

Done 4/5/88

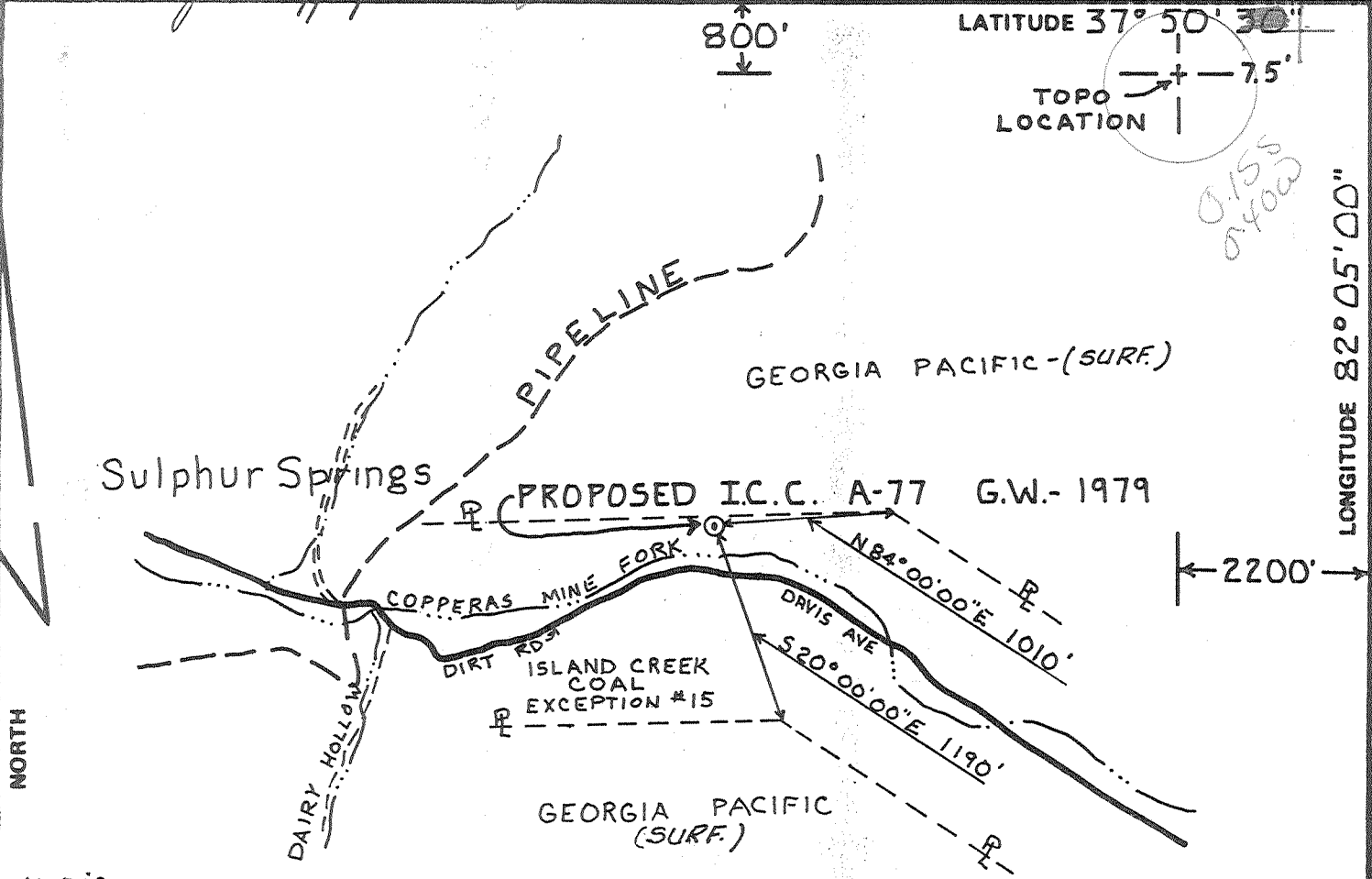
800'

LATITUDE 37° 50' 30"

TOPO LOCATION

0.155
0.400

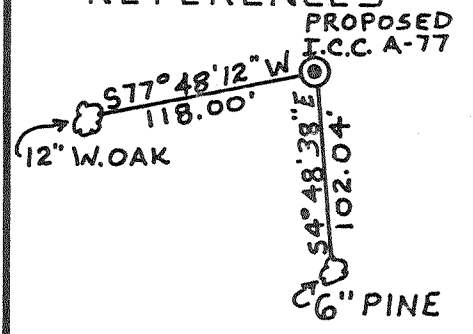
LONGITUDE 82° 05' 00"



NOTES:

- 1) BEARINGS AND DISTANCES TO ISLAND CREEK COAL PROPERTY CORNERS CALCULATED.
- 2) NO KNOWN WELLS WITHIN 2000' OF PROPOSED WELL
- 3) W.VA. STATE PLANE COORD. VALUES
N 304300.8
E 1684903.3
- 4) ISLAND CREEK COAL, LESSOR
CITIES SERVICE CORP., LESSEE

REFERENCES



SCALE: 1" = 100'

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 IN 2500
 PROVEN SOURCE OF ELEVATION KNOWN ELEV. @ MON.
 17591 = 1581.93

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) Ralph E. Norman Jr.
 R.P.E. 9682 L.L.S.

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE FEB. 11, 1988
 OPERATOR'S WELL NO. I.C.C. A-77
 API WELL NO. G.W.-1979
 47 045 - 1121
 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 ___
 LOCATION: ELEVATION 860.80 WATER SHED COPPERAS MINE FORK
 DISTRICT ISLAND CREEK COUNTY LOGAN
 QUADRANGLE HOLDEN, W.VA. 7.5' 401 059 8 +15' 50
 SURFACE OWNER ISLAND CREEK COAL & GEORGIA PACIFIC CORP. LEASEAGE
 OIL & GAS ROYALTY OWNER ISLAND CREEK COAL LEASE ACREAGE 35053.47
 LEASE NO. WV-486
 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 4450'
 WELL OPERATOR CITIES SERVICE OIL & GAS CORP. DESIGNATED AGENT PAUL D. PHILLIPS
 ADDRESS P.O. BOX 873 ADDRESS P.O. BOX 873
 CHARLESTON, W.VA. 25323 169 CHARLESTON, W.VA. 25323

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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: GEORGIA PACIFIC CORP. Operator Well No.: ICC# A77 GW1979

LOCATION: Elevation: 860.80 Quadrangle: HOLDEN

District: ISLAND CREEK County: LOGAN
Latitude: 2200 Feet South of 37 Des. 50Min. 30 Sec.
Longitude: 800 Feet West of 82 Des. 5 Min. 0 Sec.

Company: CITIES SERVICE OIL & GAS CORP.

P. O. BOX 873
CHARLESTON, WV

Agent: PAUL D. PHILLIPS

Inspector: ARTHUR ST. CLAIR

Permit Issued: 04/06/88

Well work Commenced: 11-7-88

Well work Completed: 4-22-89

Verbal Plugging

Permission granted on: _____

Rotary Cable _____ Ris

Total Depth (feet) 4349'

Fresh water depths (ft) 77'

Salt water depths (ft) 795'

Is coal being mined in area (Y/N)? N

Coal Depths (ft): 269-277 (Mined Out)

Size	Used in	Left	Cement
	&		Fill Up
	Tubing	Drillings	in Well
			Cu. Ft.
20"	25'	25'	Surface
9.625"	588'	588'	Surface
7"	1772'	1772'	450 cuft
4.5"		4327'	330 cuft
2.375"		3871'	

OPEN FLOW DATA

Lower Huron, Upper Devonian Shale

Producing formation and Big Line Pay zone depth (ft) 3851'

Gas: Initial open flow 166 MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow 153 MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 17 Hour

Static rock Pressure 370 psig (surface pressure) after 13.5 Hour

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 _____ Hour

Static rock Pressure _____ psig (surface pressure) after _____ Hour

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATE 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, Appalachian Project Manager
For: CITIES SERVICE OIL & GAS CORP.

By: Delbert G. Oliver Date: 27 April 1989 MAY 5 1989

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

Formation

Lower Huron Perforated 3553-3851' (68 holes). Frac'd w/ 50,000# sand, 96 BLW, 377 MCF N2.

Upper Devonian Perforated 2921-3115' (44 holes). Frac'd w/ 50,000# sand, 96 BLW, 363 MCF N2.

Big Lime Perforated 2010-2021' (34 holes). Acidized with 47 BLW, 37 MCF N2.

WELL LOG

Formation

	<u>Top (Ft)</u>	<u>Bottom (Ft)</u>
Sand	0	41
Siltstone	41	269
Coal	269	277 (Mined Out)
Siltstone	277	393
Sand	393	468
Siltstone	468	744
Sand	744	933
Siltstone	933	990
Sand	990	1328
Siltstone	1328	1544
Maxton	1544	1620
Siltstone	1620	1740
Little Lime	1740	1783
Pencil Cave	1783	1790
Big Lime	1790	2021
Siltstone	2021	2154
Weir	2154	2232
Shale	2232	2546
Sunbury	2546	2570
Berea	2570	2613
Devonian Shale	2613	3552
Lower Huron	3552	3859
Java	3859	4140
Rhinestreet	4140	4312
Marcellus	4312	4340
Onondaga	4340	4349

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

6799

MAY 5 1989

045-1121

Issued 4/6/88
Expires 4/6/90

FORM WW-2B

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

- 1) Well Operator: Cities Service Oil and Gas Corporation ¹⁶⁹ 9800, 5, 401
- 2) Operator's Well Number: Island Creek A-77, GW-1979 3) Elevation: 860.80
- 4) Well type: (a) Oil / or Gas /
(b) If Gas: Production / Underground Storage /
Deep / Shallow /
441
- 5) Proposed Target Formation(s): Devonian Shale
- 6) Proposed Total Depth: 4450 feet
- 7) Approximate fresh water strata depths: 125
- 8) Approximate salt water depths: 1065, 1600
- 9) From Logan 144, 151, 153, 156 Approximate coal seam depths: 125' (open mine); 281' (open mine) 308-311'
- 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	175	175	38 CSR18-11.3 Surface
Coal	9-5/8	J-55	32	350	350	38 CSR18-11.2.2 Surface
Intermediate	7	J-55	23	1775	1775	Surface
Production	4-1/2	J-55	11.6	4450	4450	38 CSR18-11.1 300 cu ft
Tubing	2-3/8	NUE	4.6	4450	4450	
Liners						

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PACKERS : Kind _____
Sizes _____
Depths set _____

For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

30051
1 Fee(s) paid: Well Work Permit Reclamation Fund WPCP
Plat WW-9 WW-2B Bond 50 blanket. Agent
(Type)

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

DIVISION OF OIL & GAS 3)
DEPARTMENT OF ENERGY

Date: March 11, 1988
Operator's well number
Island Creek A-77, GW-1979
API Well No: 47 - 045 - 1121
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 Georgia Pacific Corporation
Address General Delivery
Wyoming, WV 24898
 - (b) Name Attn: Bill Adkins
Address _____
 - (c) Name _____
Address _____
- 5) (a) Coal Operator:
Name N/A
Address _____
- (b) Coal Owner(s) with Declaration
Name Island Creek Corp., P.O. Box 840
Address Holden, WV 25625
Attn: J.L. Workman, Jr., Engr. Mgr.
Name _____
Address _____
- 6) Inspector Arthur St. Clair
Address P. O. Box 468
Brenton, WV 24818
Telephone (304)-732-6227
- (c) Coal Lessee with Declaration
Name W & P Coal Co., Attn: John Clark
Address P. O. Box 570
Omar, WV 25630

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
x 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:
x Personal Service (Affidavit attached)
_____ 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 11 day of MARCH, 1988

James J. Bay
My commission expires June 11, 1989
Notary Public