

MINUTE ITEM

This Calendar Item No 31
was approved as a Minute Item
by the State Lands
Commission by a vote of 3
to 0 at its 3/24/83
meeting.

CALENDAR ITEM

31

3/24/83
W 40275 PRC 6396
Graber/
Livenick

AWARD OF A NEGOTIATED
OIL AND GAS LEASE

APPLICANT: Northern Michigan Exploration Company
5500 Ming Avenue, Suite 210
Bakersfield, California 93309

AREA, TYPE LAND AND LOCATION:
1,240 acres of uplands on the western boundary
of the Gray Lodge State Game Refuge in
Butte County, California.

PERTINENT INFORMATION:

P.R.C. Section 6815 provides that the
Commission may negotiate and enter into
leases for compensation to the State for
the development of State lands through
drilling from adjoining lands only where
the competitive bid provisions of P.R.C.
Section 6827 are impracticable by reason
of the property's inaccessibility from
surface drill sites reasonably available
or obtainable.

A 1

S 1

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These conditions exist in the proposed lease area:

- A. The Department of Fish and Game was advised of the proposed project and advised that drillsites should not be located within the Wildlife Refuge.
- B. The State parcel is adjacent to lands under lease to the applicant (see Exhibit "A") which limits reasonable development of the applicant's prospect. For these reasons, Staff recommends a negotiated oil and gas lease. Under the proposed oil and gas lease, the applicant plans to drill from private lands and to bottom under State lands. If production from adjoining lands results in drainage of State lands, the lease provides for drilling of offset wells.

As a consideration of the lease, the applicant agrees to pay in money to the State, annually in advance, \$10 per acre and a 30 percent flat rate royalty on total production of all oil and gas produced from State-owned lands, as specified in the lease, on file in the office of the State Lands Commission. Northern Michigan Exploration Company also agrees to pay to the State five percent of the value of all oil or gas produced by wells drilled through the parcel into adjacent lands.

PREREQUISITE ITEMS:

The proposed lease has been reviewed by Staff Counsel who has advised that the proposed negotiated lease will comply with the applicable provisions of the law and the rules and regulations of the Commission.

This project is situated on uplands within the Gray Lodge Game Refuge which have not been nominated as possessing significant environmental values pursuant to P.R.C. 6370.1. A Staff review of available

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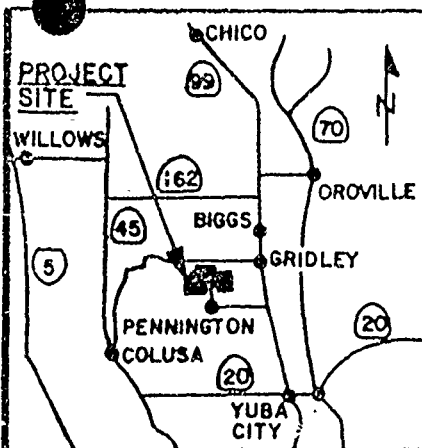
environmental information indicates no reason to identify the subject parcel as having such values at this time.

AB 884: 5/22/83.

EXHIBITS: A. Site Map.
B. Land Description.
C. Negative Declaration.

IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT A NEGATIVE DECLARATION (ND 314) WAS PREPARED BY THE STATE LANDS COMMISSION PURSUANT TO THE PROVISIONS OF THE CEQA, AND THAT SUCH DOCUMENT WAS REVIEWED AND CONSIDERED, CAL. ADM. CODE 15083 AND 15085.
2. FIND THAT THE PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT UPON THE ENVIRONMENT, CAL. ADM. CODE 15083 AND 15085.
3. FIND THAT IN ACCORDANCE WITH P.R.C. SECTION 6815, AS TO THE 1,240 ACRES OF UPLANDS, BUTTE COUNTY, THE PROVISIONS OF SECTION 6827 ARE IMPRACTICAL BY REASON OF ITS INACCESSIBILITY FROM SURFACE DRILLSITES REASONABLY AVAILABLE OR OBTAINABLE.
5. AUTHORIZE, PURSUANT TO P.R.C. DIVISION 6, THE ISSUANCE OF AN OIL AND GAS LEASE TO NORTHERN MICHIGAN EXPLORATION COMPANY, OF 1,240 ACRES OF STATE-OWNED LANDS DESCRIBED IN EXHIBIT "A", ATTACHED AND BY REFERENCE MADE A PART HEREOF; SUCH LEASE IS TO BE ISSUED ON THE TERMS AND CONDITIONS DESCRIBED IN THE LEASE FOUND IN FILE W 40275 LOCATED IN THE OFFICES OF THE COMMISSION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING TERMS: AN ANNUAL RENTAL RATE OF \$10 PER ACRE, A 30 PERCENT FLAT RATE ROYALTY ON ALL OIL AND GAS PRODUCED FROM STATE LANDS, AND A FIVE PERCENT ROYALTY RATE ON ALL OIL AND GAS PRODUCED BY WELLS DRILLED THROUGH STATE LANDS INTO ADJACENT PRIVATE LANDS WHICH HAVE NOT BEEN INCLUDED IN A POOLING OR UNITIZATION AGREEMENT APPROVED BY THE STATE.



VICINITY MAP


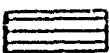
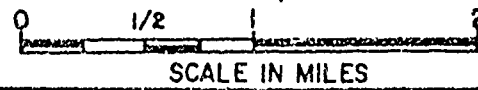
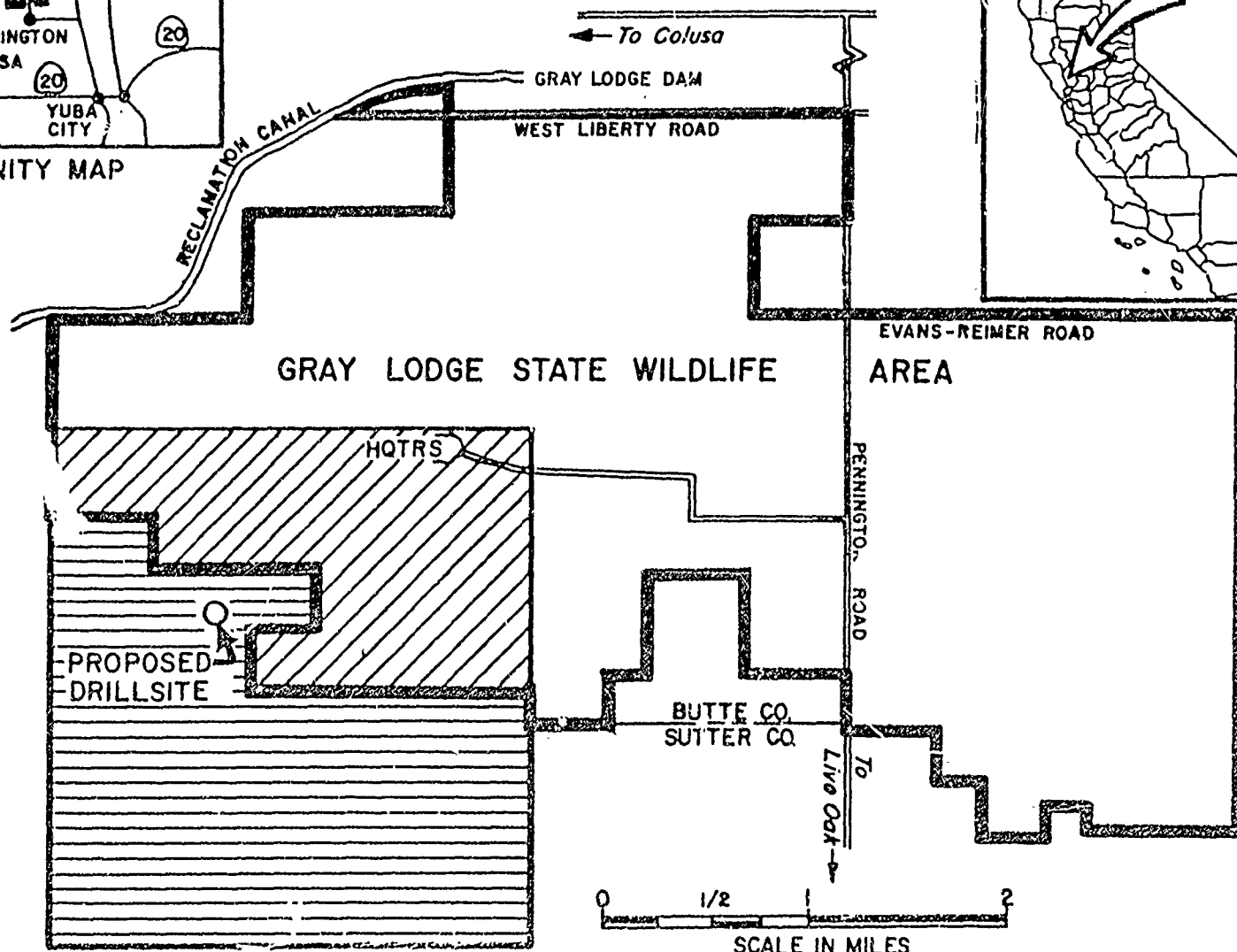
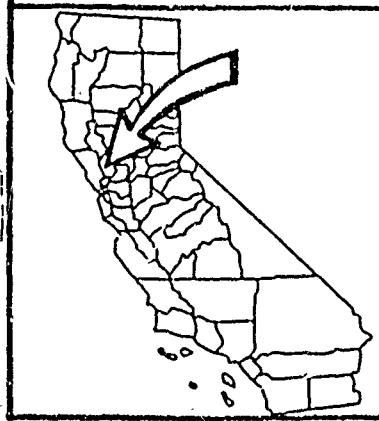
-  STATE LANDS INCLUDED IN LEASE (1,240 ACRES)
-  ADJACENT PRIVATE LANDS UNDER LEASE TO NOMECO

EXHIBIT "A"
STATE LANDS COMMISSION
W40275
NORTHERN MICHIGAN
EXPLORATION CO.
PROPOSED OIL & GAS LEASE



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EXHIBIT "B"

LAND DESCRIPTION

W 40275

Four parcels of California State school and proprietary lands in Butte County, California, described as follows:

PARCEL 1

S-1/2 of Section 15, T17N, R1E, MDM.

PARCEL 2

S-1/2 of Section 16, T17N, R1E, MDM.

PARCEL 3

N-1/2 of NE-1/4 of Section 21, T17N, R1E, MDM.

PARCEL 4

All of Section 22, T17N, R1E, MDM.

EXCEPTING THEREFROM SW-1/4 of NW-1/4; S-1/2 of SE-1/4 of SE-1/4; S-1/2 of SW-1/4 of SE-1/4; S-1/2 of SE-1/4 of SW-1/4 and S-1/2 of SW-1/4 of SW-1/4,

Comprising a total of 1,240 acres.

END OF DESCRIPTION

PREPARED FEBRUARY 25, 1982 BY TECHNICAL SERVICES UNIT, ROY MINNICK, SUPERVISOR.

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STATE OF CALIFORNIA
STATE LANDS COMMISSION

EXHIBIT "C"

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, California 95814

PROPOSED NEGATIVE DECLARATION

EIR ND 314

File Ref.: W 40275

SCH#: 82032309

Project Title: Butte Prospect.

Project Location: Beneath the Southerly portion of the Grey Lodge Game Refuge.

Project Description: To explore for, and if commercial quantities are found, produce natural gas reserves in the vicinity of Grey Lodge Game Refuge from a site located on adjacent private lands.

This NEGATIVE DECLARATION is prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq. of the Public Resources Code), the State CEQA Guidelines (Section 15000 et seq., Title 14, of the California Administrative Code), and the State Lands Commission regulations (Section 2901 et seq., Title 2, of the California Administrative Code).

Based upon the attached Initial Study, it has been found that:

- ☐ the project will not have a significant effect on the environment.
- ☒ the attached mitigation measures will avoid potentially significant effects.

Contact Person: Ted T. Fukushima
1807-13th Street
Sacramento, CA 95814
Telephone: (916) 322-7813

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MITIGATION MEASURE

To avoid disturbing Heron rookery, drilling operations will not be conducted between February 1st and July 15th.

Drilling will occur no closer than 500 feet of the Refuge boundary.

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Date Filed

1/22/20

WORK ORDER 1140275

ENVIRONMENTAL INFORMATION FORM
(To be completed by applicant)

1. Jacques Graben ^{JRG}
2. Susan Iwenick ^{SI}
3. Linda Martinez ^{LM}
4. Todd Fukushima ^{TF}

GENERAL INFORMATION

1. Name and address of developer or project sponsor: NORTHERN MOUNTAIN EXPLORATION CO
5500 MINE AVE SUITE 210 BAKERSFIELD CA
2. Address of project: GREYHOUND GAME REFUGE SOUTHERN BORDER, BUTTE COUNTY
Assessor's Block and Lot number: if available.
3. Name, address, and telephone number of person to be contacted concerning this project: SCOTT WHEELER 805-397-8749, 5500 MINE AVE BAKERSFIELD CA
4. Indicate number of the permit application for the project to which this form pertains: LOAN + GRS LEASE
5. List and describe any other related permits and other public approvals required for this project, including those required by City, regional, state and federal agencies.
NO CITY, COUNTY PERMS, BOND TO DOG.
6. Existing zoning district: A-40 40 AC MIN PZCL. AGRICULTURAL
Present use of site: AGRICULTURE
7. Proposed use of site (Project for which this form is filed): DEVELOP NATURAL GAS RESERVES

PROJECT DESCRIPTION:

- SEE FILE OK - JPL
See attached Permit in form 59.1
8. Site size. 1 ACRE
 9. Square footage.
 10. Number of floors of construction.
 11. Amount of off-street parking provided.
 12. Attach plans.
 13. Proposed scheduling.
 14. Associated projects.
 15. Anticipated incremental development.
 16. If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household and household size expected.
 17. If commercial, indicate the type, whether neighborhood or city oriented, square footage of sales area, and loading facilities.
 18. If industrial, indicate type, estimated employment per shift, and loading facilities.
 19. If institutional, indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project.

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454 PM 69.3 (5/78)

→ 20

If the project involves a variance, conditional use or rezoning application, state this and indicate clearly why the application is required.

Are the following items applicable to the project or its effects? Discuss below all items checked yes. (attach additional sheets as necessary)

YES NO

- ☒ 21 Change in existing features of any bays, tidelands, beaches, lakes or hills, or substantial alteration of ground contours.
- ☒ 22. Change in scenic views or vistas from existing residential areas or public lands or roads.
- ☒ 23. Change in pattern, scale or character of general area of project.
- ☒ 24. Significant effect on plant or animal life.
- ☒ 25. Significant amounts of solid waste or litter.
- ☒ 26. Change in dust, ash, smoke, fumes or odors in vicinity. *DURING DRILLING*
- ☒ 27. Change in ocean, bay, lake, stream or ground water quality or quantity, or lateration of existing drainage patterns.
- ☒ 28. Change in existing noise or vibration levels in the vicinity. *DURING DRILLING*
- ☒ 29. Site on filled land or on slope of 10 percent or more.
- ☒ 30. Use of disposal of potentially hazardous materials, such as toxic substances, flammables or explosives.
- ☒ 31. Change in demand for municipal services (police, fire, water, sewage, etc.)
- ☒ 32. Increased fossil fuel consumption (electricity, oil, natural, gas, etc.)
- ☒ 33. Relationship to a larger project or series of projects.

ENVIRONMENTAL SETTING

- 34. Describe the *project site* as it exists before the project, including information on topography, soil stability, plants and animals, and any cultural, historical or scenic aspects. Describe any existing structures on the site, and the use of the structures. Attach *photographs* of the site. Snapshots or polaroid photos will be accepted.
- 35. Describe the *surrounding properties*, including information on plants and animals and any cultural, historical or scenic aspects. Indicate the type of land use (residential, commercial, etc.), intensity of land use (one-family, apartment houses, shops, department stores, etc.), and scale of development (height, frontage, set-back, rear yard, etc.). Attach *photographs* of the vicinity. Snapshots or polaroid photos will be accepted.

CERTIFICATION:

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date

For

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LANDS COMMISSION
AL STUDY CHECKLIST

File Ref.: IV 40275
SCH# 82032309

BACKGROUND INFORMATION

- A. Applicant: Northern Michigan Exploration Company
- B. Checklist Date: 1 / 1
- C. Contact Person: Mr. Scott R. Wheeler - District Land Manager
Telephone: (805) 397-8748
- D. Purpose: Oil and Gas Exploration
- E. Location: Township 17 North - Range 1 East MDEW
Section 15: S/2, 16: S/2, 21: All, 22: All
- F. Description: Oil and Gas Exploratory Operations the surface location of which is
located on private land owned by Mary E. Prady. Slant hole drilling
to be conducted with a bottom hole location under Grey Lodge Game Refuge.
- G. Persons Contacted: State Lands Commission
Mr. Jacques A. Graber (Resource Engineer)
Mr. Charles Priddy
Department of Fish and Game
Mr. R.B. Reno Manager Grey Lodge Game Refuge
Paul Jensen
Mr. Fullerton, Director of Fish and Game

II. ENVIRONMENTAL IMPACTS. (Explain all "yes" and "maybe" answers)

- | | Yes | Maybe | No |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| A. Earth. Will the proposal result in: | | | |
| 1. Unstable earth conditions or in changes in geologic substructures? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Disruptions, displacements, compaction, or overcovering of the soil? <u>DURING DRILLING</u> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Change in topography or ground surface relief features? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. The destruction, covering, or modification of any unique geologic or physical features? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Any increase in wind or water erosion of soils, either on or off the site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Yes	Maybe	No
B. <i>Air</i> . Will the proposal result in:			
1. Substantial air emissions or deterioration of ambient air quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. The creation of objectionable odors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Alteration of ambient air quality or temperature or any change in climate, either locally or regionally?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C. <i>Water</i> . Will the proposal result in:			
1. Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Alterations to the course or flow of flood waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Change in the amount of surface water in any water body?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Alteration of the direction or rate of flow of ground waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Substantial reduction in the amount of water otherwise available for public water supplies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Exposure of people or property to water related hazards such as flooding or tidal waves?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Significant changes in the temperature, flow or chemical content of surface thermal springs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D. <i>Plant Life</i> . Will the proposal result in:			
1. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Reduction of the numbers of any unique, rare or endangered species of plants?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Reduction in acreage of any agricultural crop?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. <i>Animal Life</i> . Will the proposal result in:			
1. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Reduction of the numbers of any unique, rare or endangered species of animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Deterioration to existing fish or wildlife habitat?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F. <i>Noise</i> . Will the proposal result in:			
1. Increase in existing noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Exposure of people to severe noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G. <i>Light and Glare</i> . Will the proposal result in:			
1. The production of new light or glare?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. <i>Land Use</i> . Will the proposal result in:			
1. A substantial alteration of the present or planned land use of an area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I. <i>Natural Resources</i> . Will the proposal result in:			
1. Increase in the rate of use of any natural resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Substantial depletion of any nonrenewable resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- I. Risk of Upset.** Will the proposal result in:
1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions? Yes Maybe No
☐ ☒ ☐
2. Possible interference with emergency response plan or an emergency evacuation plan? ☐ ☐ ☒
- K. Population.** Will the proposal result in:
1. The alteration, distribution, density, or growth rate of the human population of the area? ☐ ☐ ☒
- L. Housing.** Will the proposal result in:
1. Affecting existing housing, or create a demand for additional housing? ☐ ☐ ☒
- M. Transportation/Circulation.** Will the proposal result in:
1. Generation of substantial additional vehicular movement? ☒ ☐ ☐ *DURING SET-UP + DRILLING*
2. Affecting existing parking facilities, or create a demand for new parking? ☐ ☒ ☐
3. Substantial impact upon existing transportation systems? ☐ ☐ ☒
4. Alterations to present patterns of circulation or movement of people and/or goods? ☐ ☐ ☒
5. Alterations to waterborne, rail, or air traffic? ☐ ☐ ☒
6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? ☐ ☐ ☒ *DURING DRILLING*
- N. Public Services.** Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:
1. Fire protection? ☐ ☐ ☒
2. Police protection? ☐ ☐ ☒
3. Schools? ☐ ☐ ☒
4. Parks and other recreational facilities? ☐ ☐ ☒
5. Maintenance of public facilities, including roads? ☐ ☐ ☒
6. Other governmental services? ☐ ☐ ☒
- O. Energy.** Will the proposal result in:
1. Use of substantial amounts of fuel or energy? ☐ ☐ ☒
2. Substantial increase in demand upon existing sources of energy, or require the development of new sources? ☐ ☐ ☒
- P. Utilities.** Will the proposal result in a need for new systems, or substantial alterations to the following utilities:
1. Power or natural gas? ☒ ☐ ☐
2. Communication systems? ☐ ☐ ☒
3. Water? ☐ ☐ ☒
4. Sewer or septic tanks? ☐ ☐ ☒
5. Storm water drainage? ☐ ☐ ☒
6. Solid waste and disposal? ☐ ☐ ☒
- Q. Human Health.** Will the proposal result in:
1. Creation of any health hazard or potential health hazard (excluding mental health)? ☐ ☐ ☒
2. Exposure of people to potential health hazards? ☐ ☐ ☒
- R. Aesthetics.** Will the proposal result in:
1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view? ☒ ☐ ☐ *DURING DRILLING*
- S. Recreation.** Will the proposal result in:
1. An impact upon the quality or quantity of existing recreational opportunities? ☐ ☐ ☒

F. Cultural Resources

Yes Maybe No

1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site? ☐ ☐ ☒
2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object? ☐ ☐ ☒
3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? ☐ ☐ ☒
4. Will the proposal restrict existing religious or sacred uses within the potential impact area? ☐ ☐ ☒

U. Mandatory Findings of Significance.

1. Does the project have the potential to degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? ☐ ☐ ☒
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? ☐ ☐ ☒
3. Does the project have impacts which are individually limited, but cumulatively considerable? ☐ ☐ ☒
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ☐ ☐ ☒

III. DISCUSSION OF ENVIRONMENTAL EVALUATION (See Comments Attached)

IV. DETERMINATION

On the basis of this initial evaluation:

- ☐ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.
- ☐ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date: / / ..

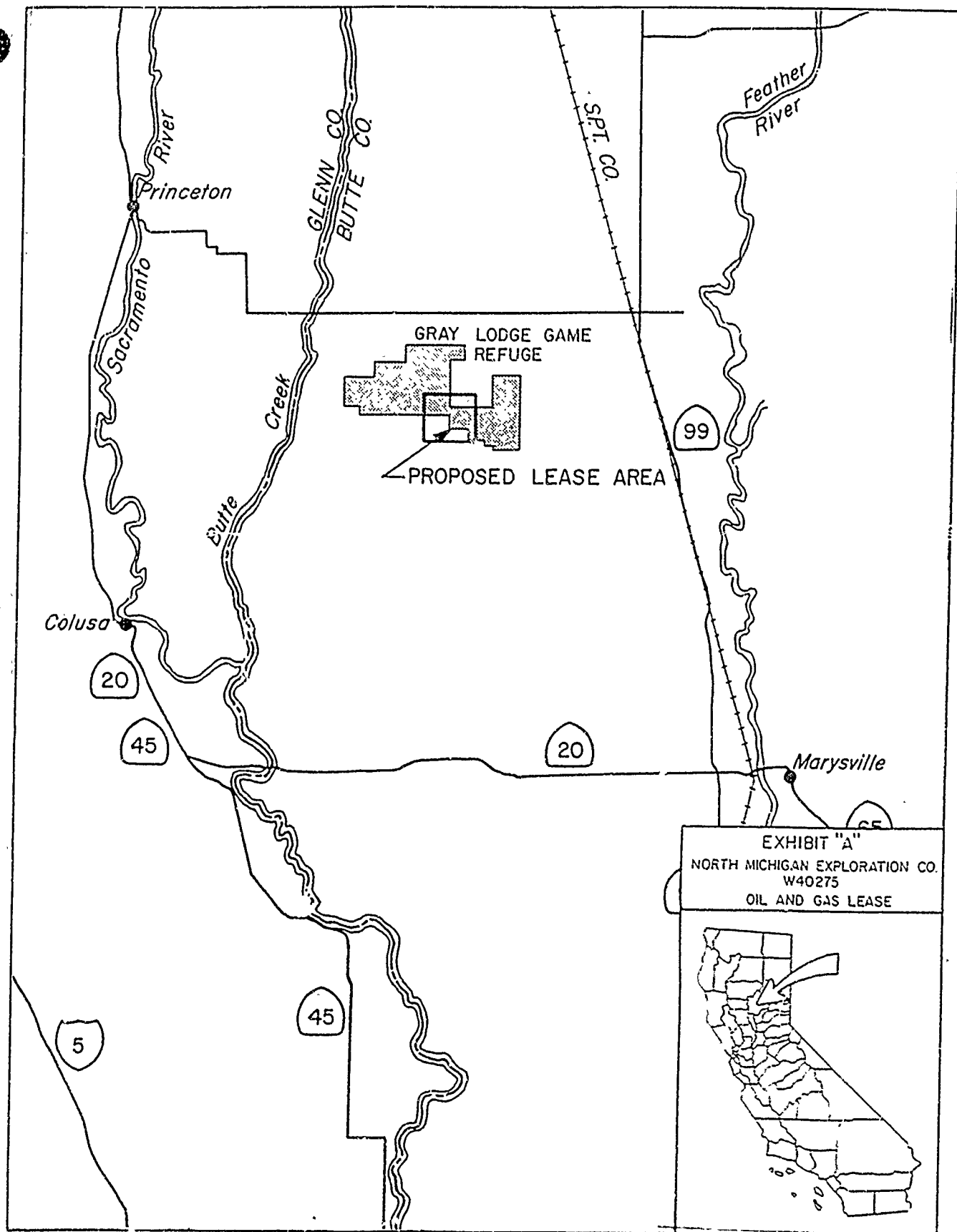
For the State Lands Commission

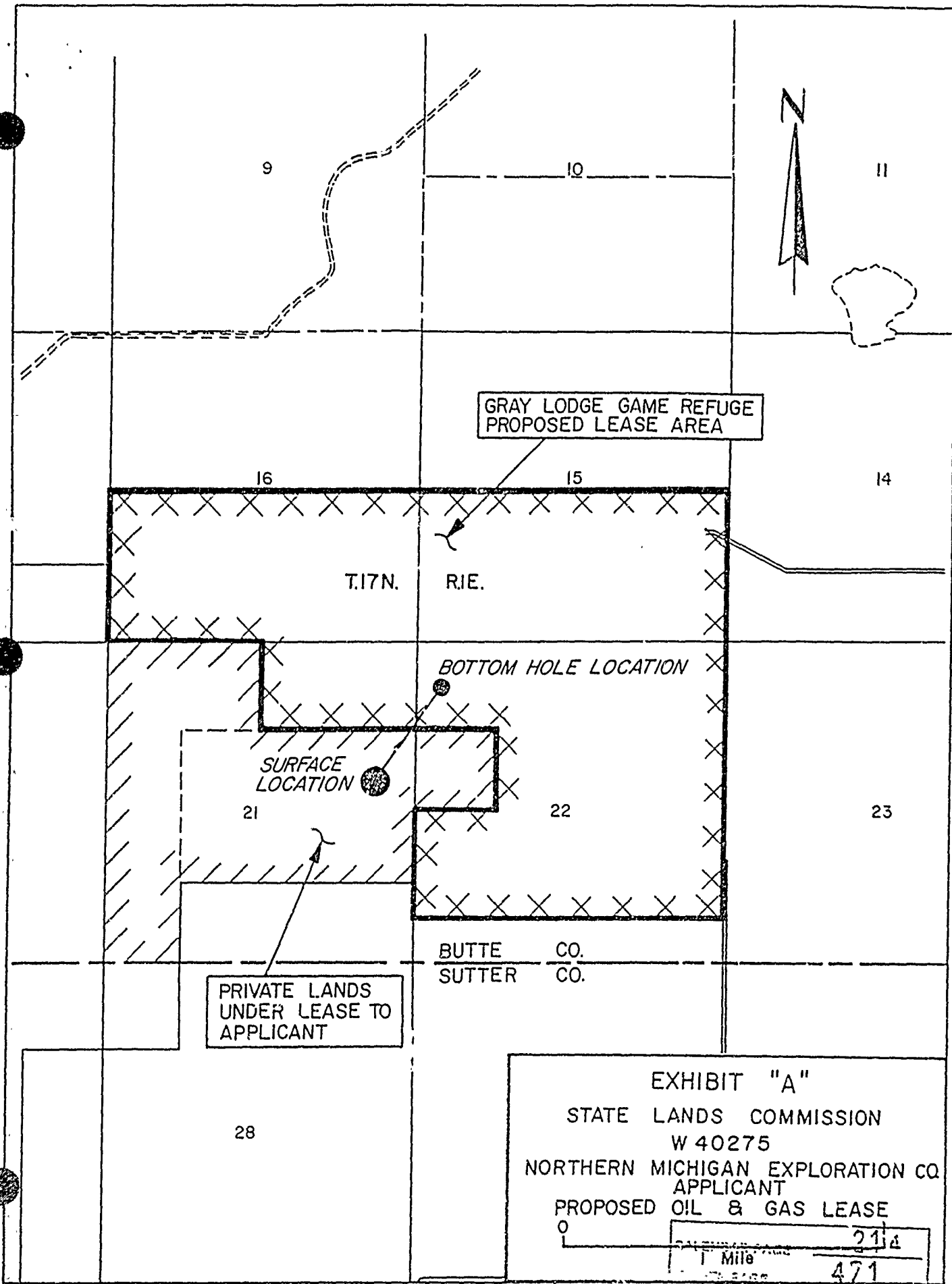
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GRAY LODGE GAME REFUGE
PROPOSED LEASE AREA

T.17N.

R.1E.

BOTTOM HOLE LOCATION

SURFACE
LOCATION

PRIVATE LANDS
UNDER LEASE TO
APPLICANT

EXHIBIT "A"

STATE LANDS COMMISSION

W 40275

NORTHERN MICHIGAN EXPLORATION CO.
APPLICANT

PROPOSED OIL & GAS LEASE

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EXHIBIT "A"

LAND DESCRIPTION

W 40275

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PARCEL 1

S-1/2 of Section 15, T17N, R1E, MDM.

PARCEL 2

S-1/2 of Section 16, T17N, R1E, MDM.

PARCEL 3

N-1/2 of NE-1/4 of Section 21, T17N, R1E, MDM.

PARCEL 4

All of Section 22, T17N, R1E, MDM.

EXCEPTING THEREFROM SW-1/4 of NW-1/4; S-1/2 of SE-1/4 of SE-1/4; S-1/2 of SW-1/4 of SE-1/4; S-1/2 of SE-1/4 of SW-1/4 and S-1/2 of SW-1/4 of SW-1/4,

Comprising a total of 1,240 acres.

END OF DESCRIPTION

PREPARED FEBRUARY 25, 1982 BY TECHNICAL SERVICES UNIT, ROY MINNICK, SUPERVISOR.

Description of Project

The project to be identified as the Butte Prospect is an effort by Northern Michigan Exploration Company to explore for, develop, and if commercial quantities are found, produce new natural gas reserves in the vicinity of Grey Lodge Game Refuge from a site located on private lands adjacent to the southern portion of the refuge, nine miles southwest of the town of Gridley in Butte County. The project is located in Sections 15, 16, 21, and 22, T17N, R1E, MDB & M.

An Oil and Gas Lease is proposed for the subsurface area of Grey Lodge Game Refuge as shown in Exhibit "A".

The issuance of the aforementioned lease would allow exploration by the applicant under the southern portion of the refuge. The proposed exploration plan calls for two exploratory holes: a directional hole to be drilled northeast under state lands, and a second hole to be bottomed directly under the proposed drillsite. State land would not be directly affected as drilling will be carried out adjacent to the refuge.

With selection of the drillsite, a drillsite pad, containment pit for the spent drilling muds, and an access road to the drillsite would be constructed.

In the event of discovery, and assuming production is achieved, additional wells would be drilled for development. A wellhead will be installed along with a heater, water separator, gas meter and water tank, all surrounded with fencing for security and safety.

There is presently a single location for a drillsite. From this single drillsite, two exploratory wells will be drilled. One well will be a directional hole northeast under the game refuge, and the second well will be a straight hole.

The initial drillsite location will occupy approximately two acres during the exploratory phase. This site will support the drill rig, containment pits, and other equipment and vehicles associated with drilling operations. If commercial production is attained, approximately one acre will be required for the production pad. The proposed location will be approved by the landowner. The pad will be so situated as to minimize land use on the acreage including roads needed for drilling access. (See Exhibit "A" for proposed drillsite.)

In event of discovery this site and additional sites will be used for drilling development wells. A single conventional drilling rig will be used for the project. An earth dike or berm will be constructed around the drillsite to contain any possible liquid spills. The exploratory phase should last approximately 30 days including time necessary for set-up of the rig and drilling.

If commercially producible gas is discovered, the well(s) will be free-flowing, requiring no lifting equipment and only a limited amount of production equipment. A wellhead production tree (made up of fittings and valves) will be installed on the well and connection to an existing P. J. and E. gathering pipeline will be made, all in conformance with Division of Oil and Gas and State Lands Commission regulations.

Following completion of development drilling, the drilling equipment will be removed, the sumps vacuumed out and cleaned up and all traces of the drilling phase removed. If a gas discovery is made, the reservoir should be depleted within twenty years at which time the well(s) would be abandoned in accordance with state regulations. Production equipment will be removed and sites will be restored to their original condition.

Persons or Agencies Contacted

Memos: California State Department of Fish and Game
California State Department of Conservation:
Division of Oil and Gas
State Water Resources Control Board
Office of Planning and Research Clearinghouse
California Department of Parks and Recreation
Office of Historic Preservation

Letters: Butte County Planning Department
Butte County Air Pollution Control District
Northern Michigan Exploration Company

Discussion of Environmental Evaluation

II A.

2. Construction of the initial drilling pad will disrupt an area of approximately two acres for the drillsite. An access road would be constructed to the drillsite. If commercial production is attained, several more wells will be drilled, in addition to the first two exploratory wells. Once drilling is completed and commercial quantities of gas are found, the production facilities would require an area of approximately one acre. The produced gas would be transported from the site via new pipeline hooked into an existing system.
3. The possibility that subsidence could occur is discussed in Exhibit "D". Also, enclosed is a subsidence and pollution control plan as required by Public Resources Code Section 6873.2, attached as Exhibit "E".

II B.

1. A small amount of air pollution would be generated during operation of diesel engines used in powering the drilling operations. Exhibit "C" provides data on operational emissions for diesel engines in a 750 H.P. rating. Duration of use of the drilling rig would be approximately twenty days for drilling.
2. During the drilling phase, operation of the diesel engines would create some objectionable odor. This could be partially controlled by properly adjusted engines and adequate pollution control devices.

II D.

1. During the exploration phase, one acre of private land would be occupied for the initial drillsite. The drillsite would be on agricultural lands thereby possibly prohibiting agricultural use in the one-acre site. If commercial quantities of gas are found, the area used for production equipment would be reduced to about one-quarter acre. The rest of the pad area would be returned to the agricultural use. If no gas is found, the exploratory site would be restored to its original condition. State lands would not be affected as drilling will be carried out adjacent to the refuge, directionally passing northeast under the refuge.

II D.

4. Initially, one acre of crop or land would be disturbed. If production is attained, this site will be reduced to one quarter acre for the remaining wellhead and production equipment. (Refer to IID-20 above.)

II E.

1. Construction of the drillsite would cause a temporary disturbance to the area. Due to a repeated disturbance because of agricultural use, animal population of this habitat has fluctuated with the season and the state of the crop. Lands within the refuge would not be disturbed as the drilling will pass under the state lands from adjacent private lands.

II F.

1. There will be an increase in the noise level in the immediate vicinity of the drilling site due to the construction equipment for building the drillsite pad and the moving in and set-up of the drilling machinery. Noise levels may be around 70 decibels at 1000 feet distance from the drillsite. The noise would be reduced at greater distances from the drillsite due to its remoteness from other developed areas.

The drillsite is located approximately 500 feet south of the southern border of Grey Lodge Refuge in Section 2. With proper mufflers installed on diesel power systems the noise should not contribute a significant disturbance to the refuge.

The increased noise level would last through the initial drilling period, approximately 20 days for preparation and drilling. If production equipment is installed afterward, there will be no noise generated during its operation life.

II F.

2. There may be some periods of extreme noise generation during gas or drill stem testing. Because of the remoteness of the project noise levels should be of a minimal impact upon the neighboring Grey Lodge Game Refuge.

II G.

1. The drilling rig would be visible at night due to high intensity lighting needed for the round-the-clock operations of drilling. The impact or visibility would be temporary, occurring only during the drilling phase (approximately twenty days).

II H.

1. If a commercially producible amount is discovered, the rate of use of natural gas will be increased.

II I.

2. If a commercially producible amount is discovered, natural gas is the only non-renewable resource that will be removed.

II J.

1. During drilling operations, there is always a chance for blowout, fire, or spills. The probability of a blowout, fire or spill of polluting material occurring during drilling operations is greatly reduced by requiring the operator to comply with the stringent safety regulations of the State Lands Commission, which cover well casing blowout prevention equipment, drilling mud requirements and personnel well-control training.

All applicable standards and regulations will be followed in the design and construction of the surface facilities and the gathering lines. Routine inspections will be conducted, and in the event of a leak, field personnel will be dispatched to locate and repair it.

II M.

1. During the drilling phase, additional traffic will result while construction equipment, drill rigs, and well service vehicles and equipment are introduced into the area. Private vehicles will be present as drilling crews arrive and leave on each shift during the drilling phase.
2. Parking for service and employee.
6. With the presence of drilling operations within the area, the additional movement of employee and service vehicles and construction equipment related to drilling

operations will increase the potential of traffic hazard. Proper caution in the operation of vehicles will help to avoid potential traffic hazards.

II P.

1. If commercial quantities of natural gas are discovered, gas transmission line hook-up will be required, necessitating construction of new gathering lines to existing public utility (P.G. & E.) systems nearby.

II R.

Obstruction of vistas or views will be of a temporary nature, occurring during drilling operations. The drilling derrick will be removed when the drilling operations are complete.

EXHIBIT "C"

DIESEL POWERED INDUSTRIAL ENGINE
EMISSION FACTORS AND RATES

750 H.P.¹

	<u>g/hp. hr.</u> ²	<u>at 75%</u> ³ <u>load factor</u>	<u>g/sec.</u>	<u>tons/mo.</u>
Carbon Monoxide (CO)	3.030	2.27	0.47	1.37
Exhaust				
Hydrocarbons (HC)	1.120	0.84	0.17	0.51
Evaporative Hydrocarbons	None			
Crankcase Hydrocarbons	None			
Nitrogen Oxides (NO _x)	14.000	10.50	2.18	6.32
Aldehydes	0.210	0.16	0.03	0.12
Sulfur Oxides (SO _x)	0.931	0.70	0.15	0.42
Particulate (Part)	1.000	0.75	0.16	0.45

1. Total H.P. - two engines of approximately 350 hp. and 400 hp. will be used.
2. Data obtained from EPA, AP-42 Supplement 5; December 1975, p. 3.3.3-1.
3. Hoisting operations will require 675 H.P. for approximately six hours per day and drilling operations will require 525 H.P. 18 hours per day.

Load factor 1 = $675/750 = 90\%$

Load factor 2 = $525/750 = 70\%$

Average load factor = $\frac{(0.90)(6) + (0.70)(18)}{24} = 75\%$

EXHIBIT "D"

Comment on Land Level Variations

Considering Subject II A - 3, there is a possibility that land subsidence could occur given certain conditions. A discussion and analysis of subsidence in this area reads as follows:

Variations in land level in a region can be affected by these causes:

1. Ground water withdrawal
2. Oxidation and compaction of peat and related organic sediments
3. Tidal fluctuations
4. Crustal adjustments

Extraction of natural gas in this area is not considered a significant cause of subsidence because:

1. The gas bearing sands are generally quite thin, ranging from 10 to 50 feet in thickness and can only compact a small amount.
2. The sands are relatively competent and resist compaction.
3. The waterdrive commonly fills the interstices as the gas is withdrawn, thus reducing compacting tendencies of the sands.

Site Specific Observations

With respect to the location of the proposed project, compaction of peat soils can be discounted because these soil types do not extend northward along the Sacramento River as far as Courtland. (Department of Water Resources Bulletin No. 76, Preliminary Edition, December 1960, page 19.) The refuge is located away from any nearby river systems and peat zones.

Tidal fluctuations (Item 3) result in very small elevation fluctuations which measure in tenths of a foot or less, and are cyclical in nature. Local groundwater withdrawal is a probable cause of some small elevation changes in the area; however, tectonic and isostatic crustal adjustments (Item 4) should not be ruled out.

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According to the applicant and the Division of Oil and Gas (memo, dated September 3, 1981), continuous drilling and drainings of gas reservoirs in this region have not contributed to an apparent significant subsidence in the area. The Division of Oil and Gas memo states that the formations involved in this region of gas production are thin and characterized by high operating pressures and rapid water influx which will resist significant subsidence.

As a precaution, the applicant will be required to survey three established bench marks adjacent to the proposed drillsite. The applicant must then establish new survey points near the drillsite and tie these into the existing survey network. These would be monitored yearly if and when production is established.

Measures Required to Minimize Impacts

Drilling and completion operations will be conducted to conform to regulations of the State Lands Commission and the Division of Oil and Gas. Surface casing will be set as prescribed by regulations to provide anchorage for blowout prevention equipment and to protect fresh water formations. Approved blowout prevention equipment will be used during drilling operations. The blowout prevention equipment will be tested for pressure integrity and operation on a routine basis. All drilling personnel will be trained in well-controls operations and drills will be conducted at least once a week for each crew.

Freshwater aquifers that may extend to 2,000 feet will be cased and/or protected with cement at the time of completion or abandonment. If toxic materials are used in the drilling fluids, the sump will be lined with impervious material and the spent mud will be disposed of at a site approved by the Regional Water Quality Board. The applicant will also contact the board to determine if adherence to waste discharge requirements will be necessary. Subsequently, the site will be cleaned up and restored as nearly as practicable to its original condition.

If a producible gas reservoir is discovered, the gas will be moved from the drillsite by pipeline and there will be minimal venting or release of gas to the atmosphere during the production phase.

The lessee will be required to suspend all drilling and production operations except those which are protective, corrective, or mitigative, immediately in the event of any disaster or contamination or pollution resulting from operations under its lease. Such drilling or production operations shall not be resumed until adequate measures have been taken and authorization for resumption of operations has been made by the Commission. Corrective measures shall be taken immediately whenever pollution has occurred.

Residuary products of oil, drilling fluid, sanitary wastes and other refuse shall be disposed of in approved dumping areas. None of these products will be permitted to enter any adjacent drainages or any slough or marshlands connected therewith. The lessee will be required to comply with the Commission's Rules and Regulations for Drilling and Production Operations on State Upland Areas.

The drilling regulations include requirements for well casing, cementing of well casing, blowout prevention equipment, supervision and training of drilling personnel, drilling mud system and control, safe drilling practices and drilling inspection. The production regulations include well completion and safety equipment, remedial and well maintenance work, subsurface injection projects, waste disposal, safety equipment and procedures relating to production facility operations, and the operation and maintenance of pipelines.

It is the responsibility of the Division of Oil and Gas and the State Lands Commission to see that the procedures are followed, and a system of inspections and reports are required to insure that this is being done.

Though the chance of an accident is slight, the lessee will be required to maintain a current well control contingency plan, for initiating corrective action to control a gas blowout or a water/gas blowout and any possible fire. The plan will cover both minor and major accidents associated with drilling operations.

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EXHIBIT "E"

SUBSIDENCE MONITORING AND CONTROL PLAN

The lessee, upon the discovery of natural gas and/or oil, will be required to determine a subsidence rate as of the current USGS, USC and GS Data before large volumes of gas are produced from the subject lease. This will be accomplished by precision leveling surveys of bench marks (USGS, USC and GS and others) in the area. The lessee will also be required to establish bench marks (preferably one on each side of the lease area) which will be tied by precise leveling into the control network. Such bench marks set by the lessee will be surveyed each year and the control network surveyed every two years.

It has been established by USGS that during subsidence (due to removal of subsurface elements) bench marks will move toward the center or toward the area of deepest subsidence. In monitoring this subsidence, detailed horizontal surveys could serve to effectively detect areal subsidence.

After discovery, a well may be drilled and programmed to include a casing joint survey. A casing joint survey is a procedure in which a magnetic tool is lowered into the well and, as it is withdrawn, records the magnetic density of the casing. Lengths of casing can be accurately determined by such technique and comparisons with later surveys or "runs" may indicate casing deformation, a sign of possible subsidence. While a casing joint survey may not reveal a total subsidence rate, it will permit the operator to determine if casings opposite the producing sands are undergoing deformation. These surveys would be run about every two years as part of the subsidence monitoring procedure.

Many gas sand reservoirs in the delta region are pressured by subsurface water that results in a partial or full waterdrive-producing mechanism in the reservoir. Under these conditions a withdrawal rate could be determined which would allow the formation pressures to remain stable and constant, and thereby negate any subsidence attributed to gas production.

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