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This newsletter is intended for landowners and other members of the public with interest in the oil and gas industry. Each newsletter is also posted on our website at www.msue.msu.edu/oilandgas. If you would like to be added to the e-mail list to receive this newsletter, please contact the editor. You can also contact your local MSU Extension Office to obtain copies of the newsletter and other free oil and gas leasing information.

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New Interactive Map Indicating Locations of Collingwood-Utica Applications, Permits and Well Information

Curtis Talley Jr. Farm Management Educator Michigan State University

Joseph Elfelt is a landowner that receives the Landowner Oil and Gas newsletter. He is also very talented in Geographic Information Systems (GIS). He has produced an interactive map that has been added to www.msue.msu.edu/oilandgas and is found under “from other sources”. Joseph’s intent is to keep this map current and show well applications, permits, production, etc. for development of the Collingwood/Utica shale formation.

The map includes links to copies of the **survey** that must be filed with the drilling **application for each horizontal well**. These surveys show the drilling unit, length and location of the horizontal leg, plus other information. So far these links are available for EnCana’s southern well along Sunset Trail and Devon’s well in Roscommon County. Click those markers and you will see the links.

Using the map:

To see/click the stacked markers you have to first zoom in so you have a 'clear shot'. You can use the wheel on your computer mouse to zoom in or the sliding control in the upper left.

Joseph plans to keep this map updated and has graciously allowed us to use it on our web site.

You can also find the map at Joseph's **URL**:

http://www.mappingsupport.com/p/mineral/michigan_utica_collingwood.html

MICHIGAN OIL AND GAS DEVELOPMENT – A MID-YEAR UPDATE

Dean Solomon, MSU Senior Extension Educator

Oil and natural gas development is still very much in the news nationally and in Michigan. Dramatically increased domestic production is driving low natural gas prices. There is continuing debate concerning potential impact from hydraulic fracturing (fracking), the controversial extraction method that is credited with the rapid oil and gas production rise.

Despite all the news attention, drilling in Michigan was significantly lower in the first half of 2012. Oil and gas drilling activity was down by more than 22 percent during the first half of the year, compared to the same period in 2011, according to an estimate by the Michigan Oil and Gas News. A total of 66 wells were drilled between January 1 and June 30. A similar reduction was noted in the number of drilling permits issued by the Michigan Department of Environmental Quality.

Continuing the trend from last year, Jackson and Lenawee Counties were the focus of activity, with 19 well completions.

A lot of excitement was generated a couple of years ago regarding the potential of the Utica-Collingwood geological formation (and fracking concerns). That play is still considered "emerging," yet no new wells were drilled into that layer this year so far, although 14 applications were pending as of July 25, 2012. Just two wells of the 28 permitted to-date are classified by the DEQ as "producing." Most of the permitting drilling activity for this formation is in Kalkaska and Cheboygan Counties.

Concerns about fracking are still widely discussed in Michigan. The DEQ recently published a new [question and answer fact sheet](#) on this topic. [Materials Safety Data Sheets](#) for the hazardous components of fracking fluids are also posted on the DEQ site.

So, what does this all mean? Is the oil and natural gas boom over in Michigan? Drilling and permitting activity is indeed down, but land men are still actively seeking leases on private land in many parts of the state. Strong leasing activity is a good indication of Michigan oil and gas

production potential. It is still very important that landowners learn as much as they can and seek advice from an oil and gas attorney prior to signing a lease.

MSU Extension and partner organizations continue to sponsor oil and gas leasing and industry update meetings around the state. Workshop dates and additional oil and gas information is available at www.msue.msu.edu/oilandgas.

GASLAND AND TRUTHLAND

Curtis Talley Jr. Farm Management Educator Michigan State University

The movie Gasland (www.gaslandthemove.com) has been around for several years. It discusses oil and gas drilling and in particular, hydraulic fracturing. It indicts the process of hydraulic fracturing as the reason for pollution of groundwater and the presence of natural gas (methane) in groundwater.

A mother, dairy farmer and school teacher in Pennsylvania had seen Gasland. Her family was being offered an oil and gas lease. She was concerned about the potential negative effects oil and gas production could have on their farm, water wells, farm animals, pets and the people in her family. She launched a cross county trip and interviews environmentalists, scientists, retired former public regulators, landowners, the head of the EPA and others about the oil and gas industry and hydraulic fracturing to determine in her own mind whether or not her family should lease their oil and gas mineral rights. This movie is located at <http://www.truthlandmovie.com>.

Highlights from an Oakland County Oil and Gas Lease

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The goal of MSU Extension is to bring knowledge to life. At our public meetings we state that we want to make landowners aware of their options when it comes to deciding whether or not to lease their oil and gas mineral rights, and what terms that lease will contain. Landowners can learn their options from what other landowners have done. Listed below are some of the terms of the Oakland County lease that was signed during the spring of 2012. A confidentiality agreement between the editor and the parties involved will not allow the editor to disclose the names of the parties. The lease comprises 316 acres of a total of 2,500 acres owned by the landowner. It is located in an area thought to have good potential for oil and gas development. The oil and gas company involved is a Michigan based company.

Mineral right owners should keep in mind that you may not be able to negotiate these terms for your land, particularly if you have small acreage. The editor's point is that this landowner was not comfortable with the terms of the "standard lease", knew there was information available to learn what their options were, had enough acreage to have negotiating clout, used a reputable oil and gas leasing attorney and is fortunate to be in an area sought after by the oil and gas industry. Some of the key terms of this lease are:

- Bonus payment: \$150/acre

- Primary term: two years
- Royalty percentage: 25%
- Limited development lease: mutual consent will be required for wellhead location. No oil and gas production facilities (tank batteries, compressor stations and related plant and transport facilities) will be allowed without written permission of Lessor.
- Limited horizon lease: horizontal zoning to exclude all formations below the Black River formation.
- Shut-in royalty: \$25/acre after a well is shut-in for more than 90 days.
- Post production costs: Lessor (landowner) will pay their proportionate share of removal of carbon dioxide, third party transportation costs after the tailgate of the central production facility and after the point of entry into any of: (1) an independent, nonaffiliated third party owned pipeline system, or (2) a pipeline system owned by a gas distribution company or any subsidiary of the gas distribution company which is regulated by the Michigan Public Service Commission.
- Hydraulic fracturing: Hydraulic fracturing will not be permitted. (editor's note: the geologic structure of the target production zone is not a tight shale and does not need hydraulic fracturing to stimulate oil and gas production)
- Seismic fee: \$1,000 per mile

There are many other terms that were negotiated. Both parties feel this was a win-win situation.

**AMERICAN PETROLEUM INSTITUTE BEST PRACTICES FOR
GROUNDWATER QUALITY AND TESTING**

Curtis Talley Jr. Farm Management Educator Michigan State University

The people of Michigan are very fortunate to have an abundance of clean water, both surface and groundwater. One of the controversies surrounding hydraulic fracturing is potential contamination of groundwater. When it comes to protecting groundwater, the American Petroleum Institute has established industry best practices for setting baseline water quality and testing (API-HF1) when hydraulic fracturing will be used. If a mineral rights owner is aware the industry has established its own best practices, adding water protection stipulations to the lease should not be as difficult. The editor has inspected oil and gas leases negotiated in Michigan that contain groundwater sampling requirements similar to those discussed here. In those agreements, the oil and gas company accepts responsibility and liability for any negative change in groundwater quality from baseline until well after oil and gas drilling and development occur. According to the API, water's taste, smell, or color is not necessarily an indicator of water quality. Many of the most hazardous contaminants are undetectable to the senses. The only way

to detect most pollutants is by testing. It is extremely important to follow proper water sampling and analysis protocols in order to obtain valid results from sampling. The National Ground Water Association maintains a [list of groundwater professionals](#) ‡ you can review to help you find someone in your area to assist you. You may also contact your county health department for assistance or the Department of Environmental Quality Laboratory Services. Proper sampling and analysis protocols may include:

1. using appropriate containers and seals,
2. purging of the well prior to sample capture,
3. collection at points before water treatment equipment,
4. following sample container filling procedures;
5. following storage and holding time requirements;
6. utilizing appropriate analysis methods; and
7. following appropriate quality control/ quality assurance protocols

If protection of the groundwater is a concern for you, it is important to have an oil and gas operational sampling and analysis of the groundwater for constituents that may provide a reasonable baseline for post fracturing analysis. The pre-fracturing baseline analysis includes tests for materials such as benzene that are used in the hydraulic fracturing process. The following is a good basic list of constituents that should be considered for analysis prior to oil & gas operations. Note that some of the constituents (Benzene, Toluene, Ethyl benzene, Xylene (BTEX)/ Diesel Range Organics (DRO)/ Gasoline Range Organics (GRO), total Petroleum Hydrocarbons or Oil & Grease (HEM) are not those normally tested for in a drinking water sample. Analyses should be conducted by an accredited laboratory using appropriate analysis methods.

According to the API, the following is a list of constituents that should be considered for analysis prior to oil and gas operations:

Major cations and anions

pH

Specific Conductance

Total Dissolved Solids

Benzene, Toluene, Ethyl benzene, Xylene (BTEX)/ Diesel Range Organics (DRO)/ Gasoline Range Organics (GRO)

Total Petroleum Hydrocarbons or Oil & Grease (HEM)

Arsenic
Barium
Calcium
Chromium
Iron
Magnesium
Selenium
Boron
Sodium
Chloride
Potassium
Bicarbonate
Dissolved Methane

Once hydraulic fracturing has taken place and a record of the actual chemicals used is available, the API advises a sampling and analysis on the groundwater for the chemicals shown on the record that match those listed above. To minimize costs for the landowner, they state that an alternative analysis could be conducted for at least Total Dissolved Solids (TDS) and Dissolved Methane. An increase in the concentration of either of these constituents could indicate that further, more complete sampling and analysis should be conducted.

It is extremely important to follow these protocols in case deterioration of water quality occurs. Failure to use these provides an open door for a litigator to reject the analysis out of hand.

The article "Groundwater Quality and Testing" can be found at <http://fracfocus.org/groundwater-protection/groundwater-quality-testing>.

Please Share Your Oil and Gas Experiences

The editor is very interested in hearing both your positive and negative experiences dealing with oil and gas leasing or production. All information is kept confidential and is combined with data from other landowners to analyze the effectiveness of the educational effort. Report your experiences to the editor by phone at 231-873-2129 or talleycu@anr.msu.edu e-mail.

Landowner Informational Meetings

MSU Extension personnel, private attorneys specializing in assisting landowners with oil and gas leasing and personnel from the Department of Environmental Quality have and continue to be willing to offer public meetings to educate

landowners about the oil and gas industry in Michigan, which includes understanding and negotiating oil and gas leases. If you would like a meeting, please contact the editor.###
operator.