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February 3, 2014

Chairwoman Anne M. Gobi
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 473F, Boston, MA 02133

Chairman Marc R. Pacheco
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 312B, Boston, MA 02133

Re: Massachusetts Sierra Club Testimony in Support of H.3796, An Act to protect our drinking water from hydraulic fracturing

Dear Chairwoman Gobi, Chairman Pacheco, and Honorable Members of the Committee,

Thank you for providing this opportunity to offer our comments on H.3796, based on H.707 (Rep. Garballey), An Act to regulate hydraulic fracturing, H.695 (Rep. Ehrlich), An Act preventing the disposal of hydraulic fracturing wastewater, and H.788 (Rep. Provost), An Act to protect our drinking water from hydraulic fracturing. The Sierra Club expresses our strong support in favor of H.3796 with this letter and our previous testimony at the September 26, 2013 hearing before this committee.

The Sierra Club is the oldest and largest grassroots non-profit and non-partisan environmental organization in the country, with over 1.4 million members and supporters nationwide. Its chapter in Massachusetts has over 22,000 members throughout the state and a history of protecting the environment that spans more than forty years. We work to create healthy, vibrant communities through support of clean air and water; clean energy; recycling and waste-elimination; and the preservation of the Commonwealth's most treasured forests, parks and open spaces.

H.3796 supports those efforts by.

- preserving our water resources with legislation to prevent the use of Class II wells for hydraulic fluids,
- providing for a 10 year moratorium on fracking in the state, and
- making sure that our state does not become a waste dump for the fracking industry, also through a ten year moratorium.¹

We believe that the ten year moratorium must be viewed only as a stop gap measure. A 10 year moratorium, i.e., which is in effect a sunset provision, and thereby requires proponents of fracking in the future to repeal legislation rather than have to start afresh. The Sierra Club would prefer prohibiting fracking and the use of our state as a wasteland. The thought of fracking waste disposal in our state brings up the images of the breached chemical tanks and coal ash ponds in West Virginia and Tennessee and North Carolina that are destroying rivers and landscapes and threatened the health of residents in other states. We have better uses for our lands, watersheds and rivers.

Our support requires some further clarification as described below.

H.3796 is especially farsighted because its definition of fluids anticipates the use of the unusually corrosive and toxic Hydrofluoric acid and as well as compressed gases as extraction fluids. Acidization is a substitute for fracturing by pressure and works differently by using corrosive acids in fractured rock to ease the flow of gas and oil. ² As the footnoted article states: 'Acidizing with HF works much better than fracking in the Golden State **because the oil-bearing shale is already naturally fractured and buckled from tectonic activity**, Collier tells TakePart. "We know it's dangerous, but we don't know what it does downhole. There are known dangers, and then there are unknowns." ' Emphasis added. Companies are also using compressed gases. Gas falls within the definition of a fluid, yet the bill refers to gas principally as what is extracted from a well, not as the tool or what is used to extract output from the well. That creates a definitional ambiguity.

It is important also that the definition of "Hydraulic fracturing" be understood to encompass these advances in extraction technology for oil or gas in rock. Thus the phrase "in order to create fractures" contained within the current definition of Hydraulic fracturing" must be construed to include the use of fluids, such as HF, to enhance the flow of oil and gas through existing and created fractures. The currently proposed definition of Hydraulic fracturing is as follows:

*Hydraulic fracturing means the process of pumping a fluid into or under the surface of the ground **in order to create fractures in rock for the purpose of the production or recovery of oil or gas.***

Emphasis added. Perhaps a better phrasing in lieu of that bolded above is: "**in order to create or develop or enhance the flow through fractures in rock for the purpose of the production or recovery of oil and gas**"

It is clear that fracking is not currently a viable industry in Massachusetts. The only possibility of fracking is the yet untested deep thin shale deposits under the Connecticut River in the State's pristine Pioneer Valley and 11 miles from Lake Quinsigamond, the largest clean water source in the state and a pristine tourist and recreation area of our state. All three of these bills have the beneficial effect of preserving clean water, preserving the fields and forests from being scraped and clear cut and preventing toxic pools and injections of fracking fluids. We cannot let this drilling scourge come to our pristine Pioneer Valley in Western Massachusetts, the state's largest watershed.

This bill is yet another example of the Commonwealth's national leadership through its Legislature's initiatives on environmental issues as well as on energy efficiency, developing clean and renewable energy sources of wind, solar photovoltaic and solar thermal, and geothermal sources. Other important, related initiatives are (1) the current bill to approve a thermal renewable energy credit, S.1970 (formerly S.1593), and its recognition of the potential of geothermal energy and ground loop heat pumps, (2) the longer term and broader based incentive to wean ourselves from fossil fuels using a market based solution of a carbon tax (H.2532, S.1770, and S.1766).

We all know that carbon dioxide is a greenhouse gas. But methane, or fracked gas, is a much more potent green house gas than carbon dioxide. Methane is a greenhouse gas that reputable scientists are currently estimating to have a global-warming potential over 70 times more potent than carbon dioxide from earlier estimates of about 22 times that are regarded to be outdated.³

The threat of methane is exacerbated by the leakage of methane in our piping distribution system – from well-head to combustion chamber.⁴ So divorcing ourselves from fracking and its toxic consequences is another tack to controlling green house gases and meeting the

goals of the Global Warming Solutions Act. Again there is a gas leaks bill is currently being considered by the legislature.

The duty to protect our and our children's' environment in this fashion also stems from Article 97 of the Massachusetts Constitution to protect our "right to clean air and water, ... and the natural scenic, historic, and esthetic qualities of their environment" Article 97 continues: "and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose."

Massachusetts has been a leader in the nation on environmental issues. It has a commitment to control green house gases. Let's not be shy about maintaining our leadership; and let's pass H.3796, and head in the right direction with the ten year moratorium.

Respectfully,



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¹ See Congressional Report on Chemicals Used in Fracking published in 2011 at <http://www.dontfractureillinois.net/congressional-report-of-chemicals-used-in-fracking/>.

² "Why Oil Companies Want to Drop Acid in California - TakePart" <http://www.takepart.com/article/2013/09/02/acid-california-fracking-acidizing-monterey-shale> Sep 2, 2013, which says, "It's known that the acid forms a dense, low-lying cloud at a relatively cool 67 degrees Fahrenheit and that breathing it scars lungs. Much of the Monterey Shale oil drilling is done in Kern County, blazing hot in summer but prone to tule fog during winters much chillier than 67 degrees. HF acid is so worrisome that the United Steelworkers want its use phased out of oil refineries entirely, calling it a risk too great for the steelworkers and the 26 million Americans living near refineries."

³ Romm, Joseph, More Bad News For Fracking: IPCC Warns Methane Traps Much More Heat Than We Thought, Climate Progress, 10/2/2013. AM <http://thinkprogress.org/climate/2013/10/02/2708911/fracking-ipcc-methane/>

⁴ The leakage of natural gas is well documented in the report prepared for Senator Markey's office entitled "America Pays for Gas Leaks" www.markey.senate.gov/documents/markey_lost_gas_report.pdf that has led to his introduction of the "Pipeline Modernization and Consumer Protection Act," and the "Pipeline Revolving Fund and Job Creation Act," and in Massachusetts by the CLF report on leaks in Massachusetts Conservation Law Foundation, "Into Thin Air: How Leaking Natural Gas Infrastructure Is Harming Our Environment and Wasting a Valuable Resource." Available at http://www.clf.org/statis/natural-gas-leaks/WhitePaper_Final_lowres.pdf