MISSOURI OIL AND GAS COUNCIL

Form OGC - 3

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL ☒ DEEPEN ☐ PLUG BACK ☐

NAME OF COMPANY OR OPERATOR Landmark Production Inc. DATE March 10, 1981
c/o Odyssey Petroleum Inc.

1801-B S. Butler Dr. (Address) Harrisonville, (City) Missouri (State)

DESCRIPTION OF WELL AND LEASE

Name of lease	Well number	Elevation (ground)
Harold & Dorothy Bishop	1	980

WELL LOCATION (give footage from section lines)
492 ft. from (N) (S) sec. line 1144 ft. from (E) (W) sec. line

WELL LOCATION Section 32 Township 44 Range 33 County Cass

Nearest distance from proposed location to property or lease line: 166 feet

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

Proposed depth	Rotary or Cable tools	Approx. date work will start
700	Rotary	March 18, 1981

Number of acres in lease: 100.0

Number of wells on lease, including this well, completed in or drilling to this reservoir: 1

Number of abandoned wells on lease: 2

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

No. of Wells: producing _____ inactive _____ abandoned _____

Status of Bond

Single Well ☐ Amt. _____ Blanket Bond ☒ Amt. $40,000.

☒ 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.
60ft	7	17#	to surface

Approved casing – To be filled in by State Geologist

amt.	size	wt./ft.	cem.

I, the undersigned, state that I am the Agent of the Landmark Production Inc. (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 M R Matthias

Permit Number 20164

Approval Date 3/18/81

Approved By J.R.L. Wallace B. Howe

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 for driller's signature

☒ SAMPLES REQUIRED
☐ SAMPLES NOT REQUIRED

WATER SAMPLES REQUIRED _____

RECEIVED
MAR 16 1981
MO. OIL & GAS COUNCIL

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.

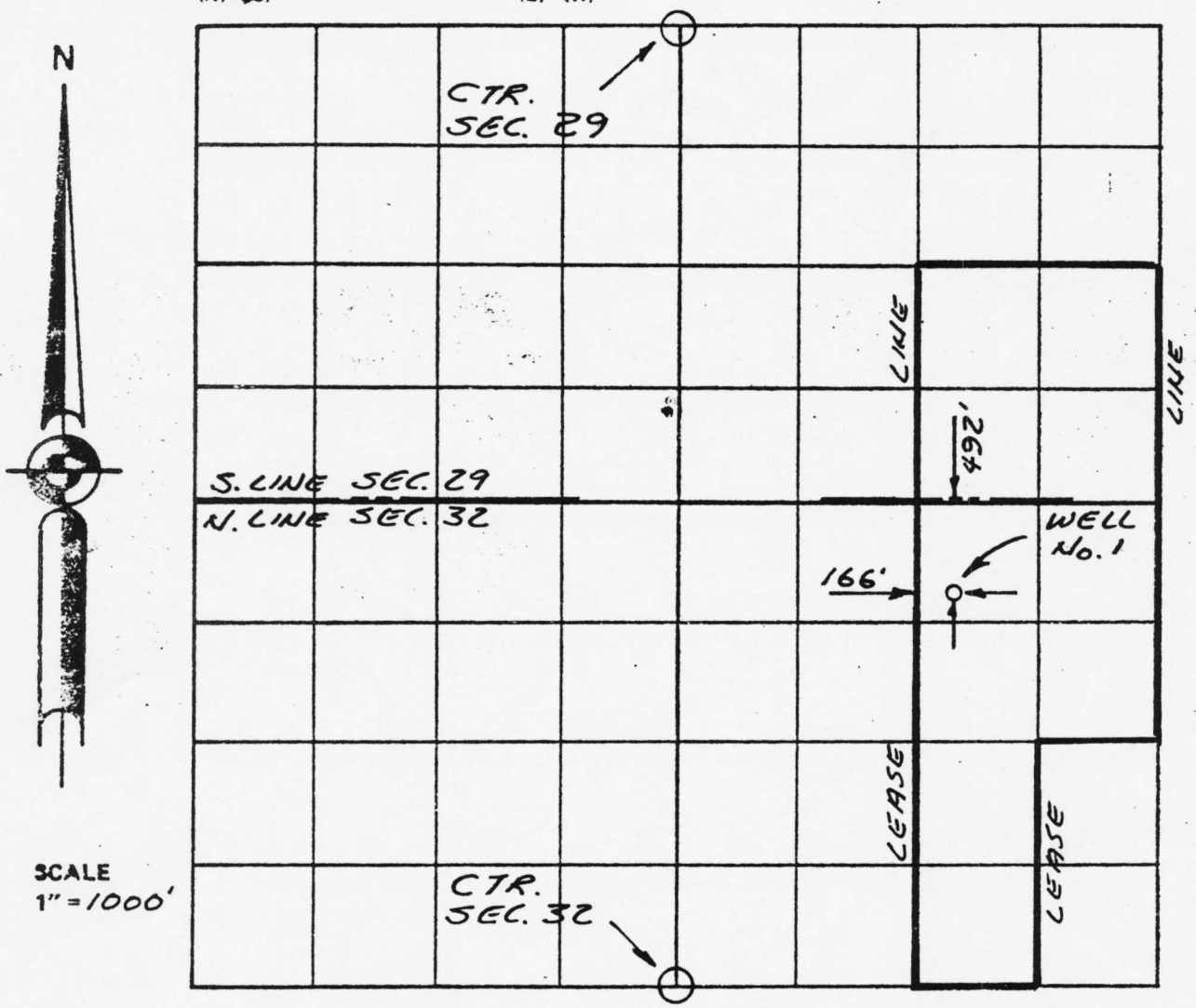
MISSOURI OIL AND GAS COUNCIL
WELL LOCATION PLAT

Form OGC—4

Owner: Landmark Production Inc.

Lease Name: Harold & Dorothy Bishop County: Cass

492 feet from north (N) - ~~(S)~~ line and 1144 feet from East (E) - ~~(W)~~ line of Sec. 32, Twp. 44 N, Range 33.



SCALE 1" = 1000'

REMARKS:

Well # 1

Elevation 980

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50-2.030 for survey requirements.

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

One will be returned.

This is to Certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

RECEIVED
MAR 16 1981
MO. OIL & GAS COUNCIL

MISSOURI No. LS-918 HOWARD L. SHERMAN REGISTERED LAND SURVEYOR

Howard L. Sherman
Registered Land Surveyor

918
Number

Missouri Oil and Gas Council

Form OGC-7

PLUGGING RECORD

Owner	Address
Landmark Production, Inc.	10950 Grandview #350 Overland Park, Kansas 66210

Name of Lease	Well No.	Permit Number (OGC-3 or OGC-3I number)
Harold and Dorothy Bishop	#1	20164

Location of Well	Sec-Twp-Rng or Block & Survey	County
Sec. 32 - T44N - R33W		Cass

Application to drill this well was filed in name of	Has this well ever produced oil or gas?	Character of well at completion (initial production) Oil (bbls/day)	Gas (MCF/day)	Dry?
Landmark Production, Inc.	No	-----	------	Yes

Date Abandoned	Total depth	Amount well producing prior to abandonment Oil (bbls/day)	Gas (MCF/day)	Water (bbls/day)
8/82	800'	0	0	0

Name of each formation containing oil or gas. Indicate which formation open to well bore 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.
Bartlesville	Trace	618' - 624'	B.P. @ 460'
Hepler	None	210' - 216'	
Hepler	Trace of Oil	220' - 226'	B.P. @ 218'

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
7"	40	0	40	None	None
4½"	773	0	773	None	None

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

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

Name	Address	Direction from this well:
Anton Bauerle	Drexel, Mo. 64742	West
Harold J. McGeeney	Jackson Co., Mo.	South
Dorotha Corine Crook	West Line, Mo.	North
Evelyn Courier Curran	1102 S. Cedar, Independence, Mo.	East

Method of disposal of mud pit contents: Unloaded, Dried Naturally, and Filled in. We cemented to surface and cut off casing below plow depth.

Use reverse side for additional detail.

File this form in duplicate with

CERTIFICATE: I, the undersigned, state that I am the Manager of the Landmark Production Inc (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 Marlene M Beer

RECEIVED

SEP 02 1982

MO. OIL & GAS COUNCIL

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

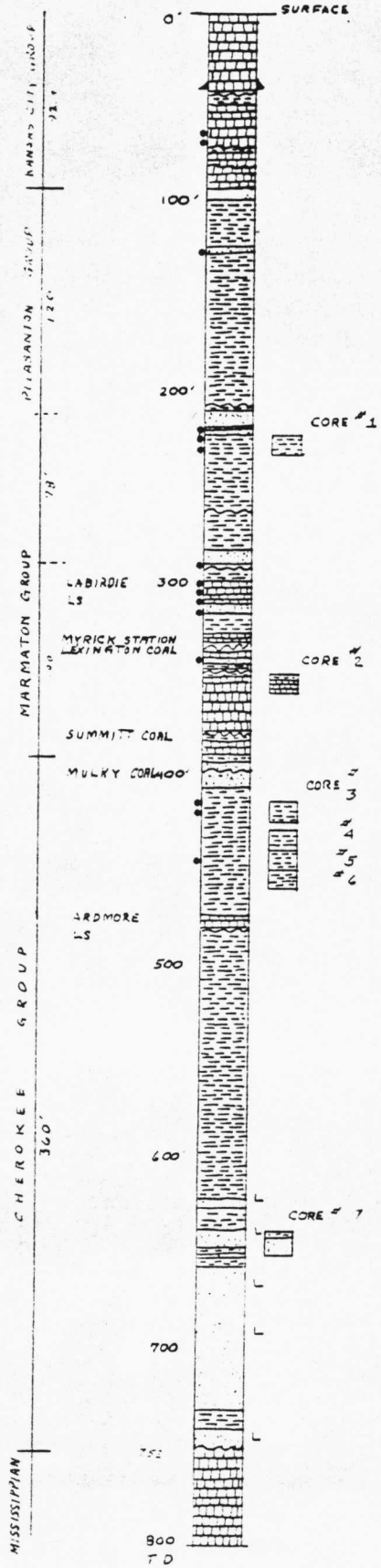
One will be returned.

3/12/82

BISHOP WELL #1

The main objective of drilling the Bishop well was to explore the expected Squirrel sand interval anticipated between 400' and 450'. The interval was reported to be productive in closely adjacent holes also drilled on the Lisle Anticline. However, the channel sands of the Squirrel were missing in the interval cored from 410' to 455'.

H BISHOP #1
Sec 32 T44N R33W
432' FNL & 1144 FEL
Elv 980



Name of Lease: Harold Bishop

Number Acres in Lease: 120

Location: NE 1/4, Sec 32-T44N-R33W

Date of Report: April 14, 1981

County: Cass

State: Missouri

Well No: 1

Well Location: Sec 32, T44N-R33W
492' fr. N line
1,142' fr. E line

Company: Odyssey Joint Venture

Surface Elevation: 980'

Casing Record: 39'7", 7" J55 to 39'4"

Date Spudded: March 24, 1981

Cementing Record: 6 Sacks, Portland A in 30 Gal. Water

Date Completed or Abandoned:

Hole Size:
9-7/8" to 40'
6-1/4" to 800'

Total Depth: 800'

Permanent Datum G.L. Elev. K.B. --
Log Measured from G.L. D.F. --
Drill Measured from G.L. G.L. 980'

Sample and Core Descriptions

Formation	Depth(s)	Unit Description
	0-5	soil and sandstone, tan, weathered
	5-20	limestone, dark gray, crystalline, dense
	20-25	limestone, gray, light, crystalline, dense; brown fossiliferous
	25-40	limestone, light tan, dense, fossiliferous
	40-45	limestone, dark gray, silty
	45-50	shale, dark gray; shale, black, fissile
	50-55	limestone, light tannish-gray, dense; show shale, black, fissile
	55-60	limestone, light cream, dense

Bishop - Well No. 1

60-70	limestone, light tan, sugar-texture, oil stained
70-75	shale, dark gray, medium soft; show shale, black, fissile
75-80	shale, dark gray; shale, black, fissile; limestone, brown, dense
80-85	limestone, light gray, dense; limestone, brown, dense 10%
85-90	limestone, gray, dense; shale, gray, soft; minor limestone, brown
90-95	sandstone, light blue-gray, silty; limestone, gray, dense; limestone, brown
95-100	shale, light gray, sandy; sandstone, tan, very fine-grained, variegated with shale, gray; sandstone, light blue, silty (a sandstone-shale mix)
100-115	shale, gray, medium-hard, platey
115-120	shale, gray, sandy; variegated with sandstone, light gray, very fine-grained, thinly varved with carbon on varved surfaces
120-130	shale, gray, sandy, hard, variegated with sandstone, gray, fine-grained; all varved or alternating very thin-beddings (4 to 8 mm)
130-140	same as above; slight oil staining on some sandstone fragments
140-205	shale, gray, sandy
205-215	shale, gray, soft; coal, black
215-220	sandstone, gray and tan, oil droplets in sandstone
220-230	Core #1
	All shale, gray, with varved sand splits. Upper 5' of core bleeding brown oil and small bubbles

Bishop - Well No. 1

	gas frying from sandy intervals - interval has 17 breaks (horizontal) in the 5'. Remainder of core is iridescent with rainbow oil.
	Shale easily parts on varving planes.
230-260	shale, dark gray, sandy, platey
260-265	shale, dark gray; show shale, black, fissile
265-270	shale, black, fissile
270-275	shale, gray, sandy, soft; coal or fissile shale
275-280	shale, gray, sandy; show coal or fissile shale, black
280-285	shale, gray, sandy variegated with sandstone, fine-grained, thinly varved; carbonaceous
285-290	shale, gray, sandy; show coal; oil stained in part
290-295	limestone, grayish-tan, fossiliferous; shale, gray, sandy; minor shale, black, fissile
295-300	shale, gray, soft; limestone, gray-tan, fossiliferous
300-310	limestone, tan to light tan, dense, fossiliferous; oil stained
310-315	limestone, tan to light tan; sandstone, brown, thin-bedded; limestone oil stained in part
315-320	shale, light gray, soft, variegated with sandstone, tan, very fine-grained; shale, gray, sandy, platey
320-330	shale, gray, soft, sandy
330-335	shale, black, fissile; limestone, brown, dense
335-340	shale, black, fissile; shale, light gray, sandy, soft; sandstone, tan, very fine-grained, platey
340-345	sandstone, brown, fine-grained; oil stained

Bishop - Well No. 1

345-353	Core #2 - Cut 8'. Received 7.6'.
	345-348 Shale, dark gray, sandy; upper 3" coalified.
	348-352.6 Limestone, light gray, dense, massive. No odor. No staining and no acid rainbows. No evidence of gas or oil.
353-365	limestone, tannish-gray, dense, fossiliferous
365-375	limestone, gray, sandy
375-380	limestone, tan, dense; shale, gray, sandy
380-385	coal, black
385-390	coal, black; shale, gray; minor limestone, tan, dense
390-395	limestone, gray, sandy, dense
395-400	shale, black, fissile; shale, gray, sandy
400-405	coal, black; shale, black, fissile; shale, gray, soft
405-411	sandstone, tan, fine-grained; yielding oil; sandstone, gray, fine-grained; oil in sample, sample water, etc.; strong odor of oil; oil visible on sample fragments; oil, brown, non-viscous
411-421	Core #3 - Cut 10'. Received 10'.
	All shale, gray, sandy with interfingers of sandstone, tan, very fine-grained throughout core; bands are knife-edge narrow and make up 30% of core; most bleeding oil faintly.
421-423	missing
423-433	Core #4 - Cut 10'. Received 10'.
	All shale, dark gray, sandy; no oil/gas; faint odor.

Bishop - Well No. 1

433-443	Core #5 - Cut 10'. Received 10'.
	433-439 Shale, dark gray to black; no oil/gas.
	439-443 Shale, dark gray with sandstone, tan, very fine-grained; sandstone is varved with shale as thin horizontal bands from 1/4 to 3/4 inches wide. Shale and sand readily split apart.
443-453	Core #6 - Cut 10'. Received 10'.
	All shale, dark gray, sandy, dense; no oil/gas indications except uppermost 3" of shale carried sandstone, tan, very fine-grained, faintly bleeding oil.
453-475	shale, dark gray and gray, sandy
475-485	shale, dark gray, sandy; limestone, light tan, dense
485-495	shale, gray, platey
495-505	shale, light gray, very sandy; show coal, black
505-510	shale, light gray, sandy; showing coal; shale, tan, thin flakes, non-calcareous
510-515	shale, light gray, sandy; shale, tan to red, thin flakes, hard
515-520	shale, light gray, sandy; shale, tan (flakes); show coal, black
520-530	shale, light gray, sandy; shale, dark gray, sandy
530-535	shale, gray, sandy; shale, light gray, sandy
535-540	shale, gray, sandy; shale, light gray with sandstone, brown to tan, very fine-grained as variegations in the shale
540-545	shale, dark gray; sandstone, brown, silty, dense

Bishop - Well No. 1

545-550	shale, black, platey and fissile; shale, dark gray; minor sandstone, brown, dense
550-555	shale, dark gray, sandy; shale, black, fissile
555-560	shale, light gray, buff (soft); shale, black, fissile; coal, black
560-565	shale, dark gray, sandy; minor shale, light gray; shale, black, fissile
565-570	shale, dark gray, sandy, platey; shale, black fissile 10%
570-590	shale, dark gray; variegated with sandstone, light tan, very fine-grained, very thinly bedded (less than 1/8 inch in width)
590-605	shale, dark gray, platey; shale, gray, sandy; show shale, black, fissile; minor sandstone, gray, variegated with shale, gray
605-610	shale, dark gray to black, sandy, platey
610-615	shale, dark gray to black, sandy, platey; show sandstone, light tan, very fine-grained, platey
615-637	shale, light gray, very sandy, hard (borderline between sandstone and shale)
637-647	Core #7 - Cut 10'. Received 10'.
	637-642 Shale, dark gray, variegated with sandstone, light gray, fine-grained, dense.
	642-647 Sandstone, light gray, very fine-grained with carbon bands as staining and as carbonaceous sandstone bands. Sandstone appears porous. No oil/gas indications; hole is making light flow of gas.
647-680	sandstone, gray and dark gray, fine-grained, carbonaceous
680-695	sandstone, light gray, fine-grained; shale, gray, sandy

Bishop - Well No. 1

695-700	sandstone, light gray, fine-grained; shale, black, fissile
700-705	sandstone, light gray, fine-grained; shale, gray, sandy
705-725	sandstone, light gray, fine-grained, platey, carbonaceous
725-730	sandstone, dark gray, very fine-grained, platey
730-735	sandstone, dark gray and gray, very fine-grained, platey
735-740	sandstone, dark gray, very fine-grained, platey
740-745	sandstone, dark gray, very fine-grained; shale, dark gray; both very platey
745-750	shale, dark gray, platey, sandy
750-755	shale, dark gray, platey, sandy; sandstone, gray, very fine-grained, platey
755-760	shale, dark gray; shale, black fissile; show chert, cream, dense
760-765	shale, dark gray; chert, gray-black, dense; minor sandstone, thinly bedded
765-780	no returns
780-785	sand-shale bits, sand of limestone
785-800	no returns
TD 800	

Permit #: 20164 Date Issued: 3-18-81

County: Cass Date Cancelled:

CONFIDENTIAL UNTIL: Date Plugged: 8-82

OGC FORMS	Date Received
1	
2	
3	3-16-81
3i	
4	3-16-81
4i	
5	
6	
7	9-2-82
8	
11	
12	
Misc. Form 2	

COMMENTS:

	TYPE	ID #	Date Received
Logs			
Samples	chip		
	core		
Analyses	water		
	core		9-2-82

Additional Submitted Data:

CORE ANALYSIS REPORT

FOR

Landmark Production, Inc.
~~ODYSSEY PETROLEUM, INC.~~

BISHOP NO. 1 WELL

CASS COUNTY, MISSOURI

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
OKLAHOMA CITY, OKLAHOMA

MAY 19, 1981

REPLY TO
SUITE 133
400 SOUTH VERMONT
OKLAHOMA CITY, OKLA.
73108

ODYSSEY PETROLEUM, INC.
1801 B SOUTH BUTLER DR.
HARRISONVILLE, MO 64701

ATTN: BRENT NATRASS

SUBJECT: CORE ANALYSIS DATA
BISHOP NO. 1 WELL
CASS COUNTY, MISSOURI
CLI FILE NO. 3406-00439

GENTLEMEN:

DIAMOND CORES WERE TAKEN IN THE SUBJECT WELL AND LATER TRANSPORTED TO OUR CHANUTE LABORATORY FOR ANALYTICAL PURPOSE. THE MEASURED DATA FOLLOWS ON THE ACCOMPANYING PAGES OF THIS REPORT.

THE ACCOMPANYING COREGRAPH PRESENTS THE SURFACE CORE GAMMA LOG AND BINOMIALLY AVERAGED CORE ANALYSIS DATA IN GRAPHICAL FORM TO AID CORRELATION WITH DOWNHOLE ELECTRICAL SURVEYS.

POOR PERMEABILITY AND POROSITY DEVELOPMENT INDICATED BY THE MEASURED DATA SUGGESTS DESIRED FLOW RATES OF COMMERCIAL SIGNIFICANCE WOULD NECESSARILY BE ACHIEVED ONLY THROUGH EXCELLENT RESPONSE FROM FORMATION FRACTURE TREATMENT.

ZONAL AVERAGES ALONG WITH ESTIMATES OF RECOVERABLE OIL (WHERE APPLICABLE) ARE PRESENTED ON THE CORE SUMMARY PAGE OF THIS REPORT.

WE APPRECIATE THIS OPPORTUNITY OF SERVING YOU.

VERY TRULY YOURS

CORE LABORATORIES, INC.

Dale E. Boyle (RR)

DALE E. BOYLE
DISTRICT MANAGER

5 CC - ADDRESSEE

ODYSSEY JOINT VENTURE NO. 1
BISHOP NO. 1 WELL
BISHOP FIELD
CASS COUNTY, MISSOURI

DATE: 4/24/81
FORMATION: WAYSIDE/LAGANDA SHALE/SQU
DRLG. FLUID: WATER BASE MUD
LOCATION: SEC. 32-44S-33W

FILE NO: 3406-004
ENGINEER: HUDSON
ELEVATION: UNKNOWN

DEAN STARK ANALYSIS

SMP. NO.	DEPTH	PERM. TO AIR MD. PLUG	POROSITY PERCENT	FLUID SATS. OIL	FLUID SATS. WTR.	GR. DEN.	DESCRIPTION
1	220.0-21.0	5.0	20.4	68.1	13.8	2.69	SD,SLTY,V/SHY
2	221.0-22.0	2.8	19.7	31.8	58.6	2.70	SD,SLTY,V/SHY
3	222.0-23.0	<0.1	15.6	10.0	78.2	2.84	SD,SLTY,V/SHY
4	223.0-24.0	<0.1	17.0	11.3	84.1	2.75	SD,SLTY,V/SHY
5	224.0-25.0	0.6	16.0	12.5	73.2	2.81	SD,SLTY,V/SHY
6	225.0-26.0	34.0	17.1	18.6	74.3	2.71	SD,SLTY,V/SHY
7	226.0-27.0	<0.1	17.0	12.7	75.6	2.73	SD,SLTY,V/SHY
8	227.0-28.0	<0.1	15.9	14.4	75.3	2.74	SD,SLTY,V/SHY
9	228.0-29.0	18.0	16.1	11.2	85.4	2.73	SD,SLTY,V/SHY
10	229.0-30.0	28.0	16.2	8.7	90.2	2.74	SD,SLTY,V/SHY
	230.0-11.0						DRILLED
11	411.0-12.0	0.9	15.5	7.0	85.8	2.71	SD,SLTY,CAL
12	412.0-13.0	<0.1	14.4	2.3	95.3	2.81	SD,SLTY,CAL
13	413.0-14.0	0.1	13.6	2.4	97.0	2.86	SD,SLTY,DOL
14	414.0-15.0	0.1	11.6	3.4	95.1	2.76	SD,SLTY
15	415.0-16.0	<0.1	14.2	19.8	80.0	2.75	SD,SLTY
16	416.0-17.0	<0.1	14.6	10.7	89.7	2.76	SD,SLTY
	417.0-20.0						SH,SD LAM
	420.0-39.0						LOST CORE
17	439.0-40.0	<0.1	16.3	2.6	82.5	2.74	SD,SLTY,SHY,SL/CA
18	440.0-41.0	<0.1	15.7	2.5	86.3	2.72	SD,SLTY,SHY,SL/CA
19	441.0-42.0	1.5	16.0	1.2	79.6	2.73	SD,SLTY,SHY,SL/CA
20	442.0-43.0	0.3	15.6	1.1	84.7	2.74	SD,SLTY,SHY,SL/CA

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
Oklahoma District

Company ODYSSEY PETROLEUM, INC.

Well BISHOP NO. 1

CLI File 3406-00439

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME	SECOND KNOBTOWN	SQUIRREL			
DEPTH INTERVAL	220-30	411-43			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	10	13			
FEET OF CORE INCLUDED IN AVERAGES	5	5			
AVERAGE PERMEABILITY: MILLIDARCYS	18	0.6			
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	90	3			
AVERAGE POROSITY: PER CENT	17.9	14.5			
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	27.7	3.0			
AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	64.5	88.4			
AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE					
OIL GRAVITY: °API					
ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL					
ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL					
CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	*	*			

Calculated maximum solution gas drive recovery is * barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. These recovery estimates represent theoretical maximum values for solution gas drive and do not take into account any prior production or drainage to other areas. The difference between the calculated stock-tank oil in place and the solution gas drive recovery estimates, which are barrels per acre-foot, represent that portion of the reservoir oil which is available for possible secondary recovery techniques. Estimates of additional recoverable oil by secondary or enhanced methods would necessitate a complete engineering study of the subject reservoir.

* TRANSITION ZONES

(c) calculated (e) estimated (m) measured

CORE LABORATORIES, INC.
2908 S. SANTA FE AVE.
P. O. BOX 945
CHANUTE, KANSAS 66720

COMPANY: ODYSSEY JOINT VENTURE NO. 1

WELL: BISHOP NO. 1

These are calculated from the fluid saturations from the BISHOP NO. 1 well, for Oil Content, in place, within the reservoir.

Calculations on lost core and drilling procedures are not included in this report.

DEPTHS	OIL CONTENT*
220.0-21.0	1077.8
22.0	486.0
23.0	121.0
24.0	149.0
25.0	155.2
26.0	246.8
27.0	167.5
28.0	177.6
29.0	139.9
30.0	109.3
411.0-12.0	84.2
13.0	25.7
14.0	25.3
15.0	30.6
16.0	218.1
17.0	121.2
439.0-40.0	32.9
41.0	30.5
42.0	14.9
43.0	13.3

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY ODYSSEY PETROLEUM, INC. FILE NO. 3406-00439
WELL BISHOP NO. 1 DATE 5-5-81
FIELD BISHOP FORMATION KNOBTOWN/SQUIRREL ELEV. UNKNOWN
COUNTY CASS STATE MISSOURI DRLG. FLD. AIR CORES
LOCATION SEC. 32-44S-33W

CORRELATION COREGRAPH

VERTICAL SCALE: 5" = 100'

Gamma Ray
RADIATION INCREASE →

Permeability
MILLIDARCIES
1000 100 10 1

Depth Feet

Porosity
PERCENT
30 20 10 0

Total Water
PERCENT PORE SPACE
100 80 60 40 20 0

Oil Saturation
PERCENT PORE SPACE
0 20 40 60 80 10

200
220
230
250
300
350
400
411
443