

# Blue Ridge Environmental Defense League

---

www.BREDL.org PO Box 88 Glendale Springs, North Carolina 28629 BREDL@skybest.com (336) 982-2691

September 21, 2009

Robert Lowe  
Department of Environmental Quality  
Southwest Regional Office  
355 Deadmore Street  
Abingdon, VA 24212

**Re: Air Permit Registration No. 11447  
MXI Environmental Services, 26319 Old Trail Road, Abingdon, Virginia 24210  
Washington County, County-Plant ID No. 51-191-00189**

Dear Mr.Lowe:

On behalf of the Blue Ridge Environmental Defense League and our members in Virginia, I write to request that the Department of Environmental Quality and the State Air Control Board not approve the draft permit as written for the above referenced MXI Environmental Services' ethanol plant. We are concerned that the emissions of air contaminants including but not limited to volatile organic compounds would adversely affect our health, safety and well-being. The DEQ and the Board are charged with protecting the environment of Virginia in order to promote the health and well-being of the Commonwealth's citizens (§ 10.1-1183). I have the following comments.

MXI Environmental Services has submitted a request to expand their operations by adding a 900 gallon per hour vapor recompression evaporator. The expansion would create huge increases in emissions of volatile organic compounds (VOC).

The present air permit has VOC emission limits of 2.08 pounds/hour and 18,240 pounds/year. The new draft permit would allow emissions of VOCs to rise to 33.37 pounds/hour and 129,880 pounds/year, or 16 times higher and 7 times higher, respectively. According to Virginia DEQ, MXI violated its permit because of an excessive level of VOCs. In June DEQ charged MXI with violating its air permit and a consent order is being negotiated. **The NOV was issued for excessive levels of same toxic compound for which MXI now seeks to increase. We believe it is wrong to issue an expanded permit to a company which is apparently still out of compliance.**

Ethanol is a volatile organic compound emitted by such plants. Also, formaldehyde and acetic acid, both carcinogens, and methanol, classified as a hazardous pollutant, are known to be emitted from such plants. While we encourage the addition of pollution control devices, we believe that the purpose of such controls is and should be the reduction of pollution, not the opposite.

Volatile organic compounds (VOCs) evaporate readily into the air. VOCs include substances such as benzene, toluene, methylene chloride, and methyl chloroform. (ATSDR, 2008, <http://www.atsdr.cdc.gov/glossary.html>) Domestic exposure to VOCs at levels below currently accepted recommendations may increase the risk of childhood asthma. Measurement of total VOCs may underestimate the risks associated with individual compounds. (*Thorax* 2004;59:746-751, © 2004 BMJ Publishing Group Ltd & British Thoracic Society)

**DEQ Permit Information**

According to the DEQ, “The purpose of this modification is to incorporate a 900 gallon per hour vapor recompression evaporator and add new equipment and requirements for control of odorous and volatile organic compound emissions. This permit supersedes your permit dated April 16, 2007.” The changes are detailed in the draft permit and copied below.

<b>Equipment to be added as part of the facility modification</b>		
<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Federal Requirements</b>
One ENCON MVC-900 evaporator (Ref. No. 1)	900 gallons per hour feed rate	N/A
one Alfa Laval Thermal, Inc. spiral heat exchanger	750 gallons per hour	N/A
One Aqua Technologies activated clay system (Ref. No. 2)	50 cubic feet volume	N/A
One oil/water separator	30 gallons per minute	N/A

<b>Equipment Previously Permitted</b>		
One Hurst Wetback 500 Series boiler with a dual burner for oil and natural gas combustion, or equivalent	16.8 × 10 <sup>6</sup> Btu per hour	NSPS Subpart Dc

<b>Equipment Exempt from Permitting</b>		
<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Exemption Citation</b>
One Stripper C-512 distillation column	----	9 VAC 5-80-1320 D

The draft permit contains little new in the way of actual pollution control. The draft permit states that maintenance and throughput are the sole methods of limiting VOC. The draft permit states: (emphases added)

- Emission Controls** - Volatile organic compounds from the ethanol recovery facility shall be controlled by proper operation and maintenance of all process, storage, and transfer equipment.

8. **Throughput** – The throughput of evaporator distillate to the cooling towers shall not exceed 3,500,000 gallons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. (9 VAC 5-80-1180)

36. **Emission Controls** – Odorous emissions from the ethanol recovery operation, as exhausted from the cooling towers, shall be controlled by use of vapor compression evaporation, oil-water separator, and activated clay filtration of wastewater prior to its use in the cooling tower. The control systems shall be provided with adequate access for inspection and shall be in operation when wastewater is in the cooling towers. Entrained water and mist from the cooling towers shall be minimized by use of appropriately designed, constructed and operated baffles, packing, and/or mist eliminators. At a minimum, semi-annual inspections of the oil/water separator, activated clay system, and cooling towers shall be completed. (9 VAC 5-80-1180 and 5-50-140)

Based on the draft permit, the following pollutants would be emitted from the MXI plant:

<b>Pollutant (a)</b>	<b>Pounds per hour</b>	<b>Pounds per year</b>
<b>Particulates</b>	7.68	67,280
<b>PM-10</b>	6.12	53,620
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	8.82	77,260
<b>Nitrogen Oxides (NO<sub>x</sub>)</b>	2.28	20,000
<b>Carbon Monoxide</b>	1.38	12,120
<b>Volatile Organic Compounds</b>	0.12	1,060
<b>Volatile Organic Compounds (b)</b>	<b>33.37</b>	<b>129,880</b>
<b>Hydrogen Chloride</b>	0.9	7,800
<b>Polychlorinated Biphenyls (PCB)</b>	0.044	381
<b>Chromium VI</b>	0.0089	78
<b>Cadmium</b>	0.0018	16
<b>TOTAL</b>	60.72	369,400

Pollutant levels are from DEQ draft permit #11447 for MXI, paragraphs 13, 14, and 32.

(a) Emissions are from the operation of the boiler unless otherwise indicated.

(b) Emissions from the ethanol recovery facility exhausted from the cooling towers.

These emissions are derived from the estimated overall emission contribution from operating limits. **In the existing permit, the process emission limits are 2.08 pounds/hour and 9.12 tons/year. The draft permit would allow the process emissions to rise to 33.37 pounds/hour and 64.94 tons/year (129,880 pounds), that would be an increase of 1,504% and 612%.**

The permit appears to have a revocation clause:

24. **Permit Suspension/Revocation** – This permit may be suspended or revoked if the permittee:
- a. Knowingly makes material misstatements in the permit application or any amendments to it;
  - b. Fails to comply with the conditions of this permit;
  - c. Fails to comply with any emission standards applicable to a permitted emissions unit;
  - d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
  - e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.
- (9 VAC 5-80-1210 F)

**However, because of its reliance on maintenance and design factors for pollution control, the DEQ would have no effective way to ensure even these higher limits are met and no practicable method of enforcement.**

#### **MXI Company Information**

According to the company's website: "MXI Environmental operates an ethanol recycling facility in Virginia. This facility receives ethanol-containing material from multiple sources, distills ethanol from those source materials, and then markets the ethanol for industrial use, primarily for use as a fuel additive." [[http://www.mxiinc.com/data/Lions Clarification of Exemption.pdf](http://www.mxiinc.com/data/Lions%20Clarification%20of%20Exemption.pdf)]. **However, the process is largely proprietary and therefore opaque to public scrutiny and, more importantly, resistant to regulatory control.**

The following wastes are processed by MXI:

- Carbon & spent carbon
- Household hazardous waste, including acids, aerosols, cleaners, etc.
- Inorganic salt solutions & solids
- Latex paints & adhesives
- Labels and Paper Products
- Mercury (metallic only)
- Non-TSCA transformers (non-PCB)
- Paint additives (talc, zinc oxide, titanium dioxide, iron oxide, etc.)

- Petroleum-based grease and oils
- Petroleum contaminated waters
- Petroleum contaminated soils and sands
- Pigments such as dyes, inks, food colorings
- Plastics & plastic components
- Resins & resin components
- Soaps & surfactants
- Spill cleanup materials (non-RCRA)
- Still bottoms
- Tank bottoms & sludge's
- Water treatment chemicals such as floccs, defoamers

[http://www.mxiinc.com/page.aspx?p=env\\_wasteStreams](http://www.mxiinc.com/page.aspx?p=env_wasteStreams)

### **Conclusion**

The pollution from MXI has had a noticeable impact, especially during the last six months. DEQ should not approve the permit as drafted. Certainly, no increase in volatile organic compounds or any other pollutant should be permitted unless and until the source of the public health threats are determined and extant violations corrected.

Respectfully,

Louis Zeller  
Science Director  
Blue Ridge Environmental Defense League  
(336) 982-2691