Form OGC - 3

MISSOURI OIL AND GAS COUNCIL

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☐ DEEPEN ☐ PLUG BACK ☐

NAME OF COMPANY OR OPERATOR DNR- Geol. Sur. DATE July '76

P.O. Box 250 (Address) Rolla (City) MO (State)

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
USGS - TS	10	1009

WELL LOCATION (give footage from section lines) 2550 ft. from (N) (S) sec. line 1320 ft. from (E) (W) sec. line

WELL LOCATION Section 29 Township 33N Range 29W County Barton

Nearest distance from proposed location to property or lease line: NA feet

Distance from proposed location to nearest drilling, completed or applied — for well on the same lease: NA feet

Proposed depth: 150 Rotary or Cable tools Approx. date work will start July 12 '76

Number of acres in lease:

Number of wells on lease, including this well, completed in or drilling to this reservoir: ____

Number of abandoned wells on lease: ____

If lease, purchased with one or more wells drilled, from whom purchased: Name NA Address ____

No. of Wells: producing ____ inactive ____ abandoned ____

Status of Bond

Single Well ☐ Amt. ____ Blanket Bond ☐ Amt. ____

☐ ON FILE
☐ ATTACHED

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone) use back of form if needed.

Proposed casing program:

amt.	size	wt./ft.	cem.
NONE			

Approved casing — To be filled in by State Geologist

amt.	size	wt./ft.	cem.

I, the undersigned, state that I am the ____ of the ____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature ____

Permit Number: 20009

Approval Date: ____

Approved By: Wallace B. Howe

☐ SAMPLES REQUIRED

☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED @:

Note: This Permit not transferable to any other person or to any other location.

Remit two copies to: Missouri Oil and Gas Council P.O. Box 250 Rolla, Mo. 65401

One will be returned.

Approval of this permit by the Oil and Gas Council does not constitute endorsement of the geologic merits of the proposed well nor endorsement of the qualifications of the permittee.

Form OGC-7

MISSOURI OIL AND GAS COUNCIL
PLUGGING RECORD

Owner: MO. Dept. of Natural Resources	Address: Rolla, MO
Name of Lease	Well No.: 1
Location of Well: Hole No. 10	Sec. Twp. Rge. or Block & Survey	County: Barton
Application to drill this well was filed in name of	Has this well ever produced oil or gas: NO	Character of well at completion (initial production) Oil (bbls/day) / Gas (MCF/day)	Dry?
Date Abandoned: 6/21/76	Total depth: 169.5'	Amount well producing prior to abandonment Oil (bbls/day) / Gas (MCF/day)	Water (bbls/day)

Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of abandonment	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount cement
Cherokee Group			

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes
	None				

Was well filled with mud-laden fluid? NO	Indicate deepest formation containing fresh water

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well

Method of disposal of mud pit contents: Pumped to waste.

Use reverse side for additional detail

File this form in duplicate with

Test hole - cutting backfill to 105'; grout filled to surface - 12 lb. cement per gallon water.

CERTIFICATE: I the undersigned state that I am the _____ of the _____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

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Signature

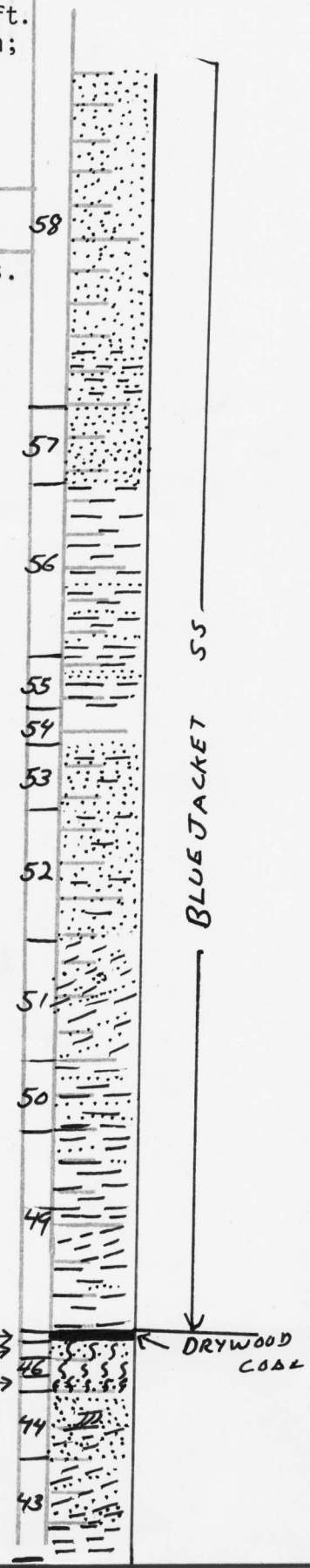
Remit two copies; one will be returned

Test Hole No. 10 DNR-USGS Tar Sand Project
NX Core, LOGGED BY RICHARD J. GENTILE
QUADRANGLE: Milford COUNTY: Barton
1009' elevation top of hole

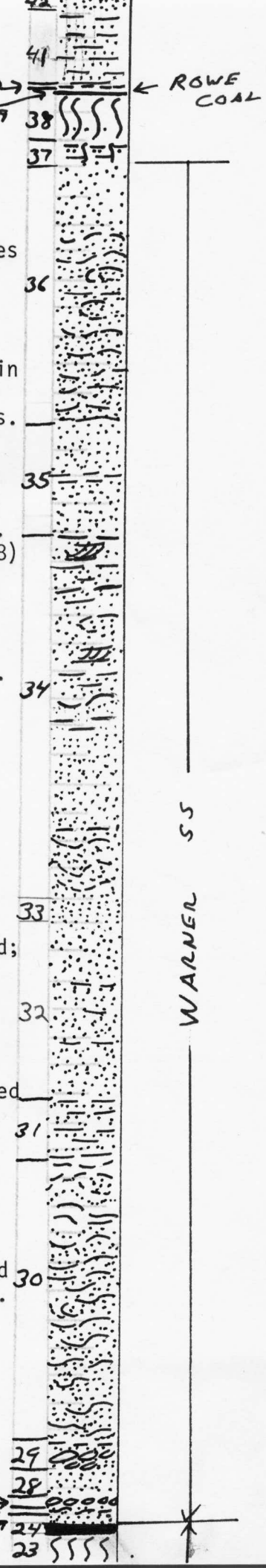
LOCATION: SE1/4, SW1/4, NE1/4 SEC. 29 T. 33N R. 29W DATE: 7/12-13/76

LOCATION DESCRIPTION: 1320 ft. west of east line of sec. 29 and 2550 ft. south of north line; north side of dirt road at right angle bend to south; 1-1/2 miles SE of Milford

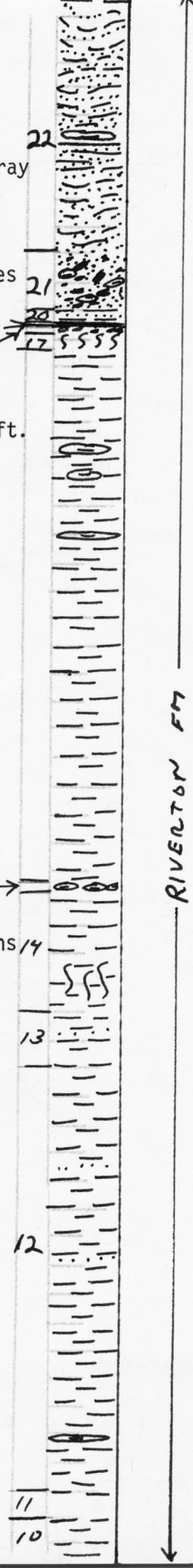
DEPTH XXXXXXXXXX XXX	XXX	BED NO.	LITHOLOGY
0.0	10.0	58	soil, and loose brown ss., to thin bedded lt. gray ss. with clay partings at bottom
10.0	12.2	57	ss., lt. gray, fine grained
12.2	17.6	56	shale, weathered brown, few thin ss. beds
17.6	19.1	55	shale, dk. gray; ss. bed .1 ft. thick at 18.3 ft.
19.1	20.0	54	lost core
20.0	22.1	53	ss., brown, thin dk. gray interbedded shale laminae comprise about 10% of unit
22.1	26.0	52	ss., dk. gray, fine grained, clayey
26.0	30.0	51	shale, dk. gray, sandy with interbedded laminae and pods of lt. gray ss.; inclined bedding
30.0	32.0	50	shale, dk. gray with lt. gray ss. laminae and pods
32.0	38.1	49	shale, grayish black (N-2 GSA Color Chart) silty, inclined fissility at 35.0 to 36.0 ft.
38.1	38.2	48	coal, thin bedded
38.2	39.0	47	ss., clayey, root impressions, few .01 ft. elongate cavities filled with asphalt
39.0	39.2	46	underclay, poorly developed, root impressions
39.2	40.0	45	ss., clayey, fine grained, root impressions
40.0	42.0	44	ss., lt. gray, fine grained, cross-bedded; lt. gray inclined shale laminae
42.0	45.6	43	ss., lt. gray interbedded laminae of dk. gray shale grades downsection into predom. shale



45.6	45.9	42	ss., tan colored by abundant oolite sized siderite concretions
45.9	48.9	41	ss., lt. greenish gray, irregular, lenses, and med. gray shale in alternating laminae; siderite conc.
48.9	48.95	40	shale, black
48.95	49.0	39	coal, thin bedded, pyrite lenses
49.0	51.0	38	underclay, lt. gray, silty, root impressions, becomes med. gray at bottom
51.0	52.0	37	shale, sandy, lt. gray, root impressions; tan ss. pods to .05 ft. dia.
52.0	61.2	36	ss., lt. gray and dk. gray carbonaceous shale beds in alternating laminae; cross-bedding, scour surfaces, convolute bedding; bottom 2 ft. predom. med. gray ss.
61.2	65.3	35	ss., med. gray, fine grained, massive; .2 ft. dk. gray shale bed near middle
65.3	79.0	34	ss., fine grained, medium gray (N5) in beds to .2 ft. thick that alternate with laminae of lt. gray ss (N8) and dk. gray shale (N3). The lt. gray ss. shows ripple marks; small scale foreset cross bedding, convolute bedding, scour contact with underlying shale; interval of massive ss. from 73.8 to 76.4; several black and white photos from 60.0 to 70.0 ft.
79.0	80.0	33	ss., med. gray, fine grained, massive
80.0	86.1	32	ss., lt. gray, fine grained, massive to cross bedded; 5% of unit is dk. gray interbedded shale laminae
86.1	88.0	31	ss., med. gray, interbedded with lt. gray cross bedded ss. and dk. shale same as from 65.3 to 79.0 ft.
88.0	98.2	30	shale, dk. gray, silty, and lt. gray contorted ss. lenses and concretions; very irregular bedding; black and white photo at 89.0 ft.
98.2	99.3	29	conglomerate; clasts to .08 ft. dia. of rounded blades and spheres of clay ironstone, brown, tan and black ss., pyrite, coal with med. grained quartz ss. matrix; top .3 ft. is lt. gray ss. and dk. gray shale is alternating laminae
99.3	100.1	28	ss., fine grained, quartzose, massive
100.1	100.2	27	congl. same as from 98.2 to 99.3
100.2	100.5	26	ss., lt. gray, shale dk. gray and coal alternating in discontinuous laminae; inclined, distorted bedding



100.5	100.6	25	ss., lt. gray massive
100.6	101.0	24	coal, bright, laminations of pyrite; sharp contact with overlying ss.
101.0	102.0	23	underclay, sandy, fossil roots
102.0	111.0	22	shale, silty to sandy; inclined and distorted lt. gray ss. laminae; bits of woody material; discont. coal lenses at 107.7 to 108.7 ft.; .2 ft. siderite concretionszone at 107.0 ft.
111.0	112.5	21	conglomerate, predom. clasts and discontinuous lenses of coal; some clay ironstone; lt. gray ss. matrix; siderite concretions
112.5	112.8	20	shale med. gray and lt. gray ss.
112.8	112.9	19	coal
112.9	113.0	18	congl. of coal clasts, smae as from 110.0 to 112.5 ft.
113.0	113.3	17	underclay, slickensided, med. gray, fossil roots; black and white photo
113.3	133.3	16	shale, black, clay ironstone zone .1 ft. thick at 116.6, 117.1 and 119.0 ft.; less than 5% of unit is lt. gray discont. laminae and pods of ss.
133.3	133.4	15	conglomerate, clay ironstone clasts
133.4	138.0	14	shale, lt. gray, very sandy with siderite concretions in top half; bottom half is slickensided clay with root impressions
138.0	140.0	13	shale, med. gray
140.0	155.0	12	shale, black, brown claystone bed .2 ft. thick at 153.5 ft.; pyrite nodules; 5% of unit is interlaminations of lt. gray ss.
155.0	156.0	11	lost core
156.0	158.2	10	shale, black



158.2	158.7	9	breccia, angular white and tan chert fragments in black shale matrix top .1 ft. grading downsection into med. gray shale matrix
158.7	158.8	8	shale, black and med. gray interbedded; scour surface at bottom
158.8	159.4	7	breccia, angular chert fragments to .2 ft. dia. with pyrite halos; pyrite composes about 30% of unit; coarse ss. matrix; black and white photo
159.4	160.0	6	ss., fine grained, med. greenish gray with black blotches; greenish gray clay laminae; coarse, rounded, clear quartz grains
160.0	161.2	5	ss., med. grained with coarse grained angular chert fragments
161.2	163.6	4	chert, white, massive; .3 ft. zone of gray sandy clay with chert fragments at 162.4 to 163.0 ft.
163.6	166.4	3	clay, greenish black, approx. 10% of unit is chert fragments to .1 ft. dia.
166.4	167.0	2	chert, white
167.0	169.5	1	clay, greenish gray, slickensided, with angular chert fragments to .2 ft. dia.

No asphalt observed except minute amount from 38.2 to 39.0 ft.

0.0 to 38.1	Bluejacket Ss.
38.1 to 52.0	Drywood-Rowe Fms.
52.0 to 100.6	Warner Ss.
100.6 to 158.2	Riverton Fm.
158.2 to 169.5	chert rubble, top part Graydon Fm.

T. D. 169.5

TEST BORING LOG

Project State of Missouri

Boring No. 10 Sheet 1 of 2

Surface Elevation _____ Offset _____

Address _____

Date Started 7-12-76 Completed 7-12-76

City & State Nevada, Missouri

Driller J. Haas Rig A.T.V.

Abbreviations: A.O. – Auger Only; H.A. – Hollow Auger; W.B. – Wash Bore; R.B. – Rock Bit; S.S. – Split Spoon; S.T. – Shelby Tube; C.W. – Core Water; C.A. – Core Air; F.B. – Finger Bit

DEPTH FROM	DEPTH TO	METHOD	PENETRATION RECORD: POCKET PENETRO-METER	PENETRATION RECORD: NO. OF BLOWS	CORE RECOVERY	SAMPLE DESCRIPTION: COLOR–MATERIAL–MOISTURE–CLAY CONSISTENCY SAND DENSITY
0.0'	8.5'	WB				Red-brown silty sandy clay, moist, stiff
8.5'	10.0'	WB				Red-brown weathered sandstone, poorly cemented, hard
10.0'	20.0'	CW1			9.5'	Red-brown very weathered sandstone w/clay partings, moist, hard
20.0'	30.0'	CW2			10.0'	Dark gray weathered shale, thin bedded, w/sandstone seams, moist, hard
30.0'	40.0'	CW3			10.0'	Same
40.0'	50.0'	CW4			9.5'	Same
50.0'	60.0'	CW5			10.0'	Gray weathered sandstone, medium cemented, w/shale seams, moist, hard
60.0'	70.0'	CW6			10.0'	Same
70.0'	80.0'	CW7			9.5'	Same
80.0'	90.0'	CW8			9.5'	Same
90.0'	99.0'	CW9			10.0'	Same
99.0'	109.0'	CW10			9.5'	Same
109.0'	119.0'	CW11			10.0'	Same
119.0'	129.0'	CW12			10.0'	Same
129.0'	136.0'	CW13			7.0'	Same
136.0'	146.0'	CW14			10.0'	Same

REMARKS: (Casing, Water Loss, Etc.) Water Level Time Date

(Completion)

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Layne-Western Company, Inc. 1010 WEST 39th STREET, KANSAS CITY, MISSOURI 64111

TEST BORING LOG

Project State of Missouri

Boring No. 10 Sheet 2 of 2

Surface Elevation _____ Offset _____

Address _____

Date Started 7-12-76 Completed 7-12-76

City & State Nevada, Missouri

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DEPTH FROM	DEPTH TO	METHOD	PENETRATION RECORD: POCKET PENETRO-METER	PENETRATION RECORD: NO. OF BLOWS	CORE RECOVERY	SAMPLE DESCRIPTION: COLOR–MATERIAL–MOISTURE–CLAY CONSISTENCY SAND DENSITY
146.0'	156.0'	CW15			9.0'	Dark gray weathered shale, thin bedded, moist, hard
156.0'	160.0'	CW16			4.0'	Same w/chert fragments
160.0'	169.5'	CW17			9.5'	Green shale w/chert layers and fragments, moist, hard
169.5'	Total Depth					

REMARKS: (Casing, Water Loss, Etc.) Water Level Time Date

(Completion)

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FR & COMP **WILDCAT**

STATE MISSOURI 12-1-95 MAP NO. S-T-R 29-33N-29W C

OPER USGS - DNR. SPOT APP C E/2 INIT

BOX 250, ROLLA, MISSOURI CO BARTON C

WELL 10 - CORE TEST (TAR SAND PROJ.) ELEV 1009 GR FIN

CONTR LAYNE - WESTERN 2550'fnl, 1320'fel of Sec

FIELD WC

IP D & A

API 24-011-20009

SPUD 7-12-76, no surface csg
Wireline cored from 0 - 169.5 ft.
No asphaltic oil shows
DTD 169.5, GR & IES Logs
D & A, FIRST REPORTED & COMPLETED 7-13-76

Note: Detailed litho description also available at Kansas Geological Society, Wichita, Kansas

SPL TOPS:

BLUE JACKET	0.0 + 1009.0
DRYWOOD	38.1 + 970.9
WARNER	52.0 + 957.0
RIVERTON	100.6 + 908.4
GRAYDON CHERT	158.2 + 850.8
DTD	169.5 + 839.5
TD IN PENN	

COMP ISSUED 12-6-76

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Permit #: 20009

County: Barton

CONFIDENTIAL UNTIL:

Date Issued: July 76

Date Cancelled:

Date Plugged: 6 21 76

OGC FORMS	Date Received
1	
2	
3	July 76
3i	
4	
4i	
5	
6	
7	8-4-76
8	
11	
12	
Misc. Form 2	

	TYPE	ID #	Date Received
Logs	test hole	10	8-4-76
Samples	chip		
	core		
Analyses	water		
	core		

Additional Submitted Data:

NX Core

COMMENTS:

Tim Penn