%	70-130	6	30
4-Methyl-2-pentanone	0.496			0.100	"	0.5020		99%	60-140	6	40
trans-1,3-Dichloropropene	0.460			0.100	"	0.5130		90%	70-130	4	30
1,1,2-Trichloroethane	0.529			0.100	"	0.5020		105%	70-130	2	30
Dibromochloromethane	0.534			0.100	"	0.5060		105%	70-130	2	30
Toluene	0.436			0.100	"	0.4920		89%	70-130	6	30
3-Hexanone	0.445			0.100	"	0.5050		88%	60-140	2	40
2-Hexanone	0.406			0.100	"	0.4950		82%	60-140	4	40
Hexanal	0.430			0.100	"	0.5010		86%	60-140	6	40
1,2-Dibromoethane (EDB)	0.481			0.100	"	0.5080		95%	70-130	2	30
Tetrachloroethene	0.497			0.100	"	0.4990		100%	70-130	1	30
Chlorobenzene	0.447			0.100	"	0.5070		88%	70-130	2	30
Ethylbenzene	0.469			0.100	"	0.4890		96%	70-130	4	30
m+p-Xylene	0.928			0.200	"	0.9850		94%	70-130	9	30
Bromoform	0.504			0.100	"	0.5240		96%	70-130	5	30
Styrene	0.469			0.100	"	0.5020		93%	70-130	2	30
1,1,2,2-Tetrachloroethane	0.519			0.100	"	0.5070		102%	70-130	2	30
o-Xylene	0.462			0.100	"	0.4860		95%	70-130	4	30



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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

LCS Dup (B17G028-BSD1)

Prepared: Jul-19-17 Analyzed: Jul-20-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	0.476			0.100	ppbv	0.5030		95%	70-130	7	30
1,2,4-Trimethylbenzene	0.477			0.100	"	0.5020		95%	70-130	4	30
1,3-Dichlorobenzene	0.434			0.100	"	0.4980		87%	70-130	5	30
Benzyl chloride	0.489			0.100	"	0.5150		95%	70-130	6	30
1,4-Dichlorobenzene	0.456			0.100	"	0.5260		87%	70-130	6	30
1,2,3-Trimethylbenzene	0.413			0.100	"	0.4380		94%	70-130	9	30
1,2-Dichlorobenzene	0.438			0.100	"	0.5140		85%	70-130	4	30
Hexachlorobutadiene	0.473			0.100	"	0.4890		97%	70-130	3	30
1,2,4-Trichlorobenzene	0.431			0.100	"	0.5120		84%	70-130	6	30
Naphthalene	0.488			0.100	"	0.5130		95%	70-130	6	30
Surrogate: Dichlorodifluoromethane	0.528			0.100	"	0.5210		101%	70-130		
Surrogate: Dichlorotetrafluoroethane	0.514			2.50E-3	"	0.5250		98%	70-130		
Surrogate: Trichlorofluoromethane	0.515			2.50E-3	"	0.5370		96%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon)	0.500			2.50E-3	"	0.5250		95%	70-130		
Surrogate: 1,1,1-Trichloroethane	0.506			1.00E-4	"	0.5080		100%	70-130		
Surrogate: Carbon tetrachloride	0.507			2.50E-3	"	0.5000		101%	70-130		

Duplicate (B17G028-DUP1)

Source: 1707008-04

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chlorodifluoromethane (HCFC-22) (R-22)	0.266			0.150	ppbv		0.255			4	30
Propene + propane	0.226	B, J		0.150	"		0.258			13	30
Chloromethane	0.502			0.150	"		0.495			1	30
Methanol	3.18	B, J		0.150	"		3.07			3	30
Vinyl chloride	U			0.150	"		U				30
Isobutene	0.0781			0.150	"		0.0740			5	30
1,3-butadiene	0.0101	Q		0.150	"		6.44E-3			44	30
Acetaldehyde	Rejected			7.50	"		Rejected			1	30
Bromomethane	7.59E-3			0.150	"		7.71E-3			2	30
Chloroethane	6.33E-3			0.150	"		5.54E-3			13	30



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RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP1)		Source: 1707008-04			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Ethanol	0.971	B		0.375	ppbv		0.892			8	30
Acrolein	0.122			0.150	"		0.118			4	30
Acetonitrile	0.110			0.150	"		0.101			9	30
Isopropyl alcohol	0.258			0.150	"		0.243			6	30
Propanal	0.222	B		0.150	"		0.218			2	30
Acetone	1.99	B, (ICV), J		0.375	"		1.86			7	30
Pentane	0.102			0.150	"		0.110			7	30
Isoprene	0.144			0.150	"		0.143			0.7	30
1,1-Dichloroethene	U			0.150	"		U				30
Methyl iodide	U			0.150	"		U				30
Acrylonitrile	U			0.150	"		U				30
Methylene chloride	0.0927			0.150	"		0.0893			4	30
Carbon disulfide	0.0912			0.150	"		0.0869			5	30
1-Propanol	U			0.750	"		U				30
Cyclopentane	U	Q		0.150	"		0.0383			200	30
Methyl tert-butyl ether	U			0.150	"		U				30
Methacrolein	0.0888			0.150	"		0.0881			0.8	30
1,1-Dichloroethane	U			0.150	"		U				30
Vinyl acetate	U	Q		0.150	"		3.96E-3			200	30
Methyl vinyl ketone	U			0.150	"		U				30
Butanal	0.282			0.150	"		0.274			3	30
Hexane	0.0784			0.150	"		0.0766			2	30
2-Butanone	0.178			0.150	"		0.170			5	30
cis-1,2-Dichloroethene	U			0.150	"		U				30
trans-1,2-Dichloroethene	0.0164			0.150	"		0.0167			2	30
Chloroform	0.0200			0.150	"		0.0189			6	30
1,2-Dichloroethane	0.0107			0.150	"		0.0106			1	30
1-Butanol	U			0.750	"		U				30
Cyclohexane	U			0.375	"		U				30
Benzene	0.122			0.150	"		0.119			2	30





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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP1)		Source: 1707008-04			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
2-Pentanone	U			0.150	ppbv		U				30
Pentanal	0.0862	Q		0.150	"		U			200	30
3-Pentanone	U			0.150	"		U				30
1,2-Dichloropropane	U			0.150	"		U				30
Trichloroethene	U			0.150	"		U				30
Bromodichloromethane	U			0.150	"		U				30
1,4-Dioxane	U			0.150	"		U				30
cis-1,3-Dichloropropene	U			0.150	"		U				30
4-Methyl-2-pentanone	0.166			0.150	"		0.161			3	30
trans-1,3-Dichloropropene	U			0.150	"		U				30
1,1,2-Trichloroethane	U			0.150	"		U				30
Dibromochloromethane	U			0.150	"		U				30
Toluene	0.122			0.150	"		0.122			0	30
3-Hexanone	U			0.150	"		U				30
2-Hexanone	U			0.150	"		U				30
Hexanal	0.214			0.150	"		0.202			6	30
1,2-Dibromoethane (EDB)	U			0.150	"		U				30
Tetrachloroethene	U			0.150	"		U				30
Chlorobenzene	3.81E-3			0.150	"		3.82E-3			0.4	30
Ethylbenzene	0.0181			0.150	"		0.0171			6	30
m+p-Xylene	0.0586			0.300	"		0.0548			7	30
Bromoform	U			0.150	"		U				30
Styrene	9.18E-3			0.150	"		7.36E-3			22	30
1,1,2,2-Tetrachloroethane	U			0.150	"		U				30
o-Xylene	0.0264			0.150	"		0.0228			15	30
1,3,5-Trimethylbenzene	8.16E-3			0.150	"		8.70E-3			6	30
1,2,4-Trimethylbenzene	0.0275			0.150	"		0.0253			9	30
1,3-Dichlorobenzene	U			0.150	"		U				30
Benzyl chloride	U	Q		0.150	"		5.70E-3			200	30
1,4-Dichlorobenzene	7.41E-3			0.150	"		8.74E-3			17	30



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP1)		Source: 1707008-04			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,2,3-Trimethylbenzene	0.0436			0.150	ppbv		0.0419			4	30
1,2-Dichlorobenzene	U			0.150	"		U				30
Hexachlorobutadiene	U			0.150	"		U				30
1,2,4-Trichlorobenzene	4.84E-3			0.150	"		4.86E-3			0.3	30
Naphthalene	0.0180			0.150	"		0.0176			3	30
Surrogate: Dichlorodifluoromethane	0.449			0.150	"	0.5100		88%	70-130		
Surrogate: Dichlorotetrafluoroethane	0.0174			3.75E-3	"	2.000E-2		87%	60-140		
Surrogate: Trichlorofluoromethane	0.216			3.75E-3	"	0.2350		92%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon)	0.0780			3.75E-3	"	7.200E-2		108%	70-130		
Surrogate: 1,1,1-Trichloroethane	2.25E-3			1.50E-4	"	4.000E-3		56%	50-150		
Surrogate: Carbon tetrachloride	0.0818			3.75E-3	"	8.300E-2		98%	70-130		

Duplicate (B17G028-DUP2)		Source: 1707008-09RE1			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chlorodifluoromethane (HCFC-22) (R-22)	0.272			3.00	ppbv		0.267			2	30
Propene + propane	1.69	B, J, Q		3.00	"		U			200	30
Chloromethane	0.629			3.00	"		0.549			14	30
Methanol	9.35	B		3.00	"		9.25			1	30
Vinyl chloride	U			3.00	"		U				30
Isobutene	0.190			3.00	"		0.185			2	30
1,3-butadiene	U			3.00	"		U				30
Acetaldehyde	Rejected			150	"		U				30
Bromomethane	U			3.00	"		U				30
Chloroethane	U			3.00	"		U				30
Ethanol	U			7.50	"		U				30
Acrolein	0.373			3.00	"		0.320			16	30
Acetonitrile	1.10			3.00	"		1.19			8	30
Isopropyl alcohol	34.0			3.00	"		34.5			2	30
Propanal	0.634			3.00	"		0.594			6	30



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**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP2)		Source: 1707008-09RE1			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Acetone	13.6	B, (ICV), J		7.50	ppbv		14.4			6	30
Pentane	0.161			3.00	"		0.201			22	30
Isoprene	0.278			3.00	"		0.304			9	30
1,1-Dichloroethene	U			3.00	"		U				30
Methyl iodide	U			3.00	"		U				30
Acrylonitrile	U			3.00	"		U				30
Methylene chloride	3.31			3.00	"		3.30			0.4	30
Carbon disulfide	0.409			3.00	"		0.362			12	30
1-Propanol	U			15.0	"		U				30
Cyclopentane	U			3.00	"		U				30
Methyl tert-butyl ether	U			3.00	"		U				30
Methacrolein	0.143	Q		3.00	"		0.199			33	30
1,1-Dichloroethane	U			3.00	"		U				30
Vinyl acetate	U			3.00	"		U				30
Methyl vinyl ketone	U			3.00	"		U				30
Butanal	0.796	Q		3.00	"		U			200	30
Hexane	0.130			3.00	"		0.104			22	30
2-Butanone	0.542			3.00	"		0.570			5	30
cis-1,2-Dichloroethene	U			3.00	"		U				30
trans-1,2-Dichloroethene	U			3.00	"		U				30
Chloroform	U			3.00	"		U				30
1,2-Dichloroethane	U			3.00	"		U				30
1-Butanol	U			15.0	"		U				30
Cyclohexane	U			7.50	"		U				30
Benzene	0.304			3.00	"		0.313			3	30
2-Pentanone	U			3.00	"		U				30
3-Pentanone	U			3.00	"		U				30
Pentanal	U	Q		3.00	"		0.481			200	30
1,2-Dichloropropane	U			3.00	"		U				30
Trichloroethene	U			3.00	"		U				30



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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP2)		Source: 1707008-09RE1			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Bromodichloromethane	U			3.00	ppbv		U				30
1,4-Dioxane	U			3.00	"		U				30
cis-1,3-Dichloropropene	U			3.00	"		U				30
4-Methyl-2-pentanone	0.371			3.00	"		0.297			22	30
trans-1,3-Dichloropropene	U			3.00	"		U				30
1,1,2-Trichloroethane	U			3.00	"		U				30
Dibromochloromethane	U			3.00	"		U				30
Toluene	0.723			3.00	"		0.744			3	30
3-Hexanone	U			3.00	"		U				30
2-Hexanone	U			3.00	"		U				30
Hexanal	0.764			3.00	"		0.986			25	30
1,2-Dibromoethane (EDB)	U			3.00	"		U				30
Tetrachloroethene	U			3.00	"		U				30
Chlorobenzene	U			3.00	"		U				30
Ethylbenzene	0.106			3.00	"		0.0942			12	30
m+p-Xylene	0.284			6.00	"		0.286			0.9	30
Bromoform	U			3.00	"		U				30
Styrene	U			3.00	"		U				30
1,1,2,2-Tetrachloroethane	U			3.00	"		U				30
o-Xylene	0.156	Q		3.00	"		0.0945			49	30
1,3,5-Trimethylbenzene	U			3.00	"		U				30
1,2,4-Trimethylbenzene	U			3.00	"		U				30
1,3-Dichlorobenzene	U			3.00	"		U				30
Benzyl chloride	U			3.00	"		U				30
1,4-Dichlorobenzene	U			3.00	"		U				30
1,2,3-Trimethylbenzene	U			3.00	"		U				30
1,2-Dichlorobenzene	U			3.00	"		U				30
Hexachlorobutadiene	U			3.00	"		U				30
1,2,4-Trichlorobenzene	U			3.00	"		U				30
Naphthalene	0.107	Q		3.00	"		U			200	30



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**Reported:**  
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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

Duplicate (B17G028-DUP2)		Source: 1707008-09RE1			Prepared & Analyzed: Jul-19-17						
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Dichlorodifluoromethane	0.506			3.00	ppbv	0.5100		99%	70-130		
Surrogate: Dichlorotetrafluoroethane	U	Q		0.0750	"	2.000E-2		%	60-140		
Surrogate: Trichlorofluoromethane	0.282			0.0750	"	0.2350		120%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon)	0.0990	Q		0.0750	"	7.200E-2		138%	70-130		
Surrogate: 1,1,1-Trichloroethane	0.0288	J, Q		3.00E-3	"	4.000E-3		720%	50-150		
Surrogate: Carbon tetrachloride	0.0831			0.0750	"	8.300E-2		100%	70-130		

### MRL Check (B17G028-MRL1)

				Prepared & Analyzed: Jul-19-17							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Chlorodifluoromethane (HCFC-22) (R-22)	0.0503			0.100	ppbv	5.310E-2		95%	0-200		
Propene	0.0790	B, J		0.100	"	5.370E-2		147%	0-200		
Chloromethane	0.0502			0.100	"	5.490E-2		91%	0-200		
Methanol	U	B		0.100	"	5.170E-2		%	0-200		
Vinyl chloride	0.0505			0.100	"	5.370E-2		94%	0-200		
Isobutene	0.0417			0.100	"	5.300E-2		79%	0-200		
1,3-butadiene	0.0462			0.100	"	5.450E-2		85%	0-200		
Acetaldehyde	Rejected			5.00	"	5.390E-2		%	0-200		
Bromomethane	0.0523			0.100	"	5.540E-2		94%	0-200		
Chloroethane	0.0516			0.100	"	5.510E-2		94%	0-200		
Ethanol	U			0.250	"	5.060E-2		%	0-200		
Acrolein	0.0441			0.100	"	5.180E-2		85%	0-200		
Acetonitrile	0.0449			0.100	"	5.050E-2		89%	0-200		
Isopropyl alcohol	U			0.100	"	5.000E-2		%	0-200		
Propanal	0.0422			0.100	"	5.220E-2		81%	0-200		
Acetone	0.0579	B, (ICV), J		0.100	"	5.410E-2		107%	0-200		
Pentane	0.0642			0.100	"	5.600E-2		115%	0-200		
Isoprene	0.0464			0.100	"	5.420E-2		86%	0-200		
1,1-Dichloroethene	0.0507			0.100	"	5.220E-2		97%	0-200		
Methyl iodide	0.0577			0.100	"	5.340E-2		108%	0-200		



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## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

MRL Check (B17G028-MRL1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Acrylonitrile	0.0435			0.100	ppbv	5.010E-2		87%	0-200		
Methylene chloride	0.0478			0.100	"	5.000E-2		96%	0-200		
Carbon disulfide	0.0513			0.100	"	4.990E-2		103%	0-200		
1-Propanol	U			0.500	"	4.790E-2		%	0-200		
Cyclopentane	0.0378			0.100	"	4.940E-2		77%	0-200		
Methyl tert-butyl ether	0.0408			0.100	"	5.040E-2		81%	0-200		
Methacrolein	0.0415			0.100	"	4.790E-2		87%	0-200		
1,1-Dichloroethane	0.0466			0.100	"	4.950E-2		94%	0-200		
Vinyl acetate	0.0453			0.100	"	4.950E-2		92%	0-200		
Methyl vinyl ketone	0.0380			0.100	"	4.920E-2		77%	0-200		
Butanal	0.0424			0.100	"	4.790E-2		89%	0-200		
Hexane	0.0414			0.100	"	4.970E-2		83%	0-200		
2-Butanone	0.0437			0.100	"	5.230E-2		83%	0-200		
cis-1,2-Dichloroethene	0.0429			0.100	"	4.960E-2		86%	0-200		
trans-1,2-Dichloroethene	0.0466			0.100	"	5.060E-2		92%	0-200		
Chloroform	0.0470			0.100	"	5.110E-2		92%	0-200		
1,2-Dichloroethane	0.0453			0.100	"	4.950E-2		92%	0-200		
1-Butanol	U			0.500	"	5.030E-2		%	0-200		
Cyclohexane	U			0.250	"	5.050E-2		%	0-200		
Benzene	0.0469			0.100	"	5.040E-2		93%	0-200		
2-Pentanone	0.0341			0.100	"	5.020E-2		68%	0-200		
3-Pentanone	0.0368			0.100	"	5.070E-2		73%	0-200		
Pentanal	0.0322			0.100	"	4.940E-2		65%	0-200		
1,2-Dichloropropane	0.0448			0.100	"	5.010E-2		89%	0-200		
Trichloroethene	0.0454			2.50E-3	"	5.010E-2		91%	0-200		
Bromodichloromethane	0.0493			0.100	"	5.240E-2		94%	0-200		
1,4-Dioxane	0.0411			0.100	"	5.300E-2		77%	0-200		
cis-1,3-Dichloropropene	0.0426			0.100	"	5.100E-2		84%	0-200		
4-Methyl-2-pentanone	0.0419			0.100	"	5.020E-2		84%	0-200		
trans-1,3-Dichloropropene	0.0444			0.100	"	5.130E-2		87%	0-200		



# Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605  
Phone:(312)353-8370 Fax:(312)886-2591

RCRA, LCD, US EPA Region 5  
77 West Jackson Boulevard  
Chicago IL, 60604

Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

## Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control US EPA Region 5 Chicago Regional Laboratory

### Batch B17G028 - ColdTrap Dehydration

MRL Check (B17G028-MRL1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,1,2-Trichloroethane	0.0467			0.100	ppbv	5.020E-2		93%	0-200		
Dibromochloromethane	0.0490			0.100	"	5.060E-2		97%	0-200		
Toluene	0.0400			0.100	"	4.920E-2		81%	0-200		
3-Hexanone	0.0401			0.100	"	5.050E-2		79%	0-200		
2-Hexanone	0.0403			0.100	"	4.950E-2		81%	0-200		
Hexanal	0.0394			0.100	"	5.010E-2		79%	0-200		
1,2-Dibromoethane (EDB)	0.0449			0.100	"	5.080E-2		88%	0-200		
Tetrachloroethene	0.0300			0.100	"	4.990E-2		60%	0-200		
Chlorobenzene	0.0387			0.100	"	5.070E-2		76%	0-200		
Ethylbenzene	0.0444			0.100	"	4.890E-2		91%	0-200		
m+p-Xylene	0.0880			0.200	"	9.850E-2		89%	0-200		
Bromoform	0.0562			0.100	"	5.240E-2		107%	0-200		
Styrene	0.0539			0.100	"	5.020E-2		107%	0-200		
1,1,2,2-Tetrachloroethane	0.0482			0.100	"	5.070E-2		95%	0-200		
o-Xylene	0.0450			0.100	"	4.860E-2		93%	0-200		
1,3,5-Trimethylbenzene	0.0454			0.100	"	5.030E-2		90%	0-200		
1,2,4-Trimethylbenzene	0.0428			0.100	"	5.020E-2		85%	0-200		
1,3-Dichlorobenzene	0.0424			0.100	"	4.980E-2		85%	0-200		
Benzyl chloride	0.0430			0.100	"	5.150E-2		84%	0-200		
1,4-Dichlorobenzene	0.0447			0.100	"	5.260E-2		85%	0-200		
1,2,3-Trimethylbenzene	0.0388			0.100	"	4.380E-2		89%	0-200		
1,2-Dichlorobenzene	0.0431			0.100	"	5.140E-2		84%	0-200		
Hexachlorobutadiene	0.0527			0.100	"	4.890E-2		108%	0-200		
1,2,4-Trichlorobenzene	0.0448			0.100	"	5.120E-2		87%	0-200		
Naphthalene	0.0414			0.100	"	5.130E-2		81%	0-200		
Surrogate: Dichlorodifluoromethane	0.0473			0.100	"	5.210E-2		91%	70-130		
Surrogate: Dichlorotetrafluoroethane	0.0574			2.50E-3	"	5.250E-2		109%	60-140		
Surrogate: Trichlorofluoromethane	0.0507			2.50E-3	"	5.370E-2		94%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.0591			2.50E-3	"	5.250E-2		113%	70-130		
Surrogate: 1,1,1-Trichloroethane	0.0470			1.00E-4	"	5.080E-2		92%	50-150		



**Environmental Protection Agency Region 5**  
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RCRA, LCD, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Mid America Steel Drum, Inc. Project Number: MASD 07-17-17 Project Manager: Jamie Paulin	<b>Reported:</b> Aug-31-17 18:07
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**Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control**  
**US EPA Region 5 Chicago Regional Laboratory**

**Batch B17G028 - ColdTrap Dehydration**

MRL Check (B17G028-MRL1)

Prepared & Analyzed: Jul-19-17

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Carbon tetrachloride	0.0469			2.50E-3	ppbv	5.000E-2		94%	70-130		





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Project: Mid America Steel Drum, Inc.  
Project Number: MASD 07-17-17  
Project Manager: Jamie Paulin

**Reported:**  
Aug-31-17 18:07

**Notes and Definitions**

- R Rejected
- NJ There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.
- MI Matrix interference
- J The identification of the analyte is acceptable; the reported value is an estimate.
- B Analyte concentration is < 5x that in the associated method blank(s); this concentration may be a high-bias estimate.
- (ICV) Initial calibration verification criteria not met for this analyte
- U Not Detected
- NR Not Reported
- Q QC limit Exceeded