#### Frack Free East Yorkshire

A Coalition of Groups Opposed to Extreme Energy

WHERE GET INFORMED ACT INCIDENTS ABOUT DONATE EVENTS



#### **Current Situation**

New oil & gas licences will be granted later in 2015, and our region is especially badly affected... read more...

It has just been announced that infamous fracking company Cuardrilla will be offered at least one block (SE95) west of Driffield, centred on Tibthorpe. <u>Read more...</u>



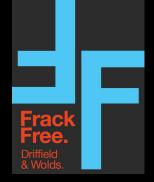
Rathlin Energy (LHQ Ltd is currently the main licence holder in our region and have 3 wellsites in East Yorkshire. Their Licence block (PEDL183) stretches from Brough, Beverley & Hornsea to Sign Up for Our Newsletter Keep up to date with the Frack Free East Yorkshire newsletter.

# frackfreeeastyorkshire.com /references





**Cherry Burton Against Fracking** 



Frack Free Bridlington

Frack Free Pocklington Area



Friends of the Earth Beverley Friends of the Earth Hull

GREENPEACE



Mid Holderness Against Rural Industrialisation New Ellerby and Old Ellerby Against Fracking







Walkington and Bishop Burton Action Group

### Extreme Energy: Extraction Effort



### Conventional Oil or Gas

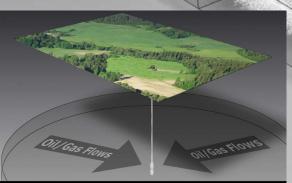
11/2

oil/Gas Flows

Oil/Gas Flows

# Unconventional Gas: Fracking

6100



CONVENTIONAL OIL / GAS







**High Volume** fracking has only happened once in the UK, at Cuadrilla's Preese Hall well near Blackpool.

It triggered small earthquakes which damaged the well casing.



## Impacts: Transport

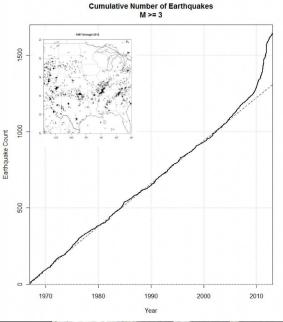
2000 00 Avg. No. of Accidents/Population 0006 0007 0008 0009 500 1000 1500 No. Well Pads 0 2000 2003 2006 2009 1997 2012 Year -- Accidents in counties with more than 20 wells Accidents in counties with less than 20 wells Marcellus Shale, Pennsylvania - Well pads drilled

SARAH SARAH

# Impacts: Earthquakes



### Impacts: Earthquakes







#### INDUCED EARTHQUAKES

### Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection

K. M. Keranen,<sup>1</sup>\* M. Weingarten,<sup>2</sup> G. A. Abers,<sup>3</sup><sup>†</sup> B. A. Bekins,<sup>4</sup> S. Ge<sup>2</sup>

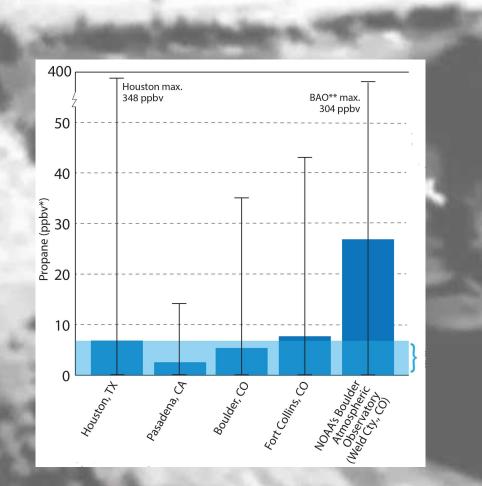
Unconventional oil and gas production provides a rapidly growing energy source; however, high-production states in the United States, such as Oklahoma, face sharply rising numbers of earthquakes. Subsurface pressure data required to unequivocally link earthquakes to wastewater injection are rarely accessible. Here we use seismicity and hydrogeological models to show that fluid migration from high-rate disposal wells in Oklahoma is potentially responsible for the largest swarm. Earthquake hypocenters occur within disposal formations and upper basement, between 2- and 5-kilometer depth. The modeled fluid pressure perturbation propagates throughout the same depth range and tracks earthquakes to distances of 35 kilometers, with a triggering threshold of ~0.07 megapascals. Although thousands of disposal wells operate aseismically, four of the highest-rate wells are capable of inducing 20% of 2008 to 2013 central U.S. seismicity.

eismicity in the United States midcontinent surged beginning in 2008 (1), predominantly within regions of active unconventional to 2013 as compared to 1976 to 2007 (Fig. 1, inset A) (10). Wastewater disposal volumes have also increased rapidly, nearly doubling in central Oklahoma.

# Impacts: Air Pollution

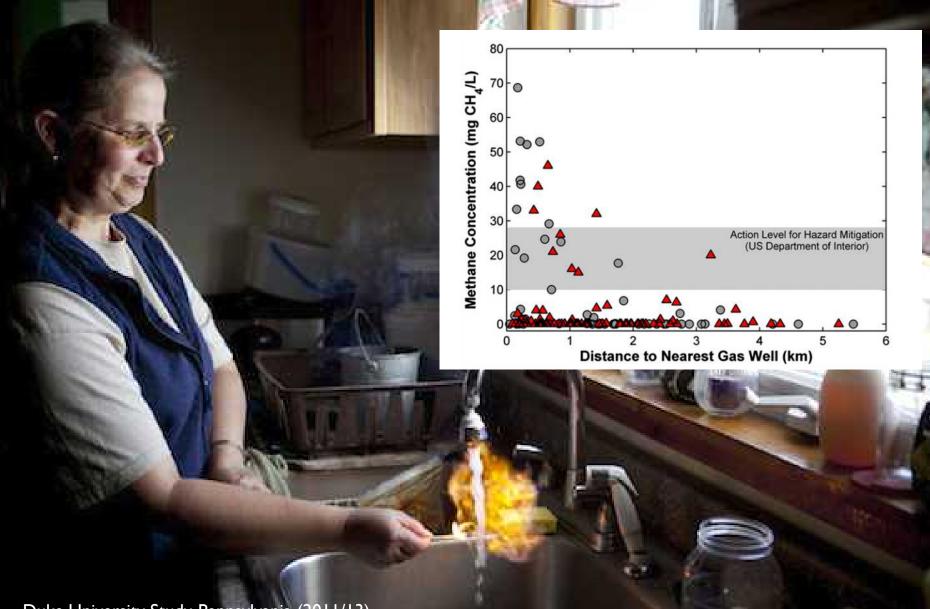


### Impacts: Air Pollution



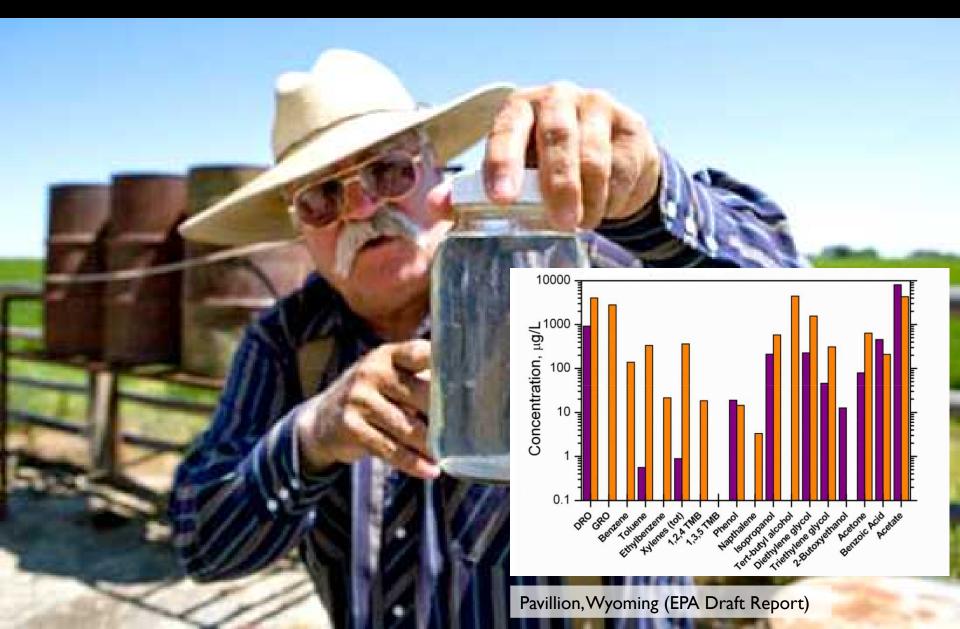
Boulder Atmospheric Observatory, NOAA, Colorado (2013)

### Impacts: Methane Contamination



Duke University Study, Pennsylvania (2011/13)

### Impacts: Toxic/Radioactive Water



### Peter Rolinson, Water Chemist



"Unlike other areas of the country, in East Yorkshire we get most of our water from one very large aquifer.

Even slight contamination of this aquifer could cause major issues for a large population.

It is vital that we maintain the integrity of this aquifer.

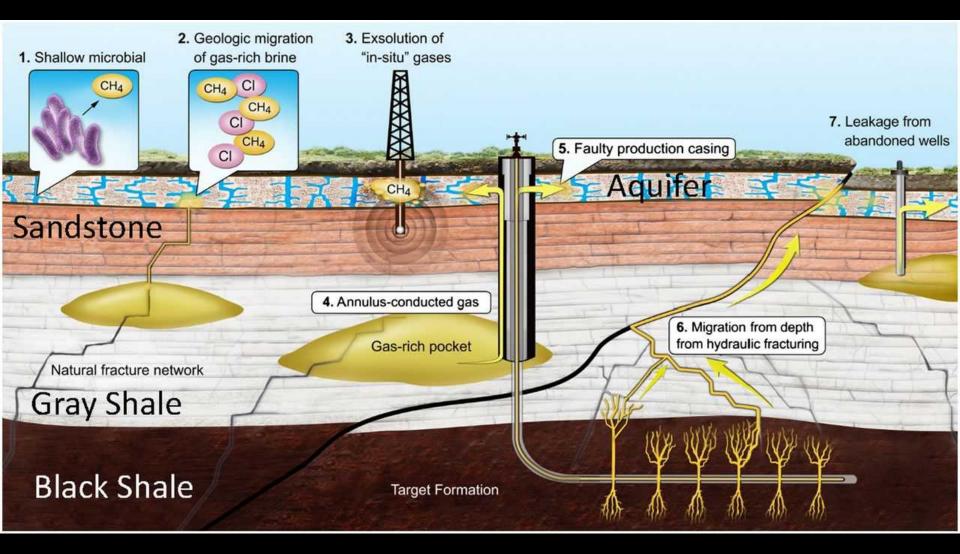
We cannot afford the slightest risk of contamination of this vital water supply for East Yorkshire.

It would take years to clean up, and the risk would remain as long as fracking continues.

I think with the potential contamination of water, the air pollution, the transport, the lack of economic benefit -

I don't think fracking should be considered at all."

### Leakage Pathways

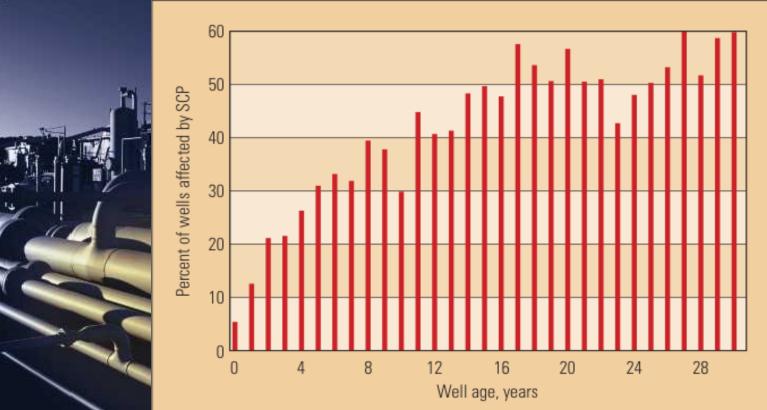


### PNAS, 2014

### Impacts: Well Casing Failure is Common

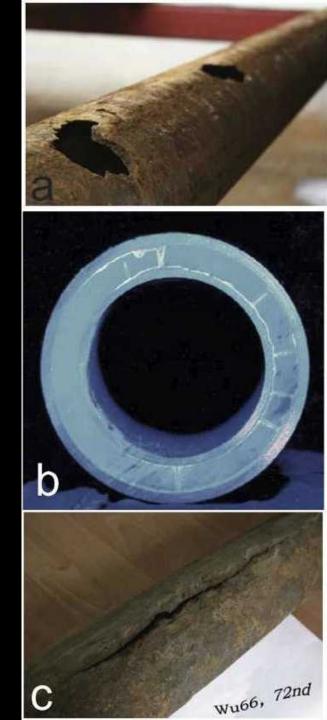


Autumn 2005



Coalbed Methane Reservoirs Fracture Restimulations Building Gas Wells

Schlumberger



#### **ARTICLE IN PRESS**

Marine and Petroleum Geology xxx (2014) 1-16



Contents lists available at ScienceDirect

Marine and Petroleum Geology

journal homepage: www.elsevier.com/locate/marpetgeo



Oil and gas wells and their integrity: Implications for shale and unconventional resource exploitation

Richard J. Davies<sup>a,\*</sup>, Sam Almond<sup>a</sup>, Robert S. Ward<sup>b</sup>, Robert B. Jackson<sup>c,d</sup>, Charlotte Adams<sup>a</sup>, Fred Worrall<sup>a</sup>, Liam G. Herringshaw<sup>a</sup>, Jon G. Gluyas<sup>a</sup>, Mark A. Whitehead<sup>e</sup>

<sup>a</sup> Durham Energy Institute, Department of Earth Sciences, Durham University, Science Labs, Durham DH1 3LE, UK <sup>b</sup> Groundwater Science Directorate, British Geological Survey, Keyworth, Nottingham NG12 5GG, UK <sup>c</sup> School of Earth Sciences, Woods Institute for the Environment, and Precourt Institute for Energy, Stanford University, Stanford, CA 94305, USA

<sup>d</sup> Nicholas School of the Environment, Division of Earth and Ocean Sciences, Duke University, Box 90338, 124 Science Drive, Durham, NC 27708-0338, USA <sup>e</sup> Ward Hadaway, Sandgate House, 102 Quayside, Newcastle Upon Tyne NE13DX, UK

#### ARTICLE INFO

ABSTRACT

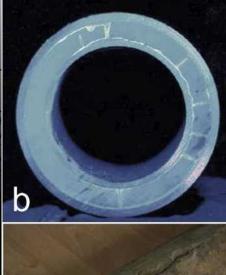
Article history: Received 8 December 2013 Received in revised form 28 February 2014 Data from around the world (Australia, Austria, Bahrain, Brazil, Canada, the Netherlands, Poland, the U and the USA) show that more than four million onshore hydrocarbon wells have been drilled globally. Here we assess all the reliable datasets (25) on well barrier and integrity failure in the published liter three wells. There detectes include according injections in the and have been drilled barbarrier and integrity failure in the published liter.

"The research confirms that well failure in hydrocarbon wells is an issue and that publicly available data in Europe on this seems to be sparse...

... we don't really know the full extent of well failures. There were unknowns we couldn't get to the bottom of." Professor Richard Davies, Durham University







Wu66, 72nd

# Parr Family, Texas



### HailOnline

### Family awarded \$3MILLION after court finds chemical exposure from fracking on land next to their home left them sick and suffering horror side effects

The Parr family of Decatur, Texas, first complained of falling ill in 2008 after Aruba Petroleum began fracking operations near to their ranch Bob and Lisa Parr and their daughter Emma developed nosebleeds, nausea, rashes and asthma

Some of their livestock were born with deformities after the Parr's land was contaminated

They launched a lawsuit against the energy firm - which went to trial The jury sided with the Parr family - a first in fracking lawsuits in the US

By JAMES NYE

PUBLISHED: 06:06, 24 April 2014 | UPDATED: 18:05, 24 April 2014

#### f Share 💆 Tweet 🖗 Pinit 🚷 🖬 🛸 Shares 2,392 shares

A Texas family have won a nearly £3 million judgement against an oil giant after claiming that fracking operations near their 40-acre ranch left them suffering severe health side-effects.

In what is believed to be the first successful legal action against a shale operator, Bob and Lisa Parr sued Aruba Petroleum for damages for a raft of illness they and their daughter Emma have suffered from for almost six years.

They convinced a jury that the company's hydraulic fracturing operations had contaminated their water and land in Decatur leaving them suffering nosebleeds, nausea and rashes.

Scroll Down for Video



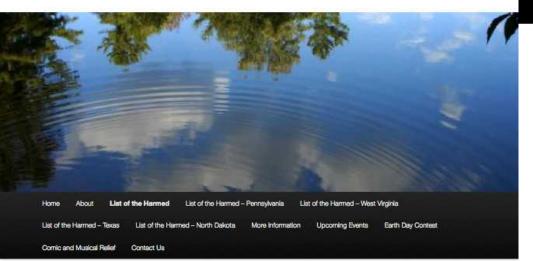


News

99 View

#### Pennsylvania Alliance for Clean Water and Air

Dedicated citizens fighting to protect our most valuable resources.



#### List of the Harmed

-Updated as of August 28th, 2015-\*PDF version here - List of the Harmed

The following is an ever-growing list of the individuals and families that have been harmed by fracking (or fracked gas and oil production) in the US.

Should you encounter any issues (misinformation, broken links, etc.) or if you are/know someone who should be added to this list, please contact us at pacwainfo@gmail.com

1. Pam Judy and family Location: Carmichaels, PA Gas Facility: Compressor station 780 feet away Exposure: Air sister" Boone said.

http://www.roanoke.com/news/local/franklin\_county/confusion-over-land-accesscontinues-as-pipaline-surveyors-charged-with/article\_05a9845d-ee20-59c9b769-e55a969e4a/c.html

#### 16714. Juan Renteria

**P** Search

Location: Ward County, TX Qas Facility: Well site Exposure: Fire/explosion Symptoms: Severely injured during blaze, which was also described as an explosion. http://www.firehouse.com/news/12103145/oilfield-worker-recovering-after-well-fire

16715. Mark and Maureen Bydalek Location: Hunterdon County, NJ Gas Facility: PennEast pipeline Exposure: Land Symptoms: Pipeline will sever their working family farm in half and will run the full width, passing within 200 feet of home and well. PennEast surveyors trespassed. Property will be devalued and damaged. http://thecostofthepipeline.com/tag/environment/

#### 16716. Holly Lovelace

Location: Franklin County, MA Gas Facility: Kinder Morgan compressor station Exposure: Land – eminent domain Symptoms: "I don't have a lot of money to hire a lawyer. I don't have a lot of skill dealing with giant corporations and I'm really frightened, and I hope my town can help me not lose everything I've ever made in my life." Attorneys have told her the home is un-sellable and un-insurable because of the pipeline and compressor station. http://www.recorder.com/home/17265623-95/a-hope-my-town-can-help-me-sayscompressor-siting-effectively-condemns-her-northfield#, VXq8zE4O\_8k.facebook

#### 16717. Rodrigo Romo and family

Location: Kern County, CA Gas Facility: 45 fracked wells within 2 miles of daughter's school Exposure: Air Symptoms: Unexplainable epileptic attacks http://www.theguardian.com/commentisfree/2015/aug/20/45-fracked-wells-2-miles-

daughters-school-discrimination

16718-16719. Linda Quodomine, Carol Mohr Location: Columbia County, PA Gas Facility: Williams' Atlantic sunrise pipeline Exposure: Land – eminent domain Symptoms: Williams wants to use eminent domain to build a gas compressor station 500 feet from the Mohr's home. The pipeline would go through both the Quodomine home and the business, shutting the business down for a year and a half. https://www.youtube.com/watch?v=ME-7[hvLFww8/sature=youtube

#### Pennsylvania Alliance for Clean Water and Air

Dedicated citizens fighting to protect our most valuable resources.

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Symptoms: Severely injured during blaze, which was also described as an explosion.

Location: Hunterdon County, NJ Gas Facility: PennEast pipeline

### Many students at the school suffer from asthma and worker ecovering after welfere

P Search

serious, debilitating illnesses.

List of the Harmed - Texas Li

Comic and Musical Relief Contact Us

Students were forced to stay inside for weeks at a time with oper with because of the noxious fumes from the fracking sites.

#### List of the Harmed every day. Here a lot of skill dealing Symptoms: "I don't have a lot of money to hire a lawyer. I don't have a lot of skill dealing

-Updated as of August 28th, 2015-

### "PDF version here Rodrigo Romo, California, letter published in the Guardian tion.

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https://www.youtube.com/watch?v=ME-7jhvLFww&/eature=youtu.be

### Dr Sarah Walpole



"The arguments against fracking on public health and ecological grounds are overwhelming.

There are clear grounds for adopting the precautionary principle and prohibiting fracking"

- Letter in the British Medical Journal

"Medact has carried out a thorough investigation of the potential health impacts of fracking, and taking into account impacts on local air quality, economy, water quality and climate change, we believe that more information is required before fracking can be declared safe and allowed to continue."

### Public Health England Report

- "Mistaking best practices for actual practices"
- "ignores many of the inherent risks ... that no amount of regulation can ... remedy"
- "There is no reason to believe that these problems would be different in the UK"

### Public Health England Report

- "Mistaking best practices for actual practices"
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- now out of date
- most research on health impacts published more recently

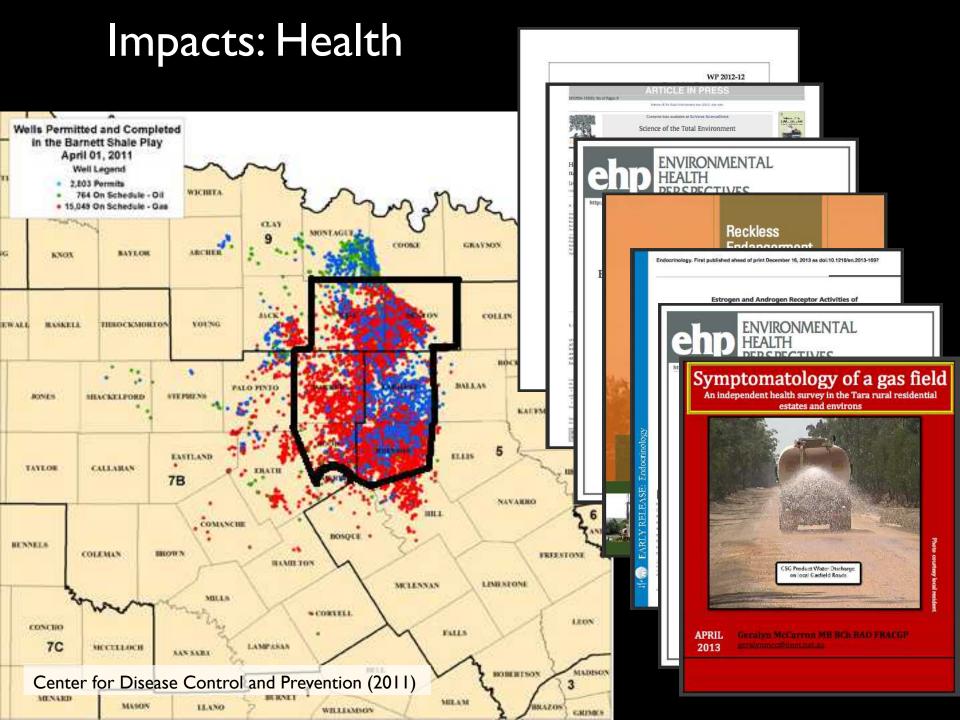
### **Dr Tim Thornton**



"Fracking is a novel process, only 10-15 years old.

The science investigating its safety is quite new but already shows risk and impacts including health impacts.

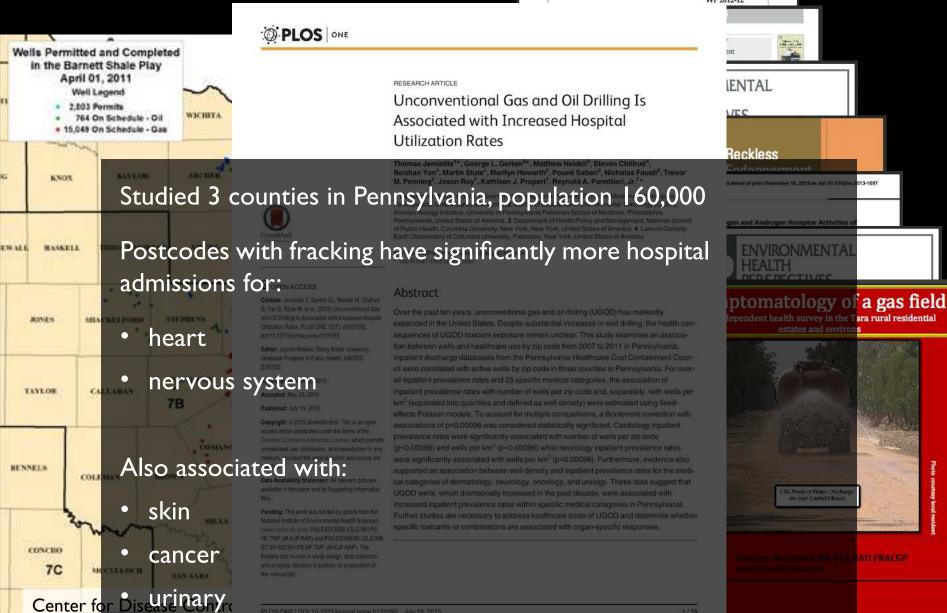
Until it can be shown by peer-reviewed science to be safe, we should not rush ahead with it in the UK."



### Impacts: Health

WP 2012-12

2013,1697



MENARD

### Impacts: Health

WP 2012-12

013-1697

ology of a gas field

ra rural residential

**JMENTA** 

duct Water Discha

ARTICLE IN PRI

Wells Permitted and Comple in the Barnett Shale Play April 01, 2011 Well Legend 2,803 Permits 764 On Schedule - Ol 15,049 On Schedule - Ol

KNOX

**HANKELL** 

DONES

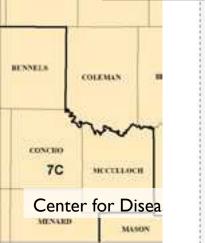
TAYLOR

SILA

EWALL

# Epidemiology

Prenatal residential exposure to unconventional natural gas development activity was associated with two pregnancy outcomes, adding to evidence that unconventional natural gas development may impact health.



9,384 mothers linked to 10,946 neonates in the Geisinger Health System from January 2009 to January 2013. We estimated cumulative exposure to unconventional natural gas development activity with an inverse-distance squared model that incorporated distance to the mother's home; dates and durations of well pad development, drilling, and hydraulic fracturing; and production volume during the pregnancy. We used multilevel linear and logistic regression models to examine associations between activity index quartile and term birth weight, preterm birth, low 5-minute Apgar score and small size for gestational age birth, while controlling for potential confounding variables.

Results: In adjusted models, there was an association between unconventional natural gas development activity and preterm birth that increased across quartiles, with a fourth quartile odds ratio of 1.4 (95% confidence interval = 1.0, 1.9). There were no associations of activity with Apgar score, small for gestational age birth, or term birth weight (after adjustment for year). In a posthoc analysis, there was an association with physician-recorded high-risk pregnancy identified from the problem list (fourth vs. first quartile, 1.3 [95% confidence interval = 1.1, 1.7]).

Conclusion: Prenatal residential exposure to unconventional natural gas development activity



CALL FOR AN HIA LETTERS TO GOV. CUOMO DOCUMENTATION ABOUT CONTACT

#### Letters to Governor Cuomo

Since Governor Cuomo's inauguration in January 2010, hundreds of health professionals and organizations from across the state of New York have called on his administration to conduct an independent, comprehensive Health Impact Assessment. Below are the letters.

May 29, 2014	February 27, 2013	October 4, 2012	March 16, 2012	December 12, 2011	October 5, 2011			
March 26, 2011	February 28, 2011	The Honorable Andrew M. Cuomo						
Governor of New Y	ork State							
NYS State Capitol	Building							
Albany, NY 12224								
Acting Health Com	missioner Howard A. Zuck	(er						
New York State De	partment of Health							
Corning Tower								
Empire State Plaza	a,							
Albany, NY 12237								
Dear Governor Cuo	mo and Acting Health Cor	mmissioner Zucker,						

We the undersigned physicians, nurses, researchers and public health professionals, write to update you on the alaming tends in the data regarding the health Evidence linking water contamination to fracking—related activities is now indisputable. The structural integrity of wells can fail. These failures are common, unavoidable, and increase over time as wells age and cement and casings deteriorate.

Air quality impacts from fracking-related activities are clearer than ever.

Community and social impacts of fracking can be widespread, expensive, and deadly.

### Impacts: House Prices



"We managed eventually to sell the house ...

at a very big loss, just over £50,000." Marie and Roland Taylor, Lancashire

### Impacts: House Prices

### THE SUNDAY TIMES

Fracking digs deep hole in house values



"We managed eventually to sell the house ...

at a very big loss, just over £50,000." Marie and Roland Taylor, Lancashire



Dianne Westgarth said the price of her five-bedroom house on the Fylde peninsula in Lancashire - just 300 yards from a site where a drilling firm wants to start fracking - had dropped by 70 per cent

FRACKING could be such a blight on homes near drilling sites that they will be placed into lower council tax bands, the government's property valuation agency admits.

The Valuation Office Agency (VOA), which sets the values of properties for council tax purposes, said any industrial or commercial development near homes, potentially including fracking sites, could reduce their value.

#### Impacts: Rural Economy

The government has announced that local authorities will benefit by receiving a tax rebate from business rates which can be invested in local services. REDACTED

> as an initial benefit, equivalent to total UK payments of between £3 and £12 million. Meanwhile, the government recently announced that English councils which give the go-ahead to shale gas developments will be allowed to keep 100 per cent of the business rates they collect from consented sites. This is estimated to be worth up to £1.7m a year for a typical site.

#### REDACTED

REDACTED	
REDACTED	
REDACTED	

- <sup>.</sup> house prices likely to fall
- higher insurance cost
- <sup>.</sup> risk to human health

"Shale gas development may transform a previously pristine and quiet natural region, bringing increased industrialisation..."

# Fracking is not permitted in...

Wales Scotland Northern Ireland France Netherlands Germany Bulgaria

# Fracking is not permitted in...

Wales Scotland Northern Ireland France Netherlands Germany Bulgaria New York State the state of Vermont the state of Maryland Beverley Hills the town of Denton, Texas (overturned)

# Fracking is not permitted in...

Wales Scotland Northern Ireland France Netherlands Germany Bulgaria New York State the state of Vermont the state of Maryland Beverley Hills the town of Denton, Texas (overturned)

Opposed in: Hull, Ryedale (North Yorkshire), York, Brighton and Hove, Calderdale (West Yorkshire), Ceredigion, Cheshire East, Cheshire West and Chester, Cinderford Town Council (Forest of Dean), Bristol, Deal Town, Dover District, Eastbourne Borough Council, Forest of Dean District Council, Glastonbury, Gloucestershire, Kirklees (West Yorkshire), Leeds, London Assembly, Manchester, Newcastle, Preston, Sheffield, Torfaen County Borough Council, Trafford, Westhoughton Town, West Dean Parish Council (Forest of Dean), and Wirral.



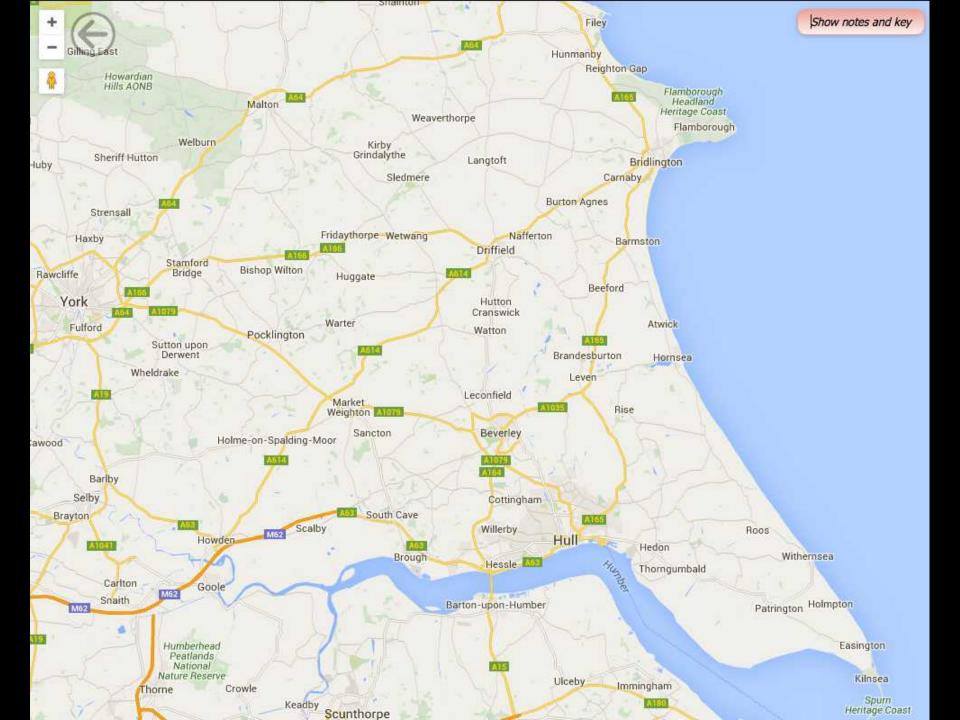
#### European Parliament

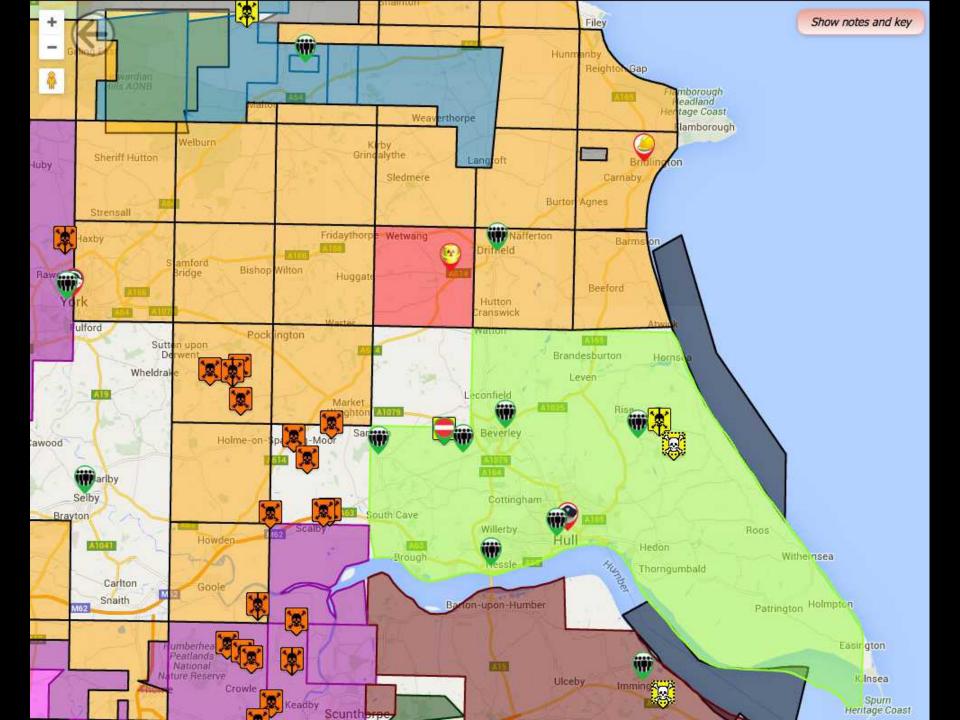
#### urges the precautionary principle and not to permit any new fracking

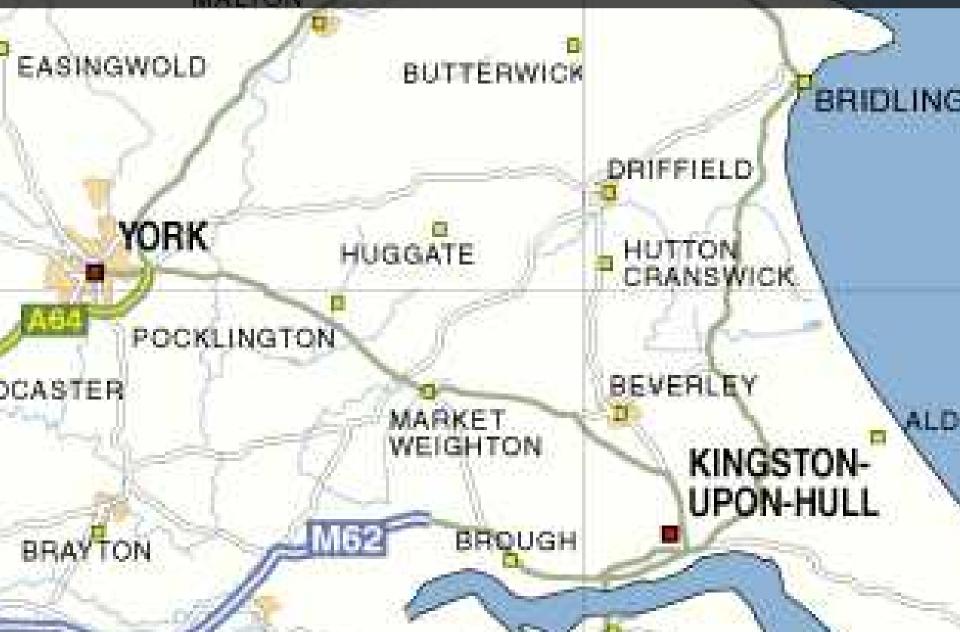
# U.N. Global Alert



#### warns of risks even if fracking is done properly







BUTTERWICK

WEIGHTON

BROUGH

# East Yorkshire 2016 2 active well sites

EASINGWOLD

CASTER

BRAYTON

- HUTTON CRANSWICK

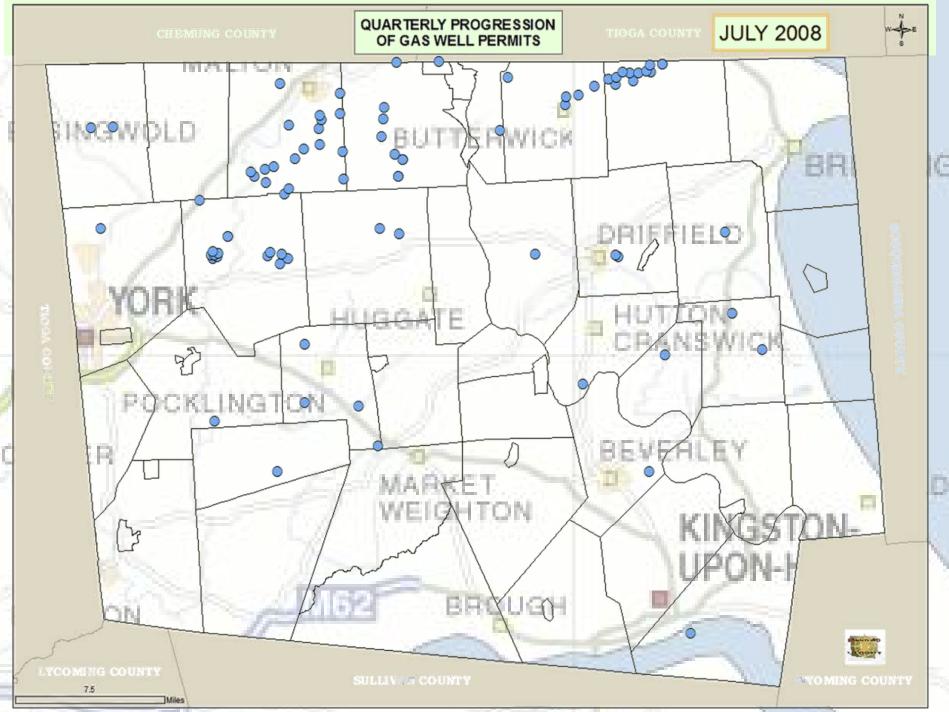
BEVERLEY

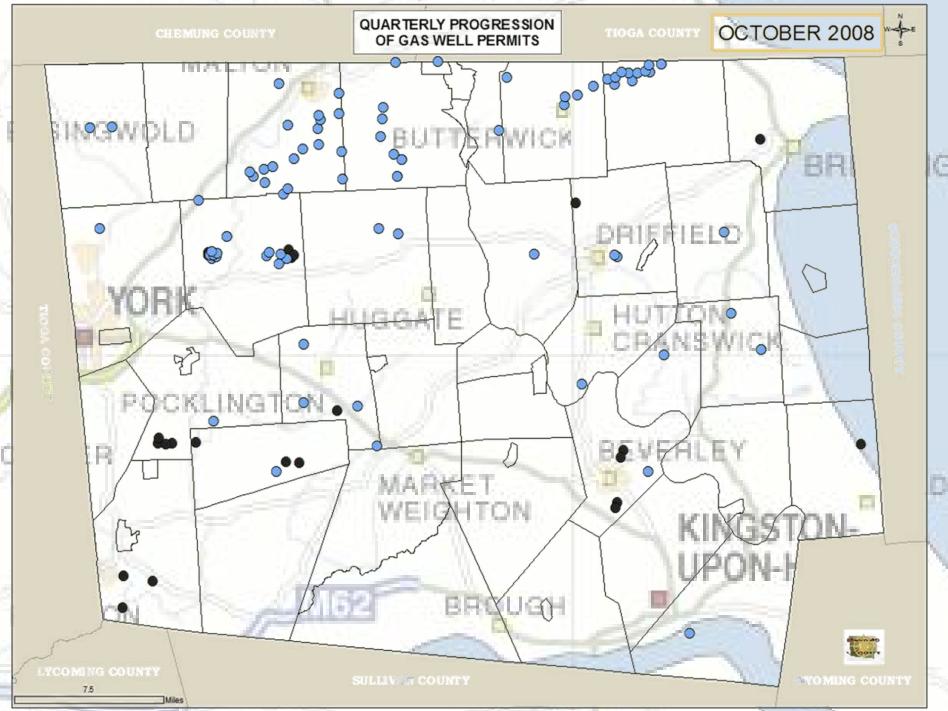
KINGSTON

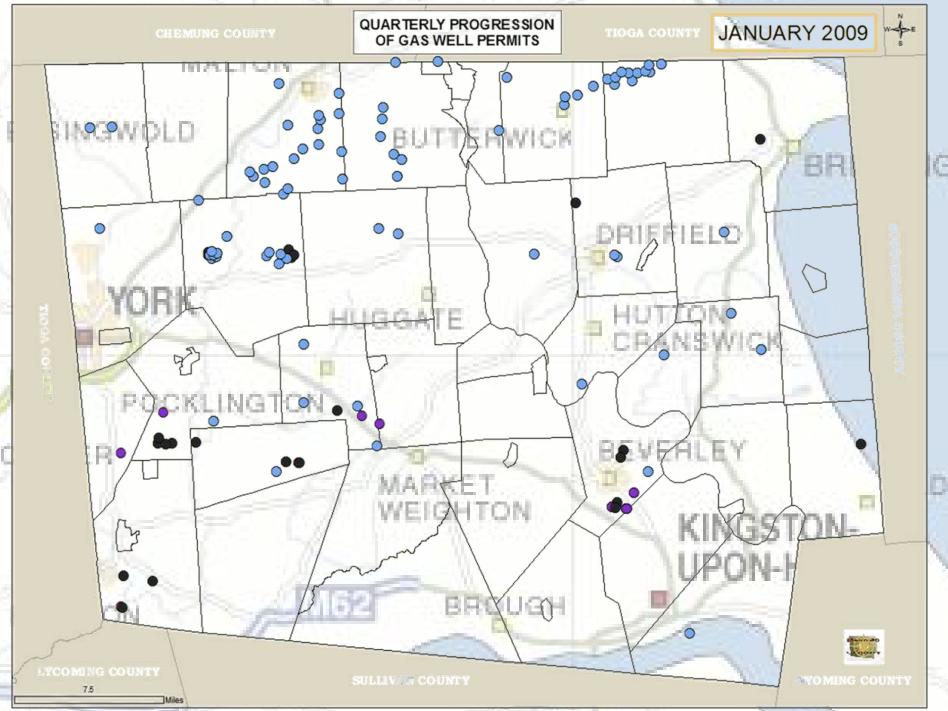
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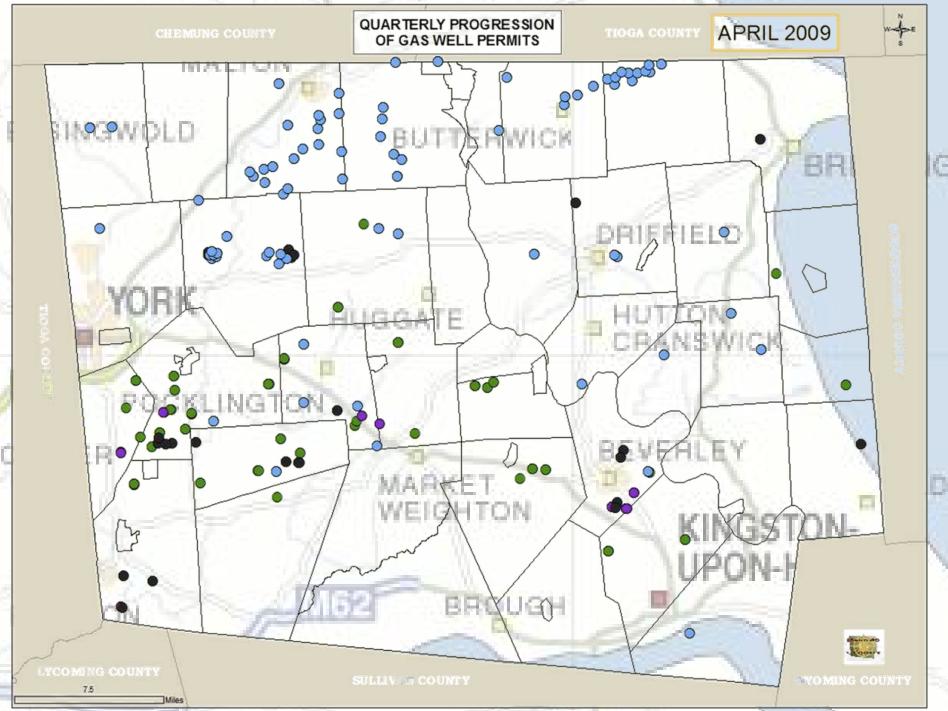
DRIFFIELD

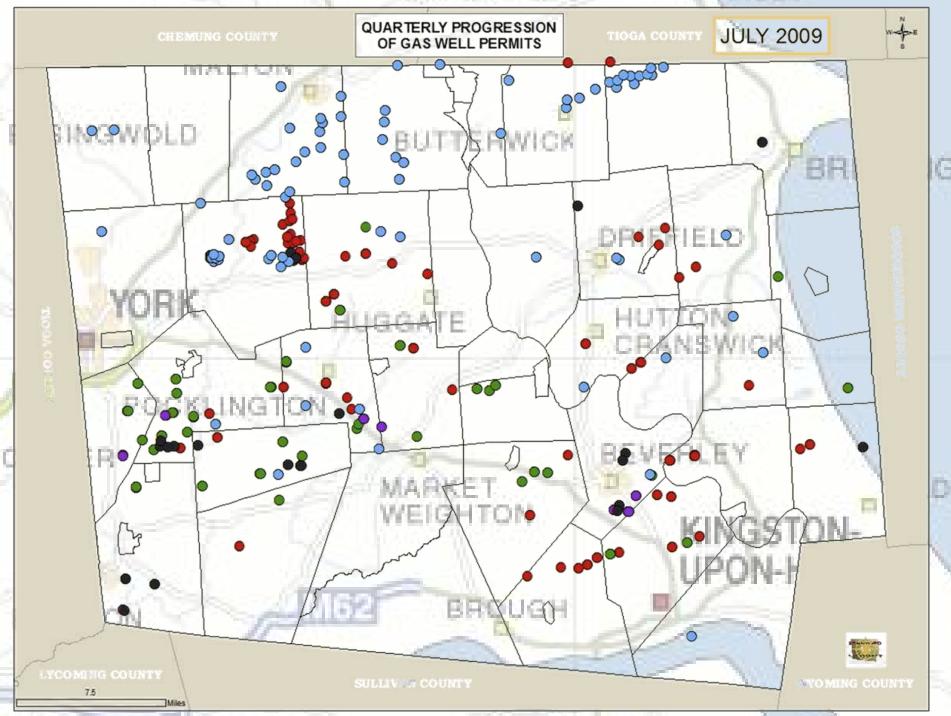
BRIDLING

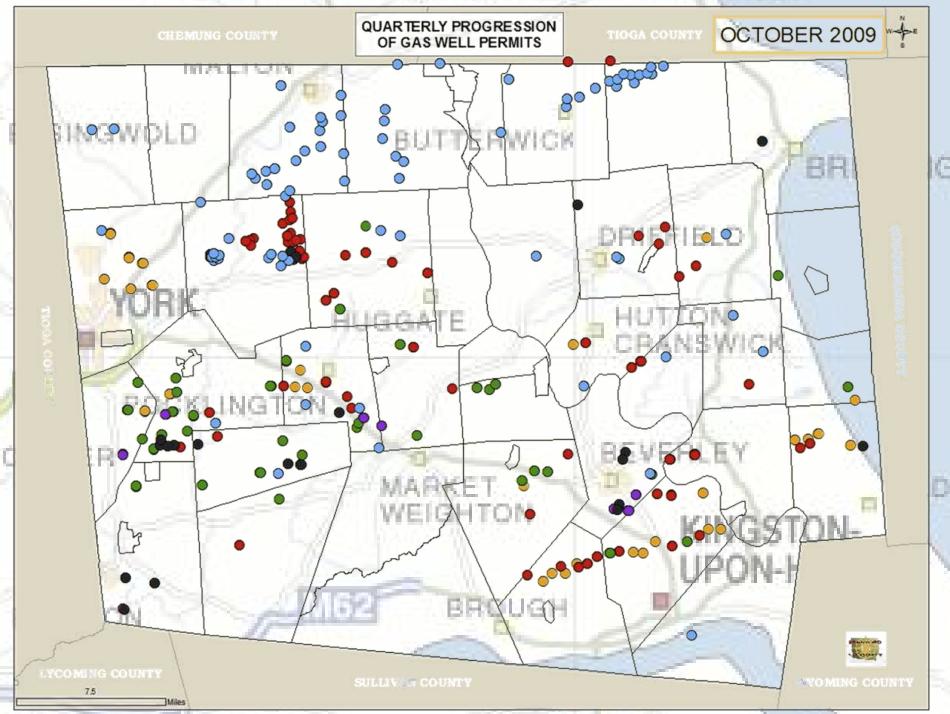


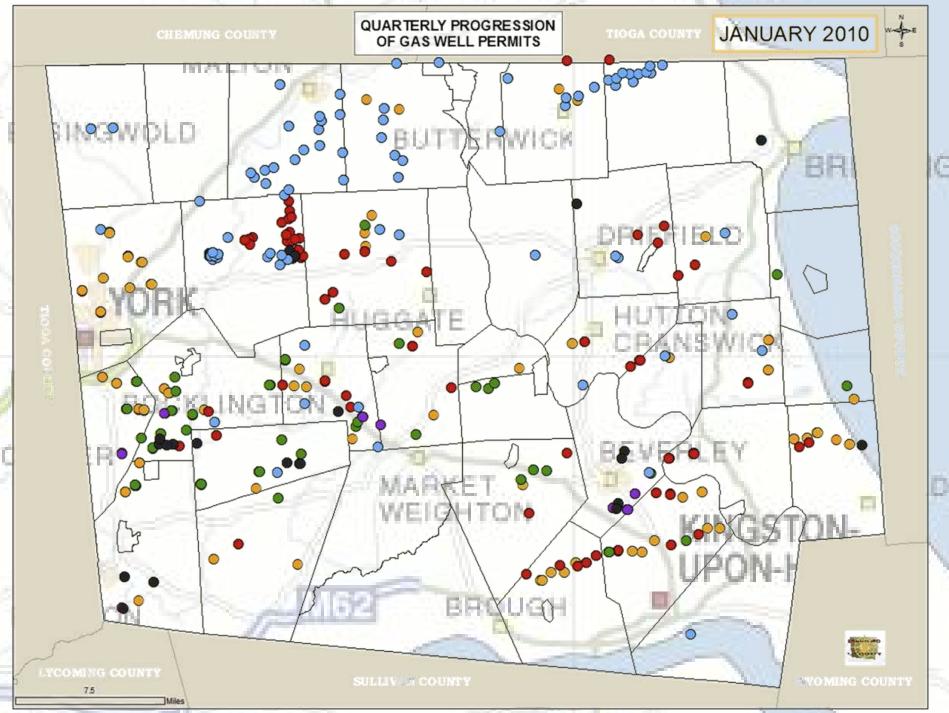


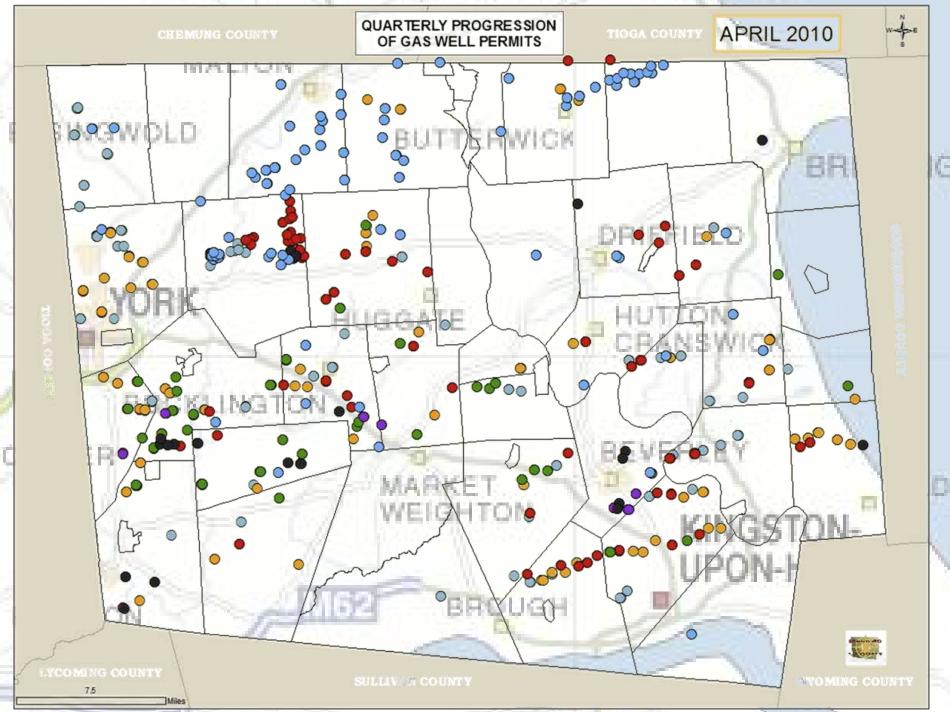


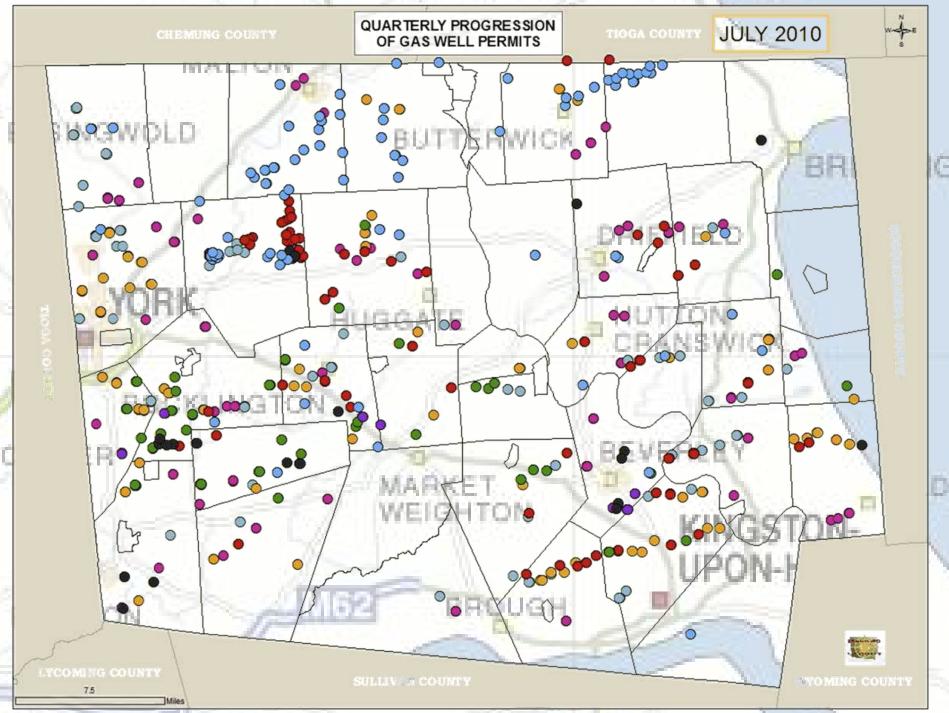


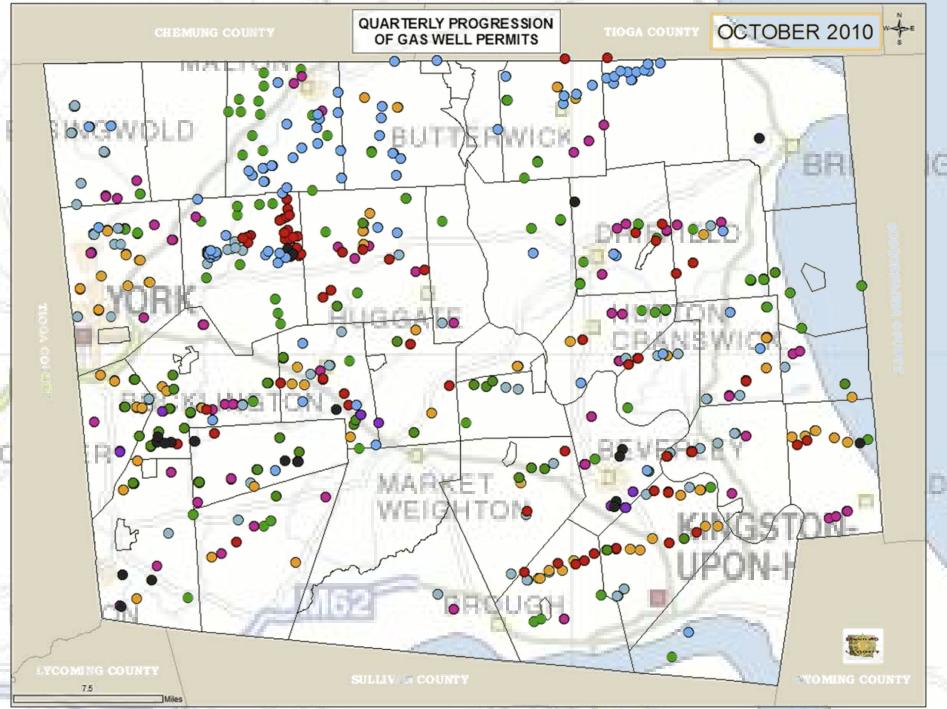


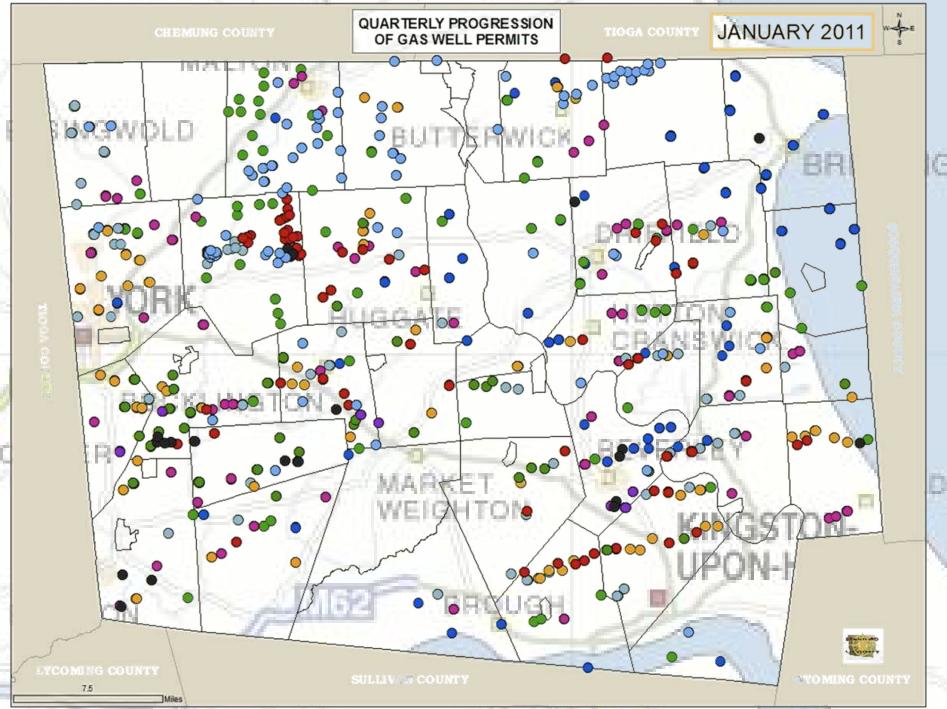




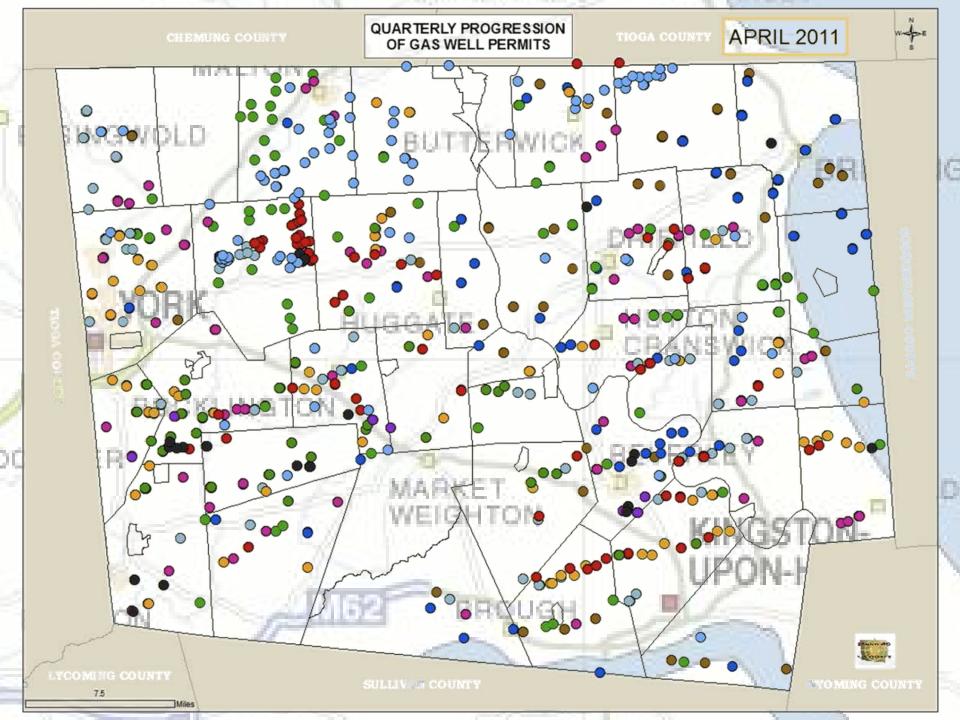


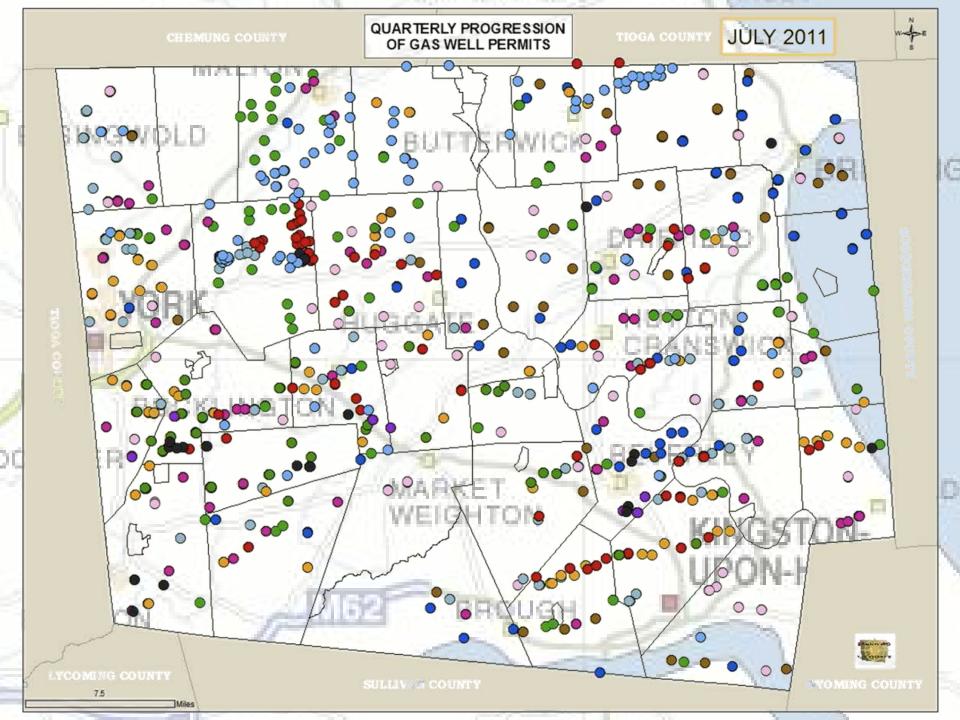


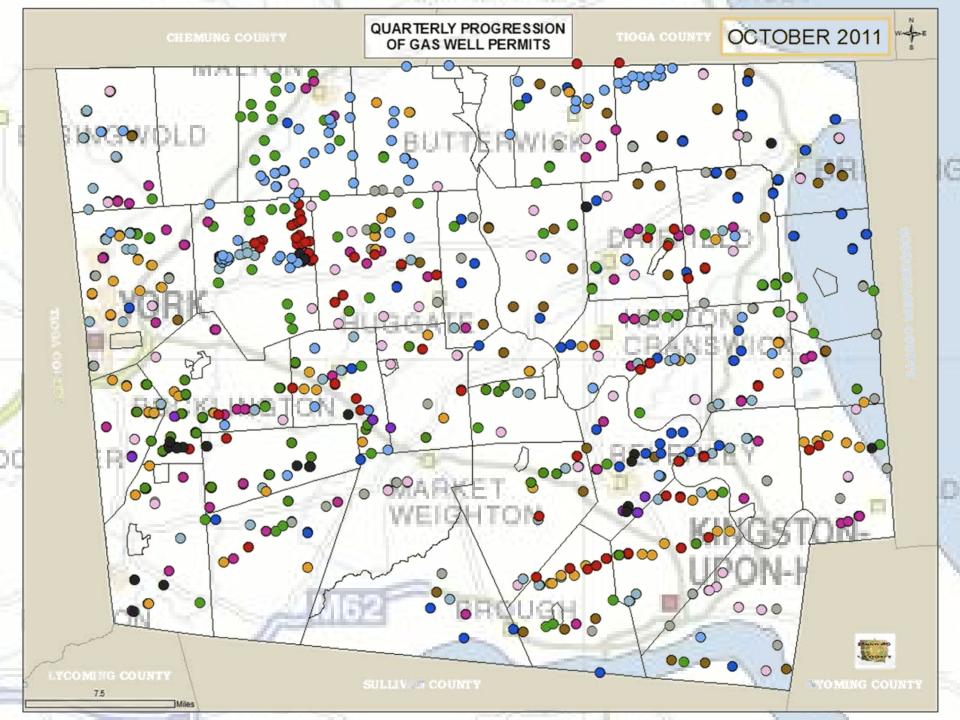


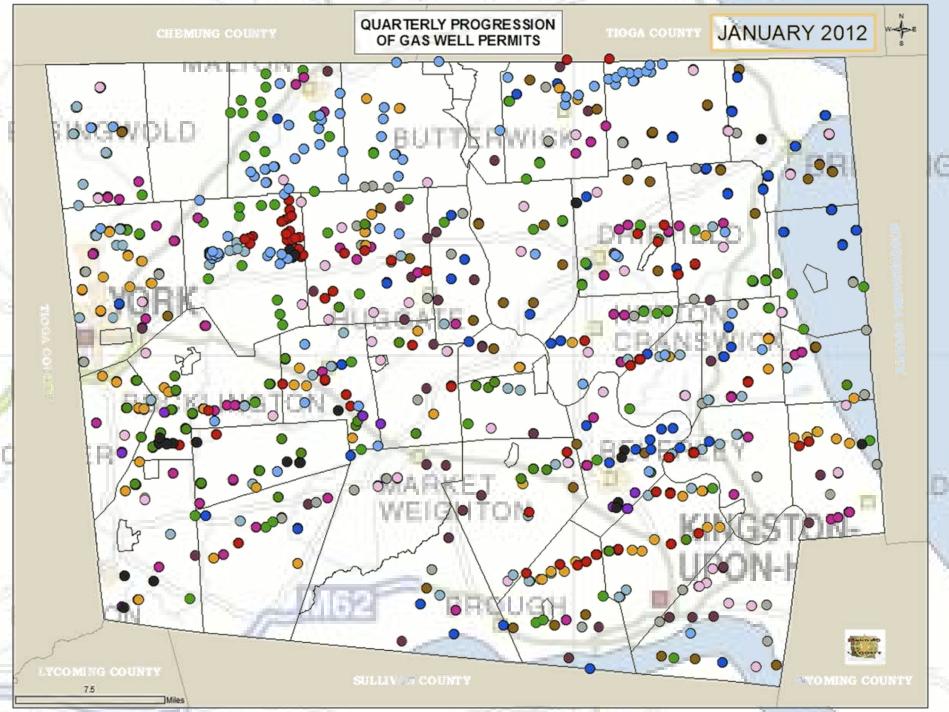


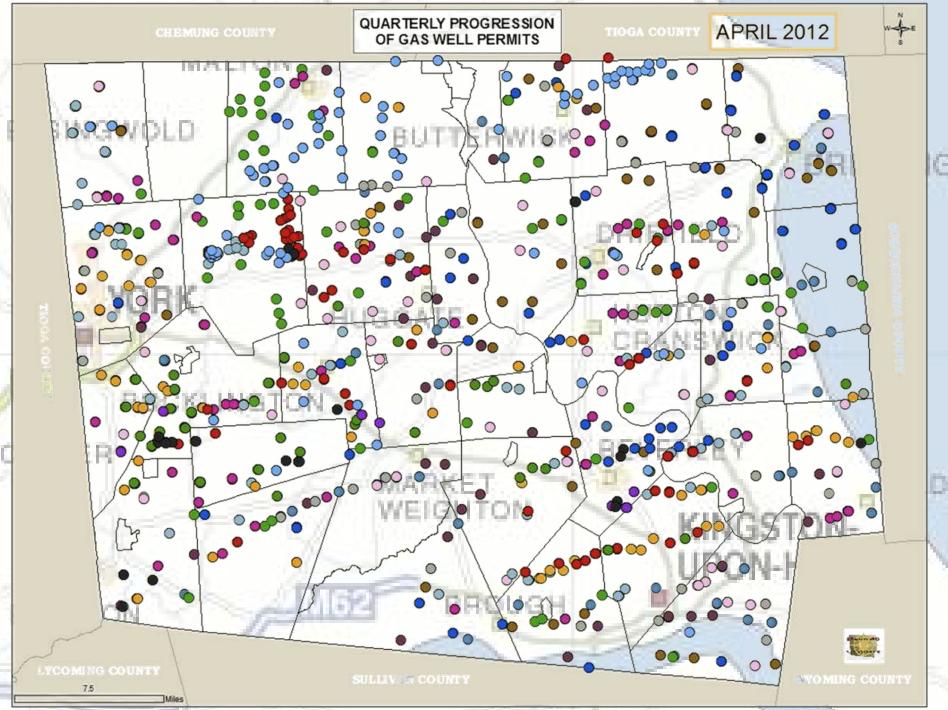
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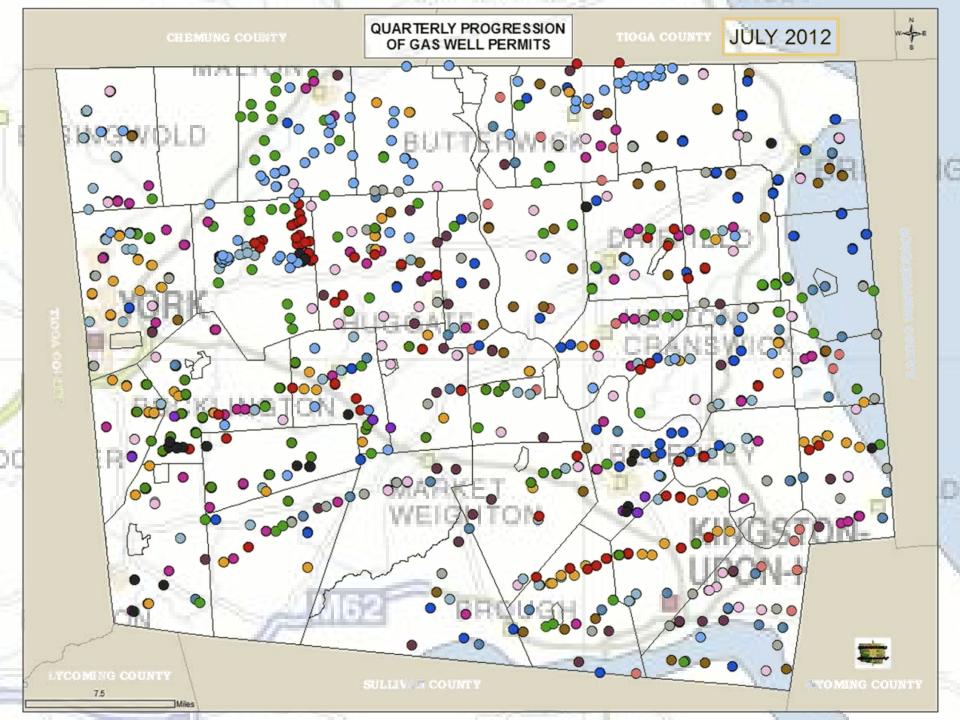


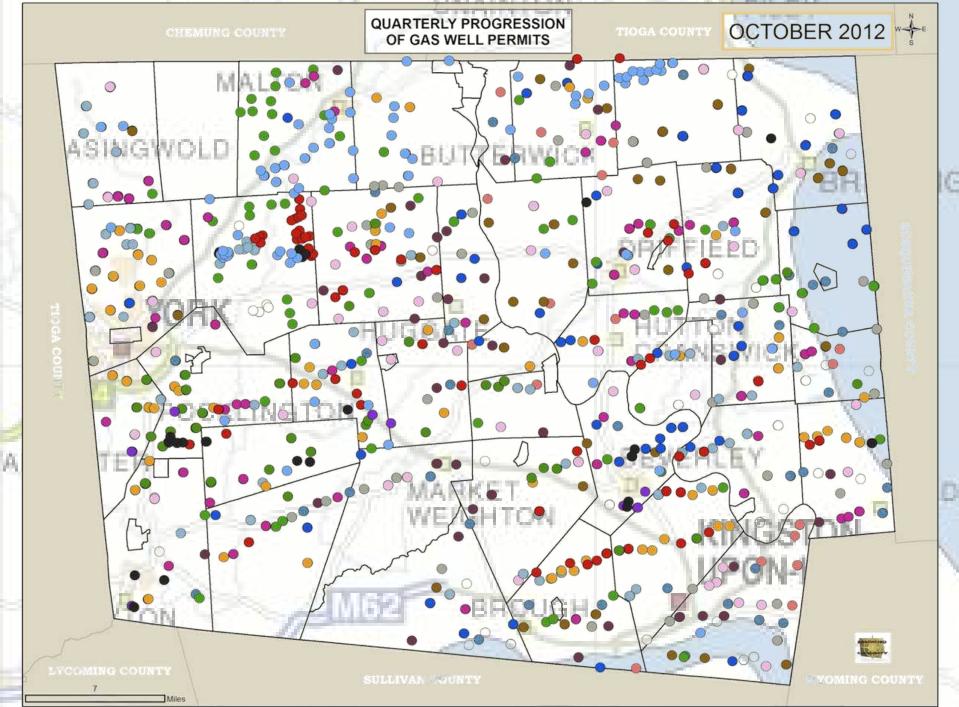




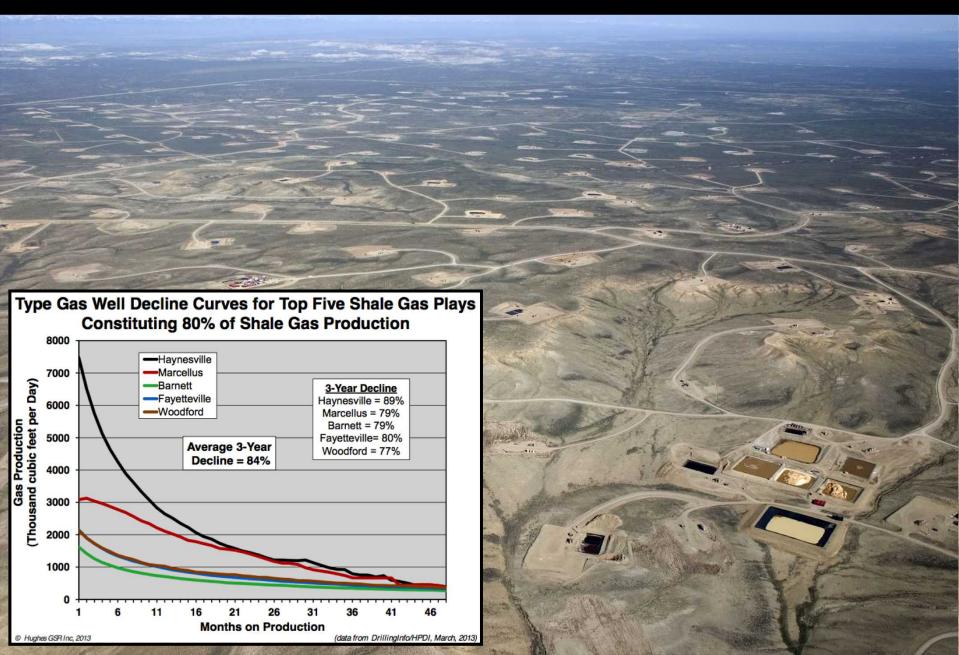










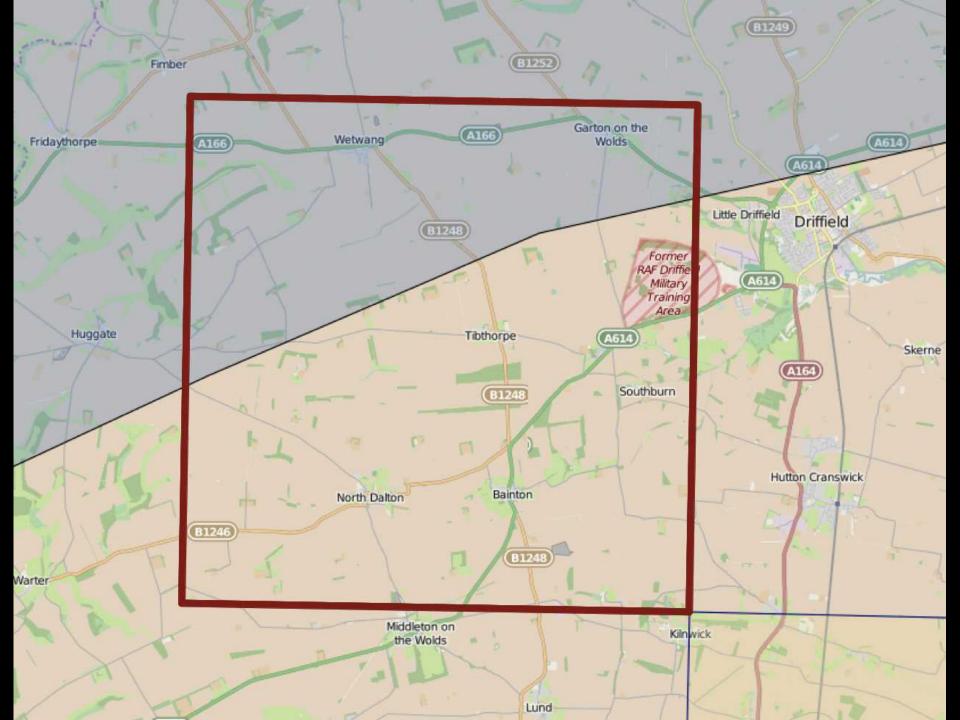




# Industrialisation: Close to Residential Areas



#### Pennsylvania



#### Economic recovery requires:

Fimber



at least 300 wells on 30 sites per 10km square

Lund

#### Economic recovery requires:

Wolds

Driffield

(A164)

Hutton Cranswick

(A614)

Driffield

Skerne

\*\*\*

Wetwang

Wetwang \*\*\* B1248 Little Driffield Similar to Ineos figure: orme "Typically, those living in a Shale gas community (approximately 100 square kilometres) .... 1248 Southlass .... would benefit from the output of 200 wells"

Bainton .... North Dailon ::: \*\*\* :::

at least 300 wells on 30 sites per 10km square

Lund

Varter

#### THE ROYAL SOCIETY



The risks can be managed "as long as operational best practices are implemented and enforced"

"Hydraulic fracturing is an established technology that has been used in the oil and gas industries for many decades."

### THE ROYAL SOCIETY



The risks can be managed "as long as operational best practices are implemented and enforced"

"Hydraulic fracturing is an established technology that has been used in the oil and gas industries for many decades."

- some basic facts not checked relied on industry figures
- recommendations not implemented as claimed

– Mike Hill, well engineer

• Gaps in regulation

– Joanne Hawkins, University of Bristol

"Making fracking safe is simply not possible"

Louis Allstadt, Retired Executive Vice President of Mobil. "Now the industry will tell you that fracking has been around a long time. While that is true, the magnitude of the modern technique is very new"

April 2014



### Rathlin Energy

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gas field

### YORKSHIRE EXPLORATION

After years of research, Rathlin Energy (UK) in 2008 requested permission to explore for oil and gas in east Yorkshire. That summer the Department of Energy and Climate Change awarded Rathlin a licence (PEDL 183) to search for oil and gas north of the Humber from west of Beverley to the North Sea in the east. This area of east Yorkshire is crossed by pipelines carrying gas from the North Sea and Europe to fuel the energy needs of the population and industry locally and beyond in England and Wales. Gas is also stored underground for the UK market at Aldbrough by SSE and Statoil and near Hornsea by SSE.

Rathlin Energy has carried out a series of studies collecting geological and geophysical information, including new seismic surveys, 2D and 3D; all designed to develop a better understanding of the sub-surface geology to determine where oil and gas could be found. Plans to test these ideas by exploratory drilling are in hand.

0.41/25a-1

41/246-1 9

### LATEST NEWS

CRAWBERRY HILL SITE UPDATE 14/02/14

Rathlin's permit application for...

WEST NEWTON SITE UPDATE 05/02/14

Rathlin's permit application for ...

NORTHERN IRELAND UPDATE 15/01/14

Rathlin is currently in the process of ...

### **II NEWS**

### PERMIT APPLICATION

# Harry Clark, local to West Newton



"During the period of well exploration at the West Newton A Wellsite the residents of the area were subjected to:

- I. Air pollution
- 2. Noise pollution
- 3. Light pollution
- 4. Very large vehicle convoys"

### Unfit Environmental Assessment



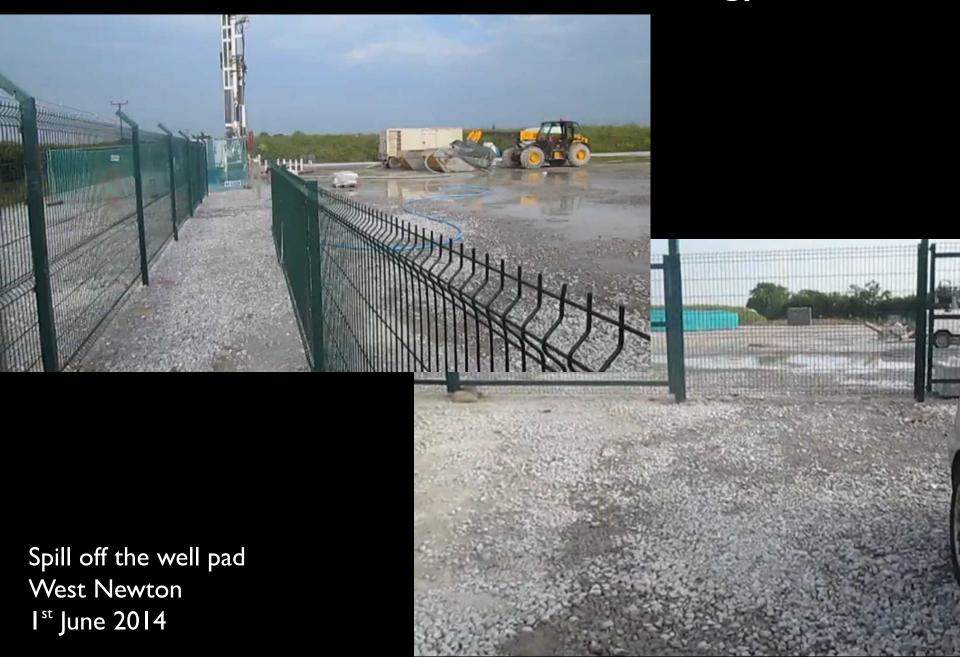
# frackfreeeastyorkshire.com/incidents



Flood onto path, field & rainwater ditch West Newton site, 23<sup>rd</sup> May and other occasions

Leaky Tank, Crawberry Hill well site May 2014





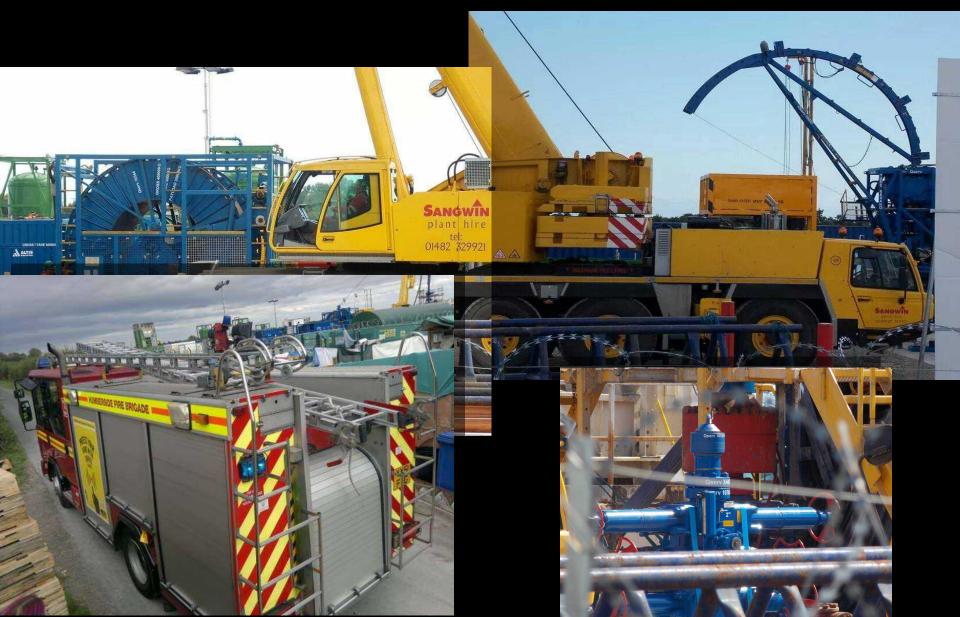


### West Newton Mini-frack Incident



# West Newton Mini-frack Incident

12<sup>th</sup> Aug – Major Operational Incident – Minifrack gone wrong?





Lake Damaged by Seismic Testing Holderness Dec 2014

I9 Breaches of Environment Agency Permit

Health & Safety Investigation

**Emergency Well Shutdown** 

Damage from Seismic Testing

Used Cuadrilla's fracking rig – not certified

### Gas Leaks & noxious odours, Sept 2014

### theguardian

News Sport Comment Culture Business Money Life & style

Environment Shale gas and fracking

### East Yorkshire gas-drilling site making locals 'sick from noxious smells'

Oil company denies fracking operation at exploratory well saying its looking at natural gas not shale

### John Vidal

theguardian.com, Friday 19 September 2014 12.17 BST Jump to comments (187)



A young boy wears a gas mask during an anti-fracking demonstration in London, England. Photograph: Tristan Fewings/Getty Images

People living near a Canadian energy company's exploratory gas-drilling site in east Yorkshire have complained to the Environment Agency about feeling sick from noxious smells. But the company has re-assured government inspectors and local people there is no danger to human health and has been allowed to continue drilling a 9,000 ft deep "wildcat" bore hole.



Gas Flaring, West Newton Sept 2014

### Cuadrilla – Breaches & Failures





Side-Track Drilled To Bypass Stuck Equipment



Seismic Event, Well Deformed, Integrity Lost?



Cement Bond Failed? Packer Trapped In Well During Test



Side-Track Drilled To Bypass Stuck Equipment

# TECHNICAL FAILURE AT EVERYFRACKINGSITE IN LANCASHIRE

Even if you add nothing at the surface, what flew back from Preese Hall I when they fracked it was lead at 1,438x drinking water, arsenic at 20x, cadmium, chromium and there was 90x the maximum permissible level of naturally occurring radioactive material. (NORM)

Mike Hill, an oil and gas engineer who accompanied the environment agency when they checked water at Cuadrilla's drilling site in Lancashire

### Cuadrilla – Breaches & Failures

### Banks/Becconsall, Lancashire

### Cuadrilla drilled beyond agreed 90 day time limit

Santifie's application (0/10/007), approved Oct 2010 onder delegated powers, included Condition 1 which required. "The diffing operations shall be completed within a period of three souths from the date of their commencement"

In September 2012, Laicochie County Countil's planning offices. Start Perign, gave evidence to a case at Preson Crown Court (ended Drunday 91 September) that Coadvilla had defiled beyond the permitted 90-day linux. Goardian anticla

### 2) Cuadrilla drilled beyond agreed cut-off date to protect wintering birds

The same application (DU1010077), Included Candidars 22 which required "No she clearance, dee preparation or development work shall. take place until a method anoman detailing the measure to be explorement to antigate the impacts of the development on ecological immests (computing tink) of the Marsh Farm Fields IEES has been submitted to and approach in writing by the County Planning. Authority. The method statements shall include provision for insucant restrictions on site development works and missiones to recail impacts on ground investing hinds".

In September 2017, Lancashire County County? 1 planning officer, Imart Perigo, gave evidence in a case of Prenton Count (rodo) Thunday 🖤 Septembril) that Cashrilla diffed beyond 30° September 2011 and as broached the planning condition designed to protect winning birds at a nearby samplary Gamilan teirly

### 3) Cuadrilla failed to restore the site within 18 months of the start of development

The same application (ME10/MT) included Conditions 1 and 23 which regional work and same remnanton more completed in 18 months of mat of development. Development mented 28". March 2011, so said to be removed by September 2812. But this has no happened.

### Cuadrilla drilled a sidetrack to the wellbore even though planning permission was for one vertical well (Becconsail 1 & 1z)

A DEEC Landwells specafilizer and a many-from the UK Onstore Graphysical Library shows that two wells were specified at Recordently. even though personality was granted for only one. Thereared 1 was specified 2014 and Thereared 2 was specified on 124 Compare Anna's Road, Lancashire 2011. The HSE suit "The Decremental well is vertical Decremental in was a sub-rise's defined to hypers equipment which had become mark in the original humbole and updal not by recovered. It was altified to the original plasmed depth. A side-turk is a plasmed deviation from a provincely milled section of the selfborn."

### Land set aside by Cuadrilla for over-wintering birds displaced from its Becconsail site had already been let to a local gun club

Liek in the full report large ...

### Preese Hall, Lancashire

### 6) Cuadrilla seismic events, deformation and failure to report immediately to DECC

A report by General Styles provide 2000G concluded a series of earthquikes in Spring 2011 in Laurabite were caused by backing as Stream Field. The first start as 1 April 2011, magnitude 2 3M. MeB-born deformation was depressed on 4+ April 2011 when a cappering tas. During term, a packer became mapped in the pressure and the company solid it was not inability to it full during in an annulu. showed that deformation was grower than 0.5 indies over a depth range between 0,000-06409. There was another nothingsake was as 21% May 2011, magnitude 1.5M. A mult of 30 ocianic events were descend from 31+ March 2011-279 May 2011. Fracking was magneted on Mrs May (Source: Indecember)

The Countrary reported that the Tawryp Secretary, Charles Hendry, wrote to Lond Roowne, on 10th May 2012. "My department is concerned Castrilla failed to recognize the significance of the casing defactuation experienced in the earth memor triggered by fracking operations as 1 raight be lioked to tracking. In the light of Coudtillo's responses to the department's subsequent implicites, I have formed the view that this hilure dischors weaknesses in Candella's performance as a license, which need to be addressed."

### Cuadrilla failed on four occasions to restore the site by the date set in the conditions

- 1. Application (6/06/072), approved October 2009, included Constitutes 1 and 2 which impaired work to mark to fairs that to fairs decision metades restaured constraines trained to straining book." S years from they of permission (Cotober 2012) and the tobe restored within 18 membro of sector of development, A diseasers' record reall work started on 15° November 2009 to the site should have been renored by 15° May 2011.
- Application (0.11043), any read in January 2013, suried the condition of application (0.099/0372 on time lasti for size 2. responsion. Condition (of that application required "No works other than these associated with the slagging and disadoutness of the bowhole and for the networkers of the site chall be carried nor on the site and the size shall be rendered in accuratence with condition 14 of this permission by car laser than AI December 2017"
- 3.1 Application (6/13/04/2), analyzed in February 2016, again varied the condition in 05/13/04/2) on time lipits for site remondor. Condition 1 required "No works ofter than those associated with the plugging and alandonners of the brooksile and for the resonantion of the use shall be carried out on the size. The use shall be restored as accordance with conditions 16 of this permission by not later than 30 May 2014.14
- Application 2014/01/21 approved September 2014, again varied the condition to 25(1)/0471 on time limit for site renoncion. In Condition Unspired "No works other than those associated with the plagging and abandoment of the boorhole and for the responsion of the are chall be carried out on the size. The size shall be respond in accordance with

modelaw 15 of this permission by nist later thee 308: April 2005." The size remains interestored.

### 8) Well integrity problems

A VICE News record on December 219 2014 said enable Servers' Cambrilla and the Health and Selets Executive, released following a Prevention of Information request, those of a leak of gos within the well. There was no evolution of any leaks matching the production causing and bits the summarizing avoid statement. But there engineers add VECE News this annuared to a technical breach of well integrity. Coald fa has denied the erael's indicate this.

### 9) Flowback fluid problems

According to an Executionnet: Agency pressing to a Preedom of Deformation region, in 2001, Cambrilla seet more than 6,000 cubic metres of forwherk fluid (the volume of 3- Openpic systeming positi) from hydraulic fracturing at Presse Hall in the United Unities Deveyfolms Industrial Ween Water monthese facility in Cenney Matchester.

As innectigation by ODC locate Dat in January 2014, front that radius levels were 90 times the personal level for doubling wore. The flowback fluid commond what was regarded as low level autoubly occurring radioactive material (NORM) and at the time, ander the regulations, it was classed at inclustrial efficient, not futurations wasse-

In October 2011, the Europeanersal Nervirting regulations changed to adreporte the Radioactive Substanties Regulations. As a wealt, Onceylulare could us longer acrept flowback fluid without a premit. The fluid was disposed, under incose, uso the Macchester Ship Canal-There are reports that the Dald was not adorparely transmit. At the tase, the BBC loads Out said these were no resumment works equipped to must Revehacle field in the north west

Understanding with these sizes had permits to must office us. The trials were designed to "help determine degressi mores should deindustry to given permission or commun. After these migh surfaction flowback semanant or the Priese Field size.

Other sources, HDC news, whose providence of contents of flowback fluids, Heiderns' Action Against Fully Flacking quoting TA'MAR HIL provenuedence: EA document on flowback field December 2013

### 10) Cuadrilla failed to restore the site by the time in the planning condition

Application (6/10/06/14, generated November 2010, included Conditions 1 and 2 which required the development in begin to bee thin 1 years from the date of the permission and the stor to be remaind within 10 months of the start of the work.

A charactery officiery' properties Pertinany 2014 for a new application (05/12/0729) said with started on 194 September 2011 and the site should have been removal an 189 March 2013.

Auster assistance (6/12/012), and wat Fritzen 2014 unlist the conduction on the time lists for remaining Conducts 1 reports the de = 18) Cuadrilla may have breached noise conditions be restanted too later than 31" July 2018.

### 11) Cuadrilla abandoned well after a packer tool becomes trapped

A Condition concerning on 16th Neverther 2012 confirmed that it would discontinue the current well and drift another 10th away. It units consent bond log duravid the possibility that the currants had not adhered evenity to the casing mist the bottom of the well below the aquiltu-

### 12) Cuadrilla abandoned fracking at Anna's Road over EIA but blamed wintering birds

On 21\* Linuary 2013 a Constitute starward promotived plates to fraction Annu's Board.

include an EEA rovering defling, tracking and flow reeting and would treadmit later in the year.

On March 16<sup>th</sup> 2013, the Gaussian reported Gaussian had balled operations or Acad's Road because of even for invitors permanental assessment. The paper and the averaginets would not be completed before assume when work would be decigned anyway by wintering blade

On 17th December 2013, a Cauthilla gavenuer said Anna's Road would be remaind by the end of July 2014.

On 13.9 December 2013, Lanceshire Course Course I recorded the withdrawal of Cauchilla's application for a horizontal boothole for exploration, more sampling but not fracking.

### Grange Hill/Singleton, Lancashire

### 13) Cuadrilla failed to restore the site by the time set in the planning condition

Application (0/10/00%), amoving February 2000, including Conditions Lond 2, which required work to must within 3 years of the permission

### and the size in he respond within 18 membro of commencement

A planning officer's proof from July 2014 said work moved on 20" July 2010 and the site through have been removed by 19" January 2012 On 20th December 2011, Condrilla submitted number and/option (05-12/0003) to extend the time period for completing the well seeing by fracking and for returnships to May 2014. This application was withdraws.

### 14) No planning permission at Grange Hill/Singleton since 2012

See above. Dn Hri April 2015, Lancadaw County Council's development control controllere refused application 1/17/2014/0284 for setunic consistenting, pressure senting, at addressives and sesaration. The decision has yet to be confirmed but it means there has been no obtaining permission for the one-sizes the uniqueal planning permission expand on 19th fancary 2012.

### 15) Cuadrilla drilled a sidetrack to the wellbore, which was not mentioned in the planning permission

Application (6/10006), approach February 2010, was for a virtical well. A DECC Landsofts spreachings and UK Ooshow Geophysical Library man cloves that Grange Hill 1 was specified on 10° January 2011 and Grange Hill 12 on 12° April 2011. A reply to an FOI request to the locality and Safety Executive (27" January 2015) confirmed that Easthrills defined the subtrack to types a defining asserbity much in the original bunchole which could not be returnered.

### 16) General seismic testing, Lancashire

A Countil or recent in August 2013 said that Countil are commarises openedly unspended in private and during geological surveys from April have 2013. The paper call Candulla had paid out to at how one horsenative to settle legal action over trespansing. Mark Wile, who have near A further 120 cubic names of Beschark Tual was even in Informativy and furth scaled timbs at a matcher of industrial scales immused times. The Tythan St Anney, said Caulif ID operation opposedly respond not be longer gather in May to by calles and store in desires of answer to make using incoolings. After the first cables were laid, he sold "I tail as spectra don't go hack on exy local and he cail, "I won't "But he and helicity, the next day they had been in again and put a big not much on the genural," Mills said the operators' stops, which he copied, showed the much was to be the site of a detocation. "It was right near a gas much and my sejels task," he said-

> The Granitan also recorded that the insert was taked at a treeting between water Cauditla staff and the then Tarrey Mitsians, Charles Hendry on 24th July 2012. Headly in taid to have expressed concern over "rocern reports of impactan late developed areas for the sensitic testing over the Jubileo weskeed" and said "frees incultors only served to more than was now becoming a national campaign".

### 17) Publicity

In April 2013, the <u>Advectory Standards Autority</u> spherit in of 10 compliants against Cauditia Resources for its Institute Services 2017. Endoring For Manuful Gat. The pressure group, BeltaCeture, channel the document was minimizing, exagground and unschmundated. The ASA ordered that the brachure man not appear again in its complained of form.

### Balcombe, West Sussex

Application WVCC027/10/BA approved under delegated powers in April 2013, set a condition on mine levels. A Dark Telegraph report (P Segmenter 2017) and a rate transform upon commissioned by Coatrilla showed that must levels during diffing posed 20% higher than allowed. West Susses County Council said it was not clear infection three had been a breact of countries. Calattilla denied is had breacted the rules. But it halved dtilling to totall further nound-perioding after toxise levels research the maximum.

### 19) Cuadrilla lorry movements breached hours of working condition

The officers' report for the same analyzing registrat." Unless otherwise agreed in advance and in writing by the County Farming Authority, construction, drilling its mobilization and encouncing phases of the development work at the time shall only be undertaken between the bound of 6750 and 1000 Members to Pridays and 0600 to 1000 on Saturdays. No work shall occur on Sondays, Back Holalays and Public Holadays. This condition does not relate to operations necessary for the 24brs drilling operation.

A Some Police gamman said Secon Police said a weakt no compromise public solely by "atching rigidly to the time constraints in place" when supervising the denoted mattern of the site. The police said: "This may more that a times Candhila are openeding matules of their planning permission, for which we would take responsibility?

### 20) Cuadrilla planning applications fail to include horizontal drilling in site boundary

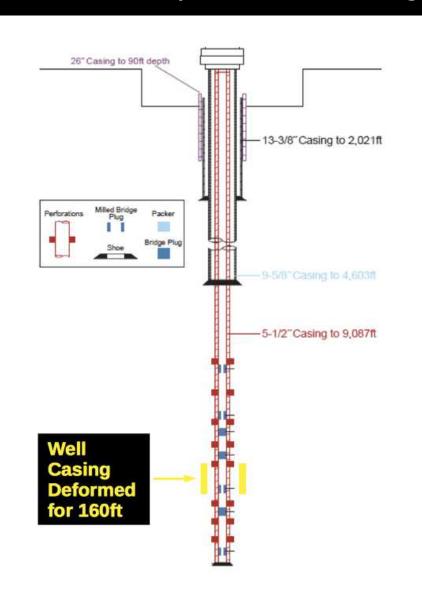
A Disense of the Earth Ports (strenge and Cambrida mamment conflored that in September 2013, Caudidia withdress an application On 14 Orodine 2011, Condition processing is would not admit an application for tracking at Arms 's Road. A superners with "The background (WSC). OGU 30(A) to menod protocolar for an explanatory drilling programme, "The company consolid that the application did not include the summ of the horizontal well. The application approved in 2011 (WSCL-007/10/0A) aim covered only the nurface dilling size. The company schemes a completely new application, which was approved in May 201A.

### 21) Cuadrilla required to apply for waste permits before drilling

A <u>Extendence</u> the Earth target reference on TP<sup>6</sup> June 2013 conditioned that Candidla many obtain a mixing wome and indicative substrates permit before it could drill at Nalcoulte. The organisation's legal mark wron to the Environment Agency pointing to the ored for a percent under the **Environmental Permitting Regulations 2010.** 

### Cuadrilla – Breaches & Failures

Preese Hall Well: Caused Earthquakes That Damaged the Well Casing



### Yorkshire Wolds

72 Sites of Special Scientific Interest in Humberside

### Yorkshire Wolds

72 Sites of Special Scientific Interest in Humberside

Yorkshire Wildlife Trust says:

- The most northerly chalk streams in Europe
- "our equivalent of rainforest and deserve a huge effort"
- amazing places for wildlife
- provide the drinking water we take for granted
- large volumes for crops
- threats include over-abstraction, leading to dangerously low flows
- project Crystal Clear Restoring the Chalk Streams of the River Hull



# Massive & Rising Opposition



# Massive & Rising Opposition













### FACT AND EVIDENCE-BASED CONSULTATION



Like many sectors, the oil and gas industry generates an enthusiastic and well-meaning following. Many of these followers have no direct experience in oil and gas, or in science or engineering and this can generate discussions, debates and observations that are not always entirely correct. That has certainly been the case here in East Yorkshire in recent months. This space in our information session is designed to address some of the most common misconceptions about our work.

Firstly, it is important to begin with some brief facts:

The work at our current well-site at West Newton is now complete and we remain encouraged by what we have found following our testing programme. All of our work was overseen by Rathlin employees and monitored closely by independent regulators. We have remained consistently compliant with all regulations and conditions of consent in everything that we have done.

Despite regular visits by the government's independent regulatory professionals, there have been suggestions that we have:

- Breached our health and safety obligations this is completely untrue.
- Breached our environmental obligations this is completely untrue.
- Created a well that failed and was unsafe this is completely untrue.
- Generated noxious and dangerous odours from our site this is completely untrue. It is fair to say that there have been some localised and intermittent naturally occurring odours that resulted in us implementing a new odour management plan. We brought the matter under control quickly; we were not forced to close the site down as has been suggested.

- Vented gas unsafely and illegally this is completely untrue.
- Contaminated neighbouring fields and crops this is completely untrue (and this allegation is potentially damaging to the local farming community).
- · Poisoned local wildlife this is completely untrue.
- Broken environmental and health and safety rules on flaring this is completely untrue.
- Not communicated about our work this is completely untrue (please see the information session info-graphic).

For independent verification, we kindly ask you to contact the Environment Agency, the Health and Safety Executive, East Riding of Yorkshire Council and/or the Department of Energy and Climate Change.

As our attention in the Holderness area now turns to the proposed site of our West Newton B well, please talk to us today about the facts. We really need to draw a line under this inaccurate and potentially libellous commentary that is damaging our reputation and unnecessarily worrying local residents.

### • Breached our environmental obligations – this is completely untrue.

Breached our environmental obligations – this is completely untrue.



UNDER SCRUTINY: Rathlin Energy breached Environment Agency permit 19 times at site

 Generated noxious and dangerous odours from our site – this is completely untrue.  Generated noxious and dangerous odours from our site – this is completely untrue.



# East Yorkshire gas-drilling site making locals 'sick from noxious smells'

Oil company denies fracking operation at exploratory well saying its looking at natural gas not shale



A young boy wears a gas mask during an anti-fracking demonstration in London, England. Photograph: Tristan Fewings/Getty Images

People living near a Canadian energy company's exploratory gas-drilling site in east <u>Yorkshire</u> have complained to the Environment Agency about feeling sick from noxious smells. But the company has re-assured government inspectors and local people there is no danger to human health and has been allowed to continue drilling a 9,000 ft deep "wildcat" bore hole.

Poisoned local wildlife – this is completely untrue.

"The operator is carrying out vermin control on site using rodenticide in bait boxes and that is believed to be contributing to the numbers of small dead mammals found in the open section of the containment ditch."

- Environment Agency

### Planning Power to be taken off us?

The Telegraph

OFFICIAL - SENSITIVE

From:

The Rt Hon Amber Rudd MP Secretary of State for Energy and

The Rt Hon Greg Clark MP Secretary of State for Communities &

Secretary of State for Environment, Food

Climate Change

Local Government The Rt Hon Liz Truss MP

and Rural Affairs





The Rt Hon George Osborne MP Chancellor of the Exchequer

7 July 2015

### Dear George,

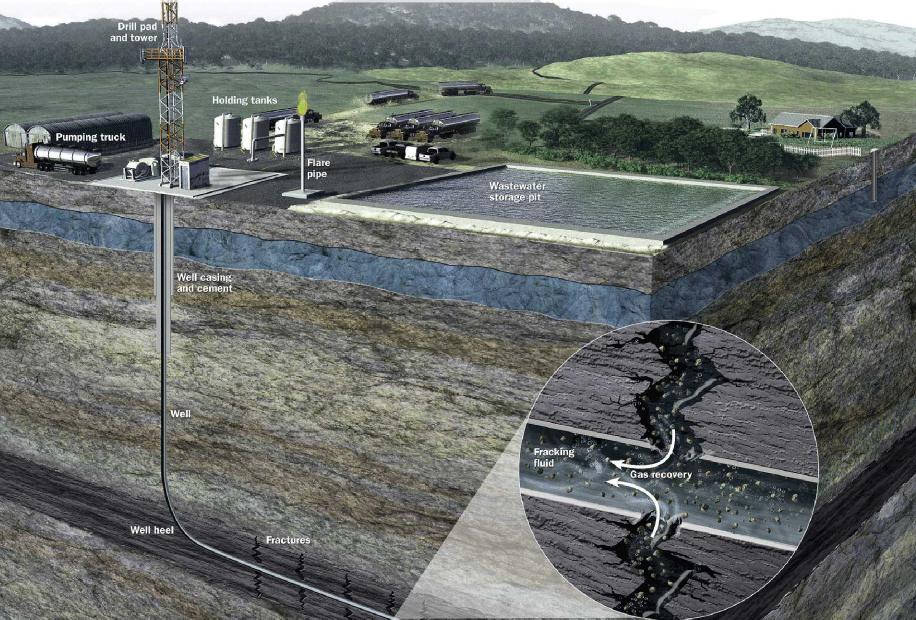
You asked us to develop a joint plan to develop the shale gas sector in the UK, building on the work that has already been done in the last Parliament. This letter proposes an ambitious strategy to enable the first exploration wells, demonstrate the safety and potential of the sector, and ultimately move to production. We propose to make a joint statement this summer to set out the Government's agenda. Our objectives are stretching, but we propose setting the bar high to drive our ambition.

Objectives for our approach to shale development

We propose these stretching Government objectives for the UK shale sector;

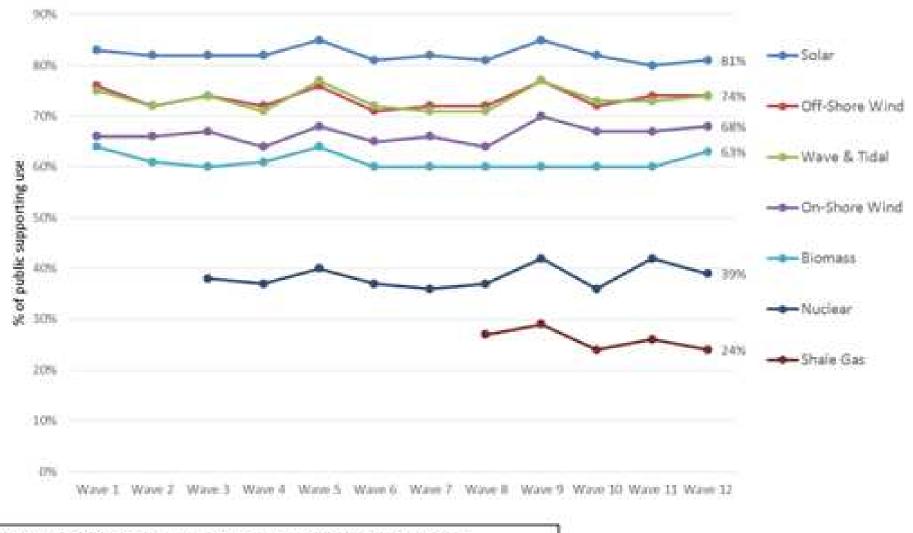
- Within two years exploration under way and first few sites hydraulic fracturing;
- Within five years production underway from the first converted sites (assuming the gas flows and is commercially recoverable);
- · Within ten years a maturing shale gas production industry.

# Hydraulic Fracturing (Fracking)



### What Does the Public Want?

**Public Favourability of Energy Technologies** 



Source: DECC Public Attitutes Tracker: March 2012 - February 2015