

STATE OF OHIO
DEPARTMENT OF NATURAL
RESOURCES

Division of Oil and Gas
Resources Management
WELL PERMIT

API WELL NUMBER
34-117-2-4222-00-00

OWNER NAME, ADDRESS

HOUGHTON INVESTMENTS, L.L.C.
1248 DRUMBARTON CT
COLUMBUS

OH 43235

DATE ISSUED

7/18/2013

PERMIT EXPIRES

7/18/2015

TELEPHONE NUMBER

(614) 844-4214

IS HEREBY GRANTED PERMISSION TO: Convert SWIW

AND ABANDON WELL IF UNPRODUCTIVE

PURPOSE OF WELL: Water Injection - Disposal

COMPLETION DATE IF PERMIT TO PLUG: 1/8/2011

DESIGNATION AND LOCATION:

LEASE NAME E DUMBAUGH (SWIW # 64)
WELL NUMBER 1
COUNTY MORROW
CIVIL TOWNSHIP GILEAD
TRACT OR ALLOTMENT
SURFACE FOOTAGE LOCATION 720'NL & 853'WL OF NE QTR., SEC. 13
TARGET FOOTAGE LOCATION

SURFACE NAD27

X: 1912773
Y: 311571
LAT: 40.5214509179721
LONG: -82.8137405344863

TARGET NAD27

TYPE OF TOOLS: Service Rig

PROPOSED TOTAL DEPTH 3415 FEET
GROUND LEVEL ELEVATION 1175 FEET

GEOLOGICAL FORMATION(S):

TREMPEALEAU

SPECIAL PERMIT CONDITIONS: Salt Water Injection Well (Class II) Construction and Operating Conditions

CASING PROGRAM (CASING MUST BE CENTRALIZED AND IS SUBJECT TO APPROVAL OF THE OIL AND GAS INSPECTOR):

9-5/8 " APPROX. 231 ' WITH CEMENT CIRCULATED TO SURFACE
7 " APPROX. 1552 ' WITH CEMENT CIRCULATED TO SURFACE
4-1/2" CASING 3408' CEMENTED TO A MINIMUM OF 300' ABOVE INJECTION ZONE

This permit is NOT TRANSFERABLE. This permit, or an exact copy thereof, must be displayed in a conspicuous and easily accessible place at the well site before permitted activity commences and remain until the well is completed. Ample notification to inspector is necessary.

OIL AND GAS WELL INSPECTOR:

THOMAS BENKO (419) 202-2611
WILL ZIEGLER - Supervisor (740) 438-5381
DISTRICT #: (740) 392-4499

INSPECTOR NOTIFICATION

The oil and gas inspector must be notified at least 24 hours prior to:

1. Commencement of site construction
2. Pit excavation and closure
3. Commencement of drilling, reopening, converting or plugback operations
4. Installation and cementing of all casing strings
5. BOP testing
6. Well stimulation
7. Plugging operations
8. Well pad construction

The oil and gas inspector must be notified immediately upon:

1. Discovery of defective well construction
2. Detection of any natural gas or H2S gas during drilling in urban areas
3. Discovery of defective well construction during well stimulation
4. Determination that a well is a lost hole
5. Determination that a well is a dry hole

FIRE AND EMERGENCY NUMBERS:

FIRE: (419) 946-7055
MEDICAL SERVICE (419) 946-5015

Richard J. Simmers

CHIEF, Division of Oil and Gas Resources
Management

STATE OF OHIO
DEPARTMENT OF NATURAL
RESOURCES

Division of Oil and Gas
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WELL PERMIT

API WELL NUMBER
34-117-2-4222-00-00

HOUGHTON INVESTMENTS, L.L.C.
1248 DRUMBARTON CT
COLUMBUS, OH 43235

PERMIT CONDITIONS – CLASS II SALTWATER INJECTION WELL – CONVERT TO INJECTION

RE: Permit # 4222, SWIW #64, E. Dumbaugh No. 1, Gilead
Township, Morrow County, Ohio

Constructional conditions:

1. The 4-1/2" casing must be enclosed with **Class A cement** from the total depth to approximately **3108 feet** (minimum of 300 feet above the top of the injection zone).
2. Injection tubing must be set on a packer at approximately **3308 feet**. A 1/4", female, threaded fitting with a stop valve must be installed on the tubing and accessible at the surface.
3. **The annular space between the injection tubing and the 4-1/2" production casing must be filled with a fluid (e.g., freshwater with a corrosion inhibitor additive), pressure tested to at least 300 psi, and monitored for at least 15 minutes with no more than a five percent decline in pressure. Additionally, the injection line must also be tested to 300 psi for 15 minutes with no more than a five percent decline.**
4. The UIC Section and the Mineral Resources Inspector must be notified at a minimum of 48 hours in advance of the time of cementing, placing and removing of casing, installation of the tubing and packer, testing of the casing, construction of the surface facilities, pressure testing of the injection line, and initial injection so that a representative of the Division can be present to witness the operations. The Division must also be notified in advance of any subsequent removal of the injection tubing or resetting the packer. A pressure test will also be required.
5. Surface facilities as proposed in the application are satisfactory and must be constructed under the supervision of a representative of the Division. A concrete pad with drain must be constructed so as to contain any spillage of saltwater during unloading from the trucks. Any proposed changes in the surface facilities must be submitted in writing and must have prior approval of the UIC Section.
6. **If an unloading pad is to be constructed, the underground concrete vault associated with the catch basin on the unloading pad shall be of one-piece construction and if the concrete vault has a detached lid, the lid must be exposed above the ground level. Additionally, the inside walls of the concrete vault shall be sealed with a salt-corrosion type material such as**

an asphalt-based coating to prevent deterioration of the vault from the brine water.

7. A Well Construction Record (Form 8) must be submitted within 30 days after completion describing how the well was completed for injection operations. This report should include the amount and grade of tubing, type and depth of packer, treatment of the injection formation, testing of the system integrity, method used to monitor pressure in the annulus and injection tubing, and method used to monitor volumes of injected fluid.
8. **Injection pressure is limited to gravity due to improperly plugged and abandoned oil and gas within the area of review.**
9. **Houghton Investments, LLC shall notify the Division in writing prior to the initiation of injection operations and injection operations shall not commence until the Division provides Houghton Investments, LLC with written approval that authorizes injection. Operational conditions to the permit shall be issued with the written approval.**

DAILY ROUTE SLIP

Gibad

APPLICATION NO. aAMY0001427

TYPE: Convert SWIW

CONAME HOUGHTON INVESTMENTS, L API 34117242220000

WELL NAME /NO. E DUMBAUGH 1

COUNTY 117 MORROW INITIALS DATE

DATE APPLICATION REC'D AM 8/3/2012

PERMIT FEE AND CHECK NO. \$1,000.00 289

RUSH AMOUNT \$0.00 RUSH CHECK NO. 0

APPLICATION ENTERED AM 8/3/2012

APPLICATIONS AND PLATS SENT FOR MINE APPROVAL AA 7-18-13

COAL APPROVAL RECEIVED AA 7-18-13

OIL/GAS AFFIDAVIT REC'D AA 7-19-13

URBANIZED AREA NOTIFICATION SENT AA 7-18-13

URBANIZED AREA NOTIFICATION SENT TO INSPECTOR/REC'D BACK AA 7-18-13

URBAN MAP REVIEW AA 7-18-13

SAMPLES: YES AA /SPECIAL AREAS 7-18-13

GEOLOGIST APPROVAL AA 7-18-13

DATA ENTRY /ISSUED AA 7-18-13

PERMIT: TAKEN _____ MAILED X MS 7/18/13

FAX TO: _____

FINAL MAP CHECK MS 8/12/13

COMMENTS: _____

Proof Sheet

SURFACE FOOTAGE

720'NL & 853'WL OF NE QTR., SEC. 13 (s)

TARGET FOOTAGE

CASING PROGRAM

09	9 5/8"	231'
09	7"	1552'
32	4 1/2"	3408'

SPECIAL CONDITIONS/COMMENTS

<div style="border: 1px solid black; padding: 2px; display: inline-block;"> (H2000000) </div> Class II Construction and Monday conditions

COMPLETION DT

1/8/2011

MINES APPROVAL

—

AFFIDAVIT APPROV

—

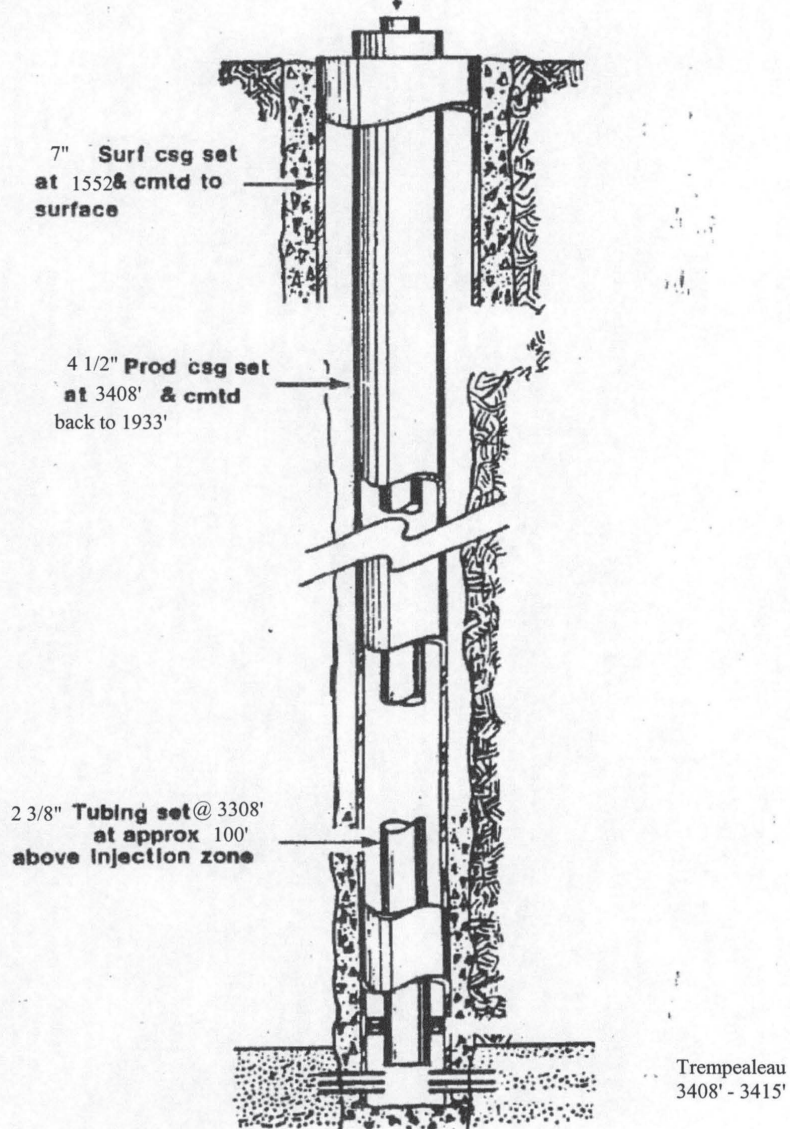
FINAL ENTRY DATE

7/18/13

Morrow County, Gilead Twp.,
SWIW # 4 E. Dumbaugh #1
P # 4222

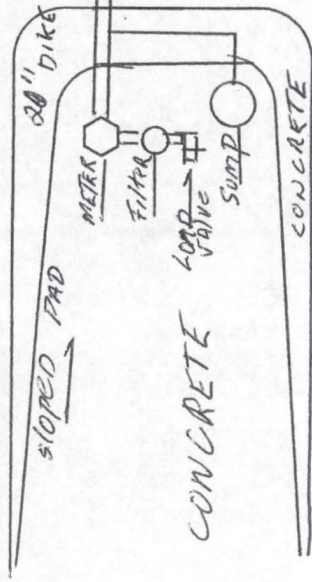
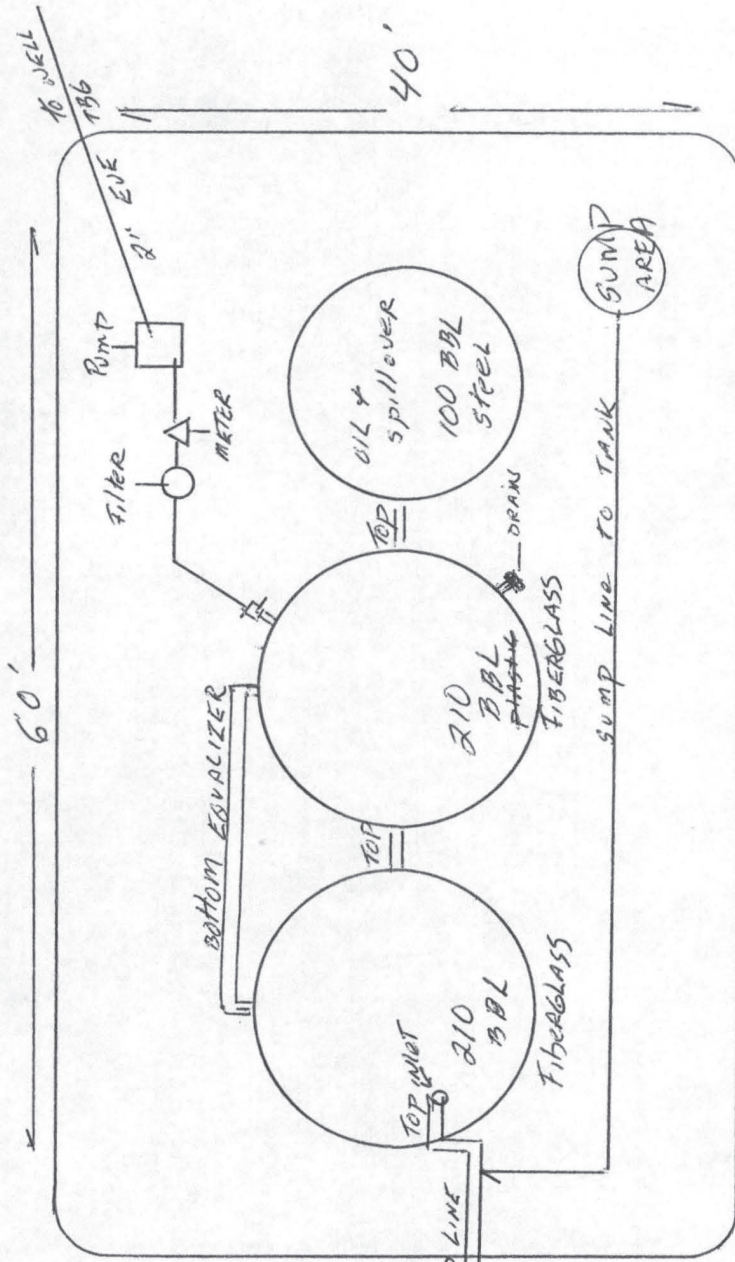
**Subsurface Construction
For Injection Well**

Maximum Injection Pressure: 0 psi



Total Depth: 3415'

DUMBAUGH LOADING/STORAGE
Facility



2' DIKE Hgt.
30 MILT LINER

60' X 40' X 0.0148
 = 35.52 bbl/inch X 24" 8/9/2012
 = 852 barrels of Capacity
 Total barrels = 520 bbls

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AUG 02 2012

**SUPPLEMENT TO APPLICATION
PERMIT FOR A SALTWATER INJECTION WELL (Form 210)**

Ohio Department of Natural Resources, Division of Mineral Resources Management
2045 Morse Road, Bldg H3
Columbus, OH 43229-6693

AREA OF REVIEW. An application for a saltwater injection well (SWIW) will be evaluated on the basis of an "area of review" surrounding the proposed well. The area of review for wells in which injection of greater than two hundred barrels per day is proposed shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-half mile. The area of review for wells in which a maximum injection of two hundred barrels per day or less is proposed shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-quarter mile.

31. PROPOSED INJECTION ZONE

Geological Formation: Trappe/lean Dolomite
Injection Interval: From: 3344 ft. feet to 3350 ft.
Geologic description of injection zone: _____

32. WELL CONSTRUCTION AND OPERATION

- A. Description of the proposed casing and cement program for new wells, or of the casing, cementing or sealing with prepared clay for existing wells to be converted:
CONDUCTOR - 7 5/8" @ 231' cemented w/ 98 SX
SURFACE - 7" @ 1552' " w/ 204 SX - TO SURFACE
PRODUCTION - 4.5" @ 3408' " w/ 150 SX - TOP CEMENT @
- B. Proposed method for testing the casing: 3700'
INSTALL 2.375" T&G ON PACKER @ 3290' + PRESS. TEST T&G ANNULUS
TO 1,200 PSI. w/ CORROSION INHIBITOR TREATED FRESH WATER
- C. Description of the proposed method for completion and operation of the injection well:
INSTALL 8" T&G + 4" ESP PRESS. MONITOR T&G. INSTALL 2" STEEL FLOW LINE
FROM DISPOSAL STORAGE FACILITY TO WELL HEAD. INJECT BRINE THROUGH
T&G ON PKR TO INJECTION ZONE
- D. Description of the proposed unloading, surface storage, and spill containment facilities:
SET 2 - 210 BBL FIBERGLASS BRINE STORAGE TANKS; 1 - 100 BBL
STEEL OIL STORAGE TANK; 1 - 15 GPM X 600# INJECTION PUMP, FLUID
FILTERS AND BRINE METER INSIDE 60' X 40' X 2' DIKE.
CONSTRUCT DIKE + PAD w/ 6" SAND BASE BELOW 30 MIL LINER AND
COVERED w/ 6" SAND LAYER. LINER TO COVER ENTIRE DIKE WALL (INTERIOR
AND EXTERIOR). BRINE LOADING FACILITY CONSTRUCTED OF CONCRETE PAD w/ FLOID
RECOVERY DRAINAGE + CONTAINMENT w/ CONCRETE DIKE WALLS AND SCREENED
SUMP PUMP w/ DISCHARGE TO TANKS. ALL TANKS + INJECTION PUMP EQUIPPED
w/ FLOID LEVEL AND/OR PRESSURE T&G OVER PRESS. INJECTION PUMP
EQUIPPED w/ PRESS. RELIEF VALVE w/ RETURN LINE TO TANKS. ALL PIPING ON TANKS
CONSTRUCTED OF NON-CORROSIVE (PVC/PLASTIC) MATERIAL. INGRESS/ EGRESS TO
LOADING FACILITY CONSTRUCTED OF CRUSHED LIMESTONE; ACCESS GATED + LOCKED
ALL FLUID VOLUMES MEASURED @ UNLOADING POINT (PAD) AND @ SUCTION
SIDE OF INJECTION PUMP.

33. PROPOSED INJECTION VOLUMES

- A. Indicate the estimated amount of saltwater to be injected into the proposed injection well per day:
 AVERAGE: 100 MAXIMUM: 200
- B. Indicate the method to be used to measure the actual amount of saltwater injected into the well:
A flow meter will be installed on the discharge side of injection
pump and will record all volume injected both daily and cumulatively.

34. PROPOSED INJECTION PRESSURES

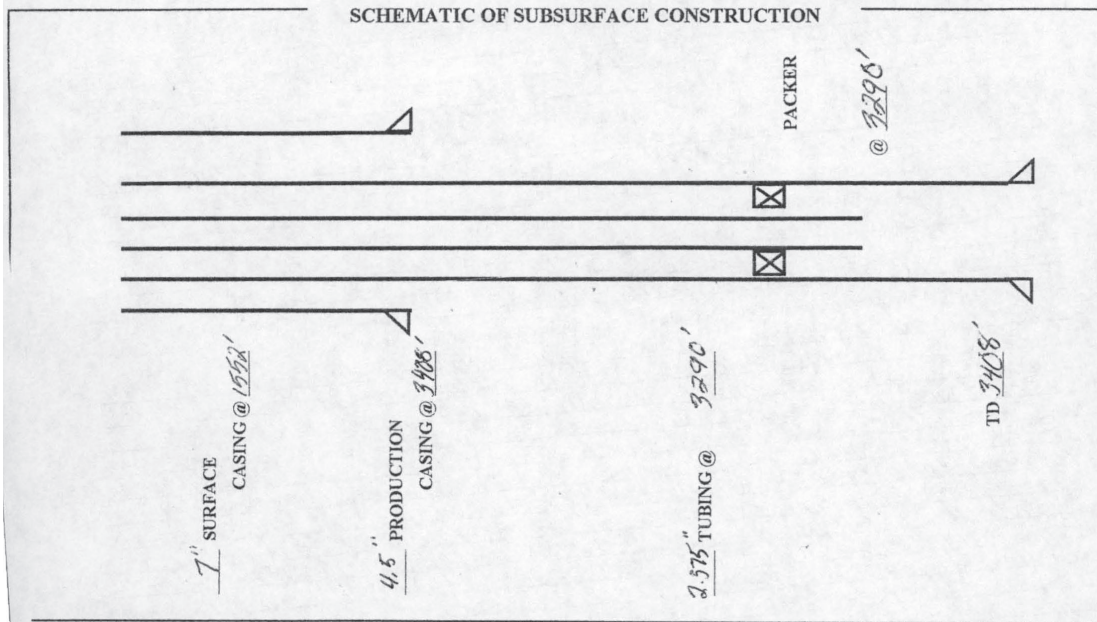
- A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:
 AVERAGE: 500 Gravity MAXIMUM: 725 Gravity
- B. Indicate the method to be used to measure the actual daily injection pressure:

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:

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36. **MAP.** Each application for a permit shall be accompanied by a map or maps showing and containing the following information:
- A. The subject tract of land on which the proposed injection well is to be located.
 - B. The location of the proposed injection well on the subject tract established by an Ohio registered surveyor showing the distances in feet from the proposed well site to the boundary lines on the subject tract;
 - C. The geographic location of all wells, penetrating the formation proposed for injection regardless of status, within the area of review;
 - D. All holders of the land owner's royalty interest of record, or holders of the severed oil and gas mineral estates of record in the subject tract;
 - E. All owners or operators of wells producing from or injecting into the same formation proposed as the injection formation.
37. **SCHEMATIC DRAWING OF SUBSURFACE CONSTRUCTION.** Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval. If the proposed input well design is substantially different from the schematic below, attach on a separate sheet a schematic of your proposal labeled with the above information.



Public notice of an application for an enhanced recovery project is required by law. In addition, the applicant must submit, on an attached sheet, a list of the names and address of those persons required to receive personal notice in accordance with Rule 1501:9-5-05(E)(1), of the Ohio Administrative Code.

After submitting the application, and after a determination by the Division that it is complete as required by the rules of the Division, a legal notice must be published by the applicant in a newspaper of general circulation in the area of review. The legal notice must contain the information described in Rule 1501:9-5-05(E)(1) of the Ohio Administrative Code. A copy of the notice must be delivered to all owners or operators of wells within the area of review producing from or injecting into the same formation proposed as the injection formation. Proof of publication, publication date, and an oath as to the delivery to those entitled to receive personal notice under this method must be filed with the Division within thirty days after the Division determines that the application is complete.

In addition, notice of all applications for enhanced recovery projects will be published in the Division's Weekly Circular.

The undersigned hereby agrees to comply with all provisions for an enhanced recovery project as required by Chapter 1501:9-5 of the Ohio Administrative Code. In addition, the undersigned deposed and says that he shall conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all orders and rules issued by the Chief, Division of Mineral Resources Management.

Owner/Authorized Agent (Type or Print):

Robert H. Atha

Signature of Owner/Authorized Agent:

Title:

President

Permanent Address of Home Office:

5389 Medallion Drive West, Westerville, Oh. 43082

If signed by Authorized Agent, a certified copy of appointment of agent must be on file with the Division.

WORN to and subscribed before me this _____ day of _____, 20__.

(SEAL)

Notary Public

Date Commission Expires

APPLICATION FOR A PERMIT (Form 1)
 OHIO DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
 2045 MORSE ROAD, BUILDING F-2
 COLUMBUS, OHIO 43229-6693
 (614) 265-6922

#0289
 \$1000.00

AM/0601427

SEE INSTRUCTIONS ON BACK

1. We (applicant) HAUGHTON INVESTMENTS, LLC 2. Owner #: 6227
 Address: P.O. Box 157, ALBANY, OHIO 45710-9421 Phone #: 614-882-7111
 hereby apply this date _____, 20____ for a permit to:

Drill New Well Revised Location Convert
 Drill Horizontally Plug Back Deepen
 Drill Directionally Plug and Abandon Reopen
 Reissue Orphan Well Program Temporary Inactive

3. TYPE OF WELL: Oil & Gas Annular Disposal Saltwater Injection
 Stratigraphic Test Gas Storage Other (explain): _____
 Solution Mining* Enhanced Recovery* (*if checked, select appropriate box below)
 Input/Injection Water Supply Observation Production/Extraction

4. IS THE WELL LOCATION OR PRODUCTION FACILITY(S) WITHIN AN URBANIZED AREA AS DEFINED BY 1509.01 (Y)? Yes No

19. TYPE OF TOOLS: Cable Rotary (Air)
 Cable/Rotary Service Rig

5. MAIL PERMIT TO: HAUGHTON Inv. LLC
1248 DUMBARTHON CT.
COLUMBUS OHIO 43235

20. SOURCE(S) OF GROUND AND/OR SURFACE WATER USED IN PRODUCTION
 OPERATION: N/A
 Watershed: Lake Erie Ohio River
 Estimated Withdrawal Rate (gal/day): _____
 Estimated Total Volume (gal): _____
 If Recycled Water – Estimated Total Volume (gal): _____

6. COUNTY: MORROW

7. CIVIL TOWNSHIP: GILEAD

8. SECTION: 13 9. LOT: _____

10. FRACTION: _____ 11. QTR TWP: _____

12. TRACT/ALLOT: _____

13. WELL #: 1

14. LEASE NAME: E. DUMBARTH

15. PROPOSED TOTAL DEPTH: _____

16. PROPOSED GEOLOGICAL FORMATION(S):
TROMPEALEAU

17. DRILLING UNIT ACRES: 20

18. IF PERMITTED PREVIOUSLY: _____
 API #: 34-117-2-4222-00-00
 OWNER: HAUGHTON Inv. LLC

21. EMERGENCY TELEPHONE NUMBERS: (closest to well site):
 Fire: 419-946-7055
 Medical: 419-946-5015

22. MEANS OF INGRESS & EGRESS:
 Road: ST. RTE. 61

23. ROAD USE FOR A HORIZONTAL WELL:
 Maintenance Agreement Attached
 Non-agreement Affidavit Attached

24. ARE THE SURFACE RIGHTS OWNED BY STATE OF OHIO?
 Agency Name: _____

25. ATTACH LANDOWNER ROYALTY LISTING

26. PROPOSED CASING AND CEMENTING PROGRAM

Type Casing	Borehole Diameter (in)	Borehole Depth (ft)	Casing Diameter (in)	Casing Depth (ft)	Cement Volume (sacks)	Formation	Zone Tested or produced (✓ if Yes)	Hydraulic Fracturing (✓ if Yes)
Drive Pipe							<input type="checkbox"/>	<input type="checkbox"/>
Conductor	<u>9 5/8"</u>	<u>231'</u>			<u>98</u>		<input type="checkbox"/>	<input type="checkbox"/>
Mine String							<input type="checkbox"/>	<input type="checkbox"/>
Surface	<u>7"</u>	<u>1552'</u>			<u>204</u>		<input type="checkbox"/>	<input type="checkbox"/>
1 st Intermediate							<input type="checkbox"/>	<input type="checkbox"/>
2 nd Intermediate							<input type="checkbox"/>	<input type="checkbox"/>
Production	<u>4 1/2"</u>	<u>3408'</u>			<u>150</u>		<input type="checkbox"/>	<input type="checkbox"/>
Liner							<input type="checkbox"/>	<input type="checkbox"/>

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I, the undersigned, further depose and state that I am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (9) ORC for this application have been duly provided by me. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required in Section 1509.13, ORC, have been given.

That I hereby agree to conform with all provisions of Chapter 1509, ORC, and Chapter 1501, OAC, and all orders and conditions issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Owner/Authorized Agent Robert H. Atha
 Name (Type or Print) ROBERT H. ATHA Title PRESIDENT

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this the 2 day of AUGUST, 2012.

RECEIVED

AUG 02 2012

Erica A. Freeman
 ERICA A. FREEMAN
 NOTARY PUBLIC, STATE OF OHIO
 MY COMMISSION EXPIRES AUG. 10, 2015
 (Date Commission Expires)