DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N556126662

FACILITY: AXSON NORTH AMERICA INC		SRN / ID: N5561
LOCATION: 1611 HULTS DR, EATON RAPIDS		DISTRICT: Lansing
CITY: EATON RAPIDS		COUNTY: EATON
CONTACT: Aldona Wilczek , Director Qulaity Operations/EH&S		ACTIVITY DATE: 08/18/2014
STAFF: Brad Myott	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: Perform scheduled inspection to determine compliance with PTI 86-95.		
RESOLVED COMPLAINTS:		

Axson is a manufacturer of various elastomers and resin products that are typically used to make thermal set plastics in markets such as aerospace, automotive, renewable energies, transportation and machine tools. The products they make include polyurethane and epoxy resins, polyurethane elastomers, gelcoats.and laminating resins. These products are made in a batch process by mixing the various ingredients in large mixing tanks. The products are then filled into different size containers and shipped to their customers.

Below is a list of emission units at the facility:

Name	Install/modify date	Permit/exemption
350 gal Myers Mixer #1	2013	R290
350 gal Myers Mixer #2	1996	86-95
150 gal Hockmeyer Mixer	1996	86-95
16 gal J-go Mixer	1996	86-95
Green 300 gal Ribbon Mixer	1996	86-95
25 HP Cowels Dissolver	1996	86-95
30 HP Myers Cowels Dissolver	1996	86-95
2 Reactors, 120 gal	1996	86-95
2 Marion mixers, 160 gal	2014	R290
2 Myers Mixers, 100 gal	2014	R290
White APEC Ribbon mixer, 650 gal	2014	R290
Pre-Mix (PM-103) 80 gal	2013	R290
EM-103, 350 gal	2013	R290
Scott Ribbon Mixer 40 gal	2014	R290
Euromix Emulsfier 50-400 gal	1996	86-95
Large APEC Ribbon Mixer, 800	2014	R290
Small Myers Ram Press	1996	86-95
Large Myers Ram Press	1996	86-95
Hobart Mixer 28 gal	1996	86-95
Epoxy Mixer (EM) 105	2013	R290
EM 106	2013	R290
PM 101	2013	R290
EM 103	2014	R290
EM 102	2014	R290

The facility is located in a light industrial area on a very large lot. Outside the facility I did not detect any visible emissions or odors. Inside, I met with Aldona Wilczek and Joe Goodrich of Axson. I provided them with the Environmental Inspections Brochure and we discussed the operations at the facility. We

discussed the current operations at the facility and their current permit. Axson was issued permit 86-95 in 1995 for process equipment to formulate polyester resin products and epoxy resin products and hardeners. The process equipment at the facility currently consists of storage tanks, pumps, mixers and blenders and two dust collectors for control of particulates.

Joe provided me a list of process equipment which I used to develop the emission unit list in this report. Joe then agreed to show me around the facility. The facility was very clean and only had some minor VOC odors inside the plant. Some of the mixers were operating during the inspection. The mixing operations are performed as needed according to the orders placed. Typical batches consist of liquid resin followed by several bags of talc. The mixers/blenders are covered while the batch is being mixed and the dust collectors are always running when batches are being made. Most of the equipment is covered under PTI 86-95 but some new equipment was added in 2013 and 2014

Joe and I walked outside the building and I did not see any visible emissions from either dust collector exit point. I didn't notice any odors outside the facility either. We then checked the pressure gauge readings on the two Torit dust collectors. The older unit handles approx. 10,000 cfm and has a stack of approx. 35' which meets the permit requirement. The gauge on the unit read 2" water. The newer unit was installed in 2014 and handles approximately 12,000 cfm. The reading on that unit was 0.7" water. Filters are typically changed when the reading is around 6".

Permit 86-95 does not contain record keeping or calculation requirements but does have VOC, toxic and particulate emission limits. The process equipment is vented to one of the two particulate control devices. I asked Aldona to provide VOC emission calculations. She later emailed me usage rates of the materials that contain styrene and VOC. We discussed emission factors to use but we were unable to determine an appropriate emission factor for their process. In the past, paint manufacturing facilities have used an emission factor of 2% VOC loss of total product made but this is a different process and 2% may be overly conservative. The emission limits in the original permit were not based on a 2% loss, but were calculated based on 15 million lbs per year of styrene based products being produced. Based on the usage information that Aldona later provided it appears that they are producing much less than this amount and should be in compliance with their permit limits. I asked Aldona to look into calculating the emissions from her facility and she has since hired a consultant to work on accurately calculating VOC and styrene emissions from the facility. This will also allow them to setup a spreadsheet so they can calculate and record their monthly emissions as required by Rule 290.

In 2014 Axson acquired Cass Polymers and some of that equipment was relocated to this site. An additional dust collector was installed to control particulate emissions from the relocated mixers and blenders. It appears that the new equipment may be exempt from permitting per Rule 290. Particulate emissions from the original permit were estimated at 842 lbs/year. It is reasonable to assume that similar particulate emissions would be expected from the new dust collector. These expected emissions are much less than the Rule 290 threshold for particulate matter. Once Axson is able to properly determine the VOC emissions from their process then they will be able to confirm their Rule 290 applicability for this new equipment. Based on the amount of material used in their existing equipment and the new equipment it appears that the company is meeting their permit emission limits and the Rule 290 emission thresholds for VOC and particulate.

NAME Brad Myatt DATE 9/9/14 SUPERVISOR M. McC

Row Labels	2014 monthly usage	2013 monthly usage	VOC	% of VOC	HAPs	% of HAPs	styrene %	Vinyl toluene %	Use of VOC in 2014/M	Use of VOC in 2013/M	Use of Styrene in 2014/M	Use of styrene in 2013/M	Use of vinyl toluene in 2014/M	Use of vinyl tuluene in 2013/M
R004002	401	319	ethanol	100	0	0	0	0	401	319				
R004003	734	442	styrene	100	styrene	100	100	0	734	442	734	442		
R004006	5,281	3,050	xylene	100	xylene	100	0	0	5,281	3,050				
R004042	112	42	vinyl toluene	100	0	0	0	100	112	42			112	42
R004046	412	343	Methyl methacrylate	100	Methyl methacrylate	100	0	0	412	343				
R005001	4,057	1,534	styrene	28.2	styrene	28.2	28.2	0	1,144.0	432.5	1,144	433		
R005027	9,247	2,424	vinyl toluene	34.5	0	0	0	35	3,190	836				
R005086	995	557	styrene	33.9	styrene	33.9	33.9	0	337.5	188.7	337	189		
R005089	17,246	27,366	styrene	31.4	styrene	31.4	31.4	0	5,415.2	8,592.9	5,415	8,593		
R005092	0	110	styrene	45.0	styrene	45.0	45.0	0	0.0	49.4	0	49		
R130177	9,891	0	styrene	35.0	styrene	35.0	35.0	0	3,461.7	0.0	3,462	0		
R130477	103	0	styrene	39.0	styrene	39.0	39.0	0	40.3	0.0	40	0		
R130677	2,102	0	styrene	34.0	styrene	34.0	34.0	0	714.6	0.0	715	0		
R130777	47	0	styrene	35.0	styrene	35.0	35.0	0	16.4	0.0	16	0		
R130977	82	0	98-83-9	100.0	98-83-9	45.0	0	0	82.3	0.0				
R132177	632	0	styrene	33.0	styrene	33.0	33.0	0	208.7	0.0	209	0		
R132477	7	0	styrene	45.0	styrene	45.0	45.0	0	3.1	0.0	3	0		
R132577	128	0	styrene	35.0	styrene	35.0	35.0	0	44.7	0.0	45	0		
R180677	4	0	toluene	100.0	toluene	100.0	0	0	4.2	0.0				
R180777	17	0	ethyl acetate	100.0	0	0	0	0	17	0				
R181277	75	0	solvent naphtha	100.0	001330-20-7	1	0	0	75	0				
R370104	3	4	solvent naphtha	100.0	001330-20-7	1	0	0	3	4				
								Total usage	21,697	14,300	12,120	9,705		
								usage per hour (240 hrs/month	90	60	50	40		
								emission/hour (2%)	1.81	1.19	1.01	0.81		

NVCode	GENERIC NAME	Volume used in 01/01/2014-07/30/2014 (lbs)	Volume used in 01/01/2013-09/30/2013 (lbs)	Notes
R003181	Methoxypropanol	0	0	
R004002	Ethanol	2,807.43	2,873.84	
R004003	Styrene	5,136.20	3,976.68	Includes usage from R131577
R004005	Methanol	0	0	
R004006	Xylene	36,968.30	27,445.50	
R004042	Vinyl Toluene	781.8	375.3	
R004046	Methyl Methacrylate	2,882.50	3,089	
R005001	Unsaturated Polyester Resin/Styrene	28,398.40	13,804.50	
R005027	Unsaturated Polyester Resin/VT	64,731.76	21,814.60	
R005065	Unsaturated Polyester/Styrene	0	0	
R005079	Unsaturated Polyester/Styrene	0	0	
R005084	Unsaturated Polyester/Styrene	0	0	
R005086	Unsat. Clear Polyester/Styrene	6,968.10	5,008.50	
R005088	Unsaturated Polyester/Styrene	0	0	
R005089	Unsaturated Polyester/Styrene	120,720.63	246,292.75	
R005091	Unsaturated Polyester/Styrene	0	0	
R005092	VE Resin	0	987	
R130177	Halogenated Polyester Resin	69,234.62	0	
R130477	Polyester resin cobalt promoted	723.5	0	
R130677	Unsaturated Polyester/Styrene	14,712.57	0	
R130777	Flame Retardant Epoxy VE Resin	327.2	0	
R130977	Alpha-Methyl Styrene	576.1	0	
R132177	Styrene	4,426.29	0	Check name
R132477	Prepromoted Polyester Resin	48	0	
R132577	VE Resin	893.53	0	
R180677	Toluene	29.3	0	
R180777	Ethyl Acetate	119.7	0	
R181277	Light Aromatic Solvent	524.4	0	
R182377	Aromatic naphtha solvent	0	0	
R182477	Diacetone Alcohol	0	0	
R370104	Trifunctional Methacrylate Ester	18.7	38.6	
RZ00201	TMPTA	0	0	