

“OUR MORALITIES AND FRAC SAND MINING: WHAT IS THE RIGHT THING TO DO?” Tuesday, October 22, 2013, La Crescent High School Fine Arts Center, La Crescent, Minnesota. Sponsored by the Houston County Protectors.

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Good evening. I'd like to begin by thanking Michael Fields and the Planning Committee which invited me to speak to you under the theme, “The Morality and Ethics of Frac Sand Mining.” Your invitation to me has prompted me to think long and hard about this topic, and it's been deeply satisfying to prepare what I will say to you tonight.

I have tweaked the title a bit and chosen “Our Moralities and Frac Sand Mining.” I have chosen this title not because I am a moral relativist, that is, one who believes that moral matters boil down to individual preferences and nothing more. Rather I have chosen this title to acknowledge respect for people's life experiences and histories, their complex social and cultural embeddedness, as these canalize beliefs and actions in the moral domain.

Prior to receiving the request to speak it would not have occurred to me to pursue and speak carefully and deliberately about the role of morality in the public debate about frac sand mining. With further reflection however I concluded that this topic is appropriate, relevant, and may enrich our public conversation in refreshing and meaningful ways. I understand that my task is to address some broad and critical moral issues that are at stake in the frac sand mining debate.

I want to preface my talk with a sentence I heard several years ago. On December 3, 2006 David Vasquez, a campus pastor at Luther College, preached at the Sunday morning

worship on the weekend celebrating “Christmas at Luther.” He said something that riveted my attention. It was this: “The reality of the world needs to be named, not put on hold.” In what follows I hope I can bring to light just a few perspectives on the concerns that bring us here tonight.

I’d like to begin with a series of themes which are not specific to frac sand mining itself, but which I think will be helpful to bear in mind.

First, consider an experience which is common to us all, and which may serve as a fitting analogy or template at various points in my talk. You’re shopping in a department store before Christmas, browsing from place to place to find just the right gift for a loved one. Your attention is clearly focused on your task. Consequently you don’t hear the holiday music that’s coming through the speakers above you. Then suddenly our attention unwittingly and smoothly shifts and you hear the music which yields transient but pleasant emotions. Just as quickly you return again to your search for a gift. This background music gently enters and departs over and over again. We don’t concern ourselves with why it is there. But of course there is a strategic reason it is there: to bring pleasure and induce you to buy the store’s merchandise. I’ll be coming back to that phrase from time to time as I proceed.

My second point is that there are two vital components that come into play in public life whenever people face off over matters that have aroused them intensely. The one has to do with the wide range of facts that must be considered. The other has to do with the convictional values and deep concerns that drive the conversation from both sides. Both facts and values, however we may agree or disagree about them, are crucial and must be weighed in context as people

aspire towards conflict resolution and struggle for ways of moving forward that will promote the common good in their communities, their nation, and in the larger web of life in which we are embedded, upon which we utterly depend, and with which we are inextricably bound in the story of life itself.

Quite obviously our chosen topic and the constraints of time won't allow a thorough focus on the complex array of facts, known or unknown, about frac sand mining. The same is true of the spectrum of values which engender the concerns that people feel so deeply about. I will highlight some facts which I think are especially noteworthy, and some values of moral relevance which I believe deserve our attention.

My third point is that moral considerations will be an abiding theme through my talk, sometimes candid and explicit, and other times embedded and implicit. Further, when we think, speak and act publically in matters we believe are morally significant and carry moral consequences, we do so with varying levels of self-awareness. I elaborate on this with the following three statements. First, there are things about ourselves about which we are clearly aware and we are clear and transparent in disclosing them to others, voluntarily or when asked to do so. Second, there are things about ourselves of which we are aware, but which we may be reluctant to share with others, perhaps for private reasons known only to ourselves. Third, there are things about ourselves of which we are not aware, and consequently we are both unable and tacitly unwilling to disclose them.

Our minds are astonishingly complex and operate with amazing and sometimes unwieldy fluidity from moment to moment, to promote our sense of well being and deal effectively with a countless array of things that are part and

parcel of living a life. A cardinal task of the mind is to defend us from danger and to protect our sense of self-adequacy. To do this our minds use defenses which do not result from conscious, willful choice, but operate automatically. Some of us use defenses which are effective, efficient, and promote healthy self-esteem and mutually satisfying relationships with others. Others of us are not so fortunate and operate with defenses which don't serve us well. If truth be told, we are all a blend of both as we strive to make our way in the world. The key factor which makes all the difference is how self-aware we are.

Now to that third level – those things about ourselves of which we are not aware, and consequently we are both unable and tacitly unwilling to disclose. This is the background music which is always playing which can make for unhappiness, strained relationships with others, and regrets about all manner of things. An example is our world views, that is, those deeply entrenched perceptions, attitudes and beliefs that determine how we think, feel and act, including equally entrenched premises that give rise to them, about which we may have no clue. Michael Shemer, who is an American science writer, historian of science, and a columnist for Scientific American, says this about our world views: “There is nothing more important, yet paradoxically most of our conflicts in life stem from these entrenched, subliminal and unrecognized world-view differences.” Here's my point: The less we are attuned to the background music going on, the more we are at risk of behaviors that hurt rather than help amidst high stakes debate and community conflicts.

Indeed how we speak and act with one another in the midst of disruptive social change, where anxieties run high and passions run deep, is a critical moral issue. This puts high

demands upon us. It requires that we manage our feelings however intensely we feel them. It requires that we think with clarity; earnestly seek the facts that are presently known; speak with sincere respect for our listeners; and act with a tinge of modesty and restraint, remembering that going gently with one another doesn't mean weakness. Quite to the contrary, this is how we dignify ourselves and others as moral agents in the world.

So the question is: How do we talk to one another in the midst of our differences, when things are felt deeply and passionately? This question bears upon our personal and social identities, our social relations and our conversations amidst our ideological divides and moral maps for living in the world. When you and I speak morally, we had better be aware of the risks, the risks of presumption and egoism which, when blended with a kind-of naivete, especially about oneself, can so frequently lead to a spirit of self-righteousness. When we claim the moral high ground for our opinions in a manner that denigrates those who have a different point of view, we succumb to the snare of unhealthy judgments which derail the possibility of productive dialogue and problem solving for the common good. I think we all know what that's about – we've seen it in others and we have seen it in ourselves. And sadly, we see it all too frequently in Washington, D. C.

But further, it's not just egoism and self-righteousness that implies risks. It also concerns the ulterior and masked motivations that trigger a wide spectrum of speech lacking clarity, transparency and integrity, or a range of behaviors that may be morally dubious. If we wish to aspire to the highest and best of which we are capable in the high stakes collision that frac sand mining has brought to our communities, then how we speak and listen is morally

significant and must be a prime ingredient in our community initiatives.

Indeed the background music is always playing, calling us to vigilant self-awareness. The music is within us and around us, carrying the risk of sabotage of our most noble dreams and moral strivings.

Now more directly to our topic – frac sand mining . Communities like Houston County and Winneshiek County in Northeast Iowa where I live, have only recently found themselves faced with issues and questions about frac sand mining that nobody could have anticipated. Our counties are part of a larger regional area comprising Southwestern Wisconsin, Southeastern Minnesota, and Northeast Iowa, which contain huge deposits of a unique kind of sand of extremely ancient geological origin. Crystalline silica sand is pure quartz, extremely dense, almost perfectly round, uniform in size, and only recently has become a strategic commodity in huge and insatiable demand by the energy industry.

Why is this so? Just a few years ago the fossil fuel industry developed and is now harnessing an unprecedented new technology called hydraulic fracking or hydro fracking. This involves a horizontal drilling process to extract previously inaccessible natural gas and oil from shale bedrock miles below the earth's surface. The indispensable key to this new technology is mined silica sand, a proppant which, with water and chemicals called flocculants, are driven under enormous pressure into the bedrock, causing fractures which releases natural gas and oil.<sup>1</sup>

Strange as it may sound, it is our huge deposits of this sand which explains what is happening across the landscapes of our region, and especially Wisconsin where frac sand mining first took off with a vengeance. Namely, the frenzied construction of open-pit sand mines; the huge trucks which rumble down our country roads and highways; the processing facilities which wash, sift and separate out the sand from sediment; the holding ponds which presumably allow the potentially toxic chemicals to settle to the bottom; and the transfer stations which ship the sand to hundreds of thousands of well sites across our nation.

This new phenomenon is inserting itself into our rural communities and our cherished landscapes. In some instances it has radically altered people's accustomed informal and collegial ties with one another, causing disruption and unrest. Lots of people are stirred up and dismayed over what is happening to their communities. They are terribly concerned over the short- and long-term impacts of mining.

Here is a quick list of just a few of the serious concerns that legitimately worry people:

Mining's threats to air quality; to children's long-term health; to community cohesion; to roads and bridges; to traffic; to property values; to landscapes; to ground water aquifers; to drinking water in our wells; to animals and plants; to tourism; to recreational fishing; and to over-all fairness and the right to live in an environment that promotes the quality of life for all.

Because of time constraints, I focus on just three of them, and then will allude briefly to the economic benefits/costs ratio of frac sand mining.

First, the health risks from freshly fractured crystalline silica sand, and its causal relationship to perilous medical conditions like silicosis and lung cancer, as well as chronic obstructive pulmonary disease and auto-immune disorders, among others. Researchers have known for decades that ongoing exposure to the dust from silica sand is a causal agent in these medical maladies.<sup>2</sup> But there is little conclusive information about the danger of “ambient” or “fugitive” dust, microscopic particles invisible to the naked eye which escape into the air and with down-wind enter people’s lungs. Researchers simply don’t know the public exposure limit nor do they as yet have a method for monitoring it.

Second, silica sand mining may result in potentially polluting impacts on surface and ground-water aquifers, depending on whether deep sub-surface rock overlying the aquifer can be an effective barrier to contamination. With regard to surface water, it is important to note that several spills from holding ponds have occurred in Wisconsin in which waste water or sediment containing potentially dangerous chemicals have washed over surrounding land, usually triggered by heavy rains and flooding. Right now the impacts of ground water discharge are being investigated by the Wisconsin Department of Geology and Natural History, a five-year study in Chippewa County.

Third, there is the use of chemicals in washing and processing sand. Processing plants use from 4,000 to 6,500 gallons of water per minute to move and wash the mined

material. Aquifers cannot meet this demand, so plants reuse water by adding chemicals called flocculants as in waste water treatment plants. These chemicals cause sediment in murky water to bind and settle to the bottom, separating out the cleaner water from unwanted material. Then they reuse the water. The question is whether the residual chemicals constituted in the unwanted material involve the risk of potential toxicity. The point here which I think is fair to make is that experts simply don't know what happens when these are buried with mine waste or seep from holding ponds into ground water systems.

To elaborate further on the potential but hopefully unlikely impact of frac sand mining on surface and ground water aquifers. This is a matter of special relevance in Winneshiek County north and northeast of Decorah where we have karst topography. Karst is a landscape characterized by numerous caves, sinkholes, fissures and underground streams that are due to the erosion and dissolving of limestone. To mine silica sand on such landscapes would be unthinkable from what I've heard and read.<sup>3</sup>

I add briefly these few words regarding the economic benefits/costs ratio of frac sand mining. Most people who know the mining industry will likely agree that "historically, mining has rarely served as a viable basis for long-term, environmentally sustainable economic development."<sup>4</sup>

Significantly, in the course of my readings I recently came upon an essay by Thomas W. Pearson, an anthropologist at University of Wisconsin Stout, which I found especially enlightening and insightful. The essay is: "Frac Sand Mining in Wisconsin – Understanding Emerging Conflicts and Community Organizing."<sup>5</sup> Pearson has worked in the

trenches, attended numerous community meetings over an extended period of time where landowners, corporations, elected officials and activists have confronted one another in highly energized ways.

Pearson asks this searching question: “How do these partisan interests negotiate and contest the right to indelibly transform shared landscapes through mining?” He notes the sheer pace and scale of what is happening, the alarming removal of hills, bluffs and picturesque farmland. He observes how mining interests, backed invisibly and collusively by multinational corporations with unimaginable wealth at their disposal, leverage their presentations at community hearings with high-powered lawyers and technical experts. He asks: “How do local community interests negotiate in the face of this structural imbalance of power and influence (where the deck is stacked against them)? And how can citizens be strengthened in the interest of promoting local, democratic decision-making, sustaining their case for social and environmental justice, and community-based sustainable development?”

He speaks about the alluring offers of immense wealth to private land owners who stand to cash in big time amidst the new “gold rush” in sand. But it is equally true that their neighbors “are rarely pleased to learn that a large-pit mine and associated industrial activities will be located nearby.” He quotes George Gavin Bridge who remarked that “one person’s discovery may be another person’s dispossession.” And he notes how Tom Wolelz of the Wisconsin Department of Natural Resources has observed that “it’s certainly big money and big change. And if you’re not in, you’re out. So you’ve got families and neighbors that aren’t going to talk to each other for the rest of their lives, and hillsides you looked

over your whole life that are wide open. Who could have imagined it?"

Out of moral shock, outrage, dismay and grief, emotions that are perfectly understandable, some have declared that the "quick wealth thing" is tantamount to pure and simple greed.

Let's step back for a moment. I'd like to suggest that quite apart from the question whether such an accusation is correct or morally warranted, it is also a reminder to me of how the background music is always playing. That is, all of us have lodged within us bedrock assumptions and fundamental premises that determine how we view the world, other people, what is right and what is wrong, and ultimately how we behave. These constitute our moral compass.

Two points are important here. The first has to do with personal integrity. If you or I are convinced of the validity of our convictions, it is perfectly appropriate to stand up for them unflinchingly. The second is that in the context of our differences, is what we say about others helpful or hurtful? Does what we say at bottom reflect a spirit of good will? These are the ever-present moral issues that constitute our human dignity, that give peace a chance within the web of our relationships, that promote a better world.

With regard to the greed issue, I can only speak for myself. We all know that greed is pervasive in the world, and that none of us is untouched by its alluring charms and the toll it exacts on human happiness. But I am personally relieved and glad that it is not my job to arbitrate someone else's moral decisions and the consequences that ensue from them. Each of us must bear that alone. For me this is not just a matter of

having clear interpersonal boundaries with others. Morality plays into the mix here too.

Then there is the issue of property rights. One person says, “I can do with my land whatever I want, even if it creates problems for my neighbor. And what gives you the right to tell me what I can or can’t do with my land?” Now I think we must remember that private property rights are enshrined as a fundamental right in the Constitution of the United States of America. But it is also true that the rights of the natural world, of non-human living beings, and of unborn generations are not. Our Winneshiek County Protectors group feels strongly about this matter. They say that the issue is not just property rights. It is property values that play into the equation. Let me quote from a statement that is admittedly quite sharp and impassioned which the Protectors’ group has recently issued. Its title is, “Eleven Ways Frac Sand Mining Will Change Your Life.” In paragraph 11 they state:

“You say, it’s my land and I have the right to do whatever I want with it. We say, should someone have the right to lower their neighbors’ property values, expose their children to lung diseases, dry up wells? Should they have the right to chase away tourists that many depend upon for a living? Should they have the right to wreck the roads we all use and poison the water we all drink – then expect the rest of us to pay to fix the unfixable? Is not this a classic example of corporations passing on their costs to the public?”

Some may not like this incisive rhetoric. But we also need to ask if their concerns make sense and deserve a careful listening.

Now to a concluding theme which brings us back to the words of David Vasquez: “The reality of the world needs to be named, not put on hold.” My aim is to provide a larger context for our topic in the history that has shaped who we are and how we think and strive to make our way in the world. I share a story with you in just a few paragraphs.

From the vantage point of the twenty-first century, Europe in the Middle Ages was kind of a sleepy continent. Feudalism shaped daily life. The Catholic church and wealthy nobility owned most of Europe’s land mass, and permanently impoverished serfs worked the land for local consumption. Then things began to change some 500+ years ago. Feudalism went into decline, and over the next centuries Capitalism evolved as the dominant economic system. Then came the Protestant Reformation in 1517 which caused profound upheavals in both church and society. Tragically the Reformation triggered 100 years of wars and bloodshed between Catholics and Protestants which finally ended with the Treaty of Westphalia in 1648. Europe was shattered by these wars and the traumatic memory of them stamped Europe’s mind-set and history for more than 300 years. In essence, many said to one another: “From now on when we leave our homes to go into the market place of daily life we’ll leave religion behind. We’ll pursue knowledge, wealth and power independently.” Simultaneously the Enlightenment which emphasized autonomous reason, gave rise to the unbelievable achievements of modern science and technology that shape the world we live in today. In sum, these immense changes were driven by the rise in science, the nation state, the growing independence of universities, the desacralization of culture, and the dethroning of religion from its former citadels of temporal power.<sup>6</sup> Then in 1750ff. came the

Industrial Revolution which exploded due to the combined exploits of science and technology coupled with extracting fossil fuels from nature to provide the energy. Robert E. Lucas writes in Wikipedia that “for the first time in history the living standards of the masses of ordinary people have begun to undergo sustained growth...Nothing like this economic behavior is mentioned by the classical economists, even as a theoretical possibility.” We are all lucky beneficiaries of this legacy. Indeed we have created a whole new world – our world, and I suspect that none of us would want to turn the clock back to a former way of life.

But there is a dark side to all of this progress. Here is why.

- (1) Most of the earth community, especially third world nations like us, have objectified nature. We treat the natural world as mere “stuff,” to be extracted, used, and indiscriminately discarded or abandoned when we’re done with it. Why have we done this? It is not just our flawed assumption that we are the sovereign rulers of the natural world, and we can do anything with it we please in our quest for wealth and to sustain our way of life. And commensurably, that anything that gets in the way of short-term profiteering becomes an unfortunate casualty. I believe it goes deeper than that. I believe it is because we have drifted from our spiritual depth. We have severed the lines that anchor us to the mystical depth of nature. We have lost true communion with the natural world. And because we have disenchanting the natural world we have resorted to a reckless exploitation of the very thing upon which we are utterly dependent, with which we are inseparably bound, and upon which our very survival depends.

Heather Eaton puts it bluntly: “The human economy has rolled along with pathological indifference to the ecological costs.”<sup>7</sup> And since our present way of life exceeds the recharge rate of the earth’s bio-rhythms, the huge question is not What do we require of the earth, but What does nature require of us?<sup>8</sup>

- (2) We have reaped from this the “law of unintended consequences.” Right now we are witnessing a massive extinction of species not seen since 63 million years ago when a meteorite hit the earth and wiped out the dinosaurs and countless other species. There have been five previous mass extinctions of life in the history of planet earth, all of them caused by the build-up of carbon in the atmosphere. What’s different this time is we humans are the prime cause, as reflected in such things as climate change, peak oil, water scarcity, over-population, habitat destruction, loss of top soils, unsafe toxins and others. In combination their impact is even more devastating.

In May, 2013, Al Gore noted in an OpEd column<sup>9</sup> that for the first time in human history concentrations of carbon dioxide, the primary global warming pollutant, hit 400 parts per million in our planet’s atmosphere. Gore writes:

“This is a reminder that for the last 150 years, and especially over the last several decades, we have been recklessly polluting the protective sheath of atmosphere that surrounds the earth and protects the conditions that have fostered the flourishing of our civilization...Every single day we pour an additional 90 million tons of global warming pollution into the sky as if it were an open sewer...

Jim Hansen (one of the leading climatologists on the Planet) has calculated that the accumulated man-made global warming pollution in the atmosphere now traps enough extra heat energy each day to equal the energy that would be released by 400,000 Hiroshima-scale atomic bombs exploding every single day. It's a big planet, but that is a lot of energy. And it is having a destructive effect."

Folks, this is the background music playing in our world. It seems pretty compelling that what we are living through is perhaps the greatest moral crisis of our time. I think it not a stretch to say that our global world is faced with the greatest existential threat in all of human history.

- (3) What does all this mean? One thing is pretty clear. It is how we think that is at the core of our plight. There is an amusing bumper sticker which advises, "Don't believe everything you think." The prophet Jeremiah exclaimed, "The heart is devious above all else...it is perverse. Who can understand it?" (Jer. 17:9) The ethicist, Larry Rasmussen, says it well: "We can't understand the world we have and our way of life until we question our perception at its deepest levels: our underlying assumptions, common biases, and the reigning desires that drive our actions in daily and long-term historical life."

The reality of the world needs to be named, not put on hold. Does that add up to bleak despair? Is there nothing we can do but await inexorable and catastrophic suffering for unborn generations to come? If not, then what is the pathway to hope? Someone has said: "Hope is the ability to hear the

melody of the future, and faith the courage to dance to that song with one's whole being." I think this is unlikely unless we probe deeply and ask the question: Who are we? And what is the meaning of these brief and fragile lives of ours on our tiny planet dangling so exquisitely in time and endless space? Isn't that the question that dwarfs every other question?

The renowned physicist and astronomer, Carl Sagan, asked that question, then ventured these words: "For small creatures such as we, the vastness is bearable only through love."

Indeed this is where morality must come to rest, summoning us to the horizon yet to appear, where love just might – just might – find a way. Or to put it more prosaically and within the context of our national civic life, Barack Obama recently said at the 50<sup>th</sup> anniversary of the 1963 March on Washington: "The arc of the moral universe may bend toward justice, but it doesn't bend on its own. In the face of impossible odds, people who love their country can change it."

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<sup>1</sup> The word "proppant" is used because the silica sand grains prop open a crack. "Flocculants" are chemicals which help to speed the separation of unwanted material from the refined silica frac sand. This solid, bound material containing the

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flocculants is placed in holding ponds where it sinks to the bottom. The primary chemical, polyacrylamide, expedites this “binding” and separating process, but as it does so the chemical breaks down into acrylamide, a neurotoxin which, when weighing only as much as a penny, can make millions of gallons of drinking water undrinkable. Polyacrylamide is customarily used in waste water treatment plants.

<sup>2</sup> There are two types of silicosis. First acute silicosis, which adversely affects miners and other industrial workers who have direct and ongoing exposure to crystalline silica sand; and chronic silicosis, which results from low level exposures over longer periods of time.

<sup>3</sup> It is important to note that at this writing the author has just been informed that a petition submitted to the Winneshiek County Supervisors by a rural resident seeking an extensive animal confinement operation atop karst topography was rejected. The applicant appealed the decision to the Governor-appointed state Environmental Protection Commission which over-ruled the Supervisors’ decision. At this point the author does not know whether the Supervisors have further Appeal options available to them.

<sup>4</sup> A sixty seven page report entitled, “The Economic Benefits and Costs of Frac Sand Mining in West Central Wisconsin: Phase One Study – General Economic and Community Overview,” commissioned by Wisconsin Farmers Union, Wisconsin Towns Association, and Institute for Agriculture and Trade Policy, and prepared by Power Consulting, Inc. (May, 2013) came to some striking conclusions. Thus I am placing in this footnote the list of their conclusions. They write: “The promise that mining can lay the basis for prosperous, vital economies has not usually been fulfilled...This ‘economic anomaly of mining,’ the apparent contradiction between wealth creation and high wages not leading to community prosperity or often, even community survival, needs to be recognized and understood if communities are going to manage their landscapes so as to sustain and increase local economic wellbeing...We discuss six reasons for the frequent failure of mining to produce sustained prosperity. 1. Mining tends to be volatile, swinging through booms into busts. These fluctuations can be quite frequent and quite deep. This creates uncertainty about mining jobs and payroll that disrupts communities and depresses local economies. 2. Labor-saving technological change is constantly reducing the number of jobs associated with any given level of mine production. This causes an ongoing loss of jobs even when production is steady or rising. 3. Miners recognize this uncertainty about employment and choose to live away from mines, commuting long distances to work or leaving their families ‘at home’ while they temporarily re-locate to work. This leads to substantial leakage of the mining payroll out of the local community. 4. Mines tend to have limited connections with the local community, especially if the mine is located in a rural area. With limited commercial infrastructure, the local economy cannot provide the mine with either the equipment or supplies it needs and often cannot even provision the mining households. As a result, the income generated rapidly leaks out of the community. 5. Mining is very landscape intensive and has often been associated with significant air and water pollution. That environmental degradation makes mining districts unattractive locations for both homes and non-mining businesses.

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6. Mining in a variety of ways can discourage or displace other economic activities. In that sense, the economic stimulus provided by the mine is offset by the economic losses also associated with the mine.

<sup>5</sup> <http://wisconsinfracsand.blogspot.com>. Found in: Culture, Agriculture, Food and Environment 35 (1): pp. 30-40.

<sup>6</sup> This five-point encapsulation of the factors central to the dramatic changes in this period of European history was written by Rabbi Jonathan Sacks, Chief Rabbi of the United Hebrew Congregations of Great Britain and the Commonwealth, in an edition of the Los Angeles Times in 2004. I have since lost the date and page number.

<sup>7</sup> Eaton, Heather. "Reflections on Water: Ecological, Political, Economic, and Theological." Available at [http://www.nccecojustice.org/downloads/water/Reflections\\_on\\_Water.pdf](http://www.nccecojustice.org/downloads/water/Reflections_on_Water.pdf).

<sup>8</sup> This point is well made in an extensive discussion by the ethicist, Larry Rasmussen, in chapter 2 of his book *Earth Honoring Faith: Religious Ethics in a New Key*, Oxford University Press, New York, pp. 43-79.

<sup>9</sup> Reader Supported News, May 11, 2013.