South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SOURCE TEST REPORT

17-339, 17-341 and 17-343

CONDUCTED AT

Weber Metals
16706 Garfield Avenue
Paramount, CA 90723

HEXAVALENT CHROMIUM
EMISSIONS FROM
FURNACES NOS. 337 AND 339, AND PRESS AREA

TESTED:	June 1 and July 13, 2017
ISSUED:	September 1, 2017
REPORTED BY:	Jason Aspell Senior Air Quality Engineer

REVIEWED BY:

Michael Garibay
Supervising Air Quality Engineer

SOURCE TEST ENGINEERING BRANCH

MONITORING & ANALYSIS DIVISION

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SUMMARY

a. Firm	Weber Metals, Inc
b. Test Location	16706 Garfield Avenue, Paramount, CA 90723
c. Units Tested	Furnaces #337 and # 339, and Press Area
d. Test Requested by	Matt Miyasato PhD, Deputy Executive Officer SCAQMD, (909) 396-3249
e. Reason for Test Request	High ambient air monitor readings of Cr (VI)
f. Date of Tests	June 1, 2017 and July 13, 2017
g. Source Tests Performed by	Jason Aspell, Wayne Stredwick Bill Welch, Eric Padilla
h. Test Arrangements Made Through	Doug McIntyre (Vice President) Weber Metals, Inc (562) 602-0260 ext. 259
i. Source Tests Observed by	Queen Uchekwe, Weber Metals, Inc. Malinda Miller, Weber Metals, Inc. Erik Pearson, Ramboll-Environ
j. Company I.D. No.	10966
k. Permit No.	Permit No. G40157 (Furnace No. 337) Permit No. G40158 (Furnace No. 339)

RESULTS

Summary of Test Conditions:

On June 1, 2017, the exhaust of Furnace No. 337 was source tested, in addition to an ambient air sample taken in the area of three presses in operation. High levels of hexavalent chromium were measured from Furnace No. 337. A subsequent source test was conducted on July 13, 2017 on the two exhaust stacks of Furnace No. 339, which showed low hexavalent chromium emissions. During the source tests, both Furnace No. 337 and No. 339 were preheating titanium billets at an operating temperature of 1725-1746°F. The results of the source tests and are presented in Table 1 below. As with previous source testing efforts at other facilities in Paramount, hexavalent chromium emissions have shown to be highly variable from furnace to furnace.

Furnace No. 337 is a rotary type furnace that contains an internal 26 ft. diameter stainless steel table to rotate parts horizontally through the furnace. Although the titanium parts processed were not expected to have significant amounts of chromium, the stainless steel rotating table is a potentially large source of chromium. In addition, during a previous source test visit on May 11, 2017, SCAQMD Compliance staff detected high levels of chromium in the refractory inside Furnace 337 with a handheld X-Ray Fluorescence (XRF) analyzer (Table 2). These components may also contribute to the hexavalent chromium emissions. Due to the nature and configuration of the process, testing was performed as a screening test, non-isokinetically.

Furnace No. 339 is similar in operation to Furnace No. 337 in regards to titanium parts processed and operating temperature, except that Furnace No. 339 does not have the stainless steel rotary table. The furnace refractory is still considered a potential hexavalent chromium source. Information requests regarding the refractory were not answered by the facility.

Seven ambient air monitors are located in close proximity to the facility. Table 3 contains nearby ambient air monitor results for the four ambient sampling days preceding the test dates.

Both furnaces have dedicated natural gas meters and readings were taken during the sampling. EPA Method 19 calculations were used to obtain exhaust flow rates and mass emission rates from the natural gas readings (Table 4). Since Furnace 339 has two exhaust stacks, the exhaust flow rate was assumed equal between the exhaust stacks based on data obtained from SCAQMD Source Test ID PR14194.

Results:

Table 1. Hexavalent Chromium Emission Concentrations

Emissions Source	Date	Concentration (ng/m^3)*
Furnace No. 337	6/1/17	24,500
Ambient - Furnace/Press Area	6/1/17	10.3
Furnace No. 339- West Stack	7/13/17	non-detect
East Stack	7/13/17	7.04

* Concentrations reported in the same units as the ambient air monitoring data in Table 3

Table 2. Furnace No 337 SCAQMD XRF Total Chromium Measurements* (May 12, 2017)

Location	Concentration (ppm)
Refractory on furnace doorway floor	818 ± 28
Brick on furnace doorway ceiling	2910 ± 45
Ceramic fiber insulation wall inside furnace	5007 ± 60
Burner tunnel refractory	3468 ± 47

* Qualitative readings taken by A.Q. Inspector A. Soltani. For further information refer to in Appendix A

Table 3. Ambient Air Monitoring Data for Hexavalent Chromium (ng/m^3)*

Date	Monitor No.						
	19	**21**	**23**	**24**	**27**	**31+**	**32+**
5/22/17	1.31	0.28	1.44	Invalid	1.23	-	-
5/25/17	0.90	0.68	1.09	1.76	0.78	-	-
5/28/17	0.08	0.32	0.10	0.10	2.31	-	-
5/31/17	0.3	0.7	1.43	0.67	1.09	-	-
7/3/17	0.14	0.14	2.90	0.43	0.23	2.07	0.21
7/6/17	0.94	0.36	0.84	1.54	0.25	0.41	0.88
7/9/17	1.25	1.87	0.22	1.75	0.62	3.44	3.21
7/12/17	2.87	1.26	0.86	2.90	7.66	1.41	2.99

* SCAQMD Multiple Air Toxics Exposure Study (MATES IV) background levels of hexavalent chromium are about 0.06 ng/m^3.

\+ Monitor was not operational until June 2017.

Table 4. Hexavalent Chromium Mass Emission Rates (U.S. EPA Method 19)

	Furnace No. 337	Furnace No. 339		
		West Stack+	East Stack+	Total
Natural gas usage (corrected)*, cfh	1,434	-	-	1,422
O_2,%	10.0	3.5	0.8	-
Exhaust Flow Rate, dscfm	419	121	121	242
Cr^{+6} Mass Emission Rate (lb/hr)	3.84×10^{-5}	3.19×10^{-9}	0	3.19×10^{-9}

* Readings and calculations are located in Calculations section.

EXECUTIVE SUMMARY

Source testing was conducted to screen for emissions at Weber Metals to identify the specific causes of recent elevated ambient hexavalent chromium levels measured near to the facility. Furnace No. 337 and ambient air in the press area were tested on June 1, 2017, and Furnace No. 339 was tested on July 13, 2017, to determine if they were potential sources of the elevated ambient readings.

Notably, the hexavalent chromium emissions from Furnace No. 337 were 10,400 times the highest, recent ambient air monitoring reading prior to the test. The ambient concentrations at ground level in the press area were 4.4 times the highest, recent ambient air monitoring reading. Since the furnace was processing titanium parts, the hexavalent chromium emissions are potentially generated from the internal furnace components (e.g. refractory or stainless steel table). A similar furnace design was issued a Permit to Construct (Appl. No. 572372) in the facility's Title V Facility Permit and further investigation and testing is warranted prior to the issuance of a Permit to Operate.

Furnace No. 339 is similar to Furnace No. 337, and processes titanium at a temperature greater than 1700^{o}F, however Furnace No. 339 does not have an internal rotary table and resulted in very low hexavalent chromium emissions. These test results cannot positively identify the internal furnace components that contribute to the emissions; however, the results do positively identify Furnace No. 337 as a high emitter of hexavalent chromium.

There was a high amount of particulate emissions generated from the press operations during the source testing visits as indicated by visual observation. High opacity visible emissions drifted upwards due to the convection currents and were observed to be consistently exiting the roof vent. The testing of the ambient air did not capture a good representation of these emissions because the majority of them drifted upwards towards the roof vent away from the ground level sampling. Source Test staff also observed these visible emissions at Weber Metals in the past while at neighboring facilities. Higher hexavalent chromium concentrations might be detected at the roof vent.

INTRODUCTION

On June 1, 2017, Engineers from the South Coast Air Quality Management District (SCAQMD) Source Test Engineering (STE) branch conducted source testing at Weber Metals, Inc. in Paramount, California. The purpose of the testing was to identify the specific causes of elevated ambient hexavalent chromium levels measured very near to the facility. The locations of these monitors are shown in Figure 1.

Previously, during a May 12, 2017 visit to the facility, SCAQMD Compliance staff detected the presence of chromium in the Furnace 337 refractory and insulation with a handheld XRF analyzer. (Table 2 and Appendix A). In addition, STE staff requested to perform ambient air sampling in the press area for two hours during the visit, but were not given sufficient time by the facility to perform adequate sampling to obtain a good representation of emissions in the press area. Therefore, the sampling results from May 12, 2017 were not valid, and sampling over a longer period was performed on June 1, 2017. The field data sheets from May 12, 2017 may be found in Appendix D.

Based on the information provided by SCAQMD Compliance staff, Furnace 337 was chosen to be source tested, in addition to sampling the ambient air near the presses for an appropriate sampling period of two hours. Furnace 337 was processing titanium parts during sampling. The closest press was processing aluminum, and the two further presses were processing titanium.

Sources whose emissions are screened as greater than that of the nearby ambient air monitors are considered potential contributors to the hexavalent chromium measured by the ambient air monitor, with those exhibiting the greater concentrations more positively identified as contributors.

EQUIPMENT AND PROCESS DESCRIPTION

Weber Metals, Inc. forges aluminum and titanium parts with open die (hand forging) and close die (die forging). In aluminum forging operation, stock is preheated to 750 deg. F before being shaped under pressure in the presses. For titanium forging operations, the stock is preheated to 1750 deg. F prior to being shaped in the presses to meet specific product parameters. Grinding is carried out to remove imperfections and to finish the product cycle.

Furnaces and presses are arranged so that heated parts may be removed at their appropriate temperature and shaped in an expedient manner. Testing was performed on one of the titanium furnaces and the ambient air near the furnaces and presses. The furnace tested, Furnace No. 337, currently operates under a Permit to Operate No. G40157. Weber also has Permits to Construct for an Abrasive Blasting Operation, an Aluminum Pre-Heat Furnace, two steel die furnaces and a second larger rotary furnace (Application No. 572372), that is yet to be constructed. A press was also installed recently but is exempt under SCAQMD permit requirements. The titanium furnace is a rotary furnace design rated at 12 MMBtu/hr that has a circular stainless steel table that rotates titanium parts through the furnace during preheating. A list of the permitted furnaces at this facility is provided in Table 5 below as provided by the current SCAQMD permit engineer.

Table 5. List of Permitted Furnaces

Application No.	Permit No.	Equipment Description	Rating	Used for:
569424	G40161	Lindberg chain pre-heat furnace	3 MMBtu/hr	Aluminum Billets
572370		Chain conveyor preheat furnace	13 MMBtu/hr	Aluminum Billets
572372		Rotary pre-heat furnace	22 MMBtu/hr	Titanium Billets
572373		Pedestal die heating furnace #1	8 MMBtu/hr	Steel Dies
572374		Pedestal die heating furnace #2	8 MMBtu/hr	Steel Dies
580275		Nutec bickley pre-heat furnace (OVE-340)	4 MMBtu/hr	Steel Dies
580276	G40154	No. 1 box pre-heat furnace	6.4 MMBtu/hr	Al. & Ti. Billets
580277	G40156	No. 2 box pre-heat furnace	6.4 MMBtu/hr	Al. & Ti. Billets
580278	G40157	Rotary hearth pre-heat furnace (OVE-337) *	12 MMBtu/hr	Titanium Billets
580279	G40158	Thorpe technology pre-heat furnace (OVE-339)*	8.54 MMBtu/hr	Al. & Ti. Billets
580280	G40155	No. 2 car bottom pre-heat furnace	10 MMBtu/hr	Steel Dies
580282	G40160	Aov pedestal pre-heat furnace	4 MMBtu/hr	Steel Dies
580283	G40162	A & A pre-heat furnace	4 MMBtu/hr	Titanium Billets

*Units source tested

SAMPLING AND ANALYTICAL PROCEDURES

Three sampling trains were utilized during testing. Train #40 was used for the testing of Furnace No. 337, Train #39 was used for the press area, and Train #38 was used as a field blank sample.

Although the furnace had sampling ports, sampling was performed by placing the opening of the quartz sampling probe about one inch inside the port. The furnace was under positive pressure (+0.03) so emissions were able to be collected from the configuration. Because of the small profile of the sampling port compared to the sampling probe, the testing was performed non-isokinetically.

The press area is largely enclosed, with a roof ridge vent above and a large door on the north side of the building that is kept open during operations. The roof ridge vent is designed to allow hot air inside the building to vent to the atmosphere. An aerial photo of the furnace and ridge vent locations is shown in Figure 2.

Hexavalent Chromium Sampling

Testing was conducted based on California Air Resources Board Method 425 applied to the furnace exhaust and the press area, with the procedures of the method specific to stack sampling omitted. Two samples were taken at single non-isokinetic sample points as described above for informational purposes. A third sampling train was used as a blank. Each sampling train consisted of a sampling line, which was used to draw the stack sample from the source. The furnace sample used a quartz probe and nozzle. The sample was then drawn through two impingers each filled with an aqueous solution of 0.1N $NaHCO_3$ (per Section 21.2), an empty impinger, a 2" filter, and an impinger bubbler filled with tared silica gel. Each sampling train was connected to a vacuum pump, a dry gas meter, and a calibrated orifice. The sampling apparatus was checked for leaks before and after sampling. The impingers were contained in an ice bath to condense water vapor and other condensable matter present in the sample stream (see Figure 3).

The samples were extracted using the sampling trains. The pH of the solution in the first impinger was measured after the test, but prior to recovery, at pH of at least 9 (the method requires a pH of 8.0 or higher). The impinger solutions were recovered within 24 hours and the SCAQMD laboratory analyzed the hexavalent chromium in the samples by CARB Method 425 and SCAQMD SOP 0046. Hexavalent chromium deposited in the filter, sample line and impingers were extracted and analyzed by an Ion Chromatograph equipped with a post-column reactor (IC/PCR) and a visible wavelength detector. Moisture content was determined gravimetrically and volumetrically. At the request of Weber, portions of the liquids extracted

from the samples were provided for duplicate analyses. The duplicate analyses are not included in this test report.

Integrated Gas Sampling and Analysis

An integrated gas sample was collected from the exhaust stack during testing. The gas sampling apparatus consisted of a stainless steel probe, a Teflon line, and a 6-liter summa canister (Figure 4).

The samples were analyzed by the SCAQMD laboratory for carbon dioxide and oxygen. The gases were separated by gas chromatography. The carbon dioxide was determined by a gas chromatograph with a nickel catalyzed methanizer and flame ionization detector (GC/Ni-FID). Oxygen was analyzed by thermal conductivity.

EPA Method 19

Furnace No. 337 was equipped with a dedicated natural gas meter as required by permit conditions. Gas meter readings were recorded during the sampling period to determine the volume of natural gas combusted in the furnace during the test. The formulas in EPA Method 19 were used to derive post-combustion flow rate where diluent measurements are made, the exhaust is analyzed for oxygen, and fuel consumption is measured and recorded. Calculation of the emission flow rate using this procedure requires a test-specific F-factor and Btu value of the fuel being combusted, in this instance natural gas. Utilizing the Higher Heating Values and F_d-factors for natural gas, the exhaust rate was able to be determined. The exhaust rate was used with the measured concentrations to calculate emissions rates.

DISCUSSION/TEST CRITIQUE

For purposes of interpreting the test results, the background level of hexavalent chromium during the most recent SCAQMD Multiple Air Toxics Exposure Study (MATES) IV study was about 0.06 ng/m^3. While the results are substantially higher than the background, it should be noted that it takes a significant volume of air at source concentrations substantially higher than the background to affect the ambient air levels. Ambient air levels measured at the monitors are also a function of distance away from the facility, due to air dilution, deposition, and meteorology. The intent of this test was to identify sources that are at least several times higher than the background levels to identify potential emissions sources and to provide a focus for potential remediation.

The highest ambient concentration adjacent to the facility was 2.31 ng/m^3 on 5/28/17 just a few days prior to the 6/1/17 test, as compared to the measured source concentrations from the facility, which were 24,500 ng/m^3 and 10.2 ng/m^3 for the Furnace No. 337 exhaust stack and the press area, respectively.

Furnace No. 337, as of the time of this report issue date, has the highest emission concentration of all furnaces tested by SCAQMD, and vents it emissions through roof vents that are upwind (prevailing southwest wind direction) from SCAQMD Monitoring Stations #19, 31, and others with elevated readings. The overall conclusion of this report is that elevated source concentrations from the Furnace No. 337 indicate that this furnace is emitting significant hexavalent chromium emissions into the atmosphere. Modeling of the reported hexavalent chromium emissions rate (3.84 x $x10^{-5}$ lb/hr) is recommended to more specifically quantify the significance for contribution to the nearby ambient monitoring readings and health risk to the surrounding area.

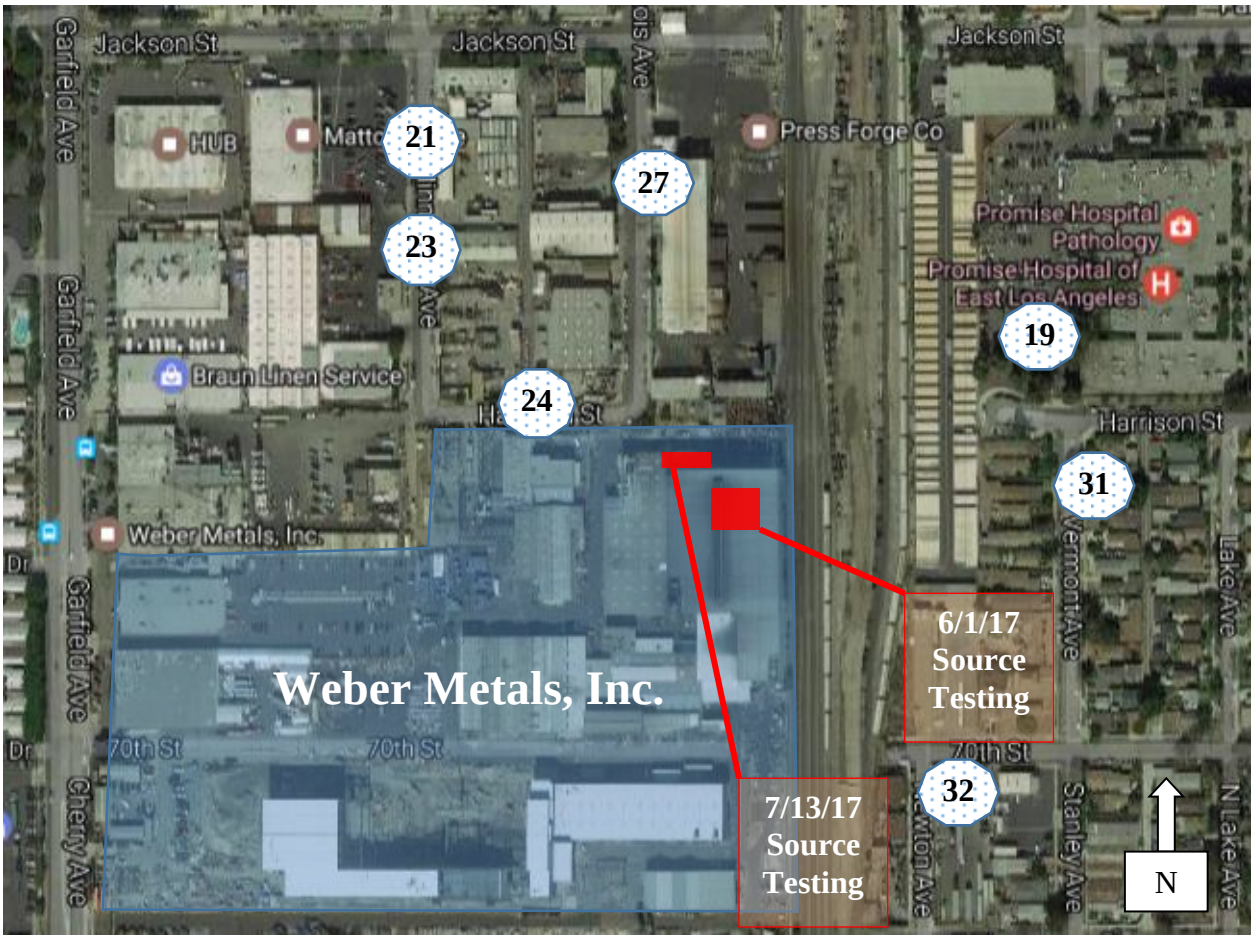
Despite the use of the single run screening approach, the use of an isokinetic and full triplicate test is not expected to change this conclusion due to the magnitude of emissions source increase over the ambient levels versus any potential variability in using a single run which is minimal. Additionally, the isokinetics were above 100%, which can only cause a low bias in the measured emissions assuring that the reported emissions are at least those that were reported.

The press area sample was diluted by incoming fresh air from a west-facing roll up door. Because of this, the press area sampling was not able to measure the undiluted emissions from the presses. The press results although not nearly as high as the furnace results, may actually be higher when sampled at a location above or closer to the presses.

Regardless of the hexavalent chromium emissions, a large amount of visible particulate matter (PM) emissions was observed from the presses. The PM emissions were caused by the use of water-based graphite containing die lubricants that were sprayed on the heated parts and dies

from the furnaces during the press phase of the forging operation. When sprayed onto the hot dies and parts, the heat from the dies and parts was observed to vaporize and/or partially combust the die lubricant creating visible PM emissions. The PM emissions were then observed to exit the forging building ridge vent. These visible emissions can be seen emitting from the ridge vent to intermittently and to varying degrees from outside the facility. As opposed to the furnace emissions, this report was inconclusive on whether the PM from the die lubricants is a significant contributor to the elevated ambient monitoring for hexavalent chromium.

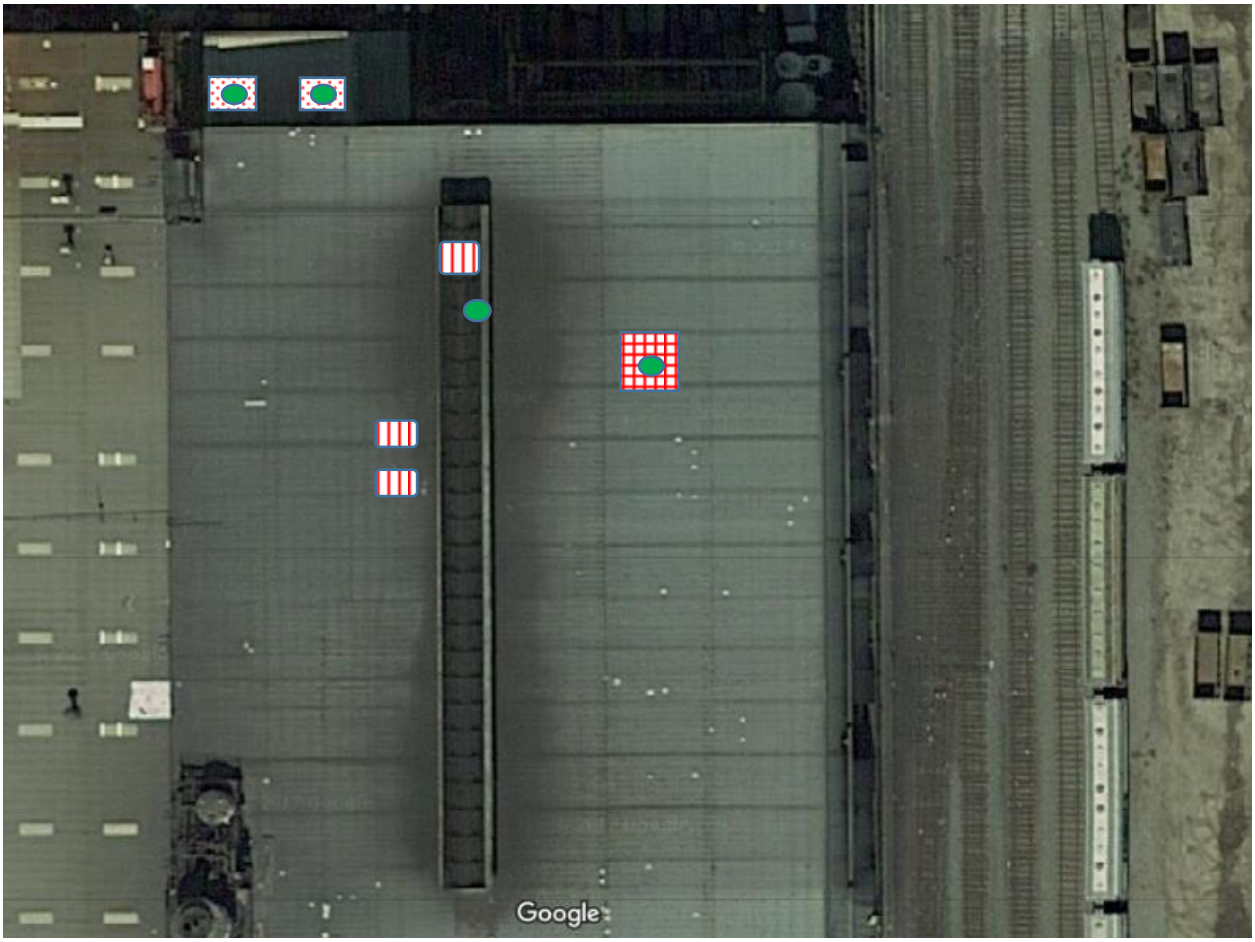
During the furnace sampling, the sampling line (post impingers and filter) slipped off of the sampling train. For a period of a few seconds, air was pulled through by the pump through the dry gas meter, but not through the impingers and filter. The air volume was minimal and is not expected to impact the results of the test. In addition, since the air did not flow through the sampling train for these few seconds, the results would be biased low by a minimal amount. The silica impinger broke during leak testing of the field blank, so moisture gain could not be analyzed for the field blank. This also is not expected to significantly affect the results of the source test.



SCAQMD Ambient Air Monitors

Approximate location of SCAQMD Source Testing on June 1, 2017 and July 13, 2017 (further detailed in Figure 2)

Figure 1: Facility and Ambient Monitor Locations



Press

Furnace No. 337

Furnace No. 339 (East and West Exhaust Stacks)

SCAQMD Sampling Points

Figure 2: Location of Process Equipment and SCAQMD Source Testing

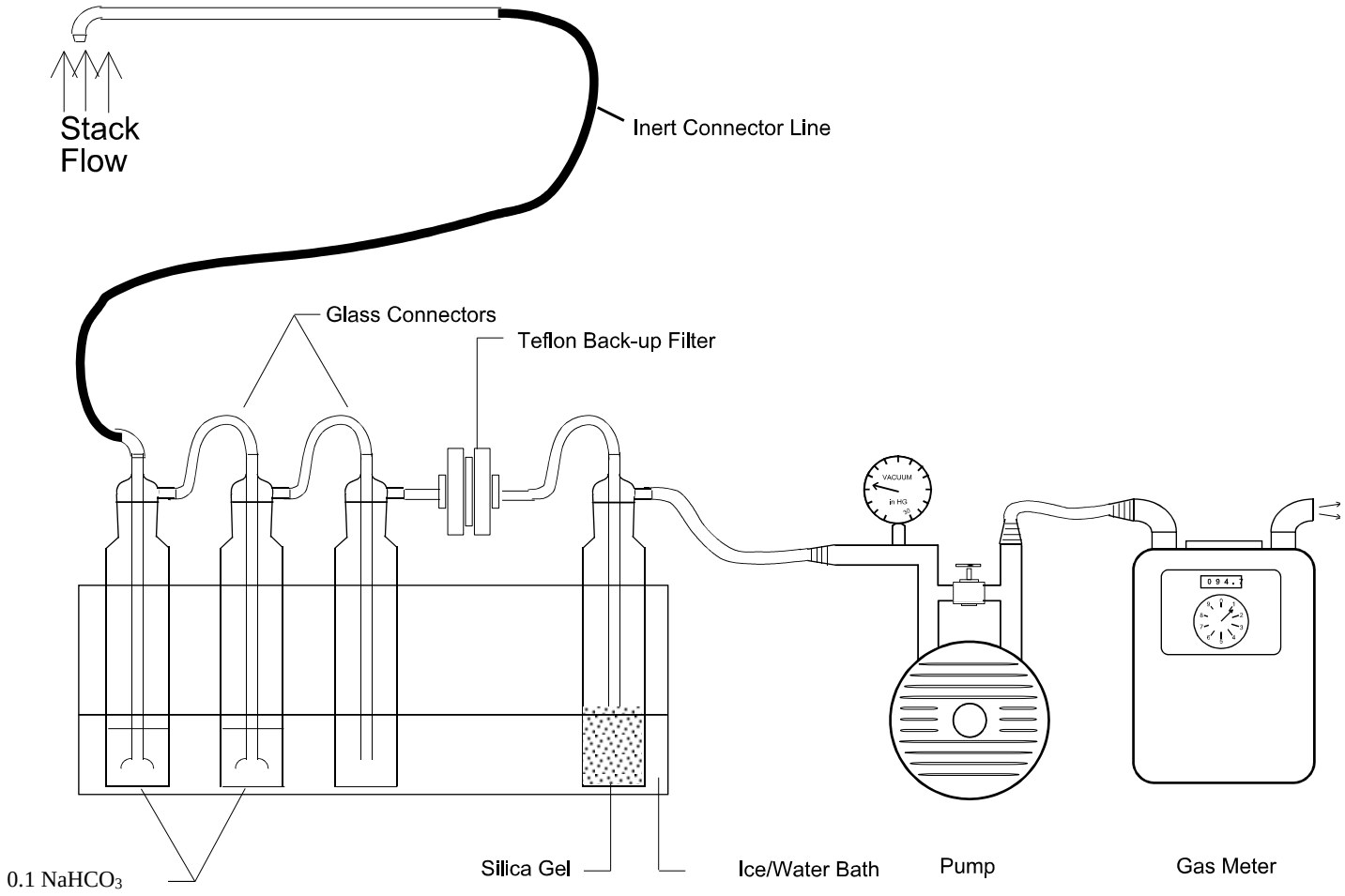


Figure 3: CARB Method 425 Train Diagram

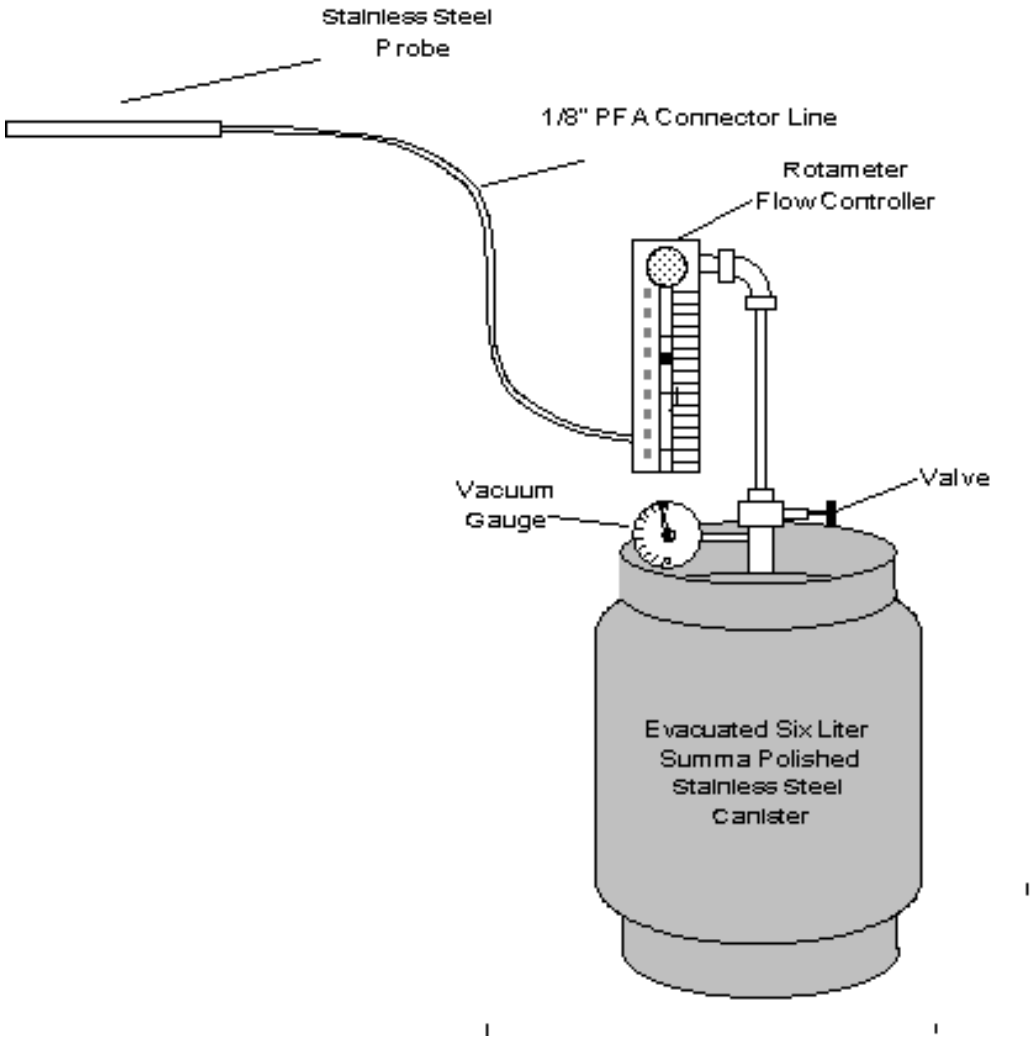


Figure 4: SCAQMD Method 10.1

CALCULATIONS

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, California 91765-4182

Test No. 2 Test Date: 6/1/17

SOURCE TEST CALCULATIONS

Sampling Location: Weber Metals-Ambient Air- Press Area
Sample Train: 39 Input by: J. Aspell

SUMMARY

A. Average Traverse Velocity		fps
A1. Average Traverse Vertical Velocity		fps
B. Gas Meter Temperature (Use 60 deg.F for Temp Comp. Meters)	98.76923	deg F
C. Gas Meter Correction Factor	1.0024	
D. Average Orifice Pressure	3.00	"H2O
E. Nozzle Diameter		inch

F1. Stack Diameter or Dimension #1		inch	M. Pitot Correction Factor	0.84	
F2. Stack Dim #2 (blank if circular)		inch	N. Sampling Time	60	min
G. Stack Cross Sect. Area		ft2	O. Nozzle X-Sect. Area	0.00000	ft
H. Average Stack Temp		deg F	P. Net Cr^{+6} Collection	0.00003	mg
I. Barometric Pressure	30.28	"HgA	Q. Net Cr_T Collection	0.00016	mg
J. Gas Meter Pressure (I+(D/13.6))	30.50	"HgA	R. Water Vapor Condensed	35	ml
K. Static Pressure		"H2O	S. Gas Volume Metered	108.640	dcf
L. Total Stack Pressure (I+(K/13.6))	30.28	"HgA			

T. Corrected Gas Volume [(S x J/29.92) x 520/(460+B) x C	103.311	dscf

PERCENT MOISTURE/GAS DENSITY

U. Percent Water Vapor in Gas Sample ((4.64 x R)/((0.0464 x R) + T))	1.55	%

V. Average Molecular Weight (Wet):

Component	Vol. Fract.		x	Moist. Fract.	x	Molecular Wt.		=	Wt./Mole
Water	0.015			1.000		18.0	,	0.28	
Carbon Dioxide	0.000	Dry Basis		0.985		44.0	,	0.02	
Carbon Monoxide	0.000	Dry Basis		0.985		28.0	,	0.00	
Oxygen	0.209	Dry Basis		0.985		32.0	,	6.58	
Nitrogen & Inerts	0.791	Dry Basis		0.985		28.2	,	21.95	
							,		
							Sum	28.83	

FLOW RATE

W. Gas Density Correction Factor (28.95/V)^.5	1.00	
X. Velocity Pressure Correction Factor (29.92/L)^.5	0.99	
Y. Corrected Velocity (A x M x W x X)	0.00	fps
YY. Vertical Corrected Velocity (A1 x M x W x X)	0.00	fps
Z. Flow Rate (Y x G x 60)	0	cfm
ZZ. Vertical Flow Rate (YY x G x 60)	0	cfm
AA. Flow Rate (Standard) {Z x (L/29.92) x [520/(460+H)]}	0	scfm
AA1. Vertical Flow Rate (Standard) {ZZ x (L/29.92) x [520/(460+H)]}	0	scfm
BB. Dry Flow Rate (AA x (U/100))	0	dscfm
BB1. Vertical Dry Flow Rate (AA1 x (U/100))	0	dscfm

SAMPLE CONCENTRATION/EMISSION RATE

CC. Sample Cr+6 Concentration [0.01543 x (P/T)]	4.48E-09	gr/dscf
DD. Sample Cr+6 Concentration [54,1 51.996 (Molecular Wt.)]	4.666E-06	ppm
EE. Sample Cr+6 Concentration [CCx 64798.9/0.0283168]	1.03E-02	$\mu g/m^3$
GG. Sample CrT Concentration [0.01543 x (Q/T)]	2.39E-08	gr/dscf
HH. Sample CrT Concentration [54,14 51.996 (Molecular Wt.)]	2.488E-05	ppm
II. Sample CrT Concentration [GG x (64798.9/0.0283168)]	5.47E-02	$\mu g/m^3$

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, California 91765-4182

Test No. 1 Test Date: 6/1/17

SOURCE TEST CALCULATIONS

Sampling Location: Weber Metals-Furnace 337- Exhaust Stack
Sample Train: 40 Input by: J. Aspell

SUMMARY

A. Average Traverse Velocity		fps
A1. Average Traverse Vertical Velocity		fps
B. Gas Meter Temperature (Use 60 deg.F for Temp Comp. Meters)	93.16667	deg F
C. Gas Meter Correction Factor	1.0051	
D. Average Orifice Pressure	1.70	"$H_2$0
E. Nozzle Diameter		inch

F1. Stack Diameter or Dimension #1		inch	M. Pitot Correction Factor	0.84	
F2. Stack Dim #2 (blank if circular)		inch	N. Sampling Time	120	min
G. Stack Cross Sect. Area	0.000	ft2	O. Nozzle X-Sect. Area	0.00000	ft
H. Average Stack Temp		deg F	P. Net Cr^{+6} Collection	0.05452	mg
I. Barometric Pressure	30.28	"HgA	Q. Net Cr_T Collection	0.48029	mg
J. Gas Meter Pressure (I+(D/13.6))	30.41	"HgA	R. Water Vapor Condensed	242	ml
K. Static Pressure	0.03	"$H_2$0	S. Gas Volume Metered	81.984	dcf
L. Total Stack Pressure (I+(K/13.6))	30.28	"HgA			

T. Corrected Gas Volume [(S x J/29.92) x 520/(460+B) x C	78.717	dscf

PERCENT MOISTURE/GAS DENSITY

U. Percent Water Vapor in Gas Sample ((4.64 x R)/((0.0464 x R) + T))	12.48	%

V. Average Molecular Weight (Wet):

Component	Vol. Fract.		x	Moist. Fract.	x	Molecular Wt.		=	Wt./Mole
Water	0.125			1.000		18.0	,	2.25	
Carbon Dioxide	0.057	Dry Basis		0.875		44.0	,	2.19	
Carbon Monoxide	0.000	Dry Basis		0.875		28.0	,	0.00	
Oxygen	0.100	Dry Basis		0.875		32.0	,	2.80	
Nitrogen & Inerts	0.843	Dry Basis		0.875		28.2	,	20.80	
							,		
							Sum	28.05	

FLOW RATE

W. Gas Density Correction Factor (28.95/V)^.5	1.02	
X. Velocity Pressure Correction Factor (29.92/L)^.5	0.99	
Y. Corrected Velocity (A x M x W x X)		fps
YY. Vertical Corrected Velocity (A1 x M x W x X)		fps
Z. Flow Rate (Y x G x 60)		cfm
ZZ. Vertical Flow Rate (YY x G x 60)		cfm
AA. Flow Rate (Standard) {Z x (L/29.92) x [520/(460+H)]}		scfm
AA1. Vertical Flow Rate (Standard) {ZZ x (L/29.92) x [520/(460+H)]}		scfm
BB. Dry Flow Rate (AA x (U/100))	419	dscfm
BB1. Vertical Dry Flow Rate (AA1 x (U/100))	419	dscfm

SAMPLE CONCENTRATION/EMISSION RATE

CC. Sample Cr+6 Concentration [0.01543 x (P/T)]	1.07E-05	gr/dscf
DD. Sample Cr+6 Concentration [54,1 51.996 (Molecular Wt.)]	1.113E-02	ppm
EE. Sample Cr+6 Concentration [CCx 64798.9/0.0283168]	2.45E+01	$\mu g/m^3$
FF. Sample Emission Rate (0.00857 x BB1 xCC)	3.84E-05	lb/hr
GG. Sample CrT Concentration [0.01543 x (Q/T)]	9.41E-05	gr/dscf
HH. Sample CrT Concentration [54,14 51.996 (Molecular Wt.)]	9.803E-02	ppm
II. Sample CrT Concentration [GG x (64798.9/0.0283168)]	2.15E+02	$\mu g/m^3$

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, California 91765-4182

Test No. 1 Test Date: 7/13/17

SOURCE TEST CALCULATIONS

Sampling Location: Weber Metals-Furnace 339- West Exhaust Stack
Sample Train: 15 Input by: J. Aspell

SUMMARY

A. Average Traverse Velocity	#DIV/0!	fps
A1. Average Traverse Vertical Velocity	#DIV/0!	fps
B. Gas Meter Temperature (Use 60 deg.F for Temp Comp. Meters)	106.9375	deg F
C. Gas Meter Correction Factor	1.0024	
D. Average Orifice Pressure	2.86	"H_2O
E. Nozzle Diameter		inch

F1. Stack Diameter or Dimension #1		inch	M. Pitot Correction Factor	0.84	
F2. Stack Dim #2 (blank if circular)		inch	N. Sampling Time	120	min
G. Stack Cross Sect. Area	0.000	ft2	O. Nozzle X-Sect. Area	0.00000	ft
H. Average Stack Temp		deg F	P. Net Cr^{+6} Collection	0.00002	mg
I. Barometric Pressure	30.20	"HgA	Q. Net Cr_T Collection	0.0003	mg
J. Gas Meter Pressure (I+(D/13.6))	30.41	"HgA	R. Water Vapor Condensed	438.6	ml
K. Static Pressure	-0.17	"H_2O	S. Gas Volume Metered	107.416	dcf
L. Total Stack Pressure (I+(K/13.6))	30.19	"HgA			

T. Corrected Gas Volume [(S x J/29.92) x 520/(460+B) x C	100.378	dscf

PERCENT MOISTURE/GAS DENSITY

U. Percent Water Vapor in Gas Sample ((4.64 x R)/((0.0464 x R) + T))	16.86	%

V. Average Molecular Weight (Wet):

Component	Vol. Fract.		x	Moist. Fract.	x	Molecular Wt.	=	Wt./Mole
Water	0.169			1.000		18.0	,	3.03
Carbon Dioxide	0.090	Dry Basis		0.831		44.0	,	3.28
Carbon Monoxide	0.000	Dry Basis		0.831		28.0	,	0.00
Oxygen	0.035	Dry Basis		0.831		32.0	,	0.93
Nitrogen & Inerts	0.875	Dry Basis		0.831		28.2	,	20.52
							,	
							Sum	27.77

FLOW RATE

W. Gas Density Correction Factor (28.95/V)^.5	1.02	
X. Velocity Pressure Correction Factor (29.92/L)^.5	1.00	
Y. Corrected Velocity (A x M x W x X)	#DIV/0!	fps
YY. Vertical Corrected Velocity (A1 x M x W x X)	#DIV/0!	fps
Z. Flow Rate (Y x G x 60)	#DIV/0!	cfm
ZZ. Vertical Flow Rate (YY x G x 60)	#DIV/0!	cfm
AA. Flow Rate (Standard) {Z x (L/29.92) x [520/(460+H)]}	#DIV/0!	scfm
AA1. Vertical Flow Rate (Standard) {ZZ x (L/29.92) x [520/(460+H)]}	#DIV/0!	scfm
BB. Dry Flow Rate (AA x (U/100))	121	dscfm
BB1. Vertical Dry Flow Rate (AA1 x (U/100))	121	dscfm

SAMPLE CONCENTRATION/EMISSION RATE

CC. Sample Cr+6 Concentration [0.01543 x (P/T)]	3.07E-09	gr/dscf
DD. Sample Cr+6 Concentration [54,14 51.996 (Molecular Wt.)]	3.201E-06	ppm
EE. Sample Cr+6 Concentration [CCx 64798.9/0.0283168]	7.04E-03	µg/m^3
FF. Sample Emission Rate (0.00857 x BB1 xCC)	3.19E-09	lb/hr
GG. Sample CrT Concentration [0.01543 x (Q/T)]	4.61E-08	gr/dscf
HH. Sample CrT Concentration [54,143 51.996 (Molecular Wt.)]	4.802E-05	ppm
II. Sample CrT Concentration [GG x (64798.9/0.0283168)]	1.06E-01	µg/m^3

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, California 91765-4182

Test No. 2 Test Date: 7/13/17

SOURCE TEST CALCULATIONS

Sampling Location: Weber Metals-Furnace 339- East Exhaust Stack
Sample Train: 5 Input by: J. Aspell

SUMMARY

A. Average Traverse Velocity	#DIV/0!	fps
A1. Average Traverse Vertical Velocity	0.00	fps
B. Gas Meter Temperature (Use 60 deg.F for Temp Comp. Meters)	104.625	deg F
C. Gas Meter Correction Factor	1.0051	
D. Average Orifice Pressure	2.93	"H_20
E. Nozzle Diameter		inch

F1. Stack Diameter or Dimension #1		inch	M. Pitot Correction Factor	0.84	
F2. Stack Dim #2 (blank if circular)		inch	N. Sampling Time	120	min
G. Stack Cross Sect. Area	0.000	ft2	O. Nozzle X-Sect. Area	0.00000	ft
H. Average Stack Temp	#DIV/0!	deg F	P. Net Cr^{+6} Collection	0	mg
I. Barometric Pressure	30.20	"HgA	Q. Net Cr_T Collection	0.00032	mg
J. Gas Meter Pressure (I+(D/13.6))	30.42	"HgA	R. Water Vapor Condensed	468.6	ml
K. Static Pressure	-0.17	"H_20	S. Gas Volume Metered	112.521	dcf
L. Total Stack Pressure (I+(K/13.6))	30.19	"HgA			

T. Corrected Gas Volume [(S x J/29.92) x 520/(460+B) x C	105.880	dscf

PERCENT MOISTURE/GAS DENSITY

U. Percent Water Vapor in Gas Sample ((4.64 x R)/((0.0464 x R) + T))	17.04	%

V. Average Molecular Weight (Wet):

Component	Vol. Fract.		x Moist. Fract.	x Molecular Wt.	= Wt./Mole
Water	0.170		1.000	18.0 ,	3.07
Carbon Dioxide	0.103	Dry Basis	0.830	44.0 ,	3.76
Carbon Monoxide	0.000	Dry Basis	0.830	28.0 ,	0.00
Oxygen	0.008	Dry Basis	0.830	32.0 ,	0.21
Nitrogen & Inerts	0.889	Dry Basis	0.830	28.2 ,	20.80
				,	
				Sum	27.84

FLOW RATE

W. Gas Density Correction Factor (28.95/V)^.5	1.02	
X. Velocity Pressure Correction Factor (29.92/L)^.5	1.00	
Y. Corrected Velocity (A x M x W x X)	#DIV/0!	fps
YY. Vertical Corrected Velocity (A1 x M x W x X)	0.00	fps
Z. Flow Rate (Y x G x 60)	#DIV/0!	cfm
ZZ. Vertical Flow Rate (YY x G x 60)	0	cfm
AA. Flow Rate (Standard) {Z x (L/29.92) x [520/(460+H)]}	#DIV/0!	scfm
AA1. Vertical Flow Rate (Standard) {ZZ x (L/29.92) x [520/(460+H)]}	#DIV/0!	scfm
BB. Dry Flow Rate (AA x (U/100))	121	dscfm
BB1. Vertical Dry Flow Rate (AA1 x (U/100))	121	dscfm

SAMPLE CONCENTRATION/EMISSION RATE

CC. Sample Cr+6 Concentration [0.01543 x (P/T)]	0.00E+00	gr/dscf
DD. Sample Cr+6 Concentration [54,14 51.996 (Molecular Wt.)]	0.000E+00	ppm
EE. Sample Cr+6 Concentration [CCx 64798.9/0.0283168]	0.00E+00	$\mu g/m^3$
FF. Sample Emission Rate (0.00857 x BB1 xCC)	0.00E+00	lb/hr
GG. Sample CrT Concentration [0.01543 x (Q/T)]	4.66E-08	gr/dscf
HH. Sample CrT Concentration [54,143 51.996 (Molecular Wt.)]	4.856E-05	ppm
II. Sample CrT Concentration [GG x (64798.9/0.0283168)]	1.07E-01	$\mu g/m^3$

EPA Method 19

Exhaust Flow Rate (dscfm) = Gas Usage (scfm) x HHV / 1,000,000 x F_d x (20.9/(20.9-%O_2))
HHV, nat. gas: 1050 BTU/cu. ft.
F_d-factor, nat. gas: 8710 dscf/MMBtu

Furnace No. 337 - June 1, 2017

Test Time	Gas Meter Reading, Cu. Ft. (uncorrected)
+0	3185700
+30	3186200
+60	3186500
+90	3187000
+120	3187300

Cu. Ft. Nat. Gas per Hour (uncorrected): 800 cfh

Pressure-Temperature Correction Factor (12 psig, 60°F): 1.792 (SCAQMD ST ID PR16359)
PR16359 is a source test conducted by Weber and submitted to SCAQMD from which the meter correction data was available.

Corrected Natural Gas Usage: 1433.6 scfh = 23.89 scfm

Stack O_2: 10.0%

Exhaust Flow Rate = 418.99 dscfm

Furnace No. 339 – July 13, 2017

Test Time	Natural Gas Usage		
	Process Control (scfh)	Gas Meter, Cu. Ft. (uncorrected)	Gas Meter, Cu. Ft. (corrected)
+0	1717	29,388,800	54,509,000
+15	1574	29,389,000	54,509,000
+30	1481	29,389,300	54,509,000
+45	1488	29,389,400	54,510,000
+60	1360	29,389,600	54,510,000
+75	1335	29,389,800	54,510,000

Test Time	Natural Gas Usage		
	Process Control (scfh)	Gas Meter, Cu. Ft. (uncorrected)	Gas Meter, Cu. Ft. (corrected)
+90	1283	29,390,000	54,511,000
+105	1311	29,390,100	54,511,000
+120	1250	29,390,300	54,511,000
AVG	1,422.11 SCFH		

Corrected Natural Gas Usage: 1422.11 scfh = 23.70 scfm

Stack O_2: 2.2% (average of both exhaust stacks)

Exhaust Flow Rate (total both stacks) = 242.2 dscfm

Single stack exhaust rate = 121.1 dscfm
(ST ID 14194 shows exhaust flow between stacks are within 6% of each other. Source Test Engineering considers flow rates within 10% as the acceptable margin of error and the stack flow rates will be considered equal)

APPENDICES

APPENDIX A

SCAQMD Compliance Staff Data

Jason Aspell

From: Eric Padilla
Sent: Friday, May 12, 2017 6:46 AM
To: Jason Aspell
Subject: FW: Weber Metals today

From: Areio Soltani
Sent: Thursday, May 11, 2017 5:32 PM
To: Garrett Kakishita <gkakishita@aqmd.gov>
Cc: John Anderson <janderson@aqmd.gov>; Amanda Sanders <asanders@aqmd.gov>; Jeffrey Lloyd <jlloyd@aqmd.gov>; Min Sue <msue@aqmd.gov>; Mike Garibay <MGaribay@aqmd.gov>; Eric Padilla <epadilla@aqmd.gov>; Wayne Stredwick <WStredwick@aqmd.gov>; Bill Welch <bwelch@aqmd.gov>
Subject: Weber Metals today

Garrett, et al.:

I wanted to give a quick summary of Compliance's activities at Weber Metals today 05/11/2017. Mike Garibay and his group were still onsite conducting testing when Min and I departed, so this is not a complete summary of all activity. Present onsite from SCAQMD were: Areio Soltani, Min Sue, Mike Garibay, Eric Padilla, Wayne Stredwich, Bill Welch. From Weber: Doug McIntyre, VP Plant Engineering; Jonathan Ayon, Manager Plant Engineering; Malinda Miller, Plant Engineer I; Jorge Pelayo, Lab Technician. From Ramboll Environ (Weber's consultant): Erik Person, Senior Manager.

We were granted access to 1 press and 1 furnace, both down since Monday for maintenance and repairs. The press was the "Mesta Press", manufactured by Mesta Pahnke and rated at 33k tons, used on both aluminum and titanium parts. A die was loaded in the press. We collected 2 bulk samples from around the press:

Sample #1 = loose debris colored black (pulverized metal scaling) and white (kitty litter); &
Sample #2 = fibrous fabric-looking debris.

We used the XRF on 2 locations, recording total Cr:

Horizontally on die itself = 354 PPM +/- 34 PPM; &
Footing used as a load out area = 596 PPM +/- 34 PPM.

Next we inspected a furnace, a titanium rotary furnace called "OV337" or "OVE337". We observed a box of "Inswool" ceramic fiber outside of the furnace as the furnace was in the process of refractory and insulation maintenance and repair. We scanned 4 surfaces with the XRF and recorded total Cr:

Refractory on furnace doorway floor = 818 PPM +/- 28 PPM;
Brick on furnace doorway ceiling = 2910 PPM +/- 45 PPM;
Ceramic fiber insulation wall inside furnace = 5007 PPM +/- 60 PPM (highest reading onside); &
Burner tunnel refractory = 3468 PPM +/- 47 PPM.

We took 3 samples from inside of the furnace:

Sample #3 = Refractory debris on rotary floor;
Sample #4 = Dark dust and debris from gap in floor; &
Sample #5 = Ceramic fiber insulation debris.

We provide a split of each sample to Ms. Miller. Ms. Pelayo also carried an XRF unit and scanned surfaces after I scanned them. We verbally requested SDS information for "Inswool" ceramic fiber insulation, brick and refractory and will also send an email requesting this information.

-- Areio

Areio Soltani – Air Quality Inspector
Toxics and Waste Management Unit
South Coast Air Quality Management District
21865 Copley Dr – Diamond Bar, CA 91765
(909) 396-3318 – Fax: (909) 396-3342

APPENDIX B

Field Data – June 1, 2017

South Coast Air Quality Management District

Test No. 17-341 Company: Weber Metals Date: 6-1-17
Sampling Location: Ambient Inside Plant Sample Train: 39

Traverse Source Test Data

Pre-Test Leak Check:
Filter: ____ cfm @ ____ "Hg vac
Probe: 0 cfm @ 20 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Post-Test Leak Check:
Filter: ____ cfm @ ____ "Hg vac
Probe: 0 cfm @ 10 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf)	Stack		Calculated			Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F		Vacuum "Hg
			Velocity Head ("H_2O)	Temp. °F	Velocity (fps)	Sampling Rate (cfm)	Orifice ΔP ("H_2O)				In	Out	
		Start 402.790											
11:25	START						3.0			52	85	83	7
+10		411.445					3.0			49	91	85	7
+20		420.100					3.0			49	99	87	7
+30		429.500					3.0			50	101	89	7
+40		438.625					3.0			52	104	92	7
+50		447.690					3.0			54	106	93	7
+60	12:25	456.700					3.0			42	106	95	7
+70		465.915					3.0			45	107	96	7
+80		474.990					3.0			50	107	96	7
+90		484.150					3.0			43	109	98	7
+100		493.240					3.0			51	111	100	7
+110		502.355					3.0			49	112	101	7
+120	STOP	511.430					3.0			55	113	102	7
(Net Vol. Uncorr.)			Avg										

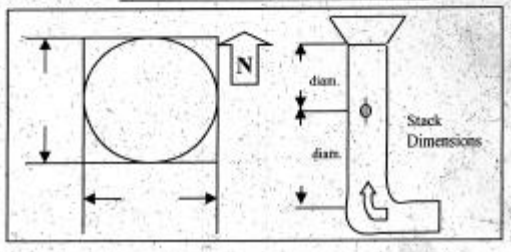
K-Factor: 0.5682 Stack Moisture: ____ Canister #: ____ Start: ____ "Hg vac

Nozzle Diameter: ____ "
Barometric Pressure: 30.28 " HgA
Static Pressure in Stack: +/- ____ " H_2O

Recorded By: W.S.
Pitot Factor: ____

Calibration Data

Inclined Manometer	(Cal:	N/A)
Magnehelic No.	(Cal:	)
Pitot Tube No.	(Cal:	)
Potentiometer No.	N10314	(Cal: 3-24-17)
Thermocouple No.	T0108	(Cal:)
Gas Meter No.	N0714	(Cal: 3-24-17)
Meter Corr. Factor:	1.0024	



Sampling Probe: Stainless Steel / Borosilicate / Quartz

Stack: Horizontal / Vertical Rectangular / Circular

Revision 01/09

South Coast Air Quality Management District

Test No. 17-341 Company: Weber Metals Date: 6/1/17
Sampling Location: Oven #337 Sample Train: ~~#39~~ 40

Traverse Source Test Data

Pre-Test Leak Check:
Filter: ____ cfm @ ____ "Hg vac
Probe: 0.00 cfm @ 17 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Post-Test Leak Check:
Filter: ____ cfm @ ____ "Hg vac
Probe: 0.00 cfm @ 14 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf)	Stack Velocity Head ("H2O)	Stack Temp. °F	Calculated Velocity (fps)	Calculated Sampling Rate (cfm)	Calculated Orifice ΔP ("H2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F In	Meter Temp. °F Out	Vacuum " Hg
	11:20	Start: 188.128											
N:20	#10	195.15					1.7			53	81	80	4
#10	#20	202.75					1.7			47	87	81	4
#20	#30	209.35					1.7			53	93	86	4
#30	#40 *	216.4					1.7			54	93	87	4
#40	#50	223.0					1.7			56	96	89	4
#50	#60	229.6					1.7			58	98	90	4
#60	#70	236.5					1.7			59	99	92	4
#70	#80	243.4					1.7			57	99	93	4
#80	#90	250.0					1.7			54	101	94	4
#90	#100	256.7					1.7			58	102	95	4
#100	#110	263.45					1.7			47	103	96	4
#110	#120	270.112					1.7				104	97	4
#120													
BW													
	*	connecting tube disconnected @ 12:06 PM (back end)											
		restart @ 12:07											
		FURNACE TEMP: 1725 °F											
(Net Vol. Uncorr.)			Avg.										

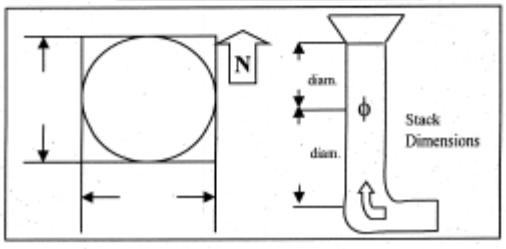
K-Factor: 0.5821 Stack Moisture: ____ Canister #: 54205 Start: 11:38 / 11:46 28" / 3" "Hg vac

Nozzle Diameter: ____ "
Barometric Pressure: 30.28 " HgA
Static Pressure in Stack: +/- 9.03 " H2O

Recorded By: BWeld
Pitot Factor: ____

Calibration Data

Inclined Manometer	NO715	(Cal: N/A)
Magnehelic No.	____	(Cal: ____)
Pitot Tube No.	____	(Cal: ____)
Potentiometer No.	NO315	(Cal: 4/20/17)
Thermocouple No.	21202	(Cal: 5/15/17)
Gas Meter No.	NO715	(Cal: 4/28/17)
Meter Corr. Factor:	1.0051	



Sampling Probe: Stainless Steel / Borosilicate / Quartz

Stack: Horizontal / Vertical Rectangular / Circular

Revision 01/09

South Coast Air Quality Management District

Test No. 17341 Company: Weber Metals Date: 6/1/17
Sampling Location: Ambient - Field Blank Sample Train: 38

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: _____ cfm @ _____ "Hg vac
Pitot Tube Leak Check: Pass / Fail

Post-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: _____ cfm @ _____ "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf) Start:	Stack: Velocity Head ("H_2O)	Stack: Temp. °F	Calculated: Velocity (fps)	Calculated: Sampling Rate (cfm)	Calculated: Orifice ΔP ("H_2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F: In	Meter Temp. °F: Out	Vacuum "Hg
		Silica Impinger Broke During Two											
		Leak Checks Attempts - Use As Field											
		Blank If Possible											
(Net Vol. Uncorr.)			Avg.										

K-Factor: _____

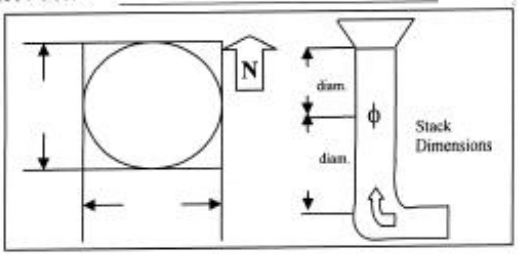
Nozzle Diameter: _____ "
Barometric Pressure: _____ " HgA
Static Pressure in Stack: + / - _____ " H_2O

Canister #: _____ Start: _____ "Hg vac

Recorded By: _____
Pitot Factor: _____

Calibration Data

Inclined Manometer	_____	(Cal: N/A)
Magnehelic No.	_____	(Cal: _____)
Pitot Tube No.	_____	(Cal: _____)
Potentiometer No.	_____	(Cal: _____)
Thermocouple No.	_____	(Cal: _____)
Gas Meter No.	_____	(Cal: _____)
Meter Corr. Factor:		



Sampling Probe: Stainless Steel / Borosilicate / Quartz

Stack: Horizontal / Vertical Rectangular / Circular

Furnace 337 Gas meter readings Recorded by E. Padilla

Start of Test
11:20 AM

+30 min
11:50 AM

+60 min
12:20 PM

+90 min

12:50 PM

+120 min

1:20 PM

Field Data – July 13, 2017

South Coast Air Quality Management District

Test No. 17-343 Company: Weber Metals Date: 7/13/17
Sampling Location: Oven 339 West Stack Sample Train: 15

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0 cfm @ 15 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Post-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0 cfm @ 15 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf) Start: 511.796	Stack Velocity Head ("H_2O)	Stack Temp. °F	Calculated Velocity (fps)	Calculated Sampling Rate (cfm)	Calculated Orifice ΔP ("H_2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F In	Meter Temp. °F Out	Vacuum "Hg
11:05													
+15	15	525.47	3.0							42	91	89	9
+30	30	538.13	3.0							42	102	92	10
+45	45	552.67	3.0							45	111	98	10
+60	60	566.43	3.0							43	113	102	11
+75	75	580.08	3.0							48	116	105	11
+90	90	593.27	2.7							52	119	108	12
+105	105	606.36	2.6							59	120	113	12
+120	120	619.212	2.6							45	120	113	12
(Net Vol. Uncorr.)			Avg.										

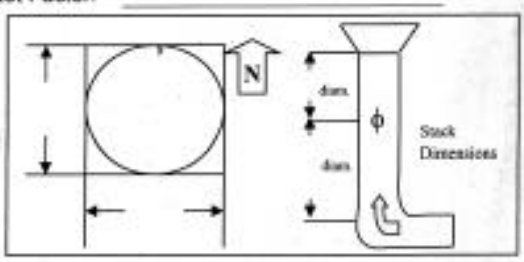
K-Factor: 0.5682 Stack Moisture: _____ Canister #: 54080 Start: 30 "Hg vac

Nozzle Diameter: _____ "
Barometric Pressure: 30.20 " HgA
Static Pressure in Stack: +/- _____ " H_2O

Recorded By: [signature]
Pitot Factor: _____

Calibration Data

Inclined Manometer		(Cal: N/A)
Magnehelic No.		(Cal:)
Pitot Tube No.		(Cal:)
Potentiometer No.	N0314	(Cal: 7/24/17)
Thermocouple No.	71207	(Cal: 5/15/17)
Gas Meter No.	N0714	(Cal: 3/24/17)
Meter Corr. Factor:	1.0024	



Sampling Probe: Stainless Steel / Borosilicate (Quartz

Stack: Horizontal / (Vertical) Rectangular / Circular

Revision 01/09

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

TCA TEST DATA SHEET

Date: 7/13/17 Page No.: _____

Test No.: 17-343 Recorded by: _____

Company/Sampling Location: Weber Metals Oven 339 West stack

Basic and Control Equipment: _____

SAMPLE A

Tank # 54080 Trap # _____ Control # _____

Pre-Test Leak Check: Gauge -30 ΔP 0

Post-Test Leak Check: Gauge 11 ΔP 0

Barometric Pressure _____ "HgA

SAMPLE B

Tank # _____ Trap # _____ Control # _____

Pre-Test Leak Check: Gauge _____ ΔP _____

Post-Test Leak Check: Gauge _____ ΔP _____

Static Pressure _____ "HgA (± _____ "H2O)

TIME	VACUUM ("Hg)	FLOW (cc/min)	COMMENTS
1128 AM	30	≥1	
+5	24	≥1	
+10	16	≤1	
+13 +15 11	12		
+20 11			

TIME	VACUUM ("Hg)	FLOW (cc/min)	COMMENTS

TCA SAMPLING INTERVAL TABLE (Δ P)

MFC °F	70	200	400	600	800	1000	1200	1400	1600
15	2.65	2.90							
20	2.20	2.45	2.70						
25	1.90	2.15	2.30	2.70					
30	1.65	1.85	2.00	2.40	2.85				
35	1.40	1.60	1.80	2.10	2.50	2.85			
40	1.20	1.40	1.60	1.90	2.25	2.50	2.95		
45	1.05	1.25	1.40	1.70	2.00	2.25	2.60	3.00	
50	0.95	1.15	1.25	1.50	1.85	2.05	2.40	2.70	
55	0.85	1.05	1.15	1.35	1.65	1.85	2.15	2.45	2.80
60	0.80	0.95	1.05	1.25	1.55	1.70	2.00	2.30	2.55
65	0.70	0.85	0.95	1.15	1.40	1.60	1.90	2.15	2.40
70	0.65	0.80	0.90	1.05	1.30	1.50	1.75	2.00	2.25
75	0.60	0.75	0.80	1.00	1.25	1.40	1.65	1.90	2.15
80	0.55	0.65	0.75	0.90	1.15	1.30	1.55	1.80	2.05
85	0.50	0.60	0.70	0.85	1.10	1.25	1.50	1.75	1.95
90	0.50	0.55	0.65	0.80	1.05	1.25	1.50	1.65	1.90

South Coast Air Quality Management District

Test No. 17-343 Company: WEBER METAL Date: 7/13/17
Sampling Location: DAE339 - EAST STACK (FURNACE) Sample Train: 5

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0.004 cfm @ 15 "Hg vac
Pitot Tube Leak Check: (Pass) / Fail

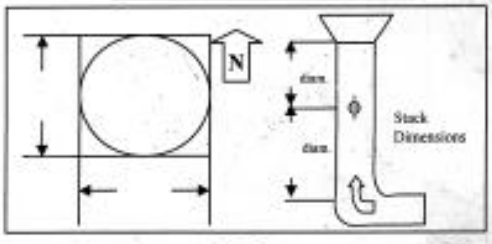
Post-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0.015 cfm @ 12 "Hg vac
Pitot Tube Leak Check: (Pass) / Fail

Time	Sample Point #	Gas Meter Reading (dcf)	Stack Velocity Head "H2O	Stack Temp. °F	Calculated Velocity (fps)	Calculated Sampling Rate (cfm)	Calculated Orifice ΔP ("H2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F In	Meter Temp. °F Out	Vacuum " Hg
1105		Start 270.744											
	+15	284.63	-.17	1746			3.0			45	91	90	7
	+30	298.84	-.17	1745			3.0			40	98	99	8
	+45	312.89	-.17	1745			3.0			48	109	99	8
	+60	327.06	-.17	1745			3.0			39	107	100	8
	+75	341.28	-.18	1745			3.0			43	111	103	8
	+90	355.44	-.19	1745			2.9			39	114	106	9
	+105	369.43	-.19	1745			2.8			41	116	108	9
1305	+120	383.265	-.19	1745			2.7			45	119	112	9
(Net Vol. Uncorr.)			Avg.										

K-Factor: .5821 Stack Moisture: _____ Canister #: 54139 (54179 ?) Start: 30 "Hg vac
Nozzle Diameter: _____ Recorded By: JA
Barometric Pressure: 30.20 " HgA Pitot Factor: _____
Static Pressure in Stack: (-) 0.02 " H_2O (last stack F)

Calibration Data

Inclined Manometer	N0715	(Cal:	N/A)
Magnehelic No.	_____	(Cal:	_____)
Pitot Tube No.	_____	(Cal:	_____)
Potentiometer No.	N0315	(Cal:	5/2/17)
Thermocouple No.	70168 (2029)	(Cal:	5/11/17)
Gas Meter No.	N0715	(Cal:	4/28/17)
Meter Corr. Factor:	1.005		



Sampling Probe: Stainless Steel / Borosilicate / (Quartz)
Stack: Horizontal / (Vertical) Rectangular / (Circular)

Revision 01/09

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TCA TEST DATA SHEET

Date: 7/13/17 Page No.: _____
Test No.: 17-343 Recorded by: JA
Company/Sampling Location: WEBER METAL
Basic and Control Equipment: OVE339 EAST STACK - 54139 CANISTER

SAMPLE A
Tank # 54139 Trap # 1 Control # _____
Pre-Test Leak Check: Gauge 30 ΔP 6
Post-Test Leak Check: Gauge 2 ΔP 0
Barometric Pressure 30.2 "HgA

SAMPLE B
Tank # _____ Trap # _____ Control # _____
Pre-Test Leak Check: Gauge _____ ΔP _____
Post-Test Leak Check: Gauge _____ ΔP _____
Static Pressure _____ "HgA (± _____ "H2O)

TIME	VACUUM ("Hg)	FLOW (cc/min)	COMMENTS
1128	30	0.6	
1133	30	0.8	
1138	29	0.10	
1143	21	1.0	
1150	52	0.8	END

TIME	VACUUM ("Hg)	FLOW (cc/min)	COMMENTS

TCA SAMPLING INTERVAL TABLE (Δ P)

ΔP	50	70	200	400	600	800	1000	1200	1400	1600
15		2.85	2.90							
20		2.20	2.45	2.70						
25		1.90	2.15	2.30	2.70					
30		1.85	1.85	2.00	2.40	2.85				
35		1.40	1.60	1.80	2.10	2.50	2.85			
40		1.20	1.40	1.60	1.90	2.25	2.50	2.95		
45		1.05	1.25	1.40	1.70	2.00	2.25	2.60	3.00	
50		0.95	1.15	1.25	1.50	1.85	2.05	2.40	2.70	
55		0.85	1.05	1.15	1.35	1.65	1.85	2.15	2.45	2.80
60		0.80	0.95	1.05	1.25	1.55	1.70	2.00	2.30	2.55
65		0.70	0.85	0.95	1.15	1.40	1.60	1.90	2.15	2.40
70		0.65	0.80	0.90	1.05	1.30	1.50	1.75	2.00	2.25
75		0.60	0.75	0.80	1.00	1.25	1.40	1.65	1.90	2.15
80		0.55	0.65	0.75	0.90	1.15	1.30	1.55	1.80	2.05
85		0.50	0.60	0.70	0.85	1.10	1.25	1.50	1.75	1.95
90		0.50	0.55	0.65	0.80	1.05	1.25	1.50	1.65	1.90

South Coast Air Quality Management District

Test No. 17-343 Company: WEBER METAL Date: 7/13/17
Sampling Location: OVE 339 FIELD BLANK Sample Train: 44

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _______ cfm @ _______ "Hg vac
Probe: 0.012 cfm @ 10 "Hg vac
Pitot Tube Leak Check: Pass / Fail (Pass circled)

Post-Test Leak Check:
Filter: _______ cfm @ _______ "Hg vac
Probe: 0.015 cfm @ 12 "Hg vac
Pitot Tube Leak Check: Pass / Fail (Pass circled)

Time	Sample Point #	Gas Meter Reading (dcf) Start:	Stack Velocity Head ("H_2O)	Stack Temp. °F	Calculated Velocity (fps)	Calculated Sampling Rate (cfm)	Calculated Orifice ΔP ("H_2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F In	Meter Temp. °F Out	Vacuum "Hg
(Net Vol. Uncorr.)			Avg.										

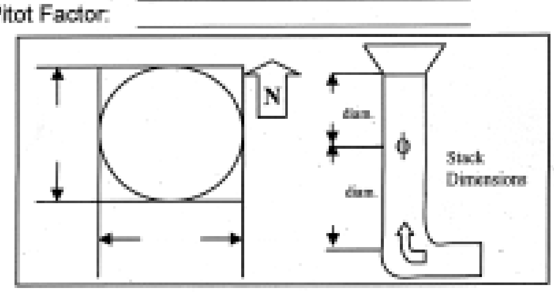
K-Factor: __________ Stack Moisture: __________ Canister #: __________ Start: _______ "Hg vac

Nozzle Diameter: __________ "
Barometric Pressure: __________ " HgA
Static Pressure in Stack: + / - __________ " H_2O

Recorded By: ____________________
Pitot Factor: ____________________

Calibration Data

Inclined Manometer __________ (Cal: N/A)
Magnehelic No. __________ (Cal: ________)
Pitot Tube No. __________ (Cal: ________)
Potentiometer No. __________ (Cal: ________)
Thermocouple No. __________ (Cal: ________)
Gas Meter No. __________ (Cal: ________)
Meter Corr. Factor:



Sampling Probe: Stainless Steel / Borosilicate / Quartz

Stack: Horizontal / Vertical Rectangular / Circular

Revision 01/09

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

TCA TEST DATA SHEET

Date: 7/13/17 NAT GAS METERS Page No.: _____

Test No.: 17-343 Recorded by: JA

Company/Sampling Location: _____

Basic and Control Equipment: _____

SAMPLE A			SAMPLE B		
Tank # _____ Trap # _____		Control # _____	Tank # _____ Trap # _____		Control # _____
Pre-Test Leak Check:	Gauge _____ ΔP _____		Pre-Test Leak Check:	Gauge _____ ΔP _____	
Post-Test Leak Check:	Gauge _____ ΔP _____		Post-Test Leak Check:	Gauge _____ ΔP _____	

Barometric Pressure _____"HgA Static Pressure _____"HgA (Δ_____"H2O)

293888

PROCESS CNTRL SCFH

UNCORRECTED

TIME	VACUUM ("Hg)	FLOW (cc/min)	~~COMMENTS~~ MCF-CCF
0			54509 293888
+15			293890
+30			293893
+45			293894
+60			293896
+75			293898
+90			293900
+105			293901
+120			293903

1717 NOS
1574
1481
1488
1360
1335
1283
1311
1250

CORRECTED

TIME	VACUUM ("Hg)	FLOW (cc/min)	COMMENTS MCF
0			54509
			54509
			54509
			54510
+60			54510
+75			54510
+90			54511
+105			~~5411+54511~~
			54511

HONEYWELL MINIMAX

TCA SAMPLING INTERVAL TABLE (Δ P)

	70	200	400	600	800	1000	1200	1400	1600
15	2.65	2.90							
20	2.20	2.45	2.70						
25	1.90	2.15	2.30	2.70					
30	1.65	1.85	2.00	2.40	2.85				
35	1.40	1.60	1.80	2.10	2.50	2.85			
40	1.20	1.40	1.60	1.90	2.25	2.50	2.95		
45	1.05	1.25	1.40	1.70	2.00	2.25	2.60	3.00	
50	0.95	1.15	1.25	1.50	1.85	2.05	2.40	2.70	
55	0.85	1.05	1.15	1.35	1.65	1.85	2.15	2.45	2.80
60	0.80	0.95	1.05	1.25	1.55	1.70	2.00	2.30	2.55
65	0.70	0.85	0.95	1.15	1.40	1.60	1.90	2.15	2.40
70	0.65	0.80	0.90	1.05	1.30	1.50	1.75	2.00	2.25
75	0.60	0.75	0.80	1.00	1.25	1.40	1.65	1.90	2.15
80	0.55	0.65	0.75	0.90	1.15	1.30	1.55	1.80	2.05
85	0.50	0.60	0.70	0.85	1.10	1.25	1.50	1.75	1.95
90	0.50	0.55	0.65	0.80	1.05	1.25	1.50	1.65	1.90

APPENDIX C

District Laboratory Data

June 1, 2017 – Source Test

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
Page 1 of 2

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

TO Mike Garibay
Supervising A.Q. Engineer
Source Test & Engineering

SAMPLE(S) DESCRIBED AS
3 Hexavalent Chromium Trains

SAMPLING LOCATION
Facility ID 10966
Weber Metals, Inc.
16706 Garfield Ave.
Paramount, CA 90723

LABORATORY NO	1714534
SOURCE TEST NO	17-341
DATE RECEIVED	06/01/17
RULE NO	NA
REQUESTED BY	Jason Aspell
DATE ANALYZED	6/2/2017
DATE REPORTED	6/8/2017

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS
Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate(NaHCO3) solution)

	Train 40	Train 39	Train 38
Moisture gain, g	242.0	35.0	-
Silica gel% expended	90	75	0
Filter gain, g	0.0001	0.0003	-0.0013
Impinger 1 pH	9	10	9
Impinger 2 pH	8	10	9
Cr^{+6}, ug	54.52	0.03	0.00
Total Cr, ug	480.29	0.16	0.10

Recovery Notes:

Train 38: The neck of Impinger 4 broke in the field, therefore post-sampling weight and moisture gain values are not obtainable.
NOTE: Additional significant figures provided for calculation purposes.

Reviewed By: _____ Date Reviewed: 06/08/17
Joan Miertit, Principal A.Q. Chemist
Laboratory Services

Approved By: _____ Date Approved: 6/8/17
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
Page 2 of 2

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

LABORATORY NO 1714534

REQUESTED BY Jason Aspell

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS
Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate(NaHCO3) solution)

QUALITY CONTROL

BALANCE CHECK (MOISTURE GAIN)

Lab No.	Result (g)	Limit (g)	Check Status
B17F012-CCV1	99.9998	±0.0005	Pass
B17F012-CCV2	500.0	±0.2	Pass

CCV RECOVERIES (CR6)

Lab No.	Results (ppt)	Limit (%)	% Recovery
S17F009-CCV1	100	90-110	100
S17F009-CCV2	93	90-110	93
S17F009-CCV3	99	90-110	99
S17F009-CCV4	97	90-110	97

CCV RECOVERIES (TOTAL CR)		Limit (%)	% Recovery
S17F010-CCV1	4.87	90-110	97
S17F010-CCV2	5.14	90-110	103
S17F010-CCV3	5.00	90-110	100
S17F010-CCV4	5.12	90-110	102
S17F010-CCV5	4.91	90-110	98

REF B17F012
S17F009
S17F010

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
Page 2 of 2

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

LABORATORY NO 1714534

REQUESTED BY Jason Aspell

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS
Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate(NaHCO3) solution)

QUALITY CONTROL

BALANCE CHECK (MOISTURE GAIN)

Lab No.	Result (g)	Limit (g)	Check Status
B17F012-CCV1	99.9998	±0.0005	Pass
B17F012-CCV2	500.0	±0.2	Pass

CCV RECOVERIES (CR6)

Lab No.	Results (ppt)	Limit (%)	% Recovery
S17F009-CCV1	100	90-110	100
S17F009-CCV2	93	90-110	93
S17F009-CCV3	99	90-110	99
S17F009-CCV4	97	90-110	97

CCV RECOVERIES (TOTAL CR)		Limit (%)	% Recovery
S17F010-CCV1	4.87	90-110	97
S17F010-CCV2	5.14	90-110	103
S17F010-CCV3	5.00	90-110	100
S17F010-CCV4	5.12	90-110	102
S17F010-CCV5	4.91	90-110	98

REF B17F012
S17F009
S17F010

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 3)

To: Mike Garibay
Supervising A.Q. Engineer
Source Test & Engineering

Sampling Location
Facility ID 10966
Weber Metals, Inc.
16706 Garfield Ave.
Paramount, CA 90723

Laboratory No.	**1714534-13**
Requested By	**Jason Aspell**
Rule No.	**NA**
ST No.	**17-341**
Report Created	**06/14/2017**

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

See attached results and sample information.

Reviewed By: _____ **Date Reviewed:** 06/14/17
Joan Niertit
Principal A.Q. Chemist
Laboratory Services

Approved By: _____ **Date Approved:** 6/15/17
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Form 2.0

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 2 of 3)

Laboratory No. **1714534-13**

Sample Description SUMMA Canister Canister 54205, Furnace Sample

Sample Date 06/01/2017 **Received Date 06/01/2017** **Analyzed Date 06/06/2017**

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

Analyte, Unit	Result	MDL	MRL
H2, %	<0.2	0.2	NA
O2, %	10	0.2	NA
N2, %	80	0.2	NA
CH4, %	<0.2	0.2	NA

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 3 of 3)

Laboratory No. 1714534-13

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

QUALITY CONTROL SUMMARY

CCV1 (CC122586) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	1.00	0.94	0.06	PASS
O2, %	1.05	1.03	0.02	PASS
N2, %	1.07	0.96	0.11	PASS
CH4, %	1.04	1.01	0.03	PASS

CCV2 (CC73109) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	0.00	0.00	NA	PASS
O2, %	24.65	24.63	0.02	PASS
N2, %	4.97	4.93	0.04	PASS
CH4, %	0.00	0.00	NA	PASS

CCV3 (FF130) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	0.00	0.00	NA	PASS
O2, %	0.98	1.00	0.02	PASS
N2, %	93.66	93.9	0.24	PASS
CH4, %	0.00	0.00	NA	PASS

CCV4 (CC122586) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	1.00	0.94	0.06	PASS
O2, %	1.07	1.03	0.04	PASS
N2, %	1.09	0.96	0.13	PASS
CH4, %	1.02	1.01	0.01	PASS

CCV5 (CC73109) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	0.00	0.00	NA	PASS
O2, %	24.65	24.63	0.02	PASS
N2, %	5.01	4.93	0.08	PASS
CH4, %	0.00	0.00	NA	PASS

CCV6 (FF130) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	0.00	0.00	NA	PASS
O2, %	1.00	1.00	0.00	PASS
N2, %	94.01	93.9	0.11	PASS
CH4, %	0.00	0.00	NA	PASS

REFERENCE NO. B17F037

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 3)

To: Mike Garibay
Supervising A.Q. Engineer
Source Test & Engineering

Sampling Location
Facility ID 10966
Weber Metals, Inc.
16706 Garfield Ave.
Paramount, CA 90723

Laboratory No.	**1714534-13**
Requested By	**Jason Aspell**
Rule No.	**NA**
ST No.	**17-341**
Report Created	**06/14/2017**

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

See attached results and sample information.

Reviewed By: _____ **Date Reviewed:** 06/14/17
Joan Niertit
Principal A.Q. Chemist
Laboratory Services

Approved By: _____ **Date Approved:** 6/16/17
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Form 2.0

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 2 of 3)

Laboratory No. **1714534-13**

Sample Description SUMMA Canister Canister 54205, Furnace Sample

Sample Date 06/01/2017 **Received Date 06/01/2017** **Analyzed Date 06/06/2017**

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

Analyte, Unit	Result	MDL	MRL
CH4, ppmvC	<1	0.5	1
CO2, ppmvC	57155	0.5	1
Ethane, ppmvC	<1	0.5	1
NMNEOC, ppmvC	<1	0.5	1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 3 of 3)

Laboratory No. 1714534-13

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

QUALITY CONTROL SUMMARY

CCV1 (CC106783) Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	2.15	1.92	11.75	0.23	PASS
CH4, ppmvC	1.99	2.02	1.68	0.03	PASS
CO2, ppmvC	2.37	1.57	51.05	0.80	PASS
Ethane, ppmvC	2.00	2.03	1.48	0.03	PASS
NMNEOC, ppmvC	2.18	2.03	7.50	0.15	PASS

CCV2 (CC135067) Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	10130	10100	0.25	25.46	PASS
CH4, ppmvC	9997	9950	0.47	46.97	PASS
CO2, ppmvC	10180	10100	0.76	76.38	PASS
Ethane, ppmvC	10020	9940	0.80	79.47	PASS
NMNEOC, ppmvC	10150	10000	1.54	154.08	PASS

CCV3 (CC106783) Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	2.23	1.92	15.90	0.31	PASS
CH4, ppmvC	2.18	2.02	7.71	0.16	PASS
CO2, ppmvC	2.09	1.57	33.21	0.52	PASS
Ethane, ppmvC	2.18	2.03	7.39	0.15	PASS
NMNEOC, ppmvC	2.06	2.03	1.58	0.03	PASS

CCV4 (CC135067) Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	10080	10100	0.18	18.19	PASS
CH4, ppmvC	9970	9950	0.20	19.78	PASS
CO2, ppmvC	10140	10100	0.39	39.21	PASS
Ethane, ppmvC	9999	9940	0.59	58.58	PASS
NMNEOC, ppmvC	10120	10000	1.22	122.24	PASS

REFERENCE NO. B17F036

July 13, 2017 – Source Test

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
Page 1 of 2

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

TO Mike Garibay
Supervising A.Q. Engineer
Source Test Engineering

SAMPLE(S) DESCRIBED AS
3 Hexavalent Chromium Trains

SAMPLING LOCATION
Facility ID 10966
Weber Metals, Inc.
16706 Garfield Ave.
Paramount, CA 90723

LABORATORY NO	1718636
SOURCE TEST NO	17-343
DATE RECEIVED	07/13/2017
RULE NO	NA
REQUESTED BY	Jason Aspell
DATE ANALYZED	7/14/2017
DATE REPORTED	7/19/2017

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS

Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate (NaHCO3) solution)

	Train 5	Train 15	Train 44
Moisture gain, g	468.6	438.6	0.2
Silica gel% expended	95	95	2
Filter gain, g	0.007	0.0025	-0.0003
Impinger 1 pH	7-8	7-8	9
Impinger 2 pH	7-8	7-8	9
Cr^{+6}, ug	0.00	0.02	0.00
Total Cr, ug	0.32	0.30	0.14

Recovery Notes:

Train 5: The impingers contained a significant amount of particulate matter, and the filter was brown and discolored.

Train 15: The impingers contained a significant amount of particulate matter, and the filter was brown and discolored. The filter was buckled and pulled away from teflon filter holder.

Train 44: Field Blank, no probe, no tubing

NOTE: Additional significant figures provided for calculation purposes.

Reviewed By: _____ Date Reviewed: 7/19/17
Na Mon Trinh
Senior A.Q. Chemist
Laboratory Services

Approved By: _____ Date Approved: 07/20/17
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
Page 2 of 2

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

LABORATORY NO 1718636

REQUESTED BY Jason Aspell

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS
Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate (NaHCO3) solution)

QUALITY CONTROL

BALANCE CHECK (MOISTURE GAIN)

Lab No.	Result (g)	Limit (g)	Check Status
B17G069-CCV1	99.9999	±0.0005	Pass
B17G069-CCV2	500.0	±0.2	Pass

CCV RECOVERIES (CR6)

Lab No.	Results (ppt)	Limit (%)	% Recovery
S17G033-CCV1	98	90-110	98
S17G033-CCV2	101	90-110	101
S17G033-CCV3	107	90-110	107
S17G033-CCV4	97	90-110	97

CCV RECOVERIES (TOTAL CR)

Lab No.	Results (ppb)	Limit (%)	% Recovery
S17G028-CCV1	4.71	90-110	94
S17G028-CCV2	4.51	90-110	90
S17G028-CCV3	4.65	90-110	93
S17G028-CCV4	4.60	90-110	92
S17G028-CCV5	5.05	90-110	101
S17G028-CCV6	5.44	90-110	109

REF B17G069
S17G033
S17G028

SOURCE TEST REQUEST FOR EQUIPMENT/ANALYSIS

Company	Weber Metals, Inc.	Source Test No.	17-343
Address	16706 Garfield Ave, Paramount, CA 90723	Request Date	6/28/17
Basic Equipment	Rotary Furnace	Control Device	N/A
Analysis/Equipment Requested By	Jason Aspell	Date Equipment Needed	7/11/17
For Compliance, Rule(s)			
Other (specify)	AB 2588	Facility ID No.	10966

Dry Ice Needed ☒
(100 POUNDS)

Laboratory No. 1718636

SAMPLE EQUIPMENT ANALYSIS REQUEST

3 Equipment Requested/ID #	Analysis Requested	Set ID
~~Two~~ CARB Method 425 trains ($NaHCO_3$, modified with back-end filter positioned before silica impinger)	Total Chrome, Cr+6, moisture	
	Trains Nos. 15, 5, 44	
Two Quartz Sampling Probes	Canisters Nos. 54080, 54128, 54139	
	Reference: STP 41, Pages. 144, 145	
Tubing (two sections)		
3 ~~2~~ - 6 L Summa Canister	Fixed Gases	
3 trains, 3 cans, 2 quartz probes, tubing		I
Equipment Return		II
Train 5: East Furnace, tubing, probe		
Train 15: West Furnace, tubing, probe		
Train 44: ~~ambient~~ Gas vault, field blank, no tubing		
Can 54128: not used		
Can 54080: West Furnace		
Can 54139: East Furnace		
Trip Blank		
Cr(VI) & Total Cr Analysis		III
Train 5: Cont 1 (-02), Cont 2 (-03), Cont 3 (-04)		
Train 15: Cont 1 (-06), Cont 2 (-07), Cont 3 (-08)		
Train 44: Cont 2 (-10), Cont 3 (-11)		
Trip Blank: (-12)		

SAMPLE EQUIPMENT CHAIN OF CUSTODY

Sample Equipment Set ID	From	To	For (S/T, Analysis, Cleanup, Not Used)	Date Received	Time
I	C. Schmeller	[illegible]	S/T	07/12/17	14:00
II	[illegible]	C. Schmeller	Analysis	07/13/17	16:30
III	C. Schmeller	[illegible]	Analysis	07/14/17	14:21

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 6)

To: Mike Garibay
Supervising A.Q. Engineer
Source Test Engineering

Sampling Location
Facility ID 10966
Weber Metals, Inc.
16706 Garfield Ave.
Paramount, CA 90723

Laboratory No.	**1718636-13 to -14**
Requested By	**Jason Aspell**
Rule No.	**NA**
ST No.	**17-343**
Report Created	**08/02/2017**

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)
Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

See attached results and sample information.

Reviewed By: Christi Schroeder
Senior A.Q. Chemist
Laboratory Services

Date Reviewed: 08/02/17

Approved By:
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Date Approved: 8/8/17

Form 2.0

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

Laboratory No. **1718636-13**
Sample Description Grab, SUMMA Canister Canister 54080, West Furnace

Sample Date 07/13/2017 **Received Date 07/13/2017** **Analyzed Date 07/18/2017**

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

Analyte, Unit	Result	MDL	MRL
H2, %	1.9	0.2	NA
O2, %	3.5	0.2	NA
N2, %	80.0	0.2	NA
CH4, %	0.2	0.2	NA

Laboratory No. **1718636-13**
Sample Description Grab, SUMMA Canister Canister 54080, West Furnace

Sample Date 07/13/2017 **Received Date 07/13/2017** **Analyzed Date 07/20/2017**

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

Analyte, Unit	Result	MDL	MRL
CH4, ppmvC	1920	0.5	1
CO2, ppmvC	89700	0.5	1
Ethane, ppmvC	<1	0.5	1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

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Laboratory No. **1718636-14**
Sample Description Grab, SUMMA Canister Canister 54139, East Furnace

Sample Date 07/13/2017 **Received Date 07/13/2017** **Analyzed Date 07/18/2017**

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

Analyte, Unit	Result	MDL	MRL
H2, %	2.4	0.2	NA
O2, %	0.8	0.2	NA
N2, %	80.8	0.2	NA
CH4, %	0.8	0.2	NA

Laboratory No. **1718636-14**
Sample Description Grab, SUMMA Canister Canister 54139, East Furnace

Sample Date 07/13/2017 **Received Date 07/13/2017** **Analyzed Date 07/20/2017**

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

Analyte, Unit	Result	MDL	MRL
CH4, ppmvC	8530	0.5	1
CO2, ppmvC	103000	0.5	1
Ethane, ppmvC	<1	0.5	1
NMNEOC, ppmvC	537	0.5	1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

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Laboratory No. 1718636-13 to -14

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

QUALITY CONTROL SUMMARY

CCV1 (CC122586)

Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	1.00	0.94	0.06	PASS
O2, %	1.11	1.03	0.08	PASS
N2, %	1.24	0.96	0.28	PASS
CH4, %	1.00	1.01	0.01	PASS

CCV2 (CC73109)

Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	NA	NA	NA	NA
O2, %	24.55	24.63	0.08	PASS
N2, %	4.97	4.93	0.04	PASS
CH4, %	NA	NA	NA	NA

CCV3 (FF130)

Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	NA	NA	NA	NA
O2, %	1.11	1.00	0.11	PASS
N2, %	93.86	93.9	0.04	PASS
CH4, %	NA	NA	NA	NA

CCV4 (CC122586)

Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	1.00	0.94	0.06	PASS
O2, %	1.03	1.03	0.00	PASS
N2, %	1.13	0.96	0.17	PASS
CH4, %	0.98	1.01	0.03	PASS

CCV5 (CC73109)

Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	NA	NA	NA	NA
O2, %	24.63	24.63	0.00	PASS
N2, %	5.02	4.93	0.09	PASS
CH4, %	NA	NA	NA	NA

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

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Laboratory No. 1718636-13 to -14

Percent hydrogen (H2), nitrogen (N2), oxygen (O2), and methane (CH4) by SCAQMD Method 10.1 (GC-TCD)

QUALITY CONTROL SUMMARY

CCV6 (FF130) Analyte, Unit	Measured	Theoretical	Absolute Difference	QC Limit ±0.5%
H2, %	NA	NA	NA	NA
O2, %	1.11	1.00	0.11	PASS
N2, %	93.65	93.9	0.25	PASS
CH4, %	NA	NA	NA	NA

REFERENCE NO. B17G094

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr. Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 6 of 6)

Laboratory No. 1718636-13 to -14

Total Gaseous Non-Methane Non-Ethane Organic Carbon by SCAQMD Method 25.1 (GC-TCA)

QUALITY CONTROL SUMMARY

CCV1 (CC106783)

Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	1.92	1.92	0.21	0.00	PASS
CH4, ppmvC	1.99	2.02	1.68	0.03	PASS
CO2, ppmvC	2.00	1.57	27.47	0.43	PASS
Ethane, ppmvC	1.91	2.03	5.91	0.12	PASS
NMNEOC, ppmvC	1.93	2.03	4.83	0.10	PASS

CCV2 (CC12628)

Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	1055	1036	1.88	19.44	PASS
CH4, ppmvC	1052	1068	1.53	16.30	PASS
CO2, ppmvC	1043	1022	2.01	20.56	PASS
Ethane, ppmvC	1046	1044	0.15	1.60	PASS
NMNEOC, ppmvC	1034	1024	1.00	10.21	PASS

CCV3 (CC106783)

Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	2.03	1.92	5.51	0.11	PASS
CH4, ppmvC	1.97	2.02	2.67	0.05	PASS
CO2, ppmvC	2.00	1.57	27.47	0.43	PASS
Ethane, ppmvC	1.93	2.03	4.93	0.10	PASS
NMNEOC, ppmvC	2.04	2.03	0.59	0.01	PASS

CCV4 (CC135067)

Analyte, Unit	Measured	Theoretical	Percent Error	Absolute Difference	QC Limit ±5% or ±1
CO, ppmvC	10090	10100	0.10	9.87	PASS
CH4, ppmvC	9947	9950	0.03	3.23	PASS
CO2, ppmvC	10140	10100	0.44	44.66	PASS
Ethane, ppmvC	9982	9940	0.43	42.26	PASS
NMNEOC, ppmvC	10120	10000	1.16	116.04	PASS

REFERENCE NO. B17G115

A

SOURCE TEST REQUEST FOR EQUIPMENT/ANALYSIS

Company	Weber Metals, Inc.	Source Test No.	17-343
Address	16706 Garfield Ave, Paramount, CA 90723	Request Date	6/28/17
Basic Equipment	Rotary Furnace	Control Device	N/A
Analysis/Equipment Requested By	Jason Aspell	Date Equipment Needed	7/11/17
For Compliance, Rule(s)			
Other (specify)	AB 2588	Facility ID No.	10966

Dry Ice Needed ☒
(100 POUNDS)

Laboratory No. 1718636

SAMPLE EQUIPMENT ANALYSIS REQUEST

3 Equipment Requested/ID #	Analysis Requested	Set ID
~~Two~~ CARB Method 425 trains ($NaHCO_3$, modified with back-end filter positioned before silica impinger)	Total Chrome, Cr+6, moisture	
	Trains Nos. 15, 5, 44	
Two Quartz Sampling Probes	Canisters Nos. 54080, 54128, 54139	
	Reference: STP 41, Pages. 144, 145	
Tubing (two sections)		
3 ~~2~~ - 6 L Summa Canister	Fixed Gases	
3 trains, 3 cans, 2 quartz probes, tubing		I
Equipment Return		II
Train 5: East Furnace, tubing, probe		
Train 15: West Furnace, tubing, probe		
Train 44: ~~Ambient~~ ~~Gas~~ field blank, no tubing		
Can 54128: not used		
Can 54080: West Furnace		
Can 54139: East Furnace		
Trip Blank		
Cr(VI) & Total Cr Analysis		III
Train 5: Cont 1 (-02); Cont 2 (-03), Cont 3 (-04)		
Train 15: Cont 1 (-06), Cont 2 (-07), Cont 3 (-08)		
Train 44: Cont 2 (-10), Cont 3 (-11)		
Trip Blank: (-12)		

SAMPLE EQUIPMENT CHAIN OF CUSTODY

Sample Equipment Set ID	From	To	For (S/T, Analysis, Cleanup, Not Used)	Date Received	Time
I	C. Sampeller	[illegible]	S/T	07/12/17	14:00
II	[illegible]	C. Schneider	Analysis	07/13/17	16:30
III	C. Schneider	[illegible]	Analysis	07/14/17	14:21

APPENDIX D

Field Data and Lab Data– May 11, 2017
Discarded

South Coast Air Quality Management District

Test No. 17-339 Company: Weber Metals Date: 5/11/17
Sampling Location: Ambient - Process Area Sample Train: 17

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0 cfm @ 15 "Hg vac
Pitot Tube Leak Check: (Pass) / Fail

Post-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: _____ cfm @ _____ "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf) Start: 268.925	Stack: Velocity Head ("H_2O)	Stack: Temp. °F	Calculated: Velocity (fps)	Calculated: Sampling Rate (cfm)	Calculated: Orifice ΔP ("H_2O)	Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F: In	Meter Temp. °F: Out	Vacuum " Hg
3:30pm		"					5.90	~~98~~	~~89~~	41	96	89	10
+15		289.98					7.70			55	104	92	13
+30		311.93					7.70			41	112	97	13
~~+45~~													
~~+60~~													
H0.2		327.291			Filter compromised - test aborted								
(Net Vol. Uncorr.)			Avg.										

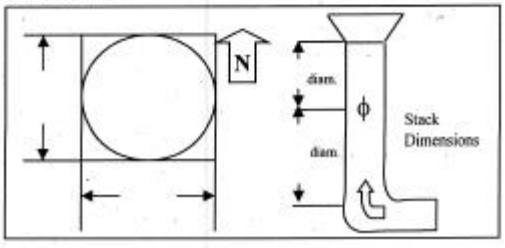
K-Factor: 0.5682 Stack Moisture: _____ Canister #: _____ Start: _____ "Hg vac

Nozzle Diameter: N/A "
Barometric Pressure: 30.1 " HgA
Static Pressure in Stack: +/- _____ " H_2O

Recorded By: SP
Pitot Factor: _____

Calibration Data

Inclined Manometer		(Cal: N/A)
Magnehelic No.		(Cal:)
Pitot Tube No.		(Cal:)
Potentiometer No.	N0314	(Cal: 3/24/17)
Thermocouple No.		(Cal:)
Gas Meter No.	N0714	(Cal: 3/29/17)
Meter Corr. Factor:	1.0024	



Sampling Probe: Stainless Steel / Borosilicate / Quartz N/A

Stack: Horizontal / Vertical Rectangular / Circular

Revision 01/09

South Coast Air Quality Management District

Test No. 17-339 Company: Weber Metals Date: 5/11/17
Sampling Location: Ambient - Process Area Sample Train: 30

Traverse Source Test Data

Pre-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0.008 cfm @ 15 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Post-Test Leak Check:
Filter: _____ cfm @ _____ "Hg vac
Probe: 0.016 cfm @ 15 "Hg vac
Pitot Tube Leak Check: Pass / Fail

Time	Sample Point #	Gas Meter Reading (dcf)	Stack		Calculated			Probe Temp. °F	Filter Temp. °F	Imp. Temp. °F	Meter Temp. °F		Vacuum " Hg
		Start: 327.527	Velocity Head ("H_2O)	Temp. °F	Velocity (fps)	Sampling Rate (cfm)	Orifice ΔP ("H_2O)				In	Out	
5[illegible]2		"					2.80			41	104	98	15
+15		340.82					2.8			40	106	98	15
+30	21.4	346.426					2.8			42	105	98	15
5[illegible]5													
+60													
(Net Vol. Uncorr.)			Avg.										

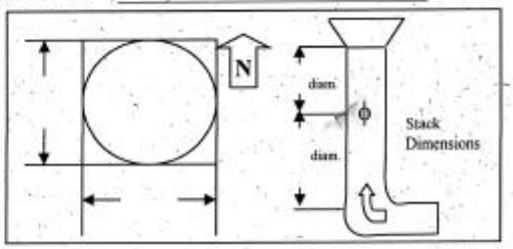
K-Factor: 0.5682 Stack Moisture: _____ Canister #: _____ Start: _____ "Hg vac

Nozzle Diameter: N/A "
Barometric Pressure: 30.1 " HgA
Static Pressure in Stack: +/- _____ " H_2O

Recorded By: _____
Pitot Factor: _____

Calibration Data

Inclined Manometer	(Cal: N/A)	
Magnehelic No.	(Cal:)	
Pitot Tube No.	(Cal:)	
Potentiometer No.	N0314	(Cal: 3/24/17)
Thermocouple No.		(Cal:)
Gas Meter No.	N0714	(Cal: 3/24/17)
Meter Corr. Factor:	1.0024	



Sampling Probe: Stainless Steel / Borosilicate / Quartz N/A

Stack: Horizontal / Vertical Rectangular / Circular

Revision 01/09

SOURCE TEST REQUEST FOR EQUIPMENT/ANALYSIS

Company	Weber Metals	Source Test No.	17-339
Address	16706 Garfield Avenue, Paramount, CA 90723	Request Date	5/4/17
Basic Equipment	Furnace, Die Lubricant Area	Control Device	N/A
Analysis/Equipment Requested By	Eric Padilla	Date Equipment Needed	5/11/17
For Compliance, Rule(s)			
Other (specify)	Rule Development	Facility ID No.	10966

Dry Ice Needed ☒
(100 POUNDS)

Laboratory No. 1712514

SAMPLE EQUIPMENT ANALYSIS REQUEST

Equipment Requested/ID #	Analysis Requested	Set ID
Three CARB 425 trains ($NaHCO_3$ with back-end filter)	Trains Nos 17, 22, 30 ✓	
✓ Two quartz probes	Reference: Blue Book 4!, pages 134, 135	
✓ Tubing (two 8' sections plus one longer)	Analysis Requested: Total Chromium, hexavalent chromium, and % Moisture.	
	Sample Date: May 11, 2017	
	Note: We will also attempt to get a sample of the die lubricant for analysis.	
No probes returned	Train 17: sample, tubing, no probe	
	Train 30: sample, tubing, no probe	
	Train 22: Blank, tubing, no probe	
Recovery Samples		
Train 17: -01	Cont 2: -04 Cont 3: -05 Cont 1: -11	
Train 22: -02	Cont 2: -06 Cont 3: -07 Cont 1: -12	
Train 30: -03	Cont 2: -08 Cont 3: -09 Cont 1: -13	

SAMPLE EQUIPMENT CHAIN OF CUSTODY

Sample Equipment Set ID	From	To	For (S/T, Analysis, Cleanup, Not Used)	Date Received	Time
Trains, probes, tubing	C. Schaefer	[illegible]	S/T	05/11/17	07:20
Trains & tubing	[illegible]	C. Schaefer	Recovery	05/12/17	08:37
Recovery Samples	C. Schaefer	[illegible]	Analysis	05/12/17	17:10

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
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MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

TO Mike Garibay
Supervising A.Q. Engineer
Source Test & Engineering

SAMPLE(S) DESCRIBED AS
3 Hexavalent Chromium Trains

SAMPLING LOCATION
Facility ID 10966
Weber Metals
16706 Garfield Ave.
Paramount, CA 90723

LABORATORY NO	1712514
SOURCE TEST NO	17-339
DATE RECEIVED	05/12/17
RULE NO	NA
REQUESTED BY	Eric Padilla
DATE ANALYZED	5/12/2017
DATE REPORTED	5/17/2017

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS

Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate(NaHCO3) solution)

	Train 17	Train 22	Train 30
Moisture gain, g	17.0	0.0	13.8
Silica gel% expended	75	15	1
Filter gain, g	-0.0016	-0.0009	0.0035
Impinger 1 pH	9	9	9
Impinger 2 pH	9	9	9
Cr^{+6} total ug	0.51	0.03	0.01

Recovery Notes:
Train 17: Teflon tape severely occluded ball side of the tubing adapter.
Train 22: Field Blank. Particulates stuck to the inside of impinger walls for all 3 impingers.
Train 30: The contents of Impinger 3 had a very musty smell.

NOTE: Additional significant figures provided for calculation purposes.

Reviewed By: _____ Date Reviewed: 05/18/17
Joan Niertit, Principal A.Q. Chemist
Laboratory Services

Approved By: _____ Date Approved: 5/19/17
Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182
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MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

LABORATORY NO 1712514

REQUESTED BY Eric Padilla

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS AND RESULTS
Moisture and Hexavalent Chromium by CARB 425 (Sodium Bicarbonate(NaHCO3) solution)

QUALITY CONTROL

BALANCE CHECK

Lab No.	Result (g)	Limit (g)	Check Status
B17E093-CCV1	100.0002	±0.0005	Pass
B17E093-CCV2	500.0	±0.2	Pass

CCV RECOVERIES

Lab No.	Results (ppt)	Limit (%)	% Recovery
S17E037-CCV1	101	90-110	101
S17E037-CCV2	101	90-110	101
S17E037-CCV3	103	90-110	103
S17E037-CCV4	102	90-110	102
S17E037-CCV5	100	90-110	100

REF B17E093
S17E037

APPENDIX E

Equipment Calibrations

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT Page 3
DRY GAS METER CALIBRATION WORKSHEET

DATE : March 24, 2017
PERFORMED BY: W Stredwick

DRY GAS METER COEFFICIENT CALCULATIONS

STANDARD DRY GAS METER ID#: 7812470 DRY GAS METER N0714
With Coefficient of 1.0000

TRIAL	CFM	U/C FlowRate	TEMP	H2O	Corrected FlowRate	U/C FlowRate	TEMP	H2O	Corrected FlowRate	COEF	AVE:	OVERALL
1	1/4	0.3168	74	1.2	0.3089	0.3188	74	0.8	0.3105	0.9950	0.9960	1.0024
2	1/4	0.3158	74	1.2	0.3079	0.3158	74	0.8	0.3076	1.0010		
3	1/4	0.3158	74	1.2	0.3079	0.3186	74	0.8	0.3103	0.9922		
1	1/2	0.5311	74	2.8	0.5198	0.5316	74	1.88	0.5192	1.0012	1.0145	
2	1/2	0.5283	74	2.8	0.5172	0.5267	74	1.88	0.5144	1.0053		
3	1/2	0.5472	74	2.8	0.5356	0.5289	74	1.88	0.5165	1.0369		
1	3/4	0.7782	74	5.2	0.7662	0.7843	74	3.6	0.7692	0.9960	0.9986	
2	3/4	0.7846	74	5.2	0.7725	0.7879	74	3.6	0.7727	0.9997		
3	3/4	0.7861	74	5.2	0.7740	0.7890	74	3.6	0.7739	1.0002		
1	1	1.0097	74	9	1.0033	1.0157	74	6.05	1.0021	1.0012	1.0006	
2	1	1.0096	74	9	1.0032	1.0177	74	6.05	1.0041	0.9991		
3	1	1.0130	74	9	1.0066	1.0189	74	6.05	1.0052	1.0013		

CORRECTION FACTOR: **1.0024**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DRY GAS METER CALIBRATION WORKSHEET

DATE: 3/23/2017

PERFORMED BY: W.Stredwick

DRY GAS METER COEFFICIENT CALCULATIONS

DRY GAS METER ID : N0715

TRIAL	CFM	U/C FlowRate	TEMP	H2O	Corrected FlowRate	U/C FlowRate	TEMP	H2O	Corrected FlowRate	COEF	AVE:	OVERALL
1	1/4	0.2976	74	1.1	0.2904	0.2969	74	0.7	0.2894	1.0032	0.8697	0.9910
2	1/4	0.1764	74	1.1	0.1721	0.2948	74	0.7	0.2874	0.5988		
3	1/4	0.2959	74	1.1	0.2887	0.2941	74	0.7	0.2867	1.0072		
1	1/2	0.5498	74	2.2	0.5380	0.5351	74	1.975	0.5233	1.0280	1.0278	
2	1/2	0.5500	74	2.2	0.5381	0.5350	74	1.975	0.5232	1.0286		
3	1/2	0.5496	74	2.2	0.5377	0.5355	74	1.975	0.5237	1.0268		
1	3/4	0.7928	74	5.6	0.7822	0.7697	74	3.85	0.7561	1.0345	1.0347	
2	3/4	0.7907	74	5.6	0.7800	0.7678	74	3.85	0.7543	1.0342		
3	3/4	0.7907	74	5.6	0.7801	0.7668	74	3.85	0.7533	1.0355		
1	1	1.0267	74	9.6	1.0227	1.0046	74	6.55	0.9934	1.0295	1.0317	
2	1	1.0289	74	9.6	1.0249	1.0033	74	6.55	0.9921	1.0331		
3	1	1.0302	74	9.6	1.0262	1.0052	74	6.55	0.9939	1.0324		

DRY GAS METER ID : N0715

CORRECTION FACTOR: **0.9910**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DATA SHEET FOR THERMOCOUPLE/POTENTIOMETER CALIBRATION

Field Meter STQC# : C0301
Ref. Thermometer # :
Temperature Source(s): JAFRA

Date: 6-7-17
Calibration By: WS
Calibration Period:
Semiannual X
Bimonthly
Other

		Lead Wire STQC# C0301				Lead Wire STQC#				
Temp.*	A	B		(B-A) 100 / A **		B		(B-A) 100 / A **		
Sensor STQC#	Ref. Temp.	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	COMMENTS
10104	34	35	35							
N0108	34	35	35							
40113	34	35	35							
10104	229	227	227							
N0108	229	225	227							
40113	229	227	227							
10104	608	600	601							
N0108	608	603	603							
40113	608	602	602							

* All temperatures are in degrees F.
**Percent (%) difference should not exceed +/- 1.5%.

Page Number____

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DATA SHEET FOR THERMOCOUPLE/POTENTIOMETER CALIBRATION

Field Meter STQC# : C0301 & 20304
Ref. Thermometer # : ASTM 08343
Temperature Source(s): Jofra Furnace

Date: 4-26-17
Calibration By: WS
Calibration Period:
Semiannual_____
Bimonthly_____
Other_____

C0301 20304

Temp.*	A	Lead Wire STQC#_____ B		(B-A)100 A **		Lead Wire STQC#_____ B		(B-A)100 A **		
Sensor STQC#	Ref. Temp.	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	COMMENTS
10102	32	32	32			33	33			
10102	215	214	215			214	214			
10102	655	655	656			655	656			

* All temperatures are in degrees F.
**Percent (%) difference should not exceed +/- 1.5%.

Page Number____

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DATA SHEET FOR THERMOCOUPLE/POTENTIOMETER CALIBRATION

Field Meter STQC# : N0314 & N0315
Ref. Thermometer # : ASTM 08343
Temperature Source(s): JOFRA FURNACE

Date: 3-24-17
Calibration By: WS
Calibration Period:
Semiannual X
Bimonthly
Other

		N0314 Lead Wire STQC#				N0315 Lead Wire STQC#				
Temp.*	A	B		(B-A)100 A **		B		(B-A)100 A **		
Sensor STQC#	Ref. Temp.	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	COMMENTS
10102	32	32	32			32	32			
20108	33	33	33			33	33			
50111	33	33	33			33	33			
20202	33	33	33			33	33			
60112	33	33	33			33	32			
10102	211	211	212			212	212			
20108	211	211	211			211	211			
50111	211	211	211			211	211			
20202	212	215	214			212	212			
60112	212	211	211			212	211			
10102	612	611	612			611	611			
20108	611	610	611			612	611			
50111	612	611	611			612	612			
20202	611	611	611			612	612			
60112	612	612	611			612	611			

* All temperatures are in degrees F.
**Percent (%) difference should not exceed +/- 1.5%.

Page Number____

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DATA SHEET FOR THERMOCOUPLE/POTENTIOMETER CALIBRATION

Field Meter STQC# : N0314 + N0315
Ref. Thermometer # : ASTM 08343
Temperature Source(s): JOHN FURNACE

Date: 3-24-17
Calibration By: WS
Calibration Period:
Semiannual X
Bimonthly
Other

		N0314 Lead Wire STQC#				N0315 Lead Wire STQC#				
Temp.*	A	B		(B-A)100 A **		B		(B-A)100 A **		
Sensor STQC#	Ref. Temp.	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	Ch#1	Ch#2	COMMENTS
10102	32	32	32			32	32			
20108	33	33	33			33	33			
50111	33	33	33			33	33			
20202	33	33	33			33	33			
C0112	33	33	33			33	32			
10102	211	211	212			212	212			
20108	211	211	211			211	211			
50111	211	211	211			211	211			
20202	212	215	214			212	212			
C0112	212	211	211			212	211			
10102	612	611	612			611	611			
20108	611	610	611			612	611			
50111	612	611	611			612	612			
20202	611	611	611			612	612			
C0112	612	612	611			612	611			

* All temperatures are in degrees F.
**Percent (%) difference should not exceed +/- 1.5%.

Page Number___

APPENDIX F
Copy of Furnace Permits

Furnace No. 337

Section D Page 34
Facility I.D.#: 10966
Revision #: 7
Date: June 30, 2017

FACILITY PERMIT
WEBER METALS INC.

PERMIT TO OPERATE

Permit No. G40157
A/N 580278

Equipment Description:

Pre-Heat Furnace, Rotary Hearth Type, Titanium Billets, Custom Made, 26'-0" Dia. x 7'-0" H., with Eight Bloom Engineering Model 1480-035 Natural Gas-Fired Burners, 12 MMBTU/hr Total.

Conditions:

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

   [Rule 204]

2. This equipment shall be properly maintained and kept in good operating condition at all times.

   [Rule 204]

3. The NOx concentration, on a dry basis corrected to 3% oxygen, shall not exceed 40 parts per million by volume (ppmv).

   [Rule 1303(a)(1)-BACT, Rule 1303(b)(2)-Offsets]

4. A non-resettable totalizing gas meter shall be installed and maintained in the fuel supply line to the furnace.

   [Rule 1303(b)(2)-Offsets; Rule 1401; Rule 3004(a)(4)-Periodic Monitoring]

5. The amount of natural gas fuel consumed by this furnace and those furnaces associated with Permits to Operate 580276, 580277 and 580279 shall not exceed 7,678,000 standard cubic feet in any one calendar month.

   [Rule 1303(b)(2)-Offsets; Rule 1401]

6. Metal contaminated with rubber, plastics, paper, rags, oil, grease, or similar smoke-producing material shall not be charged to this furnace.

   [Rule 401, Rule 1303(a)(1)-BACT]

7. Records shall be maintained to demonstrate compliance with conditions 3 and 5. The records shall be kept on file for at least the last five years and be made available to SCAQMD personnel upon request.

   [Rule 1303(b)(2)-Offsets; Rule 1401; Rule 3004(a)(4)-Periodic Monitoring]

FACILITY PERMIT
WEBER METALS INC.

Emissions And Requirements:

8. This equipment is subject to the applicable requirements of the following rules and regulations:
   CO: 2000 PPMV, Rule 407
   PM: 0.1 GR/SCF, Rule 409
   PM: Rule 404, See Appendix B for emission limits

Furnace No. 339

FACILITY PERMIT
WEBER METALS INC.

PERMIT TO OPERATE

Permit No. G40158
A/N 580279

Equipment Description:

Pre-Heat Furnace No. 3, Box Type, Aluminum And Titanium Billets, Thorpe Technologies, Inc., Custom, 34'-0" W. x 23'-0" L. x 18'-0" H., with Two Bloom Engineering Model 1480-030 Burners And Four Bloom Engineering Model 1480-035 Burners, Natural Gas-Fired, 8.54 MMBTU/hr Total.

Conditions:

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

   [Rule 204]

2. This equipment shall be properly maintained and kept in good operating condition at all times.

   [Rule 204]

3. The NOx concentration, on a dry basis corrected to 3% oxygen, shall not exceed 40 parts per million by volume (ppmv).

   [Rule 1303(a)(1)-BACT, Rule 1303(b)(2)-Offsets]

4. A non-resettable totalizing gas meter shall be installed and maintained in the fuel supply line to the furnace.

   [Rule 1303(b)(2)-Offsets; Rule 1401; Rule 3004(a)(4)-Periodic Monitoring]

5. The amount of natural gas fuel consumed by this furnace and those furnaces associated with permits to operate 580276, 580277 and 580278 shall not exceed 7,678,000 standard cubic feet in any one calendar month.

   [Rule 1303(b)(2)-Offsets; Rule 1401]

6. Metal contaminated with rubber, plastics, paper, rags, oil, grease, or similar smoke-producing material shall not be charged to this furnace.

   [Rule 401, Rule 1303(a)(1)-BACT]

7. Records shall be maintained to demonstrate compliance with conditions 3 and 5. The records shall be kept on file for at least the last five years and be made available to SCAQMD personnel upon request.

   [Rule 1303(b)(2)-Offsets; Rule 1401; Rule 3004(a)(4)-Periodic Monitoring]

FACILITY PERMIT
WEBER METALS INC.

Emissions And Requirements:

8. This equipment is subject to the applicable requirements of the following rules and regulations:
   CO: 2000 PPMV, Rule 407
   PM: 0.1 GR/SCF, Rule 409
   PM: Rule 404, See Appendix B for emission limits