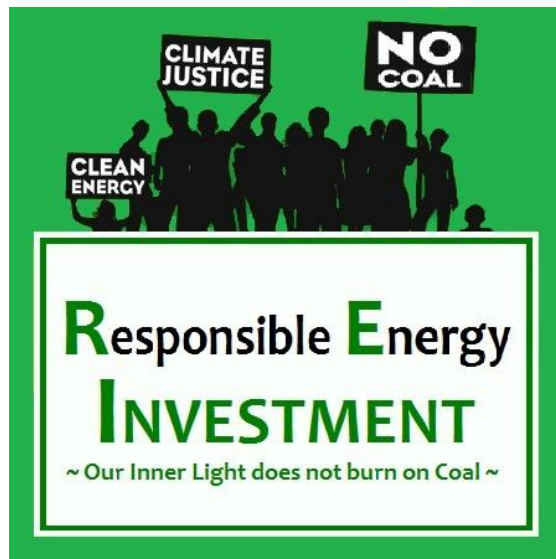


# PROPOSAL FOR FOSSIL FUEL DIVESTMENT

THE RESPONSIBLE ENERGY INVESTMENT CAMPAIGN  
("REINVESTMENT")



**Earlham College**  
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## I. INTRODUCTION

We, the students and alumni who represent the Responsible Energy Investment Campaign (REInvestment), want to begin this proposal by thanking the Socially Responsible Investment Advisory Committee (SRIAC) for their time and commitment to working with us on these important questions about Earlham College's investments. The aim of REInvestment has been to collaborate with the SRIAC in addressing Earlham's investments in dangerous and destructive forms of fossil fuel extraction. We have presented the SRIAC with different versions of a proposal for transitioning our direct holdings away from the most destructive fossil fuel extraction companies, have received feedback from the SRIAC on these proposals, and have taken this feedback under serious consideration. We now present a revised proposal, which we believe takes into consideration our dialogue with the SRIAC over the past three years.

Earlham's Quaker roots and philosophies, which inform our Principles & Practices (P&P) and distinguish us from most Liberal Arts institutions, have strongly informed REInvestment's mission. We believe that implementation of this proposal would help move Earlham's endowment more in line with its core principles.

In addition to the P&P, REInvestment has been inspired by Earlham's commitment to environmental sustainability. The college has taken many initiatives on campus in light of this commitment to sustainability, such as the new Sustainability Office, the Environmental Studies and Science programs, and the Sustainability Plan for the college. REInvestment strongly supports these initiatives and hopes that the following proposal will further Earlham's vision of becoming a leader for sustainability in higher education.

It should be noted that while previous iterations of this proposal for divestment have focused on mountaintop removal coal mining, REInvestment has shifted this proposal to include scrutiny of companies engaged in fracking and tar sands mining as well. We offer the following rationale for this shift, and for why we believe that divestment from the most extreme extractive industries is essential to adhering to our principles.

## II. OUR ASK

In light of the research and rationale provided, REInvestment would like to propose *divestment* from any company in the direct holdings of the Earlham College endowment that is engaged in:

- ❖ The extraction of coal through any means and for any purpose;
- ❖ The extraction of natural gas via high-volume horizontal hydraulic fracturing;
- ❖ The extraction of oil from bituminous tar sands.

We believe that a zero-tolerance policy is necessary for companies that participate in these destructive forms of fossil fuel extraction. Although a company may be receiving only a small portion of its revenue from any one of these activities, the harm to persons and the environment that results from these activities is unjust and immoral in any capacity. Companies found to have changed their practices could be incorporated back into the endowment if they have ceased involvement with these forms of fossil fuel extraction.

The attached list includes all the companies that REInvestment has found, in our research, to be presently engaged in coal mining, fracking, and/or tar sands extraction.

### III. RATIONALE: WHY COAL, FRACKING, AND TAR SANDS

Article II, Section B, Criteria 1 of the Socially Responsible Endowment Investments Policy for Earlham College and the Earlham Foundation (hereafter referred to as the “SRI policy”) states:

Because Earlham believes that certain behaviors are contrary to the desired order for which Friends have historically worked and witnessed, the behavior of certain companies is deemed to be outside the range of those companies in which Earlham desires to invest and derive profit. For these reasons, Earlham seeks to minimize investing in the securities of companies whose overall behavior results in **irresponsible use of the natural environment** and/or **denigrates the dignity of individuals**”.<sup>1</sup> (emphasis added)

In the following sections, we first present evidence for how coal mining, fracking, and tar sands extraction all denigrate human dignity, and then how these forms of extreme extraction constitute irresponsible use of the natural environment. Our conclusion is that, considering the evidence presented, investment in companies that utilize these practices violates the SRI policy.

#### A. Denigration of Human Dignity

What is human dignity and how can it be denigrated? One of the more established and highly-regarded bodies to have considered these questions formally is the Canadian Supreme court, as part of a larger ruling in 1991. Their decision included:

Human dignity means that an individual or group feels self-respect and self-worth. It is concerned with physical and psychological integrity and empowerment. [...] Human dignity is harmed when individuals and groups are marginalized, ignored, or devalued.<sup>2</sup>

Applying these definitions to Earlham’s current investments reveals significant discrepancies between the ethical standards that the policy intends to uphold and the some of the firms in which the endowment is invested.

##### 1. Coal

The practices of companies that are materially engaged in coal extraction and mountaintop removal (MTR) cause substantial harm to surrounding communities. An increasingly-significant body of evidence is emerging on the long-term physical and mental health impacts of living near coal extraction, with the general consensus that these impacts are negative and severe:

- ❖ A study from WVU’s Department of Health Policy concluded that communities where MTR was practiced experienced significantly more cases of major depression than non-mining communities, even after adjusted for socioeconomic, educational, and other covariates.<sup>3</sup>
- ❖ A 2004 study by Michael Hendryx, a public health researcher at IU Bloomington, concluded that living in a “coal mining area” had a much larger impact on mortality rates than smoking, obesity, or living below

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<sup>1</sup> Earlham College, “Socially Responsible Endowment Investments Policy for Earlham College and the Earlham Foundation.”

<sup>2</sup> Law v. Canada (Minister of Employment and Immigration), 1 SCR 497 (1999).

<sup>3</sup> Hendryx and Innes-Wimsatt, “Increased Risk of Depression for People Living in Coal Mining Areas of Central Appalachia.”

the poverty line, *after* adjusting for other causes of mortality.<sup>4</sup>

- ❖ A follow-up to the 2004 study compared the effect of three categories – living in an MTR community, smoking, and being obese – on a variety of self-reported illnesses, including cancer, hypertension, coronary heart disease, stroke, heart attack, and having five or more symptoms simultaneously. After adjusting for covariates, living in an MTR community resulted in more reported illnesses than the other two risk factors *in every category*.<sup>5</sup>

It is worth noting that the scope of these studies may appear limited; however, this is not necessarily an indication that such results are non-replicable in other coal-mining regions. Most scholars believe that the lack of additional researchers and areas of research – particularly in the western part of the country, such as Wyoming – can be attributed to the fierce opposition mounted by the coal industry mounts and the lack of institutions that financially compensate for such research.

The well-documented health risks associated with living in or near coal mining areas are not the only impact on human dignity for which the coal industry should be held responsible. A second major area of impact is the combination of economic stagnation, financial dependence, and destitute poverty that have accompanied the coal industry's presence in several different areas, although most noticeably in the Appalachian region spanning West Virginia, Virginia, Kentucky, and Tennessee. One of the most fervent arguments for the continued support of coal mining is that it provides jobs in economically-depressed areas. At face value, this is true: the coal industry provides jobs in areas where there are few other occupational opportunities. However, many economists argue that poor economic prospects in mining communities are *caused by*, not alleviated by, the presence of coal companies.<sup>6,7</sup> A 2002 study by economists Jason Shogren and Todd Cherry estimated the true cost of coal, accounting for all market externalities – including social costs, environmental impact, and loss of property value, among many others, but withholding the effects of climate change – to be \$160/ton. When adjusting for climate change, that figure climbed to \$190/ton. As of March 21st, 2014, the per ton market price of the most highly prized anthracite coal from northern Appalachia was \$67.90.<sup>8</sup> This disparity between real cost and market cost exemplifies the shocking lack of regard for well-being of human health and dignity demonstrated by the coal industry.

Additionally, the number of jobs produced by the coal industry has been steadily declining since the early 20th century as increasingly automated machinery reduces the need for a large number of miners. According to the National Mining Association, there were 700,000 in the United States in 1923, but that number had fallen to just over 80,000 by 2007, and it continues to decline.<sup>9</sup> In contrast, the number of people employed in the wind energy sector broke 80,000 in 2008, surpassing coal for the first time, and a study conducted by the American Wind Energy Association projected that with progressive energy policies the wind energy industry could support as many as 500,000 jobs by 2030.<sup>10</sup> When prosperous alternatives exist, there is no excuse for institutions like Earlham College to continue supporting coal.

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<sup>4</sup> Hendryx and Ahern, "Relations Between Health Indicators and Residential Proximity to Coal Mining in West Virginia."

<sup>5</sup> Hendryx, "Personal and Family Health in Rural Areas of Kentucky With and Without Mountaintop Coal Mining."

<sup>6</sup> Frankel, Jeffrey, "The Natural Resource Curse: A Survey of Diagnoses and Some Prescriptions."

<sup>7</sup> Douglas, Stratford and Anne Walker, "Coal Mining and the Resource Curse in the Eastern United States."

<sup>8</sup> Energy Information Administration, "Coal News and Markets."

<sup>9</sup> National Mining Association, "Coal Workforce."

<sup>10</sup> American Wind Energy Association, "What Does Wind Power Mean for America?"

## 2. Fracking

High-volume horizontal hydraulic fracturing – also called “hydrofracking” or simply “fracking” – is a method of natural gas extraction in which hydraulically-pressurized water and chemicals are injected into horizontal wells to unsettle pockets of gas in underground shale formations. Although, like coal, natural gas discoveries have been heralded as a solution to economic crises, growing evidence shows the devastating impacts it can have on communities:

- ❖ Although the fracking boom has created jobs, the number of jobs created has often been greatly exaggerated.<sup>11</sup> In many cases, the jobs that are created by fracking go to out-of-state workers, leaving local communities to bear the costs without the economic benefits.<sup>12</sup>
- ❖ Fracking is known to increase the frequency of earthquakes, especially during the wastewater disposal process, where used fracking fluid is injected into deep wells.<sup>13,14</sup> In the central U.S., earthquakes have increased dramatically as fracking has spread across the country, with the average of 21 quakes per year measured between 1967-2000 increasing to 300 per year from 2010-2012.<sup>15</sup>
- ❖ Noisy drill rigs lower property values<sup>16</sup> and hurt local tourism industries. Economic benefits tend to be short-lived while taxpayers are saddled with long-term costs, as was found in a 2008 study that showed that counties that have relied on fossil fuel extraction are worse off economically in the long-term.<sup>17</sup>

But most alarming are fracking’s potential and documented effects on public health, especially because of water contamination. Fracking requires approximately 5 million gallons of freshwater per well – water that is combined with hundreds of toxic chemicals before it is pumped into the ground. Many of the chemicals used in fracking fluid are not publicly known because they are legally classified as “trade secrets”; however, of the known chemicals used, over 650 are known or suspected carcinogens, hazardous air pollutants, and/or regulated under the Safe Drinking Water Act.<sup>18</sup> Many have been shown to damage nervous, immune, and cardiovascular systems, disrupt the endocrine system, and irritate the skin, eye, and respiratory system.<sup>19</sup> Included among these known agents are benzene, lead, ethanol, and formaldehyde.<sup>20</sup> Although most of the fracking fluid remains underground, some of it flows back to the surface, where it is left in open pits or is sprayed into the atmosphere prior to being permanently disposed of. At this stage, the chemical-laden water can contaminate underground and surface drinking water.<sup>21</sup> As a result, elevated methane levels in drinking water sources near fracking sites have been documented.<sup>22</sup>

In addition to water contamination, fracking also contributes to air pollution. In numerous sites where fracking has boomed, residents have complained about poor air quality, including particulate smog, ground-level ozone, carcinogens, and neurotoxins.<sup>23,24</sup> A 2012 study confirmed these concerns, finding that residents living within a

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<sup>11</sup> Food and Water Watch, “Exposing the Oil and Gas Industry’s False Jobs Promise for Shale Gas Development”

<sup>12</sup> Jorgensen, “Fracking Nonsense: The Job Myth of Gas Drilling.”

<sup>13</sup> Ellsworth, “Injection-Induced Earthquakes.”

<sup>14</sup> Mooney, “Why the Scientific Case Against Fracking Keeps Getting Stronger.”

<sup>15</sup> Keranen *et al.*, “Sharp Increase in Central Oklahoma Seismicity Since 2008 Induced by Massive Wastewater Injection.”

<sup>16</sup> Resource Media, “Fracking the American Dream: Drilling Decreases Property Value.”

<sup>17</sup> Dutzik, Ridglington, and Rumpler, “The Costs of Fracking.”

<sup>18</sup> Waxman, Markey, and DeGette, “Chemicals Used in Hydraulic Fracturing.”

<sup>19</sup> Colborn *et al.*, “Natural Gas Operations from a Public Health Perspective.”

<sup>20</sup> Waxman, Markey, and DeGette, “Chemicals Used in Hydraulic Fracturing.”

<sup>21</sup> Drouin, “As Fracking Booms, Growing Concerns About Wastewater.”

<sup>22</sup> Darrach, *et al.*, “Noble Gases Identify the Mechanisms of Fugitive Gas Contamination in Drinking-Water Wells Overlying the Marcellus and Barnett Shales.”

<sup>23</sup> Gruver, “Wyoming’s Fracking Boom Comes with Smog Attached.”

<sup>24</sup> Burnett, “Health Issues Follow Natural Gas Drilling in Texas.”

half-mile of a drill rig were exposed to numerous airborne toxins and carcinogens and were at a significantly higher risk for cancer than residents living further away from rigs.<sup>25</sup>

Although aggressive marketing by industry has presented fracking in the U.S. as a beneficial process with acceptable risks, REInvestment strongly disagrees with this assessment. The risks from fracking are in no way acceptable – and numerous European countries have already come to this conclusion, including France and Bulgaria, which have already banned it within their borders.<sup>26</sup> To ignore the detrimental effects of fracking or to consider them secondary to our monetary endeavors is to demonstrate a fundamental disregard for the dignity of those affected by this industry.

### 3. Tar Sands

Tar sands – also called oil sands or bituminous sands – are deposits of sand and clay mixed with heavy crude oil or a tarry substance called bitumen. Because the oil in tar sands is impure, extreme measures are taken to extract it. Though the energy and economic potential of the oil sands reserves are immense, current extractive practices violate any code of conduct that takes impact on local persons into account. Most egregiously affected are the First Nations communities of Northern Alberta: in fact, Canada’s largest financial institution, The Royal Bank of Canada, conditionally withdrew support from tar sands extraction in 2010 citing an observed lack of “free, prior, and informed consent” from the First Nations people.<sup>27</sup> The process of tar-sands extraction has led to numerous public health concerns, many of which are disproportionately felt by indigenous communities:

- ❖ The chemical agent often used in the process of mixing and moving bitumen is highly volatile and evaporates quickly, polluting the air with highly toxic and/or carcinogenic chemicals.
- ❖ Numerous bitumen spills, caused by pipeline ruptures, have contaminated miles of rivers, caused adverse health impacts for hundreds of people, and led to cleanup costs of over \$1 billion.
- ❖ Tar sands bitumen contains up to 11 times more sulfur than conventional crude oil, which leads to noxious odors as well as air pollution.<sup>28</sup>

But perhaps the gravest public health threat from tar sands is the vast amount of toxic wastewater generated. Wastewater from tar sands operations has been shown to leak into groundwater, and of the chemicals known to be present in this wastewater, many are human carcinogens.<sup>29</sup> Heavy metals in the water supply have led to human and wildlife health problems, as well as an increase in genetic mutations and defects in fish and other aquatic life – a poor omen for further human health developments.<sup>30</sup> A 2009 study of the First Nations community of Fort Chipewyan found statistically-significant increases in rates leukemia, soft tissue sarcoma, blood and lymphatic system cancers, and biliary tract cancers between 1995 and 2006. The overall incidence and mortality from cancer also rose significantly as a result of exposure to waste from tar-sands extraction.<sup>31</sup>

For the past six years, the Beaver Lake Cree Nation (BLCN) have been working tirelessly to stop the extraction of oil sands from their native lands in Alberta. In a Statement of Claim that the BLCN submitted against the Canadian government in 2008, it was claimed that the process of extraction on their lands denies them rights

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<sup>25</sup> McKenzie, *et al.* “Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources.”

<sup>26</sup> Bran, “Bulgaria Becomes Second State to Impose Ban on Shale-Gas Exploration.”

<sup>27</sup> BankTrack, “Dodgy Deal: Canadian Tar Sands.”

<sup>28</sup> Bailey and Droitsch, “Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel.”

<sup>29</sup> Bailey and Droitsch, “Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel.”

<sup>30</sup> Kurek, *et al.*, “Legacy of a Half Century of Athabasca Oil Sands Development Recorded by Lake Ecosystems.”

<sup>31</sup> Alberta Cancer Board, “Cancer Incidence in Fort Chipewyan, Alberta 1995-2006 .”



guaranteed by the Constitution of Canada – including the right to hunt, fish, and live peacefully on their land without interference from the government. The Statement says that extraction practices are "compromising the ecological, cultural, and spiritual integrity of the Core Traditional Territory," and that oil sands extraction has "adversely [affected] the ability of the Plaintiffs to exercise their Treaty Rights". This claim is evidenced by contaminated lake water, which lowers fish populations; disrupted migratory patterns of local wildlife; and the destruction and fragmentation of wildlife habitat.<sup>32</sup> The process of extraction, therefore, is harming the BLCN's ability to hunt, fish, trap, and live peaceably on land that has been promised to them since 1982. Thus, it is clear that the practice of tar sands extraction results in marginalization of the voices of First Nations people who were supposedly guaranteed their rights to clean water, air, and land. Continuing to support the extraction of tar sands supports the destruction of indigenous land and the silencing of their voices.

When Earlham College retains financial ties with this destructive and violent practice, a neutral or passive stance is neither in line with our principles nor truthful to the written policy that guides our ethical investment structure. If Earlham strives to uphold its commitment to nonviolence, global engagement, and respect for the dignity of individuals, we must end participation in the institutional violence created through profiting from this type of extraction.

## **B. Irresponsible Use of the Natural Environment**

What constitutes an irresponsible use of the natural environment? We can begin by considering what constitutes responsible, sustainable use of the natural environment, as defined by the United States Environmental Protection Agency (EPA):

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations.<sup>33</sup>

Therefore, irresponsible use creates conditions of conflict between humans and the natural environment that impede and limit the social, economic, and other requirements of present and future generations.

### **1. Coal**

There are many methods of coal mining that are destructive to the environment, but several methods that have often been considered the most egregiously destructive are grouped under the category of strip mining. This broad term includes open cast mining, surface mining, and mountaintop removal (MTR). All of these involve scraping away at the earth to reach the underlying coal. This destroys the ecosystems above coal sites, leading to the fragmentation and destruction of wildlife habitat. Moreover, by removing the plants that keep soil in place, strip mining results in soil erosion, which pollutes nearby surface water and destroys agricultural fields.<sup>34</sup> A second concern is the contamination of surface and groundwater, which impacts the natural environment as much as it does human communities. Acids and heavy metals like zinc, sodium, selenium, and sulfates are leading to less diverse distributions of aquatic species, as only the most pollutant-tolerant are able to survive.<sup>35</sup> Though fish,

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<sup>32</sup> Beaver Lake Cree Nation vs. Canada (May 14, 2008), Edmonton, Alberta (0803-06718).

<sup>33</sup> U.S. Environmental Protection Agency, "What Is Sustainability?"

<sup>34</sup> Greenpeace International, "Mining Impacts."

<sup>35</sup> Environmental Protection Agency, "Mid-Atlantic Mountaintop Mining."



flora, fauna, and land-dwelling animals are not spared from the effects, the impact on aquatic macroinvertebrates is especially alarming, both because of their distinct role in regulating ecosystems because they are positioned near the base of the food chain and because of the large number of species endemic to the region.<sup>36</sup>

Of these mining methods, MTR has been cited the most by REInvestment in the past because it has often been named among the most destructive practices. In MTR, the top several hundred feet of mountaintop surface rock (called “overburden” in the industry) is removed by blasting, often with charges set 600-800 feet into the ground. The debris is then dumped into nearby valleys. MTR has completely buried 724 miles of streams in the Central Appalachian region and impacted at least 1,200 miles more.<sup>37</sup> In this area, many of the world’s oldest mountains and most biodiverse temperate forests have been replaced by a topographically flattened, poisoned, gray scrub – land very often unusable even in commercial development.<sup>38,39</sup>

Strip mining, which notoriously takes place at Black Mesa, a plateau located on Hopi and Navajo reservations in the U.S. Southwest, also has catastrophic environmental consequences. A 2006 report from the National Resource Defense Council acknowledged that strip mining in Black Mesa has led to severe deterioration and contamination of the area’s watershed. Strip mining has led to a decrease in spring water levels of more than a hundred feet. Up to 120,000 gallons of water are pumped *per hour* for coal processing. Up to one million gallons of water contaminated by maintenance processes can be disposed randomly, ending up in a “rancher’s stockpond” or simply “onto the ground”. The aquifer in Black Mesa has stood as a vital resource as well as a foundation for the Hopi and Navajo tradition, but coal waste has leaked into groundwater sources thanks to failed pipelines. The NRDC remarks that “impacts on the springs of Black Mesa and, by extension, on Hopi tradition, are not quickly reversible”.<sup>40</sup>

## 2. Fracking

The process of hydraulic fracturing carries a number of environmental consequences, chief among them the damage done to topsoil and water supply. Although the high ratio of water and sand to toxic chemicals used in the process – about 99.5% to 0.5% – may make the injected solutions seem innocuous, it is far from benign when scale and recovery are considered. Each individual hydrofrack uses between 3-8 million gallons of water, of which 15-20% is recovered. That amounts to 15,000-40,000 gallons of chemical waste generated in every fracturing, with 12,000-34,000 gallons of chemical waste that is never recovered from the ground.<sup>41</sup> At this scale, the heavy metals, liquid hydrocarbons, carcinogens, neurotoxins, and CNS depressants entering groundwater have significant effects.

Although this wastewater is supposed to be stored deep enough underground that the water table would not be affected, evidence has emerged showing that there are multiple pathways through which wastewater can return to the surface and contaminate groundwater.<sup>42</sup> Because groundwater contamination leads to contamination of topsoils, fracking poses a significant threat to agriculture. Livestock are also endangered by toxic pollutants, and there are many documented cases of livestock experiencing severe health problems after accidental exposure to fracking chemicals or close proximity to fracking operations. A risk to agriculture is a risk not only to rural economies, but to our food supply.<sup>43</sup>

<sup>36</sup> Pond, *et al.*, "Downstream Effects of Mountaintop Coal Mining"

<sup>37</sup> Perks, "Appalachian Heartbreak."

<sup>38</sup> National Park Service, "Great Smoky Mountains: Nature and Science."

<sup>39</sup> Karem, Kalinski, and Hancher, "Settlement of Mine Spoil Fill from Water Infiltration: A Case Study in Eastern Kentucky."

<sup>40</sup> Grabiell, "Drawdown: An Update on Groundwater Mining on Black Mesa."

<sup>41</sup> Ohio Department of Natural Resources, "Wastewater (Flowback) from Hydraulic Fracturing."

<sup>42</sup> Myers, "Potential Contaminant Pathways from Hydraulically Fractured Shale to Aquifers."

<sup>43</sup> Bamberger and Oswald, "Impacts of Gas Drilling on Human and Animal Health."

### 3. Tar Sands

Tar sands extraction poses significant threats to the natural ecosystems as well; as with coal and natural gas, these impacts are most acutely felt in terms of air pollution and groundwater contamination. The extraction process is incredibly water-intensive, with the main method of extraction employed in Alberta's fields, known as Steam-Assisted Gravity Drainage, generating between 2.5 and 4 barrels of wastewater for every barrel of oil produced.<sup>44</sup> This toxic waste – called "tailings" in the industry – are stored in vast open lakes, or "tailing ponds," along the Athabasca River. In 2010, tailing ponds in Alberta covered an area of nearly 45,000 acres.<sup>45</sup> Leakages from tailing ponds enter both the river and local groundwater at an estimated rate of 3 million gallons per day, according to industry reports.<sup>46,47</sup> Tailings contain heavy metals and other carcinogens that pose serious threats to flora, fish, and wildlife.<sup>48,49</sup> Researchers analyzing lake sediments have also found evidence of increasing amounts of methylmercury, a potent neurotoxin responsible linked to developmental and behavior problems, in Alberta's waterways. Because methylmercury is known to accumulate in the food chain, its presence poses a significant risk especially for people and animals that eat a lot of fish; unfortunately, fish is a staple in the diet for many inhabitants of Alberta, including wildlife and human residents.<sup>50</sup>

### 4. A Note on Climate Change

Scientists around the world now almost unanimously agree that humans are driving climate change primarily through the burning of fossil fuels. There has been a great deal of discussion in the scientific community over how much warming humans can and should cause. James Hansen, NASA's leading climatologist, determined that to keep the planet within an acceptable temperature range, future burning of fossil fuels should be limited to 500 GtC, while other sources suggest 1000 GtC. The warming to date, which has totaled 0.8C – the outer limit of what Hansen deems acceptable to avoid climate catastrophe – is already having significant effects. Although individual weather events cannot be characterized as a direct result of climate change, the general increase in extreme weather events, precipitation, drought, and high temperatures that has occurred in recent decades is a result of climate change.<sup>51</sup> Though there were an equal number of record high and record low temperatures throughout the 1950s, the first decade of the 21st century has seen twice as many record high temperatures as record lows.<sup>52</sup> Moreover, the past 3 decades have been the warmest decades since 1850 and each has been increasingly warmer than its antecedent.<sup>53</sup> Even to reach the more lenient goal of 1000 GtC, most currently-known fossil fuel reserves will need to be kept in the ground.<sup>54</sup>

The urgency of this issue is being felt around the world, by political actors as well as scientists. A series of climate conferences, for example, are being organized by the U.N. with hopes of binding agreements among U.N. member states to create policies combating climate change by 2015. According to U.S. Secretary-General Ban Ki-moon, "Member states have agreed that we cannot exceed 2°C above pre-industrial temperatures... Beyond this limit, science indicates that we may face dangerous and irreversible climate disruption."<sup>55</sup> The types of fossil fuels

<sup>44</sup> Price, "11 Million Litres a Day: the Tar Sands' Leaking Legacy."

<sup>45</sup> Simieritsch, Obad, and Dyer, "Tailings Plan Review."

<sup>46</sup> Price, "11 Million Litres a Day: the Tar Sands' Leaking Legacy."

<sup>47</sup> Frank *et al.*, "Profiling Oil Sands Mixtures from Industrial Developments and Natural Groundwaters for Source Identification."

<sup>48</sup> Bailey and Droitsch, "Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel."

<sup>49</sup> Kurek, *et al.*, "Legacy of a Half Century of Athabasca Oil Sands Development Recorded by Lake Ecosystems."

<sup>50</sup> Bailey and Droitsch, "Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel."

<sup>51</sup> Stocker *et al.*, "Climate Change 2013: The Physical Science Basis."

<sup>52</sup> Raloff, "Extremely Bad Weather: Studies Start Linking Climate Change to Current Events."

<sup>53</sup> Stocker *et al.*, "Climate Change 2013: The Physical Science Basis."

<sup>54</sup> Hansen *et al.*, "Assessing 'Dangerous Climate Change': Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature."

<sup>55</sup> Ki-moon, "Opening Remarks at Press Conference to Launch the Sustainable Development Solutions Network Deep Decarbonization Pathway Project Report."

described in this proposal contribute significantly to that disruption:

**Coal** has historically been the largest contributor to atmospheric carbon, responsible for over 40% of all CO<sup>2</sup> emissions.<sup>56</sup> Global coal usage is still increasing at an accelerating rate: the rate of increase in fossil fuel emissions rose from 1.5% per year from 1980-2000 to 3% per year from 2000-2012, largely thanks to construction of new coal-fired power plants.<sup>57</sup> Despite the fact that the U.S. Department of Energy has spent \$6.5 billion over the past three decades attempting to develop “clean coal” technologies like carbon capture and sequestration (CCS), these technologies are not available anywhere near the scale that would be necessary to combat climate change - and many doubt their technical feasibility. If we used CCS to pump as much CO<sup>2</sup> underground as the volume of oil we are currently extracting, we would still be capturing only a tenth of the current global emissions.<sup>58</sup> Considering how quickly we must take action on climate change, relying on CCS is simply a fantasy.

**Natural gas** is often hailed as a “bridge fuel” because it processes fewer CO<sup>2</sup> emissions than coal and oil and would theoretically buy time and allow for a slower transition to renewable energy. However, this bridge fuel argument does not take into account the methane released during the lifetime of a well. A 2011 Cornell University study found that 3.6% to 7.9% of methane gas from fracking escapes into the atmosphere, which is significant considering that methane is 80-90 times more potent as a greenhouse gas than CO<sup>2</sup>. In fact, the study concluded that this quantity of escaped methane actually means that fracked natural gas is *more dangerous for climate change than oil and coal*.<sup>59,60</sup>

The consequences for climate of releasing the carbon in the Alberta **tar sands** are perhaps the least-contested of the examples provided. While the concentration of carbon dioxide in the atmosphere has risen from 280 parts per million to 393 in the last 150 years – already well above the estimated safe limit of 350 ppm – Alberta’s tar sands alone contain enough carbon to add a staggering 120 ppm. This is also equal to twice the amount of CO<sub>2</sub> emitted by global oil use in the entirety of human history.<sup>61</sup> In addition, because the tar sands extraction process includes burning natural gas to melt out the tar and separate the crude, the extraction process itself produces 20% more CO<sub>2</sub> emissions than conventional oil drilling.<sup>62</sup>

As a future-directed institution, Earlham has a responsibility to act on climate and to ensure that its investments are in line with its visions and values on this critical issue.

## IV. RATIONALE: WHY DIVESTMENT IS OUR TACTIC

Divestment serves a dual purpose: it is a tactic for change as well as a mechanism for living out our own moral values. For Earlham College, it would demonstrate that we are an institution unwilling to profit from companies whose actions denigrate human dignity and constitute irresponsible use of the natural environment. As part of a national movement, it calls negative attention to fossil fuel companies through mass stigmatization. In both cases, divestment promotes change that is necessary to our collective well-being – as members of the Earlham college community and as inhabitants of Earth.

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<sup>56</sup> Nihjuis, “Can Coal Ever Be Clean?”

<sup>57</sup> Hansen *et al.*, “Assessing ‘Dangerous Climate Change’: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature.”

<sup>58</sup> Nihjuis, “Can Coal Ever Be Clean?”

<sup>59</sup> Brandt *et al.*, “Methane Leaks from North American Natural Gas Systems.”

<sup>60</sup> Howarth, Santoro, and Ingraffea, “Methane and the Greenhouse-Gas Footprint of Natural Gas from Shale Formations.”

<sup>61</sup> Hansen, “Game Over for the Climate.”

<sup>62</sup> Brandt, “Why Tar Sands Oil Is More Polluting and Why it Matters.”

At Earlham, consideration of divestment has opened space to question how we as a community approach investments, including the question of whether or not we have an obligation to balance financial security with ethics. In fact, Earlham has taken a stance on this question already: the college's SRI policy states, "Earlham reaffirms the values and testimonies of the Religious Society of Friends by declining to invest in certain companies [and] hopes that this practical expression of values acting in conjunction with others of a similar mind may promote the common good". In the SRIAC's letter to REInvestment of December 6, 2013, the question was raised as to if "consensus has emerged in the wider Earlham community about whether Earlham's investments are a proper tool with which to address the overall concern [of fossil fuel investments]"; however, seeing as the existing SRI policy acknowledges responsible investing as a mechanism for "practical expression of values," REInvestment can only conclude that consensus on this question has, in fact, been reached among relevant policymaking members of the Earlham community. It thus follows that divestment is an appropriate method for Earlham to make a moral statement on issues we care about.

Regarding the secondary purpose of divestment – as a tactic in a movement to effect positive change – history has shown that divestment movements can be effective in creating social pressure and legislation against unethical business practices. Attention to corporate involvement in the South Africa, for example, deterred companies abroad from continuing to conduct business with the oppressive apartheid government and thus pushed the nation to reform its politics.<sup>63</sup> The fossil fuel divestment movement's power is in its ability to raise awareness about ethical concerns regarding fossil fuel production and to stigmatize harmful practices. This movement has had far-reaching effects in the three years since it started: as of September 14, 2014, over 650 individuals and 181 institutions and governments worldwide have committed to divestment from fossil fuels, including 14 institutions of higher education and a number of Quaker meetings. These institutions and individuals represent an aggregate \$50 of wealth.<sup>64</sup>

In mentioning the national divestment movement, we wish to recognize that the SRIAC has raised concerns in the past about using Earlham's endowment for "political engagement on short-term issues," and has stated that the purpose of the SRI is, rather, "to focus on enduring principles". Far from short-term issues, environmental injustice and climate change have long histories and significant, long-term, future consequences. REInvestment considers divestment to be one tactic in what must be a long-term response to these daunting problems. Furthermore, we see the distinction between engaging in politics and living out our principles to be a false dichotomy: Earlham College does not exist in isolation from the world, and there are times when living our values requires us to take stances which some may interpret as being politically-motivated. This is a case in which the personal and the political are fundamentally inextricable. We pose the inverse question: As people continue to suffer from extreme extraction and climate predictions become realities, how can we let the relatively short-term goals and narrow interests of our institution cloud our considerations of such a far-reaching, global issue?

The companies we have selected in this proposal have long been subjects of protest by consumers, activist groups, and the many people and communities whose daily lives are affected by their practices – but in spite of persistent public dissent, they have not demonstrated a significant shift towards renewable resources or less harmful practices. By maintaining our investments in fossil fuels, we remain as an institution tied to companies that have actively worked against the kind of positive change that Earlham aspires to effect in the world. These investments can yield nothing but short-term financial gains, as prosperity does not lie in continuous, long-term fossil fuel consumption. It is becoming more and more apparent that such investments do not align with Earlham's vision of

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<sup>63</sup> Ansar, Caldecott, and Tillbury, "Stranded Assets and the Fossil Fuel Divestment Campaign"

<sup>64</sup> Arabella Investors, "Measuring the Global Divestment Movement."

building a peaceful and sustainable future.

As a widely-respected academic institution, we at Earlham have significant potential for leveraging our privilege against this injustice. Divestment from fossil fuels would demonstrate an enactment of global engagement as more than simply a college slogan. It would demonstrate one way an academic institution can engage with the world, and would mark us as a leader in ethics and sustainability in higher education.

## **A. Comments on Shareholder Advocacy**

REInvestment does not advocate for the use of shareholder advocacy as part of our campaign. We fear that focusing on the lengthy process of advocacy would distract from the immediate need to correct violations of Earlham's investment policy – a correction that would best be made by divesting from energy companies whose actions go against the principles of Earlham College. Committing to shareholder advocacy is an extensive process, and not something REInvestment members feels prepared to undertake, especially in addition to being full-time students. These considerations aside, we believe, considering the minimal power that an institution of our size holds among shareholders of some of the largest publicly-traded firms,<sup>65</sup> that shareholder advocacy is not the best strategy for effecting positive change. If the SRIAC wishes to undertake a shareholder advocacy campaign for fossil fuel-related companies not included in this proposal – for instance, coal- or gas-burning utility companies – REInvestment would approve of that action, but would not be contributing our efforts to that campaign.

## **B. Divestment in Earlham's Sustainability Vision**

In the SRIAC's letter to REInvestment of December 6, 2013, the committee wrote, "We hope that a sharp focus on divestment will not undermine continuing discovery on what we can do as a college to reduce our dependence on coal and other fossil fuels." This is a concern that has been raised on several occasions, along with the related question of whether it would be hypocritical for Earlham to pursue divestment from fossil fuels while the campus continues to run on energy generated from fossil fuel energy sources. These concerns are legitimate, but REInvestment believes they are misguided and should not become an obstacle to compliance with the Earlham SRI policy.

Fossil fuel divestment is simply one of many tactics that Earlham administration, departments, and students are pursuing in our collective quest to become a more environmentally-sustainable campus. REInvestment values all of these efforts, and we have always openly acknowledged that divestment is but one of myriad tactics that should be used to combat injustices perpetrated by the fossil fuel industry. In fact, many REInvestment members have actively worked on other campaigns or projects related to sustainability at Earlham and beyond – including working or volunteering with Earlham's Sustainability Office, participating in other student-led initiatives or extracurricular clubs, conducting academic research, and working or interning with environmental groups off-campus. But that should not be of concern to the SRIAC in considering whether or not to pursue fossil fuel divestment.

REInvestment approached the SRIAC with this proposal because it falls under the committee's purview:

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<sup>65</sup> Ansar, Caldecott, and Tillbury, "Stranded Assets and the Fossil Fuel Divestment Campaign"

according to the SRI policy, the charge of the SRIAC includes "monitoring securities held by investment managers in separately managed accounts" and "maintaining a list of excluded companies".<sup>66</sup> In their letter to REInvestment, the SRIAC also made clear the limitations of the committee's purview, reminding us that "SRIAC is not able to direct funds from the endowment to be used for capital or operating projects". While other groups on campus – such as the Sustainability Office and the Sustainability Advisory Committee – are actively pursuing different tactics, it is clear to us based on these two documents that the SRIAC's function primarily concerns investments. Therefore, considering that reducing campus fossil fuel usage does not fall under the SRIAC's purview, we too hope that a focus on divestment within this campaign will not distract from ongoing sustainability efforts elsewhere on campus. While we appreciate that the SRIAC embraces the same systems-thinking, multi-tactic approach to environmental issues that we do, we implore the committee to take action on environmental issues where such action falls within the committee's charge.

On the other hand, choosing to retain investments in fossil fuel companies is in opposition to Earlham's sustainability goals – and it could even be said that not pursuing fossil fuel divestment while we are so actively pursuing other environmental measures is a conflict of actions. At present, Earlham has little choice about using fossil fuel energy: in 2012, 87% of the electricity in the U.S. came from nonrenewable resources, while only 12% came from renewable sources.<sup>67</sup> Divestment is a tactic that will complement Earlham's other sustainability actions by helping to effect a transition to a renewable energy economy. REInvestment is encouraged to see the college taking other concrete steps in support of renewable energy infrastructure. We hope it will be a plausible option in the near future for Earlham to completely divest our energy usage from fossil fuels along with our endowment.

### C. The Financial Case for Divestment

Numerous studies on the economic risk of fossil fuel divestment show that divestment from fossil fuel companies does not, in fact, carry the increased risk that some have feared. One study by Aperio LLC, an investment management firm, found that divesting industry-wide – meaning divestment from all fossil fuels, using the Russell 3000 as a starting point – added a 0.5978% tracking error and resulted in an absolute portfolio risk increase of 0.0101%.<sup>68</sup> It is worth noting that while the Russell 3000 uses a larger and therefore more diverse list of firms than the S&P 500 does, the proportion of companies tied to energy is comparable between the two indexes. A different study, conducted by Impax Asset Management, also supported the case for divestment, finding that all four of the divestment approaches it studied *improved* returns for their investors.<sup>69</sup> These studies are not anomalies, but are consistent with numerous other studies on fossil fuel divestment that have found divestment to carry negligible risk.<sup>70,71,72</sup>

The uncertainty of future legislation on fossil fuels adds an additional incentive for divestment. Fossil fuel companies presently hold in their reserves five times the amount of fossil fuels that even the most conservative climate scientists deem permissible to burn – 2,795 GtC versus the 565 GtC that would keep the Earth within the 2°C warming limit. Thus, it is likely that fossil fuel stock prices are being artificially inflated by a “carbon bubble,” which will burst when countries act on climate change and stop companies from burning the majority of

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<sup>66</sup> Earlham College, Socially Responsible Endowment Investments Policy for Earlham College and the Earlham Foundation.

<sup>67</sup> U.S. Energy Information Administration, “AEO2014 Early Release Overview.”

<sup>68</sup> Geddes, “Do the Investment Math: Building a Carbon-Free Portfolio.”

<sup>69</sup> Impax Asset Management, “Beyond Fossil Fuels: The Investment Case for Fossil Fuel Divestment.”

<sup>70</sup> Hoffman, Williams, and Gee, “White Paper: Sustainable Asset Reallocation.”

<sup>71</sup> Kern, Blanchman, and Cronin, “Fossil Fuel Divestment: Risks and Opportunities.”

<sup>72</sup> The Australia Institute, “Climate Proofing Your Investments: Moving Funds out of Fossil Fuels.”



their reserves.<sup>73</sup> Direct regulation on carbon, indirect regulation through pollution or water usage control, mandates on renewable energy, and new efficiency standards could all limit the amount of fossil fuels able to be burned<sup>74</sup> – a point acknowledged even by the oil and gas giant Shell.<sup>75</sup> Such a scenario would leave these companies' fossil fuel assets stranded and lead to a rapid decline in the value of their stock.<sup>76</sup> The risk of a carbon bubble is not calculated into the studies above, but is certainly worth considering when assessing the financial impact of divestment.

## V. RATIONALE: WHY EARLHAM

According to the Earlham College Mission Statement, Earlham emphasizes "pursuit of truth, wherever that pursuit leads; lack of coercion, letting the evidence lead that search; respect for the consciences of others; openness to new truth and therefore the willingness to search; veracity, rigorous integrity in dealing with the facts; application of what is known to improving our world".<sup>77</sup> These are heavy and important calls to make of students who are preparing to be leaders and innovators in today's global society. It is important to remember that conflict will arise when Earlham community members – be they students or others – come together in pursuit of truth and rigorous integrity in dealing with facts. Having extensively researched the negative environmental impacts and social costs of fossil fuel extraction, we, the students and alumni of REInvestment, see it as our imperative to continue pressuring Earlham to respond accordingly – even in the face of conflict that will inevitably arise from confronting these difficult questions.

The Mission Statement also states, "At Earlham College this education is carried on with a concern for the world in which we live and for improving human society. The College strives to educate morally sensitive leaders for future generations." We have taken this mission to heart. We strive to be morally sensitive leaders – the kind of students who are active in administrative decisions, who put forth effort to engage their schoolmates in adopting the Earlham P&P, and who have the desire to be leaders and to take stands on moral issues of global importance.

Those who practice the Quaker faith may recognize this mission as reminiscent of John Woolman, a prominent Quaker and early abolitionist, who traveled from New Jersey to North Carolina to speak out against slavery. Woolman led his life striving to pursue peace and justice in all aspects. He sought to lead through example, with his life as a witness, so that those around him could see when actions they took went against their faith. About a Meeting of Friends he was attempting to bring into the abolitionist cause, Woolman wrote that "living in the pure truth, and acting conscientiously towards those people in their education and otherwise, they might be instrumental in helping forward a work so exceedingly necessary".<sup>78</sup> Through our power as a highly regarded Quaker institution, we at Earlham too should strive to live according to our principles and to lead by example.

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<sup>73</sup> Leaton *et al.*, "Unburnable Carbon 2013: Wasted Capital and Stranded Assets."

<sup>74</sup> Gore and Blood, "The Coming Carbon Asset Bubble."

<sup>75</sup> Shell International BV. "New Lens Scenarios: A Shift in Perspective for a World in Transition."

<sup>76</sup> Gore and Blood, "The Coming Carbon Asset Bubble."

<sup>77</sup> Earlham College Mission Statement

<sup>78</sup> Woolman, *The Journal of John Woolman*.



## VI. CONCLUSION

We, the students and alumni who represent the REInvestment Campaign, implore the SRIAC to act on Earlham College's principles and turn them into practices for future students, staff, faculty, and administrations to follow. The research conducted to create this proposal has only reaffirmed our belief in our mission: Earlham College must make explicit moves away from investment in these most extreme practices of fossil fuel extraction.

Earlham's investment in fossil fuel extraction is a moral issue. As demonstrated in this proposal, we have identified the types of extraction of fossil fuels that we consider the most harmful agents of climate change and the greatest threats to health, security, and dignity. By investing in companies that thrive off such destruction, Earlham is supporting unethical and unsustainable behavior, and continued investment in these companies is socially irresponsible.

We believe that implementation of this proposal would strengthen Earlham's position as a morally conscious educational institution and a leader in sustainability. Its implementation would not harm Earlham's image, but rather would constitute an adherence to the existing, morally-conscious SRI policy. It would promote change that is necessary for the wellbeing of all living things. For an institution that promotes social justice and engaged student leadership, such an action would only reinforce that Earlham College puts its principles into practice.

Once again, we wish to thank the members of the SRIAC for the time they commit to the betterment of our college, and for their serious consideration of this proposal. It is our shared vision to create an investment portfolio that truly aligns itself with the principles and practices to which Earlham aspires.

Our inner light does not burn on fossil fuels.

### The Responsible Energy Investment Campaign

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## APPENDIX: LIST OF EXTREME EXTRACTION COMPANIES

Anadarko Petroleum	APC
Apache Corporation	APA
Baker Hughes	BHI
Bill Barrett Corporation	BBG
Black Hills Corporation	BKH
Cabot Oil & Gas Corporation	COG
Cameron International Corporation	CAM
Carrizo Oil & Gas	CRZO
Chesapeake Energy	CHK
Chevron	CVX
ConocoPhillips	COP
CONSOL Energy	CNX
Denbury Resources, Inc.	DNR
Devon Energy	DVN
EOG Resources	EOG
EQT Corporation	EQT
Exxon Mobil	XOM
Halliburton	HAL
Helmerich & Payne, Inc.	HP
Hess Corporation	HES
Kodiak Oil & Gas Corporation	KOG
Marathon Oil Corporation	MRO
Murphy Oil Corporation	MUR
Nabors Industries Ltd.	NBR
Newfield Exploration Company	NFX
Noble Corporation	NE
Noble Energy, Inc.	NBL
Occidental Petroleum ("Oxy")	OXY
Peabody Energy	BTU
Pioneer Natural Resources Co.	PXD
QEP Resources, Inc.	QEP
Range Resources Corporation	RRC
Southwestern Energy	SWN
Williams Companies	WMB



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