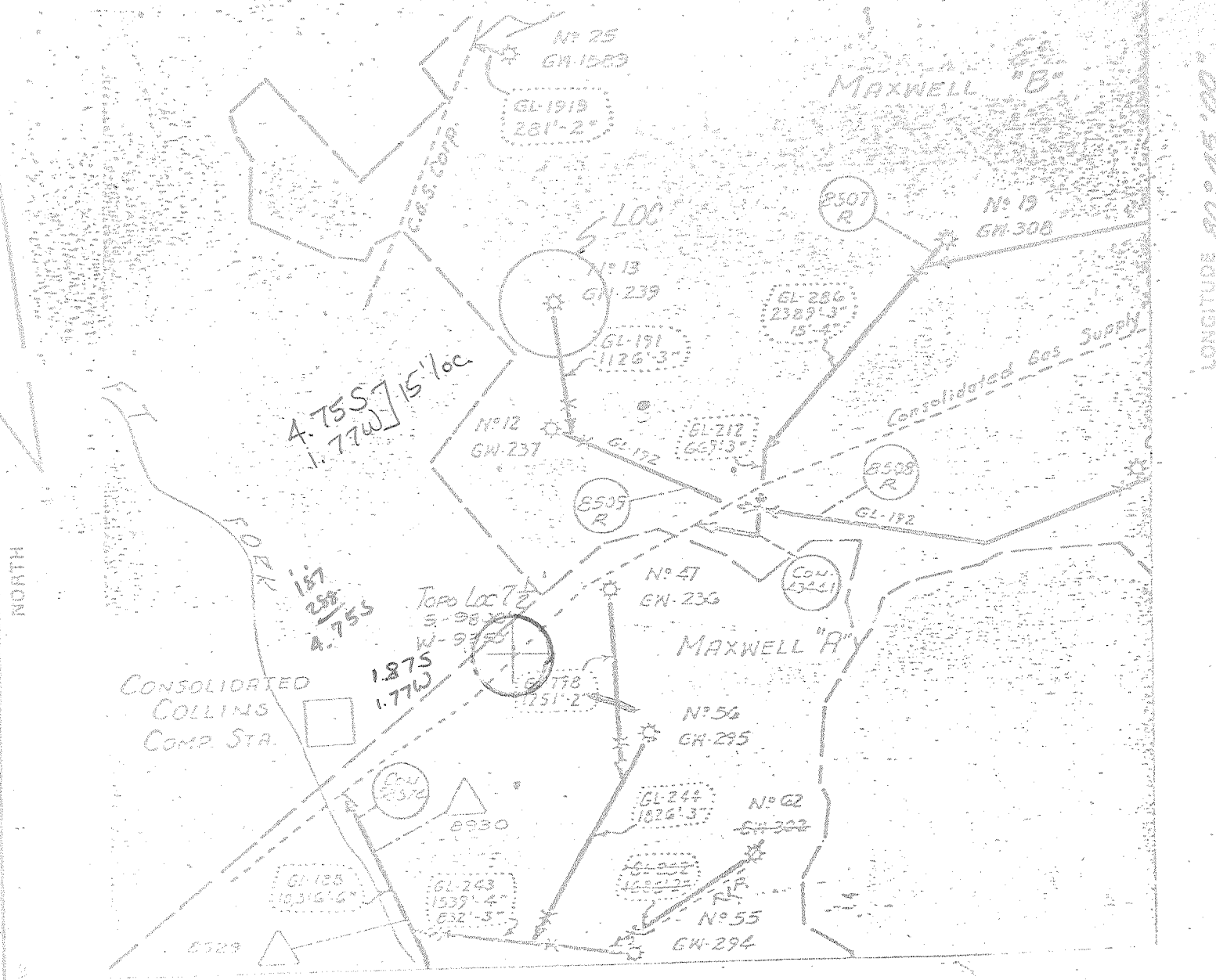


39°17'30" - 75'
39°20' - 15'



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 1320'
 MINIMUM DEGREE OF ACCURACY _____
 PROVEN SOURCE OF ELEVATION _____

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) [Signature]
 R.P.E. _____ L.L.S. 247

PLACE SEAL HERE

(H) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6
 (8-38)



STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

DATE MAR 26 19 80
 OPERATOR'S WELL NO. GW239 (B-13)
 API WELL NO. 47-017-2146
 STATE COUNTY PERMIT

WELL TYPE: OIL _____ GAS X LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION _____ STORAGE _____ DEEP _____ SHALLOW X
 LOCATION: ELEVATION 1100' WATER SHED LT. EK. OF ARNOLDS CR. & BLUESTONE CR.
 DISTRICT WEST UNION COUNTY DODDRIIDGE
 QUADRANGLE WEST UNION 7 1/2; West Union 15' 5 E
 SURFACE OWNER _____ ACREAGE _____
 OIL & GAS ROYALTY OWNER MAXWELL 'B' LEASE ACREAGE _____
 LEASE NO. _____
 PROPOSED WORK: DRILL _____ CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
F.E.R.C. FILING
 PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
 TARGET FORMATION _____ ESTIMATED DEPTH _____
 WELL OPERATOR CITIES SERVICE CO. DESIGNATED AGENT SAM J. MATTHEWS
 ADDRESS PO BX 873 ADDRESS PO BX 873
CHARLESTON WV 25323 CHARLESTON WV 25323

66 Straight Fork Bluestone Creek (133)

RECORD OF LEWIS MAXWELL #13 on Arnolds Creek Doddridge County.
 Well was drilled by COLUMBIAN CARBON COMPANY OF WILLIAMSPORT, PA.
 Contractor - F. S. GREATHOUSE OF WESTON WEST VIRGINIA
 DRILLING WAS COMMENCED ON AUGUST 31 and finished on
 OCTOBER 27, 1923.

RECORD KEPT ON ALL FORMATIONS	TOP	BOTTOM	& THICKNESS
Conductor Box	0	16	16 Feet
Red Rock Soft	16	29	13
Lime WHITE HARD	29	45	11
Slate SOFT	45	135	90
Coal	135	138	3
Lime WHITE HARD	138	185	47
Red Rock SOFT	185	215	30
Lime WHITE HARD	215	240	25
Red Rock HARD	240	300	60
Lime WHITE HARD	300	330	30
Slate Black Soft	330	350	20
Lime HARD	350	400	50
Red Rock SOFT	400	475	75
Hurry Up Sand HARD WATER 505	475	530	55
Lime WHITE HARD	530	745	215
Red Rock SOFT	745	755	10
Lime WHITE HARD	755	780	25
Little Dunkard Sand	780	805	25
Slate White Soft	805	835	30
Red Rock Soft	835	845	10
Lime Hard	845	900	55
Red Rock Soft	900	910	10
Lime Hard	910	980	70
Red Rock	980	985	5
Lime Hard	985	1010	25
Red Rock Soft	1010	1016	6
Lime Hard	1016	1140	124
Slate Black	1140	1165	25
Gas Sand Hard	1165	1265	100
Lime White Hard	1265	1435	170
Slate Black	1435	1455	20
Lime White Hard	1455	1480	25
1st Salt Sand	1480	1530	50
Black Shale	1530	1557	27
2nd Salt Sand	1557	1620	63
Black Shale	1620	1700	80
Lime Hard Little Grity	1700	1710	10
Black Slate	1710	1715	5
Lime Black	1715	1750	35
3rd Salt Sand	1750	1775	25
Black Slate	1775	1808	33
Hard Lime or Maxon Sand	1808	1850	42
Black Slate	1850	1895	45
Blue Monday Sand	1895	1910	15
Slate Soft	1910	1913	3
Little Lime-	1913	1940	27
Pencil Cave	1940	1950	10
Big Lime	1950	2025	75
Little Gas	1982	XXXXXXXXXXXXXXXXXXXX	
Big Injun Sand	2025	2124	99
Little Gas	2071	XXXXXXXXXXXXXXXXXXXX	
Gas	2110	44/10 Water in 2" pipe	
Slate	2124	2150	26
Squaw Sand & Shells	2150	2415	265
Slate & Shells	2415	2676	261
Golden Sand	2676	2679	3
Slate	2679	2690	11
Total Depth	2690		

THIS WELL WAS 48 JOINTS OF 8" CASING ON
 BOTTOM WITH SEVERAL JOINTS OF 4" JOINTS
 OF 7/8 CASING ON TOP. 95 JOINTS OF CASING
 IN ALL.

2120
 11
 2639

34 shot
 179 mcf
 467 mcf

Well was filled up with broken stone to 2120 feet. Well was shot with 30
 quarts of Nitroglycerin in Big Injun sand. Bottom of shot 2120 top 2190
 Well showed 18/10 water in 2" before shot. After shot showed 9/10 mercury
 in 2". Casing put in well 10" 358 feet. 6" 1025 feet. 3 1/2" 1343 ft. 5 24-7/8
 2007 feet. Casing pulled out 8". 1000 feet left in 1 joint 21 feet 10".
 Well was tubed with 2" tubing. Anchor below packer 20 feet 10"
 6 1/2 x 5 inch Braden Head & 5 x 2" Braden Head well shut in Nov. 3/1923
 Drillers - W. E. Flannigan & D. L. Brat. Tool D. R. Becholar H. Flecker
 Record copied from original well record. By F. S. Greathouse.

017 0146

CASING AND TUBING

PACKERS

GAS, WATER AND OIL RECORD

SIZE	PUT IN WELL	PULLED	CASING FT.	SIZE	MAKE	SET AT	LIQUID OR GAS	DEPTH	FT. RAISED IN HOLE	VOLUME
Conductor			16'				Gas SAND	1165	1265	
10"	358						Gas	1962		
8 1/2"	1028	1006					Gas	2071		
6"	1333						Gas	2110		
5 & 4 7/8 2007' (48 JTS. OF 5" ON BOTTOM, 47 JTS. OF 4 7/8" ON TOP)										
Tubed with 2" Tubing. - 2" PKR. SET AT 2034'										
WATER 505										

Doddridge Co. 2146
yoo E. log

RECORD OF SHOT

DATE SHOT	FROM	TO	SAND	TYPE OF EXPLOSIVE	QUANTITY	PRODUCTION BEFORE SHOT	PRODUCTION AFTER SHOT
2100	2120	B. I.	Glycerine		20 Qts.	18/10M 2"	9/10M 2"
						179 M	467 M

YEAR	DEPLETION CALCULATION	GRAPHIC	FROM	TO	THICKNESS	FORMATION
	Reconditioned 7-30-57 to 8-17-57	LOG	Conductor box	00	16	16
	Had small bailer, spear, jars, stem and rope socket in tubing. Pulled 2131' 10"		Red Rock	16	29	13
	of 2-3/8" tubing, lap weld, short collar swabbed 300' of water in hole. Gas		Lime	29	45	16
	Gauged 14, 900 cu ft. - 46# 20 hours.		Slate	45	135	90
	Birdwell survey showed T. D. 2127'		Coal	135	138	3
	drilled to 2140' Gas pays 2076' and 2123'		Lime	138	185	47
	Shot hole showed up at 2108-2121'		Red Rock	185	215	30
	Big Lime 1950-2025' - Big Injun 2025-2072'		Lime	215	240	25
	Ran 2034' of 2" tubing - set packer 2029'		Red Rock	240	300	60
	8-8-57 Fractured with 2,000 gal. kerosene treatment. Pumped in at 2,400#. Well never broke down-pumped in total of 40 bbls. breakdown- maximum pumping pressure 2600# - 200# on well when shut in - 1 hour afterward on vacuum.		Lime	300	330	30
	Fulled tubing - 360' water and oil in hole. Cleaned out to 2144'.		Slate	330	350	20
	Ran 2152' 3" of 2 3/8" tubing at 2144' SLM. Final open flow 94M. 90# 24 hours		Lime	350	400	50
			Red Rock	400	475	75
			Hurry Up Sand	475	530	55
			Hard water	505		
			Lime	530	745	215
			Red Rock	745	755	10
			Lime	755	780	25
			Little Dunkard Sand	780	805	25
			Slate	805	835	30
			Red Rock	835	845	10
			Lime	845	900	55
			Red Rock	900	910	10
			Lime	910	980	70
			Red Rock	980	985	5
			Lime	985	1010	25
			Red Rock	1010	1016	6
			Lime	1016	1140	124
			Slate	1140	1165	25
			Gas Sand	1165	1265	100
			Lime	1265	1435	170
			Slate	1435	1455	20
			Lime	1455	1480	25
			1st. Salt Sand	1480	1530	50
			Black Shale	1530	1557	27
			2nd. Salt Sand	1557	1620	63
			Black Shale	1620	1700	80
			Lime- Little gritty	1700	1710	10
			Black Slate	1710	1715	5
			Black Lime	1715	1750	35
			3rd. Salt Sand	1750	1775	25
			Black Slate	1775	1808	33
			Lime or Maxon Sand	1808	1850	42
			Black Slate	1850	1895	45
			Blue Monday Sand	1895	1910	15
			Slate	1910	1913	3
			Little Lime	1913	1940	27
			Pencil Cave	1940	1950	10
			Big Lime	1950	2025	75
			Little gas	1962		
			Big Injun Sand	2025	2124	99
			Little gas	2071		
			Gas- 44/10 W 2" 280 mcf	2110		
			Slate	2124	2150	26
			Squaw Sand & Shells	2150	2415	265
			Slate & Shells	2415	2676	261
			Cordon Sand	2676	2679	3
			Slate	2679	2690	11
			Total depth		2690'	

CODE NO. C. W. 239 NAME Lewis Maxwell well # 13-E.
 COUNTY Doddridge
 WATERS Arnolds Creek
 COMMENCED AUG. 31, 1923 COMPLETED Oct. 27, 1923
 DATE SPUNDED DATE SHUT IN

DRILLERS Contractor - F. S. Greathouse
 W. O. NO. I. R. NO.
 COST COMPLETE \$ 7430.76 C.P. # 4910 -
 COST PER FOOT \$ 2.76

DATE CONNECTED
 DATE PLUGGED 2690'
 TOTAL DEPTH 1240'
 C. H. ELEVATION
 Producing Sand - Gutter - Injun

Total on line

DATE	LINE PRES.	MINUTES					TIME SHUT IN	ROCK	VOLUME	BAND	REMARKS
		1	2	3	4	5					
12-20-23		125	150	225	265	12	305	554,400		Shut in	
6-30-24		93	105	160		24	230	1,470,120		Shut in	
12-1-24	15	45	57	97		1	126	168,960			
7-1-25		60	75	120		1	155	304,320			
12-31-25	10	34	44	78		1	108	150,720			
6-1-26		39	52	94	126	24	162	213,120			
12-31-26	10	25	35	62	90	1	90	94,560			
6-30-27		38	50	87	115		155	134,400			
12-31-27	10	23	33	58		1	80	126,240			
6-30-28		40	50	87	128	12	145	134,400			
12-30-28	6	18	25	48		1	68	67,392			
6-30-29		30	40	76	100	24	130	115,968			
12-1-29	8	13	20	40	60		122	67,392			
6-30-30		24	35	68	98	24	122	67,392			
12-1-30	8	14	21	44	62		84	83,040			
6-30-31		26	38	62		1	62	67,392			
12-30-31	11	14	20	42		12	275	319,680			
11-4-23		120	140	185		24	117	84,560			
6- - 32		26	36	66	88			67,392			
12-31-32	14	5	9	11	13	15	20	40	58		
6- - 33	25	4	8	10	12	14	18	38	56	48,000 B.I.	
12-1-33	9	0	0	0	5	7	13	35	52	37,680 "	
6-1-34		5	10	15	20	24	35	40	49	115 67,392 "	
12-1-34	7	0	5	9	10	18	34	53		59,120 "	
6-15-35	6	2	4	8	10	30	78			134,400 "	

LEASE NO. C-32-3.

DISTRICT Smithburg

2-DL-2

N. 290.09

E. 322.54

VOLUME AND PRESSURE TESTS

DATE	LINE PRES.	MINUTES					TIME SHUT IN	ROCK	VOLUME	BAND	REMARKS	
		1	2	3	4	5						
12-13-35	7	2	4	6	8		16	32	45	134,400 B.I.	Blown 1/2 hr.	
6-25-36	7	2	4	6	8		10	14	28	115,968 "	" "	
12-15-36	7	2	4	6	8		10	14	27	23,648 "	" "	
4/15/37	8	2	4	6	8		10	15	28	28,992 "	" "	
12-1-37	8	4	8	12	16		4	12	24	20,760 "	" "	
6-1-38	8	4	8	12	16		4	10	18	14,848 "	" "	
12-1-38	6	2	4	6	8		2	7	8	10,530 "	" "	
6-1-39	6	2	4	6	8		2	6	10	10,530 "	" "	
6-1-39	7	5	8	10	12		17	17	18	29,880 "	Before finding	
12-1-39	6	2	4	6	8		10	14	24	29,880 "	after "	
6-1-40	6	2	4	6	8		8	12	20	21,060 "	solled by down 2 in	
12-1-40	6	2	4	6	8		9	12	22	25,830 "	down 2 in.	
6-1-41	5	2	4	6	8		12	16	25	33,330 "	" "	
12-1-41	6	2	4	6	8		10	14	20	21,060 "	" "	
6-1-42	6	2	4	6	8		8	14	24	21,060 "	" "	
12-1-42	6	2	4	6	8		8	14	20	18,260 "	" "	
6-1-43	6	2	4	6	8		10	14	20	10,530 "	" "	
12-1-43	6	2	4	6	8		9	12	20	21,060 "	" "	
6-1-44	6	2	4	6	8		8	12	20	14,900 "	" "	
12-1-44	6	0	0	2	4		6	10	18	10,530 "	" "	
6-1-45	7	0	0	0	4		4	8	18	14,900 "	" "	
12-1-46	7	0	0	0	4		4	8	18	10,530 "	" "	
6-1-46	8	0	0	0	4		4	8	18	14,900 "	" "	
12-1-46	8	0	0	0	4		4	8	18	10,530 "	" "	
6-1-47	7	1	1	1	4		5	8	16	14,900 "	" "	
12-1-47	6	2	2	3	4		5	9	17	14,900 "	" "	
6-1-48	6	2	4	6	8		10	14	18	18,260 "	" "	
12-1-48	7	2	2	3	4		5	8	14	14,900 "	" "	
6-1-49	19	1	3	6	8		10	14	20	18,260 "	" "	
12-1-49	5	1	2	3	4		5	11	18	18,260 "	" "	
6-1-50	5	1	2	3	4		6	10	19	14,900 "	" "	
12-1-50	5	1	2	3	4		3	6	18	10,530 "	" "	
6-1-51	7	1	2	3	4		3	6	17	14,900 "	" "	
12-1-51	5	1	2	3	4		6	9	16	14,900 "	" "	
6-1-52	5	0	0	1	2		3	6	12	19	14,900 "	" "
12-1-52	5	0	0	1	2		3	6	12	19	14,900 "	" "
6-1-53	4	0	1	3	4		7	10	22	28	14,900 "	" "
12-1-53	5	0	2	3	4		6	11	23	24	18,260 "	" "
6-15-53	5	0	1	3	4		6	10	22	27	14,900 "	" "

STROVING TESTS IN 2' TO 6' BANDS, SINCER, 2' SPREADS - WANT FISH