

What's Fracking in SoCal

SSMPA Community Meeting
Monday, April 21, 2014



Photo: National Geographic

What's Fracking in SoCal

ex - tract

get, take, draw out, withdraw, pull out, suck

Extraction

What's Fracking in SoCal



Extraction: Breathing, or sucking the oxygen out of the air

What's Fracking in SoCal



Extraction: Drinking, sucking water

What's Fracking in SoCal



Suckers are born every minute

What's Fracking in SoCal



Masters of Extraction

What's Fracking in SoCal



Extraction: Non-fossil fuels

What's Fracking in SoCal

petroleum
(oil)



coal



natural gas
(methane)



Extraction: Fossil fuels

What's Fracking in SoCal

Some local history of **Extraction** of fossil fuels

Simi Valley 1865

Philadelphia & California Petroleum Co. bought El Rancho Simi

First "American" residents

Pico Canyon

Signal Hill – Long Beach

Inglewood – Baldwin Hills

Venice Beach

Chatsworth

What's Fracking in SoCal



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal

Santa Susana
Mountains

North face of
Oat Mountain



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal



Pico Canyon Oil Extraction 1876 - 1990

What's Fracking in SoCal



Signal Hill – Long Beach Extraction since 1921

What's Fracking in SoCal



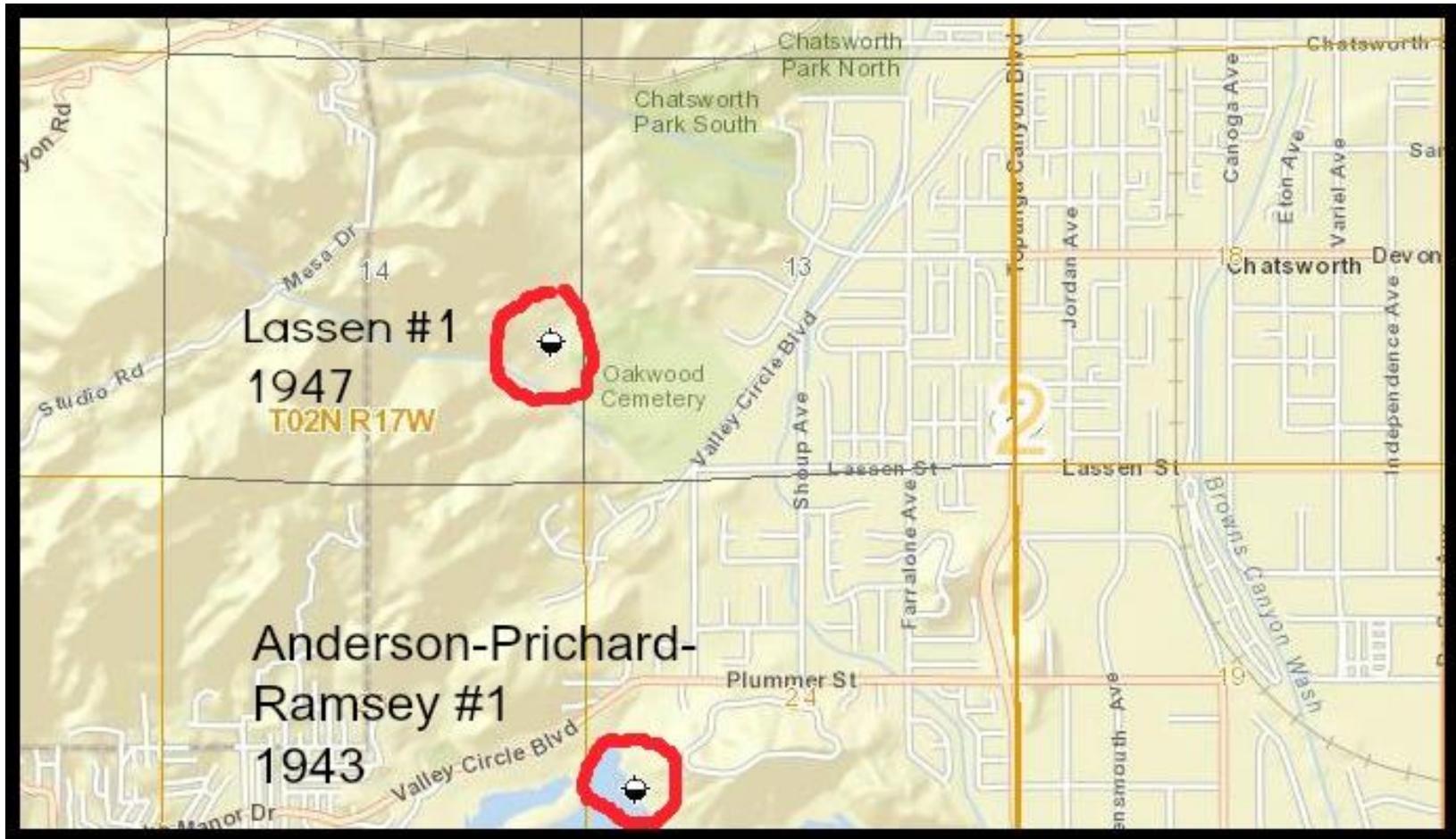
Inglewood – Baldwin Hills Extraction since 1924

What's Fracking in SoCal



Venice Beach Extraction 1929 - 1932

What's Fracking in SoCal



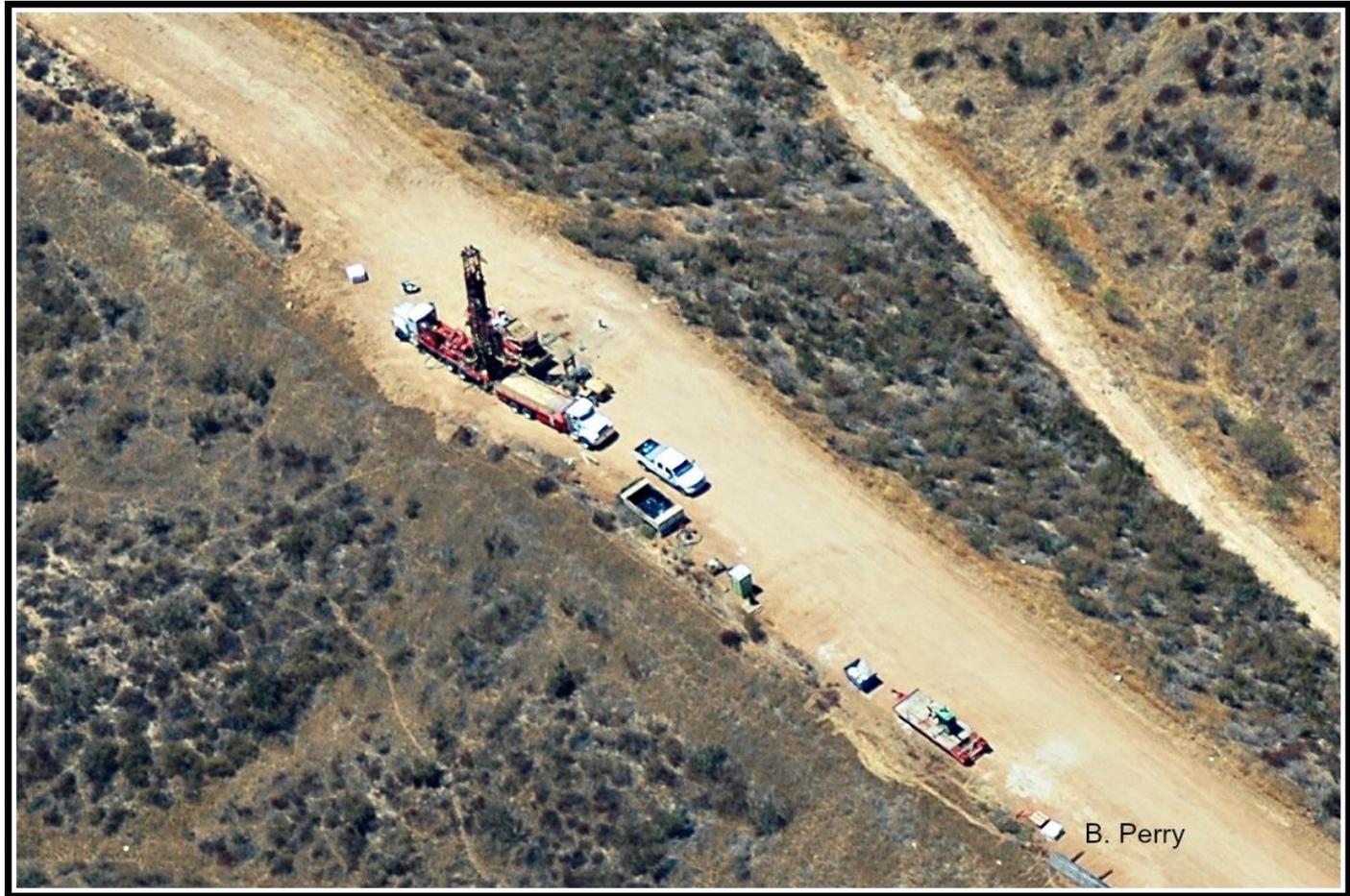
Abandoned Chatsworth Wells [1943](#), [1947](#)

What's Fracking in SoCal



Santa Susana Mountains Oil Roads

What's Fracking in SoCal



Santa Susana Mountains Oil Exploration Rig

What's Fracking in SoCal



Santa Susana Mountains Pads, Roads, Tanks

What's Fracking in SoCal

fracing vs. fracking

The industry refers to “hydraulic fracturing” as “**fracing**.” This has been the preferred industry spelling of the word for many years.

The term “**fracking**” has been adopted by the anti-fracing movement – because of its similarity to another... colorful word that begins with an “F.”

~ a law firm that serves the energy industry

What's Fracking in SoCal

Fracking in the narrow sense: **Hydraulic Fracturing**

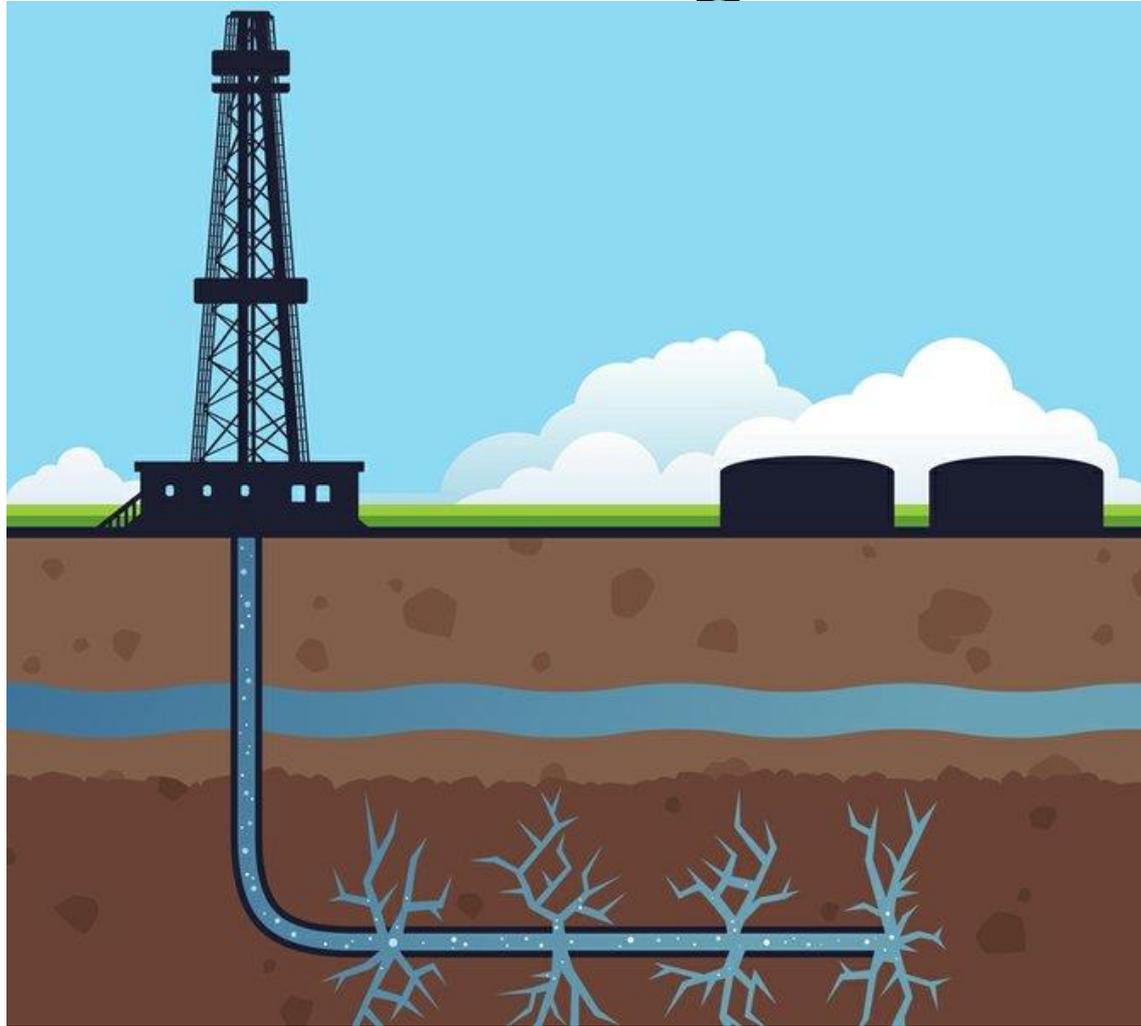
Fracking in the **broader** sense: **Well Stimulation**

Well Stimulation (“extreme extraction”)

- **Hydraulic fracturing**
- **Gravel packing**
- **Acidizing**
 - maintenance
 - matrix
 - fracturing
- **Combinations**

Directional drilling (vertical, horizontal, diagonal)

What's Fracking in SoCal



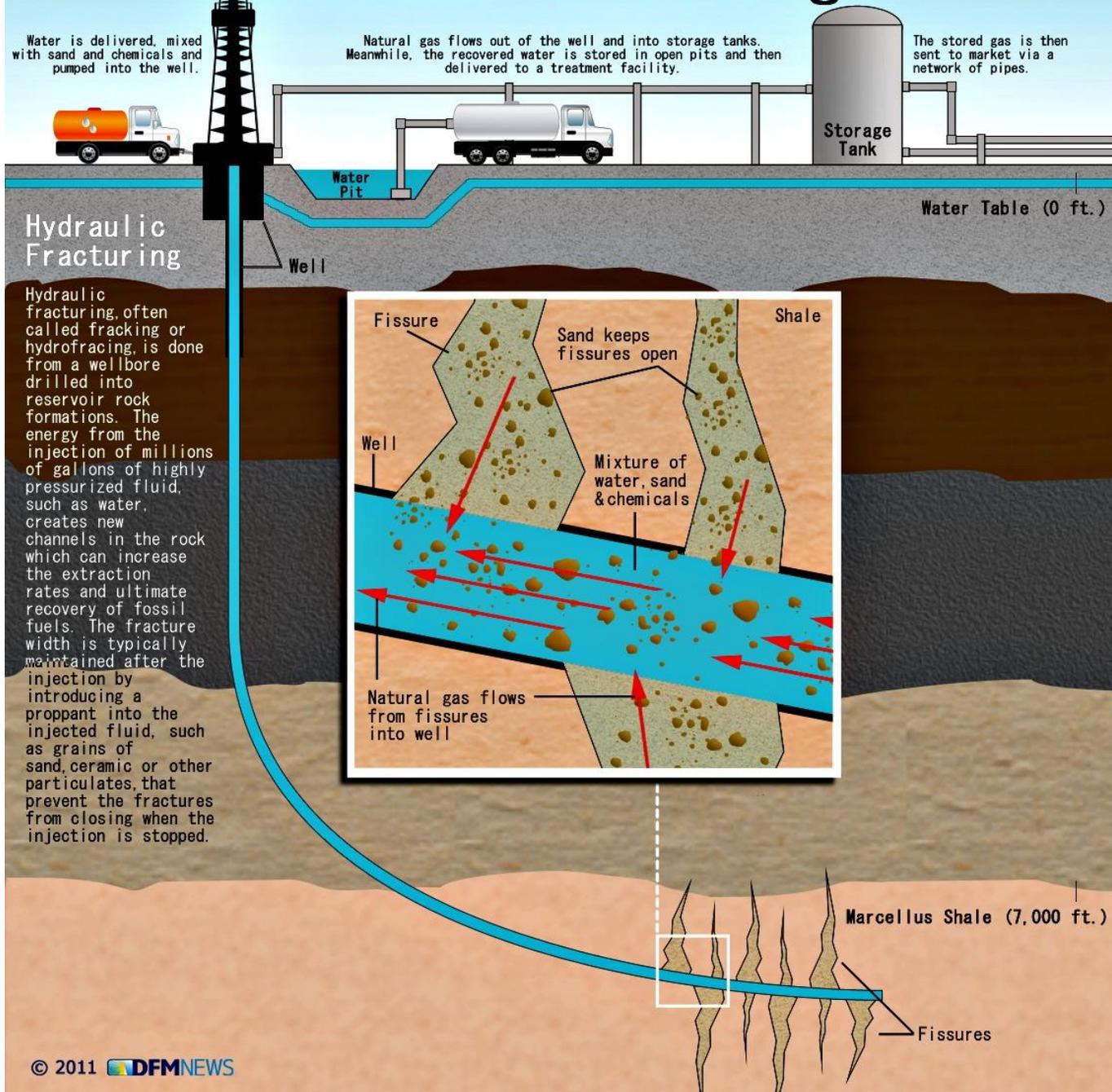
Hydraulic Fracturing and Horizontal Drilling

Hydraulic Fracturing

Water is delivered, mixed with sand and chemicals and pumped into the well.

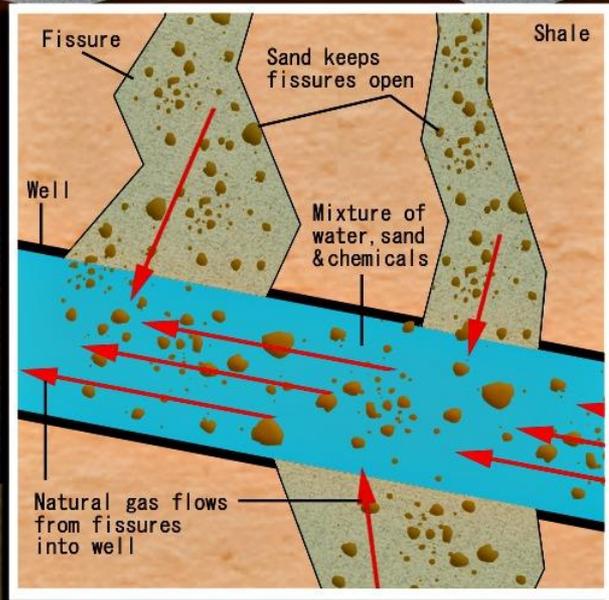
Natural gas flows out of the well and into storage tanks. Meanwhile, the recovered water is stored in open pits and then delivered to a treatment facility.

The stored gas is then sent to market via a network of pipes.



Hydraulic Fracturing

Hydraulic fracturing, often called fracking or hydrofracing, is done from a wellbore drilled into reservoir rock formations. The energy from the injection of millions of gallons of highly pressurized fluid, such as water, creates new channels in the rock which can increase the extraction rates and ultimate recovery of fossil fuels. The fracture width is typically maintained after the injection by introducing a proppant into the injected fluid, such as grains of sand, ceramic or other particulates, that prevent the fractures from closing when the injection is stopped.



What's Fracking in SoCal

Some U.S. Fracking Centers

- North Dakota & Montana (Bakken shale oil)

What's Fracking in SoCal



Man Camp, North Dakota

photo: National Geographic

What's Fracking in SoCal



Man Camp, North Dakota

photo: National Geographic

What's Fracking in SoCal



Man Camp, North Dakota

photo: National Geographic

What's Fracking in SoCal

Some U.S. Fracking Centers

- North Dakota & Montana (Bakken shale oil)
- Texas (Barnett shale gas)
- Pennsylvania & Ohio (Marcellus shale gas)
- **California** (Monterey shale oil)

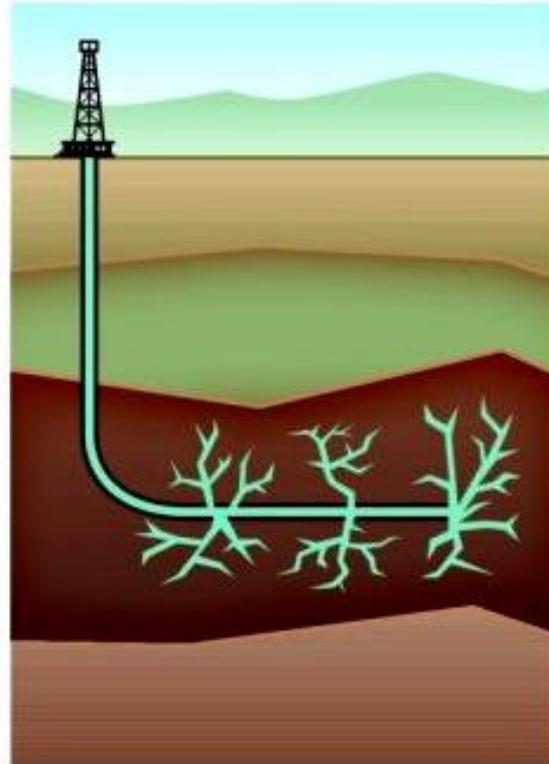
What's Fracking in SoCal

'Acidizing' for oil

In states such as North Dakota and Texas, shale formations that contain oil lie in flat layers that can be tapped by a combination of horizontal drilling and hydraulic fracturing. But California's Monterey Shale formation, folded by seismic forces, may respond better to acid pumped into a vertical well. The acid opens tiny pores in the rock.

Source: Next Generation

Typical shale deposit



Monterey Shale



Todd Trumbull / The Chronicle

Acidizing Monterey Shale

What's Fracking in SoCal

PROs



- Energy independence
- No other alternatives can meet demand for energy
- Jobs
- Grow the economy
- Not damaging to environment (groundwater, air, structure of earth)
- Great quantities of producible oil / gas

CONs



- Prolongs dependence on fossil fuels
- Detracts focus from renewables development
- Groundwater contamination danger
- Air quality contamination danger
- Earthquake stimulation danger
- Not much producible oil / gas

Some Often-Cited +/-s

What's Fracking in SoCal

Types of Legislation on Fracking:

- Notification
- Reporting
- Disclosing of Chemicals
- Moratorium
- Ban

What's Fracking in SoCal

Status of Legislative Action

Federal level:

- -----

California **state** level legislative status

- 2012 California bill SB 1054 (Pavley) Notify adjacent landowners of intent to frack. Voted down .
- 2012 AB 972 Fracking moratorium , Died
- 2013 California bill SB 4 (Pavley) Passed. Requires oil and gas companies to apply for a permit to conduct fracking, publicly disclose the fracking chemicals they use, notify neighbors before drilling, and monitor ground water and air quality, among other requirements.
- 2014 California bill SB 1132 Sub-Committee on Natural Resources and Water 5-2 vote → Senate Committee on Environmental Quality April 30.

What's Fracking in SoCal

Status of Legislative Action

Los Angeles **City** level

- File 13-1152-S1, Moratorium ordinance being drawn up

County of Los Angeles level

- -----

What's Fracking in SoCal

Regulators and Sources of information:

- **DOGGR**

California Division of Oil, Gas, & Geothermal
Resources

<http://www.conservation.ca.gov/dog/>

What's Fracking in SoCal

o wr.conservation.ca.gov/Well/WellListPage.aspx

Department of Conservation
Division of Oil, Gas, & Geothermal Resources

Online WellRecord Query for State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources.

DOGGR Home Page | Online Production/Injection | How to Print Logs

Back | Well List

SEARCH CRITERIA: County: Los Angeles

(Click API# to view details.) Total Number of Pages: 1159 - Total Number of Wells: 23173 | Export to Excel

District	API#	WellStatus	LeaseName	Well#	OperatorName	OpCode	FieldName	AreaName	Section	Township	Range	BM	Latitude	Longitude	Spud Date	Abandon Date
1	03700001	I	Southside A	8	Oxy USA Inc.	O2475	Bandini	Any Area	8	2S	12W	SB	34.009831	-118.168462		
1	03700002	P	Watson	1	Atlantic Oil Company	A4400	Any Field	Any Area	11	4S	13W	SB	33.841095	-118.211502		
2	03700003	P	Ament-Dunn	5	Petrominerals Corp.	P2900	Castaic Hills	Any Area	36	5N	17W	SB	34.475377	-118.615920	4/26/1952	12/6/1968
1	03700005	P	Azalea	1	Freeport-McMoRan Oil & Gas LLC	P3875	Montebello	Any Area	2	2S	12W	SB	34.027561	-118.101182		
1	03700007	P	[BLANK]	WI-3	Chevron U.S.A. Inc.	C5640	Wilmington	Fault Block VI	1	5S	13W	SB	33.765344	-118.196440		
1	03700009	P	Callender	92	Brea Canon Oil Co.	B6100	Dominguez	Any Area	29	3S	13W	SB	33.874226	-118.261132		
1	03700010	P	Gardena E.H.	1	Union Oil Company of California	U0200	Any Field	Any Area	25	3S	14W	SB	33.877136	-118.301017		
2	03700011	A	Fernando Fee	37	Southern California Gas Company	S4700	Aliso Canyon	Any Area	27	3N	16W	SB	34.314420	-118.545413	9/28/1966	
2	03700012	I	Porter	71	Southern California Gas Company	S4700	Aliso Canyon	Any Area	28	3N	16W	SB	34.315205	-118.561445	10/16/1966	
2	03700013	P	Porter	72	Southern California Gas Company	S4700	Aliso Canyon	Any Area	27	3N	16W	SB	34.315819	-118.549807	10/26/1966	7/30/1993
2	03700014	I	Standard-Sesnon 1	46	Crimson Resource Management Corp.	C9035	Aliso Canyon	Any Area	28	3N	16W	SB	34.315041	-118.566726	9/23/1966	
2	03700015	P	Wigdal	2	Union Oil Company of California	U0200	Oat Mountain	Any Area	19	3N	16W	SB	34.332383	-118.600658	3/20/1956	4/16/1957
2	03700016	P	Engman	14-2	Magnum Resources Corp.	M1075	Canton Creek (ABD)	Any Area	14	5N	18W	SB	34.516127	-118.737351	10/16/1957	1/28/2000
1	03700017	P	Callender	58	Union Oil Company of California	U0200	Dominguez	Any Area	33	3S	13W	SB	33.872022	-118.250494		
1	03700018	P	Callender	114	Union Oil Company of California	U0200	Dominguez	Any Area	33	3S	13W	SB	33.870164	-118.264842		
1	03700019	P	Hellman	59	Brea Canon Oil Co.	B6100	Dominguez	Any Area	28	3S	13W	SB	33.877899	-118.248684		
1	03700020	P	Hellman	75	Brea Canon Oil Co.	B6100	Dominguez	Any Area	28	3S	13W	SB	33.873985	-118.247842		
1	03700021	P	Baldwin	29	Freeport-McMoRan Oil & Gas LLC	P3875	Montebello	Any Area	1	2S	12W	SB	34.032948	-118.086966		
1	03700022	P	Rosecrans	18	Petro-Lewis Corporation	P2600	Rosecrans	Any Area	19	3S	13W	SB	33.901371	-118.277764		
1	03700023	P	Howard Park	33	Petro-Lewis Corporation	P2600	Rosecrans	Any Area	18	3S	13W	SB	33.912808	-118.284984		

Last edited on March 29, 2011

Over 23,000 in Los Angeles County

What's Fracking in SoCal

Regulators and Sources of information:

- **DOGGR**

California Division of Oil, Gas, & Geothermal Resources

<http://www.conservation.ca.gov/dog/>

- **AQMD**

South Coast Air Quality Management District

<http://xappprod.aqmd.gov/r1148pubaccessportal/Home/Index>

What's Fracking in SoCal

Termo Company above Porter Ranch

- Has operated oil wells in Aliso Canyon since 1989
- 18 wells now (~2 trucks of crude par day)
- Recovered vapor (methane) sold to SoCal Gas
- Applying for permits now to operate up to 12 more wells
- in an SEA: Santa Susana Mountains / Simi Hills (LA County)
- SoCal Gas has about 180 wells in Aliso Canyon
- Target depth of Termo's new wells: 7500-9500 ft below surface (~1 ½ mi.)
- New wells will be north of ridge line – not visible from Porter Ranch
- Drilling to Monterey shale
- Termo has fracked 2 wells in Aliso Canyon in 2011 at about 8000 ft.
- Termo “does not intend” to frack any of the new wells
- Conventional vertical drilling
- Termo is family-owned, based in Long Beach
- <http://www.termoco.com/> phone 562-279-1955 Ralph Combs

What's Fracking in SoCal

ex - tract

get, take, draw out, withdraw, pull out, suck

Extraction

What's Fracking in SoCal

Masters of Extraction

