

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion,
to consider the appropriate regulatory response to
proposals by various producers of natural gas from
Antrim Shale Formation to operate their wells
under a vacuum.

Case No. **U-16230**
(e-file/paperless)

**PROPOSED REQUIREMENTS FOR WELLS AND ASSOCIATED SYSTEMS
TO OPERATE UNDER A VACUUM**

I. Introduction

This document is filed by the Commission Staff (Staff) pursuant to Mich Admin Code, R 460.867, and as required by the May 14, 2015 order in Case No. U-16230. The order provides:

Within 60 days from the date of this order, the Commission Staff shall file in this docket a request for any additional information necessary that an applicant must provide to determine if a natural gas well and its associated systems are suitable to operate under a vacuum and identify any requirements that must be met for a gas well and its associated systems to operate under a vacuum.

II. General Application Requirements

A. As provided in Mich Admin Code, R 460.867, an operator shall not operate an Antrim natural gas well or associated system under vacuum without prior Commission approval. Pursuant to the May 14, 2015 order in Case No. U-16230, Antrim natural gas well operation under vacuum is conditionally approved for all operators subject to compliance with the informational and operational requirements set forth here.

B. An operator shall submit an application to operate one or more natural gas wells and associated systems under vacuum on an Antrim field or project basis. If one or more wells are to be operated under vacuum, the entire Antrim field or project must meet the requirements set forth in this document.

C. At least 10 days prior to filing an application to operate a well or system under vacuum, notice by certified first class mail shall be sent to any lease owners or operators adjoining the proposed project or well location.

D. All applications, notifications under Section V, and annual reports shall be submitted electronically in this docket. Applications, notifications under Section V, and annual reports shall also be provided to the Department of Environmental Quality's Office of Oil, Gas, and Minerals, electronically via email to DEQ-GeologicalRecords@michigan.gov with "U-16230" included in the subject line.

III. Application Verification and Required Documentation

A. Each Antrim field or project application to operate under a vacuum, shall include the actual or estimated fuel consumption during the five years preceding the date of the application.

B. Each Antrim field or project application to operate under a vacuum, shall include a statement by the operator that a review has been completed verifying that all gas pipelines, well production casings, and tubings are suitable for operation under vacuum based on the design, specifications, and operating history.

C. Each Antrim field or project application to operate under a vacuum, shall include records of test results demonstrating that all gas pipelines, valves, fittings, and connections were tested at a pressure and duration that is adequate to detect any leaks or failures.

D. Each Antrim field or project application to operate under a vacuum, shall include a map and/or schematic showing the location of: wells; gas pipelines (including diameter, wall thickness, material, and grade); compressors, pumps or other devices; production facilities; pressure sensing or monitoring equipment; oxygen sensing or monitoring equipment; and any other associated facilities or equipment.

IV. Operational Requirements

A. An operator operating a system under vacuum shall monitor oxygen levels at the first production facility immediately downstream of all wells operated under vacuum or at a point within the Antrim field or project downstream of all wells operated under vacuum. Operators shall establish procedures and take prompt remedial action if oxygen levels at the monitoring site are at or above 5 parts per million (ppm) for a period of 10 minutes.

B. Each well that may be operated under vacuum shall have the capability for pressure monitoring. Tubing pressures shall be monitored and recorded on a weekly basis.

C. For each well that is intended to be operated under vacuum, the wellhead, aboveground valves, fittings, connections, and pipe transitions shall be inspected for leaks immediately prior to commencing vacuum operations and at least four times per year during vacuum operations.

D. The gas pressure in the well and associated systems shall be at or above atmospheric pressure before any work is performed that has the potential to introduce oxygen into the system.

E. Any future pipelines or wells shall be designed and constructed to be suitable for vacuum operations.

V. Notification Requirements

A. After a project is approved to operate under vacuum, the operator shall file supplemental information to demonstrate continuing compliance with these requirements for any facility modifications impacting vacuum operations or additional wells that will be operated under vacuum within the Antrim field or project.

B. Operators of any Antrim field or project operating under vacuum shall file a notification: prior to the commencement of any type of work that has the potential to introduce oxygen into the formation; prior to the addition of compressors, pumps, or other devices that will be added to a Antrim field or project; or upon occurrence of pipeline failures relating to vacuum operations within the Antrim field, including the date, time, and location of the failure or incident.

C. In the event an operator wishes to cease vacuum operations on an Antrim field or project that has been granted approval, the operator shall file a statement in this docket notifying the Commission of the date that vacuum operations shall cease. This notification releases the operator of its obligation to meet the ongoing requirements for the Antrim field or project and associated wells.

VI. Annual Reporting Requirements.

A. An operator of an Antrim field or project approved to operate under vacuum shall annually file a report by March 1st for the preceding year. For each Antrim field or project, the annual report shall contain: (1) all dates on which the oxygen level was measured at or above 5 ppm for a period of 10 minutes; (2) an annual economic analysis of fuel consumption versus the estimated incremental production; and (3) the average monthly wellhead pressure for each well that was operated under vacuum.

B. If necessary, the report shall also contain an updated map and/or schematic of the Antrim field or project including the information previously stated in the Application Verification and Required Documentation section.

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_____)**

Case No. U-16230

PROOF OF SERVICE

Angie Brunette, being duly sworn, deposes and says that on July 13, 2015, A.D., she emailed a copy of the attached MPSC Requirements to the persons as shown on the attached list by first class mail, postage prepaid, or by inter-departmental mail, or electronically mailed to the persons as shown on the attached service lists.

Angie Brunette

Subscribed and sworn to before me
this 13th day of July, 2015.

Steven J. Cook
Notary Public, Ingham County, Michigan
Acting in Eaton County
My Commission Expires: April 30, 2018

Service List for U-16230

CBaird-Forristall@MIDAMERICAN.COM Mid American
david.d.donovan@XCELENERGY.COM Noble Americas
vobmgr@UP.NET Village of Baraga
braukerL@MICHIGAN.GOV Linda Brauker
info@VILLAGEOFCLINTON.ORG Village of Clinton
jepalinc@CMSENERGY.COM CMS Energy Resource Mgt Co
Jayne@HOMEWORKS.ORG Tri-County Electric Co-Op
mkappler@HOMEWORKS.ORG Tri-County Electric Co-Op
psimmer@HOMEWORKS.ORG Tri-County Electric Co-Op
aurora@FREEWAY.NET Aurora Gas Company
frucheyb@DTEENERGY.COM Citizens Gas Fuel Company
dwjooos@CMSENERGY.COM Consumers Energy Company
mpscfilings@CMSENERGY.COM Consumers Energy Company
jim.vansickle@SEMCOENERGY.COM SEMCO Energy Gas Company
kay8643990@YAHOO.COM Superior Energy Company
ebrushford@UPPCO.COM Upper Peninsula Power Company
ronan.patterson@WE-ENERGIES.COM Wisconsin Electric Power Company
kerriw@TEAMMIDWEST.COM Midwest Energy Coop
meghant@TEAMMIDWEST.COM Midwest Energy Coop
tharrell@ALGERDELTA.COM Alger Delta Cooperative
patti.williams@BAYFIELDELECTRIC.COM Bayfield Electric Cooperative
tonya@CECELEC.COM Cherryland Electric Cooperative
sfarnquist@CLOVERLAND.COM Cloverland Electric Cooperative
sboeckman@GLENERGY.COM Great Lakes Energy Cooperative
llopez@LIBERTYPOWERCORP.COM Liberty Power Delaware (Holdings)
kmarklein@STEPHENSON-MI.COM Stephson Utilities Department
debbie@ONTOREA.COM Ontonagon Cnty Rural Elec
sharonkr@PIEG.COM Presque Isle Electric & Gas Cooperative, INC
dbraun@TECMI.COOP Thumb Electric
rbishop@BISHOPENERGY.COM Bishop Energy
mkuchera@BLUESTARENERGY.COM BlueStar Energy
todd.mortimer@CMSENERGY.COM CMS Energy
igoodman@COMMERCEENERGY.COM Commerce Energy
david.fein@CONSTELLATION.COM Constellation Energy
joseph.donovan@CONSTELLATION.COM Constellation Energy
kate.stanley@CONSTELLATION.COM Constellation Energy
kate.fleche@CONSTELLATION.COM Constellation New Energy
mark.harada@CONSTELLATION.COM Constellation New Energy
hendersond@DTEENERGY.COM DTE Energy
mpscfilings@DTEENERGY.COM DTE Energy
Don.Morgan@DUKE-ENERGY.COM Duke Energy
john.finnigan@DUKE-ENERGY.COM Duke Energy
bgorman@FIRSTENERGYCORP.COM First Energy
rillo@LAKESHOREENERGY.COM Lakeshore Energy
vnguyen@MIDAMERICAN.COM MidAmerican Energy

rarchiba@FOSTEROIL.COM My Choice Energy
gbass@NOBLESOLUTIONS.COM Noble American Energy
rabaey@SES4ENERGY.COM Santana Energy
cborr@WPSCI.COM Spartan Renewable Energy, Inc. (Wolverine Power)
john.r.ness@XCELENERGY.COM Xcel Energy
cityelectric@ESCANABA.ORG City of Escanaba
crystalfallsmgr@HOTMAIL.COM City of Crystal Falls
felichel@MICHIGAN.GOV Lisa Felice
mmann@USGANDE.COM Michigan Gas & Electric
tomwhite@GLADSTONEMI.COM City of Gladstone
rferguson@INTEGRYSGROUP.COM Integrys Group
lrgustafson@CMSENERGY.COM Lisa Gustafson
tahoffman@CMSENERGY.COM Tim Hoffman
daustin@IGSENERGY.COM Interstate Gas Supply Inc
krichel@DLIB.INFO Thomas Krichel
pnewton@BAYCITYMI.ORG Bay City Electric Light & Power
aallen@GHBLP.ORG Grand Haven Board of Light & Power
sbn@LBWL.COM Lansing Board of Water and Light
jreynolds@MBLP.ORG Marquette Board of Light & Power
bschlansker@PREMIERENERGYONLINE.COM Premier Energy Marketing LLC
ttarkiewicz@CITYOFMARSHALL.COM City of Marshall
d.motley@COMCAST.NET Doug Motley
kunklem@MICHIGAN.GOV Mary Jo Kunkle - MPSC
nwabuezen1@MICHIGAN.GOV Nicholas Nwabueze
mpauley@GRANGERNET.COM Marc Pauley
ElectricDept@PORTLAND-MICHIGAN.ORG City of Portland
akb@ALPENAPOWER.COM Alpena Power
dbodine@LIBERTYPOWERCORP.COM Liberty Power
leew@WVPA.COM Wabash Valley Power
kmolitor@WPSCI.COM Wolverine Power
ham557@GMAIL.COM Lowell S.
AKlaviter@INTEGRYSENERGY.COM Integrys Energy Service, Inc WPSES
BusinessOffice@REALGY.COM Realgy Energy Services
landerson@VEENERGY.COM Volunteer Energy Services
Ldalessandris@FES.COM First Energy Solutions
rboston@NOBLESOLUTIONS.COM Noble Energy Solutions
pbeckhusen@MUNI.CBPU.COM Coldwater Board of Public Utilities
akinney@HILLSDALEBPU.COM Hillsdale Board of Public Utilities
rjrose@HILLSDALEBPU.COM Hillsdale Board of Public Utilities
mrzwiwers@INTEGRYSGROUP.COM Mich Gas Utilities/Upper Penn Power/Wisconsin
dityler@MICHIGANGASUTILITIES.COM Mich Gas Utilities/Qwest
donm@BPW.ZEELAND.MI.US Zeeland Board of Public Works
KKratt@ghblp.org Grand Haven Board of Light & Power
Teresa.ringenbach@directenergy.com Direct Energy
christina.cable@directenergy.com Direct Energy
Bonnie.yurga@directenergy.com Direct Energy
ryan.harwell@directenergy.com Direct Energy
kadardwa@itctransco.com ITC Holdings Corp.

johnbistranin@realgy.com
jweeks@mpower.org
gaclark2@aep.com
eric@rhhlawtc.com

Realgy Corp.
Jim Weeks
Indiana Michigan Power Company
Ranieri Hanley & Hodek, PLC

Atlas Gas & Oil Company
10691 E. Carter Road, Suite 201
Traverse City MI 49684

BreitBurn Operating, L.P.
515 South Flower Street, Suite 4800
Los Angeles CA 90071

Chevron U.S.A. Inc.
6001 Bollinger Canyon Road
San Ramon CA 94583

James A. Christopherson
Dingeman Dancer & Christopherson PLC
100 N. Park Street
Traverse City MI 49684

James A. Christopherson
Dingeman Dancer & Christopherson PLC
100 N. Park Street
Traverse City MI 49684

James A. Christopherson
Dingeman Dancer & Christopherson PLC
100 N. Park Street
Traverse City MI 49684

James A. Christopherson
Dingeman Dancer & Christopherson PLC
100 N. Park Street
Traverse City MI 49684

DGP Grand Lacs LLC
DGP Antrim Gas LLC
370 17th Street
Suite 2775
Denver CO 80202

Ryann S. Embury
Dingeman Dancer & Christopherson PLC
100 N. Park Street
Traverse City MI 49684

Mark D. Eyster
DLARA/MAHS - MPSC Hearings
7109 W. Saginaw Hwy.
I. D. M A I L
Lansing MI 48917

HighMount Midwest Energy LLC
226 East 16th Street
Traverse City MI 48684

HRF Exploration & Production LLC
990 S. Wisconsin
P.O. Box 160
Gaylord MI 49735-0160

Jordan Development Company, L.L.C.
1503 Garfield Road North
Traverse City MI 49686

Dennis J. Levasseur
Bodman LLP
1901 Saint Antoine Street
6th Floor Ford Field
Detroit MI 48826

Gregory M. Luyt
Bowerman Bowden Ford Clulo & Luyt PC
620 Woodmere Avenue
Suite A
Traverse City MI 49686

Harvey J. Messing
Miller Canfield Paddock & Stone PLC
1 E. Michigan Avenue, Suite 900
Lansing MI 48933

Muskegon Development Company
William C. Myler
1425 S. Mission Road
Mt. Pleasant MI 48858

Joel R. Myler
Muskegon Development Company
311 E. Front Street
Suite 300
Traverse City MI 49684

James A. O'Toole
James A. O'Toole PLLC
43773 Saint Julian Court
Sterling Heights MI 48314-1804

O.I.L. Energy Corp.
954 Business Park Drive, Suite 5
Traverse City MI 49686

Jack D Sage
Varnum, Riddering, Schmidt & Howlett LLP
Bridgewater Place
P.O. Box 352
Grand Rapids MI 49501-0352

Spencer A. Sattler
Michigan Dept. of Attorney General/PSD
7109 W. Saginaw Hwy.
Lansing MI 48917

Terra Energy Company a/k/a Terra Pipeline
Co. Ltd.
1165 Elkview Drive
Gaylord MI 49735

Turtle Lake Club
5215 Turtle Lake Road
Hillman MI 49746

Ward Lake Energy
42180 Ford Road, Suite 101
Canton MI 48187

Sherri A. Wellman
Miller Canfield Paddock & Stone
One Michigan Avenue, Suite 900
Lansing MI 48933