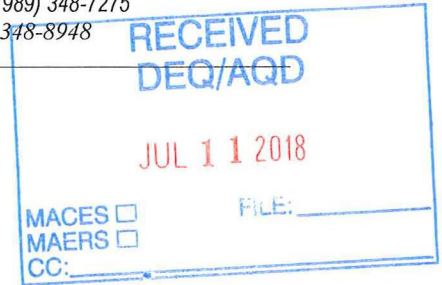




**Georgia-Pacific**

N1237-Georgia-Pacific  
Crawford Co.

*Georgia-Pacific Chemicals LLC*  
4113 Four Mile Road  
Grayling, MI 49738  
Telephone (989) 348-7275  
FAX (989) 348-8948



July 10, 2018

Certified Mail – Return Receipt 7015 0920 002 0846 0794

Ms. Caryn E. Owens  
Michigan Department of Environmental Quality  
Air Quality Division  
120 West Chapin Street  
Cadillac, MI 49601

**Re: Georgia-Pacific Chemicals LLC – Grayling, MI  
Permit to Install No. 363-89C  
Response to Violation Notice  
Fugitive Formaldehyde Emissions**

Dear Ms. Owens:

This letter responds to Michigan DEQ’s Violation Notice (Notice) related to information requested and received during an agency inspection conducted by the MDEQ Air Quality Division (DEQ) on April 11, 2018. The Notice was dated June 20, 2018 and requires a written response by July 11, 2018.

The Notice states that records provided at the time of the inspection demonstrate that actual emissions of fugitive formaldehyde from FGFORMALDEHYDE and FGRESIN are 0.142 pounds per hour, which exceeds the permit limit of 0.006 pounds per hour listed in PTI number 363-89C. After reviewing internal records corresponding with the 0.142 pound per hour figure referenced in the Notice, GP realized that the NOV is based on a mislabeled heading in an attachment to the annual emissions inventory (MAERS report). As explained below, the 0.142 number is a lb/valve figure and not a lb/hr figure. Hence, there is no violation of the permit emission limit, “just” a mislabeled emission factor in the attachment to the MAERS Report.

The annual fugitive formaldehyde emissions from LDAR equipment electronically reported as part of the most recent MAERS Report submittal made in March 2018 is 54.4 lbs. This combined emission estimate represents emissions from LDAR “equipment” including items such as flanges and connectors although they are not required to be instrument monitored by Subpart VV or the air permit. When divided by 8,760 hours, which is the duration the LDAR equipment was in VOC Service (light liquid and heavy liquid service), the average hourly rate is 0.006 lbs/hr. These emissions are calculated by utilizing actual ppm values recorded during Method 21 instrument monitoring along with published LDAR emission factors.

GP reports emissions from multiple sources in MAERS. Many of the activities reported do not have a suitable MAERS emission factor. Therefore, GP uses the best, most-site-specific information to develop emission estimates. GP attaches a summary sheet with supporting documentation to each emission source as required when not using MAERS emission factors (see attachment #1 – Focus area in red font). The annual fugitive formaldehyde emissions for

reporting year 2017 were correctly shown on the MAERS report as 54.4 pounds. Directly to the right on the same form is the figure 0.142, which is what GP was using as an average emission factor. The 0.142 emission factor was based on using the number of valves in VOC Service (384 valves) as the "Throughput" value.<sup>1</sup> As such, the 0.142 cited in the summary report and in the Notice was calculated as follows: 54.4 lbs divided by 384 valves = 0.142 (lbs/valve). The confusion stems from the fact that the heading five rows above the emission factor is labeled (lbs/hr).

GP has revised the MAERS Emission Factor Summary document which will be included with subsequent MAERS submissions (See Attachment 2). In the revised document, an extra column has been added to indicate the unit of measure associated with each emission factor.

As explained in our June 15, 2018 letter, due to the low fugitive emission limits in the air permit, GP uses an LDAR monitoring and repair program that goes beyond the regulatory requirements. This includes monitoring additional equipment components not required by Subpart VV or the air permit as a way to minimize fugitive emissions. GP's internal policy is to make an "attempt to repair" any time a Method 21 monitored value greater than 100 ppm is detected on any component. This approach not only reduces the risk of approaching a leak threshold of 10,000 ppm, the LDAR leak threshold specified in 40 CFR 60.482 of Subpart VV, but more importantly it minimizes fugitive emissions within the enclosed building. We believe that this enhanced monitoring and repair program helps assure compliance with the 0.006 pph fugitive formaldehyde limit.

In short, the 0.142 number referenced in the violation notice is actually an average emission factor, not a lb/hr number for actual formaldehyde fugitives. Hence, the records do not show an exceedance of the permit limit; they show compliance with that limit. Based on the fact that there has not been an exceedance of a permit limit, GP respectfully requests that the Violation Notice be rescinded.

If you have any questions or require any additional information, please call me at (989) 344-1869.

Sincerely,



Robert W. Morley  
Plant Manager

Attach:

- Attachment 1: MAERS Emission Factor Summary Document
- Attachment 2: Revised MAERS Emission Factor Summary Document

W/Attachments

Cc: Ms. Jenine Camilleri, Enforcement Unit Supervisor, DEQ Air Quality Division  
Certified Mail – Return Receipt 7015 0920 0002 0846 0800

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<sup>1</sup> GP chose the "Throughput" value used for MAERS reporting based on two considerations. In the MAERS reporting system, the SCC Code for formaldehyde fugitive emissions is 30112007. The Throughput Material Code is "DEVICE" and the Throughput Unit Code is "EACH-YR". The first consideration is that a common value must be used for the Throughput of both VOC and formaldehyde fugitive emissions. There are currently 384 valves in VOC service, of which 273 are in formaldehyde service. The second consideration is that the fugitive emissions are calculated using multiple SOCOMI and TRNCC emission factors based on the type of component in service such as valves, pumps, agitators, connectors, etc. GP chose to use valves as the "DEVICE" for the Throughput material code since Subpart VV requires valves to be instrument monitored on a periodic basis.

**MAERS Emission Inventory Report Including Emission Factor Development**  
**MAERS Reporting Due by March 15th for the Preceding Year (www.deq.state.mi.us/maersfacility)**

		Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors (lb/MMCF)	Reference
Boiler	EU00002	24.468	MMCF/YR Nat Gas	Ammonia	78.30	3.20	MAERS Factor (Confirmed 3/13 RWM)
				CO	2,055.31	84.00	MAERS Factor (Confirmed 3/13 RWM)
				Lead	0.01	0.0005	MAERS Factor (Confirmed 3/13 RWM)
				NOx	2,446.8	100.00	MAERS Factor (Confirmed 3/13 RWM)
				PM10	185.96	7.60	MAERS Factor (Confirmed 3/13 RWM)
				PM2.5	185.96	7.60	MAERS Factor (Confirmed 3/13 RWM)
				SO2	14.68	0.60	MAERS Factor (Confirmed 3/13 RWM)
				VOC	134.57	5.50	MAERS Factor (Confirmed 3/13 RWM)
Methanol Storage Tank	EU00003	3,802	1000 gallons/Yr	Pollutant	Annual Emissions (pounds)		Reference
				Breathing Loss VOC	42.20	0.21003	EPA Tanks (with 95% Control)
				Working Loss VOC	130.90	0.0344	EPA Tanks (with 95% Control)
Torvex Catalytic Oxidizer Burner	EU00004	6.998	MMCF/YR Nat Gas	Pollutant	Annual Emissions (pounds)	Emission Factors (lb/MMCF)	Reference
				Ammonia	22.39	3.20	MAERS Factor (Confirmed 3/13 RWM)
				CO*	0.071	0.0101	MAERS Factor (Confirmed 3/12 RWM) and <b>March 2000 Stack Test</b>
				Lead	0.003	0.0005	MAERS Factor (Confirmed 3/13 RWM)
				NOx	699.80	100.00	MAERS Factor (Confirmed 3/13 RWM)
				PM10	53.18	7.60	MAERS Factor (Confirmed 3/13 RWM)
				PM2.5	53.18	7.60	MAERS Factor (Confirmed 3/13 RWM)
				SO2	4.20	0.60	MAERS Factor (Confirmed 3/13 RWM)
				VOC*	0.0077	0.00110	MAERS Factor (Confirmed 3/13 RWM) and November 2012 Stack Test
					(pounds)	(lb/hr)	
Formaldehyde Manufacturing Process	Days/Yr	22,354	tons as 50% basis	VOC**	94.3	0.0042	Nov 2012 Stack Test (Confirmed 3/11 RWM)
	151	3,627	max hours	HCHO**	10.88	0.00049	Nov 2012 Stack Test (Confirmed 3/11 RWM)
	LDAR # Valves	384	Fugitive VOC Emissions		68.2	0.178	March 2000 Stack Test (Confirmed 3/11 RWM) and low temp startups at 98% DRE
	LDAR # Valves	273	Fugitive HCHO Emissions		54.4	0.142	EPA SOCMi and TRNCC Emission Factors (See LDAR total HCHO, MeOH, Phenol & Biphenyl)
					(pounds)	(lb/ton)	EPA SOCMi and TRNCC Emission Factors (See LDAR)
Kettle #1	EU00008	91	days	VOC	2.9	1.99E-04	Nov 2012 Stack Test.
UF Resins		14,644	tons	HCHO	0.7	4.97E-05	Nov 2012 Stack Test.
Kettle #2	EU00006	140	days	VOC	24.7	8.00E-04	Nov 2012 Stack Test.
PF Resins		30,839	tons	HCHO	1.1	3.64E-05	
Ammonia Storage Tank	EU00009	235	1000 gallons/Yr	Pollutant	Annual Emissions (pounds)		Reference
				Breathing Loss VOC	1097.7	37.09	EPA Tanks - assume no control
				Working Loss VOC	18.3	0.078	EPA Tanks - 98% control due to vapor return
Resin Solids Dumpster	EU00012	24.10	tons	Pollutant	Annual Emissions (pounds)	Emission Factors (lb/ton)	Reference
				VOC	6.1	0.25	Based on Division developed compound specific emission factors
Cooling Towers	EU00015	4541	1,000,000 gallons/Yr	Pollutant	Annual Emissions (pounds)	Emission Factors (lb PM / M(million)gal)	Reference
				PM10	981.60	2.162E-01	AP-42

**Attachment 2**  
**MAERS Emission Inventory Report Including Emission Factor Development**

Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Boiler	EU00002	24,468	MMCF/YR Nat Gas	Ammonia	78.3	3.20	lb/MMCF	MAERS Factor
				CO	2,055.3	84.00	lb/MMCF	MAERS Factor
				Lead	0.0	0.0005	lb/MMCF	MAERS Factor
				NOx	2,446.8	100.00	lb/MMCF	MAERS Factor
				PM10	186.0	7.60	lb/MMCF	MAERS Factor
				PM2.5	186.0	7.60	lb/MMCF	MAERS Factor
				SO2	14.7	0.60	lb/MMCF	MAERS Factor
				VOC	134.6	5.50	lb/MMCF	MAERS Factor
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Methanol Storage Tank	EU00003	200.9	1,000 gallons/Yr	Breathing Loss VOC	42.2	0.21003	lb/1000 gal year	EPA Tanks (with 95% Control)
		4,106	1000 gallons	Working Loss VOC	141.3	0.7035	lb/1000 gallons	EPA Tanks (with 95% Control)
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Torvex Catalytic Oxidizer Burner	EU00004	6,998	MMCF/YR Nat Gas	Ammonia	22.4	3.20	lb/MMCF	MAERS Factor
				CO*	0.1	0.0101	lb/MMCF	MAERS Factor and March 2000 Stack Test for CO
				Lead	0.0	0.0005	lb/MMCF	MAERS Factor
				NOx	699.8	100.00	lb/MMCF	MAERS Factor
				PM10	53.2	7.60	lb/MMCF	MAERS Factor
				PM2.5	53.2	7.60	lb/MMCF	MAERS Factor
				SO2	4.2	0.60	lb/MMCF	MAERS Factor
				VOC*	0.0	0.00110	lb/MMCF	MAERS Factor and November 2012 Stack Test VOC
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Formaldehyde Manufacturing Process	EU00004	22,354	tons as 50% basis	VOC**	94.3	0.0042	lb/ton	Nov 2012 Stack Test
		3,627	max hours	HCHO**	10.9	0.00049	lb/ton	Nov 2012 Stack Test
				CO	112.4	0.031	lb/hr	March 2000 Stack Test
		384	LDAR valves in VOC service	Fugitive VOC Emissions	68.2	0.178	lb/valve	EPA SOCFMI & TRNCC Emission Factors (See LDAR total HCHO, MeOH, Phenol & Biphenyl)
				Fugitive Formadehyde Emissions	54.4	0.142	lb/valve	EPA SOCFMI & TRNCC Emission Factors (See LDAR)
		151	Days/Yr					
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Kettle 1 (UF Resins)	EU00008	91	days	VOC	2.9	1.99E-04	lb/ton	Nov 2012 Stack Test
		14,644	tons	HCHO	0.7	4.97E-05	lb/ton	
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Kettle 2 (PF Resins)	EU00006	140	days	VOC	24.7	8.00E-04	lb/ton	Nov 2012 Stack Test
		30,839	tons	HCHO	1.1	3.64E-05	lb/ton	
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Ammonia Storage Tank	EU00009	29.6	1,000 gallons/Yr	Breathing Loss VOC	1,098	37.09	lb/1000 gal year	EPA Tanks - assume no control
		235	1000 gallons	Working Loss VOC	18.3	0.619	lb/1000 gallons	EPA Tanks - 98% control due to vapor return
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Resin Solids Dumpster	EU00012	31.3	tons	VOC	7.9	0.25	lb/ton	Based on Division developed compound specific emission factors
Emission Unit	Unit ID	Throughput		Pollutant	Annual Emissions (pounds)	Emission Factors	Emission Factor Units	Reference
Cooling Towers	EU00015	4,541	1,000,000 gallons/Yr	PM10	981.6	0.2162	lb PM/MMgal	AP-42