

The Environmental Perils of Steam Fracking Oxnard's Tar Sands

The Oxnard-based oil exploration firm Peak Operator is now targeting crude oil in California's Vaca Tar Sands, despite another company's failed attempts to extract Vaca Tar Sands oil a few years back.¹ Drilling and refining this heavy crude oil, known as bitumen, is inherently risky to human health, the environment and the climate.² California regulators must stop Peak Operator from expanding its tar sands operations.

Peak Operator (Peak) plans to use risky techniques to extract heavy crude from the Vaca Tar Sands. Peak will combine technologies known as cyclic steam injection (also referred to as steam fracking) and steam-assisted gravity drainage, which involve injecting highly pressurized, super-heated steam into tar sands wells to liquefy and separate the thick oil, then pump the resulting mixture to the surface.³ Toxic solvents or acids such as toluene and hydrochloric acid can be added to loosen the oil from the sand.⁴ State regulations on gas fracking do not apply to steam injection techniques, and California's oversight is inadequate to safely regulate this steam fracking, according to the U.S. Environmental Protection Agency.⁵

Tar sands extraction poses unacceptably high environmental risks. In 2008, Tri-Valley Corp. imported the controversial Canadian tar sands drilling techniques to the Vaca Tar Sands.⁶ Over four years, Tri-Valley failed to repair faulty wells, spilled chemicals on farmland and ultimately went bankrupt.⁷ Now, Peak, headed by a former Tri-Valley executive, has revived the remnants of Tri-Valley's operation and plans to drill up to 200 new wells.⁸

Steam fracking can contaminate soil and groundwater and depletes water resources

The underground pressure from steam injection can push the bitumen — and its contaminants — into nearby rock formations and aquifers through naturally occurring fissures and faults.⁹ The risk of groundwater contamination is greater than with other drilling techniques because of steam injection's propensity for breaking well casings.¹⁰ Faulty well casings are a common cause of oil and gas-related groundwater pollution.¹¹ Tar sands steam injection poses extra risks because bitumen is naturally composed of the carcinogenic chemicals benzene, toluene, ethylbenzene and xylene, which also can impair liver and central nervous system health as well as contaminate soil.¹²

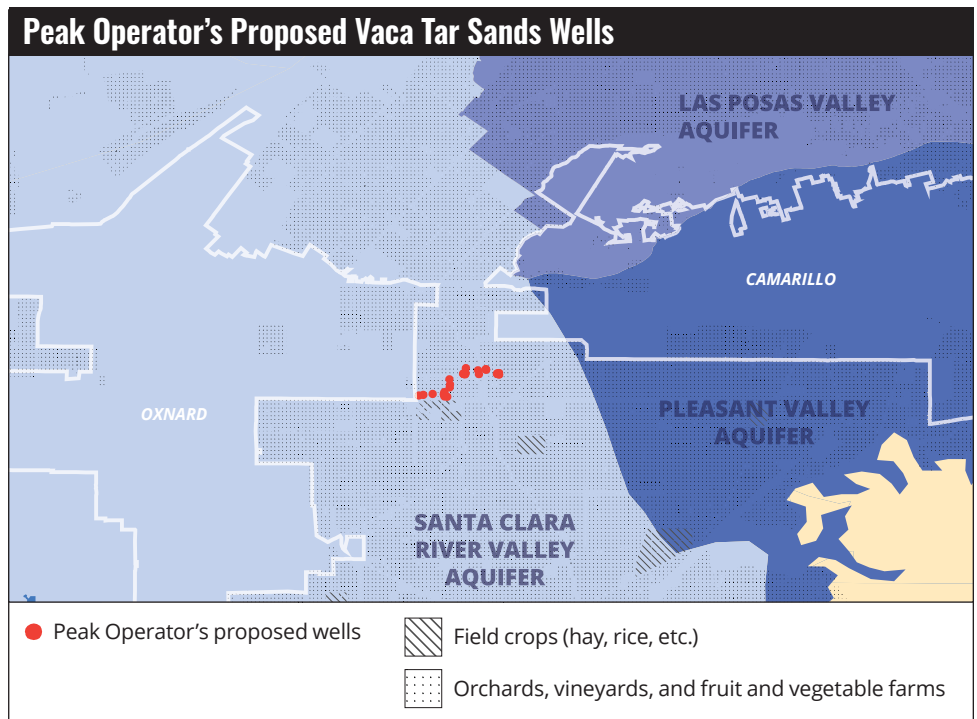
Oxnard's residents and farmers are vulnerable to water and soil pollution from steam injection as well as from accidental leaks and spills. Oxnard relies on groundwater for its water needs, and it is already grappling with increased shortages that threaten regional agriculture.¹³ The proposed wells are above Oxnard's groundwater basin and are just over a mile away from two additional aquifers.¹⁴

Tri-Valley's operations were linked to the contamination of nearby farmland with an oily liquid containing undisclosed chemicals.¹⁵

Steam injection would further stress the region's water resources. The prolonged California drought and local groundwater extraction that exceed recharge rates already strain water resources.¹⁶ Expanding steam injection would intensify this problem because it wastes about half a barrel of water for every barrel of oil, about two to five times more than conventional oil drilling.¹⁷ During 2016, California's steam fracking industry used 17.8 billion gallons of water — as much as 572,127 Californians use in a year.¹⁸

Oxnard's tar sands are too dirty to extract

California tar sands crude is among the most climate-polluting fuel sources in the world.¹⁹ Processing this heavy crude oil also produces considerable volumes of petroleum coke, a dirty refining byproduct accounting for a large portion of bitumen's climate footprint.²⁰ Vaca crude is more carbon-intensive due to its high sulfur content.²¹ Most U.S. refiners export petroleum coke to fuel power plants in developing countries that have lenient environmental regulations.²² When petroleum coke is burned to generate power, it emits more carbon dioxide than coal and significantly more deadly air pollutants like sulfur dioxide.²³



SOURCE: Food & Water Watch mapped data from California Division of Oil, Gas, and Geothermal Resources; California Department of Water Resources and Ventura County

Steam fracking causes earthquakes and sinkholes

The pressure and heat of injected steam can rupture underground pipelines and well casings, shift subsurface rocks and create unstable caverns.²⁴ For example, cyclic steaming at Chevron's Midway-Sunset oil field in California created oil-spewing geysers and sudden sinkholes, which killed one worker.²⁵ The wastewater from steam injection and oil drilling is often disposed of through underground injection, which also can cause sinkholes and earthquakes.²⁶ Underground ripples from these geologic disturbances can trigger nearby active faults, causing large-scale earthquakes.²⁷ Ventura County's geologic faults already present significant earthquake and even tsunami risks that could threaten low-lying Ventura and Oxnard.²⁸

Conclusion

California must block Peak's proposed steam fracking in Ventura County. It is time to put the health of Oxnard's land, air, water, climate and people before corporate profits, and to put an end to any attempts to mine the Vaca Tar Sands. **Tell Ventura County NO TO NEW TAR SANDS WELLS: visit fwwat.ch/NoTarSands.**

Endnotes

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