

Tour of Natural Gas Development in San Juan County, NM

November 11, 2010

Good morning. I'm LHT and would like to thank everyone for coming, with special thanks to Commissioner Leger and Alex Tafoya and the rest of the Task force for their invitation to make this presentation.

My husband Bt and I live on Las Dispensas Rd. and have a ranch where we raise horses. We decided to take a one day trip to Blanco NM with our neighbor BW and our friend DS from Mora, to see the sights.

We saw an area that was once 100% agricultural and now has Industrial facilities sprinkled all through the region.

-My husband and I and BW are in a split estate situation, all of us are land owners

-How many of you own your mineral rights?

Purpose

- 1-day, fact-finding trip by concerned surface property owners
 - Not necessarily to observe best practices
 - But to see what can go wrong
 - Bloomfield area
- Tour guided by 2 local residents – who are not O&G advocates
- Intend to balance with another tour of site where practices are more protective

The point of our tour was not necessarily to see best practices, but to see what can go wrong.

One of our guides owns his mineral rights on his farm land, his parents leased them in the late 1940's.

The other does not own the mineral rights on his ranch land.

We intend to tour another site where practices are more protective.

Overview of O&G in San Juan County

- 10's of thousands of wells in San Juan Basin:
 - Older wells: mostly cretaceous age sandstone
 - More recently: coal bed methane
 - Started in 1930s, then ramped up in '40s & '50s
- San Juan Basin: approx. 2/3 of NM gas production
- Most of gas currently sells to markets west of NM
- O&G is a Boom & Bust business, because
 - Volatility of prices
 - O&G dominates economy – accounting for over 50% of economic activity & approx. 20% of direct labor (more indirect jobs are dependent on O&G)

Oil and Gas is boom and bust.

-volatile

-dominant

Sources:

Daniel Sanchez, Oil Conservation Division, State of NM

Oil and Natural Gas Industry Contribution to the San Juan Basin; April 2005; Bureau of Business and Economic Research, University of NM

Historical, Comparative Economic Analysis; San Juan County, New Mexico; May 2008; POLICOM Corporation

Industrialization of County and City

- Small 'factory' sites everywhere
- Photos from San Juan County areas

Mixed Zoning

*Well near
subdivision*



*Middle of
250 homes*

Refinery in Bloomfield



Refinery is currently at a reduced level of operations, but still in production – Gilbert's son still works there.

But even if were completely closed, would it matter?

If anything would happen it would damage many, many homes.

Gas Storage in Bloomfield



Gasoline storage tanks, remaining from when the refinery was at this location.

[[If the tanks explode, it would cause major damage]]

2 Gas Plants Near Cemetery



Old cemetery now surrounded by 2 plants.

Where natural gas is 'refined' and derivative products are extracted and made (for example, butane)

Escaping vapors and steam. They burn off vapors 24/7.

Waste Water Disposal



*Injection wells
holding tanks*



Waste Water Disposal

Water comes from any well (fracked or coal bed methane).

One site formerly used an evaporation pond and misters to evaporate compounds.

Complaints from nearby homes about airborne contaminants caused pond and misters to be shut down.

Injection/disposal well:

- pump liquid waste back into the ground
- cause a lot of problems
- neighbors of this well complain about:
 - periodic flaring of volatile compounds
 - odor

Extended Operations

*O&G can be a 3-shift,
24/7 operation
(inspections are not)*



Daniel Foster

Common Complaints of residents of once peaceful rural areas where O & G moves in

-24/7 operations

--noise

--odor

--areas that are lit up

Gas Well Pads, Roads, and Pipelines West of Navajo Lake, San Juan County, NM



4 corners area from I-40 to I-70 and I-15 to I-25

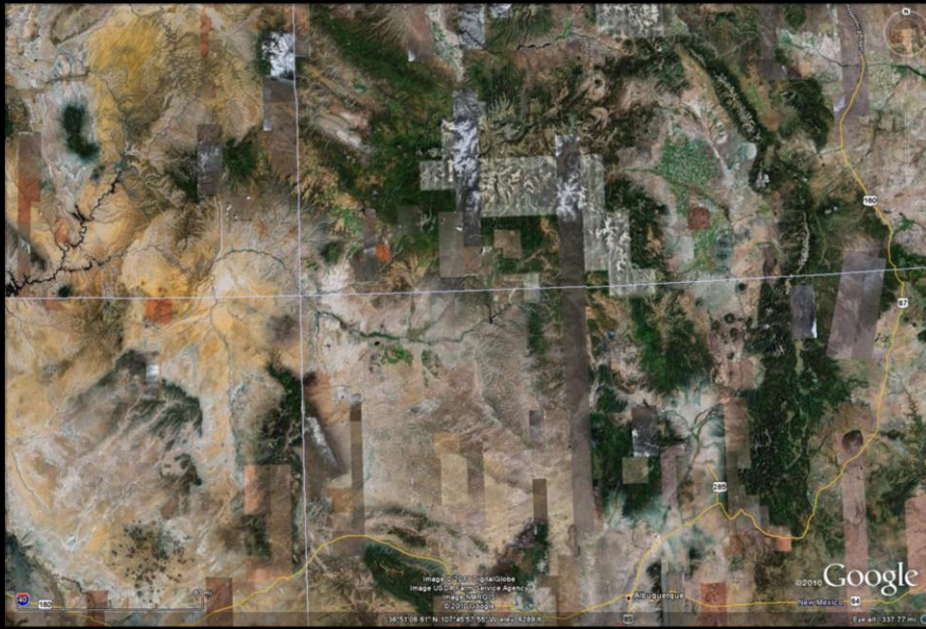
Gas Well Pads, Roads, and Pipelines

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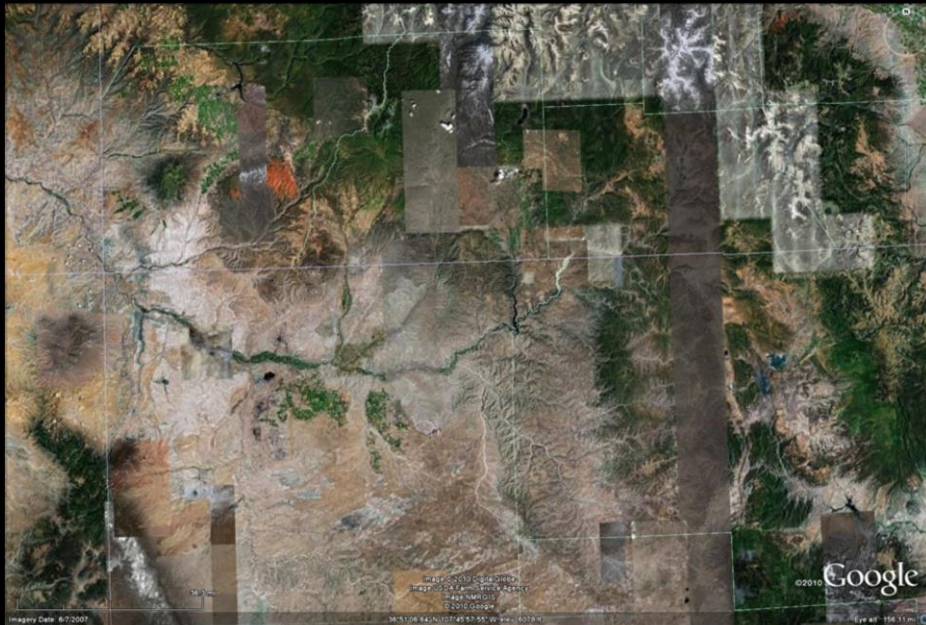
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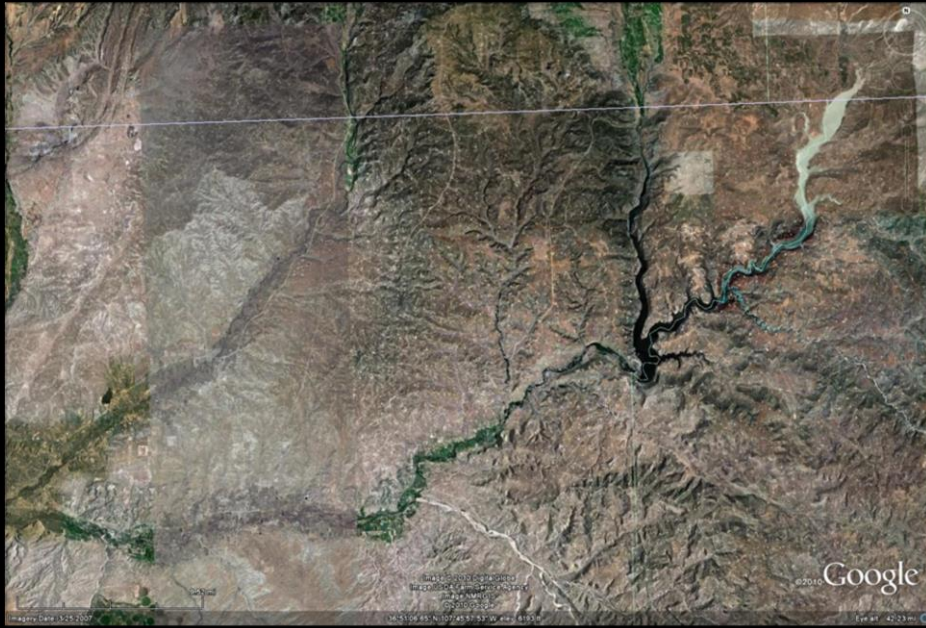
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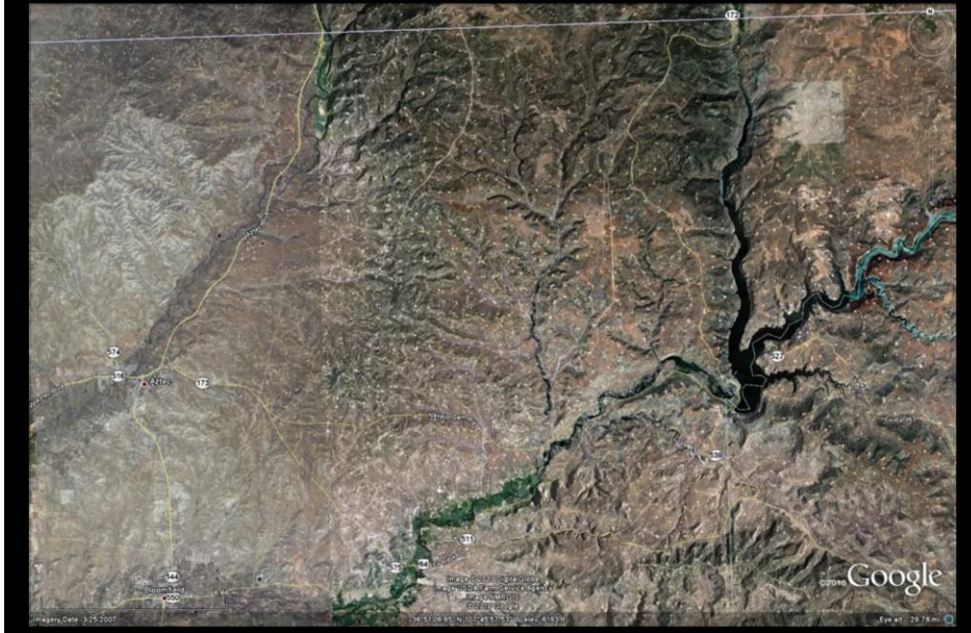
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Gas Well Pads, Roads, and Pipelines

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30 miles up

-Note Bloomfield, Aztec, and Navajo Lake

-each speckle which is a pad is 1-4 acres in area

-clearing of this number of pads has a significant loss of productive land for

--farm

--livestock

--wildlife habitat

Each well pad site has at least one pit waste sucked up out of the well

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Point out compressor station. At about 12 miles up.

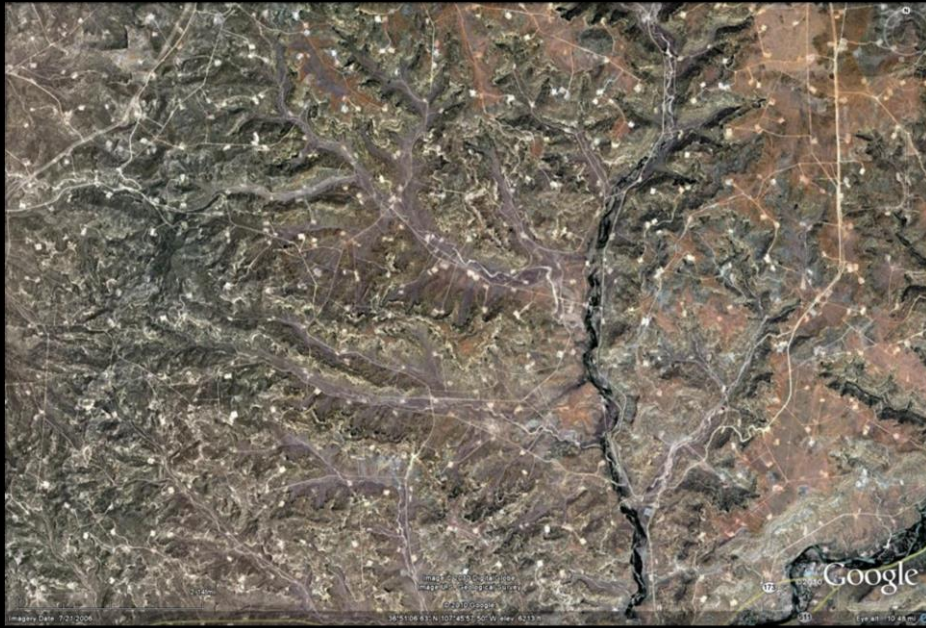
- All the wells are connected by gas pipelines as opposed to oil wells

- oil wells are not necessarily connected

All wells in this area (starting in Southern CO) fed to compressor station in Pump Canyon

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About 8000 ft above ground.

- Clearly see the size of pads
- all of the roads and pipeline routes
- Basically 1 sq mile in area
- Note proximity to arroyos and drainages.

One-Day: O&G Makes News

Oil field thief sentenced to 17 years in prison

"...When people commit crimes that involve well sites or oil and gas, the lost production and lost time cost them more than the actual repairs. It has a huge impact on the oil and gas industry"
 - Chief Deputy District Attorney Dustin O'Brien

Panel approves new emissions reporting rules
 Gen. elect Martinez opposes expanded rule but remains unclear if she can overturn changes

Energy Dance
 San Juan College sculpture nearly finished

Woman dies in fatal crash
 "...struck by a [O&G] water truck..."

Oil Field Art

Newspaper headlines from Nov. 11

- Woman struck by O & G company truck
- Gilbert says, "you don't even have to leave town to be killed by the industry"
- Sculpture made from oil field pipe called Energy Dance
- Oil field thief

-After we completed our tour, we realized the front page in the newspaper was a perfect example of how O&G has come to dominate SJC, and that Farmington, Bloomfield and the surrounding towns have become Company towns.

Gilbert Armenta

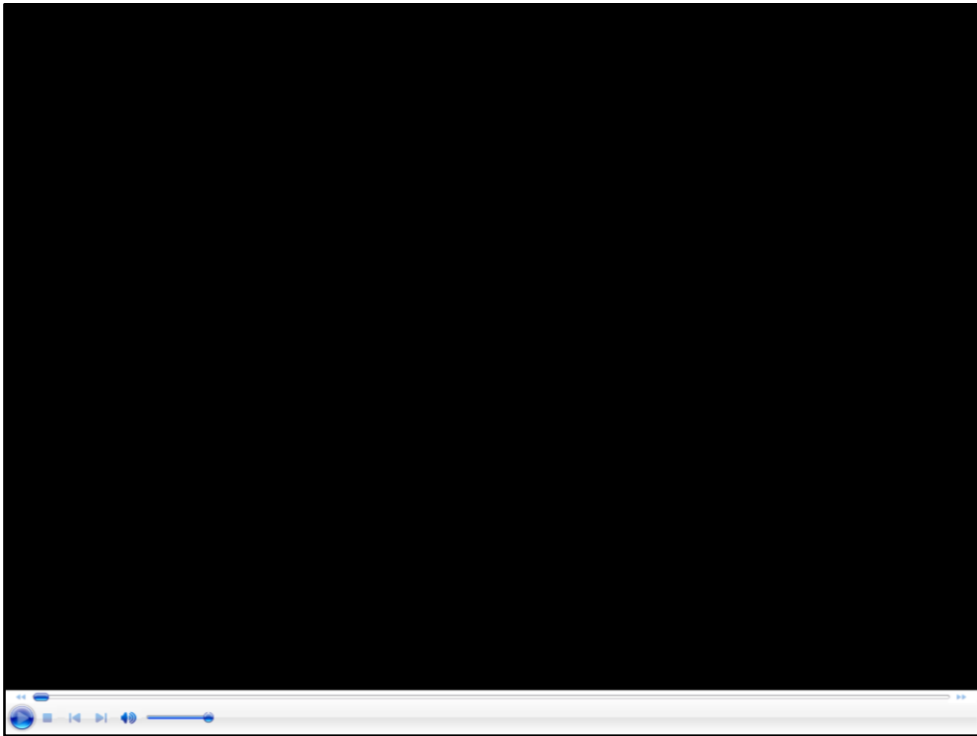


For those who have seen the docu Split Estate you have already been introduced to Gilbert Armenta.

-He is one of the resident's of the Blanco area who generously agreed to show us around his property and on his grazing allotment.

He has lost his father a couple of uncles and other cousins to fatalities while working for the industry

He has spoken about his experiences in Mora and Las Vegas



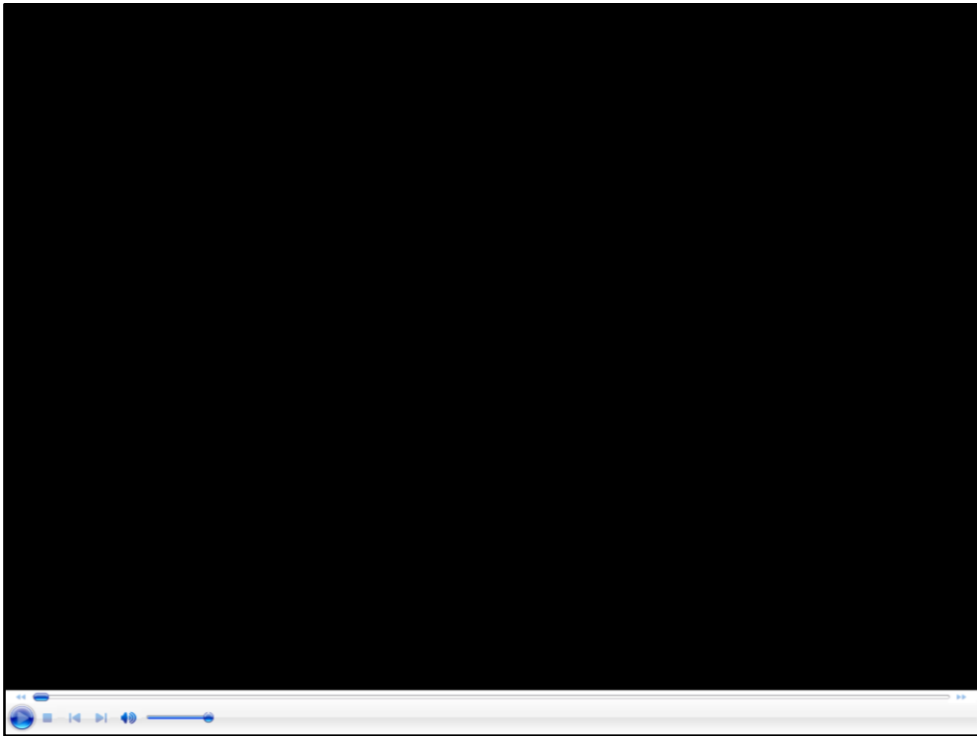
Chris Velasquez



Chris Velasquez is the second gentleman who showed us extraction facilities near his home on BLM land.

- He has extraction occurring on his ranch land, and he does not own his mineral rights.
- He sold a 32000 acre BLM grazing allotment he once had because it became so heavily impacted by gas extraction
- The following video is a little noisy, but very worthwhile.

Note bullet holes in the solar panel, not more than 5' from the large, high pressure gas pipe.



Making 'Burrito' Pits

Pits of Hazardous Materials



Their Funeral

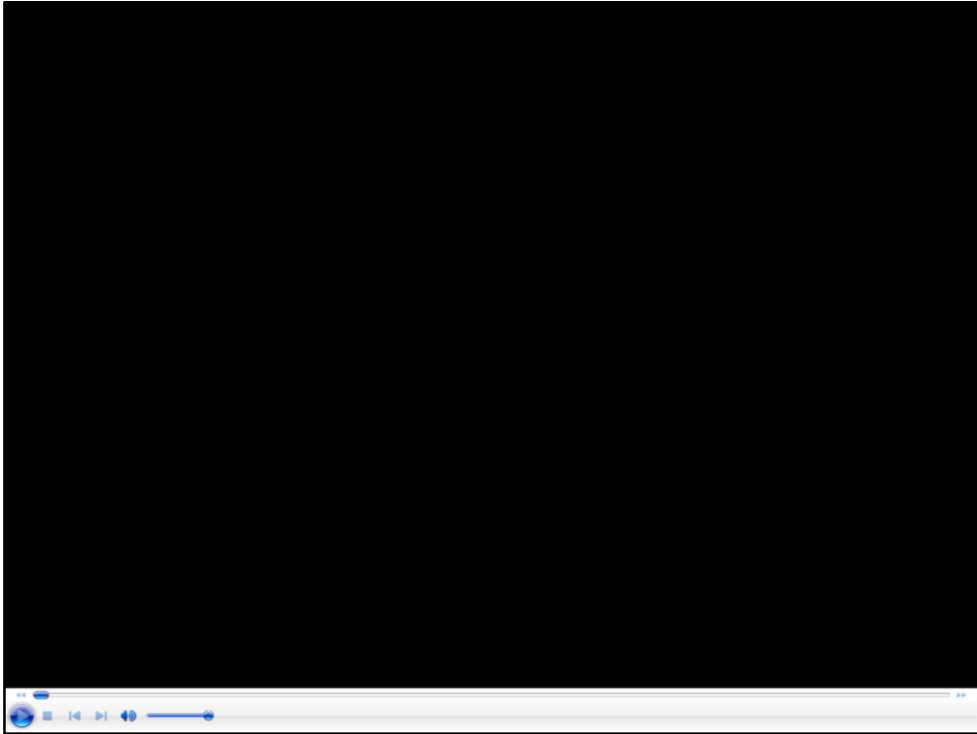


Split Estate

Hazardous material pits and their funeral, being buried
[pointer] these are The pits
This is Track hoe making the Burrito

As OCD's Mark Fesmire described, before the Pit Rule, pits were unlined or had very thin membranes.

Each time a well is drilled a pit is required for what comes back up out of the well
-each well pad has at least one pit
-if the well is reworked another pit will be required



Two different buried pits,
(the second) sunken pit that now collects water,
5 monitoring wells were placed uphill of the pit,
however the hazardous materials will flow away from monitoring wells, downhill,
toward the San Juan river.

Public BLM Lands

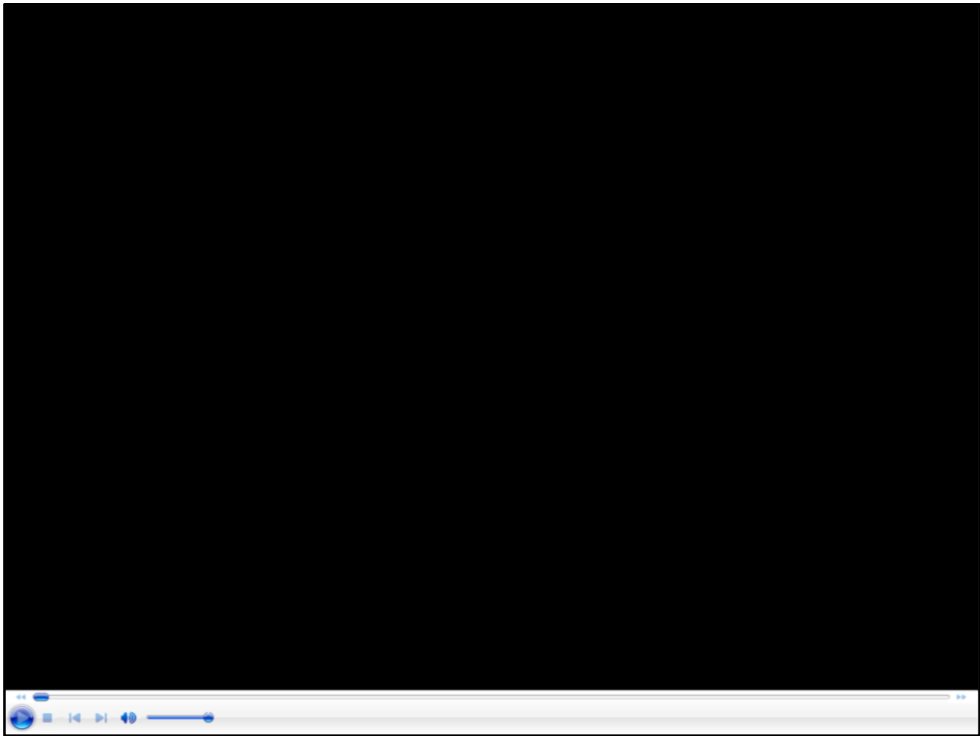
We are now going to look at drilling on BLM land. Some of these are on BLM land where Gilbert has his grazing allotment

Gas Well at Risk: Meandering Arroyo



Here (pointer) is a producing well

Here is an arroyo river bed with a 30' drop off



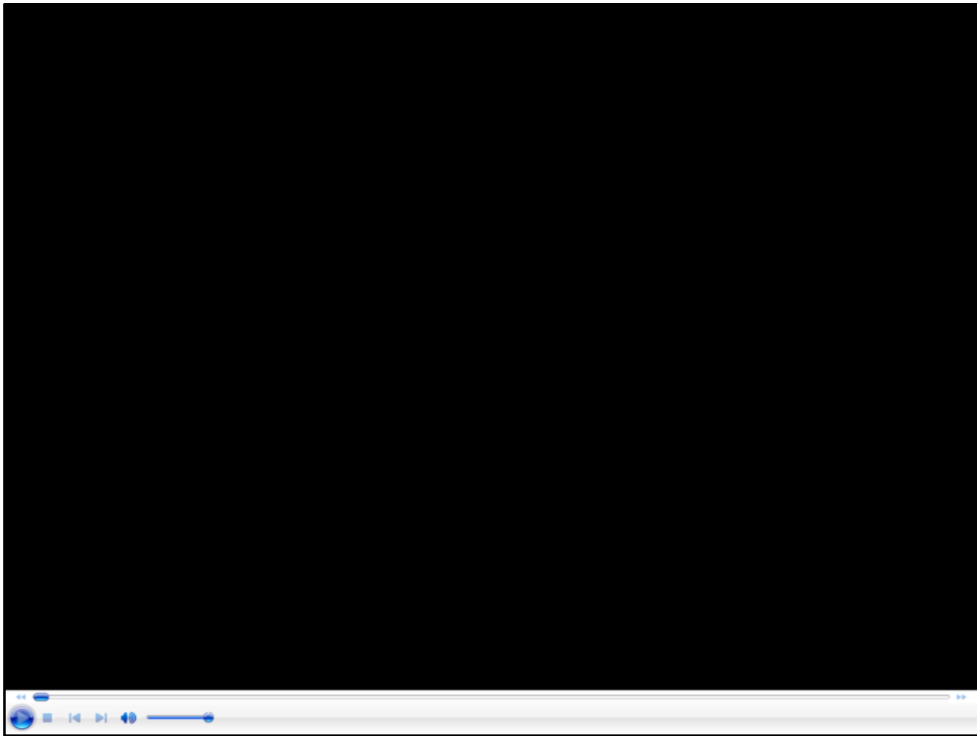
BLM Enforcement Off Road Damage



"If I had a blade of grass for every road, my cows would be fat"

- Gilbert Armenta

1 of thousands of roads carved by O&G in the County.



Old and Exposed Pipelines



This is a typical 6" pipeline

The NM PRC, Pipeline Safety Bureau, is responsible for enforcing US DOT pipeline regulations

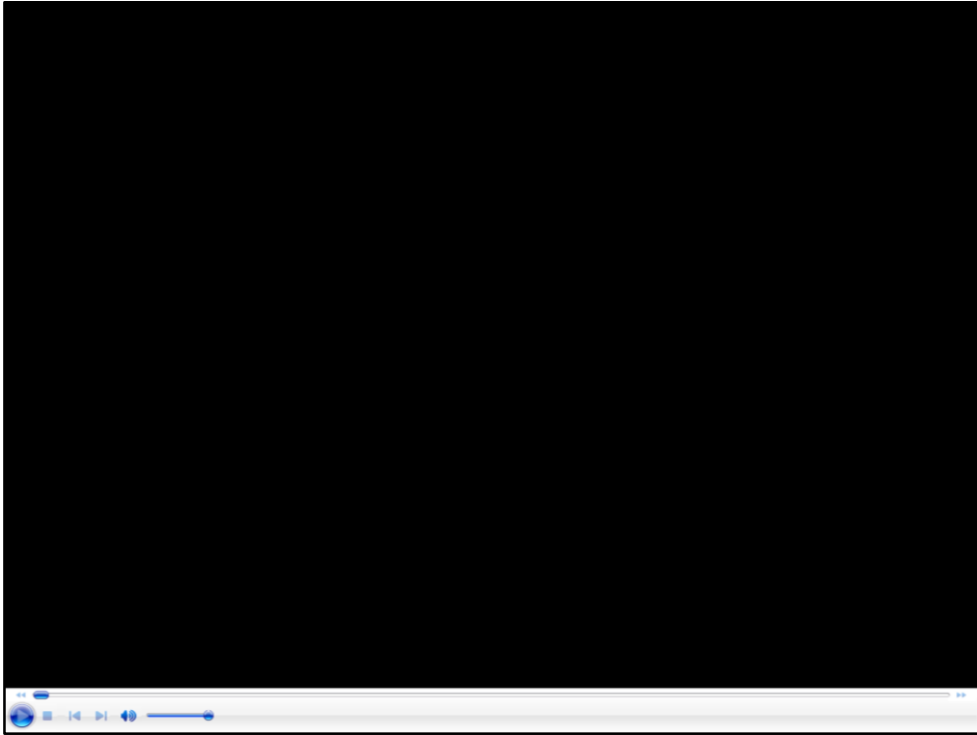
Statewide: 11 inspectors

Rely on BLM to report problems on that land

There are Thousands of miles of pipelines

Each inspector conducts about 80 inspections per year

- Sefie Anaya, 476-0259 (12/13/10)



Because of flash flooding the pipe has been bent, here the pipe is bridging flash flood cuts without proper support.
Gilbert says that this pipeline could result in huge explosion.

Excavating a Well Pad



Just started several days ago.
On Armenta's BLM allotment.

New Well Pads



*Pad During Drilling, with
Rig and Other Equipment*

Split Estate

*Recently Completed Pad,
At Least 3 Acres in Size,
(Pump Canyon, NM)*

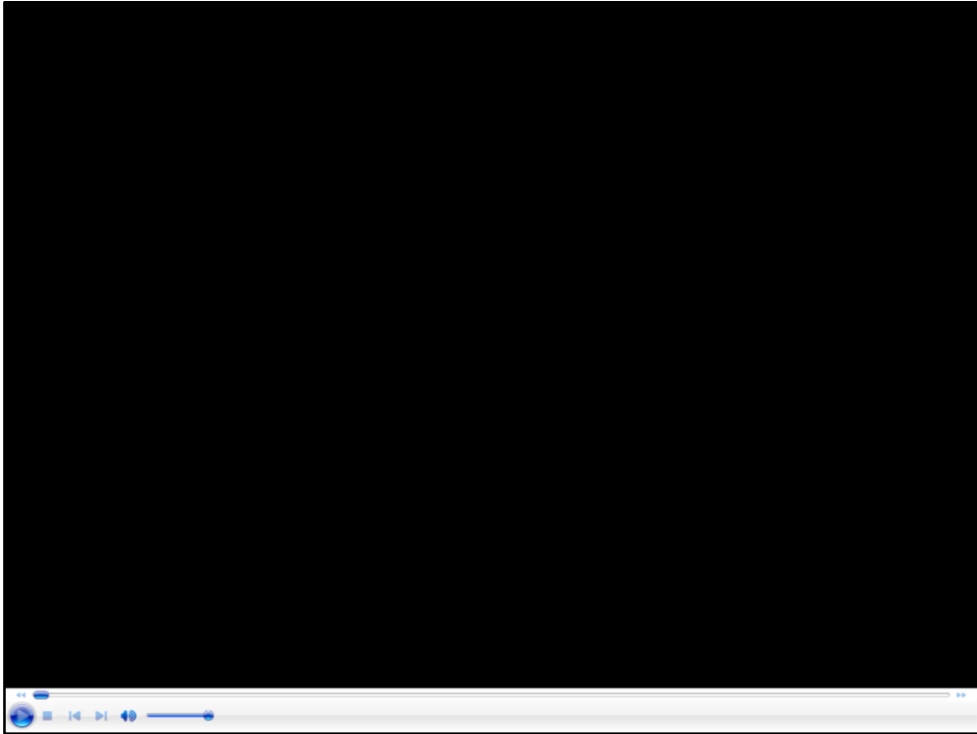


Top left:

[pointer] On bottom right (point to well head and metering station):

To generate revenue, this well began producing immediately, even before all the equipment was brought in and connected:

Such as tanks, compressors, dehydrators, and eventually a pump jack (when well production and pressures drop)



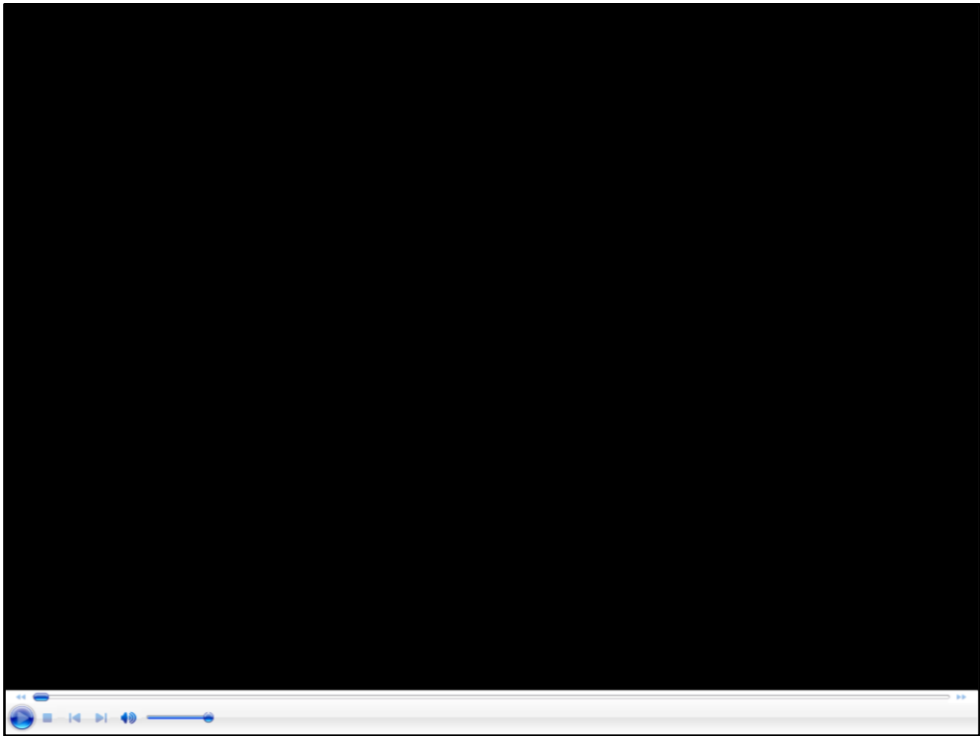
Note the large compressor station across the canyon: was pointed out in the aerial photos, and will have more detail later

-Erosion of the pad is recent could be do to rains and water from the drilling, it runs down the canyon to the San Juan River, 1 mile away, with sediment damaging 'quality waters' rating of River for fishing (audio?)

Reclaimed Well Pad



Regs say to reclaim with viable consumable vegetation that was there prior to disturbance to control the introduction of invasive species like Russian Thistle.
-In some areas, trucks must be washed before moving on to next site, to prevent the spread of invasive species.



Large Compressor Station

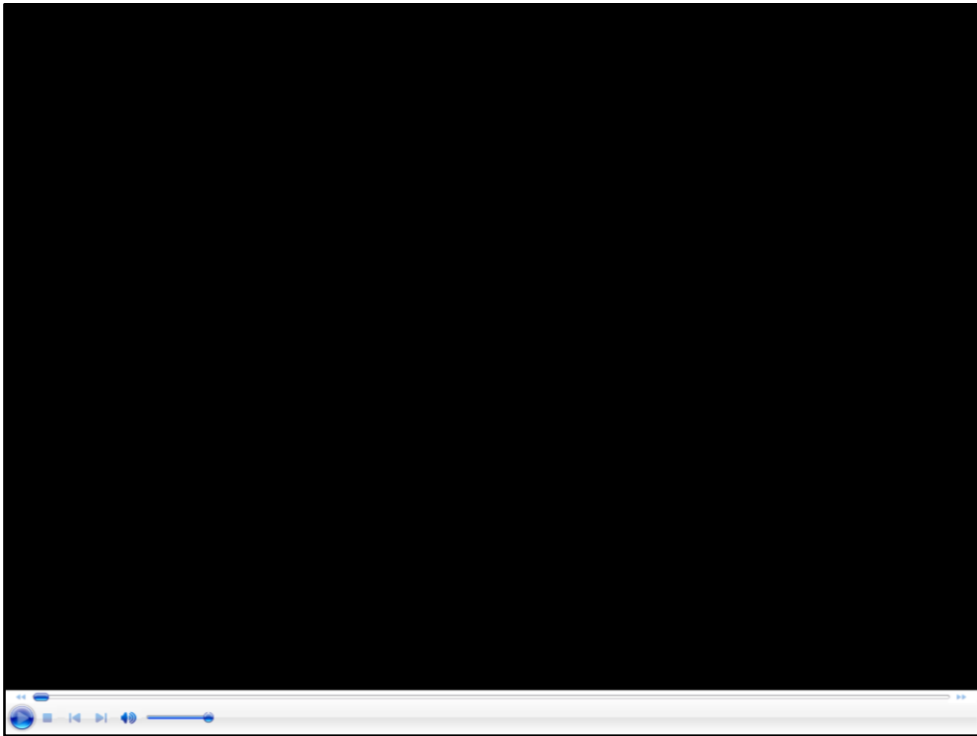
Pump Canyon, NM



6 compressors
36" High pressure pipelines



From Velasquez house can smell odors, and hear compressor facility



Video Notes:

Wavy 'fumes' arising from within facility -- Explain escaping vapors that should be captured

White tank of methanol with catch pan beneath

Grimy 'Pigs' used to clean pipelines, along with stuff scraped from the pipeline.

Occasionally, workers will be killed by pigs bursting from end of cleanout. (audio)

Material from 'pigs' on ground washes down gully (toward San Juan River)

Unprotected Well Sites



Compressor

*Well head and
metering station*



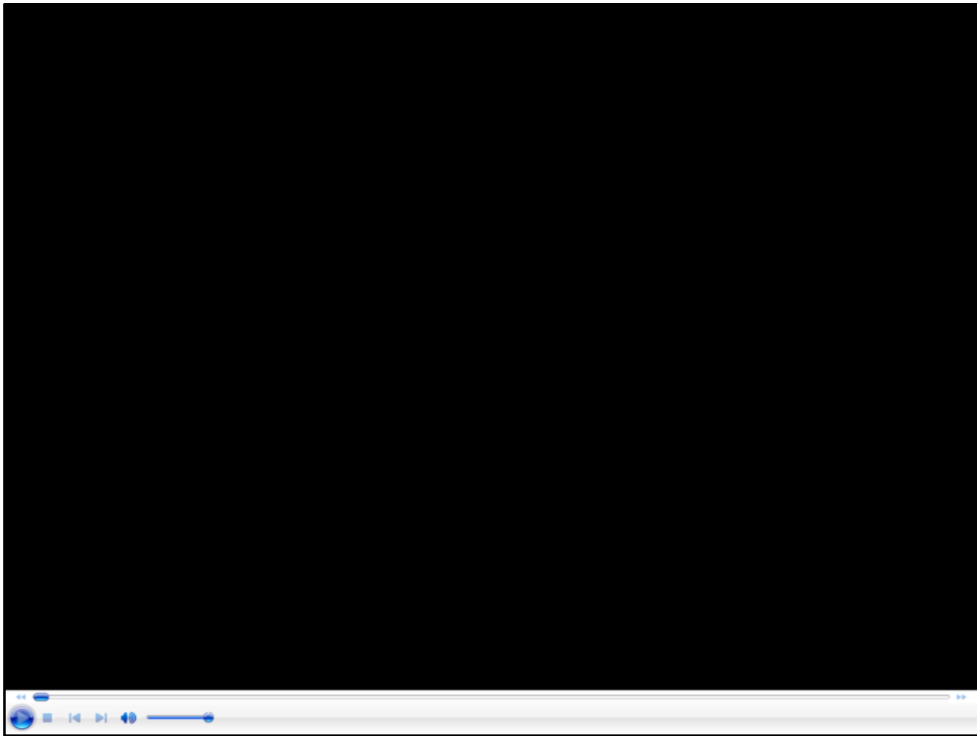
NO FENCE AROUND PRODUCING WELL HEADS AND FACILITIES

Without protection this equipment is exposed to hikers, vehicles, wildlife and livestock. Some time back, several kids drove into an unprotected well head at night, and died in the explosion.

[pointer] Note the leaking lubricants at the base of the compressor.

Methanol and glycol are used for freeze protection. Cattle and wildlife are attracted to this material when it leaks from fittings. Ingestion can cause abortion and death.

It turns out that it is better for cattle owners to take their losses on livestock, rather than seeking compensation through costly legal action.



Watering trough for livestock and wildlife.

Equipment at Well Sites



Separator

Waste water storage



[P] Separating the gas from the water, with the water going into the waste water storage tank.

-[P] The conical screen keeps birds that perch on top, and are overcome by vented gases, from falling into the equipment.

-Waste water can include combustible liquids and produce odors.

--[pointer] These Retaining ponds with gravel covered berms have no liners to prevent seepage into the ground.

O&G Factory: View from Armenta's House

One of the Producing Well Pads on Armenta's Property



View is from Mr. Armenta's house

--Beyond the well pad is one of his alfalfa fields

--Note interference with crop circle

Inventory of equipment on this 1 acre pad

2 well heads

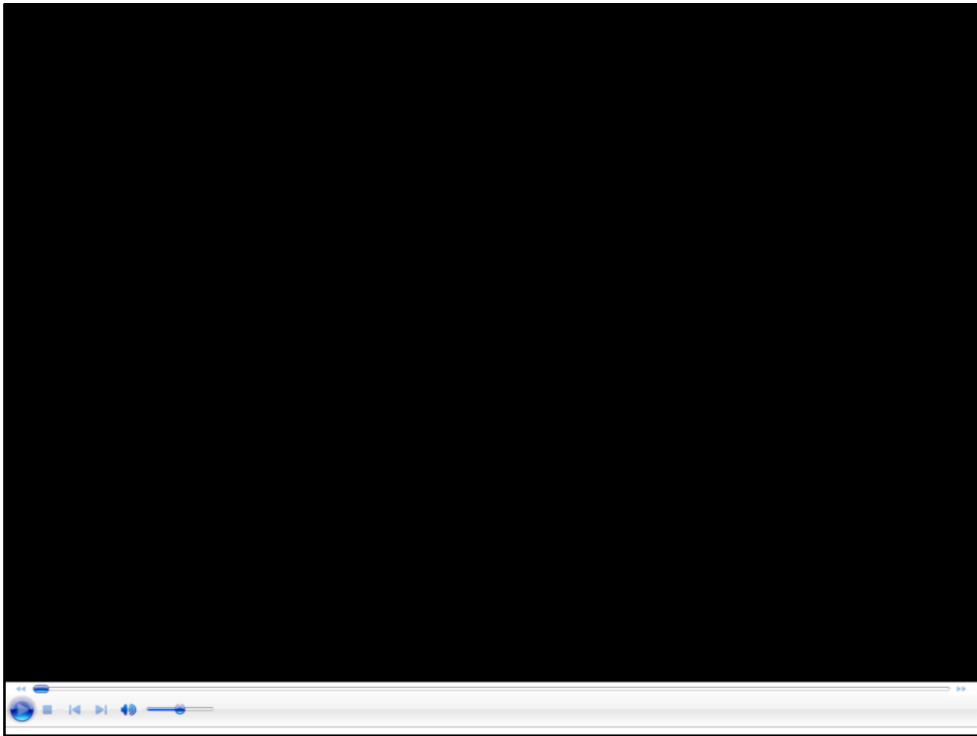
3 meter runs

2 separators

Storage tank for condensate

Open pit tank for waste water

Compressor



The Armenta's House, Viewed from the Well Pad



Pump Jack is on a 20 minute timer.

Equipment on Private Property



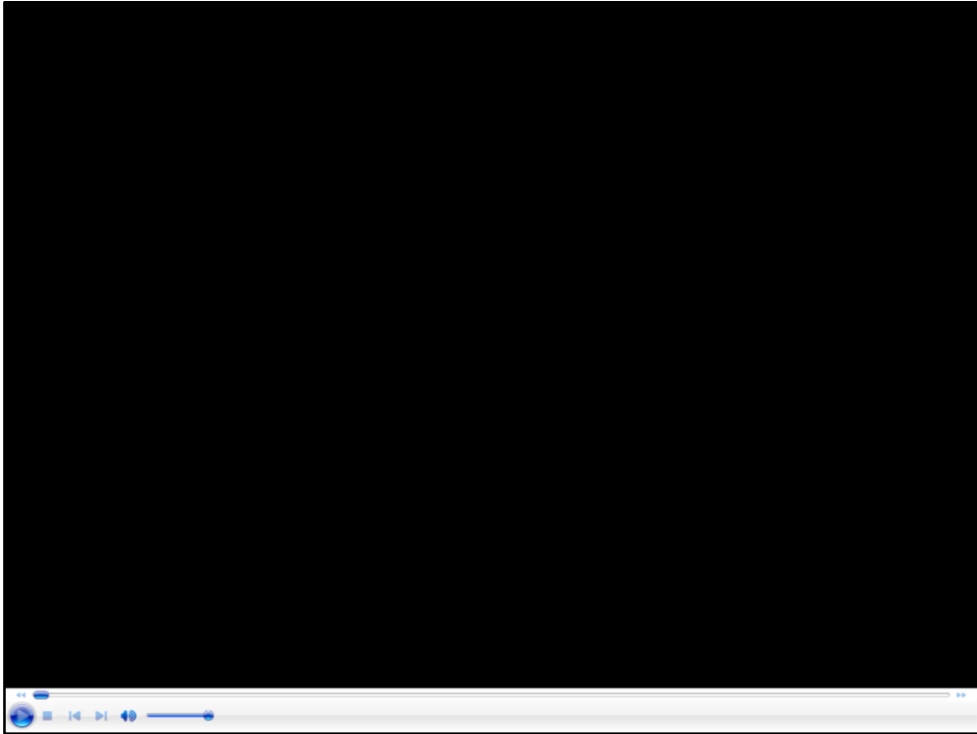
These facilities are within 200-400 ft. of the Armenta's home.

You'll see in the following video: compressors, pump jacks, and lubricants leaking from the equipment into the soil.

The shelters around the equipment offers only limited sound control.

The sounds are what we encountered, and haven't been boosted or amplified.

Play audio: Gilbert describes noise and odor from facilities.



Already said?? These walls are sheet metal and not acoustic insulation
This compressor is immediately next to Gilbert's home, he hears and smells this all night. (check for repetition)

Safe Neighbors?



These are signs you would find on industrial sites, we saw them everywhere on our tour.

Mr. Armenta Comments

- What are Your Biggest Grievances with O&G?
 - Disrespect and racism 🗣️
- Is There a Local O&G Ordinance?
 - County/city officials are connected to O&G

“Every county commissioner and city councilor is either employed by or owns an oil company. Now would you create a rule or a law to cut your own throat? No. And that’s the way San Juan County is. 100% of our representatives to Santa Fe are oil people.”

During our day with Mr. Armenta and Mr. Velasquez we had many questions and discussions. Some were recorded, but the sound quality was poor for most, so their comments were transcribed here.

[[Introduce Questions/Comments]]

What are your biggest grievances with O&G

2nd bullet responds to question Does SJ Co have an O &G ordinance write the text?

Other Comments:

Estimates that 30-50 O&G companies are operating in the area. They frequently exchange ownership of leases and property. This creates a ‘shell game’ of ownership, and an obstacle for landowners trying to resolve problems and disputes.

Wonders why it’s still called ‘Farm’ington cause “there ain’t no farms there anymore” And finally he mentioned - Most people won’t speak against O&G because of job dependence.

Mr. Velasquez Comments

- **Biggest Grievance: O&G Companies are Greedy**
 - *“Greed... the more they can get, the better for them... They aren’t satisfied with just a little bit – they want the whole thing... They have the best attorneys available to them. They’ll put 3 up against the one you hire... They’ll get in between you and your family if they have to -- there’s that much greed”*
- **O&G Flout the Rules (e.g., flaring at night)**
 - *“They do a lot of things that are illegal ...if they can get away with it, they’ll do it. BLM and all of the officials that are supposed to be in charge of that, they come out here in the morning and everything’s OK. ...Get the main guy with them in bed, and the other guys are gonna follow along”*
- **Skilled Labor Imported (or Grow Up with Industry)**
 - *“Your top echelon... comes from outside. [The local hires] are guys running the shovel.”*

[[Introduce Comments]]

‘Here’s what Mr. Velasquez had to say..’

Mr. Velasquez second comment refers to a discussion about why they do flaring at night.

-Steve Henke was the BLM’s ‘main guy’ – Our handout describes Mr. Henke’s relationship with O&G

We asked Mr. V about Jobs.

Mr. Velasquez Comments

- **Cheating on Water Rights**
 - *“They need a lot of water... And if they can’t come up with the water rights or someplace where they can get water... [in the past] they siphoned it out of the river until they caught ‘em dumping the waste in there. So they stopped that. And now individuals have ponds built so they can sell the water to the oil companies.”*
- **Impact on Wildlife and Cattle Losses**
 - *“Yeah, it impacted in a big way. I took a specialist from Farmington over [to my grazing allotment in 2000] and probably in an acre, we had over 10 different carcasses that were dead... I thought they were winter kill. But I think they were... getting into the glycol and the methanol... I had been having a lot of problems with my cows dyin’ then...”*
- **Private Land and Cattle Owner vs. O&G**
 - *“...I locked [my private property] up. So now they’ve got to sign in and sign out, and I know who’s comin’ in and goin’. That’s the best thing that I can recommend to people on private land... is to put a gate on it and lock it up. [But] They’ll fight you tooth and nail ...you’re just a pebble, you’re not even a stepping stone. There’s no stopping, once they get going...”*

More Chris Velasquez:

We asked Mr. V about where O&G gets water for drilling

Mr. V was referring to a large BLM lease allotment he owned east of Navajo Lake
Started at 32,000 acres, then reduced to 22,000 so that 10,000 would be strictly for
mule deer habitat – important wintering grounds (6400’)
Remaining 22,000 acres: 65% mule deer, 35% cattle

Mr V said that the further you get from paved roads the worse the O&G practices get.

Oil field thief
sentenced to 17
years in prison

"...When people commit crimes that involve well sites or oil and gas, the lost production and lost time cost them more than the actual repairs. It has a huge impact on the oil and gas industry"

- Chief Deputy District Attorney Dustin O'Brien

Remember our oil field thief, apparently his crime was worse than:
The Gas Co. stealing water,
The livestock losses to the ranchers
The losses of property and the income from that property,
The losses of wildlife to the public
Loss of life and health

And as far as we know, nobody went to jail for these other activities.

What Did We Learn?

- Gas development is not 'green' or clean
- Industrialization of area – irreversible
- Company towns:
 - O&G dominates business, politics, and culture
- Weak federal, state, and local regulations
 - *But even weaker enforcement*
- O&G industry does not pay all costs caused by their development

Despite what we see on TV ads Natural Gas.....

As we drove around the area one of the biggest impressions was how the entire area had become Indus, that change is irreversible

The business the politics the culture has completely changed over the past 50 yrs., it is now completely dominated by O&G

Regs. Governing O&G are weak, and even those regs have very poor enforcement

The Oil and Gas Industry is heavily subsidized by governments, landowners, and community members. Utilizing extraction techniques that do not safe guard the integrity of the land in terms of quality, value, health, and the ability of local citizens and landowners to be able to carry on their livelihoods is but one of them. By requiring the Industry to follow best practices it merely means that the true cost of the product will be spread to all consumers rather than requiring the landowners and local communities to bear all of those losses.

What Else Did We Learn?

- Water and soil (and health and safety) are valued less than gas (and oil)
- O&G does what they want – everything is a cost of doing business
- Lack of zoning control: compatible use?
- SMC needs to protect itself against these (and other) kinds of harmful activities

In 50 years water and soil will be worth more than gas and oil -- what will our heirs think if we have traded off their riches for the short term gains of corporate shareholders?

O&G is a bull in a china shop, in an under-regulated environment they do what they want.

They see everything as a potential cost of doing business.

We found a wide lack of zoning control

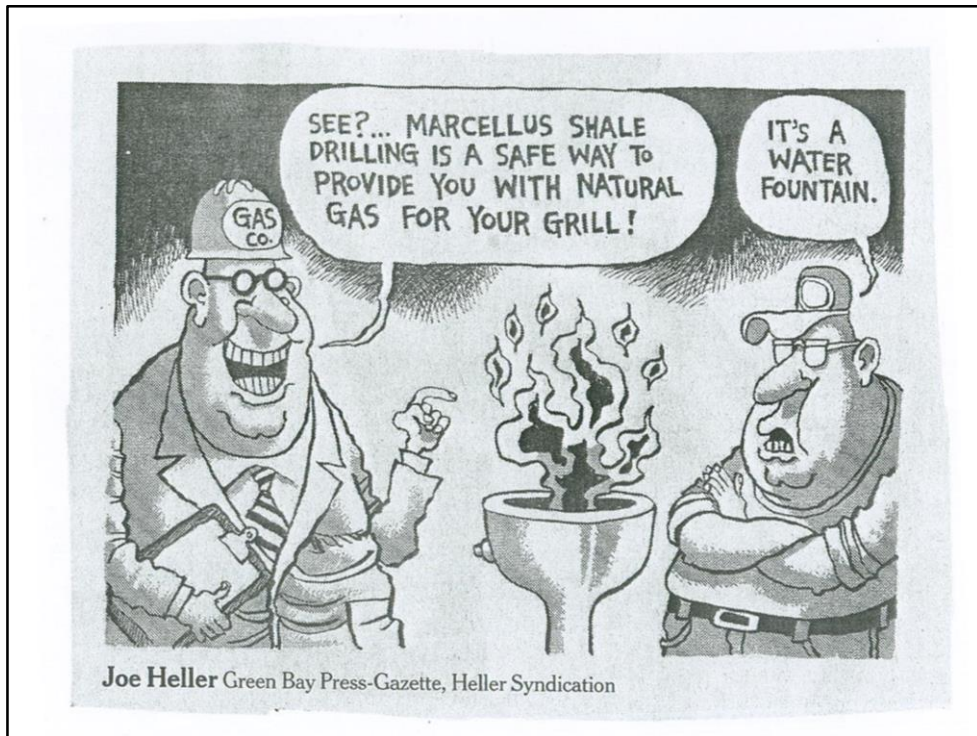
-there were wells next to houses,

-refineries in town

-where else would you allow this sort of incompatible use to happen

SMC needs to be ahead of the curve, we need protection against these kinds of activities

We are in the fortunate position of being able to enact a protective ordinance before harm is done that can not be undone.



I always like to end on a bright note!

As we were driving home...