

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

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In the Matter of:	)	
West Bay Exploration Co. of	)	Permit Appeal No. UIC 15-03
Traverse City, Michigan	)	
West Bay #22 SWD	)	
Permit No. MI-075-2D-0009	)	
Jackson County, Michigan	)	

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**PETITIONER PETER BORMUTH’S MOTION TO SUPPLEMENT**

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## PETITIONER PETER BORMUTH'S MOTION TO SUPPLEMENT

The Petitioner, Peter Bormuth, respectfully requests that this board allow a Motion to Supplement. The Petitioner just wishes to add the Savoy Energy Creque 3 20 Well permit to the list he already provided the Board of the other permitted wells using the Salina Group as a confining layer operating in the southern Michigan basin. The effective date of the Savoy Energy Creque 3 20 Well permit was February 25, 2016 so obviously the Petitioner did not have the opportunity to include it in his petition (The effective date has been corrected to April 14, 2016 because of an agency error). The Petitioner claims the Board should allow supplementation in order to fully review the important policy matter of whether the Savoy Energy Creque 3 20 Well (and the other 18 wells the Petitioner has previously identified) constitute a danger to our Michigan aquifers (see 40 C.F.R. § 124.19(a)(4); see also *In re City of Attleboro*, NPDES Appeal No. 08-08, slip op. at 10 (Sept. 15, 2009)).

Like the West Bay #22 well, the Savoy Energy Creque 3 20 Well permit states that the Injection zone is the Niagaran. The EPA October 2014 memorandum regarding geologic siting states: “the injection zone consists of dolomitized skeletal limestone and carbonate reef complexes that constitute ‘very porous and permeable formations’.” The RTC likewise states that:

The Niagaran, or Niagaran Group, is a vast limestone and dolomite rock structure underlying Michigan and parts of Illinois, Ohio, and New York. The Michigan Hydrogeologic Atlas describes the Niagaran rock group as generally very porous **and permeable...** [Att. B-11, p. 2]

The Savoy Energy Creque 3 20 Well permit states the Confining Zone is composed of the rocks of the Salina Group between 1474 and 1642 feet below ground surface. The permit differs from

the West Bay #22 permit in naming the Salina Group C Unit shale as the confining layer rather than the Salina Group A-2 Evaporite. The Stratigraphic Lexicon for Michigan, Bulletin 8, (2002) notes that the Salina C-Unit strata consists of greenish-gray shale containing anhydrite nodules. As previously noted in my reply brief, the Steiner study, (Steiner, *International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts*, 30, 4 (1993), SWELLING ROCK IN TUNNELS) shows that anhydritic shales, such as the Salina Group C-Unit shales, differ from regular shales, and that swelling phenomena are particularly severe in anhydritic shales. They note that for pure clay shales, in situ swelling pressures (from exposure to water) up to 0.3 MPa can be expected. Meanwhile they note that “for anhydritic shale rocks, extreme heave and the crushing of strong inverts were observed” (p. 361) and that “in anhydritic shales, where a chemical component influences swelling behavior, swelling pressures in the range of 2.0 – 2.5 MPa have been observed in situ.” (p. 361). The Salina group C-Unit will easily fracture under these pressures and allow for fluid migration.

The Savoy Energy Creque 3 20 Well permit also states that the maximum injection pressure shall be limited to 1998 pounds per square inch gauge (psig). EPA Permit #MI-163-3G-A002, issued June 14, 2006 for the Sunoco Inkster Facility in Wayne County limited the injection pressure to 382 psi to prevent formation fracturing. In making this determination the EPA used 0.433 lb/ft for the specific pressure gradient in the Michigan basin and used 14.7 psi for the value of one atmosphere. The EPA also used a fracture gradient of 0.8 psi/ft as the default value for Michigan. So the EPA has previously determined that an injection pressure of 382 psi is conservative and safe. For the West Bay #22 well, the EPA allowed an injection pressure of 737 psi which the Petitioner has demonstrated might induce formation fracturing. An injection

pressure of 1998 psi for the Savoy Energy Creque 3 20 Well is 5 times the pressure that the EPA previously determined was safe. The issuance of the Savoy Energy Creque 3 20 Well permit with a maximum injection pressure of 1998 psi shows willful and wanton misconduct on the part of the MDEQ and the reviewing EPA permit writer.

### **CONCLUSION**

WHEREFORE, for the above stated reasons, the Petitioner respectfully requests that this Honorable Board grant the Petitioner's Motion to Supplement.

Respectfully submitted,

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Dated: April 11, 2016

## CERTIFICATE OF SERVICE

I hereby certify that on April 11, 2016 I did send a copy of my Motion to Supplement to Kris Vesner, EPA Region 5, Environmental Protection Agency, 77 West Jackson Boulevard (C-14J), Chicago, IL 60604 and to William Horn, Mika, Meyers, Becket & Jones, 900 Monroe Ave. NW, Grand Rapids, MI 49503 by regular mail.

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