

JUL 22 2019

SENT VIA FEDEX

TRANSMITTAL

Date: July 18, 2019

To: Dan McGeen, EGLE AQD

From: Celeste Holtz, BB&E Project Manager

RE: Diamond Chrome Plating, Inc. Response to June 25, 2019 Violation Notice

On behalf of Diamond Chrome Plating, Inc. of Howell, Michigan, BB&E, Inc is pleased to provide one (1) copy of the *Response to June 25, 2019 Violation Notice*; an electronic copy was submitted on July 18, 2019.



July 18, 2019

Mr. Daniel McGeen
Environmental Quality Analyst
Lansing District Office
Air Quality Division
525 West Allegan Street, 1st Floor South
Lansing, Michigan 48933

RE: Diamond Chrome Plating, Inc. Response to June 25, 2019 Violation Notice

Dear Mr. McGeen,

On behalf of Diamond Chrome Plating, Inc. (DCP), BB&E, Inc. (BB&E) is providing this letter in response to the items listed in the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) Violation Notice (VN) dated June 25, 2019. The alleged violations were received following the April 30, 2019 inspection conducted by AQD staff.

EGLE Observation 1

AQD Rule Violations – Comment 1: Chrome plating tanks Cr-5, Cr-7, Cr-15, and Cr-17 are in violation of 40 CFR Part 63, Subpart N, Section 63.342 (c)(1)(iii). Recordkeeping shows exceedances, during January-March, 2019 of Subpart N surface tension limit of 33 dynes/cm, as measured with a tensiometer.

DCP's chrome plating tanks Cr-5, Cr-7, Cr-15, and Cr-17 are subject to the federal National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. These standards are found in 40 CFR Part 63, Subpart N. Section 63.342(c)(1)(iii) requires that for open surface hard chromium electroplating tanks, each owner or operator of an existing, new, or reconstructed affected source shall control chromium emissions discharged to the atmosphere from the affected source as follows:

"(iii) If a chemical fume suppressant containing a wetting agent is used, not allowing the surface tension of the electroplating or anodizing bath contained within the affected tank to exceed 40 dynes/centimeter (dynes/cm) (2.8×10^{-3} pound-force per foot (lb/ft)), as measured by a stalagmometer, or 33 dynes/cm (2.3×10^{-3} lb/ft) , as measured by a tensiometer at any time during tank operation "



Subsequent to the May 23, 2019 request, DCP provided a requested copy of surface tension records for 2019, year to date (YTD), for hard chrome plating tanks Cr-5, Cr-7, Cr-15, and Cr-17.

The Chrome Tank Surface Tension form for 2019 YTD shows that each tank exceeded the NESHAP limit of 33 dynes/cm, as measured by a tensiometer, on multiple occasions. The highest individual reading noted had a value of 64 dynes/cm. The above exceedances constitute a violation of 40 CFR Part 63, Subpart N, Section 63.342(c)(1)(iii).

Response 1: As described in DCP's *Response to December 20, 2018 Violation Notice Letter* dated January 31, 2019, the subject chrome plating tanks are located in the west (commercial) operational area of the DCP plant. 40 CFR 60.342(c)(1) allows chromium emissions from open surface hard chromium electroplating tanks to be controlled one of four ways, as detailed in 40 CFR 60.342(c)(1)(i) through 40 CFR 60.342(c)(1)(iv). DCP has historically used chemical fume suppressants and monitored surface tension readings within the tanks (option detailed in 40 CFR 60.342(c)(1)(iii)), as well as used a scrubber unit (Scrubber #5) to further control emissions from these tanks (option detailed in 40 CFR 60.342(c)(1)(i)), which is described further below:

“Not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.011 milligrams of total chromium per dry standard cubic meter (mg/dscm) of ventilation air (4.8×10^{-6} grains per dry standard cubic foot (gr/dscf)) for all open surface hard chromium electroplating tanks that are existing affected sources and are located at large hard chromium electroplating facilities.”

Based on DCP's calculations, 0.011 mg/dscm equates to 4.4485 pounds per year. The measured total chromium concentrations during DCP's most recent (June 2016) stack test for Scrubber #5 was 1.74×10^{-4} tons per year (TpY) or 0.348 pounds per year. In summary, the total chromium emission rate was well below the limit of 0.011 mg/dscm.

DCP reviewed surface tension records for chrome plating tanks 5, 7, and 15; surfactants had been added to tanks 5 and 15 seven days prior to the May 25, 2016 stack test, and added to tank 7 two days prior to the test. In summary, it appears that chemical fume suppressants were in the tanks at the time of the test.

Although the surface tension readings exceeded the limit of 33 dynes/cm as noted by EGLE for records reviewed for January – March 2019, based on previous stack test results detailed above, it is unlikely that the facility experienced excess atmospheric emissions that lasted for one percent or more of the total operating time. Nonetheless, DCP understands that because

surfactants have been in use, tensiometer readings and records must be in order; additional information is provided below.

Chemical fume suppressants are used in metal finishing operations to reduce surface tension in plating baths and tanks, and thereby prevent mist and bubbles generated during the plating process, from being released into the work place. In the late 1990's, DCP participated in a U.S. Environmental Protection Agency (EPA) study of the use of a per- and polyfluoroalkyl substance (PFAS) known as perfluorooctanesulfonic acid (PFOS) to prevent the formation of fumes in order to meet federal Clean Air Act requirements.

Many years later, however, EPA became aware of potential health concerns from PFOS and in September 2015, EPA no longer allowed the use PFOS containing fume suppressants in the metal finishing industry to meet federal Clean Air Act requirements. DCP ceased using PFOS containing fume suppressants in compliance with EPA regulations. Since that time, DCP, as well as other companies within the plating industry who do high amperage plating, have had difficulty finding PFOS-free fume suppressants that do not cause quality issues (i.e., pitting) and consistently yield surface tension readings below the NESHAP limit of 33 dynes/cm due to PFOS-free surfactants breaking down faster.

DCP has been very deliberate in looking for, and trying new products that are PFOS free, and are also free of PFOS precursor compounds. In fact, DCP entered into a voluntary study with EGLE Water Resources Division (WRD) and EPA to study their current fume suppressants to determine if the products are actually PFOS-free and also free of PFOS precursor compounds.

In summary, DCP has been working diligently to find products that allow them to meet the NESHAP limit and are also free of PFOS and PFOS precursor compounds, while meeting quality control requirements, but it has not been without issue. As such, DCP is in the process of implementing both short-term, and long-term solutions for addressing the surface tension exceedances for hard chrome plating tanks Cr-5, Cr-7, CR-15 and Cr-17, which are further detailed below. The short-term solution is as follows:

DCP has hired Mr. Tom Poplawski from Plating Solutions, LLC to more closely manage fume suppressant use, adds, surface tension readings, and subsequent corrective action. Mr. Poplawski completes monthly audits, and reported in his June 27, 2019 audit summary, that the surface tension levels for chrome tanks 5, 7, 15, and 17 are being controlled more closely, now that the Atotech (Fumetrol 21 LF2) fume suppressant product has replaced the MarTech fume suppressant product.

The MarTech product has historically been used by DCP as a fume suppressant; however, when MarTech experienced supply chain issues, DCP switched to using the Atotech

(Fumetrol 21 LF2) on March 5, 2019. When the MarTech product became available again, DCP decided to return to the original fume suppressant product on April 23, 2019 as the Atotech (Fumetrol 21 LF2) product is much more expensive than the MarTech product. However, it became evident based on surface tension recordings, that when DCP returned to using the MarTech product, the MarTech product was not as effective as Atotech (Fumetrol 21 LF2) at maintaining the necessary surface tension. As such, DCP decided to purchase and again use the Atotech (Fumetrol 21 LF2) product on May 20, 2019, and has observed reduced surface tension readings since. Moving forward, DCP will continue to utilize the more effective fume suppressant unless the product is no longer available or other circumstances prohibit DCP from using the product. The surface tension readings are included in **Attachment 1**.

As noted above, DCP has been, and is experiencing issues with the currently available fume suppressants, which sometimes prevent, or limit the addition of fume suppressant. In such instances, additional fume suppressant cannot be added as there is already too much foam in the tank. If additional suppressant were to be added, there is a risk that the affected tank may overflow. In addition, DCP is held to high quality standards by their customers for all of their parts, and excess fume suppressant can create quality issues (e.g., pitting) on parts that are being plated. DCP and Mr. Poplawski have been, and will continue working to ensure that the proper procedures are followed when calibrating and using the tensiometer and for the addition of fume suppressants. DCP is also working internally to design a feed/pump system for adding the fume suppressants, with hopes that by providing a more continuous, lower volume addition of the fume suppressant, as opposed to one or two larger volume additions, there will be less foam/quality issues, and the surface tension readings will be more consistent, and below the 33 dynes/cm.

As noted above, DCP is in the process of implementing both short-term and long-term solutions for addressing the surface tension exceedances for hard chrome plating tanks Cr-5, Cr-7, CR-15 and Cr-17. The long-term solution is as follows:

Based on discussions with AQD during the January 29 and June 14, 2019 meeting, DCP and BB&E are exploring options for moving away from meeting the requirements of 40 CFR Part 63, Subpart N through use of fume suppressants. To improve compliance efforts, and potential future issues associated with the use of fume suppressants, DCP and BB&E have been evaluating the possibility of conducting additional stack tests, and associated monitoring and record keeping for demonstrating continuous compliance in accordance with CFR Part 63, Subpart N, using the existing scrubber, and/or by purchasing a new scrubber.

Based on a number of vendor quotes received to-date, DCP is not planning to purchase a new scrubber at this time; however, DCP will be completing maintenance and process

improvement activities for Scrubber #5. These maintenance activities on Scrubber #5, are a top priority for DCP for the purpose of evaluating whether or not DCP can move away from relying on the use of fume suppressants. DCP has begun obtaining quotes for stack testing, and will prepare and submit to AQD, a work plan detailing plans and a schedule for the stack test. DCP is tentatively planning to submit a work plan to the department by August 16, 2019.

Lastly, as discussed with AQD during the June 14, 2019 meeting, it was DCP's understanding that if their existing permit contained language related to fume suppressant use, a new permit, or an amended permit, would be required. DCP has reviewed their current permit, and language regarding the use of fume suppressants was not observed. Therefore, DCP does not believe a new, or an amended permit, will be required.

DCP and BB&E appreciate the Department's willingness to work with us on this matter, while DCP continues to take proactive steps to eliminate surfactant use all together, due to growing concerns about not just PFOS, but other PFAS compounds as well. If you have any questions regarding this information or wish to discuss any of our responses further, please do not hesitate to contact me.

Sincerely,

BB&E, Inc.



Celeste M. Holtz
Project Manager

Cc

Mr. Todd Fracassi, Pepper Hamilton
Mr. James Colmer, BB&E
Mr. Scott Wright, Diamond Chrome Plating, Inc.
Ms. Jenine Camilleri, EGLE (electronic)
Mr. Brian Negele, EGLE (electronic)
Ms. Mary Ann Dolehanty, EGLE (electronic)
Dr. Eduardo Olaguer, EGLE (electronic)
Mr. Christopher Ethridge, EGLE (electronic)
Mr. Brad Myott, EGLE (electronic)
Ms. Carla Davidson, EGLE, WRD (electronic)
Ms. Rebecca Taylor, EGLE, RRD (electronic)
Mr. Brian Grochowski, EGLE, WMRPD (electronic)

ATTACHMENT 1
Surface Tension Readings



Chrome Tank Surface Tension
Tanks: Cr-5, Cr-7, Cr-15, Cr-17
LWI-xxx-x

Date	Lab Tech	Acceptance Criteria: <33.00 Dynes/cm								Lab Mgr Review	Comments
		Tank Cr 5		Tank Cr 7		Tank Cr 15		Tank Cr 17			
		Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)		
1/7/2019		46.0		58.0		58.0		40.0			
1/16/2019		56.0		58.0		54.0		44.0			
1/21/2019		53.0		49.0		47.0		41.0			
1/28/2019	CM	63.0	1	54.0	1	34.0	1	35.0	1		
1/31/2019	MR		2		2		2		2		
2/1/2019	MR	54.0	2	58.0	2	34.0	2	30.0	2		
2/13/2019			4		5		4		4		
2/14/2019	TP	47.0	6	64.0	6	48.0	6	37.0	2		
2/19/2019	JW	44.0		60.0		54.0		39.0			
2/26/2019	JW	49.0	2	60.0	3	51.0	2	38.0	1		
3/5/2019	TP	46.0	8	49.0	8	53.0	8	35.0	8		
3/6/2019	TP	35.0	4	39.0	8	46.0	8	29.0	0		
3/7/2019	TP	31.5	4	34.5	1	39.0	8	29.0	0		
3/8/2019	JW	31.5	4	33.5	5	35.0	8	29.0	0		
3/11/2019	SK	35.0	4	39.0	0	38.0	8	30.0	2	SK	
3/12/2019	TP		4		8		8		0	SK	
3/13/2019	AC	28.0	0	32.0	4	30.0	0	29.5	0	SK	
3/14/2019	AC	34.0	4	34.5	6	30.0	0	30.5	1	SK	
3/15/2019	TP	38.0	6	35.5	8	32.0	4	32.0	4	SK	
3/18/2019	SK	33.0	0	36.5	0	33.0	0	31.0	0	SK	
3/19/2019	AC	32.0	0	32.0	0	29.0	0	27.0	0	SK	
3/20/2019	AC	31.5	0	33.5	0	32.0	0	26.5	0	SK	
3/21/2019	AC	34.0	0	33.5	0	29.5	0	26.0	0	SK	
3/22/2019	AC	32.0	0	32.8	0	30.0	0	27.0	0	SK	



Chrome Tank Surface Tension
Tanks: Cr-5, Cr-7, Cr-15, Cr-17
LWI-xxx-x

Date	Lab Tech	Acceptance Criteria: <33.00 Dynes/cm								Lab Mgr Review	Comments
		Tank Cr 5		Tank Cr 7		Tank Cr 15		Tank Cr 17			
		Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)		
3/25/2019	SK	36.0	3	37.0	5	34.0	4	30.5	0	SK	
3/26/2019	SK	34.0	3	33.5	0	33.0	3	32.0	2	SK	
3/27/2019	SK	30.0	0		0	32.0	2	29.0	0	SK	Cr 7 Full w/ Plating
3/28/2019	AC	31.3	0		0	28.5	0	28.0	0	SK	Cr 7 Full w/ Plating
3/29/2019	AC	30.0	0		0	28.3	0	28.0	0	SK	Cr 7 Full w/ Plating
4/1/2019	AC	31.3	0	34.0	8	30.5	0	27.0	0	SK	
4/2/2019	AC	30.5	0	31.5	0	29.0	0	31.5	0	SK	
4/3/2019	AC	36.0	4	36.0	6	32.0	2	27.0	0	SK	
4/4/2019	AC	35.0	4	31.3	0	30.0	0	25.5	0	SK	
4/5/2019	AC	35.0	3	31.0	0	28.3	0	25.5	0	SK	
4/8/2019	AC		N/A	32.0	4	30.5	0	27.0	0	SK	tank 5 was not accessible
4/9/2019	AC	38.0	6	30.5	0	28.5	0	28.5	0	SK	
4/10/2019										SK	No testing performed
4/11/2019	AC	37.0	8	31.5	0	31.0	0	26.25	0	SK	
4/12/2019	AC		N/A	31.0	0	29.0	0	26.0	0	SK	tank 5 was not accessible
4/15/2019	AC	30.5	0	34.0	4	31.0	0	26.0	0	SK	
4/16/2019	JW	34.0	3	33.0	4	30.7	0	29.3	0	SK	
4/17/2019	AC			32.0	0	31.5	0	25.5	0	SK	tank 5 was not accessible
4/18/2019	AC	33.0	0	30.5	0	29.8	0	25.0	0	SK	
4/19/2019										SK	Holiday
4/22/2019	AC	31.0	0	31.0	0	31.0	0	26.0	0	SK	



Chrome Tank Surface Tension

Tanks: Cr-5, Cr-7, Cr-15, Cr-17

LWI-xxx-x

Date	Lab Tech	Acceptance Criteria: <33.00 Dynes/cm								Lab Mgr Review	Comments
		Tank Cr 5		Tank Cr 7		Tank Cr 15		Tank Cr 17			
		Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)		
4/23/2019	AC	36.0	8	31.5	4	31.0	0	30.0	0	SK	New product- Mar Mist
4/24/2019	AC	42.0	0	32.0	2	32.0	2	28.5	0	SK	
4/25/2019	AC	40.0	4	33.0	4	32.0	2	27.0	0	SK	
4/26/2019	AC	43.0	0	33.0	0	32.0	0	26.5	0	SK	
4/29/2019	AC	44.0	8	34.0	4	33.0	0	29.0	0	SK	
4/30/2019	AC	44.0	6	34.0	8	35.0	6	30.0	0	SK	
5/1/2019	AC	35.0	2	28.5	0	31.0	0	30.0	0	SK	out of Mar mist
5/2/2019	AC	31.5	0	31.0	0	32.5	0	29.0	0	SK	
5/3/2019	AC	37.5	0	33.5	0	35.0	0	31.5	0	SK	
5/6/2019	AC	45.0	0	36.0	0	37.0	0	30.0	0	SK	
5/7/2019	AC	47.0	0	34.5	0	36.0	0	32.0	0	SK	
5/8/2019	AC	47.0	8	40.0	8	37.0	8	36.0	8	SK	
5/9/2019	AC	39.5	5	38.0	7	37.0	8	38.0	8	SK	
5/10/2019	AC	49.0	0	44.0	0	39.0	0	38.0	0	SK	out of Mar mist
5/13/2019	AC	55.0	10	40.0	10	39.0	10	38.0	10	SK	Mar Mist Suppresant
5/14/2019	AC	55.0	10	40.0	10	35.0	0	33.0	0	SK	not working and
5/15/2019	AC	64.0	0	37.0	0	37.0	0	36.0	0	SK	causing excessive
5/16/2019	AC	68.0	0	42.0	0	39.0	0	38.0	0	SK	foaming - Fumetrol
5/17/2019	AC	71.0	0	49.0	0	42.0	0	42.0	0	SK	21 LF2 ordered
5/20/2019	AC	71.0	5	48.0	5	43.0	5	42.5	5	SK	Fumetrol LF21
5/21/2019	AC	41.0	0	38.5	0	39.0	0	33.0	0	SK	no adds today due to Guy's request
5/22/2019	AC	42.0	5	37.5	5	38.0	5	33.5	5	SK	



Chrome Tank Surface Tension
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LWI-xxx-x

Date	Lab Tech	Acceptance Criteria: <33.00 Dynes/cm								Lab Mgr Review	Comments
		Tank Cr 5		Tank Cr 7		Tank Cr 15		Tank Cr 17			
		Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)		
5/23/2019	SK	41.0	2	37.5	2	37.5	4	29.0	0	SK	
5/24/2019	AC	38.0	2	34.0	2	37.5	4	31.0	0	SK	
5/27/2019											Holiday
5/28/2019	AC	36.0	3	31.5	0	36.0	3	30.0	0	SK	
5/29/2019	SK	38.0	6	36.0	6	38.0	6	33.5	2	SK	
5/30/2019	AC	32.0	0	32.0	4	34.0	4	29.5	0	SK	no adds made to 5 due to tall foam
5/31/2019	AC	35.0	0	31.0	0	33.5	5	30.0	0	SK	no adds made to 5 due to tall foam
6/3/2019	AC	37.0	4	32.0	4	32.0	4	31.0	0	SK	
6/4/2019	AC	34.0	4	29.5	4	32.0	4	31.5	2	SK	
6/5/2019	AC	34.0	2	30.0	0	32.0	2	30.0	0	SK	
6/6/2019	AC	34.5	2	30.0	0	31.0	0	30.0	0	SK	out of Fumetrol LF 21
6/7/2019	AC	32.0	0	30.0	0	31.0	0	29.8	0	SK	
6/10/2019	AC	35.0	0	30.5	0	32.0	0	30.5	0	SK	
6/11/2019	AC	38.0	4	29.5	4	32.0	4	31.0	4	SK	
6/12/2019	AC	38.5	2	29.5	2	33.0	2	29.5	2	SK	
6/13/2019	AC	36.0	2	28.5	2	32.8	2	26.5	2	SK	
6/14/2019	AC	37.0	2	28.5	2	33.0	2	28.0	2	SK	
6/17/2019	AC	38.0	2	30.5	2	34.0	2	28.8	2	SK	
6/18/2019	AC	40.0	2	34.0	2	33.5	2	27.0	2	SK	
6/19/2019	AC	43.0	4	31.0	0	32.0	0	25.0	0	SK	no adds to 15 due to pitting



Chrome Tank Surface Tension
Tanks: Cr-5, Cr-7, Cr-15, Cr-17
LWI-xxx-x

Date	Lab Tech	Acceptance Criteria: <33.00 Dynes/cm								Lab Mgr Review	Comments
		Tank Cr 5		Tank Cr 7		Tank Cr 15		Tank Cr 17			
		Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)	Surface Tension (Dynes/cm)	Add (L)		
6/20/2019	AC	39.0	4	33.0	4	32.5	0	26.5	0	SK	no adds to 15 due to pitting
6/21/2019	AC	35.0	4	30.5	4	34.0	0	27.0	0	SK	no adds to 15 due to pitting
6/24/2019	AC	31.5	0	30.0	0	34.0	0	29.0	0	SK	no adds to 15 due to pitting
6/25/2019	AC	34.0	4	28.0	0	33.5	0	29.5	0	SK	no adds to 15 due to pitting
6/26/2019	AC	34.0	4	29.0	2	35.0	0	27.0	0	SK	no adds to 15 due to pitting
6/27/2019	AC	33.0	4	30.0	2	35.0	4	29.0	2	SK	
6/28/2019	AC	31.5	4	30.0	4	35.0	4	28.0	4	SK	
7/1/2019	AC	28.0	0	26.0	0	33.0	4	25.0	0	SK	
7/2/2019	AC	33.0	4	28.0	0	33.0	4	29.0	0	SK	
7/3/2019	AC	28.0	4	27.0	0	30.0	2	28.0	0	SK	
7/4/2019										SK	Holiday
7/5/2019										SK	Holiday
7/8/2019	AC	29.0	2	29.0	2	32.5	4	30.0	2	SK	
7/9/2019	AC	25.0	0	26.0	0	30.0	2	28.0	2	SK	
7/10/2019	AC	30.0	4	28.0	2	33.0	4	31.0	4	SK	
7/11/2019	AC	30.0	0	27.0	0	32.0	0	28.0	0	SK	
7/12/2019	AC	31.0	0	30.0	0	34.0	0	28.0	0	SK	
7/15/2019	AC	32.0	4	30.0	4	35.0	4	27.0	4	SK	
7/16/2019	AC	28.0	4	26.0	4	33.0	4	28.0	4	SK	