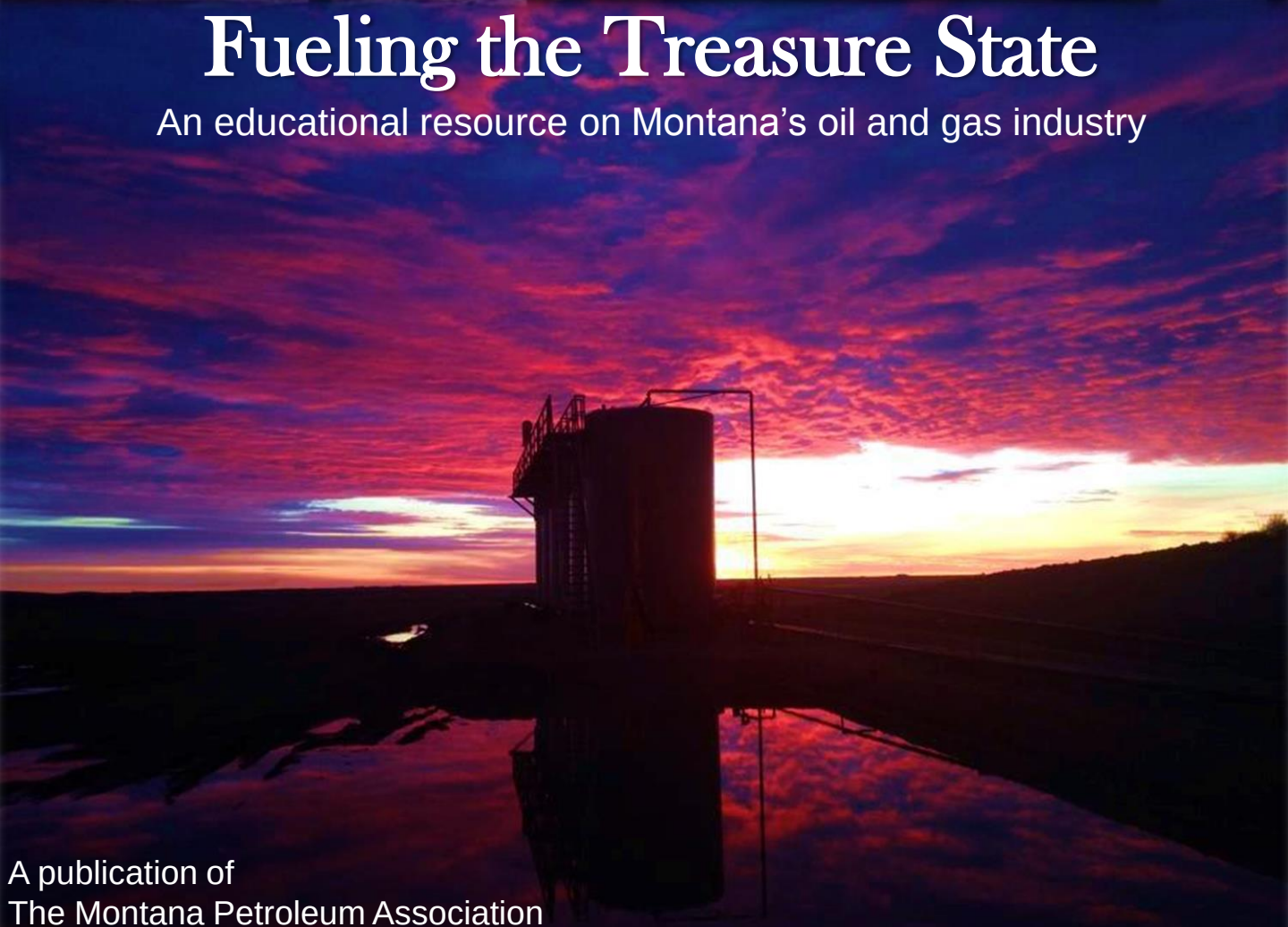
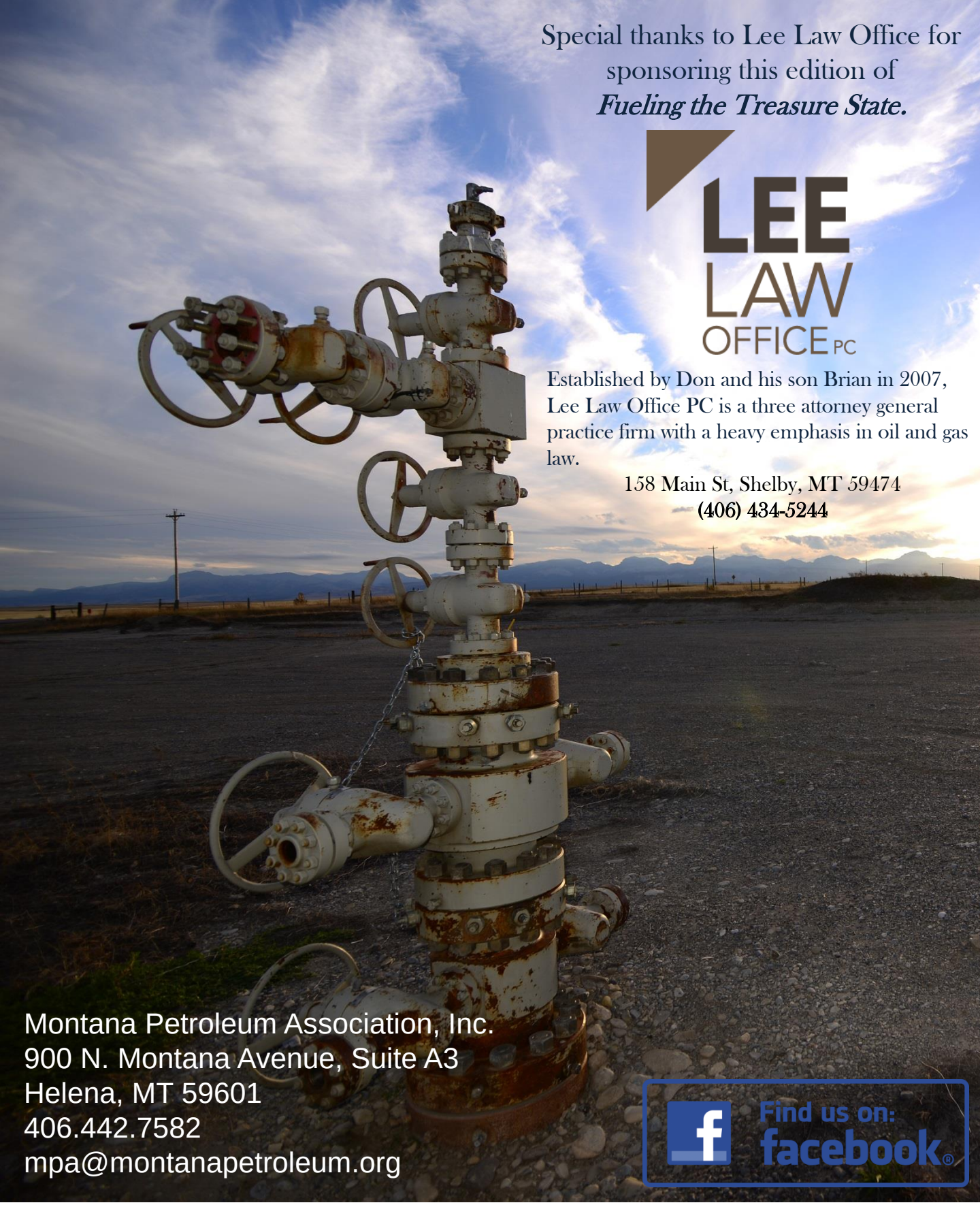
Fueling the Treasure State

An educational resource on Montana's oil and gas industry



A publication of
The Montana Petroleum Association



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LEE LAW OFFICE PC

Established by Don and his son Brian in 2007, Lee Law Office PC is a three attorney general practice firm with a heavy emphasis in oil and gas law.

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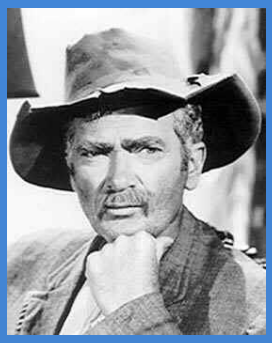
How it works

The first step is **exploration** and **discovery.** Petroleum hydrocarbons (oil and natural gas) are the product of millions of years of plant decay which now inhibit porous rock formations. Throughout history, oil seeps (above surface) have been discovered around the country, including Montana's very own Glacier National Park in the early 1900's. While this provides a clear indication to explorers of proven reserves, most discoveries are not quite as simple as stumbling upon a bubbling pool of "Texas tea".



Did you know? The first commercial oil well was drilled in Titusville, Pennsylvania on August 28, 1859 by Edwin Drake.

Thousands of feet below the surface, shifting and movement of tectonic plates has created traps for these deposits. Salt domes, for example, are created in sedimentary rock by the upward force of a salt mass, creating a dome-like trap for oil and gas. Prior to the 1901 oil discovery in Beaumont, TX, using salt domes as an indication of potential oil was unheard of.

"Formula for success: rise early, work hard, strike oil."

J. Paul Getty- American industrialist, Getty Oil Co.

Arguably one of the most influential wildcatters (oil and gas explorers) is self-taught geologist Patillo Higgins, who led to the discovery of oil in Texas. Against all odds and countless naysayers, Higgins struck black gold in 1901, with a gusher that produced 100,000 barrels of oil per day in the Spindletop oil field.

Today's exploration geologists have advanced methods of locating oil and gas, including typographical maps, aerial photography, sound waves, and 3D seismic projections to detect traps and potential deposits below ground. All of these resources accompany more than a century of oil and gas exploration and production history in the U.S.

Success rates in discovering petroleum have increased dramatically with improvements in technology, from less than 10% to more than 50% today. This means that fewer dry holes are drilled, which is good news for the environment. Better **technology** = less environmental impact and more productive wells.

Did you know? Hydraulic fracturing has enabled the U.S. to become top producer of oil & natural gas!

In addition to new methods of discovery, modern drilling practices have led to exponential growth and production in the oil and gas industry, which in turn has helped to energize the U.S. economy. Most notably, new innovation in the ability to recover substantial amounts of oil and natural gas from shale has ended the conversation about **peak oil.**

The oil and gas industry is made up of a broad spectrum of explorers, producers, laborers, environmental consultants, geologists, and engineers, to name a few. After the exploration phase, it takes a number of steps and an enormous amount of labor, expertise, and investment to bring oil and gas from below ground and into our everyday lives. In order to make this possible, there are three sectors; upstream (exploration, drilling, production), midstream (pipelines), and downstream (refining).

Wildcat: *an exploratory well , drilled in an undelineated (unproven) field.*


Drilling rig

After researching where potential reserves may be, the next step is for companies to secure lease rights from mineral owners, along with the necessary regulatory approvals, including an approved application for a permit to drill (APD). Along with exploration, the following gives an overview of the **upstream** side of the industry.


Drilling "floor"

After securing a permit to drill, a crew is brought in to ready a pad for the rig. The **drilling rig** is brought in and set up to commence construction of the well bore. This is a 24/7 operation with rotating crews to keep operations going at all times. As drilling takes place, operators are continuously monitoring activity to keep workers and the environment safe.

Efficiency in drilling has significantly reduced the length of time it takes to drill a well, from several months, to a matter of weeks.


Monitoring drilling activity

Wells can be drilled vertically, which has been the most common method until recently, or directionally. That means that operators can now gradually turn the drill pipe laterally into a formation until it is completely horizontal.


Engineer monitoring stimulation activity

Once the well is drilled, the rig is taken off of the location and a completion/stimulation crew moves in. Not all wells are stimulated ahead of production, though most horizontal wells do utilize hydraulic fracturing ***(see page 13)*** to free up trapped oil and gas from non-permeable formations such as shale. This process utilizes a high pressured mixture of water and sand, along chemical additives, to bring oil and gas to the surface.


Hydraulic Fracturing

Once a well has been stimulated, or after the well is drilled and found productive without hydraulic fracturing, the location is made ready for production. This involves setting up a tank battery (storage tanks) to collect oil and produced water. Water is a natural by-product of petroleum recovery. Storage tanks hold separated oil and water until it is shipped by truck or pipeline to finishing locations (gas plants/refineries) or to a disposal well.


Pumping unit aka pump jack


Treater


Burner

After drilling, a pumping unit is placed on the wellhead. It pumps oil (and water) into flowlines that send fluid to what is called a **treater**. The treater (or separator) uses the natural effects of gravity, along with heat (from a burner), to separate oil, water, and gas. From the treater, oil and water move through flowlines to the tank battery, and residual natural gas is either flared on location as allowed by law, or captured and sent to a processing facility through a pipeline known as a gathering line. Stored oil and water is recorded daily by **lease operators**, also known as "pumpers", who measure the tanks each day, and provide notification when it's time for water and oil haulers to arrive for transport.


Flowlines


Oil hauler


Lease operator

An Abbreviated History of Oil and Gas in Montana

1864-An emigrant wagon train used naturally exposed crude on wagon wheels near the Big Horn River.

1889- Thomas S. Cruse drills first oil well near Butcher Creek Area, Carbon County. ***Pictured***

1901-Oil well drilled in the Kintla Lake area - now part of Glacier National Park.

Did you know? Some of the wells still producing in Montana were first drilled in the 1930's.

Cat Creek oil well, circa 1920s, Coulter Studio, Lewistown

1919-First major commercial oil field discovery in Montana was at Cat Creek field, Eastern Fergus County.

1920's- Two refineries built in Kevin-Sunburst fields in Northcentral Montana.

1921-22-Two refineries were built in Lewistown; first shipment from Great Northern Refinery in Winnett

1925-1935-Kevin & Sunburst areas lead statewide oil production.

1903-Oil was discovered in the Swiftcurrent area east of the mountains.

1915-First commercial oil well near Belfry in Carbon County goes into production.

1916-Montana's first major production, Elk Basin Field on MT/WY border. Annual oil output = 44,917 barrels. **1917-** oil output increased to 99,399 barrels

1920's & 30's- Oil was first found in the Williston Basin along the Cedar Creek Anticline.

1968-The state produced a record 48.46 million barrels of crude.

2008- USGS report estimated recoverable Bakken oil up to 4.3 billion barrels. Other estimates place total reserves up to 24 billion barrels.

1927-The Bannatyne Field north of Great Falls was discovered

1953-A Montana farmer drilled on Henry Bakken's farm. Henry, unknowingly, was sitting on "an ocean of oil", now known as "The Bakken Formation" after Henry himself.

By the numbers

The economic contribution of Montana's oil and gas industry represents that of an industry twice its size. Revenue from oil and gas production makes up **5.6%** of Montana's General Fund Budget, providing funds for state and local programs, including schools, statewide water monitoring, reclamation, and conservation.

Beyond the taxes on the production of oil and gas, the industry pays higher than average **family wages**, and contributes to a host of programs which benefit the local areas where exploration, production, and refining occurs.

Oil and gas operations directly support **29,000** jobs in Montana. That does not take into account temporary contractors or the thousands of jobs supported by oil and gas wages, including retail, hospitality, and service industries.

In 2015, oil and gas companies paid over **$2.3 billion** in income received by **Montana** households.

Source: The Bureau of Business and Economic Research at the University of Montana.

Did you know? A single well, based on recent estimates, increases Montana's gross output by **$9 million**, adds $3.6 million to state GDP, and produces an additional **$1.5 million in wages,** while supporting at least 33 jobs directly.

Oil & Gas Activity

Montana ranks 12th in oil and 20th in natural gas production nationally, and is the 14th largest consumer of energy per capita. Here are a few **quick facts** on production:

45,000 + total oil wells drilled

5,000+ total producing oil wells

65,000 barrels (bbl) of oil/day

1.9 million bbl oil/month

23 million bbl oil/year

65,000+ total gas wells drilled

6,200+ active gas wells

5,000,000 MCF gas/month

69,000,000 MCF gas/year

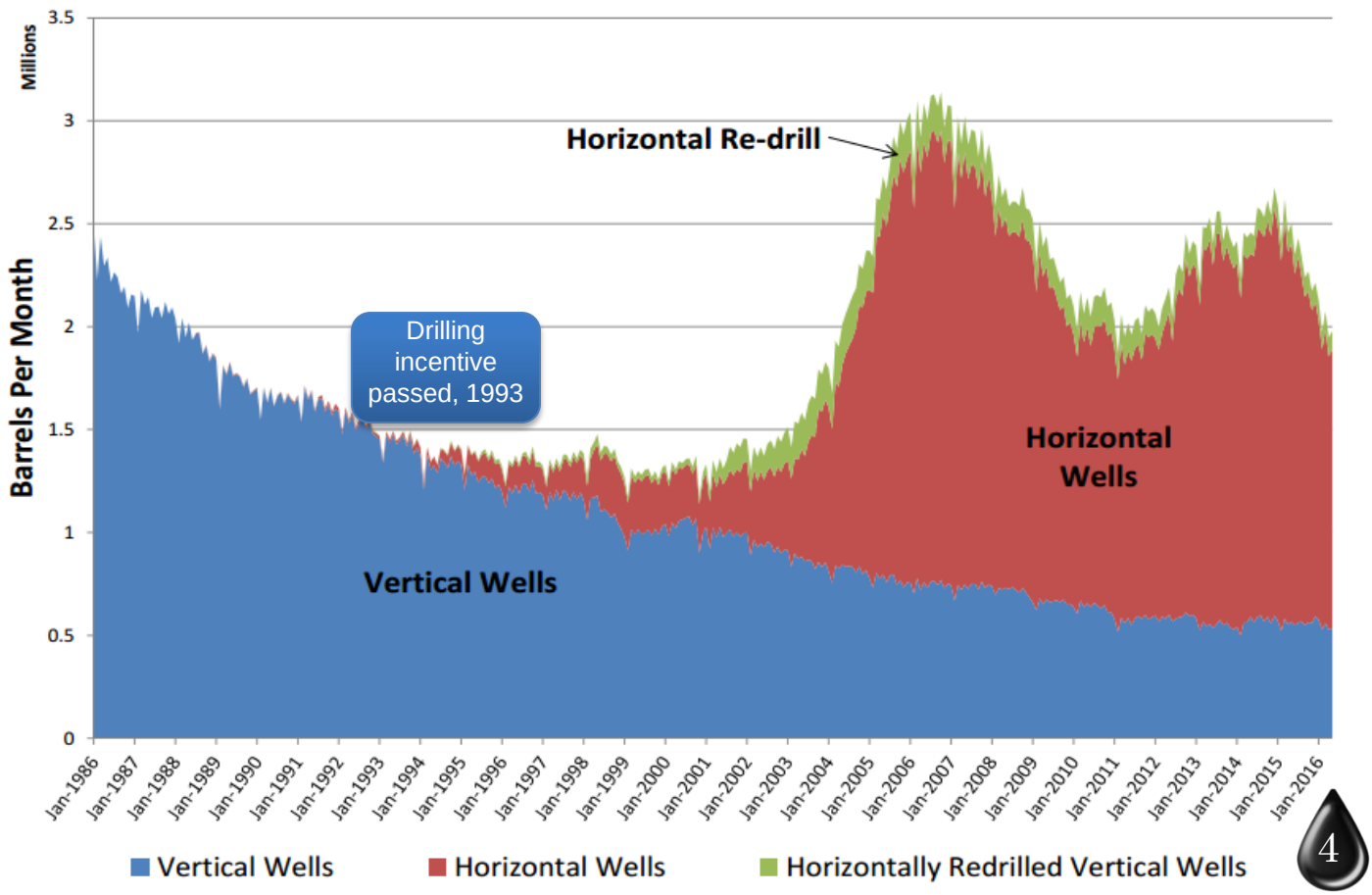
Year	Permits	Oil	Gas
2012	411	26,494,200 bbl	66,951,724 MCF
2013	297	29,288,872 bbl	63,362,525 MCF
2014	270	29,898,846 bbl	67,312,860 MCF
2015	58	28,562,676 bbl	82,871,235 MCF
2016	24	20,767,061 bbl	68,708,720 MCF

Production Taxes

To incentivize drilling, vertical wells receive a 12 month reduced tax rate of 0.76 percent. The same rate applies to horizontally drilled wells for the first 18 months of production. After 12 or 18 months, production from primary recovery is taxed at 9 percent.

In 2015, collections of production taxes totaled **$103 million**, nearly half of which is returned to local areas where production takes place.

Source: Board of Oil and Gas Conservation



The Truth About Oil "Subsidies"

"Oil and gas subsidies are costly... Removing [them would] generate $38.6 billion of additional revenue over the next 10 years."
-President Barack Obama

VS.

"No money from the U.S. Treasury goes to the oil industry."
- Washington Post

Intangible Drilling Costs

Since 1913, oil & gas firms have deducted the upfront costs of exploration and production.

Pharmaceutical companies and biotech firms deduct research and development costs up front.

LIFO

The last-in, first-out (LIFO) inventory method of accounting has been used for more than 70 years by U.S. taxpayers and is fully recognized and regulated by the IRS.

Taxing inventory, not income, would require companies to redirect cash or sell assets in order to cover the tax payment.

Double Taxation – Dual Capacity

U.S. taxpayers that pay foreign taxes on foreign income can take a credit to avoid double taxation.

Eliminating the credit would result in double taxation and undermine companies' ability to compete internationally.

Domestic Manufacturer's Deduction

Available to all taxpayers, this deduction was created to preserve U.S. manufacturing jobs.

Repealing this deduction for the oil and gas industry exclusively (rather than all taxpayers), unfairly disadvantages oil and gas producers.

Source:
American Petroleum Institute

Oil & Gas Tax Treatment

To better the widely misunderstood and misrepresented tax treatment for oil and gas, here is a breakdown:

Cost Recovery: IDCs

Intangible Drilling Costs, or IDCs, are an accelerated deduction that applies to 60-80% of the costs an operator incurs on the development of a well. These costs include surveying, site preparation, repairs, and labor costs. Generally, IDCs do not include items which are part of the acquisition price of an interest in the property. IDCs apply to producers, royalty owners, and all parties who invest in the development of a well.

The treatment of IDCs incentivizes continued investments in an otherwise risky business. IDCs are not a tax credit, a public expenditure, or government spending outlay.

2013 marked the 100th birthday of the IDC deduction.

Percentage Depletion

In 1926, Congress passed an accounting standard to address the closure of oil and gas businesses across the country, and to spur investment in the robust development of American natural resources.

Percentage depletion is a tax allowance that honors the recovery of monetary investment over time. Not a subsidy or a tax credit, this cost recovery mechanism extends beyond oil companies as a deduction for investors and royalty owners to incentivize capital formation. Similar to depreciation, percentage depletion allows an owner or operator to account for the reduction of reserves. A well depreciates as fluid minerals are extracted.

Anyone with an economic interest in mineral property, either through an investment in mineral deposits, a contractual relationship, or by legal right to income from extraction, can take a deduction for depletion. The deduction may be taken *only* by independent producers and royalty owners, and not by integrated oil companies.

Geological and Geophysical Costs

Geologic & Geophysical (G&G) costs are the expenses associated with exploring for oil and gas, including surveying. Preserving the deduction for G&G costs incentivizes the use of costly technology, including 3-D seismic surveys, which improves rate of discovery for oil and gas by 50-80% (according to IPAA) .

Enhanced Oil Recovery-Tertiary Injectants

Tertiary injectants refer to material injected into older reservoirs to help continue production and/or revitalize dormant petroleum production. Under §193, a taxpayer is allowed to deduct qualified tertiary expenses in the year injected, as opposed to amortizing the deduction over the lifespan of the resource field. The process for which tertiary injectants are used is known as Enhanced Oil Recovery (EOR).

EOR and Marginal Well Credits

Oil prices are volatile. These tax credits, EOR and marginal well credits, support continued domestic production when production might otherwise not be economical.

Because credits are only used when oil prices are low, there is a built in mechanism to phase out the credit when prices increase.

Downstream Sector-LIFO

Petroleum manufacturers are the first to buy crude oil and natural gas from the global market, they are especially vulnerable to fuel price volatility.

The LIFO (last in, first out) accounting standard has been permitted by the IRS since 1939, and is used by nearly 40% of businesses to determine book income and tax liability. LIFO is used by a variety of industries, including publicly-traded and privately-held companies, manufacturers, wholesalers, retailers, automobile and equipment dealers, and petroleum refineries.

Businesses forced off LIFO would pay, essentially, an assessment against capital to the federal government, without regard to current earnings or other factors.

Double Taxation-Dual Capacity Rules

In order for U.S. companies to compete globally and develop opportunities abroad, the U.S. tax code affords U.S. based companies a foreign tax credit (FTC) for taxes already paid on income in another country. Simply put, this mechanism prevents double taxation on foreign profits. The credit is provided only for income taxes paid to another country, not property taxes, severance taxes, mineral royalties, or other payments.

The United States requires that the federal corporate tax rate on income earned is 35%, regardless of where income is earned – domestically or abroad.

Domestic Manufacturer's Deduction-Section 199

Section 199 is a deduction equal to 9% of income earned from manufacturing, producing, growing or extracting in the United States, and is available to every taxpayer who qualifies in the U.S. Petroleum is the only industry limited to a 6% deduction.

Effective Tax Rate Among Industries

Oil & Gas 44.6%

Retail 37.7%

Utilities 32.6%

Media 23.1%

Health Care Provider Services 34.9%

Pharma 21.3%

Regulation

The full spectrum of the oil and gas industry is regulated from start to finish by multiple layers of local, state, and federal law. Additionally, administrative rules from state and federal agencies further regulate oil and natural gas production for the safety of workers and the public, and for the protection of the environment.

The Montana Oil and Gas Conservation Commission was formed in 1954 with broad authority: to track production; reduce waste and boost secondary production; set spacing requirements in certain fields, and oversee well closures and the disposal of salt water and oil field waste.

Upstream: Exploration and production





Midstream: Pipelines


Downstream: Refining and processing


Consumer market

Lifespan of a well

Once in production, after drilling and completion, a well has multiple phases of recovery, each extending the life of the well up to many decades. These phases are known as primary, secondary, and tertiary recovery.

Primary recovery may or may not utilize hydraulic fracturing. **Secondary recovery** involves some form of well stimulation, i.e. water flooding or gas injection. **Tertiary recovery,** aka enhanced oil recovery (EOR) may include thermal (heat) recovery, or gas injection (such as CO2), which is the most common technique. In Montana, each of these phases is taxed at a different rate to incentivize long term production. ***Tax treatment regulated under MCA 15-36-304***.

State Regulation

Oil and gas production in Montana is governed primarily by state statute (MCA), federal law, and administrative rules (ARM) promulgated by the **Montana Board of Oil and Gas Conservation** (BOGC) and the Montana Department of Environmental Quality **(DEQ).**

The seven member, Governor appointed BOGC issues drilling **permits**, oversees industry activity, and follows Montana's oil and gas laws in a manner consistent with the goals of **conservation**, efficient resource development, **waste prevention**, and protection of **surface owner rights and mineral rights.**

Field inspectors throughout Montana monitor and report to the BOGC. They are tasked with conducting well inspections to ensure field compliance; supervision of well abandonment and reclamation projects; geophysical inspections; and problem resolution including, but not limited to spills, leaks, fires; and filing deficiency reports .

Montana's Constitution includes provisions for **reclamation** of disturbed lands, **protection** and improvement of environmental life, prevention of unreasonable resource depletion, and **preservation** of cultural resources. These provisions are spelled out in numerous state statutes.

Fairfield Sun Times photo

*The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations. The **legislature** shall provide for the administration and enforcement of this duty*. Art. IX Sec. 1 –Environment & Natural Resources

The **Clean Air Act** and **Water Quality Act** play significant roles in regulating the environmental impacts of oil and gas development in Montana. These Acts are in addition to state and federal law, and are administered by the Montana Department of Environmental Quality (DEQ). Acts are supplemented by agency-issued rules and regulations pertaining to environmental quality.

The Montana Environmental Policy Act guides the process for environmental permitting.

Local government

A local government is prohibited from exercising power that is inconsistent with state law or administrative regulation in any area affirmatively subjected by law to state regulation or control (MCA 7-1-113). This affirms the primacy of oil and gas regulation and permitting within the Board of Oil and Gas Conservation.

County commissioners may establish interim zoning districts or interim regulations to address an emergency that involves the public health, safety, morals, or general welfare, under MCA 76-2-206. Except for in cases of emergency, county rules and resolutions **may not prevent** the complete use, development, or recovery of any mineral, forest, or agricultural resources by the owner of any mineral, forest, or agricultural resource (MCA 76-2-209).

Karl Christians
DNRC, Conservation District Bureau Specialist

Conservation Districts

Projects located along stream banks must obtain stream crossing **(310) permits** from local **conservation districts.** These are in addition to federally required permits needed in cases related to streams and rivers.

Public Notice

The public also plays a role in the regulatory environment for oil and gas operations. Here are the ways Montana law directs communication between industry and the public.

Geologists locate potential hydrocarbon deposits using geologic data and a variety of technologies, including seismic surveys. A notice of intent to explore subsurface (geophysical) resources must be filed with the Clerk of Recorder within the county (MCA 82-1-103).

Next, “landmen” research land and mineral ownership, and arrange meetings with property owners to discuss leasing opportunities. Oil/gas developers must give the surface owner and any purchaser under contract for deed written notice of planned drilling operations (MCA 82-10-503).

Oil and gas developers also use professional surveyors to define areas of interest. At least 15 days before the desired date of land entry, a surveyor must give notice to the owner of the land (MCA 70-16-111).

Then, companies must submit detailed drilling plans and file an application for a permit to drill with the BOGC. These applications are posted on the BOGC website and in the newspaper. In Montana, the public has broad access to the BOGC, and may provide comments and concerns to the Board ahead of permitting.

Once an permit to drill is approved, operators must give notice of intent to drill to surface owners (MCA 82-11-122).

At the end of production (up to 30-40 years) notice must be given to surface owners ahead of abandonment (MCA 82-10-401, ARM 36.22.1302). Well plugging and reclamation are mandated under ARM 36.22.502 , 36.22.1303, and 36.22.1307.

Communication with the local community in which oil and gas operations take place is strongly encouraged under the American Petroleum Institute (API) Community Engagement suggested practices:

a) Promote **education**, awareness, and learning during the five phases of the project life cycle and work to bridge any knowledge gaps by providing tailored information that is targeted to the community..

b) Provide clear, **concise information** to all key stakeholders including community members and local authorities and regulatory agencies in addressing challenges and issues that can impact them.

c) Provide **structured forums for dialogue**, planning, and implementation of projects and programs affecting the greater regional area.

d) Establish a process to collect, assess, and **manage issues of concerned stakeholders**.

e) Design and carry out a **communication strategy** that addresses the community, cultural, economic, and environmental context where a project occurs, and that considers the norms, values, and beliefs of local stakeholders, and the way in which they live and interact with each other.

Did you know? A portion of the taxes paid by oil and natural gas producers funds reclamation, statewide water testing, and other environmental projects and grants.

Federal Regulation

Various agencies of the Federal Government regulate exploration and production of oil and gas on federal lands to ensure safe and environmentally responsible development, and the payment of production royalties and taxes for the public benefit.

These agencies include:

- Federal Energy Regulatory Commission, which regulates the interstate transmission of natural gas, oil, and electricity. FERC also regulates natural gas and hydropower projects.
- Environmental Protection Agency, whose mission is to protect human health and the environment.
- The Department of the Interior's Bureau of Land Management, which oversees permitting and operations of mineral extraction on federal lands
- The Department of Labor's Occupational Safety and Health Administration, which assures safe and healthful working conditions by setting and enforcing standards and by providing training, outreach, education and assistance
- The Bureau of Safety and Environmental Enforcement, which works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement.
- The Department of Transportation's Pipeline and Hazardous Materials Safety Administration, which establishes national policy, sets and enforces standards, and conducts research to prevent incidents. PHSMA works to prepare the public and first responders to reduce consequences if an incident does occur.

Clean Water Act: regulates surface water discharge and storm water run-off

Safe Drinking Water Act: regulates disposal of fluid waste below ground

Clean Air Act: sets rules for air emissions, including hazardous air pollutants (HAPs)

Emergency Planning and Community Right to Know Act: requires regulated chemicals in certain amounts to be reported to state and local emergency responders and requires full disclosure of all chemicals in the event of a release

Occupational Health and Safety Act: sets standards for worker safety

Defend Trade Secrets Act, 2016: Federal law protecting proprietary intellectual property

43 C.F.R. § 3162.5 - **Environment and Safety** - Requires conducting operations in a manner, which protects mineral resources, other natural resources, and environmental quality.

Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act: protects eagles and migratory birds

Endangered Species Act: designed to protect threatened species from extinction

National Environmental Policy Act (NEPA): a national policy to encourage productive and enjoyable harmony between man and his environment and to promote the prevention and elimination of damage to the environment and biosphere.

43 C.F.R. § 3150 - **Onshore Oil and Gas Geophysical Exploration** - Enumerates requirements for geophysical exploration operations on BLM-administered lands, which includes any surface disturbing activity carried out in exploration of oil and gas prior to drilling

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

**Partial list*

Air

Air quality impacts, such as emissions, are limited by local, state, tribal, and federal air quality regulations. This includes but is not limited to, the regulation of diesel engines used during drilling; emissions from tank batteries at production locations; natural gas processing, and oil refining.

Federally, the US National Ambient Air Quality Standards (NAAQS) are standards established by the United States Environmental Protection Agency under authority of the Clean Air Act (42 U.S.C. 7401 et seq.) The limit the amount of volatile organic compounds (VOCs) which can be emitted into the atmosphere.

Emitting sources, including production equipment, storage tanks, natural gas compression and processing facilities, and refineries, are monitored routinely and managed according to applicable law to ensure the health and safety of workforces and surrounding communities.

Did you know? Richland County, Montana's most active oil producing county, has been among the top in the country for air quality during record production years. The American Lung Association's State of the Air 2013 report gave Richland an "A" grade for having no unhealthy days, based on three consecutive years of monitoring.

What about flaring?

Natural gas produced as a byproduct of oil production is either shipped to market by pipeline, or flared on location according to ARM 36.22.1220.

In Montana, oil companies can flare for 60 days. Then the BOGC must vote to extend or curtail the flaring permit, usually a month-by-month decision.

New technology and pipelines have dramatically increased capture rates to approximately **90%** of otherwise flared gas in Montana.

Water

Water quality is regulated by state and federal law, and administrative rules of Montana.

The Montana Bureau of Mines and Geology conducts statewide monitoring of water quality and quantity. Information on monitoring wells is made available to the public online through the **Groundwater Information Center.** Oil and gas operators pay Resource Indemnity and Groundwater Assessment (RIGWA) taxes, which fund the statewide monitoring program.

Montana's **Water Quality Act** aims to "conserve water by protecting, maintaining, and improving the quality of water" throughout the state and to "provide a comprehensive program for the prevention, abatement, and control of water pollution." The **DEQ** administers the Act with the assistance of the **Water Pollution Control Advisory Council**.

Here are just a few examples of state regulation which further protects water during production.

Disposal: Administrative rule 36.22.1226 mandates the disposal of water produced from oil and gas operations in a manner that does not degrade surface waters or groundwater or cause harm to soils.

The BOGC has primacy, including permitting authority, over underground Injection (Class II) wells on fee, state, and federal lands. *On Tribal lands, Class II wells are regulated by the EPA.* Injection wells are used to inject fluids, primarily salt water, that are brought to the surface as a byproduct of oil and gas production, and are regulated to protect groundwater aquifers.

Pits/Ponds: While many operators use closed-loop drilling systems in the Williston Basin (Bakken), small operators still use temporary reserve **pits and ponds** during production to store waste rock removed from the well bore (drill cuttings). They are regulated under ARM 36.22.1227 to prevent degradation of water or harm to soils.

Some of the stipulations require that pits/ponds;

-be lined with an impermeable synthetic liner
-not be located in a floodplain as defined by ARM 36.15.101, or in irrigated cropland
-be bermed or diked and have at least three feet of freeboard at all times between the surface of the water and the top of the banks, berms, or dikes
-be fenced, screened, and netted in accordance with ARM 36.22.1223
-not be used for disposal of hazardous wastes or hazardous or deleterious substances

The board administrator may impose more restrictive earthen pit or pond construction or operation requirements as may be necessary to prevent degradation of water or harm to soils.

Hydraulic Fracturing

Hydraulic fracturing is a 60+ year old stimulation technique used to extract oil and natural gas from tight formations. After a well is drilled, a pressurized mix of water, sand, and chemical additives is used to free up oil and natural gas that would otherwise be trapped in rock formations.

Engineers use computer models to custom-design each individual fracture treatment, taking into account the physical and chemical properties of the rock, the fluids contained within that rock, and the mechanical condition of the well.

Approximately 1.2 million wells have been hydraulically fractured in the U.S. since the technique was first developed, with **no documented harm to groundwater**.

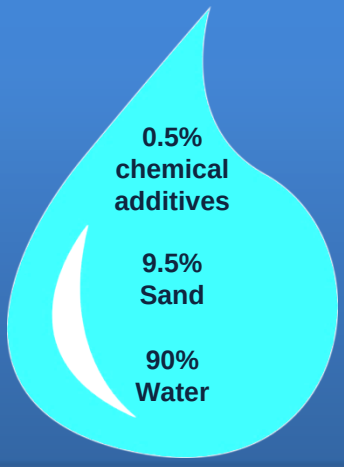
Hydraulic fracturing is essential for developing our abundant and environmentally desirable natural gas resources, and the safety and effectiveness of this process are proven every day. - *Tom Richmond, former MBOGC Administrator*

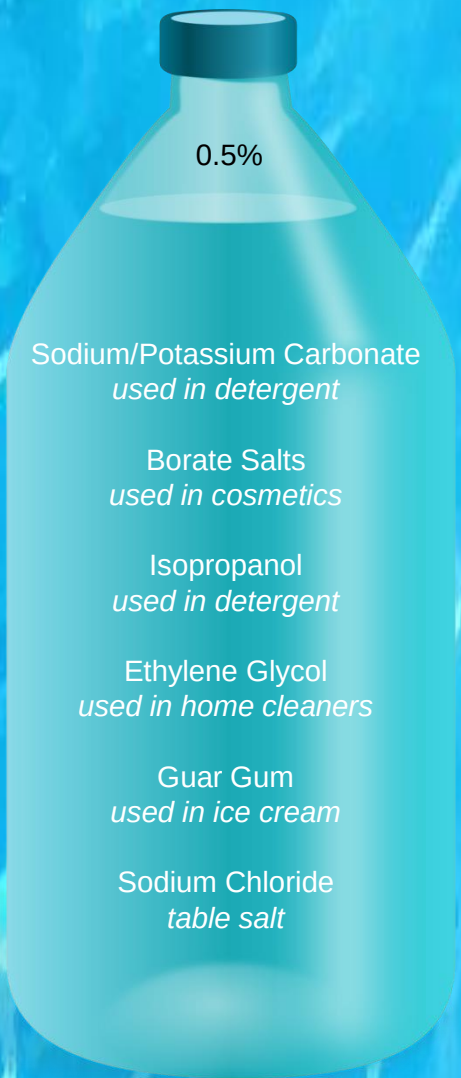
Coupled with hydraulic fracturing, directional drilling lessens surface disturbance dramatically by allowing operators to condense multiple wells within the same defined drilling area, rather than drilling wells across a much larger surface area.

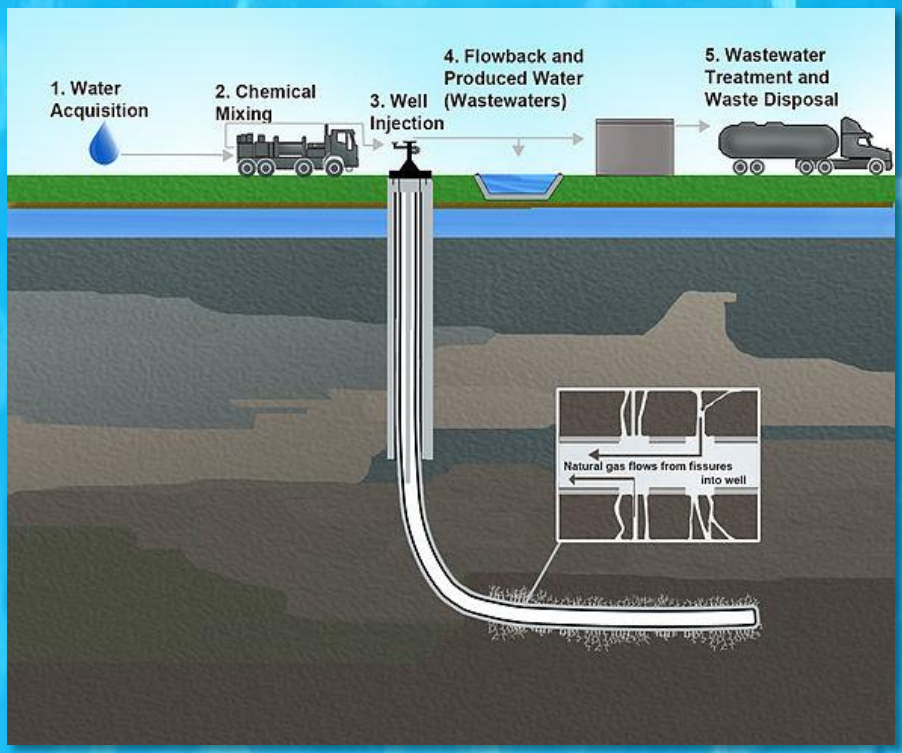
Did you know? An overwhelming majority of Montana's oil and gas wells would not be economically viable to drill without hydraulic fracturing, resulting in a loss of at least $4 billion worth of oil and $350 million of state revenues.

Frac Fluid

Did you know? Montana was among the first states to require disclosure of fracturing chemicals **before and after** well stimulation (ARM 36.22.1015). Disclosure information can be found at **www.fracfocus.org**







After fracture stimulation, frac fluid is collected at the surface as "flowback" water, then treated off location or placed in a regulated injection well (ARM 36.22.1403, 36.22.1402). Any residual fluid remains trapped thousands of feet below surface.

First Interstate Bank
Billings, MT
245 ft

Sample Depth
Over 10,000 ft
Or
40 of Montana's tallest building

Wellhead

- Cement
- Conductor Casing

- Cement
- Surface Casing

- Cement
- Intermediate Casing

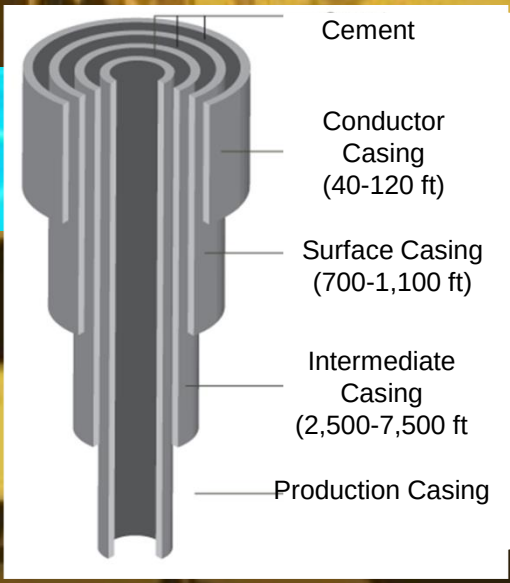
- Drilling Mud
- Cement

- Production Casing
- Cement
- Production Tubing

- Well Annulus

Did you Know?

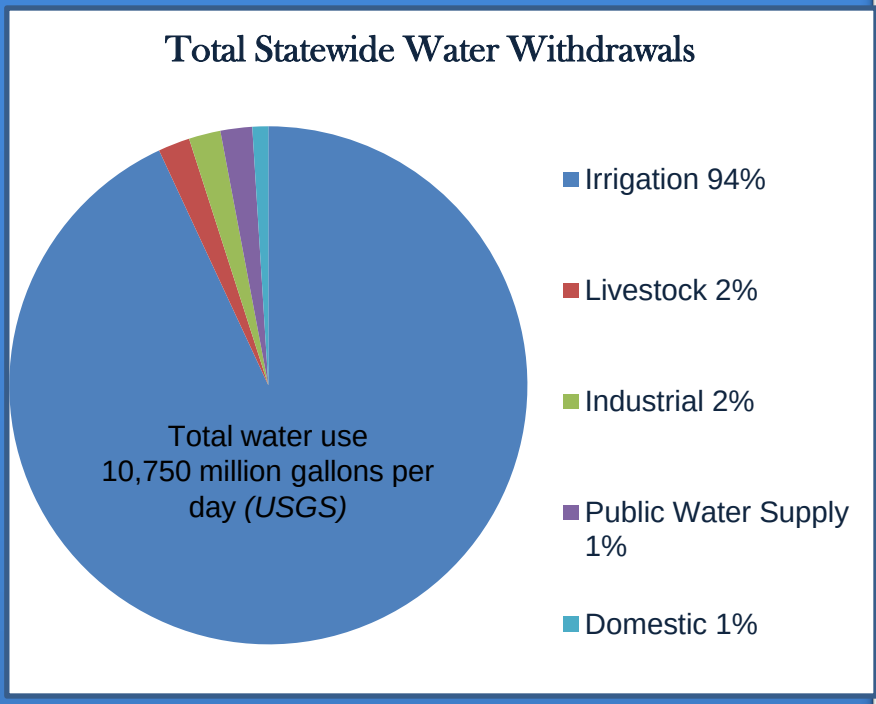
The MBOGC imposed rules which require operators to test wellbore construction to prove safe handling of fracture stimulation.(ARM 36.22.1106)



Several layers of **steel casing and cement** protect groundwater. The geology of Montana provides further protection from contamination. Drinking water aquifers do not inhabit the same reservoirs as conventional oil and gas. Rather, they are thousands of feet apart and separated by numerous impermeable layers of bedrock .

MYTH: Hydraulic fracturing depletes water supplies.

FACT: The amount of water used for hydraulic fracturing is comparatively small; about 0.8 percent of total demand in any given area, and less than 2% of total water usage in Montana, according to the U.S. Geological Survey.



MYTH: Fracturing contaminates groundwater.

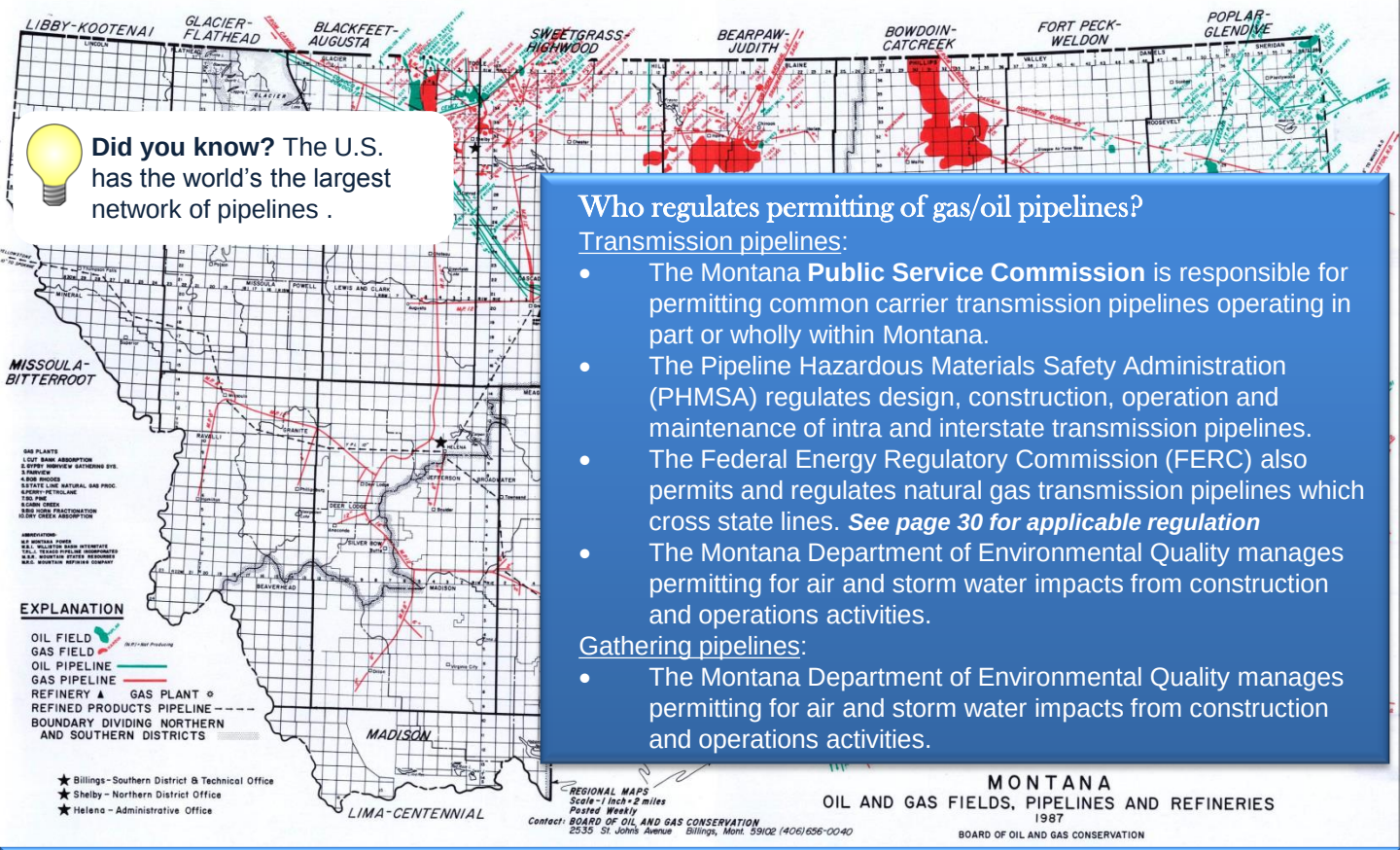
FACT: "We found the hydraulic fracturing activities in the United States are carried out in a way that has not led to widespread systemic impacts on drinking water resources," Tom Burke, EPA

MYTH: Air emissions due to hydraulic fracturing are harmful to public health.

FACT: Air monitoring data from state and federal regulatory agencies do not support this. Data from the U.S. EPA and the U.S. Energy Information Administration (EIA) show a 60 percent decrease in particulate matter from 2005 to 2013. Sulfur dioxide (SO2) also declined by 68 percent between 2005 and 2013, when oil and gas production was booming.

MYTH: Hydraulic fracturing causes earthquakes.

FACT: The U.S. Geological Survey and the National Research Council have concluded that hydraulic fracturing does not pose a risk for inducing major earthquakes.



Did you know? The U.S. has the world's the largest network of pipelines .

Who regulates permitting of gas/oil pipelines?

Transmission pipelines:

- The Montana **Public Service Commission** is responsible for permitting common carrier transmission pipelines operating in part or wholly within Montana.
- The Pipeline Hazardous Materials Safety Administration (PHMSA) regulates design, construction, operation and maintenance of intra and interstate transmission pipelines.
- The Federal Energy Regulatory Commission (FERC) also permits and regulates natural gas transmission pipelines which cross state lines. ***See page 30 for applicable regulation***
- The Montana Department of Environmental Quality manages permitting for air and storm water impacts from construction and operations activities.

Gathering pipelines:

- The Montana Department of Environmental Quality manages permitting for air and storm water impacts from construction and operations activities.

Did you know? 99.997% of petroleum products arrive safely to their destination by pipeline, making it the **safest mode** of transport.

Montana has a wide array of pipelines, approximately 15,000 miles' worth crisscross the state safely to transport natural gas, crude oil, and other energy products every day .

Regulated by state and federal agencies, pipeline operators must also obtain local permits ahead of construction.

Local permits include but are not limited to the following:

- Federal highways: Local offices of the state departments of transportation (state DOTs) generally issue crossing permits for federal highways, with some exceptions.

- State highways: As with federal highways, local offices of state DOTs generally issue permits for state highway crossings.

- County roads: Counties throughout the United States generally issue permits for crossing their roads. Requirements range from boring to open cutting of the roads depending upon the county and type of road.

- Railroads: Railroads typically require a permit or license agreement before crossing their tracks and right-of-way with a pipeline

- City streets: City road crossing permits are similar to county permits in that requirements can range from boring to open cutting depending upon the type of road and city.

- Utility districts: Numerous utilities including electricity, canal, irrigation, levee, drainage, and other facilities may exist along a pipeline route. Each of these entities will generally require a crossing agreement or permit and must be contacted early in the project to determine crossing requirements.

- Other easement crossings: A pipeline of any distance will cross fiber optic cables, other pipelines, major power lines, and other linear facilities. These entities are often referred to as "foreign utilities" and may require a crossing agreement

Transmission pipelines: For natural gas and natural gas liquids, transmission pipelines are high pressure pipelines that transport product from a processing plant to a location for further processing, or directly into the marketplace for distribution.

Gathering pipelines: Gathering lines are low pressure pipelines which collect product directly from the wellhead and transport it, in the case of natural gas and natural gas liquids, to a processing facility where it is cleaned of sediment and other impurities and then moved into transmission pipelines specific to the type of product (natural gas or methane transmission pipeline, or a y-grade or natural gas liquids pipeline).

Distribution pipelines: Distribution pipelines are low pressure pipelines which distribute natural gas (methane) to homes and businesses.

Did you know? Montana pipeline systems are centrally assessed, and are taxed more than **four times** the rate of similar systems in North Dakota and South Dakota.

Right-of-ways (ROW) must also be secured. These agreements known as easements are voluntary agreements between pipeline companies and landowners, and allow use of the surface for pipeline crossings, inspections, and maintenance. Landowners have rights in the planning process prior to, during and after construction. Stakeholder input plays a major role in the decision making process when determining the final route of a new pipeline.

Pipeline testing & monitoring

Pressure tests are used by pipeline operators as a means to determine the integrity of the pipeline immediately after construction and before placing the pipeline in service, as well as during a pipeline's operating life. The post-construction pressure test verifies the adequacy of the pipeline materials and construction methods.

Integrity Management regulations require pipeline operators to periodically conduct integrity assessments of certain pipelines. Pressure testing is one acceptable method of performing these assessments.

An integrity assessment pressure test is intended to determine whether a hazardous liquid or gas pipeline has adequate strength — integrity — to prevent leaks or ruptures under normal operation and upset conditions.

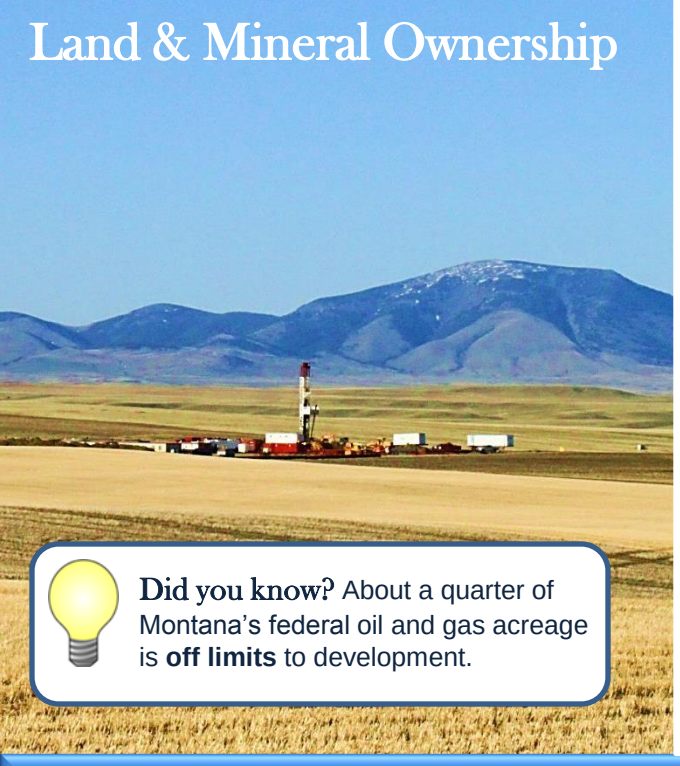
In a pressure test, a test medium (gas or liquid) inside the pipeline is pressurized by the use of pumps or compressors to a pressure that is greater than the normal operating pressure of the pipeline. This test pressure is held for a number of hours to ensure there are no leaks in the pipeline. Any indication of leakage requires the identification and repair of the leak. The pipeline is then re-pressurized and the test is repeated.

The operational integrity of field welds and of the pipe itself is assured if the pressure test is successfully completed.
Source: PHMSA

Once in operation, pipelines are monitored 24/7. Automatic and manual shut-off valves can be used in the event that pressure changes signal a potential release. ***"When in doubt, shut it down!"***

Smart pigs are an innovative technology used to clean and investigate pipelines for abnormalities. They can detect stress, corrosion, cracking, gouges, dents, pit corrosion, anomalous weld seams, longitudinal cracks, and longitudinal grooves.

Land & Mineral Ownership



Did you know? About a quarter of Montana's federal oil and gas acreage is **off limits** to development.

Montana covers 94 million acres. About 8 million acres is **federal land**, and administered by the Bureau of Land Management (BLM). The BLM is responsible for 32 million acres of oil and gas .

The **1920 Mineral Leasing Act** requires the BLM to make federally-owned oil and gas available for leasing. Several environmental studies and reviews must take place before an area is offered for lease and before drilling is permissible.

The Minerals Management Bureau of the Department of Natural Resources & Conservation (DNRC) is responsible for roughly 5,160 oil and gas leases on 2 million acres of the available 6.2 million acres of school trust lands and 5,632 acres of other **state land** . Beyond state and federal ownership are **tribal and privately owned** oil and gas (mineral) estate.

Obligation to pay royalties to mineral owners is regulated under Montana statute MCA 82-10-103. Surface use agreements with landowners, including compensatory payments, are regulated under MCA 82-10-504.

A Guide to Split Estates

A **split estate** occurs when the right to develop oil or gas deposits is severed from the surface. Therefore, one party may own the right to farm the land, build a house, or graze cattle, but another party owns the right to drill for oil or gas.

Property deeds declare who owns what. If a deed says **"fee simple",** than the owner holds both surface and mineral rights.

Copies of property deeds and mineral leases can be obtained from the **Clerk of Recorder** in the country where the property is located.

Both surface and mineral owners in a split estate have property rights. However, courts have held that the **minerals have no value unless there is reasonable access to develop oil and gas resources.**

Fairfield Sun Times photo

Tips on Oil and Gas Leasing

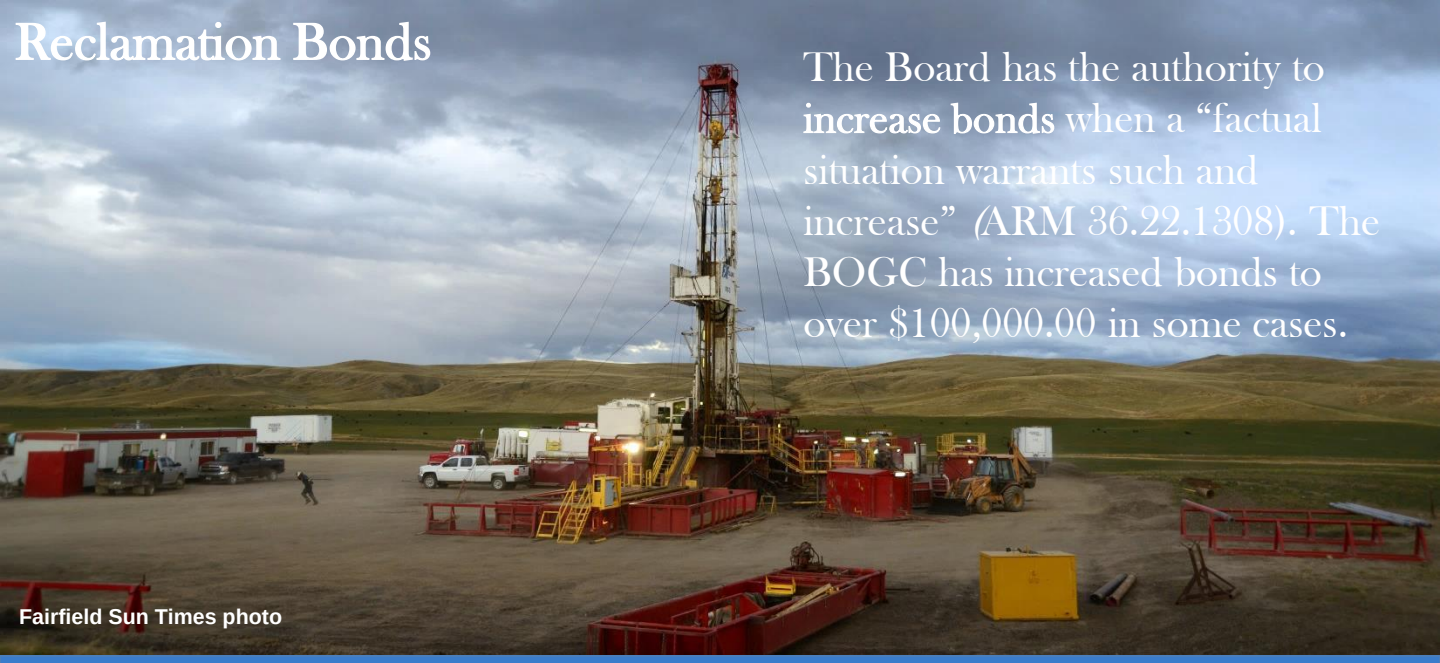
Get to know the landmen and companies. Request **contact information**. This as an opportunity to build a relationship that may span the lifespan of a producing well.

Take the time to ask questions, do your own research, and talk to neighbors before reaching a final negotiation

Get your **arrangements in writing**.

Understand all payments. Keep your own records, and consider legal counsel if you have further questions.

Reclamation Bonds



The Board has the authority to **increase bonds** when a "factual situation warrants such and increase" *(*ARM 36.22.1308). The BOGC has increased bonds to over $100,000.00 in some cases.

Fairfield Sun Times photo

The BOGC requires that oil and gas developers furnish a reasonable bond ahead of drilling to cover future plugging costs to shut in the well (MCA 82-11-123) **Plugging and restoration bonds** must be paid by operators accordingly:

$1500 –wells permitted for less than 2,000 feet in total depth

$5000- wells between 2,000-3501 feet in total depth

$10,000 –wells drilled deeper than 3,501 feet

$50,000 –for multiple wells; "blanket bond"

In addition to bonds, oil and gas operators pay taxes into the **Resource Indemnity Trust** (RIT) fund, created to indemnify Montanans for the impacts from mineral development. The fund is managed by the state Board of Investments, and is constitutionally capped at $100 million dollars. Interest on the fund is allocated at the beginning of each fiscal year as follows:

- $3.2 million to be deposited in the natural resources projects state special revenue account for the purpose of making grants
- $300,000 to be deposited in the **ground water assessment account**
- $500,000 to the department of FWP for the purposes of 87-1-283. The future fisheries review panel shall approve and fund **qualified mineral reclamation projects** before other types of qualified projects.

At the beginning of each biennium, there is allocated from the interest income of the resource indemnity trust fund:

- $650,000 to be deposited in the **oil and gas production damage mitigation account** pursuant to the conditions of 82-11-161
- $500,000 to be deposited in the **water storage** state special revenue account created by 85-1-631
- $175,000 to be deposited in the **environmental contingency** account established in 75-1-1101

The remainder of the interest income is allocated as follows:

- 65% percent of the interest income of the resource indemnity trust fund must be allocated to the natural resources operations state special revenue account established in 15-38-301.
- 26% of the interest income of the resource indemnity trust fund must be allocated to the **hazardous waste/CERCLA special revenue account** provided for in 75-10-621.
- 9%of the interest income of the resource indemnity trust fund must be allocated to the **environmental quality protection fund** provided for in 75-10-704.

(MCA 15-38-202)

Conservation

Oil and gas have activities coexisted with Montana's pristine environment for more than 100 years. Oil and gas operations provide farmers and ranchers with fuel and other products they rely on to feed families all over the world. Additionally, many farmers and ranchers lease mineral rights and obtain royalties to help support their own families.

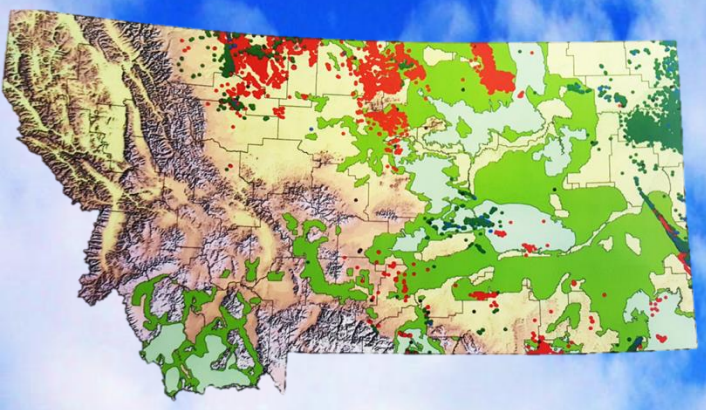
Outdoor recreation, like oil and gas, brings revenue into the state. With a higher than average income, oil and gas workers contribute to Montana's outdoor recreation through purchases of hunting and fishing licenses, use of guides and outfitters, and significant patronage within state parks and tourism-based communities.

Companies also contribute to conservation efforts through their own initiatives. Montana-Dakota Utilities, for example, has established the ECO Fund to support projects that enhance environmental education and stewardship.

Oil and gas taxes are also used for reclamation grants, which repair, reclaim, and mitigate environmental damage to public resources.

Did you know? In 2002, the ExxonMobil refinery in Billings received Wildlife Habitat certification on 110 acres of refinery property. The refinery was recertified by the international Wildlife Habitat Council in 2005, 2008, 2011 and 2014 for outstanding habitat management and environmental education.

Sage Grouse



Core Area
General Habitat
Gas wells
Oil wells

Core Area &
General Habitat
Restrictions: March 15 – July 15

No activities where breeding, nesting, early brood-rearing habitat is present

No discretionary maintenance/production between 4:00-8:00 am and 7:00-10:00 pm

No exploration or production in winter concentrations areas: **Dec. 1-March 15**

Can't exceed 10 decibels (dBA) above baseline noise at perimeter of active lek (breeding ground) from 6:00 pm – 8:00 am

Core area only

NO TOPSOIL STRIPPING OR VEGETATION REMOVAL IN SUITABLE HABITAT WITHIN 4 MILES OF ACTIVE LEK

Did you know? There are 16,738 active wells *(4,052 gas and 1,298 oil)* owned by approximately 107 operators in sage grouse areas within Montana. 27% of wells are located in core habitat.

In 2015, Montana Governor Steve Bullock issued an Executive Order on Sage Grouse Conservation , which was accompanied by a legislative stewardship act to stave off a federal listing of the bird under the Endangered Species Act. Montana was one of 11 states faced with a federal listing by the U.S. Fish and Wildlife Services.

The Montana Petroleum Association was, and continues to be a critical part of the stewardship plan. The BLM also outlined development stipulations within Resource Management Plans, which seek to prevent loss of sage grouse habitat on federal land.

Consultation with the newly created Montana Sage Grouse Oversight Team (MSCGOT) is required for **state permitted activities** in sage grouse areas; learn more at sagegrouse.mt.gov

MSGOT provides development recommendations based on potential disturbance to sage grouse habitat, using a Density Disturbance Calculation Tool (DDCT).

A **Stewardship Fund Grant Program** was granted $10 million dollars by the 2015 Legislature for conservation grants. The Fund facilitates free-market mechanisms for voluntary, incentive based conservation on private lands (and public lands as needed) in habitats necessary to conserve sage grouse.

A **Habitat Quantification Tool** (HQT) will be used to determine how many credits are generated by land conservation projects that benefit sage grouse and how many debits are incurred by habitat disturbances that cannot be avoided.

Aside from the stewardship grants, project applicants (i.e. oil and gas operators) may provide **compensatory mitigation** to offset debits incurred from development impacts. Acceptable mitigation will create conservation areas in habitat suitable for sage grouse.

Everyday Oil & Gas

Did you know? More than 6,000 consumer products rely on petroleum, including lifesavers such as pharmaceuticals, **medical supplies,** protective equipment, parachutes, and much more.

Oil and natural gas are cheap, plentiful, and reliable resources that power our lives, fuel our adventures, and provide life-saving benefits often taken for granted.

They (petroleum resources) provide far more than gasoline to fuel transportation. To help understand the essentiality of petroleum in our everyday lives, remember the acronym **TECHMAP**, which stands for Technology, Electricity, Cooking, Heating (and cooling), Manufacturing, Agriculture, and Products – all things made possible with oil and natural gas .

Technology: Petroleum-based materials known as petrochemicals make up even the most **"green"** technologies used today; including **smartphones**, hybrid vehicles, and even wind turbines, which require fiberglass- a material produced from petrochemicals.

Electricity: Electricity from natural gas power plants is now tied with coal as the largest provider of electricity generation and continues to increase. In 2015, less Than 5% of electrical generation was provided by wind energy, and less than 1% from solar power, according to the U.S. Energy Information Administration. ***Did you know? Wind developments cannot operate without the reliable back-up of either coal or natural gas.***

Cooking: Liquefied petroleum gas (LPG), better known as propane and butane, are used in heating appliances and cooking elements, such as stoves.

Heating: Homes and buildings around the world are heated by propane, and heating oil (fuel used for furnaces and boilers). **Did you know? LPG** is also used for **cooling** in air conditioners and refrigeration. Refrigeration is especially vital to medical providers for safe keeping of vaccines.

Manufacturing: Petroleum coke is a product made from crude oil, which can be used as a fuel for U.S. industries such as steelmaking. It also makes electrodes and charcoal.

Agriculture: Today's farmers would not be able to feed the world without as and diesel powered tractors/ equipment or **fertilizer,** made from petroleum by-products. Goods would also not be able to get to market without planes, trains (and automobiles) mobilized by oil.

Products: Since the 1920's, people have used an assortment of materials from petroleum byproducts; Styrofoam; polyvinyl chloride, used in plumbing fixtures and weather-resistant home siding; polyethylene, widely used in packaging; synthetic materials, including nylon, acrylics, and polyester used to make everything from clothing to industrial equipment and Plexiglas. **Asphalt** is also made from petroleum byproducts, so regardless of the mode of transportation, oil and gas pave the way. A multitude of products also enhance outdoors adventures, such as kayaks, tents, and paddleboards, to name a few.

Crude Oil Refining & Natural Gas Processing

About 47% of each barrel (42 gallons) of crude oil is refined into automobile **gasoline**. Diesel and jet fuel are also refined from crude oil.

Here's a list of what just **one barrel** of oil can yield:

- Propane to fill 12 small (14.1 ounce) cylinders for home or camping
- Enough gasoline to drive a med-sized car over 280 miles.
- Asphalt to make about one gallon of tar
- Lubricants to make a quart of motor oil.
- Nearly 70 kilowatt hours of electricity at a power plant generated by residual fuel.
- About four pounds of charcoal briquettes.

Natural gas processing facilities collect and separate gas from natural gas wells and from oil wells which produce natural gas as a by-product. Gas collected from oil wells would otherwise be flared at the wellhead, if not connected to a natural gas gathering pipeline

Natural gas is compressed and fractionated by use of refrigeration and tall, cylindrical pressure chambers. The result is a variety of natural gas liquids (NGL) such as propane, butane, and iso-butane; a petrochemical feedstock for many consumer products.

Overview

The state's four refineries have a combined daily refining capacity of 192,000 barrels of crude oil.

The refining industry is one of the most highly regulated in the country, subject to both state and federal oversight. Rules under the Clean Air Act and Clean Water Act include specific provisions for regulating the refining industry.

New federal rules, New Source Review (NSR) Consent Decree, mandate that oil refiners adopt more aggressive measures for reducing air emissions. This has led to the addition of pollution control equipment.

Refiners across the country have invested billions in environmental compliance. Here are just a few achievements:

- **Total emissions of the six principal air pollutants reduced by 57 percent since 1980**
- **Ozone levels have decreased by 33 percent since 1980**
- **Refiners have cut sulfur levels in gasoline by 90 percent since 2004**
- **Reduced sulfur in diesel fuel by more than 90 percent since 2005**
- **Reduced benzene in conventional gasoline by 45 percent since 2010**

Economic Impact

Montana's refineries have a significant economic impact on the state and local economies where they operate. More than **1,100** people are employed by the refineries. The value added from Montana refining contributes over **$1 billion** to state GDP annually (2013 report).

Beyond the direct fiscal contribution of operations, refineries are heavily involved in their local communities, supporting STEM promotion efforts in local schools, United Way, Habitat for Humanity, and many other philanthropic organizations. Many offer grants and scholarships to local applicants, while most donate thousands of hours of volunteer time in the local communities.

How Are Gas Prices Determined?

Crude **oil prices** are the single-largest factor in gas prices, while **refining** costs represent the smallest factor accounted for in gas prices.

Here's the cost breakdown on a gallon of gas:

- **70%** - Crude oil price the price
- **14%** Combined federal and state taxes. *In Montana, gas is taxed at 27 cents per gallon. The federal tax on gasoline is 18.4 cents and 24.4 cents per gallon for diesel fuel*
- **10%** Marketing and distribution
- **5%** percent covers the costs of **refining**

Source: U.S. Energy Information Administration

Downstream/Refining Regulations

***Partial list**

Mandatory Reporting Rule – EPA issued the Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of greenhouse gas data and other relevant information from large sources and suppliers in the United States.

Prevention of Significant Deterioration permitting – A permitting program for new and modified major sources of emissions such as power plants, manufacturing facilities, and other facilities, designed to ensure that air quality does not degrade beyond that established in the National Ambient Air Quality Standards.

New Source Performance Standards – These dictate the level of emissions that a new or modified stationary source may produce.

Areas of significant interest of the Clean Air Act include:

•**Maximum Achievable Control Technology (MACT)** – The Clean Air Act Amendments of 1990 required EPA to develop standards for toxic air pollutants that require the application of air pollution reduction measures known as maximum achievable control technology.

•**Residual Risk** – EPA is required to develop and implement a program for assessing risks remaining after facilities have implemented the MACT standards. EPA is required to issue regulations to reduce any residual risks in order to protect the public health.

•**New Source Review (NSR)** – a regulatory permitting program that began in the 1970s focused on new and substantially rebuilt industrial plants.

•**NAAQS** – National Ambient Air Quality Standard establishes maximum pollution concentration levels to protect public health and welfare from harmful levels of pollutants. Pollutants covered by the NAAQS are nitrogen oxides, volatile organic compounds (which are precursors to ground-level ozone), sulfur dioxide, fine particulate, sodium oxide, nitrogen oxide, carbon monoxide and lead.

The Resource Conservation and Recovery Act (RCRA)– This law gives EPA authority to control hazardous waste from the "cradle-to-grave", and created a framework for the management of non-hazardous solid wastes.

The Clean Water Act – This law establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the Clean Water Act, EPA has implemented programs such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters.

The Toxic Release Inventory – This a **publicly available database** that contains information on toxic chemical releases and other waste management activities submitted by regulated facilities. The inventory was created in 1986 as part of the Emergency Planning and Community Right-to-Know Act.

Toxic Substances Control Act – This law addresses the testing of chemicals prior to their use in commerce. Recently proposed changes include giving EPA the ability to make decisions on what materials can and cannot be used in manufacturing without requiring scientific justification for those decisions.

Source: American Fuel & Petrochemical Manufacturers

Permits required for most interstate pipelines typically include but are not limited to compliance with the provisions of the following federal and state acts:

● National Environmental Policy Act of 1969: NEPA requires the lead federal agency exercising jurisdiction over the project to consider the environmental impacts of the proposed project. The agency may prepare or issue an Environmental Impact Statement (EIS), an Environmental Assessment (EA), or a "finding of no significant impact" depending upon the projects' impact on the environment.

● Federal Water Pollution Control Act ("Clear Water Act" or CWA): Section 401 of the CWA requires that the pipeline company obtain a certification from any state in which any discharge into navigable waters of the United States is made. In the event the state fails to act within 1 year, the requirement is considered waived.

● Section 404 of the CWA authorizes the United States Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material in waters of the United States including wetland area, streams, rivers, lakes, coastal waters, or other water bodies or aquatic areas.

● Additional permits such as a National Pollutant Discharge Elimination System (NPDES) Permit may be required for discharge of test water during construction.

811
Know what's **below.**
Call before you dig

● Coastal Zone Management Act (CZMA): The CZMA manages the nation's coastal resources, including the Great Lakes, and is administered by the National Oceanic and Atmospheric Administration (NOAA) under the Department of Commerce.

An applicant must certify that the action is in compliance with the enforceable policies of the state's federally approved coastal zone management program.

● Endangered Species Act (ESA): Section 7 of the ESA requires federal agencies to ensure that the proposed project does not harm threatened or endangered species or critical habitats of such species. Section 9 of the ESA makes it unlawful to harm such endangered species during construction or operation
of the project.

● Clean Air Act (CAA): The CAA exercises jurisdiction over the construction and operation of pipelines. While pipelines in operation do not generally cause air pollution, construction of the pipeline and operation of compressor or pump stations generally affect air quality. Specific requirements under CAA programs include the New Source Review (NSR) and Prevention of Significant Deterioration (PSD) program and the permitting program for major stationary sources under Title V of the CAA.

● National Historic Preservation Act (NHPA): The NHPA requires federal agencies to consider the effects of a construction project upon historic artifacts and structures. This is accomplished by federal agencies consulting with state historic preservation officers (SHPOs). The federal Advisory Council on Historic Preservation (ACHP) may participate in this process.

● The Pipeline Safety Improvement Act (PSIA): The PSIA applies to natural gas pipelines and requires each company to prepare and implement an "integrity management program." This program addresses primarily "high consequence areas" (HCA) and requires a baseline integrity assessment. The program generally applies to pipelines in place.

● The Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006: This act further addresses the "integrity management program" and focuses on better use of the state "one-call" systems. Like the PSIA above, this program generally applies to pipelines in place.

Montana Oil and Gas Laws

MCA 82-10-103. Obligation to pay royalties – The obligation under an oil and gas lease to pay oil or gas royalties to the royalty owner or the owner's assignee is of the essence in the lease contract.

MCA 82-10-401. Abandoned Oil and Gas Wells – Reclamation – requires surface owner notification regarding abandoned wells, the implementation of proper plugging and reclamation procedures, and the recording of all abandoned wells that disturb land, water, or wildlife resources to a degree not in compliance with applicable rules

MCA 82-10-503. Notice of drilling operations – The oil and gas developer/operator shall give the surface owner written notice of the drilling operations that the oil and gas developer or operator plans to undertake no more than 180 days and no fewer than 20 days before any activity that disturbs the land surface

MCA 82-10-504. Surface Owner Damage and Disruption Compensation – establishes requirements for surface owner notification of oil and gas operations, reasonable attempts at negotiation between the operator and the surface owner in the event of surface disturbance, and payment of damages for surface disturbances, including lost agricultural production, lost land value, lost value of improvements

MCA 82-10-505. Liability for damages to property –The oil and gas developer or operator is responsible for all damages to real or personal property resulting from the lack of ordinary care by the oil and gas developer or operator. The oil and gas developer or operator is responsible for damages to real or personal property caused by oil and gas operations and production.

Chapter 11 Conservation

MCA 82-11-111. Regulation by Board of Oil and Gas Conservation – establishes the jurisdiction, powers, and duties of the Montana Board of Oil and Gas Conservation (MBOGC)

MCA 82-11-121. Oil and gas waste prohibited – Waste of oil and gas or either of them as waste is defined in this chapter is prohibited.

MCA 82-11-123. Requirements for Oil and Gas Operations – establishes general requirements for oil and gas operations, including procedures for drilling, plugging, and restoration of surface lands

MCA 82-11-161 Oil and Gas Production Damage Mitigation Account – creates a source of funding to cover the reasonable costs of properly plugging wells or restoring a drill site if the responsible party cannot be located

Partial list

Administrative Rules of Montana

Rule 36.22.601. Notice of Intention and Permit to Drill.

Rule 36.22.602. Notice of Intention to Drill and APD

Rule 36.22.603. Permit Fees.

Rule 36.22.604. Permit Issuance - Expiration - Extension.

Rule 36.22.605. Transfer of Permits.

Rule 36.22.606. Notice and Eligibility Statement for Drilling or Recompletion in Unit Operations.

Rule 36.22.607. Drilling Permits Pending Special Field Rules.

Rule 36.22.608. Well Stimulations Activities Covered by Drilling Permit

Rule 36.22.701. Spacing Units - General.

Rule 36.22.702. Spacing of Wells.

Rule 36.22.1005. Drilling Waste Disposal and Surface Restoration.

Rule 36.22.1015. Disclosure of Well Stimulation Fluids

Rule 36.22.1016. Proprietary Chemicals and Trade Secrets

Rule 36.22.1104. Control and Cleanup.

Rule 36.22.1105. Solid Waste.

Rule 36.22.1207. Earthen Pits and Open Vessels.

Rule 36.22.1220. Associated Gas Flaring Limitation—Application to exceed—Board Review and Action.

Rule 36.22.1223. Fencing, Screening, and Netting of Pits.

Rule 36.22.1226. Disposal of Water.

Rule 36.22.1227. Earthen Pits and Ponds.

Rule 36.22.1228. Disposal by Injection.

Rule 36.22.1229. Water Injection and Gas Repressuring.

Rule 36.22.1302. Notice of Abandonment.

Rule 36.22.1307. Restoration of Surface.

Rule 36.22.1308. Plugging and Restoration Bond.

Rule 36.22.1402. Underground Injection.

Rule 36.22.1416. Mechanical Integrity.

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