



***Comments of Tar Sands Action Southern California and
a Coalition of 35 California Organizations,
to the State Department on the Supplemental Environmental Impact
Statement for the TransCanada Keystone XL Pipeline***

April 16, 2013

United States Department of State
Bureau of Oceans and International Environmental and Scientific Affairs
2201 C Street NW, Room 2726
Washington, DC 20520
Submitted via Electronic Mail to: keystonecomments@state.gov

Attention: Ms. Genevieve Walker, NEPA Contact & Project Manager

RE: Comments on the Draft Supplemental EIS on the Proposed Keystone XL Pipeline (EIS No. 20130056)

Dear Ms. Walker:

Tar Sands Action Southern California and 35 environmentally concerned organizations, businesses, and political representatives thank the US State Department for the opportunity to comment on this Draft Supplemental Environmental Impact Statement (SEIS). We make up a coalition of organizations from all over Southern California expressing grave concerns with the draft review of this project. We suggest, on the basis of impacts to land, water, air and global climate, the Keystone XL Pipeline is not in the US national interest and should be rejected. The following are our comments on the draft SEIS.

Summary of Comments

Keystone XL Growth Inducing Impacts on Canadian Tar Sands. Canada’s tar sands industry has an ambitious long-term growth strategy inextricably linked to oil demand from the United States. This growth is projected to cause a doubling of the industry’s climate emissions within the next decade and would be the central reason why Canada fails to meet its carbon reduction targets. To achieve this growth the tar sands industry relies on large export pipelines to transport bitumen to the United States. If the tar sands industry is to realize its 5 million barrels per day production goal by 2030, all existing pipeline proposals will need to be built.

Impacts to Land, Water, Air, and Cultural Resources. The Canadian tar sands (the Western Canadian Sedimentary Basin) have been called the “most environmentally destructive project on earth,” with good reason. Extracting tar sands bitumen from under the Northern Boreal forests of Alberta, Canada requires huge amounts of energy and water. It has cleared vast tracts of forest, left scars on the land that are visible from space and threatened the health and livelihoods of indigenous First Nations communities across the region. The impact to land, water, air and cultural resources from the Keystone XL-enabled tar sands region of Alberta would be significant, unavoidable and irreversible.

Climate Implications of the Keystone XL. Full exploitation of the tar sands would create a grave threat to the global climate. The Environmental Protection Agency (EPA) estimates that by pipelining 830,000 bpd of tar sands instead of conventional crude, Keystone XL will increase annual U.S. CO2 emissions by up to 27 million metric tons – the impact of adding about 5 million cars on the road. Additionally, tar sands processing produces a by-product called petroleum-coke, which can be used in coal-fired power plants and will release significant amounts of greenhouse gases that must be accounted for in this analysis.

Risks from Spills, Accidents, Blowouts from Tar Sands Pipelines. Transportation through pipelines also poses a significant, unavoidable, and potentially irreversible impact from spills to major rivers, streams and the Ogallala Aquifer, which support significant proportions of US agricultural products and drinking water for six US states.

We request that more attention to impacts be assessed on the issues of Tar Sands Market Analysis, Greenhouse Gas Emissions, Impacts to the Global Climate, and Impacts to Water Resources from Potential Releases.

Market Analysis: Growth-Inducing Implications of the Keystone XL on Canadian Tar Sands Mining

Canada's tar sands industry is growing quickly, with plans to nearly triple production from 1.8 to 5.2 million barrels a day by 2030. To realize this substantial growth, pipelines to export markets are essential. TransCanada's Keystone XL pipeline from the Western Canadian Sedimentary Basin to a new market on the U.S. Gulf Coast is the most significant proposal awaiting approval.

If built, Keystone XL will be a key driver for tar sands growth, according to a study by the [Pembina Institute](#). Other alternatives to ship tar sands to the west or east coast of Canada will, for the short to medium term, play a less dominant role in accelerating development of the Western Canadian Sedimentary Basin. These other proposals are smaller in pipeline capacity than Keystone XL, are in the very early stages of development, or face major public opposition.

Alternative Tar Sands Bitumen Transportation Options

Of the two proposed west coast pipelines, Kinder Morgan's TransMountain Expansion has not yet submitted an application to the government, and Enbridge's Northern Gateway is over a year and a half away from a federal government decision. The decision on Northern Gateway will likely be contested in courts for many years by concerned British Columbians and legally powerful First Nations groups. Even oil industry commentators and federal cabinet ministers who historically have been boosters of west coast pipelines have become less vocal in their support in recent months.

Major west-to-east tar sands pipelines are only at the conceptual stage. TransCanada's nascent proposal to retrofit and reverse an underutilized natural gas pipeline to carry 625,000 per day of bitumen to Eastern Canada is years away from application. While Phase 1 of the relatively smaller 240,000 barrel per day Enbridge Line 9 Reversal project has received federal approval, another segment of this project and a proposed capacity increase to 300,000 barrels per day still needs government approval. Regardless, the Line 9 Reversal project is significantly smaller than the proposed 830,000 barrel per day Keystone XL pipeline. This Enbridge project may also connect to a Montreal to Portland, Maine pipeline, for export to the United States. However, this proposal is already seeing growing public opposition in New England.

Tar Sands Via Rail. The SEIS makes several flawed assumptions according to NRDC, including 1) an unrealistically low cost for transporting tar sands by rail from Alberta to Texas, 2) an inaccurate estimate of tar sands production costs and 3) an unrealistic assumption that tar sands production costs will not increase with rising labor, material and energy prices. The SEIS analysis relies on statistics that pertain to rail transport of shale oil from North Dakota but that do not apply to Alberta's tar sands.

In both the 2011 and 2013 environmental reviews, the analysis noted that rail capacity can be expanded in relatively short time spans – taking at most a year to expand existing facilities. Nearly two years since State’s 2011 prediction, there has been little evidence of a North Dakota trajectory for tar sands to the Gulf by rail.

The reason why rail isn’t a feasible alternative to Keystone XL is that it is simply too expensive to support tar sands expansion. The SEIS’s conclusions to the contrary are due to substantially underestimating the cost of rail transport. In 2011, the EIS assumed that rail to the Gulf would cost producers \$9 to \$12.50 per barrel. Now it is estimated it will cost about \$15.50 a barrel.

In reality, the only tar sands producers which are successfully getting crude from Alberta to the Gulf via rail and barge are doing so at a cost of over \$30 per barrel. The SEIS’s rail prices are estimates – and the fact that producers are currently paying twice as much to move their product to the Gulf suggests State is significantly underestimate the cost of rail from Alberta.

The most recent spill in Minnesota is testament to the inherent risks of shipping tar sands oil via rail. It should not be considered a viable alternative.

Regardless of whether other tar sands transport options move ahead, approval of Keystone XL will lead to substantial expansion of tar sands production and therefore an increase in global greenhouse gas emissions. Moreover, growth in production will have a significant, unavoidable and irreversible impact to the land, water, air and cultural resources of the WCSB of Alberta, Canada, directly tied to construction of the Keystone XL.

Keystone Determines Tar Sands Growth. Besides operating and capital cost increases and depressed market price for tar sands crude, pipelines are a key determinant of tar sands growth. Current constraints in pipeline capacity will reach critical levels as early as 2016, substantially limiting industry expansion plans according to a new report by CIBC World Markets Inc. TD, a major Canadian financial institution, has also recently warned investors that oil sands production growth cannot occur without additional pipelines out of Western Canada.

This tightening bottleneck is the result of an unanticipated boom in shale oil output in the United States which is competing for space in pipelines transporting Canada’s growing tar sands production. Consequently, this lack of pipeline capacity for tar sands has depressed regional oil prices. The energy research firm Wood Mackenzie predicts that these low oil prices could ultimately threaten the commercial viability of tar sands projects. As a result, any additional pipeline capacity from Alberta will directly enable additional tar sands growth.

Keystone XL-Dependent Greenhouse Gas Emissions

According to the Pembina Institute, filling Keystone XL with tar sands bitumen will cause a 36 per cent increase from current tar sands production, for which the higher upstream emissions alone will be equivalent to the annual emissions from 6.3 coal-fired power plants or over 4.6 million cars. This value will be higher when the additional emissions from upgrading and refining in the U.S. are considered.

Tar Sands More GHG-Intensive

In a comparison of production emissions only, the per-barrel greenhouse gas emissions associated with tar sands extraction and upgrading are estimated to be 220 to 350 per cent (3.2 to 4.5 times) higher than conventional crude oil produced in Canada or the United States (DOE/NETL 2009). Full life cycle (well-to-wheels) calculations look at all processes, from extraction up to and including combustion (which accounts for around 80 per cent of total emissions). Looking at this scope, a comparison of tar sands emissions intensities from seven data sources to the EPA's 2005 U.S. baseline showed that average values for tar sands emissions range from eight to 37 per cent higher than the baseline (NRDC, 2010).

In this context, the project emissions from Keystone XL are significant. A U.S. Environmental Protection Agency analysis found that Keystone XL would cause up to 27.6 Mt in additional greenhouse gas emissions compared to existing sources of crude oil.

In the absence of a credible plan for responsible development of the tar sands, including mitigating GHG emissions growth to a level that would allow Canada to meet its international climate commitments, the United States should not go ahead with the proposed Keystone XL pipeline. It would send a clear signal to tar sands producers, the Canadian government and financial markets that the current high carbon content of tar sands has become a liability for future tar sands growth and the long-term competitiveness of the U.S. economy.

Pet-Coke

As bad as these impacts already are, the SEIS analysis of the impacts of tar sands fail to account for a byproduct of the process that is a major source of climate change causing carbon emissions: petroleum coke – known as pet-coke. Pet-coke is the coal hiding in North America's tar sands oil boom.

Pet-coke is like coal, but dirtier. Pet-coke looks and acts like coal, but it has even higher carbon emissions than already carbon-intensive coal. According to [Oil Change International](#):

- On a per-unit of energy basis pet-coke emits 5 to 10 percent more carbon dioxide than coal.

- A ton of pet-coke yields on average 53.6 percent more CO₂ than a ton of coal.
- The proven tar sands reserves of Canada will yield roughly 5 billion tons of pet-coke – enough to fully fuel 111 U.S. coal plants to 2050.
- Because it is considered a refinery byproduct, pet-coke emissions are not included in most assessments of the climate impact of tar sands or conventional oil production and consumption. Thus the climate impact of oil production is being consistently undercounted.

Pet-coke in the tar sands is turning American refineries into coal factories.

- There is 24 percent more CO₂ embedded in a barrel of tar sands bitumen than in a barrel of light oil.
- 15 to 30 percent of a barrel of tar sands bitumen can end up as pet-coke, depending on the upgrading and refining process used.
- Of 134 operating U.S. refineries in 2012, 59 are equipped to produce pet-coke.
- U.S. refineries produced over 61.5 million tons of pet-coke in 2011 – enough to fuel 50 average U.S. coal plants each year.
- In 2011, over 60 percent of U.S pet-coke production was exported.

Keystone XL will fuel five coal plants and thus emit 13% more CO₂ than the U.S. State Department has previously considered.

- Nine of the refineries close to the southern terminus of Keystone XL have nearly 30 percent of U.S. pet-coke production capacity, over 50,000 tons a day.
- The pet-coke produced from the Keystone XL pipeline would fuel 5 coal plants and produce 16.6 million metric tons of CO₂ each year.
- These pet-coke emissions have been excluded from State Department emissions estimates for the Keystone XL pipeline.
- Including these emissions raises the total annual emissions of the pipeline by 13% above the State Department’s calculations.

Cheap pet-coke helps the coal industry.

- As a refinery byproduct, pet-coke is “priced to move”, selling at roughly a 25 percent discount to conventional coal.
- Rising pet-coke production associated with tar sands and heavy oil production is helping to make coal fired power generation dirtier and cheaper – globally.
- From January 2011 to September 2012, the United States exported over 8.6 million tons of pet-coke to China, most of which was likely burnt in coal-fired power plants.

To date, the impacts of pet-coke on the local and global environment have not been considered by regulatory bodies in assessing the impacts of the tar sands. Pet-coke’s full impacts must be considered by the European Union in its debate on the Fuel Quality Directive, by the U.S. State Department in its consideration of the climate impacts of the Keystone XL pipeline, and by Canadian, American, and European governments in tar sands policies across the board.

Increasing pet-coke use is a clear result of the increasing production of tar sands bitumen. Pet-coke is a seldom discussed yet highly important aspect of the full impacts of tar sands production. Factored into the equation, pet-coke puts another strong nail in the coffin of any rational argument for the further exploitation of the tar sands.

Water Resources and Potential Releases or Spills

As stated, the proposed Project would impact water-bodies across the states of Montana, South Dakota, and Nebraska, and would cross approximately 1,073 water-bodies, including 56 perennial rivers and streams, as well as approximately 25 miles of mapped floodplains, and the shallow Ogallala Aquifer. The revised pipeline route proposed by TransCanada technically avoids the boundaries of the ecologically-sensitive Sandhills, as determined by the Nebraska Department of Environmental Quality. Yet it would cut through areas ecologically similar to the Sandhills, including Northern Holt County.

According to John S. Stansbury, a civil engineering professor at the University of Nebraska-Lincoln, the worst-case scenarios for potential spills arising from Keystone XL have been grossly underestimated by TransCanada in the Draft SEIS.

A major spill from the proposed Keystone XL tar sands pipeline on the Platte River in Nebraska could spill 5.9 million gallons of toxic, corrosive tar sands oil and spread pollutants such as carcinogenic benzene in excess of federal health standards hundreds of miles downstream, contaminating drinking water for hundreds of thousands of people as far south as Kansas City, Mo. Even a small, undetected leak from an underground rupture of the pipeline in the vicinity of the Ogallala Aquifer in Nebraska could pollute almost 5 billion gallons of groundwater with benzene at concentrations exceeding safe drinking water levels – enough water to form a plume 15 miles long, posing serious health threats to anyone using the aquifer for drinking water or agriculture. And a worst-case spill at the pipeline’s crossing of the Missouri or Yellowstone Rivers in Montana could spill well over 5 million gallons of tar sands oil, contaminating drinking and recreational water in North Dakota with harmful levels of benzene and other chemicals.

However, in comparison to the methods the company used to calculate worst-case scenarios for the existing Keystone I pipeline, to which the XL would connect, this independent analysis found:

- While TransCanada estimates that the Keystone XL will have 11 significant spills (more than 50 barrels of crude oil) over 50 years, a more realistic assessment is 91 significant spills over the pipeline’s operational lifetime.
- TransCanada arbitrarily and improperly adjusted spill factors to produce an estimate of one major spill on the 1,673 miles of pipeline about every five years, but federal data on the

actual incidence of spills on comparable pipelines indicate a more likely average of almost two major spills per year. (The existing Keystone I pipeline has had one major spill and 11 smaller spills in its first year of operation.)

- Analysis of the time needed to shut down the pipeline shows that response to a leak at a river crossing could conservatively take more than ten times longer than the 11 minutes and 30 seconds that TransCanada assumes. (After the June 2010 spill of more than 800,000 gallons of crude oil into a tributary of the Kalamazoo River, an Enbridge tar sands pipeline – a 30 inch pipe compared to the 36-inch Keystone XL – was not completely shut down for 12 hours.)
- Realistic calculations yield worst-case spill estimates of more than 180,000 barrels (about 7.9 million gallons) in the Nebraska Sandhills above the Ogallala Aquifer, more than 160,000 barrels (about 6.9 million gallons) of crude oil at the Yellowstone River crossings, more than 140,000 barrels (about 5.9 million gallons) at the Platte River crossing and more than 120,000 barrels (about 5.2 million gallons) at the Missouri River crossing.

TransCanada's Flawed Tar Sands Bitumen Spill Assumptions

According to TransCanada, significant spills (more than 50 barrels) are expected to be very rare (0.00013 spills/year/mile, or 11 major spills over a 50-year design life). However, TransCanada made several highly questionable assumptions, including:

- TransCanada ignored historical data on almost one-fourth of pipeline spills by excluding all spills for which the cause is not known.
- TransCanada assumed, without supporting data, that Keystone XL will be constructed so well that it will have only half as many spills as existing pipelines, even though the tar sands crude to be transported through the pipeline is more likely to leak than the conventional crude in other pipelines.

One particular assumption in TransCanada's methods that Stansbury found especially flawed was the omission of spills arising from "other causes." According to Stansbury, these types of spills, which arise from unidentifiable causes, account for nearly a quarter of total spills. So by leaving them out, TransCanada derived potential spill estimates that are skewed heavily downward

Therefore, a more realistic assessment of expected frequency of significant spills, based on historical data, is 0.00109 spills per year per mile, resulting in 91 significant spills over a 50-year design life of the pipeline (including more than 12 spills from holes greater than 10 inches).

TransCanada consistently states the frequency of spills in terms of spills per year per mile. This is misleading; a more appropriate way to state the frequency would be the frequency of a spill somewhere along the length of the pipeline. Stating the spill frequency in terms of spills per mile

is comparable to acknowledging that, although some 33,000 deaths from automobile accidents occur annually in the U.S., the average annual fatality rate across 350 million people is only 0.000094; therefore, fatalities from automobile accidents are so rare as to be unimportant.

TransCanada's other major flawed assumption – again, unsupported by any data – is that in case of an accident, the Keystone XL can be shut down in 11.5 minutes. This is wildly optimistic. In the June 2010 spill on the very similar Enbridge pipeline in Michigan, the time to finally shut down the pipeline was approximately 12 hours, and during that time the pumps operated for at least two hours. Therefore, a more realistic estimate of shutdown time is two hours. When applied to a hypothetical spill at the Keystone's pumping station in Hardisty, Alberta, the difference between TransCanada's assumptions and the appropriate values is a spill of 41,504 barrels vs. one of 87,964 barrels.

Keystone XL's Impact on Low-Income Communities

Low-income communities will bear a disproportionate share of the contamination of water created by spills along the route of Keystone XL, as well as impacts to air and water as well as refinery emissions from processing dirty tar sands. The review should better evaluate which communities will be adversely impacted by Keystone XL.

Tribal Concerns

The project would also cross existing water pipeline easements that are owned and operated by the Oglala Sioux Tribe for the Mni Wiconi Project. More than \$450 million has been invested in the Mni Wiconi Project that will serve approximately 52,000 people. The tribes that will be served by the Mni Wiconi Project are therefore concerned that the water could end up being contaminated. It is our understanding that the Oglala Tribe has not given its permission to TransCanada to have the project cross over the water pipeline easements. According to 25 C.F.R. § 169.3(a), “[n]o right-of-way shall be granted over and across any tribal land, nor shall any permission to survey be issued with respect to any such lands, without the prior written consent of the tribe.”

Further, Ordinance No. 85-72 of the Oglala Sioux Tribe Oil and Gas Regulations prohibits the unauthorized transportation of oil through tribal lands. Using the water pipeline easements for the project oil would trespass on tribal and fee lands.

Summary

Thank you for your attention to these most important impacts. We request that the State Department deny this project as not in the interest of the United States on the basis of its significant impacts. The US must invest today in more sustainable energy options that will not substantially increase greenhouse gas levels and will not threaten water land, water, and air resources in the United States and/or Canada.

Respectfully Submitted,

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On Behalf of the following 35 organizations, businesses, or political representatives:

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