

- New Location
- Drill Deeper
- Redrill
- Abandonment

Company OWENS, LIBBEY-OWENS GAS DEPT
 Address BOX 4168 CHARLESTON W.VA.
 Farm WESTMORELAND INC.
 Tract 1 Acres 13,756 Lease No. 2931
 Well (Farm) No. 1 Serial No. 1151 (CORRECTED)
 Elevation (Spirit Level) 992.46
 Quadrangle BALD KNOB NW
 County BOONE District WASHINGTON
 Engineer Fred Ramsey
 Engineer's Registration No. 1540
 File No. _____ Drawing No. _____
 Date FEB. 12, 1962 Scale 1" = 400 FT.

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. Boo-935

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.
 — Denotes one inch spaces on border line of original tracing.



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Quadrangle Bald Knob

Permit No. Boo-935

WELL RECORD

Oil or Gas Well GAS
(KIND)

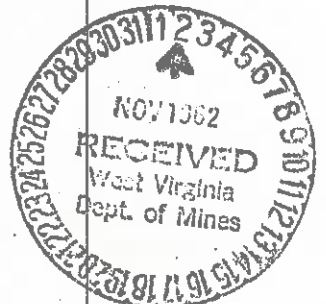
Company <u>OWENS, LIBBEY-OWENS GAS DEPARTMENT</u>	Casing and Tubing	Used in Drilling	Left in Well	Packers
Address <u>P. O. Box 4168, Charleston 4, W. Va.</u>				
Farm <u>Westmoreland, Inc.</u> Acres <u>Pt. 13,726.78</u>	Size			
Location (waters)				
Well No. <u>1 (Serial No. 1151)</u> Elev. <u>992.46'</u>	10-3/4" <u>10-3/4"</u>	<u>428'2"</u>	<u>Pulled</u>	Reg. Oilwell B.H. 10-3/4x13-3/8x16 Set at <u>443'</u> Kind of Packer
District <u>Washington</u> County <u>Boone</u>	10-3/4" <u>10-3/4"</u>	<u>428'3"</u>	<u>Pulled</u>	Hookwall
The surface of tract is owned in fee by _____	10-3/4" <u>10-3/4"</u>	<u>442'9"</u>	<u>442'9"</u>	Size of _____
Address _____	8-5/8" <u>8-5/8"</u>	<u>1895'4"</u>	<u>1895'4"</u>	<u>5 1/2x6-1/8x16"</u>
Mineral rights are owned by <u>Westmoreland, Inc.</u>	7" <u>7"</u>	<u>2196'1"</u>	<u>2196'1"</u>	Depth set _____
<u>2500 Fidelity-Phila. Trust Bldg.</u> Address <u>Philadelphia 9, Pa.</u>	3 1/2" <u>3 1/2"</u>	<u>2291'5"</u>	<u>Pulled</u>	<u>2347'2" to 2350'10"</u>
Drilling commenced <u>May 4, 1962</u>	4 1/2" <u>4 1/2"</u>	<u>2284'6"</u>	<u>Pulled</u>	Perf. top <u>2296</u>
Drilling completed <u>August 21, 1962</u>	4 1/2" <u>4 1/2"</u>	<u>2690'1"</u>	<u>Pulled</u>	Perf. bottom <u>2307</u>
Date Shot _____ From _____ To _____	5 1/2" <u>5 1/2"</u>	<u>2350'1"</u>	<u>2350'1"</u>	Perf. top <u>2714</u>
With _____	3 1/2" <u>3 1/2"</u>	<u>2759'</u>	<u>2759'</u>	Perf. bottom <u>2733</u> <u>3 1/2" 2714-2733'</u>
Open Flow _____ /10ths Water in _____ Inch	CASING CEMENTED <u>3 1/2"</u> SIZE <u>250</u> No. Ft. <u>9-25-62</u> Date			
_____ /10ths Merc. in _____ Inch	<u>35 bags Hi early cement and 125 bbls. water.</u>			
Volume _____ Cu. Ft.	COAL WAS ENCOUNTERED AT <u>120 FEET 24 INCHES</u>			
Rock Pressure _____ lbs. _____ hrs.	<u>259 FEET 48 INCHES FEET INCHES</u>			
Oil _____ bbls., 1st 24 hrs.	<u>FEET INCHES FEET INCHES</u>			
WELL ACIDIZED <u>7-31-62 -- See Remarks</u>	WELL FRACTURED <u>Water fraced 9-12-62 and 10-1-62 -- See remarks</u>			
Acid-fraced <u>9-4-62 -- See Remarks</u>				

RESULT AFTER TREATMENT Est. 294 M Big Lime; 50 M Weir Shells = 344 McF gas

ROCK PRESSURE AFTER TREATMENT 440# - 7 Days (Csg.) 725# - 7 Days (Tbg.)

Fresh Water 60, 74-80 Feet Salt Water 622-629 Feet

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Surface	Yellow	Med.	0	22			
Quicksand	Blue	Soft	22	28			
Broken Sand	Grey	Med.	28	43			
Slate	Blue	Soft	43	55			
Sand	Grey	Hard	55	85	Water at 60'		
Slate	Blue	Soft	85	120	Water 74-80'	Hole full	
Coal	Black	Soft	120	122			
Slate-Shells	Dark	Med.	122	210			
Slate	Blue	Soft	210	230			
Sand	Grey	Hard	230	259			
Coal	Black	Soft	259	263			
Slate-Shells	Dark	Med.	263	340			
Sand	Light	Hard	340	375			
Slate	Dark	Soft	375	388			
Sand	Light	Hard	388	422			
Slate	Dark	Soft	422	428			
Shells	Light	Hard	428	432			
Broken Sand	Dark	Med.	432	440			
Gritty Shell	Dark	Hard	440	443			
Sand	Light	Med.	443	449			



5-15-62
Installed 10-3/4" csg. at 428'
Pulled 428'2" of 10-3/4" casing
5-17-62
Re-installed 10-3/4" casing at 428' on a Regular Oilwell Bottom Hole Packer
5-18-62
Pulled 428'3" of 10-3/4" casing with packer.
Reamed hole from 428 to 432'
5-19-62
Re-installed 10-3/4" casing at 443' on a Regular oilwell bottom hole packer

Formation	Color	Hard or Soft	Top ²	Bottom	Oil, Gas or Water	Depth Found	Remarks
Sand	Light	Med.	449	453			
Slate	Dark	Med.	453	469			
Sl & Shls	Dark	Med.	469	516			
Sand	Light	Hard	516	562			
Sl & Shls	Dark	Med.	562	638	Salty Water	622-629'	1/2 BFH
Sand	Grey	Hard	638	654			
Sl & Shls	Dark	Med.	654	689			
Sand	Light	Hard	689	704			
Sl & Shls	Dark	Med.	704	733			
Lime Shells	Dark	Hard	733	742	Gas	733-742'	458 cu.ft.
Slate	Dark	Soft	742	754			
Sand	Light	Hard	754	795			
Gritty Shell	Dark	Hard	795	838			
Sand	Light	Hard	838	884			
Sand	White	Hard	884	976	Test 938' Gas 971'	387 1,095	cu.ft. cu.ft.
Slate	Dark	Med.	976	981			
Sand	Light	Hard	981	1006			
Sl & Shls	Dark	Med.	1006	1026			
Sand	Light	Hard	1026	1098			
Slate	Dark	Med.	1098	1110			
Sl & Shls	Dark	Med.	1110	1154			
Sl & Shls	Dark	Med.	1154	1171			
Sand	Light	Hard	1171	1360	Water 1235' Test 1329'	Hole filling up No gas	
Lime Shells	Dark	Hard	1360	1366			
Sand	Light	Hard	1366	1384			
Sand	Light	Hard	1384	1479			
Gritty Lime	Grey	Hard	1479	1576			
Sl & Shls	Dark	Med.	1576	1595			
Gritty Lime	White	Hard	1595	1626			
Sl & Shls	Dark	Med.	1626	1679			
Gritty Lime	Dark	Med.	1679	1705			
Sl & Shls	Dark	Med.	1705	1739			
Lime Shells	Light	Hard	1739	1774			
Sand	Light	Hard	1774	1795			
Sand	Light	Hard	1795	1802			
Lime-Sand	Light	Hard	1802	1901	Installed 8-5/8" csg. at 1897' on a shoe.		
Black Lime	Black	Hard	1901	1903			
Black Lime	Black	Hard	1903	1913			
Red Rock	Red	Med.	1913	1930			
Lime Shells	Dark	Hard	1930	1971			
Sl & Shls	Dark	Med.	1971	2005			
Red Rock	Red	Med.	2005	2027			
Sl & Shls	Dark	Med.	2027	2050			
Sl & Shls	Dark	Med.	2050	2113			
Lime	Dark	Med.	2113	2202	7-13-62 Installed 7" csg. at 2196' on a shoe in red clay.		
Big Lime	Light	Med.	2202	2280	Gas 2255' Gas 2280'	866 cu.ft. 2.7 MCF	
Big Lime	Light	Hard	2280	2297			
Big Lime	Light	Med.	2297	2314	Gas 2314'	230.0 MCF	
Big Lime	Light	Hard	2314	2324			
Red Injun	Red	Med.	2324	2327	Test 2327'	193.0 MCF	
Red Injun	Red	Med.	2327	2416	Set rock bridge at 2389'		
Grey Injun	Grey	Med.	2416	2424	Filled back to 2333'6"		
Sl & Shls	Grey	Med.	2424	2440	Dumped in capseal at 2333'6" Filled back to 2324'		
					7-28-62 Installed 3 1/2" tubing at 2289'5" with a Larkin upside down packer set from 2223'6" to 2230'.		
					7-31-62 Halliburton acidized Big Lime with 1,000 gals. 15% acid, flushed with		

Date October 29, 1962

APPROVED OWENS, LIBBEY-OWENS GAS DEPARTMENT, Owner

By A. H. Smith
A. H. Smith, Mgr. (Title) Land, Engrg. & Geol.



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 2A

Quadrangle Bald Knob

Permit No. Boo-935

WELL RECORD
PAGE TWO

Oil or Gas Well GAS
(KIND)

Company OWENS, LIBBEY-OWENS GAS DEPARTMENT
Address P. O. BOX 4168, Charleston 4, W. Va.
Farm Westmoreland, Inc. Acres _____
Location (waters) _____
Well No. 1 (Serial No. 1151) Elev. _____
District _____ County _____
The surface of tract is owned in fee by _____
Address _____
Mineral rights are owned by _____
Address _____
Drilling commenced _____
Drilling completed _____
Date Shot _____ From _____ To _____
With _____
Open Flow /10ths Water in _____ Inch
/10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
WELL ACIDIZED _____
WELL FRACTURED _____
RESULT AFTER TREATMENT _____
ROCK PRESSURE AFTER TREATMENT _____
Fresh Water _____ Feet Salt Water _____ Feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
10			
13			
10			Size of
8 1/4			
6 3/4			Depth set
5 3/16			
8			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom
CASING CEMENTED	SIZE	No. Ft.	Date
COAL WAS ENCOUNTERED AT	FEET	INCHES	
	FEET	INCHES	FEET INCHES
	FEET	INCHES	FEET INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
							23 bbls. of water. Acid injected at the rate of 3 bbls/min. with a breakdown pressure of 2,000 lbs. Maximum treating pressure of 800 lbs. with a minimum pressure of 500 lbs. Test 3:00 P.M. 125 MCF 8-1-62 Test 4:30 P.M. 137 MCF 8-7-62 Test 3:00 P.M. 172 MCF Pulled 2291' 5" of 3 1/2" tubing.
Slate & Shell	Grey	Hard	2441	2603			
Sl & Shls	Grey	Med.	2603	2612			
Weir Shells	White	Hard	2612	2726			Test 2700' 133 MCF Gas 2710' 154 MCF
Sl & Shls	Grey	Med.	2726	2847			
Slate	Grey	Med.	2847	2876			
Coffee Shale	Brown	Soft	2876	2884			
Berea Sand	Brown-Grey	Hard	2884	2903			Test 2899' 140 MCF Gas 2903' 144 MCF Test 2903' 140 MCF Gas 2915' 147 MCF Test 2943' 147 MCF
Berea Grit	White	Hard	2903	2923			
Slate	Dark	Med.	2923	2943			
			Total Depth 2943'				8-22-62 Schlumberger made gamma-gamma density, temperature and induction logs. 8-25-62 Set brush bridge at 2370' Filled with rock to 2328'

Formation	Color	Hard or Soft	Top 2A	Bottom	Oil, Gas or Water	Depth Found	Remarks
					Ran two bags cement at 2328' Gas tested: 386 MCF Top of cement 2320' 8-28-62		
					Schlumberger perforated the Big Lime formation at 2296 and 2307'. Used a Quinn radial jet tool and perforated 5 - 1" holes at both depths. 8-30-62		
					Test 9:45 A.M. 133 MCF 9-4-62		
					Installed 4 1/2" casing at 2284' Halliburton acid-fraced the Big Lime through a Lynes Production packer at 2275' with 12,500 lbs. of 20-40 sand, 10,000 lbs. of 10-20 sand, 1,000 gals. of 15% HCL acid and 460 bbls. of total fluid. Formation broke down at 1350%. 9-5-62		
					Pulled 2284' 6" of 4 1/2" casing. Test 4:00 P.M. 386 MCF 9-7-62		
					Drilled out bridge and bailed water. Test 11:30 P.M. 277 MCF 9-8-62		
					Test 7:30 P.M. 268 MCF Set brush bridge at 2800' Put 42' of rock in hole. Top of rock 2758'. 2 bags of cement on top of rock. Gas test: 264 MCF 9-11-62		
					Perforated Weir and bailed water 12 hrs. Schlumberger perforated the Weir Shells with a Quinn radial jet tool at 2714 and 2733'. Perforated 5 - 1" holes at both depths. Test after well open 10 hrs: 323 MCF 9-12-62		
					Installed 4 1/2" casing at 2690' with a Lynes production packer set at 2685' Halliburton water fraced the Weir Shells using 22,500 lbs. of 20-40 sand, 1,000 gals. MCA acid and 435 bbls. of water. Pulled 2690' 1" of 4 1/2" casing. 9-13-62		
					Test 12:00 Midnight 273 MCF 9-14-62		
					Test 4:00 P.M. 268 MCF 9-15-62		
					Test 5:00 P.M. 306 MCF 9-17-62		
					Test 5:15 P.M. 323 MCF 9-19-62		
					Installed 5 1/2" casing at 2350' 1" on an Oilwell Hookwall packer set from 2347' 2" to 2350' 10" Tests: Big Lime 268 MCF Weir 51 MCF 9-25-62		
					Installed 3 1/2" tbg. at 2759' with a Baker cement float collar set from 2755' 11" to 2754' 8". Tubing set 3" off bottom.		

Date October 29, 1962

APPROVED OWENS, LIBBEY-OWENS GAS DEPARTMENT, Owner

By *A. H. Smith*
A. H. Smith, MGR (Title) Land, Engrg. & Geol.



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION *2B*

Quadrangle Bald Knob

Permit No. Boo-935

WELL RECORD
PAGE THREE

Oil or Gas Well GAS
(KIND)

Company OWENS, LIBBEY-OWENS GAS DEPARTMENT
Address P. O. Box 4168, Charleston 4, W. Va.
Farm Westmoreland, Inc. Acres _____
Location (waters) _____
Well No. 1 (Serial No. 1151) Elev. _____
District _____ County _____
The surface of tract is owned in fee by _____
Address _____
Mineral rights are owned by _____
Address _____
Drilling commenced _____
Drilling completed _____
Date Shot _____ From _____ To _____
With _____
Open Flow _____ /10ths Water in _____ Inch
_____ /10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
WELL ACIDIZED _____

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16			
13			
10			Size of
8 3/4			
6 5/8			Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

WELL FRACTURED _____

RESULT AFTER TREATMENT _____

ROCK PRESSURE AFTER TREATMENT _____

Fresh Water _____ Feet _____ Salt Water _____ Feet _____

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
							<p>9-25-62 (Cont'd) Halliburton cemented in 3 1/2" tubing from 2500' to 2750' with 35 bags Hi early cement. Used 75 bbls. of water to circulate cement, 20 bbls. to flush and 25 bbls. to pump plug to 2746'. 9-28-62 Schlumberger perforated 3 1/2" tubing at 2714 and 2733' Perforated 6 holes with a 2-1/8" radio Tri jet tool. 10-1-62 Halliburton water fraced Weir Shells with 22,500 lbs. of 20-40 sand, 5,000 lbs. of 10-20 sand, 1,500 gals. 15% acid, 250 gals. MCA acid and 440 bbls. water. Maximum treating pressure 3150# Minimum pressure 2450#. Formation broke down at 1400#. 10-4-62 Test Midnight: 37.5 MCF 10-5-62 Test Midnight: 42.9 MCF 10-8-62 Test 4:30 P.M. 50.7 MCF Well shut-in in 3 1/2" tubing at 5:15 P.M. Final Open Flow: Estimated: Big Lime 294 MCF Weir Shells 50 MCF</p>

