

THE WORLD'S DIRTIEST OIL: U.S. TAR SANDS THREATEN WEST

Tar sands are the dirtiest source of oil on Earth. This extreme source of oil is currently being mined mainly in Alberta Canada, however, oil companies are now pursuing tar sands mines in the U.S. West.

MINING TAR SANDS FOR CRUDE

Tar sands are composed of clay, sand, water, and bitumen (a heavy black hydrocarbon). Extracted bitumen can be refined into synthetic oil and other petroleum products. Bitumen cannot be pumped from the ground in its natural state, so deposits must be mined using energy-intensive extraction techniques and then separated from the sand, clay, and water. Shallow tar sands deposits can be recovered using open-pit mining techniques. In this process, massive 20-story-tall shovels strip the tar sands from the earth and load it onto the world's largest dump trucks for transport to upgraders, where hot water is used to separate the bitumen from the sand. The *in situ* method, used to extract deeper tar sand deposits, entails injecting compressed steam into a network of underground pipes to melt the bitumen out of the earth.

CLIMATE DISRUPTION

Both of these processes pose serious risks to the environment and human health. **Producing a barrel of tar sands oil generates three times more carbon emissions than producing a barrel of conventional oil.** In the United States, growing interest in tar sands development, especially in the Western states, could

increase U.S. greenhouse gas emissions from new tar sands projects from 27 to 126 million tons by 2015.¹

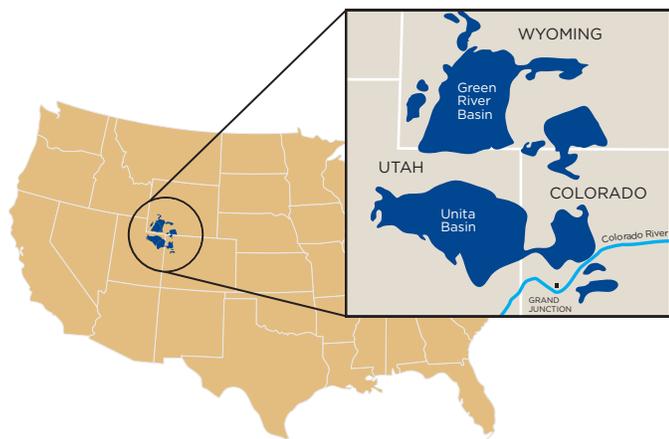
WATER QUALITY, WATER SUPPLY

Tar sands extraction is extremely water-intensive. **It takes three barrels of water to produce one barrel of oil.**² This decreases surface water flow, which can harm stream habitats for fish and other species that depend on local water supplies. Less than 10 percent of the water used by tar sands extractions can be returned to its original source, while large amounts of contaminated wastewater must be discarded³. In Albertan tar sands developments, this toxic wastewater is held in massive tailings ponds that are large enough to be seen from space.

WILDLIFE AND HUMAN HEALTH

These poisonous mining sites have harmful implications for human health and local wildlife. Local communities near tar sand sites suffer higher-than-average rates of cancer and autoimmune diseases. For example, in some areas near tar sands **the number of cases of bile duct cancer is 30 percent higher than** the national average.⁴ Tar sands developments also pose direct threats to bird populations that have historically used the area for nesting and mating – the toxic tailings ponds are





responsible for the deaths of **an estimated 58,000 to 400,000 birds.**⁵ In Alberta alone, the government has recorded the death of countless deer, moose, bear, and other mammals in the areas surrounding the tar sands developments.

WHERE, WHEN, WHO AND HOW MUCH

Although the most advanced tar sands developments are located in the Canadian province of Alberta, the United States also has large tar sands reserves, found mainly in Utah. The U.S. Geological Survey (USGS) and the U.S. Bureau of Mines estimate that the United States has 53.7 billion barrels of oil in its tar sand resources. Approximately 11 billion of these barrels are recoverable.⁶

An American company, U.S. Oil Sands, has received permits to begin construction on America's first major domestic tar sands mine in the Uinta Basin in northeast Utah. The company hopes to break ground in the summer of 2012, with oil production estimated to begin in late 2013.⁷ Executives predict the company will produce 2,000 barrels of oil a day.⁸

Although the only company currently licensed to begin construction on a tar sands project in the U.S. is U.S. Oil Sands, several additional proposals are in the works. For example, Crown Asphalt Ridge LCC has proposed an oil sands processor in Vernal, Utah.⁹ In May 2012, the company submitted permit applications to Utah's Division of Environmental Quality. These documents are currently being reviewed and are open for public comment until June 23, 2012.

REGULATING EXTREME OIL

The U.S. Bureau of Land Management published a draft programmatic environmental impact statement (PEIS) for federally administered tar sands projects

in February 2012. The draft PEIS preferred alternative would open 91,045 acres in eastern Utah to tar sands extraction. This would replace the 2008 land allocation decision that opened 2 million acres of public land to commercial oil shale leasing. The public examination and comment period for the draft PEIS ended in May 2012. The finalized version is expected to be released in October 2012.

PREVENTING A WESTERN DISASTER

Tar sands developments are already responsible for the demolition of wilderness in Canada. We cannot allow this destructive industry to begin operating in the United States. The mining and processing of tar sands will cause significant health and environmental impacts, including increased emissions of greenhouse gases, destruction of wildlife habitat, and degradation of air and water quality. Instead of investing in carbon intensive, extreme sources of oil like tar sands, we need to invest in clean energy, high-efficiency vehicles and solutions that eliminate the need for the most dangerous, highly polluting sources of oil.

ENDNOTES

- 1 Sierra Club "Background: Environmental Impacts of Tar Sands Development". <http://www.sierraclub.org/energy/factsheets/tarsands.asp>.
- 2 National Wildlife Federation (2010). "Staying Hooked on a Dirty Fuel"
- 3 Pembina Institute (2006), *Troubled Waters, Troubling Trends*, available at <http://www.pembina.org>
- 4 Chen Yigun, BMed, MSc, PhD. Cancer Incidence in Fort Chipewyan, Alberta 1955-2006, Alberta Cancer. Alberta Health Services. Alberta Cancer Board Division of Population Health and Information Surveillance, Feb. 2009. <http://www.ualberta.ca/~avnish/rls-2009-02-06-fort-chipewyan-study.pdf>
- 5 Timony, K and Lee, Peter, Does Alberta Tar Sands Industry Pollute? The Scientific Evidence," *The Open Conservation Journal*, 2009,3.
- 6 U.S. Congressional Research Service. "North American Oil Sands: History of Development, Prospects for the Future" (RL34258; Dec. 11, 2007), by Marc Humphries.
- 7 US Oil Sands (2012). "Management's Discussion and Analysis." http://www.usoilsandsinc.com/documents/financials/March%2031%202012%20interim%20MDA_FINAL.pdf
- 8 Foy, Paul. "Oil Sands Company Raises \$11M for Utah Project." *BusinessWeek*. N.p., 24 May 2012. Web. <http://www.businessweek.com/ap/2012-05/D9UVC35G0.htm>.
- 9 Utah Department of Environmental Quality. "Ground Water Discharge Permit-by-Rule Statement of Basis" 8 May 2012. http://www.waterquality.utah.gov/PublicNotices/CrownAsphaltRidgeSOB_DWQ-2012-001626.pdf