



Attn: Exec. Committee
Siting Committee - if any
Review Board

COMMENT FORM

BEFORE
IT'S TOO
LATE!!!

Federal Energy Regulatory Commission
Draft Environmental Impact Statement for the
REX East Project

ORIGINAL

06-1142-GA BIN

CP07-208-000

Please include your name and address so that we can add you to our mailing list if you would like to receive subsequent information on the project. Thank you for taking the time to provide us with your comments.

Name: Shirley Marmie

Deadline to Submit Comments:

January 14, 2008

Address: 12209 Rose Rd
Senecaville OH
43780

Valley Top
Sec 23

FILED
OFFICE OF THE
SECRETARY
FEB 11 A 10 08
FEDERAL ENERGY
REGULATORY COMMISSION

Please provide comments on the Draft Environmental Impact Statement (EIS). Please provide any edits, changes, or additions for the Final EIS. Please be as specific as possible in referencing the Draft EIS.

Exhibits are enclosed to support my address of this issue.

Rex pipeline affiliates, membership and unions - GIE, GTE, GTS

INTERNATIONAL PIPELINE + OFFSHORE CONTRACTOR - IPLOCA.COM

REPRESENTATION
GEOGRAPHIC MEMBERSHIPS > HOSTAL COUNTRIES

PLAYS LEAD ROLE: FEDERATION OF PIPELINE INDUSTRY ASSOCIATIONS

(Too Many) Enough Northern Gas Pipelines: Links client, producers, markets, media, suppliers

(I know these are presently being) Countries, contractors, transmission +

(operated without REX Pipeline East) distribution lines, companies, US Energy

Trade + Professional Groups, Organization

Environmental Groups, Research, Education

Financial, Data centers, Labor + unions,

Consultants, human resources, public affairs

Rextag strategies.com/qiselectricty.php - compare to natural hazards - areas

USGS maps + stats

FEMA Reports

ODNR reports, + maps

EMF info

Parts of FEMA Study Guide: Session #7

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business
Technician
Date Processed 2.15.08

EXPORT
IMPORT
LNG Lines
internet
download

2008 FEB 15 PM 1-01

RECEIVED-DOCKETING DIV

2-2-08
City of Emergency County
Dept of Energy copy

I would like to address this issue with compassion to enlighten all of us, with some unseen facts and the unknown factors of REX pipeline and their affiliates before it's too late: (Exhibits for viewing only.)

Rex pipeline specs and maps were produced by GIE (Gulf Interstate Engineering), headquartered at Houston, Texas (Texas, imagine that.) If you follow GIE.com or Info@GIE.com, one can follow the chain of contributors and benefactors. Transco, Texas Eastern Trans. Co., Tennessee Gas Pipeline, Rockies Express Pipeline, Florida Gas, Gulf South Pipeline, Pacific Gas and Electric Pipeline are among 37 transmission lines joined at the spine in politics, unions, investments and productions, setting prices and manipulating the markets. Six LNG Sites and pipelines are associated with direct foreign and European investments: import, export. OPEC is not all to blame; as you can see from the REXSTRATEGIES' mapping dept., which includes the U.S. Electric Transmission & Power Plants Systems (per Digital GIS data of U.S.).

GIE is connected with the same acronym as GIE (Gas Infrastructure of Europe), with memberships of hostile and terrorist countries that are killing our people and others around the world, including GTE (Gas Transmission Europe), GTS (Gas Storage Europe), and with our own government and private sector connections. If the U.S. is independent, then why has our elect and appointed in offices, past and present, sold us out as slaves to the global markets? They were designed to represent the whole people. How much of the laborers' dollar stays at home for his own pursuit of life, liberty and benefit of prosperity? How many families have split over money?

The grand scheme and strategies of this program is generated out of meetings, conferences, training, trade, commerce, political position, political increase of employment, goods and services, crunching numbers and passing policies that do not benefit the majority of its citizens and their heirs, even mother earth. These unions were birthing globally and in operation before and around 2002, the time when Ohio was experiencing increased earthquakes.

However, mineral extraction and electronic transmission lines and storage do contribute directly and indirectly to the loss of life and property by their attributing to the increase of earthquake and subsidences activity; rock and mud slides from erosion and earth relocation, acid rain damages, weather patterns and changes from excavating and clearing right-of-ways, widening corridors, and shifting and changing the ecosystems, magnetic winds and storms caused by gases and byproduct released into the atmosphere. Their attributions also change and wipe out the natural crop protectors and increase loss of pollinating insects. These patterns and changes in the environment have caused more natural disasters in size and scope: tornadoes, tsunamis, hurricanes, cyclones, typhoons, floods, erosion, explosions, with increased release of negative charges (or ions) out of earth's core elements and into the atmosphere, including expelling invisible oil and gas byproducts and pollutants into the air that diminish the Ozone layer, resulting in Global Warming, causing drought, famine and plagues. Malignancies are linked to supply and demand of petroleum diversities and byproducts, expelling ionic reactions and the electro magnetic fields (frequencies) (EMF), from the electrical transmission lines.

The biggest contribution made to loss of life and property is by greed and prosperity of a people in positions associated with (supply side) coal, gas and oil production, storage and transmission, which includes the consumer and enslaved (demand side), of which I too am guilty. I have personally tagged us as, "global terrorists and parasites", consuming natural resources that protect us from the reciprocating gravitational and leucic forces of earth's core. Some of the most affluent and influential terrorists and parasites have hidden or known agendas, while the rest of us stay ignorant to the big picture, until they affect us. Their main agenda is to join in the one-world government and the European Union, WFOPIA (World Federation of Pipeline Industry Assoc.), and IPLOCA (International Pipeline and Offshore Contractors Assoc.) Since the founding of IPLOCA in May 1989, 4 of 8, (1/2), founding members are deceased (imagine that.) They list 107 Company and 117 Associate Company memberships. Some are in enemy countries to the United States and against family, human liberty and moral accountability.

These mineral sapping terrorists are speeding up the atomic and nuclear time clock for the next polar shift of earth's tectonic plates. Some insurance companies and scientists are projecting this polar shift within the next 5 years, 2012 or 2013. With polar shifts, come cataclysmic magnetic storms, wiping out power grids and magnetic sensitive components and electronics, even pipeline sensors and pacemakers. (How can REX pipeline guarantee 100% safety in operation and distribution, with these oncoming events? In addition to the Apophis asteroid that will move into our orbit in 2013, 2021, 2025, and being projected to collide or be a near miss with earth, depending on earth's magnetic pull. If scientists, NASA, and government agents cannot innovate movement of this asteroid off its present trajectory, the odds increase for collision in 2029 and more so in 2036. These magnetic storms will wipe out power and grids for about 3 1/4 years, if there is anyone left to repair and use them. All production will stop unless manually operated without magnetic sensitive equipment. (How does REX pipeline plan to control the pressures inside the pipelines and equipment? How does Rex, the elect and appointed entities plan to address these

coming disasters? Provide us with specifics, numbers and written documentation to verify, how does this or another transmission line benefit Ohio, its citizens (except for the few), its economy, and this county, (which has been proven to be geographically, geologically and meteorologically unstable for any high risk and deadly transmission lines to enter our State, County, Cities and Townships?) Loss of life, property, industry, and water source aquifers are at extreme risk, lowering property values and local prosperity, jeopardizing cities, industry, economy and employment, in addition to loss of the ecology, timber, grazing, wildlife, livestock and dairy production, and additional flood plains. Our Interstate systems and crossroads are at jeopardy, which allows transports of goods and services to the entire nation and abroad. (I personally believe REX pipeline is premature in executing their plans, and stealing property by extortion of eminent domain; extortion -political or private-is illegal the last time I checked.) Ohio already has at least 10 major transmission lines, and many minor ones, and large storage areas. Why does our state need one more, except for political and monetary gain of the influential rich and powerful?

According to Ohio Dept of Natural Resources and FEMA reports, our state is listed as a top hazard, increasing in seismic activity, and natural and manmade disasters. Ohio hazards are in the company with Florida, Texas and California, in which major transmission pipelines run along fault line activities, as they tap into weaken crustal cavities to exhume gas, oil and water, and other mineral insulators. We open new cavities with ore extraction.

More than 30 earthquakes have occurred in and around Ohio since 2002, going on 6 years. More than 200 earthquakes with a magnitude of 2.0 or greater have occurred in Ohio regions since 1776, more since mid 1800's when mining and oil and gas productions were starting, leaving empty and dangerous cavities to produce subsidences and yes, earthquakes and trimmers, underground explosions and fires for nearly 150 years. Now with wells depleted and capping or plugging going on, pressures are building up elsewhere and increasing production in new and older wells, adding to more depleted drilling cavities and breaches, more concentrated and closer together. For each earthquake here or abroad on the other side of the globe, some meter charts reflect an associated increase in gas pressure and production at shallower depths. Therefore, common sense tells us that the core gases and cavities are moving closer to the surface and more drilling fractures have weakened more cavities and strata. Each hole or boring produced is like drilling into a cookie, a piece of mud, rock, stone, marble or wood splintering and cracking, as it is being poked from one or both sides, as the tensile and shear strengths decrease, being squeezed between the core boring upward and the surface drilling downward, unable to truly cap or seal it up, until the end result is a fault line fractured, splintered and relocated.

I have taken ODNR maps of pipeline and gas storage and overlaid it with earthquake epicenters and seismic activities. The conclusion is physically seen, as positively correlating the two. (Exhibit for viewing only.)

Explosions are listed on the Internet and in the history books. (Funny how the writers missed or omitted the transmission lines that exploded in Guernsey, Noble, Monroe, Muskingum and Franklin Counties, the loss of life, property and prosperity since the 70's. The heat and damages, and weather changes were felt and viewed for miles.)

Bridges, infrastructure, cables and utilities are capsizing and fracturing due to these earthquakes and losses of power. India is the latest earthquake victim in offshore cable ruptures, a more flexible material than a pipeline. Collapse of 11 overpasses had severe consequences in loss of life and property, including Los Angeles, San Fernando Valley (PG&E and its formerly owned Gas Transmission Northwest Corp. pipeline transmission lines run along present major fault lines), and more if you were to include the New Jersey, Pennsylvania, and Florida Freeways that have collapsed (areas of Dominion, Columbia, Florida, Gulf, Sonat, etc gas pipelines). Weakened and aged infrastructure and manmade disasters have attributed to many consequences reciprocated by increased frequencies of oil & gas production and land development and political neglect. Statewide counties in Ohio have experienced many road and land disasters. Guernsey and Muskingum counties each had one collapse on I-70. Guernsey and neighboring counties have several sinkholes and subsidences, road and land damage, including Valley and Jackson Twp., Noble and Monroe County's SR 78, and adjoining lands. Many road closings and loss of business, economy, employment and other factors occurred. Aquifers have depleted and have been closed and rerouted due to construction and resurfacing, increased use, and from major and minor collapses. If one were to research this, and as news has reported, these occurrences are caused mainly by old abandoned mines and open cavities, and erosion.

(Others and I have personally felt and heard earth trimmers and explosions as drillings increased in Valley Twp., in the past 5 years; strong enough to rattle windows and crack foundations and walls. When notified, ODNR agents could not account nor explain these events to me in comparison of date and times for permitted state, county and local public and private activities. Did my reports ever get recorded? (People from Claysville and Walkonding have heard and felt them.) It was not the underground or strip mines, nor the

Seismic testing close to Cleveland, nor Wampum Hardware, even though they were dynamitting a new roadway at the time, nor was it a neighbor operating a land stripper.

According to ODNR and FEMA reports downloaded from the Internet at the library, more than 40,000 square kilometers of the U.S., in 38 states, is slowly sinking because of human activities, recently manifested dramatically in Florida and Ohio. In America alone, the structural damage, done by expensive soils costs about \$6 billion dollars per year. (When are the oil and gas producers and affiliates going to reimburse the American people for their part in the loss of life and property? It wouldn't be so profitable then and production would be phased out. When are the costs of structural damages, loss of life and property going to be reimbursed?)

Flooding and other meteorological hazards are attributed to weather pattern and climatic changes. Some caused by opened corridors of transmission lines and rights of way. (Again, when are these producers and affiliates going to reimburse the peoples of affected nations for losses of life and property? When does it stop? At what price?)

Other hazards causing great loss of life and property are technological and radiation, also manmade, clearly growing in number and more so in scale. Radon seepage is more prevalent.

The frequency rate increases with the experiences of large growing numbers of disasters. Between 1965 and 1985 (100 years of mining and drilling), about 500 Federally declared disasters in the U.S. have occurred. Between 1989 and 1995, only 7 years, the size and number increased roughly to 300 disasters, large enough for Presidential disaster declarations. (A few of these major disasters happened in five surrounding counties, including Guernsey.)

Disaster losses per hazard in the U.S. total about \$34 billion annually, not including losses from drought, heat waves, hazardous materials accidents and releases, train derailments, air crashes, or wildfires. (I believe that disasters are changing invisible atmospheric pressures and visible weather patterns, causing magnetic and ionic fluctuations and atmospheric collisions, increasing the number and intensity of electrical storms.)

In 1970, during the coal, gas and oil boom, U.S. direct losses from natural disasters were estimated at \$4.5 billion a year. Today, estimates range from \$6 to 10 billion annually, in addition to crop damage. (Again, which part of the \$ billions and trillions in losses are attributed to the affiliated nations, State, County and Local entities and their elected and appointed, the supply and demand producers and affiliates, and the political promises, resulting in bribes and extortions, and including the bar association that is selling out Americans to the Crows and other countries. Some associations and individuals have very deep pockets and greedy agendas.)

A conservative estimate of total dollar losses during the past 20 years is \$500 billion. (Where does the citizen of the world benefit by these disasters? How does the tax-paying citizen of U.S. benefit paying multiple times for these disasters, once by loss of land, then life, future hopes, revenues and security, disguised as economic prosperity and progress by right of eminent domain? The thief of the night and day has come; the prophetic Beasts of the Sea and Land have arrived. Americans are violated and betrayed by greed and power.)

Only a few examples were given to confirm the increase of disasters with the attributing and reciprocating correlation of gas and oil production and storage, with the drillings into and along fragile fault lines and strata, that consequently have increased seismic activity and natural and manmade disasters. Offshore drilling is directly and indirectly related to the reciprocated increase of Coastline disasters, with visible ionic changes, catastrophic weather, shifting plate tectonics, volcanic and earthquake activities, and global warming. According to FEMA, the risk to people and property from disasters in the U.S. is expected to grow to 73 million by the year 2010.

Regional hazard vulnerability ranks southern states as the most hazards prone. Texas ranks tops, followed by Florida, Georgia and OHIO. The least hazardous states are Vermont, Delaware and Rhode Island. OHIO, South Carolina, and Pennsylvania (states of the Appalachian Miss fault line, which is home to us) are among the most hazardous states based on hazards per square mile; Nevada, Alaska, and Montana are the least hazardous per square mile. (I say Alaska report is questionable because of the numbers and magnitudes of earthquakes recorded, which is also the home of excessive oil and gas production and home to a military Weather manipulation Station HAARP.)

Per capita, the states that rank high in proportional damage and casualties are California, Texas and Florida (these are coastal states with many transmission lines running inland and through northern and midland states. Also ranked as hazardous states are topped by Kansas, then Arkansas, Georgia and South Carolina.

The FEMA course guide for Session 7 states, "Actually, we know what has to be done. What is now required is the political commitment to do it."

With all the exhibits and evidences, public records available for viewing and research, I am opposed to the eminent domain and political extortion of an unnecessary transmission line, proposed for an unstable and hazardous prone state. Our families, neighbors and citizens will not benefit today, nor tomorrow and what short years remain. I suggest that we corporately stop denying the truth and recognize these practices as a red alert Homeland Security warning, that we the consumers are the greediest of Homeland Terrorists, and that we use the time left as the last generation on earth to find solutions instead of being the problems associated within all these hazards. Does it matter to anyone; does anyone care enough to do something about it? We cannot change the past, but we can change the quality of future that is left. I suggest that we (American consumers) take back the private and public (tax payer) patents that have been buried, lost or stolen by the large power mongers and governments that reveal existing solutions and alternative energy sources, and phase out present practices and uses in demand and supply of this type of energy source, within the next 3 years. I suggest that laws be rescinded to carryout this endeavor. (We could convert transmission lines into conveyor allos to transport goods and services, in times of war and peace. Convert gathering lines into water and sewer distribution lines desperately needed. Find solutions to convert generator and electro-magnetic devices into self-contained, wind powered engines and devices. Using the knowledge of how tornadoes and storms, and natural disasters are created and how self-generating they are, we as a nation can tap into that knowledge for our benefit, change the negative ions, heal the atmosphere, and live life with better quality of health and prosperity, and heal broken homes and lives. Harmony, justice and fairness are the true missions. The greatest good for the greatest number is possible.)

I would like to know:

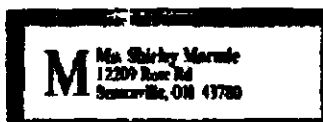
Where are the impact and feasibility studies by all departments and agencies affected?
Where are the official, raised seal certifications of approval for REX Pipeline?
Where are these documents for centralized public (citizen) viewing from the taxpayer supported entities, like the departments of Natural Resources, Mines, Oil and Gas, Minerals, Commerce, Energy, Environment Protection, Farm Bureau, Soil and Water Conservation, Attorney General, Administration, Auditor, Governor, etc. in Ohio and affected states, and from the elect at the State, County and Local levels?
Where is the special election to hold a vote by the people in Ohio, in and for the people's best interest, completely informed of any hidden agenda and lobbyists? (Like the issues voted on a few years ago.)
Where and when were Sunshine Laws in compliance for this endeavor?
What other laws protecting us are non-compliant by REX Pipeline?

Do your own research; prove me wrong? Include all your certified public and private documentations that apply. I only need to prove reasonable doubt in the courtroom, and common sense and love for others needs no license to practice it, revealing truths that are politically correct. As a Valley Township resident and a citizen of the United States, I have only one chance to make a difference and that is now, with no turning back. Good changes begin in the individual heart with re-indoctrination and a new vision, never yielding to fear.

REX Pipeline can send its goons to destroy me, but I will not turn my back on this issue and look the other way as long as I have the right to breathe and the freedoms bought by centuries of blood. I believe in the certain unalienable rights, among them, the right to life, liberty and the pursuit of happiness, united in the endeavor under Divine Providence, in life, fortunes and honor as the signers did. We the people, the governed, have the right to abolish a destructive government (governing body) of rights and freedoms, and replace it with a new one, according to the Declaration of Independence, signed July 4, 1776. At times, I am ashamed to speak truth about our last 100 years of government, which forgot why our forefathers fled tyranny and governing policies from their homelands to here. Democracy in this Republic works if it is honest, truthful, just and fair, and it seeks no harm to life or property. The "me" has to return to the "we" focus, if we are to survive with any good quality of life remaining.

My defense rests on truth.

Respectfully submitted, Shirley Marmie.



*Comments are welcome, + or - .
Write me. I don't have email, nor internet.*

*MAJOR HOMELAND SECURITY RISK (TERRORISTS)
P.S. Utility - Electric, Coal, Gas, Oil Major Economic
Life + Property
Homeland
TERRORIST*

*10 major pipelines Ohio
forming minor + gathering lines*

List of North American natural gas pipelines

From Wikipedia, the free encyclopedia

This is a list of pipelines used to transport natural gas in the United States and Canada. The interstate pipelines are regulated by the Federal Energy Regulatory Commission (FERC)^[1] in the US and the National Energy Board in Canada.^[2] Intrastate pipelines are regulated by state, provincial or local jurisdictions.

Contents

- 1 United States interstate pipelines
 - 1.1 Major interstate pipelines
 - 1.2 Minor interstate pipelines
 - 1.3 Predominantly Offshore Pipelines
 - 1.4 LNG Importation/Export Terminals
 - 1.5 Hineshaw Pipelines
- 2 Canadian Pipelines
- 3 References
- 4 See also

United States interstate pipelines

FERC requires most interstate pipelines to maintain an interactive web site with standardized information regarding their operations under a heading of "Informational Postings."^[3] The exact legal name of each company appears below. Many of these companies are wholly owned subsidiaries of larger publicly-traded companies.

Major interstate pipelines

- Alliance Pipeline L.P.
- ANR Pipeline Company — formerly Michican Wisconsin
- CenterPoint Energy Gas Transmission Company
- Centerpoint Energy - Mississippi River — formerly, Mississippi River Transmission
- Colorado Interstate Gas Company
- Columbia Gas Transmission Corporation
- Columbia Gulf Transmission Company
- Dominion Transmission, Inc. — formerly Consolidated Gas Transmission *(East Ohio)*
- East Tennessee Natural Gas Company
- El Paso Natural Gas Company
- Florida Gas Transmission Company
- Gas Transmission Northwest Corporation [1] *formerly P6transmission*

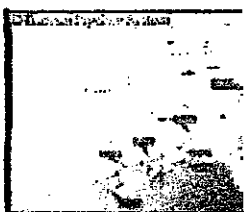







*Mountains are extreme faultlines
weakened each crest
compressive rupture
concentrated
Peak in
earthquake risk
upward
cavity
attraction
last
150 yrs.
build up*



US Gas Pipelines in 2000

Columbia Gas + affiliates
Domestic Gas + affiliates
(aka Eastern)
Columbia Gulf Trans.
Transcontinental Gas
Cleveland East Ohio Gas

There are enough (too many)
transmission lines running through
the Heart (hub) of U.S.A.
Destroy SE Ohio I-70/I-77/US 40
You destroy ALL US Interstate
TRANSPORT E.W.N.S. ↕

REX-002	Transco Pipeline Map	
REX-003	Texas Eastern Trans. Co. (TETCO) Texas - Ohio and Texas Gas Trans. and Texas Gas pipe	
REX-004	Tennessee Gas Pipeline Map	
REX-006	Algonquin Pipeline Map	
REX-007	El Paso Pipeline Map	
REX-008	Rockies Express Pipeline Map	
REX-009	Florida Gas Transmission Pipeline Map	
REX-010	Gulf South Pipeline Map	

United States

Civil's
NOT LISTED

VAPOR CLOUD
stress corrosion
improper weld
gas pressure stn
severe internal corrosion
of pipeline
some causes unrelated

- 1965: Gas Transmission Pipeline, North of Natchitoches, LA. Tennessee Gas Pipeline Company explodes from stress corrosion cracking, killing 17 people. This accident lead to then President Johnson to call for the formation of a national pipeline safety agency. (March 4, 1965)
- 1968: Ruptured LPG Pipeline, Near Yutan, Nebraska. Repair crews responded to a pipeline rupture, thought vapors were dispersed, but ignited the vapor cloud by driving into it. 5 Repairmen were killed. (December 5, 1968)
- 1969: Low Pressure Natural Gas Distribution System, Gary, Indiana. (June 3, 1969)
- 1969: High Pressure Natural Gas Pipeline, near Houston, Texas, September 9, 1969.
- 1970: Colonial Pipeline Company, Petroleum Products Pipeline, Jacksonville, Maryland, (September 3, 1970).
- 1970: Propane Gas Pipeline rupture. Phillips Pipeline Company propane gas explosion, Franklin County, Missouri. Leak lead to propane cloud explosion with a force of several tons of TNT. (December 9, 1970)
- 1972: Rupture of Propane Pipeline, near Butler, Alabama. A road grader being used hit a high pressure propane pipeline. A while after the line was ruptured, a car drove into the vapor cloud, igniting it, and killing 4 people. (June 20, 1972)
- 1973: Natural Gas Liquids Pipeline rupture. Austin, Texas A Natural Gas Liquids (NGL) pipeline ruptured due to an improper weld, 6 people killed. (February 22, 1973)
- 1975: NGL Pipeline rupture. An NGL pipeline ruptured due to previous mechanical damage at Devers, Texas. 4 killed in vapor cloud fire. (May 12, 1975)
- 1976: LPG Pipeline rupture. An LPG line ruptured near Romulus, Michigan, due to previous mechanical damage to the pipeline and overpressurization from operator error at a storage facility. 9 people were injured in the vapor cloud fire. (August 2, 1975)
- 1977 LPG Pipeline rupture. A LPG pipeline ruptured near Ruff Creek, Pennsylvania from stress corrosion cracking. The resulting propane vapor cloud ignited when a truck driven into the cloud stalled, then created a spark when it was restarted. (July 20, 1977)
- 1978 LPG Pipeline rupture. An LPG pipeline at Donnellson, Iowa ruptured from past mechanical damage and improped lower for road improvements. The vapor cloud ignited several minutes after the rupture. 3 people were killed. (August 4, 1978)
- 1989 Pipeline failure after the San Bernardino train disaster.
- 1994 Texas Eastern Transmission Corporation Natural Gas Pipeline Explosion and Fire Edison, New Jersey on March 23, 1994.
- 1997 Pipeline Rupture and Fire, Indianapolis, Indiana, July 21, 1997.
- 1998 Natural Gas Explosion and Fire, South Riding, Virginia, July 7, 1998.
- 1998 Natural Gas Pipeline Rupture and Subsequent Explosion, St. Cloud, Minnesota, December 11, 1998.
- 1999 Natural Gas Explosion and Fire at a gas pressure station, Wytheville, Virginia, destroying a home and motorcycle store. [3] (January 3, 1999)
- 1999 Natural Gas Service Line and Rupture and Subsequent Explosion and Fire, Bridgeport, Alabama, January 22, 1999
- 1999 A pipeline in a Bellingham, Washington park leaked gasoline, vapor from leak exploded and killed 2 children and an 18 year old young man on June 10, 1999.
- 2000 Hazardous Liquid Pipe Failure and Leak, Explorer Pipeline Company, Greenville, Texas, March 9, 2000.
- 2000 Natural Gas Pipeline Rupture and Fire Near Carlsbad, New Mexico This Explosion Killed 12 Members Of The Same Family. Cause was due to severe internal corrosion of the pipeline. (August 19, 2000)
- 2000 Rupture of Piney Point Oil Pipeline and Release of Fuel Oil Near Chalk Point, Maryland,

SEE ALSO: Cleveland East Ohio Gas Explosion
Texas Eastern Transmission Corp Natural Gas Pipeline Explosion

- April 7, 2000.
- 2002 Rupture of Enbridge Pipeline and Release of Crude Oil near Cohasset, Minnesota, July 4, 2002.
- 2003 Excavation Damage to Natural Gas Distribution Line Resulting in Explosion and Fire, Wilmington, Delaware, July 2, 2003.
- 2007 Steampipe Explosion in Midtown Manhattan
- ■ 2007 Natural gas pipeline explodes killing two and injuring five others near Melvin, AL on November 1, 2007.

References

1. ^ Probe ordered after Nigeria blast (<http://news.bbc.co.uk/1/hi/world/africa/4768159.stm>), May 13 2006, BBC News
2. ^ Up to 500 killed in Lagos fuel blast (<http://uk.news.yahoo.com/26122006/325/500-killed-lagos-fuel-blast.html>), December 26 2006, Yahoo News
3. ^ Thousands Lose Heat After Va. Blast (<http://www.highbeam.com/doc/1P1-22246627.html>), January 3, 1999, HighBeam research

October 12, 2006 A pipeline explosion occurred at Cote Blanche Bay in Louisiana claiming 4 lives, leaving two people in missing status. Until this day, those 2 have not been found, much to the detriment of their families.



Wild Life and Protection
Ohio Department of Natural Resources

Home About Mine & Well Locators Field Inspectors Forms Bids / Meetings / Calendar Publications
OIL & GAS COAL MINING MINE SAFETY INDUSTRIAL MINERALS ABANDONED MINES

Oil & Gas

Ohio's Oil and Gas Program and History

Oil and Gas Electronic
Folder

Oil and Gas Well Search

Field Inspectors

Production / RBDMS

Emergency Response

Landowner Information

Mandatory Pooling

Urban Drilling

Law and Rules

Regulatory Enforcement

Permitting, Hydrology and
Bonding

Orphan Well Program

Underground Injection

Additional Resources:

▶ [Interstate Oil and Gas
Compact Commission](#)

▶ [US Army Corps of
Engineers](#)

▶ [Ground Water
Protection Council](#)

▶ [Ohio Oil and Gas
Association](#)

ODNR
Mineral Resources Management
2045 Morse Road
Building H-3
Columbus, Ohio 43229-6883
(614) 265-6533
Fax # (614) 265-7998

Map to our offices:
Fountain Square, Building H-2

Office hours: Monday - Friday,
8:00 A.M. to 5:00 P.M.

The Division of Mineral Resources Management's oil and gas programs were incorporated into the Ohio Department of Natural Resources (ODNR) in 1965 to regulate drilling and production of Ohio's oil and gas resources.

Current funding for division programs comes from five sources: permit fees, federal Underground Injection Control Program grant, severance taxes (\$.10 bbl tax on oil and \$.025 tax on natural gas), general revenue funds, and fines.

Most of Ohio's 62,966 active wells are classified as "stripper" wells or wells that produce less than 10 barrels (42 gallons per barrel) of oil per day or less than 60 thousand cubic feet (mcf) of gas per day.

In 2006, Ohio wells produced nearly 5.4 million barrels of oil and more than 86.3 billion cubic feet of natural gas. Market value for oil and gas production totaled nearly \$1.007 billion dollars, exceeding the \$1 billion mark for the second straight year and only the third time ever. Even though Ohio's gas production accounts for only 11% of Ohio's consumption, it is equivalent to the amount required to heat more than 1 million homes and businesses. In addition, the oil and gas industry paid an estimated \$135 million in royalty payments to landowners for oil and gas produced.

In 2006, the Division of Mineral Resources Management:

- Released 2005 annual statements of production. This data (47,204 rec available by county or for the entire state)
- Issued 2,291 permits, including 1,239 permits to drill (a 4% decrease) permits to plug (an decrease of 30%)
- Performed more than 14,997 site inspections
- Witnessed over 91% of 577 plugging operations under Division jurisdiction
- Plugged 51 orphan wells, including 49 funded through the Landowner (
- Continued to receive favorable reviews by US EPA for management of Underground Injection Control (UIC) Program
- Inspected brine injection wells once every eleven weeks on average, if

Additional Information

☐ To learn more about
some of the oil and gas
Colonel Drake, the Dr
located in Titusville, Pa
some of the other earl
oil and gas industry.

☐ 2006 Summary of
Gas Activities for our
more information rega
and gas activities

*89% reported
or natural gas*

For general information e-mail your questions here.

Inspection frequency for any UIC program in the nation



In 2006, the Ohio oil and gas industry:

- Drilled an estimated 952 oil and gas wells in 42 counties
- Monroe County was the most active county with 79 wells drilled
- Over 614 wells were drilled to the Clinton Sandstone in 27 counties
- Oil production: 5,422,194 barrels
- Value of oil production: \$338.5 million
- Gas production: 86,315,100 mcf
- Value of gas production: \$568.9 million

Ohio's Oil and Gas History

Perhaps the least known fact about the State of Ohio is its long and colorful oil and gas industry, dating back to the mid-1800s. The first commercial product Ohio was discovered in Wellburg (Washington County) in 1860. As of 2006, oil and gas wells drilled in Ohio reached 272,589 wells yielding 1.1 billion barrels and more than 8.1 trillion cubic feet of natural gas.

Ohio remains a leading producer of oil and gas, ranking in the top half of all states in the nation. Research completed by ODNR's Divisions of Mineral Resources and Geological Survey indicates that Ohio has significant remaining producible reserves.

Following are additional facts and information which may be of interest to you about Ohio's most precious, but little known, natural resources.

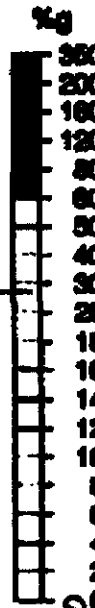
Ohio's Oil and Gas History:

- Deepest well drilled in Ohio: 11,442 feet in 1967 (Noble County)
- Deepest producing well in Ohio: 8,794 feet in Harrison County
- First year of production: Oil - 1860; Gas - 1884
- Year and amount of peak production:
 - Oil: 23,941,000 barrels in 1896
 - Gas: 186.5 billion cubic feet in 1984
- Total number of wells drilled: 272,589; Ohio ranks 4th nationally behind Oklahoma and Pennsylvania.

CAVITY VOLUME



Solismic Hazard Map



USGS National Seismic Hazard Maps

U.S. Department of the Interior | U.S. Geological Survey

URL: <http://earthquake.usgs.gov/regional/states/ohio/hazards.php>

Page Contact Information: Web Team

Page Last Modified: February 05, 2007 6:31:24 PM.

: February 05, 2007 6:31:24 PM.

HOMELAND SECURITY
RED ALERT
HIGHEST RISK

- MAJOR EXPLOSIONS
- MAJOR EARTHQUAKES
- MAJOR ELECTRIC OUTAGE CONTROLLING P

LAST 10 yrs 5-6 MAJOR GAS LINE RUPTURES
inside 5 counties S & C AND
AND ARLINE

DECLARED
OHIO - HIGH HAZARD
per sq. mile
POTENTIAL
HAZARDS

- 2002 05 24 - Pittsburgh Aftershock - M 3.8
- 2002 12 25 - Redford, New York - M 3.3

North Carolina

- 1816 02 21 - Waynesville, North Carolina - M 5.2

North Dakota

- 1909 05 16 - North Dakota - M 5.5

Ohio

- 1884 05 19 - Near Lima, Ohio - M 4.8
- 1901 05 17 - Near Portsmouth, Ohio - M 4.2
- 1937 03 09 - Western Ohio - M 5.4
- 1986 01 31 - Northeast Ohio - M 5.0

Oklahoma

- 1952 04 09 - El Reno, Oklahoma - M 5.5

Oregon

- 1910 08 05 - Oregon - M 6.8
- 1993 09 21 - Klamath Falls, Oregon - M 6.0 Fatalities 2
- 2002 06 29 - near Mt. Hood Volcano, Oregon - M 4.5
- 2003 01 18 - Blanco Fracture Zone - Offshore Oregon - M 6.3
- 2004 07 12 - Offshore Oregon - M 4.9

Pennsylvania

- 1998 09 25 - Pennsylvania - M 5.2

Rhode Island

- 1876 03 11 - Newport, Rhode Island - M 3.5

South Carolina

- 1886 09 01 - Charleston, South Carolina - M 7.3 Fatalities 60
- 2002 11 11 - Sesbrook Island, South Carolina - M 4.4

South Dakota

- 1911 06 02 - South Dakota - M 4.5
- 2003 05 25 - South Dakota - M 4.0

Tennessee

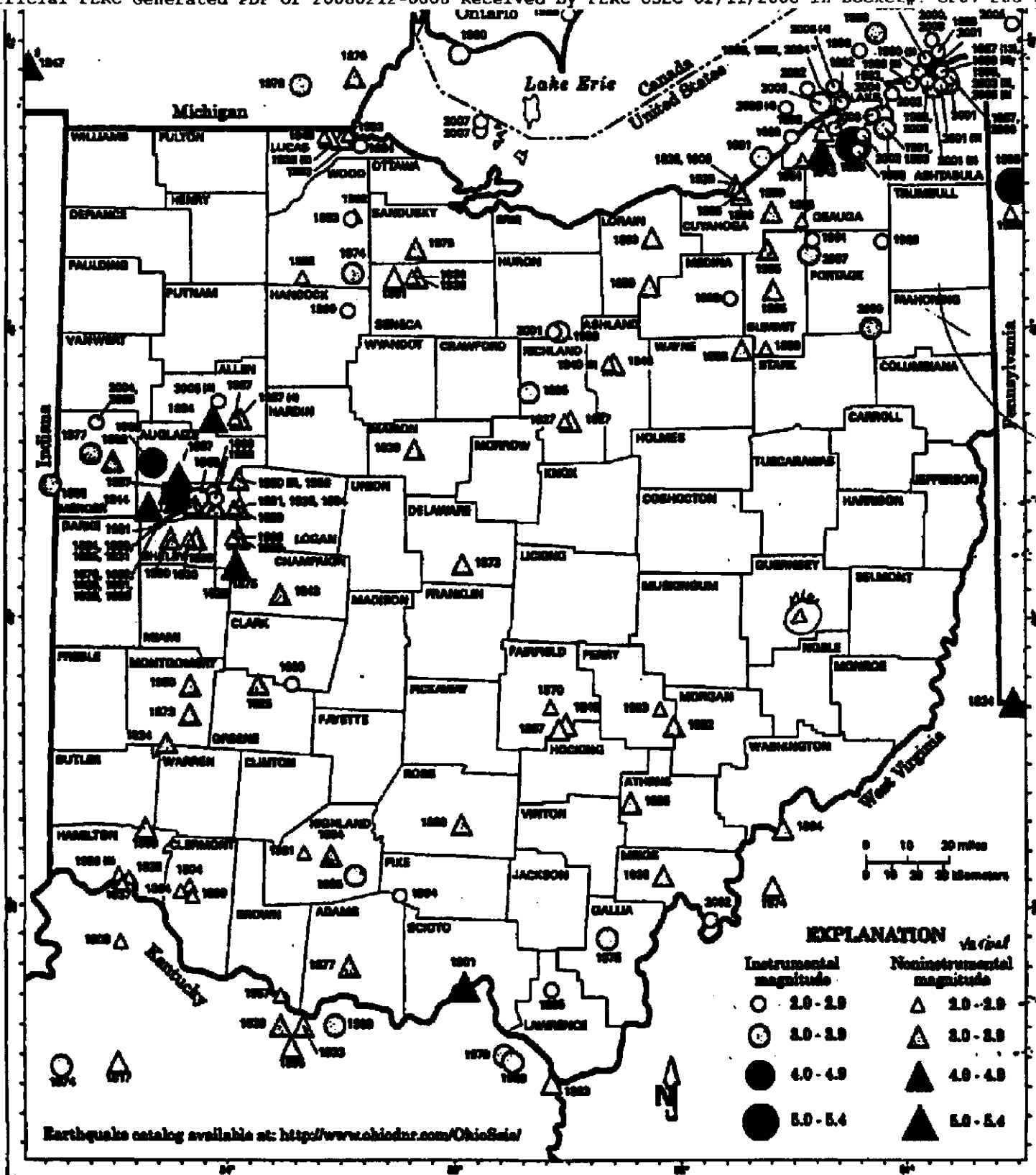
- 1855 08 17 - Memphis, Tennessee - M 5.0
- 1928 11 03 - Eastern Tennessee - M 4.5

Texas

- 1931 08 16 - Valentine, Texas - M 5.8

Utah

1st oil well - Wood Co. 1860; 1890s well 1884 (where?)
2006 272,589 wells
1.1 Billion bbl oil
8.1 Trillion of natural gas
Ohio leading producer behind Oklahoma + Pennsylvania
Deepest well drilled 11,442 ft 1967 (Noble Co.)
Produced until 8794 (Noble Co.)
NO DATA OF EARTHQUAKES RECORDED HERE AFTER 1956
20 years



EARTHQUAKE EPICENTERS IN OHIO AND ADJACENT STATES

OhioSeis



0 10 20 30 40 miles
0 10 20 30 40 kilometers

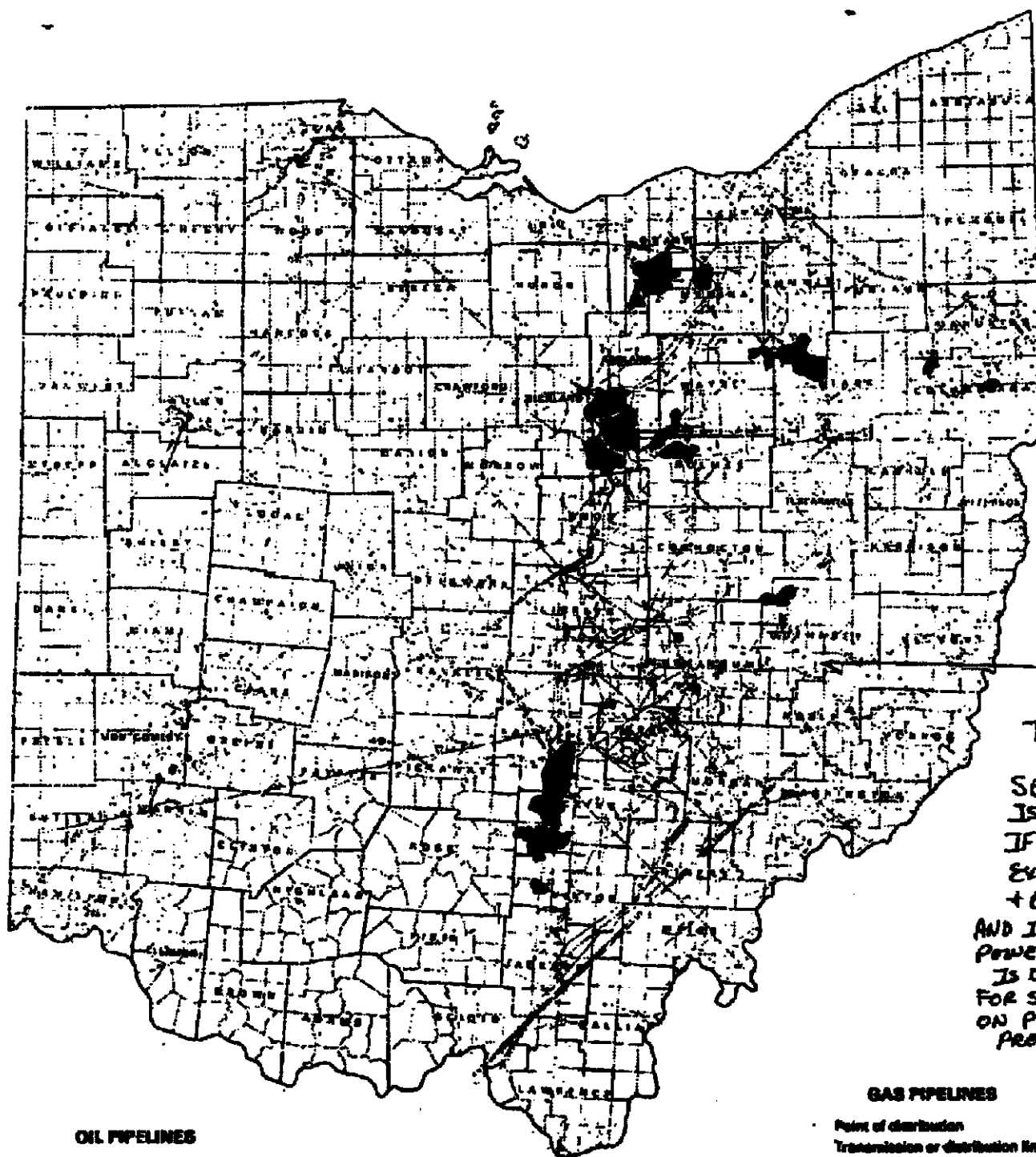


Map available also at a scale of 1 inch = approximately 8 miles

STATE OF OHIO
George V. Voinovich, Governor
DEPARTMENT OF NATURAL RESOURCES
Frances S. Beuthner, Director
DIVISION OF GEOLOGICAL SURVEY
Thomas M. Borg, Chief

An Equal Opportunity Employer - M/F/H

HOLD
+ LOOK UP TO LIGHT TO SEE OVERLAY
WITH AN 18 YR OLD PIPELINE MAP



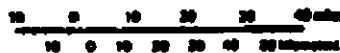
OIL PIPELINES

- Refinery and terminal
- Pumping station
- Pipeline
- Liquid petroleum storage area

GAS PIPELINES

- Point of distribution
- Transmission or distribution line
- Compressor station
- Propane plant
- Major control point
- Gas storage area

OIL AND GAS PIPELINES IN OHIO 1989



2007
1989
18 yrs ago

STATE OF OHIO
George V. Volonakis, Governor
DEPARTMENT OF NATURAL RESOURCES
Frances S. Beukholder, Director
DIVISION OF GEOLOGICAL SURVEY
Thomas M. Burg, Chief



Map available also at a scale of 1 inch = approximately 8 miles

An Equal Opportunity Employer - M/F/H



Ohio Department of Natural Resources

NEWS BY TOPIC

- ☒ View All Recent Entries
- ☒ ODNR NEWS
- ☒ Outdoor Columns
- ☒ Feature Stories

Ohio Department of Natural Resources

THE TRIP PLANNING CENTER

SEARCH LOGIN FEED

Archive

< January 2008 >						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

Monthly

[January, 2008](#)
[December, 2007](#)
[November, 2007](#)
[October, 2007](#)
[September, 2007](#)
[August, 2007](#)
[July, 2007](#)

[PRESS ROOM](#)
[CONTACT](#)
[AUDIO FILES](#)
[VIDEO FILES](#)
[NEWS ARCHIVES](#)
[FEATURE ARCHIVES](#)

Receive Media Updates

Email:

Go

Location: [Home](#) > [ODNR NEWS](#) > [Geological Survey](#)

ODNR UPDATES OHIO EARTHQUAKE MAP TO REFLECT STATEWIDE SEISMIC ACTIVITY SINCE 2002

Map also includes newly discovered information about historic earthquakes
download the map

COLUMBUS, OH - More than 30 earthquakes have occurred in and around Ohio since 2002, spurring the Ohio Department of Natural Resources (ODNR) Division of Geological Survey to publish an updated map that pinpoints the location and approximate magnitude of these recent seismic incidents. The revised map also includes new information about historic earthquakes in the region.

More than 200 earthquakes with a magnitude of 2.0 or greater have occurred in the Ohio region since 1776. While it may seem like earthquakes are occurring more frequently in recent years, ODNR's Ohio Seismic Network attributes this perceived change to improved technology and communication among people who experience the earthquakes.

The new map, which includes all of Ohio's recorded earthquakes, shows a concentration of earthquake epicenters in two areas of the state: western Ohio in the vicinity of Shelby County, and along the Lake Erie coast in Lake County at Painesville. Users can apply information from the map to determine earthquake insurance rates, construction strength determinations for bridges and buildings, and to research deep-earth structures such as hidden faults.

Michael C. Hansen, coordinator of the Ohio Seismic Network, researched an extensive collection of accounts of earthquakes in old newspapers and information in the files of the Division of Geologic several previously unknown historic earthquakes to add to the new map. From this information, he non-seismic historic events (e.g., explosions, atmospheric phenomena and rockfalls) that were not on the 2002 map. These false earthquakes were removed from the new version.

Earthquakes reported before 1970 by the public - often less accurate than seismic station reports - are depicted by a different color symbol on the new map than post-1970 earthquakes.

The 2007 map has an explanatory text and chronological table listing exact coordinates and other earthquake data, such as earthquake event time, depth, size of the area felt and information source. C seats, latitude and longitude and known faults deep below the surface are also depicted on the map designed to help map users relate points of interest with earthquake information.

The wall-size Earthquake Epicenters in Ohio and Adjacent Areas (map EG-2) measures 50 inches available for \$10 (plus tax and mailing) from the ODNR Geologic Records Center at 614-265-6576 geo_survey@dnr.state.oh.us. A free page-size version of the map and chronological listing of earthquakes is available on the Ohio Seismic Network's website: www.ohiodnr.com/OhioSeis.



IONIZING RADIATION frequency Electric and Magnetic Fields EMF

Highlights

The Department regulates electric and magnetic fields (EMF) from electrical transmission lines, under the provisions of ss. 403.061(30) and 403.523(14), F.S. The pertinent rule is 62-814, F.A.C., and the application form is 62-814.900, F.A.C. [per]. Those companies (primarily utilities) which construct or operate transmission lines would be regulated under these provisions. No permit, per se, is issued; this regulation is a monitoring function under which the applicant is demonstrating compliance with the regulations.

- » Applications in Process
- » Conditions of Certification
- » Rules & Statutes
- » Special Projects
- » Frequently Asked Questions (FAQ's)

EMF in the transmission line frequency range (60 Hertz) is classified as "non-ionizing radiation" as compared to ionizing radiation like X-rays. In addition to DEP's jurisdiction over the transmission line-related nonionizing radiation, the Department of Health also has regulatory jurisdiction over various sources of non-ionizing radiation, such as that from laser equipment (scanners used for bar code readers, lasers for medicine, and so forth).

The reason for the Department's interaction in this subject is best described in a report prepared in July of 2006 by the former SCO Administrator, Hamilton S. Owen, Jr., to the Environmental Regulation Commission (DEP's standard setting body). For additional reading, refer to a report by the National Institute of Environmental Health Services.

who did the studies?
Are they accurate?
Or politically funded to weaken the result?

Notice: The Department is proposing to revise the rule (Draft Rule) on Electric and Magnetic Fields, Ch 62-814, F.A.C. Workshops on the rule will be held on:

October 19, 2007, from 9:30 - 11:30am, in Room 609, Bob Martinez Center, 2600 Blairstone Road, Tallahassee, FL.

October 24, 2007, from 2:30 - 4:30pm, at the Tampa Port Authority, 1101 Channelside Drive, Tampa, FL.

For more information, please contact Ms. Landa Korokous at Florida Department of Environmental Protection, Siting Coordination Office, 2600 Blair Stone Road, MS 48, Tallahassee, Florida 32399-2400; phone (850) 245-8002.

Last updated: January 25, 2008

ionic & magnetic attraction for hurricanes
electronic transmission & pipeline
Tornadoes
hurricanes
floods

Observations
and Reminding
when planning & developing:

Directly & Indirectly related:

↑ Natural Disasters
by ionic fluctuations
"MAN MADE"

Electromagnetic fields
EMF
Negatively Charged
Atmosphere

Apophis Asteroid
to pass 2013, 2021, 2025
depending on
magnetic pull of
earth's atmosphere,
is projected to
impact or be near
miss by 2029
Magnetic storms

Polar shift projected within next 5 yrs.
Electric grids - destroyed & down for 2013
3½ yrs. If we survive and any luxuries
are left to repair.
Gas/Earth cavities/explode
rip entire U.S.A. apart.

01/29/08 3

Objective 7.1: To provide a perspective on the range and state of hazards in the U.S.

The U.S. Experiences a Very Broad Range of Hazards:

Note: To introduce this session, you may wish to ask the class to name some of the hazards that the U.S. faces. You might want to put these on chart paper or a board.

- There is more than a single way to categorize hazards. This session uses geological, meteorological and technological/manmade.

Geological	Meteorological	Technological/Human Caused
<ul style="list-style-type: none"> • Earthquakes • Landslides • Sink holes/ subsidence • Tsunamis • Volcano eruptions 	<ul style="list-style-type: none"> • Beach erosion • Drought • Floods • Heat waves • Hurricanes, Nor'Easters, tropical storms • Ice and snow storms • Lightning • Thunderstorms, wind and hail storms • Tornadoes • Wildfires • Winter storms 	<ul style="list-style-type: none"> • Airplane crashes • Bridge/over-pass failure • Civil disorder or disturbance (strikes, riots) • Dam failure • Explosions • Fires (urban, rural) • Hazardous materials incidents in business and industry • Hazardous materials transportation accidents • Hazardous waste sites • Highway transportation accidents • Nuclear power plant "incidents" • Oil spills • Pipeline breaks and ruptures • Power failures • Radiological incidents - transportation • Rail transport accidents • Sabotage • Terrorism • Weapon storage facility incidents/releases

Pre + Post
Mineral
Extraction
Rate of
Frequency Increase +
magnitude
scope

Weather
changes

IONIC CHANGES
Magnetic flux

Pollution by hydrocarbons

Corridor openings
development

Energy Products
Petroleum
Electronic - Mining
Magnetic
Hydro

Note: At this point, you may wish to distribute the handouts: Geological Hazard and Disaster Basics; Meteorological Hazard and Disaster Basics; and Technological/Human Hazard and Disaster Basics. You could draw upon the information in these handouts to elaborate on the list of hazards that the students have suggested. A few examples from each of the handouts are included below.

ALL RELATED TO
ENERGY PRODUCTION
OF MINERALS
(SUBSURFACE)

WEAKENED (CAVITIES)

EARTH CRUST

Concentrated portholes of pressure release
+ concentration

Part of Course Title: Theory, Principles, and Fundamentals of Hazards, Disasters, and U.S. Emergency Mgmt. 01/29/08 4

FEMA

Session Title: Overview of US Hazards
Session #7

- One of the most well known of the recent earthquakes was the Northridge quake that occurred on January 17, 1994.

"Moderate to severe damage was reported for about 12,500 structures, including the collapse of 11 overpasses on some of the busiest freeways in Los Angeles and the San Fernando Valley.¹ More than 56,000 residential units (mostly apartments) were heavily damaged or destroyed. . . More than 19,000 single-family homes sustained damages in excess of \$10,000. (Comerio 1995)." (Bolin/Stanford 1998, 83)

WV
+OH10

Note: You may wish to offer a word of caution about over- or underestimating the overall costs of disasters. This issue is addressed later in this session.

- While earthquakes are arguably the best known type of geological hazards, subsidences and sinkholes also cause significant damage. A subsidence is defined as a vertical displacement or downward movement of a generally level ground surface.

- Quarantelli on subsidences:

* "More than 40,000 square kilometers of the United States in 38 states is slowly sinking because of human activities, of which recent sinkholes in Florida and Ohio are only dramatic manifestations. In fact, structural damage done by expansive soils costs about six billion dollars a year in America alone."²

★
OH10

- Turning to meteorological hazards, a notable example from the recent past is the 1993 Midwest Floods that occurred when thousands of miles of nonfederal levees were breached or overtopped despite heroic sandbagging and levee-saving efforts. (Platt 1996, p. 50). Anywhere from 38 to 48 deaths were attributed to the flooding.
- And what may seem to be a relatively mundane winter function is actually extremely costly.

"Keeping streets and roads clear of snow and ice (including plowing) costs approximately \$2 billion annually." (Baker [forthcoming])

OH10

¹ It is noteworthy that a number of bridges had been retrofitted prior to the earthquake and these "sustained little or no damage" (Concrete Reinforcing Steel Institute 1994). Bolin/Stanford 1998 (86), however, notes that "two bridges retrofitted after 1971 collapsed during Northridge. . ." and cites the Seismic Safety Commission Report (No. 95-01), *Northridge Earthquake: Turning Loss to Gain*, Sacramento CA, SSC, 1995, p. 88.

² Enrico Quarantelli. 1987. "What Should We Study? Questions and Suggestions for Researchers About the Concept of Disasters." *International Journal of Mass Emergencies and Disasters* (March) Vol. 5, No. 1, p. 10.

01/29/08 7

"The Federal Emergency Management Agency (FEMA) has approved a grant for \$4.4 million to the State of New York to assist the State court system recover and rebuild following the collapse of the World Trade Center."¹⁰

- These examples illustrate just a portion of the impact that the growing range of hazards has on the United States.

The Incidence Rate for Hazards in the U.S. is Large:

- "The United States has more severe weather and flooding than any other nation in the world."¹¹

In an average year "the United States can expect some 10,000 violent thunderstorms, 5,000 floods, more than 800 tornadoes, and several hurricanes..." (National Oceanic and Atmospheric Administration; quoted in Pugh 1993, 85)

Frequency Rate Increase:

- Not only do we experience large numbers of disasters but the numbers are growing. In the twenty years between 1965 and 1985 there were about 500 Federally-declared disasters in the U.S. (Rubin et al. 1986.)
- In the seven years between 1989 and 1995 the U.S. experienced a sizable increase in the number and expense of its natural disasters, with roughly 300 disasters large enough to warrant a Presidential Disaster Declaration.

boom in
oil gas
& coal
extractor

↑
more production
more pressure
volume gas
extracted
↑ exports
opening old &
new cavities
weakening
more states

¹⁰ Release No.: FEMA-1391-DR-NY-PR-151 Release Date: September 16, 2002 (www.fema.gov).

¹¹ Richard Hallgren, Executive Director, American Meteorological Society; quoted in Pugh 1993, 85.

01/29/08 9

Disaster Losses Are Enormous and They Are Going Up:

Note: You may wish to remind the students that the enormity of U.S. disaster losses was first discussed in Session 1. You could ask the students to recall some of that discussion, and then elaborate with the following.

- Disaster losses per hazard in the United States total about \$34 billion per year, not including losses from drought, heat waves, hazardous materials accidents and releases, train derailments, air crashes, or wildfires.

Human Costs:

- Disasters that used to cost millions of dollars and a few thousand victims now can cost many billions of dollars and affect hundreds of thousands of victims.
- It has been stated that on average, 1,500 people lose their lives due to natural hazards per year in the United States.¹³
- As an example, as a result of the Northridge earthquake of 1994 in the Los Angeles, California area, some 670,000 individuals and families registered for disaster assistance in the Los Angeles area.
- Severe weather in the US results in 300-500 deaths and billions of dollars in economic damage. (National Oceanic and Atmospheric Administration; quoted in Pugh 1993, 85)
- Dr. Dennis S. Mileti addresses the number of lives lost:

"From 1975 to 1994, natural hazards killed over 24,000 people and injured some 100,000 in the United States and its territories." (Mileti 1999, 4)

"The United States has succeeded in saving lives and reducing injuries from some natural hazards such as hurricanes over the last two decades. However, casualties from floods—the nation's most frequent and injurious natural hazard—have failed to decline substantially. And deaths from lightning and tornadoes have remained constant.

*** Meanwhile injuries and deaths from dust storms, extreme cold, wildfire, and tropical storms have grown." (Mileti 1999, 4)**

¹³ Kenneth E. Kunkel, Roger A. Pielke Jr., and Stanley A. Chagnon. "Temporal Fluctuations in Weather and Climate Extremes That Cause Economic and Human Health Impacts: A Review." *Bulletin of the American Meteorological Society* (Vol. 8, No. 6, June 1999, p. 1080. Drawn from www.dir.ucar.edu/cisg/bocamp/weather1.

EMF
ionic changes
+/-
magnetic
field
wind
petroleum
escape into
atmosphere
by product
waste
pollution
aerosols
global
warming

OHIO

National Economic Losses:

- Miloti on direct losses from natural disasters:

"In 1970 total U.S. direct losses from natural disasters were estimated at \$4.5 billion annually. Today, estimates range from \$6 billion to \$10 billion annually; some claim the figure will reach \$17 billion by the year 2040 (all in 1970 dollars). Still others claim that by including crop damage from hail and the impacts of extreme heat and cold the annual losses today would be \$20 billion. These estimates do not include indirect losses such as downtime for businesses, lost employment, environmental impacts, or emotional effects on victims. At least one broader estimate puts U.S. losses since 1989 at \$52 billion annually." (Miloti 1999, 25)

- This latter figure is supported by the Assistant to the President for Science and Technology, John Gibbons, who wrote in 1996 that:

"Between August 1992 and December 1995, the United States experienced structural losses amounting, on average, to approximately one billion dollars a week due to natural disasters."¹⁴

- In terms of the increasing cost of disasters, Miloti writes:

"The dollar losses associated with most types of natural hazards are rising. A conservative estimate of total dollar losses during the past two decades is \$500 billion (in 1994 dollars). More than 80 percent of these costs stemmed from climatological events, while 10 percent resulted from earthquakes and volcanoes. Only 17 percent were insured." (Miloti 1999, 4-5)

- Elsewhere Miloti (1999, 66) notes that the estimated range was from \$230 billion to \$1 trillion in 1994 dollars standardized on the basis of the Consumer Price Index.

- Writing in 1999 about the 1989-1994 timeframe, Miloti states:

"Seven of the ten most costly disasters—based on dollar losses—in U.S. history occurred between 1989 and 1994. In fact, since 1989 the nation has frequently entered periods in which losses from catastrophic natural disasters averaged about \$1 billion per week." (Miloti 1999, 5)

¹⁴ Preface to *Natural Disaster Reduction: A Plan for the Nation*. National Science and Technology Council, Committee on the Environment and Natural Resources, Subcommittee on Natural Disaster Reduction. Washington, DC: 1997. Hooks (2000, 6) writes that the \$1 billion per week figure for natural disasters in the U.S. in recent years was "based on an informal compilation carried out in 1997 by the White House Office on Science and Technology Policy."

STRIP - BLASTING
COAL - MINING
SUBSIDENCES
ABANDONED
MINES
OPEN-CAVITY
CAVITIES

#25 min/yr
20/500 lbs
400
anyone
to
#25 min/yr
in trade
or sale
COST
NOT ENANCED
life property
loss
FEMA
TAXPAYER
PAYMENT
MILITARY
TIMES

01/29/08 12

- Not only has the number of disaster declarations risen, but also the cost to the Federal government has climbed enormously. Michael J. Armstrong, a previous Associate Director of the Federal Emergency Management Agency Directorate, describes an astounding increase:

"In the past 10 years, 460 major disasters have been declared by the President, nearly double the declarations for the previous 10-year period." ... "Comparing the 3-year period from 1989 to 1991 and 1997 to 1999, the Federal costs of severe weather disasters rose by 337%."¹⁵

- FEMA's costs are large, but they are just the tip of the iceberg:

"The Federal Emergency Management Agency (FEMA) has spent more than \$25 billion in repairs and rebuilding over the past ten years."¹⁶

- The enormity of the cost is even more remarkable when one considers that the \$25 billion does not reflect the rest of the Federal government, State and local governments, the insurance industry, business and industry, or individuals.

State and Local Government Costs:

- The foregoing is essentially in reference to more or less direct Federal disaster costs. During the 1980s, it has been estimated that State and local governments lost roughly \$1 billion per year to floods, earthquakes, hurricanes, and other natural hazards. (Roenigk, 1993, 207; citing Burby et al. 1991)

Insurance Industry Costs:

- Another yardstick for measuring disaster losses can be found in insurance industry outlays:

"Prior to Hurricane Hugo in 1989 (where insured losses were over \$4 billion), the insurance industry had never suffered any loss of over \$1 billion from a single disaster. Since that time 10 disasters have exceeded this amount in 1997 dollars." (Kunreuther 1998, 4; referencing Gary Kearney, Property Claims Services, personal communication, 1998)

¹⁵ Michael J. Armstrong. 2008. "The Political Economy of Hazards." *Environmental Hazards* (Vol. 2, No. 2, June, p. 53).

¹⁶ Cynthia Ramsey Taylor (FEMA Project Impact National Public Affairs Manager). 2001. "Making an Impact." *Disaster Recovery Journal*, Vol. 14, No. 2, Spring, p. 84.

Guernsey and
5 other counties
SE OHIO

X

Profit margin
estimated
unless
gutting public

OHIO
X GUERNSEY
COUNTY
5 other
SE counties

01/29/08 13

- Data from the insurance industry show a trend of increasing losses. Prior to the late 1970s, annual losses were on the order of a few hundred million dollars.¹⁷
- Dollar losses climbed dramatically upward to the \$0.5-\$2.5 billion range during the 1980s.
- Writing in 1999, Harvey Ryland, President of the Institute for Business and Home Safety, notes that:

"Losses continue to rise. Since 1989, the United States alone has suffered at least US\$ 90 billion in insured damage (not including disaster payments from governments or the costs property owners must absorb themselves), and has seen more than 23,000 people injured and at least 2,000 deaths. ...
...we still have a long way to go."

"In the spring of 1997, the U.S. government and the U.S. insurance industry realized that they faced a common challenge. The conquest of natural disasters, which had once seemed nearly within reach, was proving more difficult than expected. Losses from natural disasters had been doubling or tripling each decade since 1960 and the century's steady progress in reducing deaths and injuries due to natural disasters had begun to level off. Furthermore, there was concern that a single disaster—for example, a catastrophic East Coast hurricane or a repeat of the 1906 San Francisco earthquake—could kill thousands, cost hundreds of billions of dollars, disrupt the national economy, and exhaust the reserves of the insurance industry."

*Time of
major
oil spills
President*

"The statistics were alarming. Seven of the ten costliest U.S. disasters had occurred since 1980, and the President's Office of Science and Technology Policy estimated that natural disasters were costing the United States on average a billion dollars each week and were consuming nearly one percent of GDP (Gross Domestic Product). This emerging pattern of disaster prompted Representative Bill Emerson and Senator Ted Stevens, in 1995 to note, 'Hurricane Andrew and California's Northridge earthquake together cost more (\$24 billion [of Federal outlays]) than what the government spends annually on running the Federal court system, aiding higher education and pollution control, combined.' We are paying a high price for the way we live on our beautiful—but dangerous—planet."¹⁸

¹⁷ U.S. Congress, Bipartisan Task Force on Funding Disaster Relief. 1993. Federal Disaster Assistance, Washington, DC: U.S. Senate. 104-4, 194 pp.

¹⁸ Harvey Ryland (President, Institute for Business and Home Safety). 1999, pp. 260-261 in Ingelton.

¹⁹ Institute for Business and Home Safety, 2001. *Lessons from PPP2000, Living With Earth's Extremes*, Tampa, FL, p. 1.

01/29/08 15

- The trend of rising disaster losses, both in economic terms and in lives lost, is apparent not only in the United States, but also worldwide.

"The combined cost of disasters worldwide, according to the Center for Epidemiology of Disaster in Belgium, was \$742 billion between 1990 and 1999. Human lives lost during this period in deaths has climbed each year since 1994."²⁵

It Could Have Been Worse:

- As troubling as the above may be, the U.S. has been, in many respects, fortunate that some of the disasters that it has experienced could have been worse say if Hurricane Andrew had hit Miami. As Dennis Mileti (1999, 5) writes:

"...the most catastrophic likely events, including a great earthquake in the Los Angeles area, have not yet occurred. Such a disaster would cause up to 5,000 deaths, 15,000 serious injuries, and \$250 billion in direct economic losses."

Note: At this point, you may wish to reinforce that in the United States, the risk from hazards and disasters is far greater than most people think. Then, you could proceed with the following specific risk statistics from FEMA and other sources.

Disasters Put People and Property at Risk:

- According to FEMA's *Multi Hazard Identification and Risk Assessment (MHIRA, 1997)*, FEMA estimated that:

- Approximately 9-11 million homes are at risk from flooding.
- About 25 million homes are at risk from severe wind damage.
- About 2 million homes are at risk from coastal storm surge.
- And at least 50 million homes are at risk from earthquakes.
- More than 36 million people are at direct risk from hurricanes.
- The risk is expected to grow to 73 million by the year 2010.²⁶

ENTIRE STATE (enlarged flood plains declared)
NORTH OF I-70
SOUTH CAROLINA
LAKES REGION
CLEVELAND AREA
OHIO
MIDWEST
ALONG PIPELINES

TEXAS, Florida, Georgia
Only are a
off shore drilling
weather changes

↑
COULD BE
YOUR FAMILY
AFFECTED

2008
2 years

MORE WITH
RISKS OF

REX PIPELINE
RUPTURES +
CHAIN REACTION
DISASTERS

²⁵ Ben Wisner. 2001. "Disasters: What the United Nations and its World Can Do." p. 1.

²⁶ FEMA. 1997. *Multi Hazard Identification and Risk Assessment*. Washington, DC: FEMA, p. xvii.

01/29/08 18

Regional Hazard Vulnerability:

- Dennis Mileti (1999, p. 95) provides a summary of regional hazard vulnerability in terms of frequency, amount of losses, hazards per square mile, hazards on a per capita basis, and proportional damage and casualties:

- "...the southern states are the most hazard prone, not only in terms of the frequency of hazard events but in the amount of losses."

"Texas ranks as the most hazardous state, followed by Florida, Georgia, and Ohio."

- "The least hazardous...are Vermont, Delaware, and Rhode Island."

- "Ohio, South Carolina, and Pennsylvania are among the most hazardous states based on hazards per square mile..."

"...Nevada, Alaska, and Montana are the least hazardous."

- "Residents in the South, portions of the Great Plains, and Rocky Mountain states bear a disproportionate burden of hazardous events and losses on a per-capita basis."

"In this per-capita measure, Kansas is the most hazard-prone state, followed by Arkansas, Georgia, and South Carolina."

- "Finally, and perhaps most importantly, a proportional measure was developed that permits an examination of the relative impact of hazards in each state. The percentage of a given hazard for a given state was calculated by taking the total number of specific hazardous events divided by the national total. This was also done for casualties by hazard and losses by hazard. The three indicators...were summed across all hazards and an average was taken...."

"States that rank high in proportional damage and casualties are California, Texas, and Florida."

*Oil spills
transmission lines*

*PORTS
EXPORTS
COASTAL
DRILLING*

OHIO

*oil state Midwest pipelines
Rockies Faultlines*

Appalachian Blue Ridge Faultlines

tourist states

*Coastal Drilling
states
Hurricane
Typhoon*


Red Alert:

Please shut it down!!!!

Use eminent domain to recapture buried patents for alternative energy & operating resources technology
Cut Losses + Increase Savings From recovery costs

by reducing
oil & gas revenues

OHIO COULD OPERATE IN BLACK, with RESERVES for Emergencies with low risk



**GULF INTERSTATE
ENGINEERING**
The Pipeline People

Gulf Interstate
Field Services

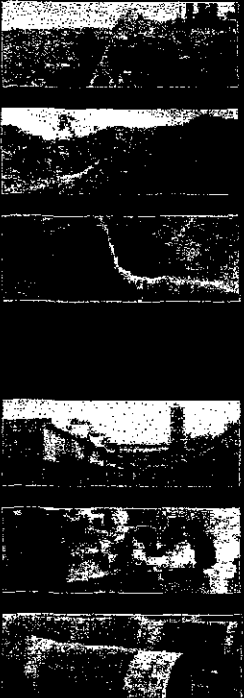
Gulf Inter
Engineering Corp

Project - Territory
Management

Global
Engineering

[Home](#) | [About Us](#) | [Capabilities](#) | [Experience](#)

Search Our Site



Contact Us

[Contact Us](#) | [Local Map](#) | [Local Hotels](#)

Corporate Headquarters

Address: **Gulf Interstate Engineering
Gulf Plaza
16010 Barkers Point Lane, Suite 600
Houston, TX 77079-9900 USA**

Attn: Business Development Dept.

Phone Number: **713.850.3400**

Fax Number: **713.850.3579**

E-mail: **info@gie.com**

Addition:

Calgary *European Union*
Gulf Inter

United Kin *UK*
Serco Gu

Moscow *Russia*
Coordinat

Beijing *China*
Coordinat

©2008 - Gulf Interstate Engineering - Houston, Texas

Rex pipeline / all mapping by this company

US Citizens (working force) are
Slaves to Oil + Gas + Energy dependency

NO LONGER INDEPENDENT NATION
NOR HOME OF THE FREE
AND SOON A GEOLOGICAL, GEOGRAPHICAL
NATION DIVIDED

TO SELL OUT AMERICAN CITIZENS
FORGETTING THE REVOLUTIONARY WAR
AND BLOOD BOUGHT COUNTRY IS A TRAITOR
GOVERNMENT

gie

DESTRUCTIVE
TO U.S.A.

NEEDS
REPLACED w/
NEW ONE
UNDER THE
DECLARATION
OF INDEPENDENCE

Gas Infrastructure Europe

www.gie.eu.com

gte gse gle^{ing}

enter site >>>



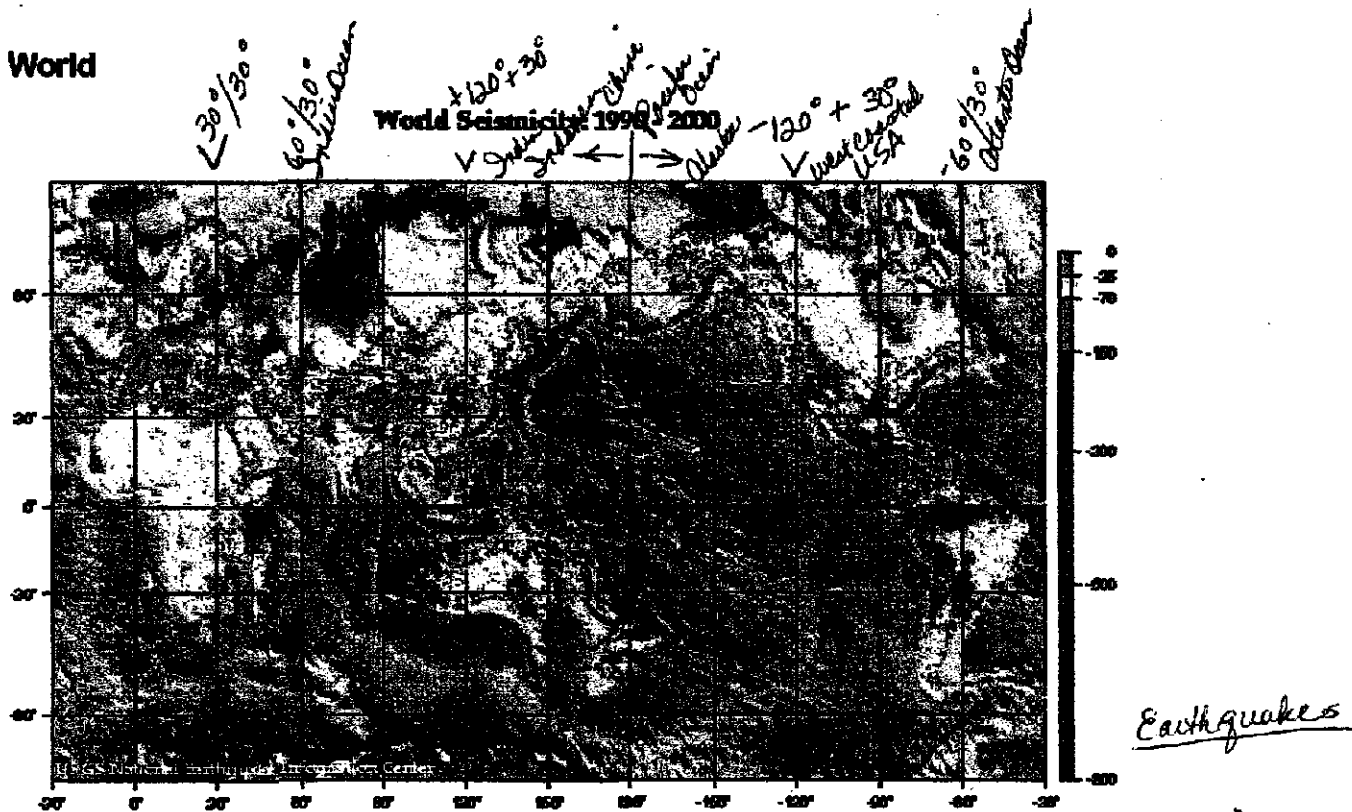
Earthquake Hazards Program

World Seismicity Maps

Regions

World • Africa • Atlantic Ocean - North • Atlantic Ocean - South • Australia, Indonesia and New Zealand •
Canada • Central America and the Caribbean • Central Asia • Europe • Indian Ocean • Japan and the Kuril
Islands • Middle East • North Pole • Pacific Ocean - Pacific Rim • Pacific Ocean - Central • South America •
South Pole • United States • Alaska • Hawaii • Eastern US • Central US • Western US

World



Earthquakes depicted on the seismicity maps are taken from the USGS/NEIC PDE catalog.

U.S. Department of the Interior | U.S. Geological Survey

URL: <http://earthquake.usgs.gov/regional/world/seismicity/index.php>

Page Contact Information: Web Team

Page Last Modified: February 28, 2007 11:18:01 AM.

7 11:18:01 AM.

<http://earthquake.usgs.gov/regional/world/seismicity/>

Compare epicenter
tsunami to
offshore drilling
and international
pipelines &
transmission lines
(INCREASED MOVEMENT)
PLATE TECTONICS
POLAR SHIFT
VOLCANIC ACTIVITIES
1/30/2008



Earthquake Hazards Program

Historic Worldwide Earthquakes

*Post extraction
oil & gas local
production
1776 - 1860 local
1860 - present
1860 - present
1860 - present*

*WORLD
Magnitude
Sort*

5.0 magnitude

*circled
PLOC
numbers
NOT ALL
USED*

Sorted by Country/Region & Magnitude

Afghanistan • Algeria • Argentina • Armenia • Asia Minor • Atlantic Ocean •
Australia • Azerbaijan • Bolivia • Brazil • Canada • Caribbean Sea •
Caucasia • Cayman Islands • Chile • China • Colombia • Congo • Costa Rica •
Dominican Republic • Ecuador • El Salvador • Greece • Guam • Guatemala •
Honduras • India • Indian Ocean • Indonesia • Iran • Israel • Italy • Jamaica •
Japan • Jordan • Kashmir • Kazakhstan • Kyrgyzstan • Leeward Islands •
Mexico • Micronesia • Mongolia • Morocco • Mozambique • Myanmar • New
Zealand • Nicaragua • Pacific Ocean • Pakistan • Panama • Papua New
Guinea • Peru • Philippines • Portugal • Puerto Rico • Romania • Russia •
Solomon Islands • Southern Ocean • Spain • Syria • Taiwan • Tajikistan •
Tanzania • Tonga • Turkey • Turkmenistan • United Kingdom • Uzbekistan •
Vanuatu • Venezuela • Windward Islands • Yemen • Yugoslavia

Does not include United States earthquakes.

Afghanistan

- 2002 03 03 - Hindu Kush Region, Afghanistan - M 7.4 Fatalities 166
- 2004 04 05 - Hindu Kush Region, Afghanistan - M 6.6 Fatalities 3
- 1998 05 30 - Afghanistan-Tajikistan Border Region - M 6.6 Fatalities 4,000
- 2005 12 12 - Hindu Kush Region, Afghanistan - M 6.5 Fatalities 5
- 2002 03 25 - Hindu Kush Region, Afghanistan - M 6.1 Fatalities 1,000
- 1998 02 04 - Afghanistan-Tajikistan Border Region - M 5.9 Fatalities 2,323

Algeria

- 1980 10 10 - El Asnam (formerly Orleansville), Algeria - M 7.7 Fatalities 5,000
- 2003 05 21 - Northern Algeria - M 6.8 Fatalities 2,266
- 1954 09 09 - Orleansville, Algeria - M 6.8 Fatalities 1,250
- 2003 05 27 - Northern Algeria - M 5.8 Fatalities 9

Argentina

- 1922 11 11 - Chile-Argentina Border - M 8.5
- 1944 01 15 - San Juan, Argentina - M 7.4 Fatalities 8,000
- 1977 11 23 - San Juan, Argentina - M 7.4
- 2006 11 13 - Santiago del Estero, Argentina - M 6.8
- 2002 08 18 - Chile-Argentina Border Region - M 6.8
- 1985 01 26 - Mendoza, Argentina - M 6.0

Armenia

Worldwide Earthquakes

sorted by

Date
Magnitude
Magnitude 6.0 and Greater
Country & Date
Country & Magnitude

United States

Earthquakes sorted by

Date
Magnitude
State & Date
State & Magnitude
Largest by State

*compare
offshore + onshore
drilling activities*

*China stats - host to
next olympic
event*

Fatalities	Yr	
100,000	1290	627
830,000	1556	266
930,000		361
726,278		
1,656,278		

*1917 - 2003 DATA
(86 yrs) gas + oil prodn*

*7.3 times increase
rate of
earthquake*

86/627

http://earthquake.usgs.gov/regional/world/historical_country_mag.php

Use for the rest of exhibit

1/30/2008

Sony

Sources of information exhibited:

http://www.gie.com/contact_us/index.php
<http://gie.eu.com/>
<http://gie.eu.com/interactivemap/index.html>
<http://www.iploca.com/page/content/index.asp?>

Gulf Interstate Engineering contact information
 GIE Gas Infrastructure Europe: Operations and Procedures

About IPLOCA:

IPLOCA (International Pipeline & Offshore Contractors Assoc.) Mission, Leadership, History, Geographical Representations, WFOPIA (World Federation of Pipeline Industry Assoc.) Awards.

Newsroom:

News Feeds

Health and Safety:

Membership Centre:

Benefits of Membership

Membership Categories

Join Now

Meetings and Conventions:

Industry Conferences 2008-2009

Past Conventions (1975 to 2007)

<http://www.dnr.state.oh.us/mineral/oil/program/>

Ohio's Oil and Gas Program and History

<http://earthquake.usgs.gov/regional/states/ohio/hazards.php>

Ohio Seismic Hazard Map

<http://earthquake.usgs.gov/regional/states/texas/hazards.php>

Texas Seismic Hazard Map

<http://earthquake.usgs.gov/regional/states/florida/hazards.php>

Florida Seismic Hazard Map

http://earthquake.usgs.gov/regional/states/historical_state.php

Historic U.S. Earthquakes, sort by State and Date

Earthquake and Pipeline Maps: Ohio Department of Natural Resources: Division of Geological Survey: Earthquake Epicenters in Ohio and Adjacent Areas, and the Oil and Gas Pipelines in Ohio 1989.

http://www.pge.com/pipeline/about/system_maps/statemap.shtml California Gas Transmission/Interactive System Map (Western Natural Gas Pipeline System Map)

<http://www.rextagstrategies.com/downloads>

Free Oil & Gas Pipeline Map Download

[http://www.dep.state.fl.us/siting/Programs/Natural Gas Pipeline Siting Overview.htm](http://www.dep.state.fl.us/siting/Programs/Natural_Gas_Pipeline_Siting_Overview.htm) Florida Dept of Environmental protection (FDEP): Natural Gas Transmission Pipeline Siting Act (NGPSA)

Small thumbnail map of Alaska and Northwest American pipelines.

Small thumbnail map of Ohio and earthquake map.

<http://earthquake.usgs.gov/regional/world/seismicity/>

World Seismicity Regions Map: 1990-2000

http://earthquake.usgs.gov/regional/world/historical_country_mag.php Historic Worldwide Earthquakes (sorted by Country/Region & Magnitude of 5.0 +

http://www.seismo-watch.com/EOSERVICES/SeismoFeatures/FeltQuake.Check_List.html

Seismo-Watch Check List

http://en.wikipedia.org/wiki/Nigeria_oil_blast

U.S. List of pipeline accidents

http://en.wikipedia.org/wiki/List_of_North_American_natural_gas_pipelines 10 major pipelines in Ohio

<http://www.rextagstrategies.com/free-maps.html>

<http://www.arcticgaspipeline.com/pipelinelinks.htm>

Pipeline Links: Northern Gas Pipelines (Companies, clients, operating interests; suppliers; contractors; producers; Gas transmission; distribution and promotion; Lower 48 Natural Gas Transmission Companies; Interested Non-profit Orgs.; Alaska, U.S., and Canada Energy Trade; Environmental Groups; Research; Education; Media Outlets and News; Industry Data; Labor Union Links; Job Information; Consultants; Human Resources; Public Affairs)

<http://www.rextagstrategies.com/giselectricity.php>

U.S. Electric Transmission & Power Plants (GIS Data)