

To U.S. Oil Sands' Strategic Partners and Investors:

I am writing to you to share my concerns regarding potential investment in U.S Oil Sands Inc. In my opinion, U.S. Oil Sands represents a very risky investment for the following reasons:

- Because tar sands mining is an essentially labor-intensive operation, it has a narrow profit margin;
- Because U.S. Oil Sands' technology relies so heavily on D-Limonene, a finite commodity, the project does not scale; and
- Because the project is environmentally sensitive, it is tremendously vulnerable to resistance from the community and the attendant delay and expense that entails--and that's not including the high costs of continuing legal battles to begin and expand operations.

Narrow Profit Margin

Tar sands projects are essentially large mining operations. Therefore, they are very labor- and energy-intensive. This results in a lower profit margin than conventional oil production enjoys. The narrow margin makes tar sands especially vulnerable to fluctuations in production costs. One large vulnerability that is unique to this project is its reliance on D-Limonene as a solvent. D-Limonene is a finite commodity that already has a market. Extensive use of D-Limonene in an energy project will inevitably drive the price up to the point where the minimal profit margin is driven out of the operation. In fact, the entire viability of the project can be jeopardized by a sudden unavailability of D-Limonene as the result of bad weather or a blight. A disease in Florida's orange groves has caused the industry to lose over \$4.5 billion since 2006.¹ Given the low profit margins and the unique risks, a tar sands play is not a viable investment vehicle unless it can scale to a level comparable to the Alberta tar sands project. For the reasons set forth below, this project cannot scale.

Scalability

It's doubtful that the Utah tar sands deposits represent a scalable opportunity for two reasons:

First, there is not enough available water to run an industrial process like this on a large scale, despite the fact that U.S. Oil Sands' technology is designed to minimize water usage.

Second, the D-Limonene that U.S. Oil Sands claims will solve water issues comes from oranges, meaning there is a finite amount of solvent that can be produced each year. There is already a market for this solvent, and if it is used for tar sands extraction on a large scale, the price will

likely skyrocket.² This creates the anomalous situation that, the larger this project scales, the higher the production costs will be and the smaller the profit margin. In addition, once the upper limit of D-Limonene production is reached, further increase in the size of the project will be impossible.

Popular Resistance

In addition to the cost and scalability factors mentioned above, public resistance adds a significant cost to this project that seriously threatens its viability. People across the country are engaging in increasingly escalated forms of civil disobedience to halt tar sands projects, including U.S. Oil Sands' operation. In July, roughly 100 activists halted road construction and activity in U.S. Oil Sands' test pit at PR Springs, blockading equipment for a full day.³ This took place after a direct action training camp that focused on building skills to carry out such actions, which was reportedly attended by people from many neighboring states as well as Utah locals.⁴ In Texas, Oklahoma, Nebraska, and South Dakota, people have been halting or preparing to halt construction of the Keystone XL pipeline. In Texas, people maintained a tree-sit blockade for 85 days.^{5,6} In addition to incurring the financial burden of project delays, TransCanada had to hire multiple on-site security guards to work 24/7 merely to prevent more activists from scaling the trees in the path of their bulldozers. These efforts caused serious and expensive setbacks to the pipeline's construction, which would be substantially magnified if TransCanada were a start-up operation rather than a multinational corporation.

I have included links to several media reports concerning significant actions directed at U.S. Oil Sands' proposed tar sand strip mine at PR Spring in Utah. The following are some of the main concerns motivating the activists:

- Uranium, present in the tar sands deposits at PR Spring, would be mobilized by the strip mining, concentrated via upgrading, and released at refineries near Salt Lake City. As downwinders to nuclear testing operations in Nevada, Utahns will surely rebel against additional uranium exposures.⁷
- Water sources, already scarce in Utah, are anticipated to be very unreliable in the future. Since Utah's tar sands are not water-wetted as in Canada, extracting bitumen in the U.S. will prove more difficult than in a wet environment.⁸
- Ambient ozone pollution levels in the Uintah Basin are above the federal non-attainment levels, and state leaders are predicting federal intervention in air quality permitting. Controls in the Basin are likely to be implemented in the near future.⁹

Expert assessments indicating that this tar sands project is not sustainable and actually presents a serious threat to the people of Utah and the 40 million downstream water users of the Colorado

River is a serious motivating factor to the environmental community—and it will likely cause them to create serious push back against the project, similar to what TransCanada has experienced. It is thus more than likely that actions by environmental interests will continue to be directed at this project, with many out-of-state activists mobilizing alongside Utah locals to shut down U.S. Oil Sands' mine.¹⁰ The types of expenses incurred by TransCanada due to this resistance would pose a severe economic risk to an early-stage startup like U.S. Oil Sands in the form of dramatically shortening its runway to get to the point of viability.

Conclusion

A tar sands project in the U.S. is already a speculative and high-risk venture even without considering the potential for further work stoppages similar to those that have already occurred at PR Spring. In my opinion, the risks associated with this project that is still in its proof-of-concept phase, combined with its narrow profit margin, lack of scalability, and low pay-out potential, make this a very unfavorable investment.

Sincerely,

Links and citations

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2. FBC Chemical Corp., "Why Is the D-Limonene Price So Volatile?" <http://www.fbcchem.com/prices/why-is-the-d-limonene-price-so-volatile-2/>
3. Peaceful Uprising, "Nonviolent Direct Action Shuts Down First U.S. Tar Sands Mine in Utah," August 2, 2013. <http://www.peacefuluprising.org/CCACvideo>
4. Utah Canyon Country Action Camp: <http://uneditedmedia.com/utah-canyon-country-action-camp>
5. Dan Frosch, "Last Ditch Bid in Texas to Try to Stop Oil Pipeline," New York Times. http://www.nytimes.com/2012/10/13/us/protesters-gather-at-keystone-xl-site-in-texas.html?_r=0
6. Tar Sands Blockade, "Over 50 Enter Tree Blockade in Defiance of Police Repression," Oct. 15, 2013. <http://www.tarsandsblockade.org/9th-action/>
7. W.J. Hail, Jr., "Reconnaissance for Uranium in Asphalt- Bearing Rocks in the Western United States: Contributions to the Geology of Uranium." Geological Survey Bulletin 1046-E.
8. J. T. Bartis et al., "Oil Shale Development in the United States: Prospects and Policy Issues," Rand Corporation, MG-414-NETL, 2005.
9. Judy Fahys, "Smog Isn't Just an Urban Problem in Utah," The Salt Lake Tribune, 11 May 2013. <http://www.sltrib.com/sltrib/news/56293858-78/utah-smog-ozone-pollution.html.csp>
10. Peaceful Uprising, "Tar Sands Ecoterrorists Can't Hide from the Resistance—Climate Justice Will Be Served!" May 8, 2013. <http://www.peacefuluprising.org/ecoterrorists-20130508>

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