RECORD OF DECISION
FOR
LEASING OF FEDERAL OIL AND GAS ESTATE
ON THE
U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE'S
HURON-MANISTEE NATIONAL FORESTS
NEWAYGO COUNTY, MICHIGAN
NEPA #DOI-ES-030-2013-0008

BUREAU OF LAND MANAGEMENT-EASTERN STATES

Rebecca W. Matz
Preparer Signature
Physical Scientist
Northeastern States Field Office
Mineral Resources Division

12/11/2012
Date

Kurt J. Wadsworth
Reviewer Signature
Environmental Planner/Coordinator
Northeastern states Field Office
Lands and Renewable Resources Division

12/11/2012
Date

DECISION:
It is my decision to offer for lease the 75% U.S. oil and gas interest in 440 acres of the U.S. Department of Agriculture, Forest Service's Huron-Manistee National Forests (HMNF) in Newaygo County, Michigan. In a letter dated November 16, 2012, the Forest Service authorized leasing the U.S. mineral interest in these lands, which were requested in pre-sale lease offer MIES 38349, designated Expression of Interest (EOI) 010. The Forest Service authorization applies only to the U.S. oil and gas interest under Forest Service surface.

The 440 acres is configured as one lease parcel and will be offered for lease subject to the Bureau of Land Management (BLM) standard lease terms, the Forest Service Standard Lease Stipulations for the HMNF, and the Forest Service Lease Stipulations and Lease Notices as identified in the authorization letter. Attachment 1 to this Record of Decision (ROD) is a copy of the Forest Service's authorization package. The package includes the authorization letter, Title Report Request, Worksheets for Deed Examination that indicates the lands available, lease parcel list, Standard Lease Stipulations for the HMNF, list of Lease Stipulations and Lease Notices for the parcel, a map of the lease parcel showing areas affected by the Lease Stipulations, and copies of the deeds.

With the authorization package, the Forest Service provided a copy of an Additional Information Letter that addresses the Forest Service's review of available information regarding the Antrim, Utica, and Collingwood Formations. The Forest Service concluded that there is no new information or circumstances that would warrant additional environmental analysis prior to authorizing leasing.

It is anticipated that this parcel will be offered on the June 20, 2013, Eastern States Oil and Gas Lease Sale, subject to BLM standard lease terms, the Forest Service Standard Lease Stipulations for the HMNF, and the Forest Service Lease Stipulations and Lease Notices as identified in the authorization letter.

ALTERNATIVES:
In 2006, the Forest Service finalized an Environmental Impact Statement (EIS) for revision of the HMNF's 1986 Land and Resource Management Plan (Forest Plan), as amended. The EIS describes a range of alternatives, documents the effects of implementing various management options, provides the basis for determining what changes will be made to the Forest Plan, and evaluates the effects of implementing the revised Forest Plan. The BLM-Eastern States (BLM-ES) was a cooperating agency in preparation of this EIS, which allows the BLM-ES to base the decision to offer a lease on the EIS, as set forth in the National Environmental Policy Act (NEPA) implementing regulations at 40 CFR 5106.3. The final EIS (FEIS) is a companion document to the revised Forest Plan.

The Forest Service used the Forest Plan revision process to accomplish the following in regard to oil and gas resources:

1) Establish desired conditions, goals and objectives for oil and gas resources.
2) Incorporate regulatory requirements of the Federal Onshore Oil and Gas Leasing Reform

Act (FOOGLRA) of 1987 into the Forest Plan by developing and analyzing a programmatic Reasonably Foreseeable Development Scenario (RFDS) for oil and gas leasing and development for the next 10 to 15 years (prepared in cooperation with the BLM-ES, Northeastern States Field Office).
3) Identify National Forest System lands that may be considered administratively available for leasing and if available, under what conditions, as well as identity those lands that are not available.

The HMNF considered and evaluated three alternatives (A, B, and C) in detail and considered, but dismissed from further consideration, seven alternatives, one of which was "No Mineral Leasing". The Forest Service found "No Mineral Leasing" to be inconsistent with current Forest Plan direction and the agency mineral policy. Alternative A was the "No action" alternative, e.g. the current management allocations, activities, and management direction within the 1986 Forest Plan, as amended, would continue. Alternatives B and C were developed to provide a range of choices for addressing the revision topics and issues. In regard to oil and gas, Alternative B activities were the same as Alternative A, except that the Forest Service conducted an analysis of a RFDS for oil and gas, as required by FOOGLRA of 1987, and identified conditions under which National Forest System lands may be considered for oil and gas leasing. Alternative C was similar to B, with certain exceptions, none of which relate to oil and gas. All alternatives adhered to the concepts of multiple-use and ecosystem management.

The evaluation of alternatives in the FEIS provided an adequate basis for identifying the one alternative that came closest to maximizing net public benefits, while providing adequate environmental protection for surface and subsurface resources. On March 20, 2006, the Regional Forester signed a ROD for the selection of the HMNF's 2006 Forest Plan which entirely replaces the 1986 Forest Plan and its subsequent twenty-five Amendments. The Regional Forester selected Alternative B, as modified, in the FEIS as the 2006 Forest Plan for the HMNF. Alternative B, as modified, falls within the range of alternatives between B and C and reflects a balance based on the extensive public comments received on the Proposed Revised Forest Plan and Draft EIS. Alternative B, as modified, is also the environmentally preferred alternative.

The analysis documented in the FEIS served as the basis for the Forest Service's "availability" decision for leasing that was made in the Forest Service's ROD. Under the 2006 Forest Plan, the HMNF lands are, in general, open to mineral exploration. The only lands statutorily withdrawn from oil and gas leasing are the Nordhouse Dunes Wilderness Area; no lands are administratively unavailable for oil and gas leasing; and all other lands are considered to be available with specified Forest Plan Standards and Guidelines. Exploration, development, production of mineral and energy resources and reclamation activities are considered to be part of the Forest Service's management responsibilities.

There are approximately 480,000 acres of federally owned oil and gas development rights on the HMNF, including the 440 acres addressed in this ROD. The remaining acreage of federal surface has private or state held oil and gas development rights. Under the 2006 Forest Plan, 969,727 acres of federally owned surface would be available for mineral leasing. This includes the 480,000 acres

of federally owned subsurface rights. For each Management Area on the HMNF, the Forest Plan Standards and Guidelines identify restrictions that must be applied to protect resource values should Federal oil and gas leasing occur. These restrictions include no surface occupancy, controlled surface use, and timing limitations.

The Forest-wide Standards and Guidelines state "Department of Agriculture consent for leasing of Federal oil and gas on specific lands will be made following review/validation of the assumptions and analysis in the Forest Plan Environmental Impact Statement, verification that there are no changed conditions, and documentation of compliance with 36 CFR 228.102. The Forests' leasing recommendation to the Regional Office will include Standards and Guidelines as required lease stipulations/notices." (2800 Minerals and Geology (2800), I. Minerals-General, B. 1.)

MITIGATION AND MONITORING:
The BLM will offer a lease subject to the BLM standard lease terms, the Forest Service Standard Lease Stipulations for the HMNF, and Lease Stipulations and Lease Notices provided in the lease authorization letter. The Forest Service developed both Forest-wide and Management Area-specific Standards and Guidelines as a part of the environmentally preferable alternative in the FEIS. The Forest Service reviewed the proposed lease parcel and selected Standards and Guidelines to be applied as Lease Stipulations and Lease Notices based on resource values present on the lease parcel.

The FOOGLRA of 1987 granted the Forest Service authority to approve the surface use program for an Application for Permit to Drill (APD) on a Federal oil and gas lease, while the BLM has authority to approve the drilling program for an APD. Assuming a lease is issued, the Forest Service will evaluate surface use proposals for conformance with the Forest Service Standard Lease Stipulations for the HMNF and Lease Stipulations and Lease Notices. The BLM will evaluate proposed drilling operations for conformance with the BLM lease terms, regulations and standards. As appropriate, the Forest Service and the BLM will document the analysis of impacts for site-specific operations and development of site-specific mitigation measures in a joint NEPA document. The Forest Service and the BLM would jointly administer the operations during the life of the project with inspections by BLM and Forest Service field personnel at various stages to assure that mitigation measures outlined in the lease and the specific operational proposals are being carried out.

If the expected development exceeds the RFDS of the FEIS, and/or could result in significant cumulative effects not discussed in the FEIS, a supplemental EIS may need to be done.

PUBLIC INVOLVEMENT:
The HMNF implemented a thorough and active public participation campaign throughout the planning process. The process began in the mid 1990's with the "Need for Change" process. This process temporarily ceased due to a legislative mandate that no additional plan revisions be initiated until a new planning rule was implemented. Input received during the mid-1990's effort was considered when the plan revision process resumed in 2002. The HMNF utilized a variety of public involvement tools and methods including public meetings, open houses, newsletters, news

releases, and meetings with specific special interest groups when requested.

Public meetings were held in October and November 2002 and again in February 2003. After the Notice of Intent was published in the Federal Register on September 18, 2003, the HMNF held 10 open houses throughout the state. Following the March 18, 2005 Notice of Availability of the Draft EIS and Proposed Revised Forest Plan, the HMNF held a series of eight open house meetings throughout the State. Roughly 350 copies of the Draft EIS and Proposed Revised Forest Plan were distributed in print or CD ROM format. Notification was also provided to roughly 1,450 individuals on the HMNF mailing list indicating these documents could be viewed on the HMNF website. During the 3-month public comment period following the March 18, 2005 release of the draft documents, the HMNF received roughly 1,650 pieces of mail (letters, postcards, e-mails). Comments were from individuals, organizations, and all levels of government, including tribal governments.

RATIONALE:

Factors on which I have based my decision include:

1) The Forest Service authorized oil and gas leasing following completion of a FEIS that fully disclosed to the public the potential impacts to the HMNF of a RFDS under three alternatives. The Forest Service chose to implement the environmentally preferred alternative (Alternative B, as modified).
2) Prior to authorizing leasing the lands, the HMNF validated that leasing was adequately analyzed in the FEIS and is consistent with the Forest Plan. The Forest Service provided the BLM an Additional Information Letter that addresses the Forest Service's review of available information regarding the Antrim, Utica, and Collingwood Formations and the conclusion that there is no new information or circumstances that would warrant additional environmental analysis prior to authorizing leasing.
3) The HMNF reviewed the requested lands and verified which Forest Plan Standards and Guidelines must be applied as Lease Stipulations and Lease Notices for protection of resource values. The stipulations include no surface occupancy and controlled surface use. These restrictions are specified in the November 16, 2012 authorization package.
4) The Federal government has a policy of fostering and encouraging private enterprise in the development of a stable domestic minerals industry and the orderly and economic development of domestic resources (Mining and Minerals Policy Act of 1970). The BLM's 2008 Energy and Mineral Policy reflects this policy in stating" The BLM actively encourages private industry development of public land energy and mineral resources, and promotes practices and technology that least impact natural and human resources."
5) The BLM's Energy and Mineral Policy further states "BLM…multiple-use management decisions will recognize that energy and mineral development can occur concurrently or sequentially with other resource uses, providing that appropriate stipulations or conditions of approval are incorporated into authorizations to prevent unnecessary or undue degradation, reduce environmental impacts, and prevent a jeopardy opinion."
6) Objectives of the Forest Service's Minerals Program Policy include facilitating the orderly exploration, development, and production of mineral and energy resources within the National Forest System on lands open to these activities and ensuring that exploration,

development, and production of mineral and energy resources are conducted in an environmentally sensitive manner and integrated with the planning and management of other resources using the principles of ecosystem management.

7) This decision is consistent with the BLM policy of making mineral resources available for leasing and development while protecting both surface and subsurface resources, and complies with coordination requirements and responsibilities of the FOOGLRA of 1987 and Energy Policy Act of 2005.
8) The decision to offer and issue a lease, subject to the BLM standard lease terms, the Forest Service Standard Lease Stipulations for the HMNF, and Lease Stipulations and Lease Notices, as provided in the November 16, 2012 authorization package, will not result in any undue or unnecessary environmental degradation nor require preparation of a statement of adverse energy impacts.

Approving Official:

_____ _____

Deputy State Director Date
Division of Natural Resources

ATTACHMENT 1

Forest Service Authorization Package
for EOI 010/MIES 38349

USDA United States Department of Agriculture | Forest Service | Eastern Region | 626 E. Wisconsin Suite 800 Milwaukee, WI 53202

File Code: 2820
Date: NOV 16 2012

RECEIVED

NOV 19 2012

BUREAU OF LAND MANAGEMENT
ES-NSFO

Dr. John Lyon
Eastern States Director
Bureau of Land Management
7450 Boston Blvd.
Springfield, IL 22153-3121

Dear Dr. Lyon:

The Forest Service authorizes the Bureau of Land Management to offer oil and gas mineral interest contained in Expressions of Interest EOI-010/MIES-38349 on 440 acres of the Huron-Manistee National Forest (Forest) for the next competitive oil and gas lease sale subject to the enclosed stipulations and notifications.

A copy of the Forest March 2006 Record of Decision, Land and Resource Management Plan (LRMP), Final Environmental Impact Statement and accompanying maps are on file in the Eastern Regional Office. This analysis was completed in accordance with 36 C.F.R. 228.102(c) which outlines the requirements for leasing analyses. The "availability" decision under 36 C.F.R. 228.102(d) was made in the Record of Decision. In processing these specific lands for leasing, we verified the leasing of these tracts has been adequately analyzed in the EIS and is consistent with the LRMP in accordance with 36 C.F.R. 228.102(e). This validation process follows direction provided by the Washington Office on "Implementation of USDA Oil and Gas Leasing Regulations" in a letter dated February 24, 2004. No new information or circumstances arose to necessitate additional environmental analysis prior to making our recommendation on consent.

Please see the enclosed document "Additional Information Letter" for a review by the Forest of available information on shale plays in and around the Forest. The letter was sent for a separate EOI, but includes information for the entire Newaygo County where the subject lands are found.

Enclosed are the following documents for the parcels offered:

- Title report, worksheets for deed examination, availability lists with a copy of the pertinent EOIs as provided by the BLM and forwarded to the Forest by the Regional Office.
- Parcel list and recommended lease notice/stipulations.
- Maps showing areas affected by stipulations (the parcel list contains proximate legal descriptions by aliquot parts of the areas affected by stipulations).
- Copies of deeds where parcels are described as part of a tract, lot, or metes and bounds description, or have partial mineral interest.

If you have questions, please contact Jessica Stuntebeck at (414) 297-3342 (jjstuntebeck@fs.fed.us) or Caray Grundman at (414) 297-3652 (cgrundman@fs.fed.us).

Sincerely,

for NORA B. RASURE
Acting Regional Forester

Enclosures (7)

cc: Kemba Anderson, Caray R Grundman, Jessica J Stuntebeck, Jennifer Spencer, Mary Beth Borst

Title Report Request
USDA Forest Service - Region 9

Serial Number:	EOI-010 MIES-38349
Forest:	Manistee
State:	Michigan
Recd from BLM:	4/13/10
To Forest:	5/3/10

X	Oil/Gas
☐	Hardrock

1. Does the description conform to that contained in the deed to the United States? Yes ☐ No ☐
   (If 'no', describe the lands as shown on your records.)
   1a. Is the acreage applied for correct? Yes ☐ No ☐
   (If 'no', indicate correct acreage by legal subdivision)

SEE WORKSHEET

2. Specify any mineral reservations contained in the conveyance to the United States, or any prior conveyance, as evidenced by abstract of title. Indicate:
   a. Reservation by grantor (specify):
   b. Minerals outstanding in third parties (specify):

SEE WORKSHEET

3. If the land, has been conveyed by the United States, specify any provision in conveyance reserving minerals to the United States?

SEE WORKSHEET

4. Under what authority was land acquired, or is it being administered?
   ☐ Weeks Law, as amended
   ☐ Other, please specify:

SEE WORKSHEET

5. Give the name, address and accounting location of your office to receive credit for the deposit of collections:

   Director, Financial Management
   USDA Forest Service
   626 E. Wisconsin Avenue
   Milwaukee, WI 53202

6. Is exercise of granted rights consistent with the purposes for which the land was acquired or is being administered? Yes ☐ No ☐
   If 'yes', stipulate necessary terms and conditions. (If 'none', write 'none').

SEE FOREST SERVICE STIPULATIONS

7. Give the fund symbol to receive collections: 125008 218 (Acquired Lands)

FOR RO USE ONLY

Regional Forester Date

Worksheet for Deed Examination (corrected 1/3/11)

Name:	Meridian Energy Corp.
ES No.:	EOI-010

Land Description	Acres	Case No. And Grantor	Date of Deed Or Decree	Mineral Reservation
		Lands Available		
T.16N., R.13W. (Newaygo County) Sec. 17 N2SW, SWSW, NWSE, N2NE, SWNE, NW	440.00	Union Bank of Michigan #1613-11	10/30/39	75% USA mineral interest - 25% mineral interest outstanding in third party
Total Acres	**440.00**			

United States Department of the Interior

Bureau of Land Management-Eastern States
Milwaukee Field Office
626 E. Wisconsin Avenue, Suite 200
Milwaukee, Wisconsin 53202-4617

IN REPLY REFER TO:
3120 (03410)
Lease Offer MIES 38349 (EOI-010)

April 13, 2010

Mr. Paul Stockinger
Natural Resources Team
USDA Forest Service - Region 9
626 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

Dear Mr. Stockinger:

The Bureau of Land Management - Eastern States has received a Lease Offer for oil and gas leasing for approximately 440 acres of the Huron-Manistee National Forest, Newaygo County, Michigan. Enclosed is a copy of lease offer MIES 38349 requested by industry to be offered on a lease sale at the earliest possible date. Should the Forest Service decide to consent to leasing of the subject land, please provide our office with the original listing of the land for which consent is given, a title report for the affected land, and any lease stipulations that are needed to mitigate impacts to surface resources. Please forward an entire copy to our State Office in Springfield, Virginia.

If you have any questions, please contact Dave LaChance in our Division of Mineral Resources at (414) 297-4145 or dave_lachance@blm.gov.

Sincerely,

Mark Storzer
Field Manager

Enclosure

cc: ES-934

Form 3100-11*
(March 1984)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0008
Expires January 31, 1986

EASTERN STATES

Serial No. 038349

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned (reverse) offers to lease all or any of the lands in item 2 that are available for lease pursuant to the Mineral Leasing Act of 1920 (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands (30 U.S.C. 351-359), the Attorney General's Opinion of April 2, 1941 (40 OP. Atty. Gen. 41), or the

Read Instructions Before Completing

1. Name MERIDIAN ENERGY CORPORATION

Street 2500 KERRY STREET

City, State, Zip Code LANSING, MICHIGAN 48912

BUREAU OF LAND MANAGEMENT
EASTERN STATES

2. This offer/lease is for: (Check Only One) ☐ PUBLIC DOMAIN LANDS ☒ ACQUIRED LANDS (percent U.S. interest 75%)

Surface managing agency if other than BLM: Department of Interior '88 MAR 25 P12:17 Unit/Project Manistee National Forests

Legal description of land requested:

T. 16N R. 13W Meridian Michigan State Michigan County Newaygo

ALEXANDER

Section 17: N/2 NE/4, SW/4 NE/4, NW/4
N/2 SW/4, SW/4 SW/4, NW/4 SE/4

Containing 440.00 acres more or less formerly ES-30342

Total acres applied for 440.00

Amount remitted: Filing fee $ 75.00 Rental fee $ 660.00 Total $ 735.00

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T.	R.	Meridian	State	County

Total acres in lease _____

Rental retained $ _____

In accordance with the above offer, or the previously submitted simultaneous oil and gas lease application or competitive bid, this lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described in item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

Type and primary term of lease:

☐ Simultaneous noncompetitive lease (ten years)

☐ Regular noncompetitive lease (ten years)

☐ Competitive lease (five years)

☐ Other _____

THE UNITED STATES OF AMERICA

by _____ (Signing Officer)

_____ (Title) _____ (Date)

EFFECTIVE DATE OF LEASE _____

Manistee National Forest
Corrected Parcel List (1/3/11)

	Acres
Total Acres Available	**440.00**
Acquired Lands **125008 218**	**440.00**

ACQUIRED – Manistee NF

EOI-010
MIES-38349

Michigan, Newaygo County, Manistee NF
T16N, R13W, Michigan Meridian
Sec. 17, N2SW, SWSW, NWSE, N2NE, SWNE, NW
Total Acres: 440.00
Notice: 75% USA mineral interest on entire parcel – 25% outstanding in third party
Subject to:
Forest Service Standard Lease Stipulations
Lease Notices 1, 2, 3, 6
Lease Stipulation 3 applies to all lands except E2SENWSE
Lease Stipulation 4 applies to E2SENWSE
Lease Stipulation 22 applies to E2SENWSE

USDA – FOREST SERVICE
STANDARD STIPULATIONS - LEASE
(FSM 2820)

Serial No.: MIES 38349 (EOI-010)
Lessee:
National Forest: Huron-Manistee NF

The lessee is notified and agrees:

All work and any operations authorized under this permit shall be done according to an approved operating plan on file with the Forest Supervisor at 1755 S. Mitchell St. Cadillac, MI 49601. Plans generally require a minimum of 45 days for Forest Service review. Bureau of Land Management must also review and also approve.

Operating plan will contain information the Forest Officer determines reasonable for assessment of (1) public safety, (2) environmental damage, and (3) protection for surface resources. Content of such plans will vary according to location and type of activity and may contain:

1. Steps taken to provide public safety.
2. Location and extent of areas to be occupied during operations.
3. Operation methods including size and type of equipment.
4. Capacity, character, standards of construction and size of all structures and facilities to be built.
5. Location and size of areas where vegetation will be destroyed or soil lay bare.
6. Steps taken to prevent and control soil erosion.
7. Steps taken to prevent water pollution.
8. Character, amount, and time of use of explosives or fire, including safety precautions during their use.
9. Program proposed for rehabilitation and revegetation of disturbed land.

Copies of all permits obtained from State or Federal agencies pertaining to work might be required. Archeological studies, if required, will accompany plan.

The Forest Supervisor or his/her designated agent has authority to temporarily suspend or modify operations in whole or in part due to emergency forest conditions such as high fire danger or other unsafe situations.

The lessee must keep the Authorized Officer informed about progress of operations to the extent reasonably necessary for assuring public safety. This is especially important with geophysical inventory and testing activities because of their mobile nature. The Authorized Officer will alert the lessee to circumstances, which may affect safe and efficient conduct of work activities.

Terms of this lease are considered violated if not done according to these stipulations.

See Special Stipulations & Notifications

_____
Lessee

R9-2800-6a (3/83)

Huron-Manistee National Forest
EOI-010

Lease Notices

Lease Notice #1) Operations under this lease will be consistent with the Standards and Guidelines found in the Huron-Manistee National Forests Land and Resource Management Plan (Plan) and hereby incorporated into this lease in their entirety.

Lease Notice #2) Surface disturbance will be limited to that necessary for reasonable, safe and prudent extraction of the oil and gas. Measures will be implemented to minimize erosion and sedimentation. Road and stream crossings will be planned to eliminate stream crossings whenever practical.

Lease Notice #3) Processing of proposed surface use plans of operation on National Forest System lands includes site-specific analysis to determine effects to threatened, endangered, or sensitive species. This analysis may require surveys for certain plants and/or animals. Depending upon the species of concern, it may be necessary to survey through spring, summer, and fall. The extent of required surveys could delay permit issuance. Operators are encouraged to submit proposals as soon as possible to facilitate the scheduling of necessary survey work.

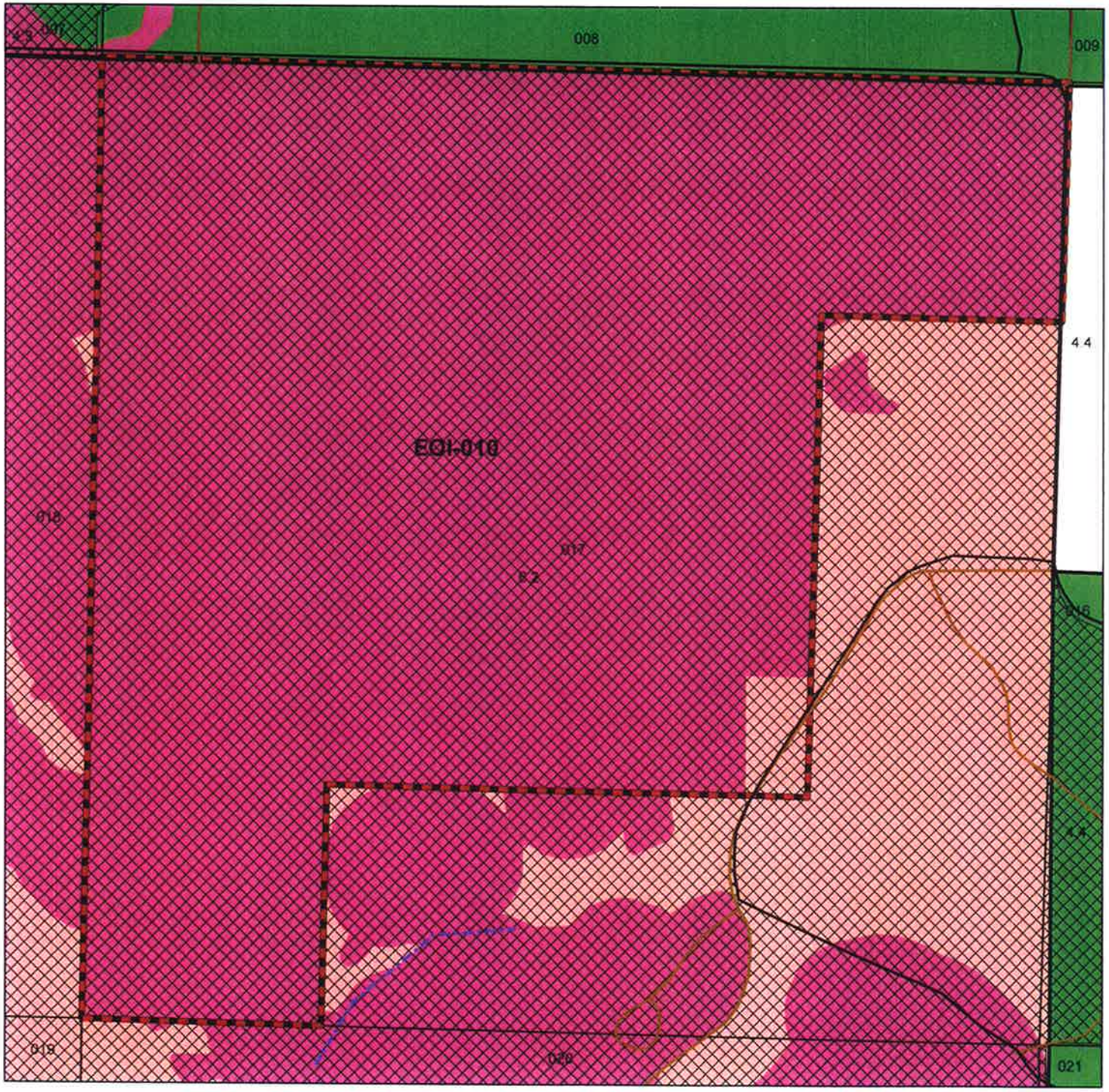
Lease Notice #6) Portions of this lease parcel have had occurrences of certain threatened, endangered, or sensitive species or communities. At the time a drilling permit application or other request for surface use is filed, a site-specific review will be done to determine potential effects to these species. Depending upon the findings of the site-specific review, additional operating constraints, such as seasonal restrictions or re-location of the proposed wellsite, may be necessary to mitigate effects to threatened, endangered, or sensitive species or communities.

Lease Stipulations

Stipulation #3) All or portions of this lease parcel are located in an area managed as Old Growth. In accordance with the Huron-Manistee National Forest Plan, no surface occupancy is permitted on this parcel due to the lack of existing reasonable access.

Stipulation #4) All or portions or this lease parcel are located in an area managed as Old Growth. Surface disturbing activities will take place outside of old growth where there are reasonable alternative locations. Due to the presence of existing reasonable access via roads/trails, surface occupancy is permitted, however, is limited to existing roads and trails.

Stipulation #22) This parcel is located in an area managed as a semi-primitive motorized area. The Huron-Manistee National Forest Plan limits surface location density in these areas. The maximum surface development density in this area is 1 surface location per 160 acres. Production facilities will be located outside the area when practical and needed pumps will be run by electric motors or equipped to minimize noise.



EOI-010

Manistee N.F.
Newaygo County

- Other Roads
- USFS Roads
- North Country Trail
- Management Areas
- EOI-010
- Forest Boundary
- Oldgrowth
- Not Available
- No Surface Occupancy
- KBB / Wildlife Emphasis
- 1 well per 160 acres
- 1 well per 640 acres
- USFS Ownership

N
W E
S

The remaining lands in this particular abstract passed of record from said Liquidating Trustee of the A. E. Cartier Sons Company to Harry D. Jewell and Euphemia S. Jewell, his wife, by the deed reported at item 27.

At item 29 Edith C. Sligh acquired an undivided 1/3 interest in all of the concerned lands by deed from Harry D. Jewell and wife.

At item 36 Harry D. Jewell and wife conveyed to Fred R. Jean and Sadie S. Jean, his wife, an undivided 1/3 interest in the concerned lands without exception or reservation.

The Fred R. Jean interest in said lands passed to Edith C. Sligh at item 38 with a reservation of all minerals, which would amount to a reservation of an undivided 1/3 interest in said minerals. It is, however, reported at item 39 that on January 7, 1929, certain oil, gas and mineral rights in said lands were owned by Mabel L. Sippy, but no deed for said interest appears of record.

At item 33 Edith C. Sligh acquired the remaining undivided 1/3 Harry D. Jewell interest with a reservation to the grantors in said deed of an undivided 1/6 interest in all minerals, which would be an undivided 1/6 of an undivided 1/3 interest therein. Said mineral interest was subsequently conveyed to Edith C. Sligh at item 40.

At item 41 the said Edith C. Sligh conveyed to Harry D. Jewell and wife an undivided 1/4 interest in the minerals.

At item 43 all of the concerned lands in this particular abstract were conveyed by Edith C. Sligh to Union Bank of Michigan, excepting said outstanding mineral rights.

At page 75 of Volume 7 is reported the recent recordation of a quitclaim deed from Percy McDonald, widower, to Grand Rapids Trust Company as Liquidating Trustee of the A. E. Cartier Sons Company covering the SW/SW/4 of Section 7, T 16 N, R 13 W (see item 39). Said title passed from said Liquidating Trustee to Harry D. Jewell and wife by the warranty deed of May 14, 1929, reported at item 27.

Abstract "B"

Township 16 North, Range 13 West.

Section 17: N 3/4, SE/SE/4

Exhibit "C-1" (Volume V) and the last paragraph of the certificate at page 19 of Volume V reports the due patenting of all of the immediately concerned land by the United States to the State of Michigan for Flint & Pere Marquette Railway Company, and item 11 reports the due conveyance of the concerned lands by the Trustees for said railroad company on August 3, 1882, to Antoine E. Cartier and Frank Filer.

Said land thereafter passed through items 12 and 19 to The Danaher and Melendy Company, and exhibit "F" (Volume V) reports the nonexistence of any railroad over and across Section 17, Township 16 North, Range 13 West, hence, the easement granted at item 24 to the Flint & Pere Marquette Railroad Company is of no effect.

The A. M. Todd Company, Limited, acquired title to the concerned land at item 25, subject to said nonexistent right-of-way easement for railroad, and at item 28 conveyed the said land to A. M. Todd Company.

At items 29 and 30 Harry D. Jewell and Euphemia A. Jewell, his wife, acquired an undivided 1/2 interest therein, and Edith C. Sligh acquired the remaining 1/2 interest.

Union Bank of Michigan acquired the Harry D. Jewell and Euphemia C. Jewell undivided 1/2 interest through foreclosure proceedings reported at items 30, et seq, as a result of the foreclosure of the mortgage reported at item 31 and assigned at items 32 and 33, and at item 42 the Circuit Court Commissioner executed to Union Bank of Michigan a deed of conveyance of said undivided 1/2 interest without reservation or exception.

At item 44 said undivided 1/2 interest in said land was conveyed by said Union Bank of Michigan to Edith C. Sligh, previous to which Edith C. Sligh had conveyed to Harry D. Jewell and wife an undivided 1/6 of an undivided 1/2 interest therein, the said Edith C. Sligh not having acquired title to the remaining undivided 1/2 interest until the year 1938 (see item 44).

At item 45 Harry D. Jewell and his wife conveyed to Edith C. Sligh an undivided 1/6 interest of their undivided 1/12 interest in oil, gas and other minerals, being an undivided 1/72 interest, and at item 46 said Edith C. Sligh conveyed to Harry D. Jewell and wife an undivided 1/4 interest in all minerals upon said lands.

At item 47 Edith C. Sligh conveyed the concerned lands, subject to said outstanding mineral interest, to Union Bank of Michigan.

Abstract "C"

Township 16 North, Range 13 West

Section 17: SE¼SW¼, S½SE¼

The chain of title involving the lands concerned with this particular abstract is practically identical with the chain concerned with the lands in Abstract "B", including the easement deed to Flint & Pere Marquette Railroad Company at item 24, and reference is made to exhibit "P" (Volume V) certifying to the nonexistence of any railroad upon the concerned lands.

The foreclosure of the Harry D. Jewell and Euphemia S. Jewell undivided 1/2 interest, resulting in the deed of said interest to Union Bank of Michigan at item 42, is concerned herewith.

Abstract "D"

Township 16 North, Range 13 West

Section 18: Entire Section

Exhibit "C", et seq, reports the due patenting of all of the lands in Section 18, Township 16 North, Range 13 West, by United States of America to various individuals and to the State of Michigan.

The W½NW¼ of Section 18, T 16 N, R 13 W, referred to at item 4 was duly patented to the State of Michigan, and page 18 of Volume V reports the due patenting of said description by the State of Michigan to John A. Wheeler. Through subsequent conveyances reported at items 4, 5, 12, 13, 14, 15, 16, 17 and 18, said description comes down of record to Antoine E. Cartier.

Item 19 reports the due patenting of the E½NW¼ and NE¼SW¼ of Section 18 by the United States to William Houghtaling, and at item 20 said lands were conveyed to Silas P. Hovey.

Item 21 reports the issuance of United States Patent to Silas P. Hovey covering the SE¼SW¼ of Section 18, and item 22 reports the due patenting of the W½NE¼ and SE¼NE¼ of Section 18 to William G. Hinman, who at item 23 conveyed said descriptions to Silas P. Hovey and James H. Kidd, with Silas P. Hovey acquiring the James H. Kidd interest in the W½NE¼ and SE¼NE¼ of Section 18 at item 24.

Item 26 reports that Silas P. Hovey acquired the Daniel B. Hewit interest in the N½SE¼ of Section 18, which was patented to Daniel B. Hewitt by United States of America at item 25.

United States Department of Agriculture
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File Code: 2820
Route To:

Date: December 22, 2011

Subject: EOI-72, EOI-861 - Additional Information

To: Regional Forester, R-9

By letters dated September 28 and October 31, 2011, we transmitted the Forests' recommendation on leasing federal oil and gas resources under National Forest System lands identified in Expressions of Interest (EOIs) 861 and 72, respectively. All of this acreage is in Newaygo County, on the southern part of the Manistee National Forest. Both letters stated that the recommendation on "consent" was based on the existing environmental analysis documented in the Final Environmental Impact Statement (FEIS) for the Forests' Land and Resource Management Plan (LRMP) and no new information or circumstances have arisen that would necessitate additional environmental analysis prior to making this recommendation.

Recent interest in possible Marcellus shale gas exploration and hydraulic fracturing in states such as Pennsylvania, West Virginia, and Ohio prompted us to consider whether or not such development would be likely for the Huron-Manistee National Forests (HMNF) or more specifically, for the areas nominated under EOIs 72 and 861. In Michigan, since the 1950s, more than 12,000 wells have been hydraulically fractured. Hydraulic fracturing has been used extensively for many years in roughly 9,900 Antrim shale wells in Michigan, which produce natural gas at depths of 500 to 2000 feet. According to the Michigan Department of Environmental Quality, there is no indication that traditional hydraulic fracturing techniques used in the state have ever caused damage to ground water or other resources.

There is a relatively new play in Michigan known as the Utica/Collingwood shale. Depths to the Utica/Collingwood range from approximately 4,100 to 9,000 feet. Hydraulic fracturing of these horizontally completed wells requires significantly larger volumes of fluids. To date, four Utica/Collingwood wells have been horizontally drilled and fractured – one in Missaukee County, one in Cheboygan County, and two in Kalkaska County (these two are currently being flow tested or fractured) (*Michigan Oil and Gas News*, November 25, 2011). It is unknown at this time as to whether the Utica/Collingwood wells are considered a viable producing formation.

A review of available information on the Antrim, Utica, and Collingwood formations indicates the Manistee National Forest lies outside the mapped known geological extent of the these formations and, therefore, would probably not see drilling in these formations. The same review indicates the Huron National Forest lies within the mapped geological extent of the Utica and Collingwood formations, including the portion that has been identified as prospective for natural gas. The far northeastern portion of the Huron National Forest may be underlain by a potentially prospective portion of the Antrim Shale. In 2005, the Forest processed four drilling applications for Antrim Shale on the Huron Forest in Alcona County. The company decided not to pursue these wells. To date, Antrim Shale development has not occurred on the HMNF. It is not

possible at this time to definitively identify the potential or timeframe for development of these formations on the Huron National Forest. Although, assuming the development of these formations proves economic, the potential for such development on the Huron National Forest appears better then even within the next five years.

Appendix D of the Forest Land and Resource Management Plan (LRMP) includes the Reasonably Foreseeable Development Scenario (RFDS) for oil and gas leasing/development. This RFDS projected a total of 88 wells would be drilled on National Forest System lands over the next 10-15 years (following plan approval in 2006) with a total initial cumulative disturbance of 384 acres. This projection equates to approximately 6-9 wells per year. Monitoring data subsequent to 2006 indicates that there have been a total of nine wells drilled over the past five+ years, which equates to almost two wells per year (10% of total wells projected). Total initial disturbance for these nine wells is approximately 27.25 acres (7% of total projected disturbance over the life of the plan). Actual oil and gas development is well below projections documented in the RFDS and analyzed in the LRMP/EIS.

Based on a review of existing information relative to the Antrim, Collingwood, and Utica formations, we have verified that the leasing of the parcels included in EOI-72 and EOI-861 has been adequately analyzed in the LRMP Final Environmental Impact Statement and is consistent with the LRMP in accordance with 36 CFR 228.102(e). No new information or circumstances have arisen that would necessitate additional environmental analysis prior to making our recommendation on consent.

If you have any questions or require additional information, please contact Terry Saarela at (231)775-5023, ext. 1-8733 or tsaarela@fs.fed.us.

/s/ Mary A. Doke (for)
BARRY PAULSON
Forest Supervisor

cc: Randy Rabideaux
Jessica J Stuntebeck
Diane T Walker