west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3176
Plant ID No.:	049-00177
Applicant:	Ridge Runner Industries, Inc.
Facility Name:	Fairmont Facility
Location:	Fairmont, Marion County
NAICS Code:	336214
Application Type:	Construction
Received Date:	March 4, 2014
Engineer Assigned:	Laura Jennings
Fee Amount:	$1,000
Date Received:	March 7, 2014
Complete Date:	September 15, 2014
Due Date:	December 14, 2014
Applicant Ad Date:	August 21, 2014
Newspaper:	*Times West Virginian*
UTM's:	Easting: 578.495 km Northing: 4,371.00 km Zone: 17
Description:	After-the-fact permit application for a fiberglass truck topper manufacturing facility.

DESCRIPTION OF PROCESS

Process for manufacturing a fiberglass truck top (as taken from the application):

1. Gel coat the mold
2. Spray the fiberglass in the mold
3. Remove the top from the mold
4. Move the top to the paint booth
5. Paint the top
6. Assemble the top

Material safety data sheets were provided for the following materials:

Nason® Activators, Reducers, Solvents and Additives
ChromaSystem™ Binders and Basemakers

Nason® Clears
Hi Point 90
C1 3001 polyester resin
Polycor
SS Solvent (Premium Wash Thinner/ Lacquer Thinner)

Emission Units Table:

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type and Date of Change	Control Device
1S	1E	Gel Coat Station	2007	4,380 units/yr	New	N/A
2S	1E	Resin Station	2007	4,380 units/yr	New	N/A
3S	2E	Paint Booth	2013	n/a	New	1C
Control Device:						
1C		Viledon filters		98% efficiency		

SITE INSPECTION

Gene Coccari from DAQ, Small Business Assistance Program visited the facility on a referal from Lou Ann Lee of DAQ's Compliance and Enforcement Section. The facility has been in operation at this facility since 1989.

Directions to the facility from I-79: take exit 139, off exit, take a left on Bunner's Ridge Road, Ridge Runners is a ½ mile on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions were calculated for the applicant by DAQ's Small Business Assistance Program Environmental Resource Analyst, Gene Coccari and are based on a spreadsheet that has been developed for paint booth applications. Emissions were calculated based on maximum production capacity of 2,080 hours of coating operation per year and 4,380 units per year produced. The control efficiency of 98% was used for the particulate matter controlled emissions.

The emission calculations spreadsheet was reviewed by the writer.

Emissions Summary Table:

Emission Point ID	Emission Unit ID	Control Device	Regulated Pollutant	Maximum Potential Uncontrolled Emissions		Maximum Potential Controlled Emissions	
				lb/hr	tpy	lb/hr	tpy
1E	1S (Gel Coat Application)	n/a	VOCs	1.01	4.44	1.01	4.67
			Styrene	0.66	2.86	0.66	2.86
			Dimethyl Phthalate	0.03	0.12	0.03	0.12
			Cobalt Compounds	<0.01	0.02	<0.01	0.02
1E	2S (Resin Application)	n/a	VOCs	1.67	7.33	1.67	9.02
			Styrene	1.08	4.73	1.08	4.73
			Dimethyl Phthalate	0.14	0.61	0.14	0.61
			Cobalt Compounds	0.03	0.15	0.03	0.15
2E	3S (Paint Booth)	1C	VOCs	68.9	9.47	68.9	9.47
			PM	4.94	0.49	0.10	0.01
			PM_{10}	2.35	0.23	0..05	0.01
			Cumene	n/a	<0.01	n/a	<0.01
			Ethylbenzene	n/a	0.16	n/a	0.16
			Methanol	n/a	1.16	n/a	1.16
			Methyl isobutyl ketone (MIBK)	n/a	1.65	n/a	1.65
			Toluene	n/a	0.60	n/a	0.60
			Xylene	n/a	0.68	n/a	0.68
			Total HAPs	48.23	4.25	48.23	4.25
Facility PTE			VOCs	71.58	23.17	71.58	23.17
			PM	4.94	0.49	0.10	0.01
			PM_{10}	2.35	0.23	0..05	0.01
			Styrene	1.74	7.59	1.74	7.59
			Total HAPs	49.97	12.74	49.97	12.74

REGULATORY APPLICABILITY

The following state and federal regulations have been reviewed for applicability:

45CSR7 TO PREVENT AND CONTROL PARTICULATE MATTER AIR POLLUTION FROM MANUFACTURING PROCESSES AND ASSOCIATED OPERATIONS

The facility has the potential to emit particulate matter during routine process operations and therefore 45CSR7 is applicable to the facility. Section 3.1.1. limits the emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity. Compliance will be demonstrated by demonstrating compliance to permit requirements.

Section 4.1.1. limits the particulate matter emissions in Table 45-7A by source operations type. The proposed facility is a type 'a' emission source defined by 45CSR7-2.39. The process weight rate to determine compliance with 45CSR7 was provided in the calculations section of the application. The process weight rate used is the approximate weight rate of the truck topper plus the weight rate of the coating used in the process. The process weight rate used to determine the maximum allowable PM emissions is 110.3 lb/hr which equates to an allowable PM emissions rate of 0.13 lb/hr for type "a" sources. The hourly controlled PM emission rate based on the efficiency rate of 98% is 0.10 lb/hr, thus demonstrating compliance.

Section 5.1 requires a system to minimize the emissions of the fugitive particulate matter. The Paint filters are used in the painting operation to minimize the fugitive particulate matter, thus demonstrating compliance.

45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION

The facility is subject to 45CSR13 because it meets the definition of a stationary source. The facility is subject to a substantive requirement of an emission control rule promulgated by the Secretary (45CSR6), it has the potential to discharge more than 6 pph and 10 tpy of any regulated air pollutant, and it has the potential to discharge more than 2 pph and 5 tpy of hazardous air pollutants considered on an aggregated basis.

The facility has demonstrated compliance by submitting a complete permit application and publishing a Class I legal notice.

45CSR22 AIR QUALITY MANAGEMENT FEE PROGRAM

The applicant has demonstrated compliance by paying the permit application fee. They will be required to keep current their Certificate to Operate.

Non-applicability determinations

45CSR21 REGULATION TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF VOLATILE ORGANIC COMPOUNDS

This regulation applies to sources located in Putnam, Kanawha, Cabell, Wayne, and Wood Counties.

The facility is not subject to 45CSR21 because it is located in Marion county which is not one of the applicable counties.

45CSR30 REQUIREMENTS FOR OPERATING PERMITS

The facility does not meet the definition of a major source because it does not emit or have the potential to emit 100 tpy or more of any air pollutant subject to regulation,10 tpy or more of any hazardous air pollutant, or 25 tpy or more of any combination of hazardous air pollutants.

40CFR63, SUBPART WWWW (NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS: REINFORCED PLASTIC COMPOSITES PRODUCTION

This subpart applies to major sources of HAP emissions. Ridge Runner Industries, Fairmont facility is not a major source of HAP emissions and therefore is not subject to this subpart.

Applicability determination not made

40 CFR63, SUBPART HHHHHH (PAINT STRIPPING AND MISCELLANEOUS SURFACE COATING OPERATIONS AT AREA SOURCES)

The state of West Virginia has not taken delegation of Area Source toxics standards. As such, this facility has not been reviewed against Subpart HHHHHH requirements.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The following hazardous air pollutants are components of the materials used in this operation with a summary of the hazards.

Cobalt Compounds: Cobalt is a natural element found throughout the environment.

Acute (short-term) exposure to high levels of cobalt by inhalation in humans and animals results in respiratory effects, such as a significant decrease in ventilatory function, congestion, edema, and hemorrhage of the lung. Respiratory effects are also the major effects noted from chronic (long-term) exposure to cobalt by inhalation, with respiratory irritation, wheezing, asthma, pneumonia, and fibrosis noted. Cardiac effects, congestion of the liver, kidneys, and conjunctiva, and immunological effects have also been noted in chronically-exposed humans. Cobalt is an essential element in humans, as a constituent of vitamin B12. Human studies are inconclusive regarding inhalation exposure to cobalt and cancer, and the one available oral study did not report a correlation between cobalt in the drinking water and cancer deaths. EPA has not classified cobalt for carcinogenicity. Cobalt is used to make superalloys (alloys that maintain their strength at high temperatures approaching their melting points) and in pigment manufacture.

Cumene: Cumene is used in a variety of petroleum products. Acute (short-term) inhalation exposure to cumene may cause headaches, dizziness, drowsiness, slight incoordination, and unconsciousness in humans. Cumene has a potent central nervous system (CNS) depressant action characterized by a slow induction period and long duration of narcotic effects in animals. Cumene is a skin and eye irritant. No information is available on the chronic (long-term), reproductive, developmental, or carcinogenic effects of cumene in humans. Animal studies have reported increased liver, kidney, and adrenal weights from inhalation exposure to cumene. EPA has classified cumene as a Group D, not classifiable as to human carcinogenicity. Cumene is used as a thinner for paints, lacquers, and enamels and as a component of high octane fuels.

Dimethyl Phthalate: Dimethyl phthalate has many uses, including in solid rocket propellants, plastics, and insect repellants. Acute (short-term) exposure to dimethyl phthalate, via inhalation in humans and animals, results in irritation of the eyes, nose, and throat. No information is available on the chronic (long-term), reproductive, developmental, or carcinogenic effects of dimethyl phthalate in humans. Animal studies have reported slight effects on growth and on the kidney from chronic oral exposure to the chemical. EPA has classified dimethyl phthalate as a Group D, not classifiable as to human carcinogencity.

Ethylbenzene: Ethyl benzene is mainly used in the manufacturing of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects, such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans. In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

Methanol: Methanol is released to the environment during industrial uses and naturally from volcanic gases, vegetation, and microbes. Exposure may occur from ambient air and during the use of solvents. Acute (short-term) or chronic (long-term) exposure of humans to methanol by inhalation or ingestion may result in blurred vision, headache, dizziness, and nausea. No information is available on the reproductive, developmental, or carcinogenic effects of methanol in humans. Birth defects have been observed in the offspring of rats and mice exposed to methanol by inhalation. EPA has not classified methanol with respect to carcinogenicity.

Methyl isobutyl ketone (MIBK): Methyl isobutyl ketone is used as a solvent for gums, resins, paints, varnishes, lacquers, and nitrocellulose. Acute (short-term) exposure to methyl isobutyl ketone may irritate the eyes and mucous membranes, and cause weakness, headache, nausea, lightheadedness, vomiting, dizziness, incoordination, narcosis in humans. Chronic (long-term) occupational exposure to methyl isobutyl ketone has been observed to cause nausea, headache, burning in the eyes, weakness, insomnia, intestinal pain, and slight enlargement of the liver in humans. Lethargy and kidney and liver effects have been observed in rats and mice chronically exposed by gavage (experimentally placing the chemical in the stomach), ingestion, and inhalation. EPA has classified methyl isobutyl ketone as a Group D, not classifiable as to human carcinogenicity. Methyl isobutyl ketone is used as a solvent for gums, resins, paints, varnishes, lacquers, and nitrocellulose, as an alcohol denaturant, in the extraction of rare metals, and as a synthetic flavoring adjuvant.

Styrene: Styrene is primarily used in the production of polystyrene plastics and resins. Acute (short-term) exposure to styrene in humans results in mucous membrane and eye irritation, and gastrointestinal effects. Chronic (long-term) exposure to styrene in humans results in effects on the central nervous system (CNS), such as headache, fatigue, weakness, and depression, CSN dysfunction, hearing loss, and peripheral neuropathy. Human studies are inconclusive on the reproductive and developmental effects of styrene; several studies did not report an increase in developmental effects in women who worked in the plastics industry, while an increased frequency of spontaneous abortions and decreased frequency of births were reported in another study. Several epidemiologic studies suggest there may be an association between styrene exposure and an increased risk of leukemia and lymphoma. However, the evidence is inconclusive due to confounding factors. EPA has not given a formal carcinogen classification to styrene.

Toluene: The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. `Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene

are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies. The major use of toluene is as a mixture added to gasoline to improve octane ratings. Toluene is also used to produce benzene and as a solvent in paints, coatings, synthetic fragrances, adhesives, inks, and cleaning agents. Toluene is also used in the production of polymers used to make nylon, plastic soda bottles, and polyurethanes and for pharmaceuticals, dyes, cosmetic nail products, and the synthesis of organic chemicals.

Xylene: Commercial or mixed xylene usually contains about 40-65% *m*-xylene and up to 20% each of *o*-xylene and *p*-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity. Mixed xylenes are used in the production of ethylbenzene, as solvents in products such as paints and coatings, and are blended into gasoline.

AIR QUALITY IMPACT ANALYSIS

The facility does not meet the definition of a major source according to the definition provided in 45CSR14; therefore, air modeling is not required for this facility.

MONITORING OF OPERATIONS

The following monitoring and recordkeeping requirements are included in the permit:

- Monitor and record the amount of gel coat, resin, coating and solvent usage
- Monitor and record opacity
- Monitor and record filter maintenance activities

PERMIT CHANGES

This is a new construction permit with no previous version.

RECOMMENDATION TO DIRECTOR

Based on the information provided in the application including supplemental information received, the applicant should meet all applicable federal and state requirements. It is therefore recommended that permit R13-3176 be issued to Ridge Runner Industries, Fairmont Facility located in Fairmont, Marion County, WV.

Laura Jennings
Permit Engineer

2/2/15
Date