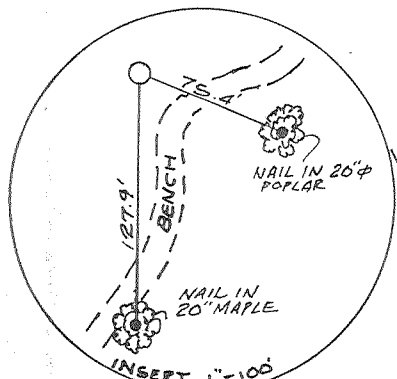


3/23/83

LATITUDE 37°42'36"

LONGITUDE 81°55'00"



MAPLE ON POINT FOUND

TOPO. LOCATION MAN QUAD. 7 1/2



2980'

0.745
0.555W

3.62
0.55



NORTH

CHAFIN COAL CO.

A-18, GW-1982

COAL SHAFT ABAND.

MCDONALD LAND CO.

5990.47 ACRES

TR. G-6084 ACS. OIL & GAS

PT. OF 8666.505 ACS

WV-409

LYNN & POPLAR FOUND

NO KNOWN OIL & GAS WELLS WITHIN 2400'

FILE NO. CS 88-3
 DRAWING NO. 3
 SCALE 1" = 400'
 MINIMUM DEGREE OF ACCURACY 1:2500'
 PROVEN SOURCE OF ELEVATION U.S.G.S. BM H-162 AT CHRISTIAN

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.

(SIGNED) William S. Robertson
 R.P.E. _____ L.L.S. 257 S-U

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FORM IV-6 (8-78)



DATE February 25, 19 88
 OPERATOR'S WELL NO. A-18, GW-1982
 API WELL NO.

47 - 045 - 1118
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1416.5' WATER SHED ROCKHOUSE CREEK OF GUYANDOT RIVER
 DISTRICT TRIADELPHIA 3 COUNTY LOGAN
 QUADRANGLE MAN 7.5' 456 0491 Gilbert nc
 SURFACE OWNER W.W. McDONALD LAND CO. ACREAGE 5,990.47 TRACT NO 6
 OIL & GAS ROYALTY OWNER W.W. McDONALD LAND CO. LEASE ACREAGE 6084 ACS. PT. OF 8666.505 ACS.
 LEASE NO. WV 409
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5420' MAR 25 1988
 WELL OPERATOR CITIES SERVICE DESIGNATED AGENT PAUL D. PHILLIPS
 ADDRESS P. OIL & GAS CORP. 169 ADDRESS P.O. BOX 873, CHARLESTON WV 25323
P.O. BOX 873 CHARLESTON WV 25323

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24-Mar-88

API # 47- 45-01118

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Well Operator's Report of Well Work

Farm name: McDONALD, W.W. LAND CO. Operator Well No.: A-18, GW-1982

LOCATION: Elevation: 1416.50 Quadrangle: MAN

District: TRIADELPHIA County: LOGAN
Latitude: 3880 Feet South of 37 Des. 42Min. 30 Sec.
Longitude: 2980 Feet West of 81 Des. 55 Min. 0 Sec.

Company: CITIES SERVICE OIL & GAS CORP.

P. O. BOX 873
CHARLESTON, WV

Asent: PAUL D. PHILLIPS

Inspector: ARTHUR ST. CLAIR
Permit Issued: 03/24/88
Well work Commenced: 5-1-88
Well work Completed: 5-3-89

Verbal Plussions
Permission granted on:
Rotary Cable Ris
Total Depth (feet) 5534'
Fresh water depths (ft)

Salt water depths (ft) 396'; 1347'

Is coal being mined in area (Y/N)? Y
Coal Depths (ft): 81', 131', 304', 342',
382', 523'

Size	Casings & Tubings	Used in Drillings	Left in Well	Cement Fill Cu. Ft.
20"		31'	31'	
13-3/8"		194'	194'	TOC Surface
7"		2691'	2691'	TOC Surface
4-1/2"		5512'	5512'	TOC 2250'
2-3/8"			5406'	

OPEN FLOW DATA

Producing formation: Devonian Shale Pay zone depth (ft) 3573-4065'
Gas: Initial open flow 411 MCF/d Oil: Initial open flow Bbl/d
Final open flow 303 MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 708 Psig (surface pressure) after 260 Hours

Second producing formation Pay zone depth (ft)
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
Final open flow MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure Psig (surface pressure) after Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Delbert G. Oliver
For: CITIES SERVICE OIL & GAS CORP.

By: Delbert G. Oliver
Date: 6-2-89

JUN 16 1989

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.:

Rhinestreet (5270-5403') Perforated with 67 holes. Fracture stimulated with 51,100# sand.
 Lower Huron (4555-4927') Perforated with 69 holes. Fracture stimulated with 52,200# sand.
 Upper Devonian (3573-4065') Perforated with 70 holes. Fracture stimulated with 50,000# sand.

WELL LOG

<u>FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>
Sand	0	81
Coal	81	88
Sand	88	131
Coal	131	135
Sand	135	254
Siltstone	254	304
Coal	304	306
Siltstone	306	342
Coal	342	345
Siltstone	345	382
Coal	382	386
Siltstone	386	523
Coal	523	525
Siltstone	525	835
Sand	835	858
Siltstone	858	916
Sand	916	1006
Siltstone	1006	1060
Sand	1060	1182
Siltstone	1182	1259
Sand	1259	1492
Siltstone	1492	1513
Sand	1513	1824
Siltstone	1824	2538
Maxton	2538	2581
Siltstone	2581	2614
Little Lime	2614	2656
Pencil Caye	2656	2662
Big Lime	2662	2913
Siltstone	2913	3034
Weir	3034	3158
Shale	3158	3483
Sunbury	3483	3508
Berea	3508	3529
Devonian Shale	3529	4552
Lower Huron	4552	4937
Java	4937	5270
Rhinestreet	5270	5479
Marcellus	5479	5504
Onondaga	5504	

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 JUN 06 1989

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

TO 5534

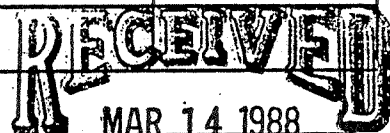
6759

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
WELL WORK PERMIT APPLICATION**

- 1) Well Operator: ¹⁶⁹ Cities Service Oil and Gas Corporation 9800, 3, 456
- 2) Operator's Well Number: McDonald Land Co. A-18, GW-1982 3) Elevation: 1416.8
- 4) Well type: (a) Oil / or Gas /
(b) If Gas: Production / Underground Storage /
Deep / Shallow /
- 5) Proposed Target Formation(s): ⁴⁴¹ Devonian Shale
- 6) Proposed Total Depth: 5600 feet
- 7) Approximate fresh water strata depths: 143, 261 ~~OK~~
- 8) Approximate salt water depths: 1400, 1550, 1600 ~~OK~~
- 9) ^{Approx logon 293, 381, 385, 436} Approximate coal seam depths: 77 (open mine); 127 (open mine); 157; 347 (Possible Open Mine) ~~OK~~
- 10) Does land contain coal seams tributary to active mine? Yes / No /
- 11) Proposed Well Work: DEVONIAN SHALE DRILLING WELL
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	16	H-40	52	40	40	Surface
Coal and Fresh Water	13-3/8	H-40	48	200	200	Surface
Open Mine Coal Contingency	9-5/8	J-55	32	450	450	38CSR18-11.3 Surface
Pipe Intermediate	7	J-55	23	2645	2645	38CSR18-11.2.2 Surface
Production	4-1/2	J-55	11.6	5600	5600	38CSR18-11.1 325 cu ft
Tubing	2-3/8	EUE	4.7	5600	5600	
Liners						



PACKERS : Kind _____
 Sizes _____
 Depths set _____

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

For Division of Oil and Gas Use Only

30055
 Fee(s) paid: JS Well Work Permit JS Reclamation Fund JS WPCP JS
JS Plat JS WW-9 JS WW-2B JS Bond Blanket 50 JS Agent JS
 (Type)

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MAR 14 1988

Page 1 of 4
Form WW2-A
(09/87)
File Copy

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

1) Date: March 4, 1988
2) Operator's well number
McDonald Land Co. A-18, GW-1982
3) API Well No: 47 - 045 - 1118
State - County - Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name W.W. McDonald Land Co.
Address P. O. Box 1706
Logan, WV 25601, Attn: Ed Wood, Pres.
(b) Name _____
Address _____
(c) Name _____
Address _____

5) (a) Coal Operator:
Name Powellton Coal Co.
Address Box 8
Mallory, WV 25634, Attn: Dino Palelti
(b) Coal Owner(s) with Declaration
Name W.W. McDonald Land Co.
Address P. O. Box 1706
Logan, WV 25601, Attn: Ed Wood, President
Name _____
Address _____

6) Inspector Arthur St. Clair
Address P. O. Box 468
Brenton, WV 24818
Telephone (304)- 723-6277

(c) Coal Lessee with Declaration
Name Powellton Coal Co.
Address Box 8
Mallory, WV 25634, Attn: Dino Palelti

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
xx Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 4 on the above named parties, by:

- _____ Personal Service (Affidavit attached)
- X Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Cities Service Oil and Gas Corporation
By: Paul D. Phillips
Its: Operations Manager
Address P. O. Box 873
Charleston, WV 25323
Telephone (304) 344-8383

Subscribed and sworn before me this 4 day of March, 1988

Donald J. Bay
My commission expires June 1, 1989
Commissioner
Notary Public