DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

P063647282

FACILITY: Elm Plating Co. - Hupp Street		**SRN / ID:** P0636
LOCATION: 533 Hupp Street, JACKSON		**DISTRICT:** Jackson
CITY: JACKSON		**COUNTY:** JACKSON
CONTACT: Brian Boyer , Director of Environmental Engineering		**ACTIVITY DATE:** 12/14/2018
STAFF: Stephanie Weems	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Self-Initiated Partial Compliance Inspection (PCE) of Elm Plating (Plant 3), a HAP Synthetic Minor / Opt-Out Source conducted in response to request for termination of CO 27-2016.		
RESOLVED COMPLAINTS:		

Self-Initiated Partial Compliance Inspection (PCE) of Elm Plating (Plant 3), a HAP Synthetic Minor / Opt-Out Source.

Facility Contacts:

Brian Boyer, Director of Environmental Engineering for all Elm Plating locations in Jackson.

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Sam Bitonti, Vice President Operations Organic Coatings and Heat Treat for Elm Plating Company.

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Purpose

On December 14, 2018, I conducted an unannounced compliance inspection of Elm Plating Company's third plant, located within the city of Jackson. I was accompanied by Scott Miller, District Supervisor for the Jackson Field Office. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules and HAP Opt-out Permit to Install (PTI) 113-16A in order to address the company's request for termination of Consent Order No, 27-2016.

Facility Location

The facility is located within the city of Jackson. It is surrounded by commercial and industrial establishments. See Image 1 for an aerial photo.

Facility Background

The facility was issued PTI 113-16 on August 26, 2016 to resolve a Rule 201 violation for operating two coating lines without a PTI permit. Consent Order No. 27-2016 became effective July 15, 2016. The consent order required that they comply with their permit and pay a settlement amount. Since then, the facility has been issued PTI 113-16A for the installation of a third dip-spin coating line, and PTI 113-16 has been voided. The company is requesting termination of Consent Order No. 27-2016 because the two-year effective period stipulated in the Order has been met.

A Full Compliance Evaluation (FCE) and Inspection (PCE) was conducted January 17, 2017 by AQD staff. At that time, the facility was found to be in compliance, except for their exceedance of their 12-month rolling VOC emissions limit. Staff determined that this was because of their emissions previously being uncontrolled and it was determined that their future emissions limits should obtain compliance.

From previous inspections, and as listed in the PTI, it is understood that the facility currently has two operational coating lines that apply high performance corrosion-resistant coatings to miscellaneous steel parts (e.g. fasteners, nuts, bolts.) The coatings are solvent or water based. Coatings are received from the manufacturer in

15-gallon totes and diluted with organic solvent or water, as appropriate, prior to their application. In each coating line, parts are loaded into a feed bin and conveyed into the dip-spin coating section. Here, a steel basket containing the metal parts is submerged in a coating reservoir. The coating reservoir is then lowered, and the basket is spun to remove excess coating from the surface of the coated parts. The excess coating is collected on the interior freeboard surface of the coating reservoir and gravity drains to the liquid level within the reservoir. The coated parts are then dropped to a conveyor that transports them through a two-zone curing oven and a cool down zone. At the exit of the cool down zone, the parts are dropped into a final production collection bin. Each product will go through this process three times.

The dip-spin coating processes operate continuously; however, the dip spin coating reservoirs operate in a cyclic nature. A steel mesh basket is loaded with uncoated parts and the reservoir is raised so that the basket is below the liquid level. The reservoir is then lowered so that the base is above the liquid level and spun to remove excess coating from the parts. Excess coating accumulates on the interior freeboard surface of the coating reservoir and drains back to liquid level with the reservoir. The coated parts are unloaded onto a conveyor that transports the parts through the drying oven and then into the cool down zone. The conveyor is designed to disperse the parts on the conveyor so that the coated parts cure evenly in the oven. The cool down zone allows cured parts to cool prior to being packaged for shipment. Once the coated parts are dropped onto the conveyor, the dip-spin coating basket is repositioned in the coating section and loaded with the next batch of uncoated parts. Several batches (basket loads) make up a single order.

Each coating line exhausts process air from the: 1) Dip-spin coating booth, 2) capture hood or tunnel installed over the conveyor, where the coated parts are dropped form the basket, 3) curing oven and 4) cool down zone. Solvent laden process air exhausted from the coating booths, conveyor hoods, and the curing ovens are combined and exhausted to the regenerative thermal oxidizer (RTO). Process air exhausted from the cool down zones contains low concentrations of VOC that are exhausted directly to the in-plant atmosphere.

Coating Line No. 1 (EU-DIPSPIN1) consists of two (2) dip-spin coating reservoirs followed by a natural gas fired conveyorized curing oven with two zones. The first oven zone (preheat) is heated with a 1.5 MMBtu/hr burner. The second oven burner (curing) is heated with a 2.5 MMBtu/hr burner.

Coating Line No. 2 (EU-DIPSPIN2) consists of one (1) dip-spin coating reservoir and a separate natural ga fired conveyorized curing oven with one zone. Parts are transferred approximately 25 feet from the dip-spin coating reservoir to the curing oven by robotic arm. The curing oven is heated with a 3.0 MMBtu/hour burner.

Coating Line No. 3 (EU-DIPSPIN3) will consist of three dip-spin coating reservoirs and two primary base coat reservoirs. Each reservoir will be followed by a natural gas-fired curing oven. The basecoat oven will be heated by burners with a combined heat input of 5.46MMBtu/hr and the topcoat oven is heated by burners with a heat input of 1.365MMBtu/hr.

The facility also operates a parts shot blaster and table blaster in conjunction with the dip-spin lines. Emissions from these are ducted to a separate dust collector. The parts shot blaster is exhausted inside the plant, and the table blaster is exhausted outside. These processes are exempt from permitting under Rule 285.

Regulatory Applicability

Active Permits:

HAP Opt Out Permit PTI 113-16A for 3 dip-spin coating application stations, drying ovens, and associated equipment to coat the surface of miscellaneous metal parts, all controlled by an RTO. The coatings lines must comply with Rule 702(a) and Rule 205(1)(a).

PTI 113-16A includes FG-DIPSPINS and FGFACILITY.

FG-DIPSPINS includes three (3) dip-spin coating lines controlled by an RTO.

FGFACILITY includes all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

Consent Orders:

CO No. 27-2016 was issued to resolve a Rule 201 violation for the installation of two coating lines without a permit. The CO became effective on July 15, 2016.

Arrival & Facility Contact

No visible emissions or odors were observed upon our approach to the facility. We arrived at approximately 10:21 AM, proceeded to the facility office to request access for an inspection, provided our identification, and met with Sam Bitonti who is the Vice President of Operations for Organic Coatings and Heat Treat for Elm Plating Company. Sam gave us insight into the daily operations of the facility while we waited for Brian Boyer, Director of Environmental Engineering for Elm Plating Company, to arrive. A pre-inspection discussion was held with Sam and Brian. We informed them of our intent to conduct a facility inspection and to review the various records as necessary in order to better respond to their request in terminating the consent order. Sam and Brian extended their full cooperation during the inspection, accompanied us during the full duration of the inspection, and fully addressed our questions.

Pre-Inspection Meeting

Sam outlined that the plant is currently operating 3 shifts per day, 5 days a week. They currently have 14 employees.

The facility is expanding. They added on a new addition to the building, located off the back of the old plant, that will house the new dip-spin coating line (EU-DIPSPIN3). Sam stated that, though operations are expanding, the number of employees will not increase.

Sam explained that with this expansion, new robotics were brought in, designed, and programmed specifically for this process. The new coating line will be fully automated, and he expects it to be finished early next year. He also explained that they will continue to operate their same three-coat process, but the process will be completed much faster.

Onsite Inspection

Sam and Brian gave us a tour of the facility, showing us both of the original dip-spin lines (EU-DIPSPIN1 and EU-DIPSPIN2). Both lines were operating. Line 2 was located near the entrance to the facility. This line was operated by a robotic arm that inserted the steel baskets into the coating reservoir, and at the end of the process, dumped the coated products onto the oven conveyor. See Image 2 attached. Line 1 was located further within the facility. This consisted of two larger coating reservoirs. See Images 3 and 4 attached. Sam stated that, once the third line becomes operational and completes their production tests, these dip-spin lines will be removed.

The water-cooled shot blaster (see Image 5) was in operation while the table blaster was not. These processes use a separate dust collector. The shot blaster is exhausted internally, while the table blaster is exhausted externally. Sam explained that once the third line becomes operational, the shot blaster and table blaster will no longer be used either.

We were then directed into the newly building's new addition. This is where the third dip-spin line is being installed. Sam explained to us how the robotic arms lift and move the steel mesh baskets between the coating reservoirs and the ovens. There are three coating reservoirs that can spin up to three mesh baskets at a time. Each of these three reservoirs are housed within their own dip-spin booth, and the entire coating and heating process is housed within a booth. The exhaust from the dip-spin booths and the enclosed process is routed to the RTO. See Images 6 and 7. Sam explained how all three coatings of the product will occur back-to-back within the enclosed process, instead of their current way of moving coated parts from line to line to complete all three coatings. He also stated that the new oven will have three levels so that each step of the coating process will be able to be heated in the oven simultaneously.

There were little to no VOC odors prevalent throughout the facility. There was an open duct on the wall, seen in Image 3, near Line 1 that Sam explained helped to pull building air in and duct it to the RTO. This helps to limit the amount of VOCs in the in-plant air.

Storage of paint/solvents appeared to be done properly with closed lids on everything and generally good housekeeping throughout. See Image 8.

Next, Sam and Brian showed us the RTO. Images 9 and 10 show one angle of the RTO. When shown into the control room, I was able to see that the combustion zone reading was 1504 degrees F, meeting the requirements of their permit. According to Brian, the RTO runs continuously when the lines are operating, and production cannot start on the lines unless the RTO is operational.

A roof inspection was not conducted due to wet weather conditions.

Recordkeeping Review

Sam and Brian explained that no new coatings or solvents have been used since their last inspection in January of 2017. Therefore, the SDS sheets for all coatings and solvents they use can be found with the inspection report from 01/17/2017.

Required VOC/HAP usage records and emission calculations were requested, and Brian graciously supplied them. These records can be found in the file with this printed report.

The records show compliance. They are using less than 1000 gallons of coating, and less than 500 gallons of reducers, per month. When averaged out to the number of days, this is well below their 85 gallon per day limit. Additionally, their rolling 12-month VOC and HAP controlled emissions records indicate that they are well below the limits specified in their permit.

Permit Condition Compliance Review

I reviewed all permit conditions for FG-DIPSINS. The faciltiy is in compliance with all Emission limits, Material limits, Process/Operational Restrictions, Design/Equipment Parameters, Testing/Sampling, Monitoring/Recordkeeping, Reporting, Stack/Vent Restrictions, and Other requirements.

I reviewed all permit conditions for FG-FGFACILITY. The faciltiy is in compliance with all Emission limits, Material limits, Process/Operational Restrictions, Design/Equipment Parameters, Testing/Sampling, Monitoring/Recordkeeping, Reporting, Stack/Vent Restrictions, and Other requirements.

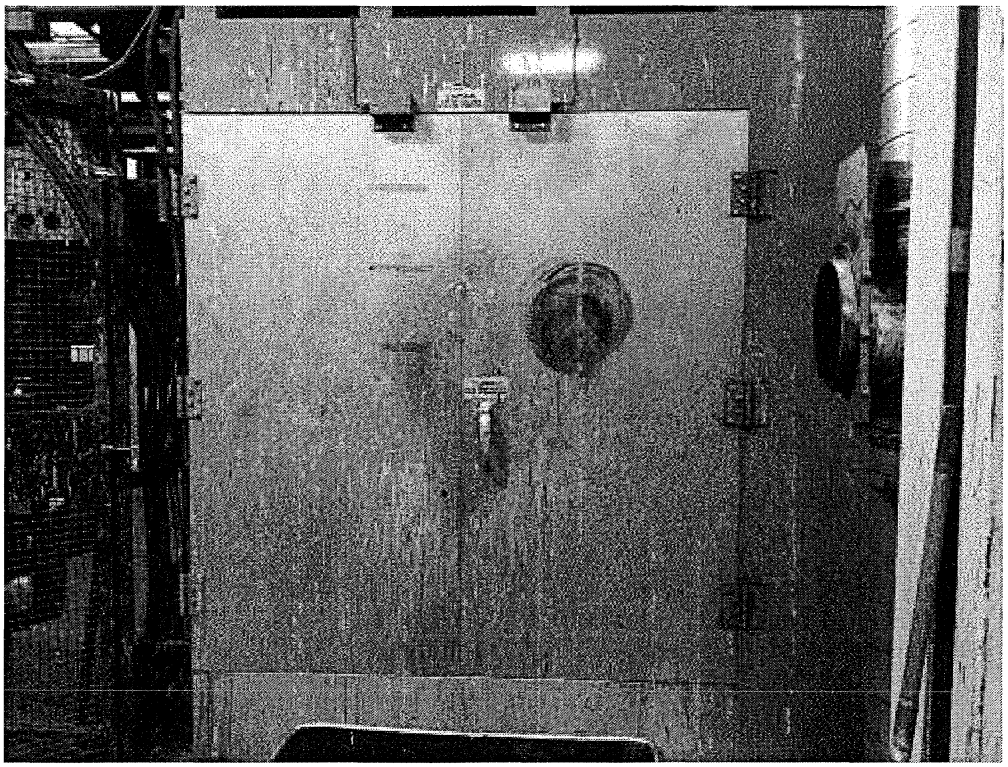
Post-Inspection Meeting

We held a brief post-inspection meeting with Sam and Brian. We discussed their plans for testing as described in PTI-113-16A. Brian stated that they will be testing once the new dip-spin line is fully installed and operational. We requested that they let us know when that occurs.

We departed the facility around 11:40AM.

Compliance Summary

Based upon the facility inspection, review of the records, and review of applicable requirements the company was found to be in compliance at the time of this inspection.



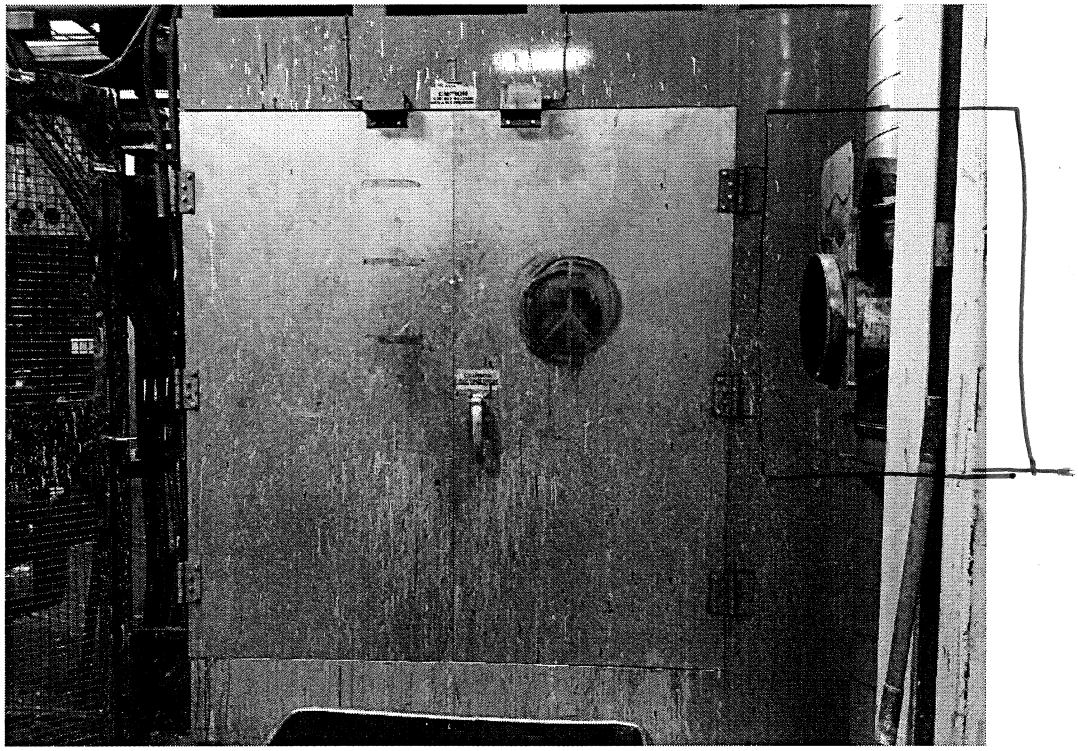


Image 3: EU-DIPSPIN1

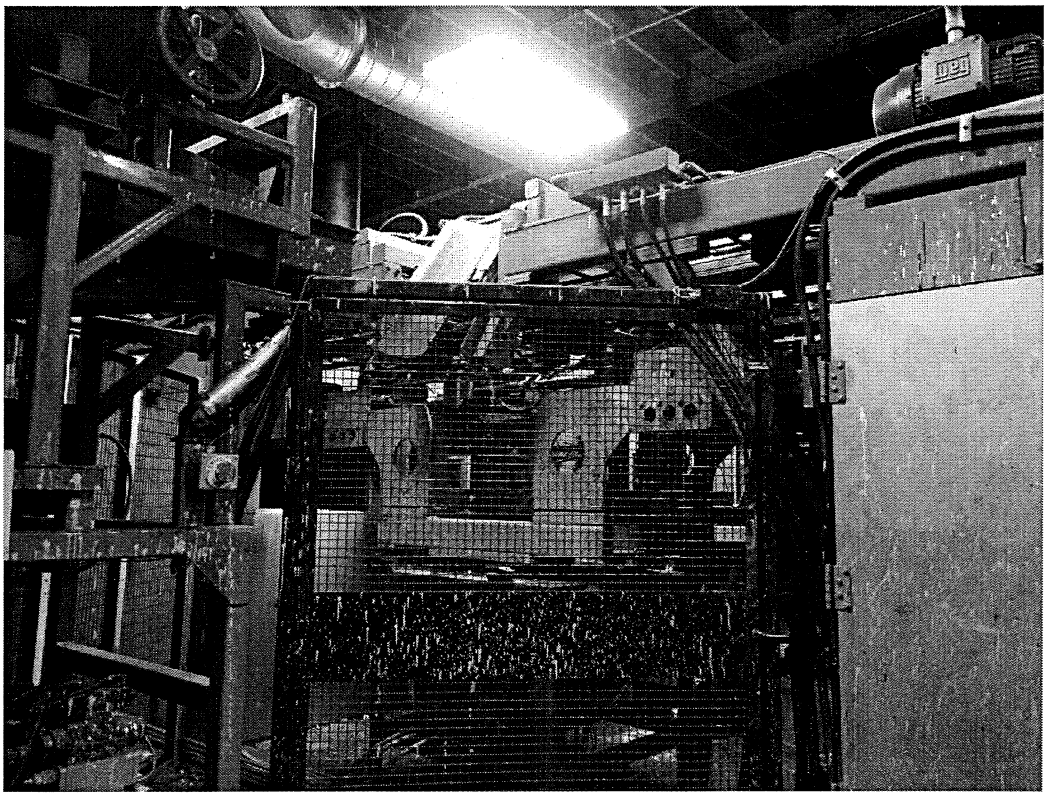


Image 4: EU-DIPSPIN1

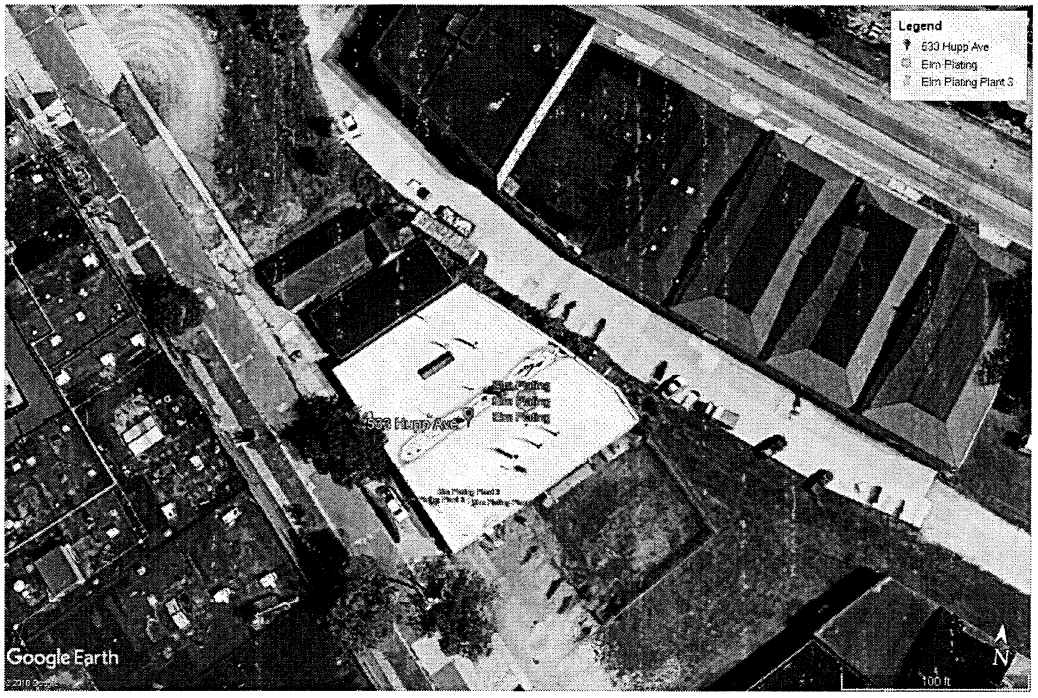


Image 1: Aerial photo.

Image 2: EU-DIPSPIN2

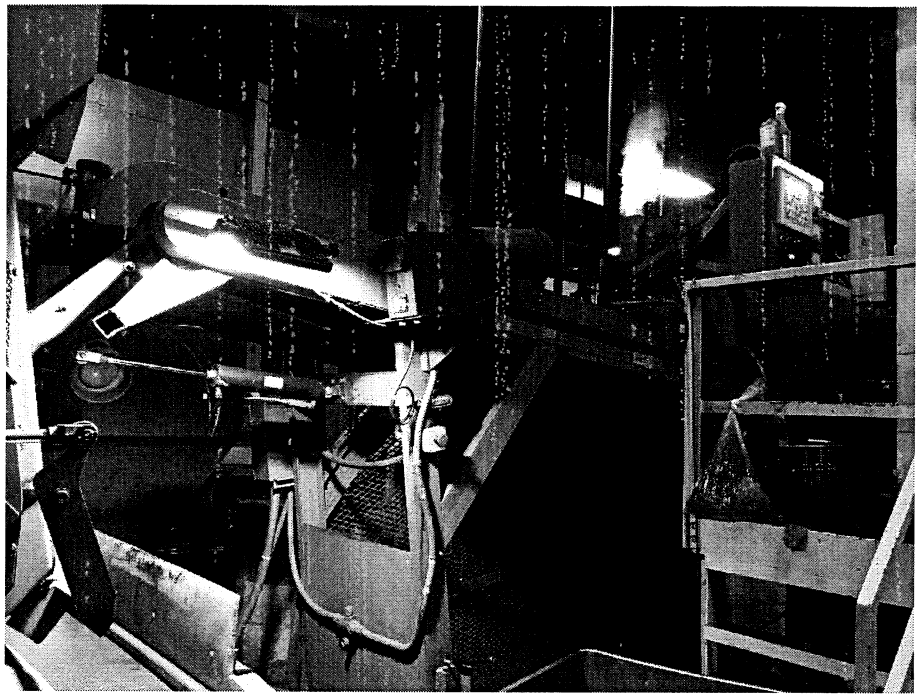


Image 5: Water-cooled shot blaster

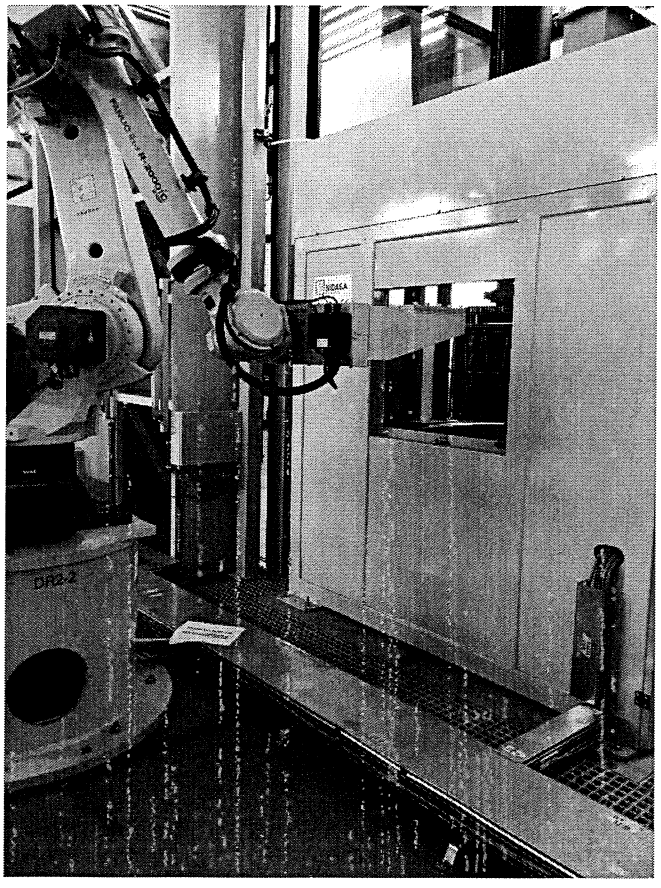


Image 6: EU-DIPSPIN3 reservoir

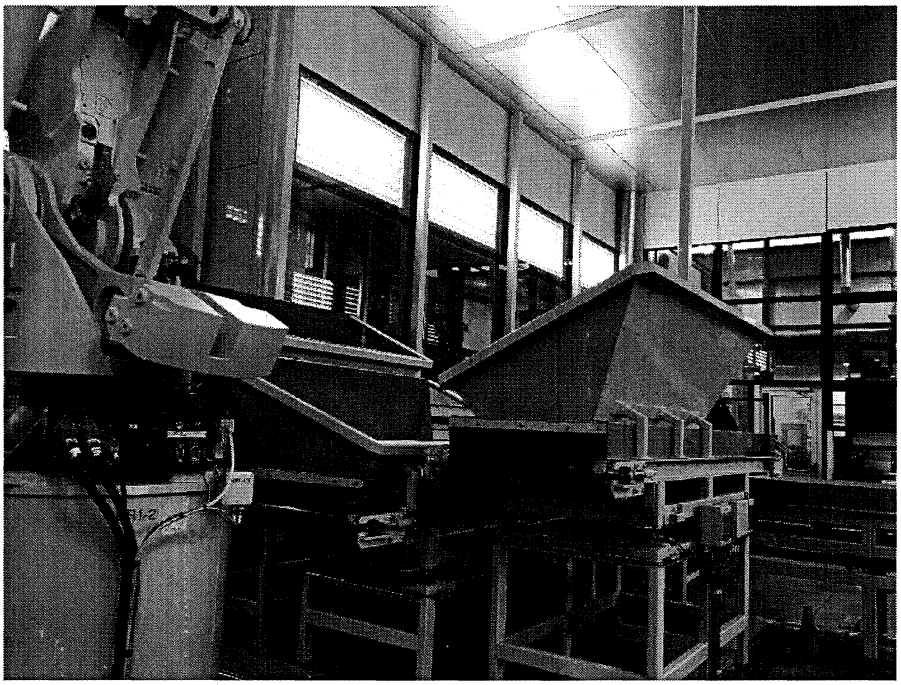


Image 7: EU-DIPSPIN3

Image 8: Storage of paint/solvents

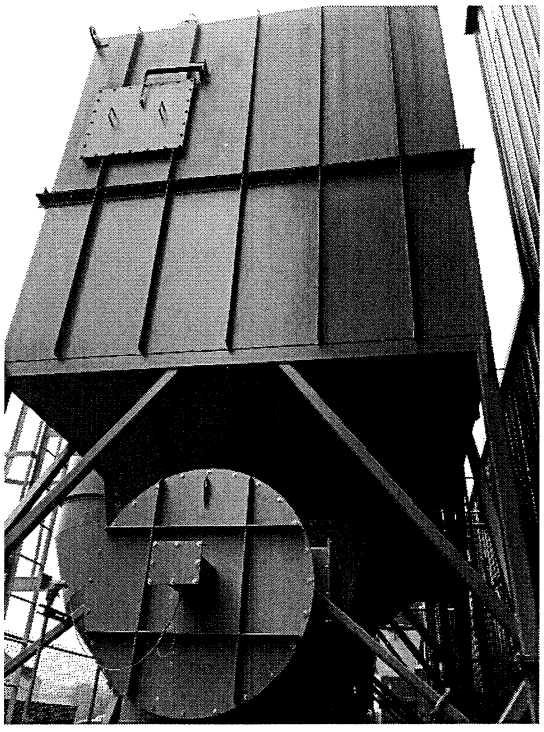


Image 9: RTO

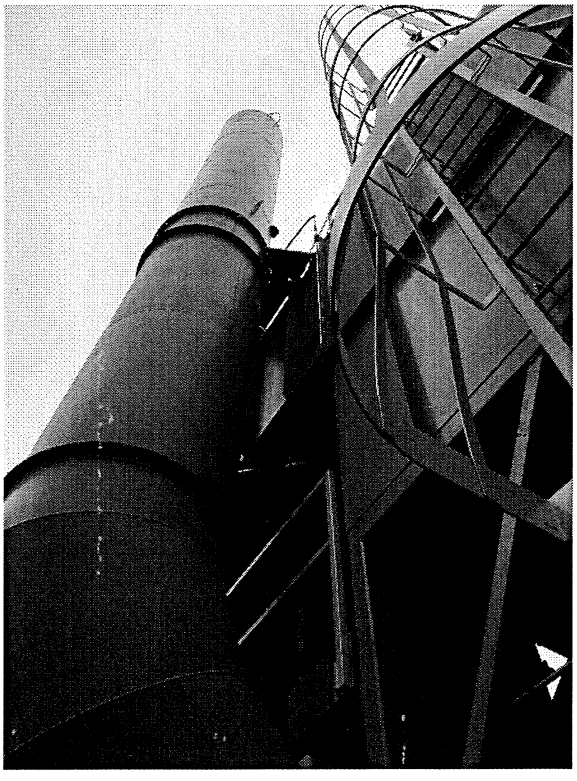


Image 10: RTO

		Coatings								Reducers														
		KL100	VH 302	VH 301	GZ SILVER	GZ BLACK	DS BLACK	DS 10 BLUE	DS DARK BLUE	KLT	DS 2000	Gallons Used		MONTH TOTAL EMISSIONS UNCONTROLLED		Monthly Total Emissions Controlled		Total Annual Usage Amount 12 Month Rolling Total		AVERAGE VOC CONTENT	ROLLING 12 MONTH TOTAL UNCONTROLLED		Rolling 12 Month Total Controlled		
		Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Gallons used	Coatings	Reducers	VOC, POUNDS	HAPs, POUNDS	VOC Tons	HAPs Tons	Coatings Gallons	Reducers Gallons	POUNDS / GALLON	VOC TONS	HAPS POUNDS	VOC Tons	HAPs Tons	
VOC Content lbs/gal		5.16	0.00	3.10	6.16	5.89	5.75	0.00	6.22	7.26	7.94														
HAPs, wt%		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Naphthalene 1% wt	0.00														
2015	Jan	158.96	60.72	18.48	5.75	0		0		103.98	8.45	298.97		1734.93	7.63	0.87	0.0038			5.80					
	Feb	188.97	57.6	36	3.55	0		0		93.15	1.32	314.35		1795.30	6.84	0.90	0.0034			5.71					
	March	253.44	96.84	19.32	14.92	0		5.28		107.98	2.11	389.80	110.09	2260.24	7.92	1.13	0.0040			5.80					
	April	315.55	82.32	28.68	9.42	0		3.83		136.06	0.37	439.80	136.43	2765.91	9.99	1.38	0.0050			6.29					
	May	266.21	79.56	14.88	17.86	1.74		0		113.84	3.84	380.25	117.68	2397.01	8.35	1.20	0.0042			6.30					
	June	366.47	90.12	23.52	11.74	3.24		3.17		193.91	3.7	498.26	197.61	3492.46	14.23	1.75	0.0071			7.01					
	July	337.25	99.48	16.8	16.15	14.25		2.24		187.24	19.62	486.17	206.86	3490.85	13.74	1.75	0.0069			7.18					
	Aug	336	101	28	21	8		3		189	15	497.00	204.00	3488.28	13.87	1.74	0.0069			7.02					
	Sept	325	106	42	18	0		3.6		201	12.7	494.60	213.70	3478.18	14.75	1.74	0.0074			7.03					
	Oct	325	106	27	27.4	3.7		1.5		180	23.3	490.60	203.30	3443.08	13.21	1.72	0.0066			7.02					
	Nov	312	110	19	9.3	5.79		3.8		153	24	459.89	177.00	3061.55	11.23	1.53	0.0056			6.66					
	Dec	304	107	33.6	30.6	5.8		5.3		154	19.8	486.30	173.80	3170.71	11.30	1.59	0.0057	5235.99	1740.47	6.52	17.29	133.07	17.29	0.0665	
2016	Jan	404.17	118.32	28.8	24.46	11.59		3.17		178.2	12.4	590.51	190.60	3785.92	13.08	1.89	0.0065	5527.53	1931.07	6.41	18.31	138.52	18.31	0.0693	
	Feb	346.44	97.68	24	21.65	11.59		2.11		155.03	25.61	503.47	180.64	3392.52	11.38	1.70	0.0057	5716.65	2111.71	6.74	19.11	143.06	19.11	0.0715	
	March	414.67	108.72	43.2	29.11	11.59		5.28		182.95	26.14	612.57	209.09	4056.97	13.43	2.03	0.0067	5939.42	2210.71	6.62	20.01	148.56	20.01	0.0743	
	April	377.93	96	28.8	39.19	5.79		50.68		160.97	17.58	598.39	178.55	3623.14	11.81	1.81	0.0059	6098.01	2252.83	6.05	20.44	150.39	20.44	0.0752	
	May	477.66	100.8	39.46	117.99	5.79		12.67		205.59	67.53	754.37	273.12	5376.74	15.09	2.69	0.0075	6472.13	2408.27	7.13	21.93	157.12	21.93	0.0786	
	June	393.68	91.2	32.54	79.5	0		5.28		175.43	44.1	602.20	219.53	4245.76	12.88	2.12	0.0064	6576.07	2430.19	7.05	22.31	155.77	22.31	0.0779	
	July	435.67	96	38.4	67.27	5.79		5.28		208.43	36.43	648.41	244.86	4618.04	15.30	2.31	0.0076	6738.31	2468.19	7.12	22.87	157.32	22.87	0.0787	
	Aug	472.41	99.36	127.18	122.32	11.59		0		215.99	63.83	832.86	279.82	5728.55	15.85	2.86	0.0079	7074.17	2544.01	6.88	23.99	159.30	23.99	0.0797	
	Sept	456.66	87.84	48	110.08	23.18		3.27		222.37	75.07	729.03	297.44	5530.25	16.32	0.20	0.0006	7308.60	2627.75	7.59	25.02	160.87	22.45	0.0729	
	Oct	446.64	117.26	43.2	124.81	11.59		2		212.25	61.85	745.50	274.10	5307.70	15.58	0.19	0.0006	7563.50	2698.55	7.12	25.95	163.24	20.92	0.0668	
	Nov	372.68	126.53	23.95	107.81	32.65		7.55		194.32	65.18	671.17	259.50	4781.98	14.26	0.17	0.0005	7774.78	2781.05	7.12	26.81	166.27	19.57	0.0617	ak 120916
	Dec	341.19	291.57	68.19	87.21	15.32		3.01		153.48	43.6	806.49	197.08	4059.83	11.26	0.15	0.0004	8094.97	2804.33	5.03	27.25	166.23	18.13	0.0565	ak 011317
2017	Jan	377.93	91.2	30.58	72.48	13.65		0	10.59	197.76	77.11	596.43	274.87	4685.65	14.51	0.17	0.00053	8100.89	2888.60	7.86	27.70	167.67	16.41	0.05048	ak 021317
	Feb	400.9	94.18	27.74	126.74	5.79		0	0	207.97	75.81	655.35	283.78	5081.25	15.26	0.18	0.00055	8252.77	2991.74	7.75	28.55	171.55	14.89	0.04535	ak 030917
	March	527.79	128.95	37.54	71.8	5.79		0	0	240.96	51.95	771.87	292.91	5478.01	17.68	0.20	0.00064	8412.07	3075.56	7.10	29.26	175.81	13.07	0.03928	ak041417
	April	424.21	114.55	27.6	81.09	5.79		0	0	320.66	74.51	653.24	395.17	5727.70	23.53	0.21	0.00086	8466.92	3292.18	8.77	30.31	187.53	11.46	0.03422	ak051517
	May	401.18	98.02	27.79	91.74	3.96	2.3	5.28	6.3	284.53	89.73	636.57	374.26	5522.82	20.88	0.20	0.00076	8349.12	3393.32	8.68	30.38	193.33	8.97	0.02744	ak061517
	June	357.74	90.05	23.9	100.54	7.62	0	5.28	14.17	298.28	80.08	977.66	378.36	5385.58	21.89	0.20	0.00080	8724.58	3552.15	5.51	30.95	202.34	7.05	0.02180	ak071317
	July	347.87	84.19	23.57	52.35	2.2	3.78	0	24.3	318.97	94.84	952.07	413.81	5272.26	23.41	0.19	0.00085	9028.24	3721.10	5.54	31.28	210.45	4.93	0.01500	ak081517
	Aug	314.77	89.76	24.34	70.53	25.45	3.27	9.82	0	299.53	147.71	537.94	447.24	5631.44	21.98	0.20	0.00080	8733.32	3888.52	10.47	31.23	216.59	2.27	0.00787	ak091517
	Sept	326.37	86.4	31.78	53.28	7.11	6.25	0.74	0	293.83	85.3	891.06	379.13	4963.16	21.56	0.18	0.00078	8895.35	3970.21	5.57	30.95	221.83	2.25	0.00806	ak101117
	Oct	306.93	74.26	27.02	77	5.79	0.93	4.43	0	278.18	83.94	858.48	362.12	4862.01	20.42	0.18	0.00074	9008.33	4058.23	5.66	30.73	226.67	2.23	0.00824	AK111017
	Nov	324.63	75.36	28.8	49.93	0	6.67	9.08	16.65	260.41	96.33	867.86	356.74	4727.38	19.11	0.17	0.00069	9205.02	4155.47	5.45	30.70	231.52	2.23	0.00842	AK121217
	Dec	287.02	68.06	19.2	51.3	11.59	0	3.96	9.74	238.31	71.78	760.96	310.09	4224.88	17.49	0.15	0.00064	9159.49	4268.48	5.55	30.78	237.75	2.24	0.00864	AK011018
2018	Jan	301.29	90.53	33.22	51.52	0	4.96	5.17	11.79	231.69	58.7	788.87	290.39	4123.15	17.00	0.15	0.00062	9351.93	4284.00	5.23	30.50	17.00	2.22	0.00873	
	Feb	369.13	118.85	19.58	59.64	3.41	0	3.75	17.69	263.08	66.9	922.03	329.98	4794.02	19.31	0.17	0.00070	9618.61	4330.20	5.20	30.36	36.31	2.21	0.00888	
	March	321.64	96.14	36.05	33.25	3.66	4.12	5.28	5.89	252.49	56.89	815.41	309.38	4282.58	18.53	0.16	0.00067	9662.15	4346.67	5.25	29.76	54.84	2.16	0.00891	
	April	308.52	75.79	29.23	51.98	2.5	0.69	5.28	23.59	233.52	83.19	814.29	316.71	4373.38	17.14	0.16	0.00062	9823.20	4268.21	5.37	29.08	71.98	2.11	0.00868	
	May	330.16	74.26	18.86	58.1	7.81	1.85	5.28	29.49	316.48	111.12	953.41	427.60	5345.93	23.23	0.19	0.00084	10140.04	4321.55	5.61	28.99	95.21	2.11	0.00876	
	June	295.64	65.95	23.9	48.93	15.09	3.2	2.64	14.7	316.46	125.85	912.36	442.31	5286.63	23.23	0.19	0.00084	10074.74	4385.50	5.79	28.94	101.43	2.10	0.00881	
	July	276.5	62.4	24.36	59.57	13.88	3.73	5.38	19.29	279.47	131.31	875.89	410.78	5022.51	20.51	0.18	0.00075	9998.56	4382.47	5.73	28.82	102.63	2.10	0.00871	
	August	315.76	62.98	10.56	68.86	5.26	4.24	5.7	22.31	297.59	127.85	921.11	425.44	5292.85	21.84	0.19	0.00079	10381.73	4360.67	5.75	28.65	105.94	2.08	0.00870	
	Sept	242.33	54.82	7.51	48.93	3.66	0	1.11	16.65	321.02	104.02	800.05	425.04	4753.19	23.56	0.17	0.00086	10290.72	4406.58	5.94	28.54	112.36	2.08	0.00877	
	Oct	245.22	57.14	15.84	30.58	2.66	7.34	1.9	24.77	306.11	97.68	789.24	403.79	4516.42	22.47	0.16	0.00082	10221.48	4448.25	5.72	28.37	111.60	2.06	0.00885	
	Nov	300.68	79.44	25.68	48.93	0	2.25	3.22	26.11	261.62	73.39	821.32	335.01	4414.60	19.20	0.16	0.00070	10174.94	4426.52	5.38	28.22	107.58	2.05	0.00885	
	Dec																								

NAME [signature] DATE 12-21-18 SUPERVISOR [signature]