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September 12, 2015

Mr. Richard A. Conforti
Office of Waste Management and Radiological Protection
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, Michigan 48909-7741
via email only to confortir@michigan.gov

RE: Comments to Michigan Department of Environmental Quality (Opposition
comments to proposed amendment for U.S. Ecology Michigan, Inc, Detroit, MI, MID 074
259 565, hazardous waste facility)

Dear Mr. Conforti:

I offer these comments on behalf of Ban Michigan Fracking (www.banmichiganfracking.org), a Charlevoix-based grassroots group opposed to hydraulic fracturing extraction of mineral resources.

I. OBJECTIONS

1. We object to the comment deadline falling on Saturday, September 12, 2015. That is not a normal business day for DEQ (your office is closed today), and we believe that any comments submitted by midnight Monday, September 14, 2015 should be accepted as timely filed.

2. We object to the unwillingness or inability of Michigan DEQ in not uploading the entire application file to its internet website. This is 2015, not 1995, and it is patently disdainful of the public interest in transparent decision making to make vital records available only on request and not through the agency site.

3. This is a very important regulatory decision with obvious environmental justice implications and we request that the comment period be extended immediately to November 10, 2015.

II. COMMENTS ON APPLICATION

1. Part Of The Reason For Plant Expansion Is for Fracking Wastes

Notwithstanding the euphemistically-driven language in the Fact Sheet and other documents posted online, wherein there is avoidance of admitting the fracking connection, U.S.

Ecology is evidently expanding its facility in Detroit in significant part to handle the treatment and disposal of drilling wastes, *i.e.*, wastes from hydraulic fracturing for oil and gas. The availability of materials onsite for, and equipment and infrastructure for, the downblending of radioactive fracking waste is indisputable, coupled with U.S. Ecology's history of handling radioactive waste materials.

According to the Detroit Free Press, the U.S. Ecology facility in Detroit "processes a 'small amount' of TENORM [technologically-enhanced naturally-occurring radioactive material] that's shipped to other sites for disposal." "Detroit Hazardous Waste Site Plans Tenfold Expansion,"¹ Free Press, September, 11, 2015. Moreover, Richard Conforti, an environmental engineer in the DEQ's Office of Waste Management and Radiological Protection, "said TENORM is not considered radioactive waste under federal and state rules, nor are fluids used in or resulting from oil and gas drilling considered hazardous wastes." *Id.*

The Free Press further reported that "A DEQ record of an Oct. 31, 2013 inspection of the US Ecology Detroit plant noted: 'Site receiving approved Radium-226 waste slurry in Pit 1.' According to the U.S. Environmental Protection Agency, Radium-226 is a naturally radioactive metal that emits both alpha and gamma radiation, meaning its radiation could be potentially harmful without being ingested. Radium-226 has a half-life of about 1,600 years." *Id.*

2. Fracking Waste Is Radioactive And Can Be Dangerous

Radium-226 and Thorium-232, found plentifully in drilling wastes, are ionizing radiation and there is no scientifically-identified safe level of ionizing radiation. Regulation of radioactive fracking waste is left to the states and not covered by the Atomic Energy Act.

A January 2015 Pennsylvania Department of Environmental Protection study of the fracking waste stream in Pennsylvania, found at http://www.portal.state.pa.us/portal/server.pt/community/oil__gas_related_topics/20349/radiation_protection/986697 reveals that fracking waste liquids contained levels of radioactivity in excess of 26,600 pCi/L. The federal drinking water standard is 5 pCi/L.

It is likely that the radiation detection equipment at U.S. Ecology is either nonexistent or grossly inadequate if there is any. There is no simple, inexpensive radiation detector available to effectively measure alpha radiation. Geiger counters and similar hand-held or so-called "portal" (fixed-site) monitors are effective only in detecting gamma radiation. The metal walls of tank trucks or rolloff containers distort even those readings, and they block almost entirely the alpha particles emitting from Ra-226 laden wastes, which can be blocked by a mere sheet of paper, or human skin. However, if ingested, inhaled, or incorporated as by passing through a wound in the skin, alpha-emitting radioactive substances can seriously harm human beings.

¹ Accessible at <http://www.freep.com/story/news/local/michigan/2015/09/10/hazardous-waste-deq-toxic-chemicals/71950318/>

There is no evidence in the documents on the internet that workers or members of the public in the affected neighborhood areas through which trucks delivering or removing radioactive fracking waste will travel will have adequate advance data concerning the cargoes. Inadequate technical monitoring equipment means that a tank or rolloff container of fracking waste must have serious levels of gamma radiation before monitors register it. Sound - and disclosed - technological means of measurement are critical to keeping fracking wastes from radioactively contaminating the Michigan biosphere.

Consequently, we oppose the expansion of U.S. Ecology's facility which would allow large amounts of radioactive materials to be treated as if they are minimally or nonradioactive. No analysis provides estimates or limits on the amount of radioactive material the site could accept, treat, store and release (intentionally or inadvertently) in the locale of the U.S. Ecology plant. No investigation suggests the levels of radiation to which the neighborhoods surrounding U.S. Ecology will be exposed, via air or flow of water offsite, despite the fact that there will routinely be airborne, and possibly waterborne, radioactive emissions from fracking waste en route to or from the site, and in storage at the site.

3. Vapors From Fracking Waste Are Not Contained

Alpha-emitting isotopes such as Ra-226 are dangerous. are nonetheless dangerous. If Ra-226 or radon gas are inhaled or otherwise incorporated into the body, as through open wounds or on food, the radioactive particles lodge in the body and give continual doses like an x-ray machine that cannot be turned off. The continual internal exposures are potentially more dangerous than a one-time x-ray or gamma ray exposure from outside the body.

While the U.S. Ecology facility has thermal and catalytic vapor Incinerators, there is no mention of monitoring for radioactivity, or capturing it in the online license materials. Neither Ra-226 nor radon gas are harmed or broken down by incineration.

4. No Analysis Of Chemical Synergy; Ra-226 Uptake

The online permit documents reveal no discussion of the synergistic effects of radioactive and hazardous chemicals. There is no investigation into, nor discussion of the potential for even greater than additive negative health effects. The human body misrecognizes Ra-226 as calcium, not as a dangerous or toxic substance, and in the routine course of events will deposit it into bone tissue. A common manifestation of cancer from radium is bone cancer. None of the waste acceptance, monitoring, training or emergency response and remediation plans mention plans for dealing with radioactive materials, wastes, emissions or releases.

5. Waiver Of Groundwater Monitoring Terminated By Outside Waste Storage

In p. 9 of the Fact Sheet it states that U.S. Ecology's groundwater monitoring waiver was granted in 2004 because the facility had enclosed all treatment, storage, and waste handling activities inside a structure that provides protection from precipitation and runoff. In Attachment

6a, Engineering Plans Part 1, (p. 4/18 of .pdf), site plans for the proposed expansion indicate “possible container storage spaces” in a clearly outdoor area (*i.e.*, not inside a structure that provides protection from precipitation and runoff) next to proposed building 5A. Outdoor storage invalidates the basis for USE’s groundwater monitoring waiver, consequently the license must include a requirement that USE conduct regular and rigorous groundwater monitoring, and the application must be revised and resubmitted for public comment.

6. Incorporate By Reference Comments Of NIRS

We fully support and incorporate herein by reference as those rewritten the comments made in this proceeding by Nuclear Information Resource Service.

III. CONCLUSION

The construction and operation of the facility as contemplated by the permitting-related documents available online presents a hazard to public health and the environment. The applicant has not submitted sufficiently detailed or accurate information for the public to comment more specifically about the dangers (because of the disingenuous euphemizing around the receipt, handling and disposal of fracking wastes) and to enable the DEQ to make a reasonable judgment on whether to issue the license. Consequently, we request that the amended license be denied.

Very truly yours,

/s/ Terry J. Lodge
For Ban Michigan Fracking

cc: Luanne Kozma, President
Ban Michigan Fracking

Michael Keegan, Don’t Waste Michigan

Ed McArdle, Michigan Sierra Club