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Criticism of the ACSF Natural Gas Leak from 2 Prominent Media Outlets

On 08 January 2016, two prominent national media outlets offered sharp criticisms of the SoCalGas Aliso Canyon Storage Field (ACSF.) The Los Angeles Times published an editorial focused on the dangers of fossil fuels, with a specific focus on well SS-25 of the ACSF. Newsweek published a lengthy article regarding the harms and dangers of the leaking SS-25 well at ACSF. The author of the latter article raised the unsettling specter of leaks from underground natural gas storage facilities causing fires and explosions. The example of the fate of Hutchinson, Kansas was raised. Per the Wikipedia about that city, "On January 17, 2001, 143 million cubic feet (4,000,000 m³) of compressed natural gas leaked from the nearby Yaggy storage field.[11] It sank underground, then rose to the surface through old brine, or salt wells making around 15 gas blowholes. An explosion in the downtown area at 10:45 a.m. destroyed 2 businesses and damaged 26 others. An explosion the next day in a mobile-home park took the lives of two people. The Kansas National Guard was called in to help evacuate parts of the city because of the gas leaks, and a team of specialists looked over all the city for leaks after the event. These events were broadcast on nationally televised news stations across the country.[12][13][14]"

Thankfully, to date there has been no fire or explosion connected with the huge ACSF underground natural gas storage facility. However, given the Susana Fault that bisects the ACSF and recent nearby earthquake activity such as the 9 February 1971 San Fernando Earthquake, which had a magnitude over 6.5, future ACSF leaks cannot be ruled out.

The negative externalities described in these articles are being imposed on the Los Angeles area - and the Earth, via increased global warming. As noted in earlier docket entries, California should be emphasizing clean, safe nuclear power instead of focusing on intermittent solar and wind power, typically backed up with fossil fuel combustion for reliable electric power. During the next month, the draft 2015 IEPR should be revised to reflect this requested change.

Diablo Canyon Power Plant (DCPP), which typically generates 18,000,000,000,000 Watt-hours (18 TWh) of electrical power each year as California's largest generator, while avoiding the annual emissions of about 13 MMT of CO₂ associated with Coal and Natural Gas combustion for power generation is California's "Clean Air Champion." Potential California state regulatory barriers to DCPP's NRC license renewal should be eliminated as a means to achieve California's carbon reduction goals announced in Governor Brown's Executive Order B-30-15 dated 29 April 2015 mandating significant GHG reductions. San Onofre Nuclear Generating Station (SONGS) should also be restored to operation. Sadly, a small number of vocal protesters pushed for the premature SONGS shutdown in January, 2012. Another approximately 13 MMT per year of CO₂ emission avoidance would result from the proposed SONGS restoration.

Additional submitted attachment is included below.

Los Angeles Times

Editorial

The real emergency at Porter Ranch? California's dangerous dependence on fossil fuels.



SoCalGas crews and technical experts attempt to safely stop the flow of natural gas leaking from a storage well at the utility's Aliso Canyon facility near Northridge section of Los Angeles.

(Javier Mendoza / Associated Press)

[The Times Editorial Board](#) [Contact Reporter](#)

January 7, 2016 12:18 PM

<http://www.latimes.com/opinion/editorials/la-ed-porter-ranch-emergency-20160108-story.html>

It took a while, but Gov. [Jerry Brown](#) finally [declared a state of emergency at Porter Ranch](#), where a 75-day-old natural gas leak has forced thousands of people from their homes. For weeks residents and elected officials have called on Brown to elevate the catastrophic leak to emergency status, which, they said, could help make state funding available to aid the community. But the fiscally conservative governor has been wary of using the designation — and rightfully so — because he didn't want to taxpayers to get stuck with costs that are the responsibility of Southern California Gas Co. His proclamation makes clear that the gas company, and not the taxpayers or the utility's ratepayers, will be responsible for all expenses related to the leak at the company's nearby Aliso Canyon gas storage facility.

The leaking well at Aliso Canyon has emitted as much greenhouse gas as 330,000 passenger vehicles produce in a year.-

While much of the announcement Wednesday formalizes what state agencies have already required of the gas company, the proclamation also begins to address environmental and safety issues facing underground gas storage facilities that have largely gone unnoticed until now.

The dozen gas fields in the state can dramatically increase greenhouse gas emissions if they are not controlled. The primary component of natural gas is methane, a potent heat-trapping pollutant that hastens climate change. The leaking well at Aliso Canyon, as of Dec. 22, had emitted as much greenhouse gas as 330,000 passenger vehicles produce in a year. Brown's proclamation says that the gas company will be responsible for funding projects to cut greenhouse gas pollution and offset the methane emitted from the leaking well.

Brown's order also calls for emergency regulations requiring operators of gas storage facilities around the state to take new safety and reliability precautions. Storage operations have had fairly lax regulation, compared to other sectors of the oil and gas industry, even as the facilities have gotten older and more prone to leaks. The utility, for example, knew the wells at its Aliso Canyon facility were corroding and failing at an increasing rate, but there are rules mandating frequent inspections. The leaking well didn't have a working safety valve, which could have stopped the flow of gas once a problem was discovered. But such a valve isn't required by law.

Brown also directed state energy and environmental agencies to study the long-term viability of natural gas storage facilities in the state, both from a safety and climate change perspective. That's essential. The Porter Ranch leak makes clear the hidden costs of our dependence on fossil fuels. As long as California needs natural gas, the state has an obligation to strictly regulate operations to protect residents. But the ultimate goal should be cleaner, safer energy sources.

GAN Comment and LTE Submission to the *Los Angeles Times* 01 08 16

The emphasized sentence about 330,000 cars is low by a factor of five. See:

<http://www.climatechangenews.com/2016/01/06/california-massive-methane-leak-by-numbers/>

"At time of writing, the Environmental Defense Fund estimated nearly 80,000 tonnes of methane had escaped. That is worth more than US\$12 million and has a warming impact equivalent to 7 million tonnes of carbon dioxide. See the real time counter below.

Those figures are equivalent to:

- Two and a half times California's entire fugitive emissions (leaks) from oil and gas extraction in 2013
- Running 1.5 million typical US cars for a year"

Diablo Canyon Power Plant produces 18,000,000,000,000 Watt-hours annually and avoids about 13 million metric tonnes of CO2 emissions. The plant has operated safely for over 3 decades.

Newsweek

METHANE GAS CRISIS: HOW CALIFORNIA'S PORTER RANCH BECAME A GHOST TOWN

BY ALEXANDER NAZARYAN ON 1/7/16 AT 12:57



Signage directs prospective buyers to new housing developments under construction in the Porter Ranch neighborhood, January 3. Methane gas leaks from the SoCalGas Aliso Canyon Storage Facility well SS-25 in Porter Ranch have forced many residents to abandon their homes. SoCalGas is currently drilling a relief well that is expected to take months to complete and plug the leak. Patrick T. Fallon for Newsweek

U.S. PORTER RANCH GAS LEAK CALIFORNIA LOS ANGELES GAS

<http://www.newsweek.com/porter-ranch-california-methane-gas-leak-crisis-412807>

In the winter of 2008, a real estate column in the Los Angeles Times profiled Porter Ranch, a collection of subdivisions in the San Fernando Valley that feels utterly removed from the huge city on whose northern edge it lies. The neighborhood is “graced with lush parks,” the Neighborly Advice column gushed, and “attracts residents seeking sanctuary from the urban hubbub.” Toll Brothers, the upscale builder that has developed much of the land here, promises potential residents they will “relax in open, natural spaces and live within a true community.”

Until very recently, you would have had to do a considerable amount of Internet sleuthing to discover that Porter Ranch, home to 30,000 people, is not exactly the pristine, quasi-rural paradise promised by its developers and boosters. The hills that frame its Instagram-ready backdrop also cradle the Aliso Canyon Storage Facility, a parcel of 3,600 acres in which the Southern California Gas Company has turned 115 defunct oil wells into an underground warehouse that can hold 80 billion cubic feet of natural gas. On October 23, workers discovered that a 7-inch casing in one of those wells had ruptured, and that well has been continuously pouring methane into the atmosphere, at a peak rate of 60,000 kilograms per hour (the rate of loss has been reduced since then). A counter on the website of the Environmental Defense Fund estimates that, as of Thursday morning, the total loss has been more than 79,000 metric tons of methane sent into the air above Los Angeles.



A "No Trespassing" sign and fence mark the boundary of the SoCalGas Aliso Canyon Storage Facility, looking toward where a leaking gas well and a relief well are being

drilled. Public trails crisscross the hills near the well where the smell of gas was strong on December 30, 2015. Patrick T. Fallon for Newsweek

Methane, or CH₄, traps about 85 times more heat radiation than carbon dioxide, when effects of the two are compared over a 20-year span, making it a much more potent contributor to climate change; according to the Environmental Defense Fund, the Porter Ranch methane leak was equal in mid-December to emissions of six coal-burning plants or 7 million new cars on the road. Despite its green image, California is second only to Texas in its contribution to the United States' carbon footprint, and the Porter Ranch leak is believed to be adding 25 percent to the state's daily methane output.

As for the much-touted serenity of Porter Ranch, that's also gone. Methane is not a killer on the order of carbon monoxide, but medical research suggests it can cause a variety of chronic ailments, including bloody noses, headaches, vomiting and rashes. A compound called mercaptan is routinely added to methane in order to alert a household of a potential leak, since methane is colorless and odorless—sulfurous mercaptan is so noxious, you have no choice but to pay attention. To live in a methane effluvium has been, for many in Porter Ranch, an experience ranging from unpleasant to excruciating. Thousands of families have left, spending their winter holidays in hotel rooms or rentals (SoCalGas is paying). They do not know when they will come back, since SoCalGas does not know when the leak will be plugged. It might be late February, but it could be late March.



Heavy machinery and equipment sits along the hillside of the SoCalGas Aliso Canyon

Storage Facility behind a Porter Ranch Housing development on Sesnon Boulevard on December 30, 2015. A week later, on January 6, California declared a state of emergency of the environmental disaster. Patrick T. Fallon for Newsweek

“We are not refugees living in tents,” says Porter Ranch resident Matt Pakucko, acknowledging the community’s relative affluence. “But this shouldn’t happen.” He says SoCalGas and public officials have turned him and his fellow residents into “guinea pigs.” He does not believe the company’s assurances that long-term methane exposure poses no known health risks. Nor is he convinced that SoCalGas can stop the leak by next month. And he is troubled by his proximity to Aliso Canyon, the source of all the troubles that have befallen Porter Ranch, posing a question that must haunt many others here:

What else is going on in that hill?

Boots and Coots

Porter Ranch started appearing with some frequency in the headlines just as world leaders convened in Paris for a landmark climate change conference in late November. Eric Garcetti, the mayor of Los Angeles, visited Porter Ranch on his way to Paris. He toured a school and pronounced the methane leak a “natural disaster,” though the cause was almost certainly human error, or at least human hubris.



Co-founders of Save Porter Ranch Kyoko Hibino, left, and Matt Pakucko sit on their couch with their cats. The pair are trying to raise awareness of the nearly three-month-old gas leak and urge lawmakers to act. Patrick T. Fallon for Newsweek

Since then, the sense of crisis has only deepened, moving slowly but surely over Porter Ranch. Two schools are closed, their students relocated. Businesses are suffering because residents are leaving: About 2,500 families have relocated and another 1,800 are on their way out. On Tuesday, California Governor Jerry Brown declared a state of emergency, outlining the work seven state agencies are doing in response to the leak and mandating that SoCalGas “cover costs related to the natural gas leak and its response.” The latter move should appease those who’ve **criticized Brown as slow to respond, perhaps, they’ve suggested, because his sister, Kathleen Brown, sits on the board of Sempra Energy**, the parent company of SoCalGas (that charge is “scurrilous and irresponsible,” says a spokesman for the governor).

Gas, though, is impervious to politics—and the gas in the well known as SS-25 seems to be especially intractable. Unable to stop the flow with an injection of liquid into the well, SoCalGas called in experts at Boots & Coots Services, the Halliburton subsidiary considered the best in the world at killing wells. But they couldn’t kill this one, with six additional liquid injections proving ineffectual. **So, for now, the best solution is to drill a relief well into the 8,700-foot-deep sandstone cavern that holds the gas and, ultimately, plug SS-25 with cement. That will take at least another two months.**



A flyer for "Smell Something? Say Something" warns Porter Ranch residents of the leak. Natural gas has been spewing out at a rate of up to 100,000 pounds since October, according to state officials. Patrick T. Fallon for Newsweek

“Our community is starting to look like a ghost town,” says David Balen, a local businessman on the Porter Ranch Neighborhood Council. He pulled his 8-year-old daughter out of school at Thanksgiving, his worries for her health trumping SoCalGas’s claims that there was no risk. “Nothing is normal anymore,” he laments. His little white dog looks even more beleaguered than he does.

Last month, the Paris talks concluded with an accord that would compel—though not force—major polluters like the United States and China to radically curb their greenhouse emissions. “Whatever they agree to in Paris, it's not enough,” Brown said before heading to the summit. **He has ambitiously pledged to decrease his state’s greenhouse emissions by 40 percent of 1990 levels by 2030, which he can do only by weaning the state off carbon.**

The methane leak in Porter Ranch, though, is an apt demonstration of our complex affair with carbon fuels. **The natural gas stored in Aliso Canyon flows to the homes of about 20 million customers in the greater Los Angeles area. So while we contemplate wind farms and solar arrays, we remain married to an antiquated infrastructure that lets us do what we have done for centuries: extracting energy by burning carbon.**

Paris, with all its promises, has come and gone. Porter Ranch is still enshrouded in noxious gases.



Alexandra Nagy, an organizer with Food & Water Watch, speaks about a plan to "Shut It All Down" as residents including Matt Pakucko, president and co-founder of Save Porter

Ranch, center right, and Kyoko Hibino, rear right, look on, during a board meeting for the group on January 3. Patrick T. Fallon for Newsweek

A Fire That Lasted Six Days

Despite its artful hyperbole and stylized violence, the Paul Thomas Anderson film *There Will Be Blood* got one thing right: **Los Angeles is an oil town built by oil men.** Today's oil men don't look like Daniel Day-Lewis's rough-hewn Daniel Plainview, but there are still some 3,000 active oil wells in Los Angeles County, none more famous than the one called the Tower of Hope, a rig on the Beverly Hills High School campus cleverly concealed with floral decorations.

Oil was first pumped from Tapo Canyon in 1910, in what is today the community of Simi Valley; Aliso Canyon, directly to the east, yielded its reserve of hydrocarbons in 1938, with SS-25 opening on February 25, 1954. It operated as an oil well for less than two decades; in 1973, SoCalGas converted the Aliso Canyon oil wells to gas storage caverns.



Vehicles drive past machinery at the SoCalGas Aliso Canyon Storage Facility at sunset on December 30, 2015. The company has relocated residents who have complained about the smell of gas, as it promised to plug the leak within months. Patrick T. Fallon for Newsweek

Rodger Schwecke, a vice president at SoCalGas now heading the recovery efforts at Porter Ranch, says the porous sandstone caverns of Aliso Canyon, overlaid with a

thick layer of capstone, made perfect natural gas repositories. He compares the geological formation to a bottle full of marbles, with gas sitting in the interstitial spaces. It was a seemingly auspicious reuse of the old oil-drilling infrastructure, one that allowed for easy delivery of natural gas to the stoves and water heaters of Southern California.

But the current SS-25 leak is not the first accident in Aliso Canyon. There was a well blowout in 1968 that led to a fire that lasted for six days, and there was another fire in 1975, according to the Los Angeles Times. Back then, though, there was no Porter Ranch. Residential development in this part of the San Fernando Valley had not reached that far north, explains Kevin Roderick, who runs the LA Observed news site and grew up in nearby Northridge. Only recently did the gated subdivisions of faux-Mediterranean estates start to crawl up the slopes of the Santa Susana Mountains. “These people have paid a lot of money to live on the very edge of the city,” says Roderick, who has also authored a history of the Valley. He suspects that many residents of Porter Ranch did not know about Aliso Canyon when they bought their homes. “This is gonna be, for a lot of people in Porter Ranch, a huge wake-up call. Now they know what they live next to.”



Rodger Schwecke of SoCalGas draws a basic diagram of how the relief well will intercept and stop the leak, December 30, 2015. If successful, the leaks will be stopped within months, but the environmental impact won't be fully seen for years. Patrick T. Fallon for Newsweek

The Porter Ranch residents I spoke to confirmed Roderick's assessment. **Maybe it was poor disclosure on the part of the real estate brokers, maybe an eagerness of buyers to believe in the idyllic vision they'd been offered.** Whatever the case, most are, as Roderick suggests, only now learning about Porter Creek's legacy, sort of like the archetypal family in a horror movie that discovers its fixer-upper Victorian house was the site of a gruesome killing.

"I didn't know about Aliso Canyon at all," says Paige Hemmis, a real estate broker and television host for the Hallmark Channel's *The Home & Family Show* who bought a house in Porter Ranch in 2010, in Balen's subdivision. Her 93-year-old grandmother, who also lives in Porter Ranch, had nose bleeds so severe she required hospitalization. One of her two dogs developed lesions. On many mornings, the animals refuse to go outside.

When I met Hemmis, in a half-empty Middle Eastern restaurant in the shopping mall that constitutes the town center of Porter Ranch, she apologized for wearing a hat indoors, a stylish number the color of sand. She had an unsightly rash along her hairline, she explained, which she was sure was related to methane exposure. Rashes don't play on television, but neither do hats, and there were attempts to hide the outbreak with creative hairstyling. These failed. **But then Hemmis went to tape an episode of *Home & Family in Bakersfield, the city in the Central Valley of California notorious for having some of the dirtiest air in the nation.* Three days after she got there, Hemmis says, the rash on her forehead disappeared.**



Tire skid marks cover an intersection between a housing development, left, and Porter Ranch Community School. Schools have been closed for weeks and at times the Porter Ranch is more of a ghost town than the thriving escape from Los Angeles it was billed as. Patrick T. Fallon for Newsweek

Sinkholes and Stink Holes

The fate Porter Ranch most fears is the one that visited Hutchinson, Kansas, on January 17, 2001. Methane that leaked from an underground cavern there caused an explosion that killed two people and forced many residents to evacuate. “In this case the injected material had done everything that scientists usually describe as impossible,” reported ProPublica in a recent article. “It migrated over a large distance, travelled upward through rock, reached the open air and then blew up.”

Aliso Canyon is the fifth-largest gas storage facility in the United States. There are 400 such underground natural gas warehouses across the country, found in “depleted reservoirs in oil and/or natural gas fields, aquifers, and salt cavern formations,” according to the federal Energy Information Administration. Many are clustered in the Midwest, as well as along the Gulf of Mexico. The federal government leaves much of the oversight of these underground facilities to states. In Louisiana, a salt cavern collapsed in the rural community of Bayou Corne, creating an enormous sinkhole that released methane (the cavern had been used to make brine, but methane is common in Louisiana’s swampy soil), thus serving as a terrifying reminder of the potential risks of trying to tailor the Earth’s geology to our energy needs.

Underground storage is “absolutely a crucial part of the gas infrastructure in this country,” says Sally Benson, who runs an energy storage lab at Stanford University. By allowing utilities to store vast reserves of gas, she says, these underground facilities account for the “mismatch between supply and demand” in energy markets. **For example, during the recent cold spell in Southern California, SoCalGas was able to quickly meet the heating needs of customers by tapping into its Aliso Canyon reserve (that also reduced pressure in the problem well, which should make it easier to kill).**



From left, Shannon Waldman, 12, Cameron Waldman, 6, and Katherine Waldman play in Holleigh Bernson Memorial Park, January 3. Patrick T. Fallon for Newsweek

“It really works very well most of the time,” Benson says of the technology that allows for gas to be injected into, and drawn from, subsurface chambers. However, she shares a worry of many in Porter Ranch as they deal with the mundanities of the leak: that the gas plume will somehow become ignited, leading to a Hutchinson-type explosion.

“They’re really fortunate that this one hasn’t caught fire,” Benson says. “They better stop it quickly.” The Federal Aviation Administration has imposed a no-fly zone above Porter Ranch “out of concerns that fumes from the gas leak could be ignited from the air.” Schwecke, the SoCalGas vice president, says workers near the relief well are taking every precaution, not using their cellphones and working with brass hammers, which don’t spark.

Schwecke exudes the confidence of a company man who has seen enough blown wells in his 30-year career to not panic over this one. **When I asked him about those who've fled Porter Ranch, he expressed something that felt perilously close to disdain. To him, I figured, the anxiety of those who have fled comes across as deeply uninformed, alarm occasioned by nothing more than a bad smell.**

"That's their choice to leave," he told me as we sat in a trailer in Aliso Canyon, from whose entrance you could see the red-topped scaffolding of the relief well, rising like a beacon in the hills above. "I would feel very comfortable living here."

Spewing Like a Black Geyser

Although SS-25 ruptured in October, it was not really until the last days of 2015 that the rest of the world started paying attention. Methane is invisible, which robs the disaster of the kind of doomsday imagery that photo editors and TV news producers crave. And though it adds significantly to the greenhouse gases trapped in Earth's atmosphere, that is also invisible—and, according to many Americans, including virtually all Republicans running for the White House this year, not a major concern anyway. **In other words, Porter Ranch was turning out to be a disaster without an audience.**

That started to change on December 9, when activists from the environmental group Earthworks released a video of the leak taken with an infrared camera capable of capturing invisible gasses. There is an "ordinary" shot of Aliso Canyon: brown hills crisscrossed with roads, along with some evidence of light industry. Next comes the infrared view from the same vantage point. **A black plume moves continuously over the hills, as if an immense fire were burning somewhere on the horizon. Another infrared shot is from above, showing the plume spewing like a black geyser. You realize at once, and without any doubt, that a very bad thing is happening in Porter Ranch. Normal things don't smoke like that.**

Ten days after that video appeared on YouTube, environmental activist Erin Brockovich called Porter Ranch "a catastrophe the scale of which has not been seen since the 2010 BP oil spill," a neat analogy that paired perfectly with the video of the black plume, which surely reminded some of the underwater feed from the Deepwater Horizon disaster. Brockovich had an interest in proffering the narrative of calamity: **She was organizing a lawsuit for a New York firm (the Earthworks video was shot for a similar class action by another firm).**

Brockovich—who became famous for exposing the chromium-tainted water in Hinkley, California—is sometimes accused of peddling "junk science," but few can deny that she is especially adept at getting publicity for environmental disasters that might otherwise be relegated to the back pages of local newspapers. **Sure enough, her comparison of Porter Ranch to Deepwater Horizon was the irresistible storyline the Internet craved. High-traffic outlets, including Vice, Gizmodo and Business Insider, picked up the claim. Leonardo DiCaprio posted a photo of Porter Ranch on Instagram; as of this writing, it has been liked 39,500 times. Finally, Porter Ranch was making the news.**

“This isn’t a one-day thing for the people that live here,” Brockovich told me when we met in Porter Ranch town center, just a couple of doors down from where SoCalGas had opened a “resource center” that appeared to be the most popular destination in town. She won’t go up the hill, closer to the leak, because she says the sulfur in the mercaptan makes her ill. She believes the nosebleeds, coughs and headaches residents have thus far experienced could presage deeper health problems that might take years to manifest, echoing the anxiety voiced by Matt Pakucko about being turned into a public health experiment. “We need to know what’s in the air,” she says.

It’s not that air sample readings are especially difficult to come by in Porter Ranch. Rather, people don’t believe they adequately capture the extent of the exposure. **Balen showed me photographs of a white dust that had collected on concrete surfaces around his property; an expert was coming to test the substance, which Balen thought was something toxic. On January 4, the Los Angeles Times reported that SoCalGas was installing mesh screens around the leak “to prevent an oily mist from drifting off the site.”**

A disaster like Porter Ranch inevitably brings an examination of the past: Were there missed signs, worries left unaddressed? **Scrutiny has focused on a subsurface safety valve that was found faulty and removed in 1979—but never replaced, because the well was not close enough to residential areas to necessitate such a valve.** Schwecke, the SoCalGas vice president, says he does not know why the valve was removed and never replaced, but he downplays the ability of a subsurface valve to stop a powerful leak like this one. “It wasn’t a requirement,” he says without much contrition.

Abandoned

One night, I went to a meeting of the Porter Ranch Advisory Committee at one of the two schools that had recently been closed. It was unsettling to drive on such empty streets in what was still, by map and law, the city of Los Angeles. Never have I yearned so much for just a little traffic, the slightest sign of life. But the streets were empty, hauntingly so.

The meeting was in the school’s library, which seemed perverse—all this talk of methane explosions amidst picture books for 7-year-olds. Three or four exhausted-looking SoCalGas employees were on hand, but nothing they said could appease the residents of Porter Ranch because the gas was still leaking, the air still reeked of rotten eggs, and the only thing these harried people wanted was for it all to stop. A tray of cellophane-wrapped sandwiches went untouched.



A car drives past an illuminated display on Sesnon Blvd. warning would be burglars that the LAPD is in the area and to encourage residents— those who have stayed— to call 911 if they see criminal activity. Patrick T. Fallon for Newsweek

"Does this kind of leak rewrite the rules on operating a gas well?" asked Issam Najm, who runs a water-quality testing company. Paula Cracium, who heads the Porter Ranch Neighborhood Council, sounded a little bit more conciliatory. "The work we do here is going to impact the entire country," she said. One does want to believe that.

The next day, I met Pakucko in Bee Canyon Park, in a community directly east of Porter Ranch that is called Granada Hills. SoCalGas denied my request to visit SS-25, but Pakucko said we could at least get a good view of the relief well if we hiked to a nearby hill. It seemed like a good way to spend the afternoon, though it occurred to me very quickly that by "hike," he had not meant "leisurely stroll." Both he and the Newsweek photographer came prepared, with winter wear, backpacks, snacks and flashlights. I recalled with some trepidation that mountain lions are known to roam the outer edges of Los Angeles.

The path began steeply and never really flattened out, heading toward the darkening sky. Behind us lay Los Angeles, surrounded by mountains and frosted with haze. The smog of Los Angeles has been the butt of many cheap late-night jokes, **but the city is among the worst polluters in the nation, and the smog is only the visible evidence of that despoliation. Though unseen, the methane spewing from Porter Ranch vastly exacerbates the problem.** As for the effects of all that climate change, it was in evidence

all around us as we ascended the canyon's side, with dry brush crackling with each gust of wind. The California drought is thought to have been deepened by human activity that led to global warming. Now, with the recent leak, Aliso Canyon was causing its own future desiccation, a sadly ironic feedback loop.

For a park enveloped in a thick cloud of flammable gas, Bee Canyon seemed surprisingly full of life: joggers, power walkers, couples holding hands. We passed through an open gate and onto SoCalGas property. Finally, the relief well came into view, nestled into the side of a hill. We could hear it too, a high whine like a dentist's drill in the next room.



According to state officials, the leak could be plugged as soon as March, nearly six months after it began. Drilling down the 8,500 feet to the source of the leak has been a challenge as going too fast would puncture adjust pipes carrying gas, according to SoCalGas. Patrick T. Fallon for Newsweek

The winds shifted with the setting sun, and I got my first smell of Eau de Porter Ranch. It's the smell of gas escaping from a stove, except we were in the wilderness, and there was no knob to turn. And maybe the gas is perfectly safe, but as it comes up on you that's very difficult to believe. We lingered in the dusk as the photographer took pictures, trying to reconcile the surrounding beauty with the catastrophe unraveling several hundred yards away. By the time we descended, it was fully dark. At one point, a pack of coyotes started yapping behind us, and Pakucko urged me to find a large stick. I could not tell if he was joking.

Los Angeles was now entirely blanketed by darkness, but you could see the freeways, ribbons of light weaving through the mountains, **as some of the 5.8 million cars of Los Angeles County deposited vapor trails of carbon dioxide into the atmosphere.** The lights were on in houses across the San Fernando Valley, and because it was an especially cold night, many of the city's 3 million households drew natural gas, probably from Aliso Canyon. There's nothing quite like the pleasure of a warm house fortified against the winter chill. **The city needed Aliso Canyon, and Aliso Canyon faithfully met the city's demands. Only there were hidden costs too, drifting relentlessly over Porter Ranch.**

Correction: A previous version of this article incorrectly stated that methane emissions deplete the ozone layer. In fact, methane emissions contribute to climate change by trapping heat in the Earth's atmosphere.